Sewer Acct.#: **1003803000**

Company: **BRIDGETON LANDFILL LLC**

Address: **13570 St. Charles Rock Road**

City: **Bridgeton**

State and Zip: **MO 63044**

Industry ID	File Code	File Description
17931	31	INDUSTRY OVERFLOW

(2)

ACCOUNT NUMBER: **10038030-00**

COMPANY NAME: **BRIDGETON LANDFILL**

CORRESPONDENCE

July 2013	Last page 566	From: 07-01-13	Thru: 08-02-13
June 2013	First page 567	From: 06-01-13	Thru: 06-27-13
May 2013	First page 772	From: 05-01-13	Thru: 05-31-13

X	CORRESPONDANCE LOCATED IN OVERFLOW FILE

JULY 2013

Doug Mendoza

From: Joe Pavlich
Sent: Friday, August 02, 2013 11:35 AM
To: Doug Mendoza
Subject: Bridgeton Landfill

Doug, here is the reading from Bridgeton:319982

Table 1
General Parameters and Metals
December 2012 - July 2013
Bridgeton Landfill

					Biochemical Oxygen Demand (5-day)	Chemical Oxygen Demand	Nitrogen, ammonia as N	Oil and Grease	Oil and Grease - Silica gel cleanup	pH	Solids, total suspended
					NA	NA	NA	NA	NA	NA	NA
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l
316-017	7/18/2013	Pace	Validated	60149196	35200	59100	717	503	96.3	5.3	2410
316-016	7/17/2013	Pace	Validated	60149010	32300	60100	671	541	45.9	5.3	2540
MSD Batch 282/283	7/16/2013	Pace	Validated	60148928	34000	53100	660	449	55.4	5.4	1260
316-015R	7/15/2013	Pace	Validated	60148850	27100	49200 *	741	461	16.4	5.4	2110
MSD Batch 278	7/15/2013	Pace	Validated	60148849	30400	56500	704	410	7.4	5.3	1720
316-014	7/12/2013	Pace	Validated	60148776	28700	54300	664	410	38.4	5.4	1020

Table 1
General Parameters and Metals
December 2012 - July 2013
Bridgeton Landfill

					Aluminum	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Copper
					Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
316-017	7/18/2013	Pace	Validated	60149196	7.13	0.0560	0.73	ND	ND	0.295	0.0516	ND
316-016	7/17/2013	Pace	Validated	60149010	10.3	0.0607	0.686	ND	ND	0.271	0.0564	ND
MSD Batch 282/283	7/16/2013	Pace	Validated	60148928	8.37	ND	0.686	ND	ND	0.276	0.0578	ND
316-015R	7/15/2013	Pace	Validated	60148850	13	ND	0.726	ND	ND	0.286	0.0677	ND
MSD Batch 278	7/15/2013	Pace	Validated	60148849	8.94	ND	0.716	ND	ND	0.314	0.0676	ND
316-014	7/12/2013	Pace	Validated	60148776	22.7	0.0539	0.679	ND	ND	0.295	0.0678	0.0822

Table 1
General Parameters and Metals
December 2012 - July 2013
Bridgeton Landfill

					Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
					Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
316-017	7/18/2013	Pace	Validated	60149196	**947**	**0.0980**	**0.00031**	**0.137**	ND	ND	ND	**18.4**
316-016	7/17/2013	Pace	Validated	60149010	**919**	**0.226**	**0.0099**	**0.146**	ND	**0.0224**	ND	**17.1**
MSD Batch 282/283	7/16/2013	Pace	Validated	60148928	**900**	**0.219**	**0.00067**	**0.143**	ND	ND	ND	**14.7**
316-015R	7/15/2013	Pace	Validated	60148850	**896**	**0.246**	**0.00084**	**0.162**	ND	ND	ND	**13.1**
MSD Batch 278	7/15/2013	Pace	Validated	60148849	**1150**	**0.282**	**0.00071**	**0.163**	ND	ND	ND	**17.9**
316-014	7/12/2013	Pace	Validated	60148776	**896**	**0.239**	**0.0048**	**0.176**	**0.0974**	ND	ND	**14.4**

Table 3
VOCs and SVOCs
December 2012 - July 2013
Bridgeton Landfill

					Benzene
Location	Date	Lab Name	Data Status	Lab Report	ug/l
316-017	7/18/2013	Pace	Validated	60149196	ND
316-016	7/17/2013	Pace	Validated	60149010	ND
MSD Batch 282/283	7/16/2013	Pace	Validated	60148928	ND
316-015R	7/15/2013	Pace	Validated	60148850	ND
MSD Batch 278	7/15/2013	Pace	Validated	60148849	ND
316-014	7/12/2013	Pace	Validated	60148776	ND

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissell Point Tracking Table			
Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Saturday, July 20, 2013	Batch 316-019	97,500	97,500
Sunday, July 21, 2013	Batch 316-019	97,500	97,500
Monday, July 22, 2013	Batch 316-020	120,000	120,000
Tuesday, July 23, 2013	Batch 316-020	118,500	120,000
Wednesday, July 24, 2013	Batch 316-021	120,000	120,000
Thursday, July 25, 2013	Batch 316-022	120,000	120,000
Friday, July 26, 2013	Batch 316-023	120,000	120,000
Saturday, July 27, 2013	Batch 316-024	119,900	120,000

Starting Date	***7/20/2013 5:00***
Ending Date	***7/28/2013 5:00***

MSD - Missouri River Tracking Table								
Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and Time	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)	Adjusted pH
Saturday, July 20, 2013	None	-	7/20/2013 5:00	7/21/2013 5:00	24.0	840	0.0	N/A
Sunday, July 21, 2013	None	-	7/21/2013 5:00	7/22/2013 5:00	24.0	840	0.0	N/A
Monday, July 22, 2013	None	-	7/22/2013 5:00	7/23/2013 5:00	24.0	840	0.0	N/A
Tuesday, July 23, 2013	Batch 257	17,502	7/23/2013 5:00	7/24/2013 5:00	24.0	840	729.3	N/A
Wednesday, July 24, 2013	Batch 257	17,502	7/24/2013 5:00	7/25/2013 5:00	24.0	840	729.3	N/A
Thursday, July 25, 2013	None	-	7/25/2013 5:00	7/26/2013 5:00	24.0	840	0.0	N/A
Friday, July 26, 2013	None	-	7/26/2013 5:00	7/27/2013 5:00	24.0	840	0.0	N/A
Saturday, July 27, 2013	None	-	7/27/2013 5:00	7/28/2013 5:00	24.0	840	0.0	N/A

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Brian J. Power Title: Environmental Manager Date: 7/31/13.

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/21/2013 5:00:00 AM	7/20/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Brian J. Power

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Brian J. Power *Name:* Brian J. Power

Title: Environmental Manager *Date:* 7/31/13

MSD Daily Flow Reading, ending 7-21-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/22/2013 5:00:00 AM	7/21/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Brian J. Power

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Brian J. Power *Name:* Brian J. Power

Title: Environmental Manager *Date:* 7/31/13

MSD Daily Flow Reading, ending 7-22-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/23/2013 5:00:00 AM	7/22/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Brian J. Power

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Brian J. Power *Name:* Brian J. Power

Title: Environmental Manager *Date:* 7/31/13

MSD Daily Flow Reading, ending 7-23-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/24/2013 5:00:00 AM	7/23/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	302,480	284,978	17,502

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 17,502 gallons

Bridgeton Landfill, LLC representative: Brian J. Power

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Brian J. Power *Name:* Brian J. Power

Title: Environmental Manager *Date:* 7/31/13

MSD Daily Flow Reading, ending 7-24-2013

Daily Flow Reading — *Bridgeton Landfill*

	Current	Previous	Difference
Date / Time:	7/25/2013 5:00:00 AM	7/24/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	319,982	302,480	17,502

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 17,502 gallons

Bridgeton Landfill, LLC representative: Brian J. Power

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Brian J. Power *Name:* Brian J. Power

Title: Environmental Manager *Date:* 7/31/13

MSD Daily Flow Reading, ending 7-25-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/26/2013 5:00:00 AM	7/25/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	319,982	319,982	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Brian J. Power

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Brian J. Power *Name:* Brian J. Power

Title: Environmental Manager *Date:* 7/31/13

MSD Daily Flow Reading, ending 7-26-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/27/2013 5:00:00 AM	7/26/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	319,982	319,982	0

Flow Meter Adjustment	
Reading Adjustment:	0
Flow During Adjustment:	0

Comments

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Brian J. Power

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Brian J. Power *Name:* Brian J. Power

Title: Environmental Manager *Date:* 7/31/13.

MSD Daily Flow Reading, ending 7-27-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/28/2013 5:00:00 AM	7/27/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	319,982	319,982	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Brian J. Power

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Brian J. Power *Name:* Brian J. Power

Title: Environmental Manager *Date:* 7/31/13

MSD Daily Flow Reading, ending 7-28-2013

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Wednesday, July 31, 2013 11:24 AM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill Weekly Report

Good morning,

This serves as the weekly report for Bridgeton Landfill. The materials for July 20th through Saturday July 27th are now available on Barr's FTP site. Please note that because of when we are running reports, we are now able to include the most recent Saturday in the weekly report. This week covers Saturday 7/20 – Saturday 7/27 (8 days). Future weekly reports will go back to a normal week - covering Sunday – Saturday. We hope that extending the reporting week by one day helps with MSD's concern on receiving data within an appropriate time from discharge. The missing page from last week has also been certified and added to the FTP site. We apologize for the oversight.

The facility is continuing to work on connection the 316,000 gallon tank to the 96,000 discharge tank for discharge to the Missouri River Treatment Facility. As we progress in that, we will update MSD on the plan for resuming discharge and conducting the confirmation air sampling. We appreciate your patience as we try to get a long term solution in place.

As always, please let me know if you have any questions or need additional information.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Tuesday, July 30, 2013 9:45 AM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally; Dan Feezor
Subject: RE: Bridgeton Landfill Weekly Report

Good morning,

We have completed our review of the data submitted for the 7/13-7/19 report. All appeared to be in order, except that the Daily Flow Reading sheet was not submitted for 7/13/2013 05:00 am to 7/14/2013 05:00 am. This must be submitted with the next weekly report.

The above item is also noted in the attached conditional approval tracking spreadsheet. This spreadsheet also reflects the increase in approved volume to 125,000 GPD for leachate hauled to the Bissell Point hauled waste station.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

7-31

OB-257 AST

Bridgeton Landfill

Fill Data

Fill Start Date	6/26/2013
Fill Start Time	19:40
Fill Stop Date	6/27/2013
Fill Stop Time	00:15
Process Battery	Tank Battery 3

Processing Data

Process Start Date	6/27/2013
Process Start Time	00:20
Process Stop Date	6/29/2013
Process Stop Time	10:05

Approval Data

Approval Details	NAL13026-414 thru -417
Test Results	Benzene ND/ND/ND/ND <1
Reprocessed Batch	1st benzene (96-001) = 240 ppb

Notes

Batch 257-AST has been sampled numerous times as 96-001, including before it was transferred from the 96k AST to TB-3, after re-processing in TB-3, and after sending it back to the 96k AST. Approvals are from post-reprocessing samples while still in TB-3.

Monday, July 29, 2013

OB-316-019 Bridgeton Landfill

Fill Data

Fill Start Date	7/19/2013
Fill Start Time	16:00
Fill Stop Date	7/20/2013
Fill Stop Time	00:00
Process Battery	316 AST

Processing Data

Process Start Date	7/20/2013
Process Start Time	00:00
Process Stop Date	7/20/2013
Process Stop Time	06:15

Approval Data

Approval Details	NAL13026-507
Test Results	Benzene 21 ppb
Reprocessed Batch	

Notes

Monday, July 29, 2013

OB-316-020 Bridgeton Landfill

Fill Data

Fill Start Date	7/21/2013
Fill Start Time	12:45
Fill Stop Date	7/21/2013
Fill Stop Time	18:35
Process Battery	316 AST

Processing Data

Process Start Date	7/21/2013
Process Start Time	18:35
Process Stop Date	7/22/2013
Process Stop Time	06:15

Approval Data

Approval Details	NAL13026-522
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, July 29, 2013

OB-316-021 Bridgeton Landfill

Fill Data

Fill Start Date	7/23/2013
Fill Start Time	14:30
Fill Stop Date	7/23/2013
Fill Stop Time	19:07
Process Battery	316 AST

Processing Data

Process Start Date	7/23/2013
Process Start Time	19:10
Process Stop Date	7/24/2013
Process Stop Time	06:48

Approval Data

Approval Details	NAL13026-539
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, July 29, 2013

OB-316-022 Bridgeton Landfill

Fill Data

Fill Start Date	7/24/2013
Fill Start Time	20:00
Fill Stop Date	7/24/2013
Fill Stop Time	22:05
Process Battery	316 AST

Processing Data

Process Start Date	7/24/2013
Process Start Time	22:05
Process Stop Date	7/25/2013
Process Stop Time	06:30

Approval Data

Approval Details	NAL13026-545
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, July 29, 2013

OB-316-023 Bridgeton Landfill

Fill Data

Fill Start Date	7/25/2013
Fill Start Time	20:00
Fill Stop Date	7/25/2013
Fill Stop Time	22:00
Process Battery	316 AST

Processing Data

Process Start Date	7/25/2013
Process Start Time	22:00
Process Stop Date	7/26/2013
Process Stop Time	06:35

Approval Data

Approval Details	NAL13026-551
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, July 29, 2013

OB-316-024 Bridgeton Landfill

Fill Data

Fill Start Date	7/26/2013
Fill Start Time	15:00
Fill Stop Date	7/26/2013
Fill Stop Time	18:45
Process Battery	316 AST

Processing Data

Process Start Date	7/26/2013
Process Start Time	15:00
Process Stop Date	7/27/2013
Process Stop Time	06:30

Approval Data

Approval Details	NAL13026-561
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, July 29, 2013

7-31-13

Daily Flow Reading — *Bridgeton Landfill*

	Current	Previous	Difference
Date / Time:	7/14/2013 5:00:00 AM	7/13/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Brian J. Power

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Brian J Power *Name:* Brian J. Power

Title: Environmental Manager *Date:* 7/31/13.

MSD Daily Flow Reading, ending 7-14-2013

Doug Mendoza

From: Darin Lewis
Sent: Tuesday, July 30, 2013 1:19 PM
To: Catherine Politte; Mike Townley; Doug Mendoza; Brian G. Gibson; Steve Grace; Sara Kammerer
Subject: Bridgeton Landfill Leachate weekly volume summary.

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant from 7/22/2013 to 7/27/2013.
7/22 – 120,000 gallons
7/23 – 118,500 gallons
7/24 – 120,000 gallons
7/25 – 120,000 gallons
7/26 – 120,000 gallons
7/27 – 119,900 gallons
Total = 718,400 gallons

Doug Mendoza

From: Doug Mendoza
Sent: Tuesday, July 30, 2013 9:45 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill Weekly Report

Good morning,

We have completed our review of the data submitted for the 7/13-7/19 report. All appeared to be in order, except that the Daily Flow Reading sheet was not submitted for 7/13/2013 05:00 am to 7/14/2013 05:00 am. This must be submitted with the next weekly report.

The above item is also noted in the attached conditional approval tracking spreadsheet. This spreadsheet also reflects the increase in approved volume to 125,000 GPD for leachate hauled to the Bissell Point hauled waste station.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Wednesday, July 24, 2013 10:34 AM
To: John Lodderhose; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: Bridgeton Landfill Weekly Report

Good morning,

This email is submitted on behalf of Bridgeton Landfill as the weekly report to MSD. This week's materials have been loaded on Barr's FTP site for your review.

Our team reported that the extended weekend discharge worked very well. We sincerely appreciate MSD making that available. Please let us know if you have any feedback or follow up on the process at any time so we can ensure that continues to work to your satisfaction.

As noted in yesterday's emails, Bridgeton Landfill has resumed discharge to the Missouri River Treatment Plant. The facility team will conduct daily benzene and pH confirmatory sampling to ensure the leachate is within the compliance limits, and will continue this until levels have been demonstrated to stabilize. Additionally, the facility is currently working to schedule follow up air sampling for benzene. Please note that the existing 4-gas meter was

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissell Point Tracking Table

Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Saturday, July 13, 2013	Batch 278	45,000	45,000
Sunday, July 14, 2013	None	None	None
Monday, July 15, 2013	Batch 316-015	95,900	97,000
Tuesday, July 16, 2013	Batch 278	22,500	22,500
	Batch 282 / 283	65,800	67,000
Wednesday, July 17, 2013	Batch 316-016	95,800	97,000
Thursday, July 18, 2013	Batch 316-017	95,800	97,000
Friday, July 19, 2013	Batch 286 / 287	15,000	15,000
	Batch 316-018	80,800	82,000

Starting Date	***7/13/2013 5:00***
Ending Date	***7/20/2013 5:00***

MSD - Missouri River Tracking Table

Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and Time	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)	Adjusted pH
Saturday, July 13, 2013	None	-	7/13/2013 5:00	7/14/2013 5:00	24.0	840	0.0	N/A
Sunday, July 14, 2013	None	-	7/14/2013 5:00	7/15/2013 5:00	24.0	840	0.0	N/A
Monday, July 15, 2013	None	-	7/15/2013 5:00	7/16/2013 5:00	24.0	840	0.0	N/A
Tuesday, July 16, 2013	None	-	7/16/2013 5:00	7/17/2013 5:00	24.0	840	0.0	N/A
Wednesday, July 17, 2013	None	-	7/17/2013 5:00	7/18/2013 5:00	24.0	840	0.0	N/A
Thursday, July 18, 2013	None	-	7/18/2013 5:00	7/19/2013 5:00	24.0	840	0.0	N/A
Friday, July 19, 2013	None	-	7/19/2013 5:00	7/20/2013 5:00	24.0	840	0.0	N/A

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: _____ Title: Area Eng. Mgr. Date: 7-23-13

7-30-13

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/15/2013 5:00:00 AM	7/14/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment	
Reading Adjustment:	0
Flow During Adjustment:	0

Comments

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: - Craig Almanza

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Signed: *Name:* Craig Almanza

Title: Area Env. Mgr. *Date:* 7-23-13

MSD Daily Flow Reading, ending 7-15-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/16/2013 5:00:00 AM	7/15/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Craig Almanza - Craig Almanza

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Signed: Craig Almanza *Name:* Craig Almanza

Date: ~~*Title:*~~ 7-23-13 Title ~~*Date:*~~ Area Env. mgr.

MSD Daily Flow Reading, ending 7-16-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/17/2013 5:00:00 AM	7/16/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Craig Almanza

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Craig Almanza *Name:* Craig Almanza

Title: Area Env. Mgr. *Date:* 7-23-13

MSD Daily Flow Reading, ending 7-17-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/18/2013 5:00:00 AM	7/17/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Craig Almanza

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Craig Almanza *Name:* Craig Almanza

Title: Area Env. Mgr. *Date:* 7-23-13

MSD Daily Flow Reading, ending 7-18-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/19/2013 5:00:00 AM	7/18/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Craig Almanza

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Craig Almanza *Name:* Craig Almanza

Title: Area Env. Mgr. *Date:* 7-23-13

MSD Daily Flow Reading, ending 7-19-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/20/2013 5:00:00 AM	7/19/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Craig Almanza

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: _____ *Name:* Craig Almanza

Title: Area Sup. Mgr. *Date:* 7-23-13

MSD Daily Flow Reading, ending 7-20-2013

7-30-13

OB-278 Bridgeton Landfill

Fill Data

Fill Start Date	7/11/2013
Fill Start Time	09:00
Fill Stop Date	7/11/2013
Fill Stop Time	14:30
Process Battery	Tank Battery 1

Processing Data

Process Start Date	7/11/2013
Process Start Time	14:30
Process Stop Date	7/12/2013
Process Stop Time	14:45

Approval Data

Approval Details	NAL13026-474
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Batch volume includes co-mingled liquid transferred from BTF containment area.

Monday, July 22, 2013

OB-282 Bridgeton Landfill

Fill Data

Fill Start Date	7/14/2013
Fill Start Time	18:50
Fill Stop Date	7/14/2013
Fill Stop Time	22:45
Process Battery	Tank Battery 3

Processing Data

Process Start Date	7/14/2013
Process Start Time	22:50
Process Stop Date	7/15/2013
Process Stop Time	05:00

Approval Data

Approval Details	NAL13026-487
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, July 22, 2013

OB-283 Bridgeton Landfill

Fill Data

Fill Start Date	7/14/2013
Fill Start Time	22:45
Fill Stop Date	7/15/2013
Fill Stop Time	00:30
Process Battery	Tank Battery 4

Processing Data

Process Start Date	7/15/2013
Process Start Time	00:35
Process Stop Date	7/15/2013
Process Stop Time	17:00

Approval Data

Approval Details	NAL13026-488
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, July 22, 2013

OB-286/287 Bridgeton Landfill

Fill Data

Fill Start Date	7/16/2013
Fill Start Time	16:35
Fill Stop Date	7/16/2013
Fill Stop Time	22:30
Process Battery	TB-1/2

Processing Data

Process Start Date	7/16/2013
Process Start Time	19:25
Process Stop Date	7/17/2013
Process Stop Time	12:30

Approval Data

Approval Details	NAL13026-494
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, July 22, 2013

OB-316-015 Bridgeton Landfill

Fill Data

Fill Start Date	7/12/2013
Fill Start Time	18:00
Fill Stop Date	7/12/2013
Fill Stop Time	22:50
Process Battery	316 AST

Processing Data

Process Start Date	7/12/2013
Process Start Time	23:00
Process Stop Date	7/14/2013
Process Stop Time	12:30

Approval Data

Approval Details	NAL13026-484
Test Results	Benzene ND <100 ppb
Reprocessed Batch	1st benzene = 54 ppb

Notes

Monday, July 22, 2013

OB-316-016 Bridgeton Landfill

Fill Data

Fill Start Date	7/15/2013
Fill Start Time	16:18
Fill Stop Date	7/15/2013
Fill Stop Time	22:30
Process Battery	316 AST

Processing Data

Process Start Date	7/16/2013
Process Start Time	16:30
Process Stop Date	7/17/2013
Process Stop Time	06:00

Approval Data

Approval Details	NAL13026-493
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, July 22, 2013

OB-316-017 Bridgeton Landfill

Fill Data

Fill Start Date	7/17/2013
Fill Start Time	15:50
Fill Stop Date	7/18/2013
Fill Stop Time	00:05
Process Battery	316 AST

Processing Data

Process Start Date	7/18/2013
Process Start Time	00:05
Process Stop Date	7/18/2013
Process Stop Time	06:00

Approval Data

Approval Details	NAL13026-496
Test Results	Benzene 72 ppb
Reprocessed Batch	

Notes

AST only loaded to 14.5 ft due to inoperable vacuum relief valve on BTF-to-AST transfer pump.

Monday, July 22, 2013

OB-316-018 Bridgeton Landfill

Fill Data

Fill Start Date	7/18/2013
Fill Start Time	15:45
Fill Stop Date	7/19/2013
Fill Stop Time	00:00
Process Battery	316 AST

Processing Data

Process Start Date	7/19/2013
Process Start Time	00:00
Process Stop Date	7/19/2013
Process Stop Time	07:00

Approval Data

Approval Details	NAL13026-438
Test Results	Benzene 40 ppb
Reprocessed Batch	

Notes

Monday, July 22, 2013

Pm

Table 3
VOCs and SVOCs
December 2012 - July 2013
Bridgeton Landfill

					Benzene
Location	Date	Lab Name	Data Status	Lab Report	ug/l
316-013	7/11/2013	Pace	Validated	60148688	ND
316-012	7/10/2013	Pace	Validated	60148560	ND
OpBatch0272	7/9/2013	Pace	Validated	60148427	ND
316-011	7/9/2013	Pace	Validated	60148426	ND
316-010	7/8/2013	Pace	Validated	60148422	ND
316-009	7/6/2013	Pace	Validated	60148335	ND

Table 1
General Parameters and Metals
December 2012 - July 2013
Bridgeton Landfill

					Biochemical Oxygen Demand (5-day)	Chemical Oxygen Demand	Nitrogen, ammonia as N	Oil and Grease	Oil and Grease - Silica gel cleanup	pH	Solids, total suspended
					NA	NA	NA	NA	NA	NA	NA
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l
316-013	7/11/2013	Pace	Validated	60148688	29100	51700	709	298	13.8	5.2	730
316-012	7/10/2013	Pace	Validated	60148560	28200	52100 *	735	478	24.3	5.2	1480
OpBatch0272	7/9/2013	Pace	Validated	60148427	34100	69100	754	64.8	ND	5.4	490
316-011	7/9/2013	Pace	Validated	60148426	27700	53700	799	257	13.1	5.6	1430
316-010	7/8/2013	Pace	Validated	60148422	27900	51300	713	395	13.1	5.5	1520
316-009	7/6/2013	Pace	Validated	60148335	24900	52100	694	356	50.1	5.6	1530
316-008	7/5/2013	Pace	Validated	60148306	23500	42500	580	264	8.5	5.6	1020

Table 1
General Parameters and Metals
December 2012 - July 2013
Bridgeton Landfill

					Aluminum	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Copper
					Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
316-013	7/11/2013	Pace	Validated	60148688	9.04	0.0534	0.623	ND	ND	0.271	0.0586	ND
316-012	7/10/2013	Pace	Validated	60148560	14.4	ND	0.684	ND	ND	0.301	0.0712	0.0504
OpBatch0272	7/9/2013	Pace	Validated	60148427	6.41	ND	0.593	ND	ND	0.293	0.0618	ND
316-011	7/9/2013	Pace	Validated	60148426	11.2	ND	0.652	ND	ND	0.277	0.0716	0.0288
316-010	7/8/2013	Pace	Validated	60148422	10.2	ND	0.61	ND	ND	0.264	0.0729	0.0351
316-009	7/6/2013	Pace	Validated	60148335	7.48	0.0720	0.604	ND	ND	0.263	0.0614	ND
6-008	7/5/2013	Pace	Validated	60148306	10.3	ND	0.54	ND	ND	0.217	0.0548	ND

Table 1
General Parameters and Metals
December 2012 - July 2013
Bridgeton Landfill

					Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
					Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
316-013	7/11/2013	Pace	Validated	60148688	820	0.15	0.00031	0.152	0.0944	ND	ND	14.1
316-012	7/10/2013	Pace	Validated	60148560	911	0.182	0.00087	0.175	0.116	ND	ND	15.5
OpBatch0272	7/9/2013	Pace	Validated	60148427	858	0.169	ND	0.16	ND	ND	ND	19.8
316-011	7/9/2013	Pace	Validated	60148426	815	0.198	0.00030	0.164	ND	ND	ND	15.7
316-010	7/8/2013	Pace	Validated	60148422	855	0.236	0.00056	0.164	ND	ND	ND	15
316-009	7/6/2013	Pace	Validated	60148335	802	0.167	0.00024	0.157	ND	ND	ND	14.6
6-008	7/5/2013	Pace	Validated	60148306	708	0.15	ND	0.152	ND	ND	ND	11.1

Doug Mendoza

From: Brian G. Gibson
Sent: Monday, July 29, 2013 1:27 PM
To: Doug Mendoza
Cc: Joe Pavlich
Subject: Bridgeton Landfill

The Bridgeton Landfill meter reading was at 319,982. 0 gal/hour. The reading was taken at 10:39 a.m. on Thursday, July 25 , 2013.

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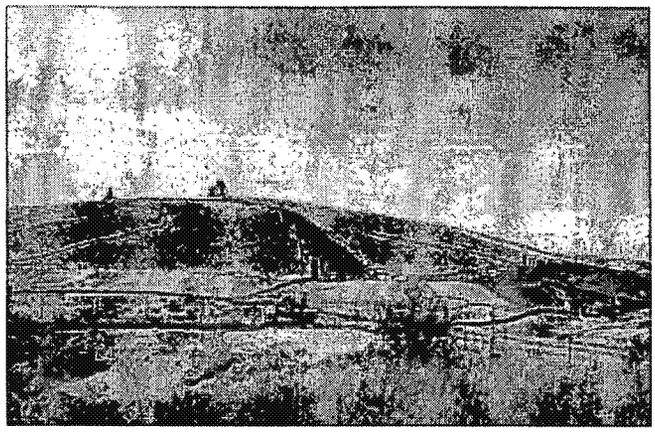
News

Records show history of methane violations at Bridgeton Landfill

By JEFFREY TOMICH jtomich@post-dispatch.com 314-340-8320

Posted: 07/20/2013 11:45 PM



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More than two and a half years have passed since waste giant Republic Services Inc. notified state regulators about the presence of a smoldering fire deep within the Bridgeton Landfill.

For people who live and work in the area, just northeast of the intersection of Interstates 70 and 270, the 52-acre landfill has been at least a nuisance, especially for the past year.

Noxious odors from gases being emitted have prompted hundreds of complaints and stirred concern about potential long-term health effects, especially among young children. Many fear that the subsurface problem could spread to nearby West Lake Landfill, where tons of radioactive waste — the product of nuclear weapons work in the 1940s — are buried.

Unknown to most of the landfill's neighbors, however, is another, less obvious problem that has persisted for more than a decade.

State and county inspection reports and other public documents from the Missouri Department of Natural Resources show the landfill has been out of compliance with state regulations since the late 1990s for allowing excess levels of methane, a potentially dangerous gas, to seep off-site.

The methane problems — more specifically, efforts to solve them — also raise questions about a possible connection to the mass of overheated waste that continues to smolder deep below the surface of the landfill.

Engineers, including one of the consultants hired to advise the DNR on the situation at Bridgeton, and the U.S. Fire Administration make clear that one of the main causes of underground landfill fires is overdrawing methane gas. When that happens, a vacuum is created that pulls air in from the surface or surrounding soils, providing fuel for combustion.

In a 2002 report titled "Landfill Fires: Their Magnitude, Characteristics and Mitigation," the U.S. Fire Administration, part of the Federal Emergency Management Administration, states: "Operators must take care to ensure the system is not overdrawn, which can lead to fire ignition."

Todd Thalhamer, an engineer and firefighter hired last spring to advise the DNR, said in a report last month that Republic was overdrawing the landfill gas system as recently as May.

Republic Services agrees that overdrawing landfill gas systems can cause subsurface fires, but spokesman Richard Callow said the company strongly believes that what's happening deep underground at the former quarry isn't a fire — a term that's been used at least by the DNR, Missouri Attorney General Chris Koster, and the U.S. Environmental Protection Agency.

The company believes the elevated temperatures, which have exceeded 300 degrees in spots, are the result of a chemical reaction, in part because the elevated temperatures are occurring so deep, some 80 to 120 feet below the surface, far below where oxygen would be drawn into the waste.

Still, the company said it isn't yet ruling anything out and is working with the DNR to determine the origin of what has been called a "smoldering event."

"Bridgeton Landfill continues to also evaluate factors that may have contributed, or could contribute, to the subsurface smoldering event, but that investigation is ongoing and nothing has been confirmed or eliminated," the company said in a statement.

State regulators have said little about what they believe caused the smoldering fire.

"While we have several opinions on how the (smoldering event) began, the facts have not revealed a sole source for the event," DNR Solid Waste Management Program director Chris Nagel told the public at a meeting June 17 at Pattonville High School.

DNR spokeswoman Gena Terlizzi last week said the state, as yet, has not identified the cause for the underground smoldering.

METHANE RISK

While the state regulators and the landfill operator are unable to pinpoint a cause, state records leave no doubt that the landfill has remained out of compliance with methane regulations for 16 years.

Republic, in fact, confirmed last week that monitoring wells along the perimeter of the landfill continue to detect excess methane levels.

Methane is a colorless, odorless gas produced by the decomposition of waste. Besides being a potent greenhouse gas, it's also potentially dangerous if allowed to seep into confined spaces such as sewers, buildings and basements.

The gas can be explosive at concentrations between 5 to 15 percent by volume, and higher concentrations in confined spaces can displace oxygen and lead to suffocation. Regulations limit methane in the soil at a landfill property boundary to 2.5 percent by volume, or 50 percent of the lower explosive limit.

While explosions or fires related to landfill gases are extremely rare, methane violations aren't unusual and can be challenging for landfill operators, especially companies that run older landfills that were

permitted and put in service before current regulations that require liners that serve as a barrier for gases that move through the soil.

At least 11 Missouri landfills, four of them in St. Louis County, have been issued notices of violations by the DNR over the past few years for allowing excess methane levels at the perimeter, according to the department's website.

While there have been no reported safety incidents related to methane accumulations near the Bridgeton Landfill, DNR records indicate the facility, a former quarry that began accepting waste in 1985, has been out of compliance with methane regulations since 1997.

Republic and the landfill's previous operator, Allied Waste, were issued three formal violation notices during the past decade, leading to settlement agreements in 2006 and 2011. The department also required the landfill owners to notify property owners within 1,000 feet and offer to provide them methane alarms.

The agreements with the DNR and attorney general's office established civil penalties of $104,000 against Allied waste in 2006 and $47,000 against Republic in 2011. But in each case, records show the companies didn't have to pay more than an initial $5,000 fine if they followed plans to bring the facility into compliance by repairing and upgrading the gas collection system.

In the most recent settlement, however, the state granted Republic's request to suspend its terms in order to address the subsurface fire, said Terlizzi, the DNR spokeswoman, in an email last week. Compliance actions spelled out in that agreement will be addressed as part of the lawsuit filed against the company in March by Attorney General Koster, she said.

"The department continues to monitor the situation as it pertains to methane gas exceedances, although the current focus is geared toward actions related to the subsurface smoldering event," Terlizzi said.

Still, methane problems persist.

And as recently as a year ago, the company was again cited by state regulators for high methane levels in soils at the landfill perimeter as part of a broader notice of violation concerning the smoldering fire and related odors.

In October, for instance, a gas monitoring probe on the southwest side along Old St. Charles Road near Corporate Exchange Drive measured methane levels as high as 71.3 percent — nearly 30 times greater than the 2.5 percent allowable under state regulations.

Phoenix-based Republic, which acquired the inactive Bridgeton Landfill as part of the company's $6.1 billion purchase of rival Allied Waste in 2008, said it's continuing to work with the DNR to address methane migration problems.

From late 2012 to April, the company said it completed the installation of 40 additional gas extraction wells and continues to "fine tune" its collection system to manage landfill gases.

"Bridgeton Landfill has continually worked with MDNR to implement appropriate measures and continue monitoring and assessment to ensure that the site does not pose a risk to site occupants or nearby properties," the company said.

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Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, July 26, 2013 4:49 PM
To: John Lodderhose; Rob G Daly; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Good afternoon,

Well unfortunately the air sampling equipment did not arrive today, and we do not have confirmation that it will be all available tomorrow. So the facility did not resume discharge to the Missouri River Treatment Facility today and did not conduct air sampling at the lift station.

The facility team is currently working on plumbing to connect the 316,000 tank directly to the 96,000 tank (and reduce some of the intermediate handling required at the moment). It is possible that it may make the most sense to wait until that improvement is complete and then resume discharge and conduct air testing representative of what will be the longer term discharge. We plan on regrouping early next week to assess the best course to ensure discharge can resume in a manner that meets MSD's requirements and allows for the follow up testing that has been discussed. We will update you early next week and appreciate your patience as we continue to work to improve the system.

Have a nice weekend,
Jessie

From: Merrigan, Jessie
Sent: Thursday, July 25, 2013 5:23 PM
To: John Lodderhose; Rob G Daly; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally; Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Yes. We have asked for the shortest turnaround for the sample. Given the long run time on Friday, the lab will receive the sample on Monday and should have results to us by COB Wednesday.

Thank you,
Jessie

From: John Lodderhose [mailto:JRLODD@stlmsd.com]
Sent: Thursday, July 25, 2013 2:48 PM
To: Rob G Daly; Merrigan, Jessie; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro;

TO: **Chris Verplancke, Finance Department**
Becky Bartholomew, Finance Department
Mary Wimsatt, Finance Department

FROM: **Darin Lewis**

DATE: **July 26, 2013**

SUBJECT: **BRIDGETON LANDFILL LLC**
WASTEWATER USER CHARGE BILLING
ACCOUNT NUMBER 0039145-8

Pursuant to the MSD Industrial Wastewater Discharge Permit for the above referenced facility, please bill this facility for the following volume for the indicated billing period:

VOLUME
On-Site Discharge

220,454 gallons with surcharge applied = $13,399.00

VOLUME
Hauled Waste Discharge

2,137,800 gallons X $0.08/Gal = $171,024.00

Total Bill = $184,423.00

The volume was obtained from the customer's on-site discharge self-monitoring report and hauled waste total truck capacities.

SOURCE OF WASTE: SP 801 Commingled landfill leachate and landfill gas collection system condensate

BILLING PERIOD: June 1, 2013 through June 30, 2013

Other applicable wastewater user charges, as per Ordinance 13402, should be included in this bill.

Please call me at 436-8716 if you have any questions.

bv

ec: Brian Gibson
Doug Mendoza
Laura Joiner

FILE: IU, Bridgeton Landfill LLC, 1003803000

		Rate:	$2.28	$620.14	$231.35		Rate:	$2.28		$620.14	$231.35			
		Charge:	$6,516.29	$160,353.65	$2,607.02	$169,476.97	Charge:	$671.97		$12,612.48	$114.55	$13,399.00		
						$0.079						$0.061		
					Actual billing:	$171,024.00								
						$0.08								
258	Okay	07/01/13	15,200	26,300	82		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
316-006	Okay	07/01/13	83,000	28,900	171		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
263/264	Okay	07/02/13	37,400	52,300	540		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
316-007	Okay	07/02/13	60,800	33,700	221		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
316-007	Okay	07/03/13	15,200	33,700	221		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
263/264	Okay	07/03/13	22,700	52,300	540		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
266	Okay	07/03/13	60,800	35,600	2,190		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
316-008	Okay	07/04/13	98,200	23,500			n/a	n/a	n/a	n/a	n/a	n/a		
316-008	Okay	07/05/13	98,200	23,500			n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a	n/a	n/a	n/a	07/01/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	07/02/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	07/03/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	07/04/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	07/05/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	07/06/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	07/07/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	07/08/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	07/09/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	07/10/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	07/11/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	07/12/13	0	Yes	n/a	n/a	n/a	n/a	n/a
316-009	Okay	07/06/13	30,000											
316-010	Okay	07/08/13	97,000											
272	Okay	07/09/13	15,000											
316-011	Okay	07/09/13	82,000											
272	Okay	07/10/13	15,000											
316-012	Okay	07/10/13	82,000											
272	Okay	07/11/13	15,000											
316-013	Okay	07/11/13	82,000											
272	Okay	07/12/13	15,000											
316-014	Okay	07/12/13	82,000											

180	Okay	06/03/13	92,100	30,200	1,570		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
179/181	Okay	06/04/13	98,200	35,100	2,370		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
184	Okay	06/05/13	83,500	32,100	1,400		n/a	n/a	n/a	n/a	n/a		Printed for file	Printed for file
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/03/13	0	Yes	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/04/13	0	Yes	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/05/13	0	Yes	n/a	n/a		n/a	n/a
184	Okay	06/06/13	37,400	32,100	1,400		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
187	Okay	06/06/13	60,800	24,600	870		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
189/190	Okay	06/07/13	98,200	27,500	1,100		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
Accum.	n/a	n/a	n/a	n/a	n/a	n/a	06/06/13	15,169	Yes	29,400	730		n/a	n/a
Accum.	n/a	n/a	n/a	n/a	n/a	n/a	06/07/13	15,325	Yes	29,400	730		n/a	n/a
194/195	Okay	06/08/13	45,600	28,500	560		06/08/13	19,196	Yes	28,500	560		Printed for file	Printed for file
Accum.	n/a	n/a	n/a	n/a	n/a	n/a	06/09/13	17,502	Yes	28,500	560		n/a	n/a
199/200	Okay	06/10/13	97,200	28,000	2,800		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
203/204	Okay	06/11/13	97,200	25,500	2,300		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
207/208	Okay	06/12/13	97,200	22,946	920		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
Accum.	n/a	n/a	n/a	n/a	n/a	n/a	06/10/13	14,784	Yes	28,500	560		n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/11/13	0	Yes	n/a	n/a		n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/12/13	0	Yes	n/a	n/a		n/a	n/a
207/208	Okay	n/a	n/a	n/a	n/a	n/a	06/13/13	13,658	Yes	22,946	920		Printed for file	Printed for file
210/211	Okay	06/13/13	97,200	22,796	810		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
210/211	Okay	n/a	n/a	n/a	n/a	n/a	06/14/13	17,702	Yes	22,796	810		Printed for file	Printed for file
213/214	Okay	06/14/13	91,200	29,000	1,700		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
218/219	Okay	06/14/13	7,500	24,000	1,400		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
218/219	Okay	06/15/13	45,600	24,000	1,400		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
Accum.	n/a	n/a	n/a	n/a	n/a	n/a	06/15/13	19,007	Yes	22,796	810		n/a	n/a
Accum.	n/a	n/a	n/a	n/a	n/a	n/a	06/16/13	17,502	Yes	22,796	810		n/a	n/a
Accum.	n/a	n/a	n/a	n/a	n/a	n/a	06/17/13	16,901	Yes	22,796	810		n/a	n/a
223/224	Okay	06/17/13	97,200	34,000	830		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
228/229	Okay	06/18/13	98,200	11,000	1,200		06/18/13	18,103	Yes	11,000	1,200		Printed for file	Printed for file
232/233	Okay	06/19/13	98,200	41,000	1,800		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
235/236	Okay	06/20/13	98,200	34,000	2,500		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
237/238	Okay	06/21/13	98,700	31,000	1,200		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
Accum.	n/a	n/a	n/a	n/a	n/a	n/a	06/19/13	18,103	Yes	11,000	1,200		n/a	n/a
Accum.	n/a	n/a	n/a	n/a	n/a	n/a	06/20/13	17,502	Yes	11,000	1,200		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/21/13	0	Yes	n/a	n/a	n/a	n/a	n/a
237/238	Okay	06/22/13	15,200	31,000	1,200		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
242	Okay	06/22/13	30,400	34,000	3,600		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
245/246	Okay	06/24/13	98,200	37,000	1,800		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
245/246	Okay	06/25/13	22,700	37,000	1,800		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed fo
250/243	Okay	06/25/13	76,000	38,000	2,300		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed fo
250/243	Okay	06/26/13	83,500	38,000	2,300		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
251/252	Okay	06/27/13	67,800	27,000	1,800		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
316-004	Okay	06/27/13	15,200	22,200	920		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
316-004	Okay	06/28/13	98,200	22,200	920		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/22/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/23/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/24/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/25/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/26/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/27/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/28/13	0	Yes	n/a	n/a	n/a	n/a	n/a
258	Okay	06/29/13	45,600	26,300	82		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/29/13	0	Yes	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/30/13	0	Yes	n/a	n/a	n/a	n/a	n/a
		Gallons:	2,137,800	29,298	1,564		Gallons:	220,454		22,418	838			
		Ccf:	2,858			Total	Ccf:	295				Total		

Batch #	FT data/ SOP manifests	HWRS disch. dates	Total truck capacities	BOD for HWRS	TSS for HWRS	Date HWRS billing info sent to Darin	Onsite disch. dates	Total on-site volume	On-site vols certified	BOD for on-site	TSS for on-site	Date on-site billing info sent to Darin	BOD,COD,pH,O&G,TSS,Metals,etc. status (BOD copied to others' line for printing) [Dissolved & unanalyzed columns deleted]	VOCs ,SVOCs status (Pace/PDC do the 624/625 tests for VOAs/SVOAs) [Only info. & BENZENE columns printed, not the other results columns]
65	Okay	04/25/13	12,000	34,000	1,200	06/20/13	n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
65	Okay	04/26/13	48,000	34,000	1,200	06/20/13	n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
67	Okay	04/27/13	49,600	22,000	2,900	06/20/13	n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
71	Okay	04/29/13	51,000	21,000	1,200	06/20/13	n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
74	Okay	04/30/13	49,500	25,000	960	06/20/13	04/30/13	7,143	Yes	25,000	960	06/20/13	Printed for file	Printed for file
77	Okay	05/01/13	49,500	27,000	1,300	06/20/13	05/01/13	17,524	Yes	27,000	1,300	06/20/13	Printed for file	Printed for file
82	Okay	05/02/13	49,500	28,000	1,300	06/20/13	05/02/13	17,503	Yes	28,000	1,300	06/20/13	Printed for file	Printed for file
86	Okay	05/03/13	49,500	36,000	1,000	06/20/13	05/03/13	17,502	Yes	36,000	1,000	06/20/13	Printed for file	Printed for file
89	Okay	05/04/13	49,400	29,000	1,500	06/20/13	05/04/13	17,502	Yes	29,000	1,500	06/20/13	Printed for file	Printed for file
Accum.	n/a	n/a	n/a	n/a	n/a	n/a	05/05/13	17,502	Yes	29,000	1,500	06/20/13	n/a	n/a
92	Okay	05/06/13	49,500	30,000	1,000	06/20/13	05/06/13	10,426	Yes	30,000	1,000	06/20/13	Printed for file	Printed for file
94	Okay	05/07/13	49,500	22,900	ND	06/20/13	05/07/13	8,653	Yes	22,900	ND	06/20/13	Printed for file, high O&G	Printed for file
98	Okay	05/08/13	49,500	38,400	775	06/20/13	05/08/13	16,110	Yes	38,400	775	06/20/13	Printed for file, high O&G, low pH	Printed for file
100	Okay	05/09/13	49,500	29,300	935	06/20/13	05/09/13	18,896	Yes	29,300	935	06/20/13	Printed for file, high O&G	Printed for file
105	Okay	05/10/13	49,500	20,700	1,080	06/20/13	05/10/13	17,502	Yes	20,700	1,080	06/20/13	Printed for file, high O&G, low pH	Printed fo
107	Okay	05/11/13	49,600	20,700	835	06/20/13	05/11/13	6,610	Yes	20,700	835	06/20/13	Printed for file, high O&G	Printed for
112	Okay	05/13/13	49,500	25,500	1,670	06/20/13	n/a	n/a	n/a	n/a	n/a	n/a	Printed for file, high O&G	Printed for file
114	Okay	n/a	n/a	n/a	n/a	n/a	05/12/13	0	Yes	n/a	n/a	06/20/13	n/a	n/a
114	Okay	n/a	n/a	n/a	n/a	n/a	05/13/13	328	Yes	34,000	1,540	06/20/13	Printed for file, high O&G	Printed for file
114	Okay	n/a	n/a	n/a	n/a	n/a	05/14/13	0	Yes	n/a	n/a	06/20/13	n/a	n/a
114	Okay	n/a	n/a	n/a	n/a	n/a	05/15/13	17,502	Yes	34,000	1,540	06/20/13	Printed for file, high O&G	Printed for file
117	Okay	05/14/13	49,500	29,000	1,610	06/20/13	n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
119	Okay	05/15/13	49,500	35,700	1,470	06/20/13	n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
121	Okay	05/16/13	43,100	27,600	1,510	06/20/13	05/16/13	17,502	Yes	27,600	1,510	06/20/13	Printed for file	Printed for file
128	Okay	05/17/13	45,000	45,400	1,150	06/20/13	05/17/13	17,502	Yes	45,400	1,150	06/20/13	Printed for file	Printed for file
131	Okay	05/18/13	45,600	45,700	1,360	06/20/13	05/18/13	17,541	Yes	45,700	1,360	06/20/13	Printed for file	Printed for file
Accum.	n/a	n/a	n/a	n/a	n/a	n/a	05/19/13	17,502	Yes	45,700	1,360	06/20/13	n/a	n/a
136	Okay	05/20/13	45,000	56,500	2,200	06/20/13	05/20/13	17,502	Yes	56,500	2,200	06/20/13	Printed for file	Printed for file
138	Okay	05/21/13	45,000	25,600	675	06/20/13	05/21/13	17,462	Yes	25,600	675	06/20/13	Printed for file	Printed for file
142	Okay	05/22/13	45,000	31,600	510	06/20/13	05/22/13	17,502	Yes	31,600	510	06/20/13	Printed for file	Printed for file
145	Okay	05/23/13	45,000	28,700	543	06/20/13	05/23/13	15,571	Yes	28,700	543	06/20/13	Printed for file	Printed for file
148	Okay	05/24/13	45,000	25,900	1,610	06/20/13	05/24/13	19,244	Yes	25,900	1,610	06/20/13	Printed for file	Printed for file
153	Okay	05/25/13	45,600	25,800	1,220	06/20/13	05/25/13	17,018	Yes	25,800	1,220	06/20/13	Printed for file	Printed for file
Accum.	n/a	n/a	n/a	n/a	n/a	n/a	05/26/13	719	Yes	25,800	1,220	06/20/13	n/a	n/a
157	Okay	n/a	n/a	n/a	n/a	n/a	05/27/13	0	Yes	n/a	n/a	06/20/13	Printed for file	Printed for file
157	Okay	n/a	n/a	n/a	n/a	n/a	05/28/13	15,229	Yes	29,400	730	06/20/13	Printed for file	Printed for file
157	Okay	n/a	n/a	n/a	n/a	n/a	05/29/13	3,337	Yes	29,400	730	06/20/13	Printed for file	Printed fo
159	Okay	05/28/13	45,000	33,800	723	06/20/13	n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed fo
165	Okay	05/29/13	45,000	51,800	1,050	06/20/13	n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
168	Okay	05/30/13	45,000	36,400	800	06/20/13	n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
172	Okay	05/31/13	52,500	35,100	1,190	06/20/13	n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
n/a	n/a	n/a	n/a	n/a	n/a	n/a	05/30/13	0	Yes	n/a	n/a	06/20/13	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	05/31/13	0	Yes	n/a	n/a	06/20/13	n/a	n/a
		Gallons:	**1,445,400**	**31,552**	**1,216**		**Gallons:**	**384,334**		**31,374**	**1,157**			
		Ccf:	**1,932**			**Total**	**Ccf:**	**514**				**Total**		
		Rate:	**$2.28**	**$620.14**	**$231.35**		**Rate:**	**$2.28**		**$620.14**	**$231.35**			
		Charge:	**$4,405.76**	**$116,843.14**	**$1,277.45**	**$118,120.59**	**Charge:**	**$1,171.50**		**$30,892.26**	**$317.86**	**$31,210.12**		
						$0.082						**$0.081**		
					Actual billing:	**$115,632.00**								
						$0.08								
176	Okay	06/01/13	45,600	28,900	2,060		n/a	n/a	n/a	n/a	n/a	n/a	Printed for file	Printed for file
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/01/13	0	Yes	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	06/02/13	0	Yes	n/a	n/a		n/a	n/a

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Mr. Chris Bulmahn
Associate Engineer
Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913

CB 8.26

July 25, 2013

Dear Mr. Bulmahn:

Second Quarter 2013 Self-Monitoring Report,
Bridgeton Landfill, LLC. Discharge Permit No. 0511559802-2

1003803000

Bridgeton Landfill, LLC. is submitting the Second Quarter 2013 leachate sampling and analysis report for the Bridgeton Landfill. On June 17, 2013 and June 18, 2013, Herst & Associates, Inc. personnel collected samples of the leachate discharge as required by the Bridgeton Landfill Metropolitan St. Louis Sewer District (MSD) Wastewater Discharge Permit No. 0511559802-2 (Permit). The samples were collected from leachate sampling point 008 as an instant grab, or composite sample, dependent on constituent type, and in accordance with the permit. Samples collected for analysis of radioactive constituents were analyzed by Eberline Services located in Oak Ridge, Tennessee. Samples collected for analysis of other constituents were analyzed by Heritage Environmental Services, LLC, of Indianapolis, Indiana.

The results indicate that the analyzed parameters for sampling point 008 are within permitted limits. The analyzed parameters for sampling point 008 are also within the limits specified in variances granted June 18, 2013 for Total Toxic Organics (TTOs) and phenols and May 29, 2013 for arsenic, mercury, and zinc.

The MSD Self-Monitoring Report Forms are provided as Attachment 1. Attachment 2 presents methodology used to calculate the amount of radionuclide activity discharged during the Second Quarter 2013 reporting period.

Attachment 3 presents methodology used to calculate the maximum mass of arsenic, mercury, zinc, and phenols discharged during the Second Quarter 2013 reporting period. The reported mass loading presented in Attachment 3, was performed based upon quarterly sampling results per permit obligations. However, mass loading for conditional approval requirements will continue to be based upon average MSD verification data.

Attachment 4 presents analytical results for constituents analyzed by Heritage Environmental Services, LLC. Attachment 5 provides analytical results for constituents analyzed by Eberline Services. Attachment 6 presents monthly leachate volume records for the Bridgeton Landfill for April, May, and June 2013.

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4631 North St. Peters Parkway
St. Charles, Missouri 63304

Telephone (636) 939-9117
Fax (636) 939-9757

Please contact Bryan Sehie, Environmental Specialist at 314-744-8190 if you have any questions or comments.

Sincerely,

HERST & ASSOCIATES, INC.

Matt Stewart
Project Geologist

Ward E. Herst
Managing Partner

Cc: *Bryan Sehie, Republic Services, Inc.*
John Haasis, St. Louis County Department of Health

Attachments:
Attachment 1 – MSD Industrial User Self-Monitoring Reports
Attachment 2 – Calculation of Discharged Activity
Attachment 3 – Calculation of Discharged Mass
Attachment 4 – Heritage Environmental Laboratories, LLC, Analytical Report
Attachment 5 – Eberline Services. Analytical Report
Attachment 6 – Monthly Leachate Discharge Volume Records at Bridgeton Landfill

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METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER SELF MONITORING REPORT

PART I: IDENTIFYING INFORMATION

Company Name: BRIDGETON LANDFILL LLC 1003803000

Permit No: 0511559802-2 Effective Date: 12/1/2010 Expiration Date: 11/30/2015

Premise Address: 13570 St. Charles Rock Road, Bridgeton, MO 63044

Monitoring Period: ☐ (JAN-MAR) ☑ (APR-JUNE) ☐ (JULY-SEPT) ☐ (OCT-DEC)

Samples Collected By: **Matt Stewart, Herst & Associates, Inc.**

Analyses Performed By: **Heritage Environmental Services, LLC and Eberline Services**

PART II: ANALYTICAL RESULTS OF SELF MONITORING

MSD SAMPLE POINT REFERENCE NUMBERS ⇨			008						
DATES ON WHICH SAMPLES WERE COLLECTED ⇨			6/17/2013 and 6/18/2013						
TIMES AT WHICH SAMPLES WERE COLLECTED ⇨			1236, 1720, 0806, 1236						
PARAMETER	LIMIT	RECORD SAMPLE TYPES (G, C, M OR E) AND RESULTS BELOW (G=grab, C=composite, M=measured flow, E=estimated flow)							UNITS
FLOW	***	E	17488						GPD
Biochemical Oxygen Demand	***	C	31000						mg/L
Chemical Oxygen Demand	***	C	44000						mg/L
Oil and Grease	200	G	118						mg/L
pH Acidic (<7)	5.5	G	5.70						SU
pH Basic (≥7)	11.5	G							SU
Temperature	60	G	29.3						°C
Total Suspended Solids	***	C	2800						mg/L
Ammonia (as N)	***	C	410						mg/L
Arsenic (Total)		C	0.43						mg/L
Cadmium (Total)	0.7	C	0.012						mg/L
Chromium (Total)	5.0	C	0.16						mg/L
Copper (Total)	2.7	C	0.052						mg/L
Lead (Total)	0.4	C	0.22						mg/L
Mercury (Total)		C	0.011						mg/L
Nickel (Total)	2.3	C	0.12						mg/L
Zinc (Total)		C	11.0						mg/L
Total Toxic Organics	5.844	G	3.74						mg/L
Phenols		G	6.20						mg/L
Gross Alpha	***	C	46.6 ± 56.9						pCi/L
Gross Beta	***	C	429 ± 83.2						pCi/L
Gross Gamma (as Cesium-137)	***	C	1.54 ± 1.67						pCi/L
Radium – 226	***	C	0.0752 ± 0.162						pCi/L
Radium – 228	***	C	2.64 ± 0.678						pCi/L

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Uranium (Total)	***	C	2.08					µg/L

Notes:
BDL = Below Detection Limit
U = Result is less than sample detection limit

PART III: SPECIAL CERTIFICATION STATEMENTS

Based on the special conditions contained in your discharge permit you may be required to certify the following. Please review your permit and **PLACE YOUR INITIALS ON THE LINES NEXT TO THE CERTIFICATIONS.**

NONE

PART IV: GENERAL CERTIFICATION STATEMENTS

B DISCHARGE MONITORING REPORT CERTIFICATION

All permittees must sign and complete the information below:

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

Print or type name of signing official: **Craig Almanza**

Title: **Area Environmental Manager** Telephone: **314-744-8195**

Signature: Craig Almanza Date: 7-25-13

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METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

Part I: Identifying Information

Company Name: Bridgeton Landfill, LLC

Permit No.: 0511559802-2

Premise Address: 13570 St. Charles Rock Road, Bridgeton, MO 63044

Monitoring Period: ☐ (Jan-Mar) ☒ (Apr-Jun) ☐ (July-Sept) ☐ (Oct-Dec)

Part II: Record of Disposal of Radioactive Materials to the Sewer System

Radionuclide	Activity Discharged (Picocuries)
Gross Alpha	1.03×10^{9}
Gross Beta	9.51×10^{9}
Gross Gamma (as Cesium -137)	3.41×10^{7}
Radium - 226	1.67×10^{8}
Radium - 228	5.85×10^{7}
Total Activity Discharged :	1.06×10^{10}

Part III: Certification Statements

Place your initials in the box under item A.
Everyone must complete the information under items A & B and sign this report.

A. Certification of Compliance with Federal regulations

☒ I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20, Appendix B, Table 3 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission have been met for the period covered by this report.

CAA

B. Radioactive Materials Discharge Report Certification

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

Print or type name of signing official: Craig Almanza

Title: Area Environmental Manager Telephone: 314-744-8195

Signature: Craig Almanza Date: 7-25-13

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Attachment 2

Calculation of Discharged Activity

In accordance with Special Condition II.B.2 of the Bridgeton Landfill MSD Permit (Permit 0511559802-2), each quarterly discharge report shall specify the activity discharged to the sewer system by radionuclide during the reporting period. The following methodology was used to calculate the activity discharged from the Bridgeton Landfill during the Second Quarter 2013 monitoring period.

To determine the activity discharged for each radionuclide, the activity concentration for the reporting period is multiplied by the total volume discharged during the reporting period:

$$\text{Discharged Activity} = \text{Activity Concentration} \times \text{Discharged Volume}$$

As provided in Attachment 4, the following radionuclide activity concentrations were reported from samples collected from Outfall 008 during the Second Quarter 2013 monitoring period.

Constituent	Result	Units
Gross Alpha	46.6 ± 56.9	pCi/L
Gross Beta	429 ± 83.2	pCi/L
Gross Gamma (as Cesium -137)	1.54 ± 1.67	pCi/L
Radium – 226	0.0752 ± 0.162	pCi/L
Radium – 228	2.64 ± 0.678	pCi/L

Notes:
1 pCi = 1×10^{-12} Ci

As provided in Attachment 5, the following monthly volumes were discharged through leachate sampling point 008 during the Second Quarter 2013 monitoring period:

- April 2013: 8,604 gallons
- May 2013: 373,684 gallons
- June 2013: 203,151 gallons

Summation of the monthly volumes provides the total volume discharged during the Second Quarter 2013 period:

$$8{,}604\ gal + 373{,}684\ gal + 203{,}151\ gal = 585{,}439\ gal$$

Because activity concentration results are presented in pCi/L, the discharged volume is converted from units of gallons to liters prior to calculation of discharged activity:

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$$585{,}439\ gal \times \frac{3.785\ L}{gal} = 2{,}215{,}887\ \text{L}$$

Therefore, to determine the discharged activity attributable to Gross Alpha, multiply the activity concentration by the discharged volume:

$$\frac{46.6\ pCi}{L} \times 2{,}215{,}887\ L = 1.03 \times 10^{9}\ pCi$$

Similarly, for Gross Beta:

$$\frac{429\ pCi}{L} \times 2{,}215{,}887\ L = 9.51 \times 10^{9}\ pCi$$

Similarly, for Gross Gamma (as Cesium-137):

$$\frac{1.54\ pCi}{L} \times 2{,}215{,}887\ L = 3.41 \times 10^{7}\ pCi$$

Similarly, for Radium 226:

$$\frac{0.0752\ pCi}{L} \times 2{,}215{,}887\ L = 1.67 \times 10^{6}\ pCi$$

Similarly, for Radium 228:

$$\frac{2.64\ pCi}{L} \times 2{,}215{,}887\ L = 5.85 \times 10^{7}\ pCi$$

Summation of the five (5) results yields the total discharged activity for the Second Quarter 2013 reporting period:

$$1.03 \times 10^{9}\ pCi + 9.51 \times 10^{9}\ pCi + 3.41 \times 10^{7} + 1.67 \times 10^{6} + 5.85 \times 10^{7} = 1.06 \times 10^{10}\ pCi$$

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Attachment 3

Calculation of Discharged Mass

In accordance granted variances dated May 29, 2013 and June 18, 2013 for the Bridgeton Landfill MSD Permit (Permit 0511559802-2), limits for total metals arsenic, mercury, and zinc and the toxic organic compound phenol will be set on a mass basis per day for each constituent. The reported mass loading presented below was performed based upon quarterly sampling results per permit obligations. However, mass loading for conditional approval requirements will continue to be based upon average MSD verification data.

The following methodology was used to calculate the mass discharged from the Bridgeton Landfill during the Second Quarter 2013 monitoring period.

To determine the mass discharged for each constituent, the concentration for the reporting period is multiplied by the maximum allowed volume discharged per day during the reporting period:

Discharged Mass = Second Quarter 2013 Concentration x Maximum Allowed Discharge per Day

As provided in Attachment 5, the following metals concentrations were reported from samples collected from Outfall 008 during the Second Quarter 2013 monitoring period.

Constituent	Result	Units
Arsenic	0.43	mg/L
Mercury	0.011	mg/L
Zinc	11.0	mg/L
Phenol	6.20	mg/L

During the Second Quarter 2013 period, the maximum daily discharge was limited to 20,000 gallons per day.

Because metals concentration results are presented in mg/L, the maximum discharged volume is converted from units of gallons to liters prior to calculation of maximum discharged mass:

$$\frac{20{,}000 gal}{day} \times \frac{3.785\ L}{gal} = 75{,}700\ \text{L}$$

To determine the maximum discharged mass of Arsenic, multiply the concentration by the maximum discharged volume:

$$\frac{0.43\ mg}{L} \times 75{,}700\ L = 32{,}551\ mg$$

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Because discharge limitations for Arsenic are in pounds per day, the maximum discharged mass is converted from units of milligrams to pounds:

$$\frac{2.20 \times 10^{-6}\ mg}{lb} \times 32{,}551\ mg = 0.072\ lb$$

Similarly, for Mercury:

$$\frac{0.011\ mg}{L} \times 75{,}700\ L = 832.7\ mg$$

Because discharge limitations for Mercury are in pounds per day, the maximum discharged mass is converted from units of milligrams to pounds:

$$\frac{2.20 \times 10^{-6}\ mg}{lb} \times 832.7\ mg = 0.0018\ lb$$

Similarly, for Zinc:

$$\frac{11.0\ mg}{L} \times 75{,}700\ L = 832{,}700\ mg$$

Because discharge limitations for Zinc are in pounds per day, the maximum discharged mass is converted from units of milligrams to pounds:

$$\frac{2.2046 \times 10^{-6}\ mg}{lb} \times 832{,}700\ mg = 1.83\ lb$$

Similarly, for Phenol:

$$\frac{6.20\ mg}{L} \times 75{,}700\ L = 469{,}340\ mg$$

Because discharge limitations for Phenol are in pounds per day, the maximum discharged mass is converted from units of milligrams to pounds:

$$\frac{2.2046 \times 10^{-6}\ mg}{lb} \times 469{,}340\ mg = 1.03\ lb$$

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HERITAGE ENVIRONMENTAL SERVICES

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	19-JUN-13	A987088
	Completed	**PO Number**
	05-JUL-13	3526681 BRIDGETON
	Printed	**Sampled**
	05-JUL-13	18-JUN-13 12:36

Report To	Bill To
MATT STEWART HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: OUTFALL 008
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: LEACHATE - BRIDGETON LANDFILL
DATA PACKAGE #: 64835
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: ANNUAL LEACHATE
PERMIT: 830871

BIOCHEMICAL OXYGEN DEMAND, 5-DAY SM 5210B-2001 NELAC:Y

Analyst: D. DICKERSON Analysis Date: 24-JUN-13 12:45 Test: G801.4.1

Parameter	Result	Det. Limit	Units
BIOCHEMICAL OXYGEN DEMAND	31000	200	mg/L

1:100 Dilution.

Reanalyzed outside of holding time due to insufficient oxygen depletion of BOD seed on first analysis.

BIOCHEMICAL OXYGEN DEMAND, 5-DAY SM 5210B-2001 NELAC:Y

Analyst: D. DICKERSON Analysis Date: 19-JUN-13 14:15 Test: G801.4.0

Parameter	Result	Det. Limit	Units
BIOCHEMICAL OXYGEN DEMAND	25000	200	mg/L

1:100 Dilution.

BOD seed exhibited insufficient oxygen depletion.

BOD seed value didn't meet the method & lab acceptance limits; reported result is estimated.

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4, REV. 2.0 (1993) NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-JUL-13 11:00 Test: G301.1.0

Parameter	Result	Det. Limit	Units

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Sample ID: A987088 OUTFALL 008

CHEMICAL OXYGEN DEMAND	44000	500	mg/L
1:50 Dilution.			

TOTAL SUSPENDED SOLIDS DRIED AT 103-105 DEGREES C SM 2540 D, 19TH ED. NELAC:Y

Analyst: M. KAGIMBI Analysis Date: 21-JUN-13 12:00 Test: G403.8.0

Parameter	Result	Det. Limit	Units
SUSPENDED SOLIDS	2800	1	mg/L
Filtered less sample due to sample matrix.			

AMMONIA DISTILLATION SM4500-NH3 B - 1997

Analyst: T. DRIGGERS Analysis Date: 03-JUL-13 11:00 Instrument: PREP Test: P203.7.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	250		mL
The prep analyst decreased the initial weight/volume due to the matrix of the sample and/or a strong odor.			

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G - 1997 NELAC:Y

Analyst: E. SKALA Analysis Date: 04-JUL-13 13:14 Instrument: AUTO-ANALYZER Test: G204.6.0

Prep: AMMONIA DISTILLATION SM4500-NH3 B - 1997 P203.7.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	410	25	mg/L
1:50 Dilution.			

HEXANE OIL AND GREASE - TOTAL (SOLID PHASE EXTRACTION) EPA 1664A NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 25-JUN-13 11:30 Test: G166.0.0

Parameter	Result	Det. Limit	Units
HEXANE EXTRACTABLE MATERIAL (OIL AND GREASE)	118	5.0	mg/L

FAA OR ICP ACID DIGESTION EPA 200.0

Analyst: K. KAMARA Analysis Date: 24-JUN-13 09:00 Instrument: PREP Test: P129.2.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	25		mL
FINAL VOLUME	50		mL

ARSENIC ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER Analysis Date: 25-JUN-13 09:08 Instrument: ICP Test: M403.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
ARSENIC	0.43	0.020	mg/L

HERITAGE ENVIRONMENTAL SERVICES

Sample ID: A987088 OUTFALL 008

CADMIUM ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER Analysis Date: 25-JUN-13 09:08 Instrument: ICP Test: M408.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
CADMIUM	0.012	0.010	mg/L

CHROMIUM ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER Analysis Date: 25-JUN-13 09:08 Instrument: ICP Test: M410.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
CHROMIUM	0.16	0.020	mg/L

COPPER ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER Analysis Date: 25-JUN-13 09:08 Instrument: ICP Test: M412.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
COPPER	0.052	0.020	mg/L

LEAD ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER Analysis Date: 25-JUN-13 09:08 Instrument: ICP Test: M416.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
LEAD	0.22	0.020	mg/L

NICKEL ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER Analysis Date: 25-JUN-13 09:08 Instrument: ICP Test: M422.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
NICKEL	0.12	0.010	mg/L

ZINC ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER Analysis Date: 25-JUN-13 09:08 Instrument: ICP Test: M439.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
ZINC	11	0.040	mg/L

MERCURY CVAA ACID DIGESTION EPA 245.1 REV. 3.0 NELAC:Y

Analyst: S. O'NEAL Analysis Date: 26-JUN-13 11:00 Instrument: PREP Test: P131.2.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

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Sample ID: A987088 OUTFALL 008

MERCURY CVAA EPA 245.1 REV. 3.0 NELAC:Y

Analyst: S. O'NEAL Analysis Date: 26-JUN-13 16:43 Instrument: CVAA Test: M420.2.0

Prep: MERCURY CVAA ACID DIGESTION EPA 245.1 REV. 3.0 P131.2.0

Parameter	Result	Det. Limit	Units
MERCURY	0.011	0.00060	mg/L

1:3 Dilution.

SEMI-VOLATILE EXTRACTION (NEUTRAL/BASE/ACID FRACTIONS) EPA 625

Analyst: J. MINNIEAR, II Analysis Date: 24-JUN-13 06:00 Instrument: PREP Test: P243.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	* 100		mL
FINAL VOLUME	1.0		mL

The prep analyst decreased the initial weight/volume due to the matrix of the sample and/or a strong odor.

625 SEMI-VOLATILE PRIORITY POLLUTANTS (BASE/NEUTRAL/ACID) EPA 625 NELAC:Y

Analyst: T. PINCKERT Analysis Date: 26-JUN-13 14:52 Instrument: GC/MS SVOA Test: O501.3.0

Prep: SEMI-VOLATILE EXTRACTION (NEUTRAL/BASE/ACID FRACTIONS) EPA 625 P243.1.0

Parameter	Result	Det. Limit	Units
2,4,6-TRICHLOROPHENOL	BDL	1000	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	1000	ug/L
2-CHLOROPHENOL	BDL	1000	ug/L
2,4-DICHLOROPHENOL	BDL	1000	ug/L
2,4-DIMETHYLPHENOL	BDL	1000	ug/L
2-NITROPHENOL	BDL	1000	ug/L
4-NITROPHENOL	BDL	1000	ug/L
2,4-DINITROPHENOL	BDL	2000	ug/L
4,6-DINITRO-O-CRESOL	BDL	1000	ug/L
PENTACHLOROPHENOL	BDL	2000	ug/L
PHENOL	6200	1000	ug/L
ACENAPHTHENE	BDL	1000	ug/L
BENZIDINE	BDL	2000	ug/L
1,2,4-TRICHLOROBENZENE	BDL	1000	ug/L
HEXACHLOROBENZENE	BDL	1000	ug/L
HEXACHLOROETHANE	BDL	1000	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	1000	ug/L
2-CHLORONAPHTHALENE	BDL	1000	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	1000	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	1000	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	1000	ug/L
3,3'-DICHLOROBENZIDINE	BDL	2500	ug/L

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Sample ID: A987088 OUTFALL 008

2,4-DINITROTOLUENE	BDL	1000	ug/L
2,6-DINITROTOLUENE	BDL	1000	ug/L
FLUORANTHENE	BDL	1000	ug/L
4-CHLOROPHENYL-PHENYLETHER	BDL	1000	ug/L
4-BROMODIPHENYL ETHER	BDL	1000	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	1000	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	1000	ug/L
HEXACHLOROBUTADIENE	BDL	1000	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	1000	ug/L
ISOPHORONE	BDL	1000	ug/L
NAPHTHALENE	BDL	1000	ug/L
NITROBENZENE	BDL	1000	ug/L
N-NITROSODIMETHYLAMINE	BDL	1000	ug/L
N-NITROSO-DIPROPYLAMINE	BDL	1000	ug/L
N-NITROSODIPHENYLAMINE	BDL	1000	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	1000	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	1000	ug/L
DI-N-BUTYLPHTHALATE	BDL	1000	ug/L
DI-N-OCTYLPHTHALATE	BDL	1000	ug/L
DIETHYLPHTHALATE	BDL	1000	ug/L
DIMETHYLPHTHALATE	BDL	1000	ug/L
BENZ(A)ANTHRACENE	BDL	1000	ug/L
BENZO(A)PYRENE	BDL	1000	ug/L
BENZO(B)FLUORANTHENE	BDL	1000	ug/L
BENZO(K)FLUORANTHENE	BDL	1000	ug/L
CHRYSENE	BDL	1000	ug/L
ACENAPHTHYLENE	BDL	1000	ug/L
ANTHRACENE	BDL	1000	ug/L
BENZO(G,H,I)PERYLENE	BDL	1000	ug/L
FLUORENE	BDL	1000	ug/L
PHENANTHRENE	BDL	1000	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	1000	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	1000	ug/L
PYRENE	BDL	1000	ug/L
1,2-DIPHENYLHYDRAZINE	BDL	1000	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	1000	ug/L
3-METHYLPHENOL (M-CRESOL)	*	1000	ug/L
4-METHYLPHENOL (P-CRESOL)	* 3300	1000	ug/L
...			
SURROGATE RECOVERY			

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Sample ID: A987088 OUTFALL 008

2-FLUOROPHENOL	22		% Rec
PHENOL-D5	33		% Rec
NITROBENZENE-D5	! 133		% Rec
2-FLUOROBIPHENYL	! 31		% Rec
2,4,6-TRIBROMOPHENOL	33		% Rec
TERPHENYL-D14	37		% Rec

DUE TO LABORATORY INSTRUMENT CONSTRAINTS, BENZIDINE AND 2,4-DINITROPHENOL ARE REPORTED AT DETECTION LIMITS OF 20 UG/L INSTEAD OF 10 UG/L

1:10 Dilution

Unable to analyze sample at lower dilution due to high concentration of non-target analytes.

NOTE: 3-Methylphenol and 4-Methylphenol co-elute.

! Low surrogate recovery due to sample matrix.

VOLATILE PRIORITY POLLUTANTS EPA 624 NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 23-JUN-13 22:21 Instrument: GC/MS VOA Test: O502.3.0

Parameter	Result	Det. Limit	Units
ACROLEIN	BDL	1000	ug/L
ACRYLONITRILE	BDL	1000	ug/L
BENZENE	440	100	ug/L
BROMOFORM	BDL	100	ug/L
CARBON TETRACHLORIDE	BDL	100	ug/L
CHLOROBENZENE	BDL	100	ug/L
CHLOROETHANE	BDL	100	ug/L
2-CHLOROETHYLVINYLETHER	BDL	100	ug/L
CHLOROFORM	BDL	100	ug/L
DIBROMOCHLOROMETHANE	BDL	100	ug/L
BROMODICHLOROMETHANE	BDL	100	ug/L
1,1-DICHLOROETHANE	BDL	100	ug/L
1,2-DICHLOROETHANE	BDL	100	ug/L
1,1-DICHLOROETHENE	BDL	100	ug/L
1,2-DICHLOROPROPANE	BDL	100	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	100	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	100	ug/L
ETHYL BENZENE	BDL	100	ug/L
BROMOMETHANE	BDL	100	ug/L
CHLOROMETHANE	BDL	100	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	100	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	100	ug/L
TETRACHLOROETHENE	BDL	100	ug/L

Sample ID: A987088 OUTFALL 008

TOLUENE	BDL	100	ug/L
1,2-DICHLOROETHENE (CIS AND TRANS)	BDL	100	ug/L
1,1,1-TRICHLOROETHANE	BDL	100	ug/L
1,1,2-TRICHLOROETHANE	BDL	100	ug/L
TRICHLOROETHENE	BDL	100	ug/L
TRICHLOROFLUOROMETHANE	BDL	100	ug/L
VINYL CHLORIDE	BDL	100	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	96		% Rec
TOLUENE-D8	98		% Rec
4-BROMOFLUOROBENZENE	104		% Rec

PH6

Acrolein & Acrylonitrile reported only for screening purposes. Results should be considered estimated.

Unable to analyze sample at lower dilution due to high concentration of non-target analytes.

Unable to analyze at lower dilution due to sample matrix. Sample foamed.

1:100 Dilution.

ORGANOCHLORINE PESTICIDES AND PCBS EXTRACTION EPA 608

Analyst: B. WOOD Analysis Date: 21-JUN-13 Instrument: PREP Test: P223.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	10		mL

ORGANOCHLORINE PESTICIDES AND PCBS IN WATER/WASTEWATER EPA 608 NELAC:Y

Analyst: C. HIPSKIND Analysis Date: 25-JUN-13 01:11 Instrument: GC/ECD Test: O305.0.0

Prep: ORGANOCHLORINE PESTICIDES AND PCBS EXTRACTION EPA 608 P223.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	10	ug/L
BETA-BHC	BDL	10	ug/L
DELTA-BHC	BDL	10	ug/L
GAMMA-BHC (LINDANE)	BDL	10	ug/L
HEPTACHLOR	BDL	10	ug/L
ALDRIN	BDL	10	ug/L
HEPTACHLOR EPOXIDE	BDL	10	ug/L
ENDOSULFAN I	BDL	10	ug/L
DIELDRIN	BDL	10	ug/L

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Sample ID: A987088 OUTFALL 008

4,4'-DDE	BDL	10	ug/L
ENDRIN	BDL	10	ug/L
ENDOSULFAN II	BDL	10	ug/L
4,4'-DDD	BDL	10	ug/L
ENDOSULFAN SULFATE	BDL	10	ug/L
4,4'-DDT	BDL	10	ug/L
METHOXYCHLOR	BDL	10	ug/L
ENDRIN ALDEHYDE	BDL	10	ug/L
ALPHA-CHLORDANE	BDL	10	ug/L
GAMMA-CHLORDANE	BDL	10	ug/L
CHLORDANE	BDL	10	ug/L
TOXAPHENE	BDL	10	ug/L
PCB AROCLOR 1016	BDL	10	ug/L
PCB AROCLOR 1221	BDL	10	ug/L
PCB AROCLOR 1232	BDL	10	ug/L
PCB AROCLOR 1242	BDL	10	ug/L
PCB AROCLOR 1248	BDL	10	ug/L
PCB AROCLOR 1254	BDL	10	ug/L
PCB AROCLOR 1260	BDL	10	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	114.0		% Rec

Matrix interference may mask low level analytes.

Sample Comments

! Outside Lab Generated Control Limits
* See Note for Parameter
BDL Below Detection Limit

Sample was received on ice at temperature 1 C.
Sample chain of custody number 13749.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Heritage Environmental Services, LLC certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 05-JUL-13

01093356

HERITAGE ENVIRONMENTAL SERVICES, LLC.
COMMERCIAL LABORATORY OPERATIONS

7901 W Morris St Indianapolis, IN 46231
www.heritage-enviro.com (800)827-4374 Fax:(317)486-5095

13749

Submitter Name: MO-ALLIED-BRIDGETON LANDFILL (8945)
Project Name: LEACHATE - BRIDGETON LANDFILL (5586)
Z Quote No: Z140306
PO No: 4337-12001-9 (2012)
Heritage Contact CHRISTOPHER BOYLE (317)390-3128

Sample Turn Around Time
Standard: X Rush Date ___/___/___ Mo Day Yr
Accelerated TAT subject to Additional Charge.
Date must be Accepted and Approved by Lab.

Sampled By: Matt Stewart, Herst & Associates, Inc.

Analyses Requested (Note special detection limits or methods)

Comments:

Date Sampled	Time Sampled	Comp	Grab	Sample ID and/or Location where your sample was taken	Sample Type (Matrix): Water, Soil, Oil, Sludge, Swipe, Other	Number of Containers	PCB/PEST, SVL BNA WW	HEM(O&G)	COD, NH3	BOD, TSS	VOL	As, Cd, Cr, Cu, Hg, Ni, Pb, Zn	Remarks:	Lab use only Sample No.
6/17-18/13	1236, 1720 0806, 1236 AM PM	X		Outfall 008	LCH	10	X		X	X		X	LCH = leachate	A987088
6/18/13	1236 AM PM		X	" "	LCH	6		X			X		* SHORT HOLD	1
	AM PM												BOD	
	AM PM													
	AM PM													
	AM PM													
	AM PM													
	AM PM													
	AM PM													
	AM PM													

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Matt Stewart	6/18/13 / 1800	FedEx # 542797683689
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Received for Lab by: (Signature) [signature]	Date 6/18/13	Temperature 1.0 (1.2) °C
	Time 0805	Received On Ice ~~Yes~~ No

Laboratory use only	Yes	No	NA
Custody seals intact on cooler?	✓		
C. seals intact on containers?			✓
Broken containers?		✓	
COC agree with sample labels?	✓		
Correct containers for testing?	✓		
Headspace issues acceptable?	✓		
Holding time(s) acceptable?	✓		
Preservative pH's acceptable?	✓		
Was pH left unadjusted?	✓		

Send Report To:
Co: HERST AND ASSOCIATES
Addr: 4630 SOUTH HIGHWAY 94
ST. CHARLES, MO 63304
Attn: MATT STEWART
Phone: (636)939-9111
Fax: (636)939-9757
email: mstewart@herstassociates.com

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Quality Assurance Report

64835

05-JUL-13

Service Location	Submitter
Heritage Environmental Services, LLC Commercial Laboratory Operations 7901 West Morris Street Indianapolis, IN 46231 (317) 243-8304	MATT STEWART HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 ST. CHARLES, MO 63304

Sample ID	Client ID	Date/Time Sampled	Date Received	Date Released
A987088	OUTFALL 008	18-Jun-13 12:36	19-Jun-13	05-Jul-2013
	DESCRIPTION :	ANNUAL LEACHATE		
	LOCATION :	BRIDGETON LANDFILL		
	PERMIT :	830871		

2012

Bridgeton Landfill LLC
Monthly Leachate Outfall Report

7/25/2013 Filed in 15.4

Month	Net Meter Reading	Precipitation Inches	Date of Reading	Gallons	Average Daily Discharge (Gal)	Equivalent Cubic Feet	Equivalent 100 Cubic Feet
January	6,297,239	3.12	2/1/2013	3,498,515	112,855	467,715.91	4,677.16
February	6,905,982	3.25	3/1/2013	608,743	21,740	81,382.75	813.83
March	6,906,109*	4.95	4/1/2013	0*	0*	0*	0*
April	6,915,104	5.67	5/1/2103	8,604**	8,604**	1,150.27	11.50
May	81,827	7.13	6/1/2013	373,684***	12,054	49,957.75	499.58
June	284,978	5.86	7/1/2013	203,151	6,771	27,159.22	271.59
July							
August							
September							
October							
November							
December							

Note:

*Flow represented is due to flow meter error. No discharge to MSD has occurred between 2/7/2013 and 4/30/2013.

** Discharge to MSD was resumed on 4/30/2013 (Net meter reading 6,906,500)

***New flow meter intalled and set to 0, meter was also reset twice during May, see daily logs.

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CB

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Thursday, July 25, 2013 5:23 PM
To: John Lodderhose; Rob G Daly; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Yes. We have asked for the shortest turnaround for the sample. Given the long run time on Friday, the lab will receive the sample on Monday and should have results to us by COB Wednesday.

Thank you,
Jessie

From: John Lodderhose [mailto:JRLODD@stlmsd.com]
Sent: Thursday, July 25, 2013 2:48 PM
To: Rob G Daly; Merrigan, Jessie; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally; Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Jessie, could you please ask the lab for a quick turn around.
Thanks
Sent from my Verizon Wireless Phone - John Lodderhose

Rob G Daly <rdaly@stlmsd.com> wrote:

John

What is estimated date results will be available if testing occurs as noted below?

Rob Daly, EIT
Division Manager- Pump Stations
Department of Operations
Metropolitan St Louis Sewer District
1025 Grand Glaize Parkway
Valley Park, MO 63088-1952
(636) 861-6706 (Office)

rdaly@stlmsd.com

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Thursday, July 25, 2013 8:34 AM

Pm

Doug Mendoza

From: John Lodderhose
Sent: Thursday, July 25, 2013 2:48 PM
To: Rob G Daly; 'Merrigan, Jessie (LG)'; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
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Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Good morning,

Bridgeton Landfill has arranged to perform the first follow up Summa Canister air sampling tomorrow, Friday July 26th. However, in order to ensure that discharge can continue uninterrupted throughout the test, so that the results are reflective of continuous discharge, Bridgeton Landfill has stopped discharge for today. The facility team wants to make sure that there is sufficient volume for a regular continuous discharge tomorrow and does not want that interrupted by transfers from the large treatment tank while the test is running tomorrow.

P2

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Thursday, July 25, 2013 8:34 AM
To: John Lodderhose; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

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I just wanted to update you so that you were aware of the air sampling schedule and so that you did not come out today to split sample while no discharge was occurring.

Please let us know if you have any questions.

thank you,
Jessie

From: John Lodderhose [mailto:JRLODD@stlmsd.com]
Sent: Tuesday, July 23, 2013 2:42 PM
To: Merrigan, Jessie; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally; Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Thanks Jessie. Could we proceed with one of the air samplings for benzene this week or early next week by summa canister to confirm that benzene is not an air problem at the pump station?

John R. Lodderhose, P.E.
Metropolitan St. Louis Sewer District
Assistant Director of Engineering
Environmental Compliance
314-436-8714

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Tuesday, July 23, 2013 10:04 AM
To: John Lodderhose; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace;

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Wednesday, July 24, 2013 10:34 AM
To: John Lodderhose; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: Bridgeton Landfill Weekly Report

Good morning,

This email is submitted on behalf of Bridgeton Landfill as the weekly report to MSD. This week's materials have been loaded on Barr's FTP site for your review.

Our team reported that the extended weekend discharge worked very well. We sincerely appreciate MSD making that available. Please let us know if you have any feedback or follow up on the process at any time so we can ensure that continues to work to your satisfaction.

As noted in yesterday's emails, Bridgeton Landfill has resumed discharge to the Missouri River Treatment Plant. The facility team will conduct daily benzene and pH confirmatory sampling to ensure the leachate is within the compliance limits, and will continue this until levels have been demonstrated to stabilize. Additionally, the facility is currently working to schedule follow up air sampling for benzene. Please note that the existing 4-gas meter was recalibrated prior to resuming discharge and it, along with the lift station scrubber, are operational. We will update MSD as soon as the air sampling is scheduled.

We appreciate your ongoing assistance. Please let us know if you have any questions or need any additional information.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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Pa

Doug Mendoza

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Tuesday, July 23, 2013 3:42 PM
To: John Lodderhose; Merrigan, Jessie (LG); Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

John, that is consistent with our discussions last week. We are working to get an air sample scheduled ASAP and we'll let you know when it is scheduled and when we can expect results.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

resourceful. naturally. BARR

From: John Lodderhose [mailto:JRLODD@stlmsd.com]
Sent: Tuesday, July 23, 2013 2:42 PM
To: Merrigan, Jessie (LG); Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
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Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Thanks Jessie. Could we proceed with one of the air samplings for benzene this week or early next week by summa canister to confirm that benzene is not an air problem at the pump station?

John R. Lodderhose, P.E.
Metropolitan St. Louis Sewer District
Assistant Director of Engineering
Environmental Compliance
314-436-8714

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Tuesday, July 23, 2013 10:04 AM
To: John Lodderhose; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson

Doug Mendoza

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Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
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Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Good morning,

I wanted to update you that Bridgeton Landfill confirmed the leachate was acceptable for discharge (benzene – 45 ppb; pH – 6.28 su) and resumed discharge this morning.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

From: Merrigan, Jessie
Sent: Monday, July 22, 2013 4:53 PM
To: John Lodderhose; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace;

PL

Doug Mendoza

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To: John Lodderhose; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
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Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally; Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Thank you so much John,

To answer your question, the benzene investigation was inconclusive. However, the leachate team found that operating aeration within the 97K tank reduced the benzene concentration from nearly 600 ppb to below 100 ppb, and we are changing the protocol to:

1) Run the recirculation pump a minimum of 6 hours a day, and we most likely would leave pump going all the time;
2) Every morning during the discharge will cease and a new benzene test will be run, and the discharge will only commence once we receive passing benzene results.

Doug Mendoza

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Sent: Monday, July 22, 2013 4:53 PM
To: John Lodderhose; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
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1) Run the recirculation pump a minimum of 6 hours a day, and we most likely would leave pump going all the time;
2) Every morning during the discharge will cease and a new benzene test will be run, and the discharge will only commence once we receive passing benzene results.

We will continue that process until the results demonstrate the consistent effectiveness of this approach in maintaining compliance with the benzene limit.

Please let me know if you have any questions.

Thank you,
Jessie

From: John Lodderhose [mailto:JRLODD@stlmsd.com]
Sent: Monday, July 22, 2013 2:54 PM
To: Merrigan, Jessie; Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
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Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Jessie, you should be able to resume the discharge starting tomorrow. We do not need a split sample, but we will be preforming sampling within the next week or two to verify compliance. We would also like to know what caused the benzene problem in the 96,000 gallon tank and how it was resolved.

John R. Lodderhose, P.E.
Metropolitan St. Louis Sewer District
Assistant Director of Engineering

1r

Doug Mendoza

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John R. Lodderhose, P.E.
Metropolitan St. Louis Sewer District
Assistant Director of Engineering
Environmental Compliance
314-436-8714

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Monday, July 22, 2013 12:28 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Good afternoon,

We are pleased to report that the facility team believes the benzene issue in the 96,000 gallon tank has been resolved. The leachate currently in that tank is at 86 ppb benzene, with a pH of 6.43. We would like to resume discharge to the Missouri River Treatment Facility, but wanted to first update you and see if MSD wanted to take a split sample today prior to us resuming discharge tomorrow. The 4 gas meter requires recalibration and that will occur tomorrow morning, after which discharge will resume.

Additionally, following up on last week's discussions, the facility will be ordering equipment to conduct follow up air sampling for benzene. In order to assess whether the benzene air detections are resolved by resolution of the benzene detections in the 96,000 tank, Bridgeton Landfill will conduct sampling for benzene by summa canister grab or PID meter. These measurements would repeat the exposure environment locations of the Stantec sampling and would be conducted every 4 weeks until data demonstrates consistency.

Please let me know if you have any questions.
We appreciate your continued help,
Jessie

Jessica E. Merrigan

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Monday, July 22, 2013 12:28 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
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We appreciate your continued help,
Jessie

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Doug Mendoza

From: Sara Kammerer
Sent: Monday, July 22, 2013 12:00 PM
To: Catherine Politte; Mike Townley
Cc: Doug Mendoza; Brian G. Gibson; Steve Grace; Darin Lewis
Subject: Bridgeton Landfill Leachate weekly volume summary (7/15/13 - 7/21/13)

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant for 7/15/2013 to 7/21/2013:

7/15 – 95,900 gallons
7/16 – 88,300 gallons
7/17 – 95,800 gallons
7/18 – 95,800 gallons
7/19 – 95,800 gallons
7/20 – 97,500 gallons
7/21 – 97,500 gallons

Total = 666,600 gallons

Thanks,

Sara Kammerer
Environmental Assistant Engineer
Metropolitan St. Louis Sewer District
10 E. Grand Avenue
St. Louis, MO 63147-2913
(314) 436-8763 - phone
(314) 436-8766 - fax

Doug Mendoza

From: Brian G. Gibson
Sent: Friday, July 19, 2013 7:05 AM
To: Doug Mendoza
Cc: Joe Pavlich
Subject: Bridgeton Landfill

The Bridgeton Landfill meter reading was at 284,978. 0 gal/hour. The reading was taken at 11:20 a.m. on Thursday, July 18 , 2013.

Doug Mendoza

BRIDGETON LANDFILL
1003 803000

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, July 19, 2013 1:40 PM
To: Brian Hoelscher; Doug Mendoza; John Lodderhose
Cc: Tim Trost; Almanza, Craig; Power, Brian (BPower@republicservices.com); Sehie, Bryan
Subject: Request to add signatory
Attachments: image2013-07-19-114931.pdf

Good afternoon,

Please see the attached request submitted on behalf of Bridgeton Landfill, LLC, the original of which will be sent by US Mail.

As always, please let us know if you have questions or need additional information.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
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Bridgeton Landfill, LLC

July 18, 2013

Brian Hoelscher
Executive Director
St. Louis Metropolitan Sewer District
2350 Market Street
St. Louis, MO 63103

Re: Authorized Signatory for Certification for Bridgeton Landfill, LLC

Dear Mr. Hoelscher:

Pursuant to MSD Ordinance 12559, Article X, Section 3.B.4 I, as an Officer of Bridgeton Landfill, LLC, would like to authorize Brian Power as an authorized individual to sign certifications on behalf of Bridgeton Landfill, LLC. Brian Power is the Environmental Manager of Bridgeton Landfill, LLC. As the Environmental Manager, Mr. Power occupies a "position having responsibility for the overall operation of the facility from which the discharge originates."

Please let me know if you have any questions or need any additional information to permit Mr. Power to sign certifications on behalf of Bridgeton Landfill, LLC. We appreciate MSD's continued cooperation and support.

Sincerely,

Tim Trost
Area President

cc Doug Mendoza, MSD Industrial Pretreatment Manager
Brian Power, Bridgeton Landfill, LLC
Craig Almanza, Area Environmental Manager

Doug Mendoza BRIDGETON LANDFILL

From: Dan Feezor <dfeezor@feezorengineering.com>
Sent: Thursday, July 18, 2013 10:44 AM
To: Doug Mendoza
Cc: Merrigan, Jessie (LG); Steve Smith - Republic AEM; Power, Brian; Ed Galbraith
Subject: FW: Aeration Test in 316k AST (Batch 1)
Attachments: AST 316 Aeration Test, Revised 2013-07-18.pdf

Doug,
As you requested, included is the Benzene vs aeration time graph for the first test with 1 blower. I took the original sample once the leachate was loaded, but due to some initial instrument control problems, the blowers did not start until 12 pm. If you would like to see the full analytical reports let me know.

Thank you,
Dan

From: David Eastvold
Sent: Thursday, July 18, 2013 10:35 AM
To: David Eastvold; Dan Feezor
Subject: RE: Aeration Test in 316k AST (Batch 1)

Changes to show that aeration didn't begin until 12:00

From: David Eastvold
Sent: Thursday, July 18, 2013 10:02 AM
To: Dan Feezor
Subject: FW: Aeration Test in 316k AST (Batch 1)

From: David Eastvold
Sent: Monday, July 01, 2013 7:25 PM
To: Dan Feezor
Cc: Bill Abernathy
Subject: Aeration Test in 316k AST (Batch 1)

Dan,

Attached is a graph of the data from Batch 1 in the new AST on June 17. I'm really curious about that last data point.

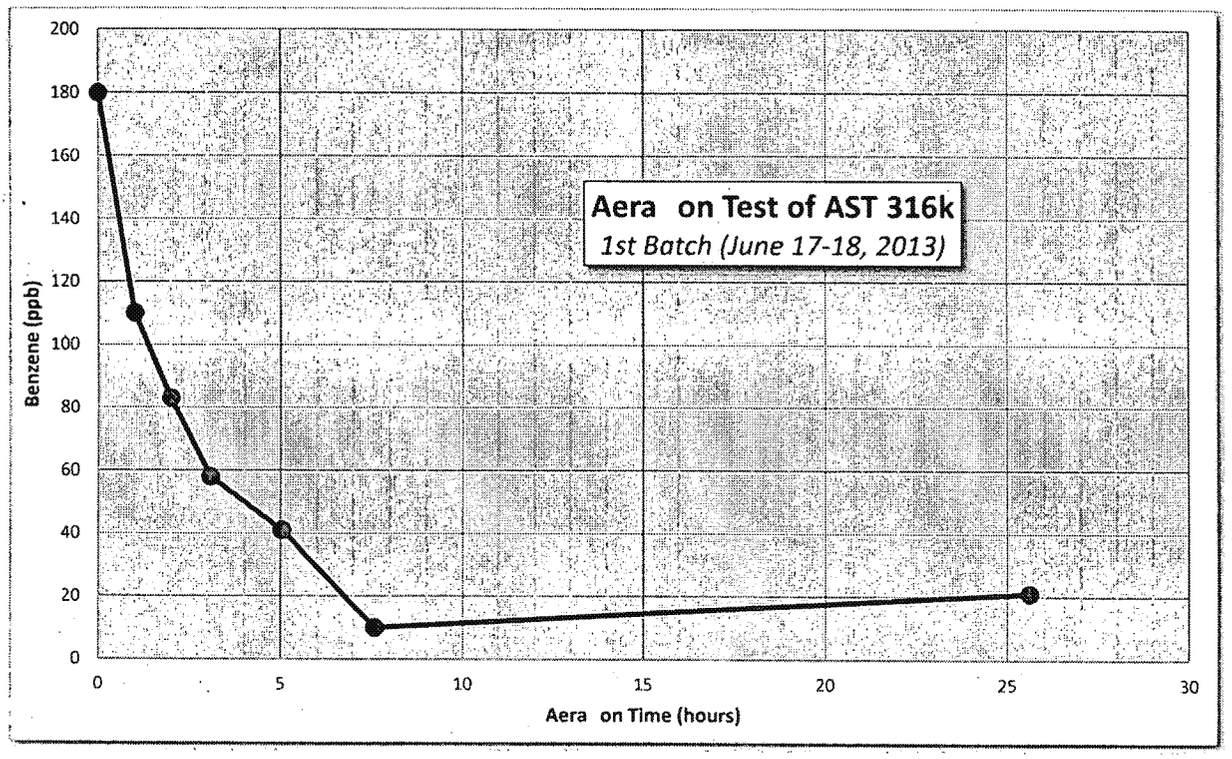
David

David Eastvold, P.E.
Residuals Management Team Member
Feezor Engineering, Inc.
406 East Walnut St.
Chatham, IL 62629
(217)483-3118
deastvold@feezorengineering.com

Aeration Test

AST 316k, Batch 001

Test Number	Date	Sample Time	Aeration Begins	Processing Time (hrs)	Benzene (ppb)	Time Delta (hrs)	Benzene Removed (ppb)	Benzene Removal Rate (ppb/hr)
1	17-Jun	9:02	12:00	0.0	180			
2	17-Jun	13:01		1.0	110	1.0	70	68.9
3	17-Jun	14:00		2.0	83	1.0	27	27.5
4	17-Jun	15:05		3.1	58	1.1	25	23.1
5	17-Jun	17:02		5.0	41	2.0	17	8.7
6	17-Jun	19:35		7.6	10	2.5	31	12.2
7	18-Jun	13:36		25.6	21	18.0	-11	-0.6



Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

MSD

July 18, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Response to Bridgeton Landfill July 8, 2013 Request for Changes to Operational and Discharge Procedures

Dear Mr. Almanza:

We have reviewed your July 8, 2013 letter requesting certain changes to operational and discharge procedures for Bridgeton Landfill's leachate. We also discussed the individual changes during the July 17, 2013 meeting between MSD and Bridgeton Landfill representatives. The requests and responses are listed below.

<u>Request 1 – Extended discharge at MSD's Bissell Point hauled waste station on Saturday and Sunday</u>

MSD approves this requested change for deliveries of Bridgeton Landfill leachate to MSD's Bissell Point hauled waste station, beginning Saturday, July 20, 2013, subject to the following conditions:

- The Saturday and Sunday deliveries will be limited, as requested, to the same amount approved for weekday deliveries.
  - This is currently 100,000 gallons per day.
  - The amount will increase to 125,000 gallons per day, starting July 22, 2013. See request 2 below.
- The discharge hours will be the same as during the week, currently 7:00 am to 5:30 pm.
  - The last truck must be discharging by 5:00 pm.
- The discharge must be spread evenly over the entire approved discharge day.
- For all deliveries, both on weekdays and on weekends, Bridgeton Landfill will be limited to one leachate truck discharging at a time.
  - This is to prevent surcharging the hauled waste station's lines, causing a spill, and to help equalize the load in the treatment plant.
  - Note that other companies may also be discharging at the same time (only during normal station operating hours).
- On Sundays, and possibly at the end of other days, the entrance gate to the Bissell Point plant may be closed.
  - To gain entry, the truck driver should push the call button and inform the operator who the driver represents, and what is being delivered.
- For deliveries outside normal hauled waste station hours, each truck driver must contact the treatment plant operator at 314-436-8785 before discharging.
  - An operator will come over to receive paperwork, record necessary data, raise the gate, and receive the retain sample.
  - Current normal hauled waste station hours are Monday-Friday 7:00 am-5:30 pm, and Saturday 7:00 am-12:00 noon.
- Additional staff costs related to deliveries outside normal hauled waste station operating hours will be billed to Bridgeton Landfill.

- All other requirements for discharge to MSD's Bissell Point hauled waste station continue to apply.

Request 2 – Graduated increases at MSD's Bissell Point hauled waste station of 25,000 GPD until a total of 200,000 GPD is reached

MSD approves the initial increase of 25,000 GPD, effective Monday, July 22, 2013, and provides for potential future increases, subject to the following conditions:

- The discharge hours will remain the same, currently 7:00 am to 5:30 pm.
  - The last truck must be discharging by 5:00 pm.
  - These hours will be reevaluated at each subsequent increase in volume, and will depend on logistics at the hauled waste station.
    - However, additional staff costs related to deliveries outside normal hauled waste station operating hours will be billed to Bridgeton Landfill.
- The discharge must be spread evenly over the entire approved discharge day.
- Bridgeton Landfill will be limited to one leachate truck discharging at a time.
- MSD will evaluate the impact on the treatment plant for each increase in volume, before possibly approving a further increase.
  - We anticipate that at least two weeks at each discharge volume will be necessary before MSD can approve (or deny) a further increase in volume.
- As weather conditions change, primarily during winter, and biological treatment efficiency also changes, it may be necessary for MSD to reduce the approved discharge volume.

Request 3 – Shortened aeration times

MSD has reviewed the data submitted in support of this request, and approves a change in procedure from five hours of leachate aeration to a minimum of at least two blower-hours of aeration, subject to the following conditions:

- The reduced aeration time is only approved for the 316,000 gallon aeration tank, not for the other tank batteries.
- Each batch still must be analyzed for benzene, and may not be discharged to MSD until benzene concentrations are below the fume toxicity screening level.
- If benzene concentrations are not below that screening level, further aeration will be required, with subsequent testing showing benzene below the fume toxicity screening level. Otherwise, disposal other than to MSD will be required.
- MSD will continue to evaluate the benzene levels, and may revise the aeration or benzene concentration requirements to protect its workers' health and safety.

Request 4 – Email of results from onsite laboratory to the leachate manager

MSD will approve this request, as described in the request and summarized below, and subject to the following conditions:

- A sampling technician will take an operational benzene sample and have it tested using the onsite laboratory.
- Once the GC/MS has been completed, the onsite chemist will email the benzene result, the data, and the batch number to the leachate manager.

- The leachate manager will review and approve (or reject), and send the printed copy (on the laboratory's letterhead) with the first truck delivering leachate to MSD's Bissell Point hauled waste station that morning (if a passing result has been obtained).
- Later in the day, the full SW8260B report will be emailed to MSD.
    - The report will be emailed to Darin Lewis, Brian Gibson, Sara Kammerer, Steve Grace, and Doug Mendoza, all with MSD.

Thank you for helping us comply with federal and state regulations. If you have any questions, please contact me at 314.436.8717.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Douglas M. Mendoza, P.E.
Manager of Industrial Pretreatment

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Thursday, July 18, 2013 11:36 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Jessie,

I can accept the reports on Wednesdays, due to the issues you express below. However, to prevent further creep in the submittal schedule, which further distances it from the actual discharge dates and times, you must submit the reports by noon on Wednesday.

Regarding the requests in Bridgeton Landfill's July 8, 2013 letter, we are approving all the requests, subject to various conditions, as contained in the copy of the letter below. The original letter will be mailed to Craig Almanza at Bridgeton Landfill.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

July 18, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Response to Bridgeton Landfill July 8, 2013 Request for Changes to Operational and Discharge Procedures

Dear Mr. Almanza:

We have reviewed your July 8, 2013 letter requesting certain changes to operational and discharge procedures for Bridgeton Landfill's leachate. We also discussed the individual changes during the July 17, 2013 meeting between MSD and Bridgeton Landfill representatives. The requests and responses are listed below.

<u>Request 1 – Extended discharge at MSD's Bissell Point hauled waste station on Saturday and Sunday</u>

MSD approves this requested change for deliveries of Bridgeton Landfill leachate to MSD's Bissell Point hauled waste station, beginning Saturday, July 20, 2013, subject to the following conditions:

- The Saturday and Sunday deliveries will be limited, as requested, to the same amount approved for weekday deliveries.
    - This is currently 100,000 gallons per day.

- The amount will increase to 125,000 gallons per day, starting July 22, 2013. See request 2 below.
- The discharge hours will be the same as during the week, currently 7:00 am to 5:30 pm.
  - The last truck must be discharging by 5:00 pm.
- The discharge must be spread evenly over the entire approved discharge day.
- For all deliveries, both on weekdays and on weekends, Bridgeton Landfill will be limited to one leachate truck discharging at a time.
  - This is to prevent surcharging the hauled waste station's lines, causing a spill, and to help equalize the load in the treatment plant.
  - Note that other companies may also be discharging at the same time (only during normal station operating hours).
- On Sundays, and possibly at the end of other days, the entrance gate to the Bissell Point plant may be closed.
  - To gain entry, the truck driver should push the call button and inform the operator who the driver represents, and what is being delivered.
- For deliveries outside normal hauled waste station hours, each truck driver must contact the treatment plant operator at 314-436-8785 before discharging.
  - An operator will come over to receive paperwork, record necessary data, raise the gate, and receive the retain sample.
  - Current normal hauled waste station hours are Monday-Friday 7:00 am-5:30 pm, and Saturday 7:00 am-12:00 noon.
- Additional staff costs related to deliveries outside normal hauled waste station operating hours will be billed to Bridgeton Landfill.
- All other requirements for discharge to MSD's Bissell Point hauled waste station continue to apply.

<u>Request 2 – Graduated increases at MSD's Bissell Point hauled waste station of 25,000 GPD until a total of 200,000 GPD is reached</u>

MSD approves the initial increase of 25,000 GPD, effective Monday, July 22, 2013, and provides for potential future increases, subject to the following conditions:

- The discharge hours will remain the same, currently 7:00 am to 5:30 pm.
  - The last truck must be discharging by 5:00 pm.
  - These hours will be reevaluated at each subsequent increase in volume, and will depend on logistics at the hauled waste station.
    - However, additional staff costs related to deliveries outside normal hauled waste station operating hours will be billed to Bridgeton Landfill.
- The discharge must be spread evenly over the entire approved discharge day.
- Bridgeton Landfill will be limited to one leachate truck discharging at a time.
- MSD will evaluate the impact on the treatment plant for each increase in volume, before possibly approving a further increase.
  - We anticipate that at least two weeks at each discharge volume will be necessary before MSD can approve (or deny) a further increase in volume.
- As weather conditions change, primarily during winter, and biological treatment efficiency also changes, it may be necessary for MSD to reduce the approved discharge volume.

<u>Request 3 – Shortened aeration times</u>

MSD has reviewed the data submitted in support of this request, and approves a change in procedure from five hours of leachate aeration to a minimum of at least two blower-hours of aeration, subject to the following conditions:

- The reduced aeration time is only approved for the 316,000 gallon aeration tank, not for the other tank batteries.
- Each batch still must be analyzed for benzene, and may not be discharged to MSD until benzene concentrations are below the fume toxicity screening level.

- If benzene concentrations are not below that screening level, further aeration will be required, with subsequent testing showing benzene below the fume toxicity screening level. Otherwise, disposal other than to MSD will be required.
- MSD will continue to evaluate the benzene levels, and may revise the aeration or benzene concentration requirements to protect its workers' health and safety.

Request 4 – Email of results from onsite laboratory to the leachate manager

MSD will approve this request, as described in the request and summarized below, and subject to the following conditions:

- A sampling technician will take an operational benzene sample and have it tested using the onsite laboratory.
- Once the GC/MS has been completed, the onsite chemist will email the benzene result, the data, and the batch number to the leachate manager.
- The leachate manager will review and approve (or reject), and send the printed copy (on the laboratory's letterhead) with the first truck delivering leachate to MSD's Bissell Point hauled waste station that morning (if a passing result has been obtained).
- Later in the day, the full SW8260B report will be emailed to MSD.
    - The report will be emailed to Darin Lewis, Brian Gibson, Sara Kammerer, Steve Grace, and Doug Mendoza, all with MSD.

Thank you for helping us comply with federal and state regulations. If you have any questions, please contact me at 314.436.8717.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT
Douglas M. Mendoza, P.E.
Manager of Industrial Pretreatment

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Wednesday, July 17, 2013 10:30 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Good evening Doug,

Thank you so much. We sincerely appreciate MSD's continued cooperation and support. As was expressed to MSD in today's meeting, this is extremely helpful for leachate management and we are very grateful for the efforts that your entire team has gone to, it is a tremendous help to the ongoing leachate management efforts. We look forward to continuing to work with your team on long term solutions to leachate management.

As you may have noticed, our weekly reports keep creeping later into the day on Tuesdays due in part to the time it takes to pull to reports and certify summaries. Would it be acceptable to MSD to submit weekly reports by Wednesdays? That would give us a little more flexibility on report issuance and signatures. Please let me know if that would cause any inconvenience for your processing or review, and we can look at another arrangement. But if that would work fine for you, we will start planning on submitting reports by Wednesday.

Thank you again for your efforts and cooperation.

MSD DK

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Thursday, July 18, 2013 11:47 AM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Thank you so much, Doug. We will continue to work to submit and post as early as possible, with noon on Wednesday as the latest option. If this presents any concern for your review as we move forward, please let us know and we can adjust.

We appreciate MSD's approval as outlined below and look forward to continuing to work with you.

Have a nice day,
Jessie

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Thursday, July 18, 2013 11:36 AM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally; Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Jessie,

I can accept the reports on Wednesdays, due to the issues you express below. However, to prevent further creep in the submittal schedule, which further distances it from the actual discharge dates and times, you must submit the reports by noon on Wednesday.

MSD

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Wednesday, July 17, 2013 10:30 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill requests for changes to operating and discharge procedures

Good evening Doug,

Thank you so much. We sincerely appreciate MSD's continued cooperation and support. As was expressed to MSD in today's meeting, this is extremely helpful for leachate management and we are very grateful for the efforts that your entire team has gone to, it is a tremendous help to the ongoing leachate management efforts. We look forward to continuing to work with your team on long term solutions to leachate management.

As you may have noticed, our weekly reports keep creeping later into the day on Tuesdays due in part to the time it takes to pull to reports and certify summaries. Would it be acceptable to MSD to submit weekly reports by Wednesdays? That would give us a little more flexibility on report issuance and signatures. Please let me know if that would cause any inconvenience for your processing or review, and we can look at another arrangement. But if that would work fine for you, we will start planning on submitting reports by Wednesday.

Thank you again for your efforts and cooperation.
Sincerely,
Jessie

LATHROP & GAGE L.L.P
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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MSD

Doug Mendoza

From: Doug Mendoza
Sent: Thursday, July 18, 2013 9:26 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Thank you, Jessie.

We have reviewed the posted documents for leachate discharges, and have no additional comments or questions at this time. I will be writing separately regarding Bridgeton Landfill's July 8, 2013 request for changes to operational and discharge procedures. Among the changes requested is an increase in volume hauled to and discharged at MSD's Bissell Point hauled waste station. As the volumes are approved an implemented, you should also see an update to the pertinent sections of the conditional approval tracking spreadsheet.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Tuesday, July 16, 2013 5:51 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Good evening,

This week's documents have been posted –including the corrected final copy of the Industrial Hygiene Report reviewing air sampling results.

Our team looks forward to tomorrow's meeting.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

MSD

To: BRIDGETON LANDFILL LLC [1003803000]

From: Doug Mendoza DM

Date: July 18, 2013

Re: Status update/technical issues meeting between MSD and Bridgeton Landfill

---

On 7/17/13 at 10 am, MSD and Bridgeton Landfill representatives met at MSD to discuss various items related to Bridgeton Landfill's leachate and discharge, as shown on the attached agenda and below:

1. Introductions
2. Updates

a. Discharges to Bissell Point and MO River Plants (Steve and Dan)
   - The 316,000 gallon treatment/sparging tank is on line. They are still struggling with benzene levels in the old 96,000 gallon holding tank upstream to onsite discharge. They think there may be possible old connections to the landfill in this tank. There will continue to be no discharges onsite until all is resolved and corrected.

b. Benzene and pH issues (Steve and Dan)

See above re. benzene.
   - Recent pH levels were near, but above 5.5. Latest ones have been slightly below 5.5, though. So long as not discharged on-site, not a problem. They are looking at some way to add caustic to neutralize, but not in the 96K holding tank.

c. Lift Station status (Steve)
   - The air moving and filtering equipment is running as designed. MSD will be working with landfill personnel on an SOP for the equipment, reporting, access, etc. The October 2012 administrative order will stay open (not completed) until discharges to the station are in compliance – i.e. are not setting off alarms for atmosphere pollutants, and are not exceeding fume toxicity levels in the wastewater.

d. Hygienist report (Ed)
   - MSD's hygienist will be doing a peer review of the Bridgeton Landfill hygienist's report. A future air sampling protocol for the lift station also must be decided <u>before</u> resuming discharge to the station.

e. 316K gallon tank batch procedure (Dan)
   - See above.

f. Interim pretreatment (Tony)
   - They are still investigating (design/build) different options for the pretreatment system. pH adjustment settles material and precipitates zinc. Additional polymers and metal chelating should address arsenic, too. When asked, they believe mercury and iron will also be reduced. Bench scale biological treatment is reducing BOD significantly, but COD is still high. When MSD asked what the system was being designed to deliver for output, they replied about 300 BOD and about 900 COD, but were getting 1200-1500 currently in the bench scale tests. They hope pilot scale testing will provide additional information. It looks like about 12 days hydraulic retention time will be necessary. There is some foaming to address, using non-silicone defoamer so as to not blind ultrafiltration at the end. A pilot MBR, as another option, will arrive the end of next week for testing, and will go after the clarification step. They are also looking at electrocoagulation as an option to clarification. Some nitrification is expected, too, within the treatment process.

MSD reminded them that certain defoamers could contain oil compounds and/or exhibit toxicity to aquatic life. Both issues will need to be considered. There also will need to be a sample point for both MSD and Bridgeton Landfill at the end of pipe, that is, after the final treatment step. MSD also reminded them that additional storage or an alternate disposal option will be needed, in case their pretreatment goes down. MSD's Missouri River treatment plant will not have capacity to absorb high strength discharges.

3. Pending requests

a. Extended discharge hours at Bissell Point
   - MSD agreed to extend Saturday hours from 12:00 noon to 5:30 pm, and to open Sundays for 7:00 am – 5:30 pm. This will match the weekday hours. Bridgeton Landfill will be billed for the extra staffing costs.

b. Increase volume to Bissell Point
   - MSD will allow an increase to 125,000 GPD discharge, with 25,000 GPD increases approximately every 2 weeks, depending on impact on plant. MSD will notify when increases can occur. Maximum will be 200,000 GPD. This amount may need to be reduced in the winter, due to decreased biological treatment in the plant. Trucks may only discharge one at a time, to help equalize the loading at the plant, and to prevent surcharging/overflowing at the receiving station. After each increase, the logistics will also be evaluated, to see if extended hours will be necessary. Bridgeton Landfill will be billed for the extra staffing costs.

c. Reduce aeration times per the SOP
   - Bridgeton Landfill will send data showing that shortened aeration times in the 316K treatment tank provides adequate reduction of benzene levels. Once this is reviewed by MSD, MSD may allow a revised SOP.

d. Amend the benzene reporting procedure
   - An email from the landfill's onsite laboratory with benzene results that is then printed and hand delivered with the first truck, in lieu of a printed full lab report, will be allowed. The full report will be emailed directly to MSD later in the day. This will allow more efficient staging of the leachate delivery trucks.

4. Evaluating frequency and amount of sampling (Ed)
   - This will be discussed at a later date.

5. Transmittance issue at Mo River WWTP
   - Raw leachate from the landfill was tested by MSD. At full strength, there was virtually no transmittance (0%). It took 1000x to 2000x dilution for the leachate's transmittance to get up to 60%-70%. That would be about the minimum requirement for the Missouri River plant ultraviolet disinfection to work. That equates to about the current 20,000 GPD discharge limit (assuming the landfill gets its benzene issues corrected). Pretreatment will have to address this, too.

MSD AND BRIDGETON LANDFILL TECHNICAL ISSUES MEETING

July 17, 2013

AGENDA

1. Introductions
2. Updates
    a. Discharges to Bissell Point and MO River Plants (Steve and Dan)
    b. Benzene and pH issues (Steve and Dan)
    c. Lift Station status (Steve)
    d. Hygienist report (Ed)
    e. 316K gallon tank batch procedure (Dan)
    f. Interim pretreatment (Tony)
3. Pending requests
    a. Extended discharge hours at Bissell Point
    b. Increase volume to Bissell Point
    c. Reduce aeration times per the SOP
    d. Amend the benzene reporting procedure
4. Evaluating frequency and amount of sampling (Ed)
5. Transmittance issue at Mo River WWTP

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Wednesday, July 17, 2013 2:24 PM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: Bridgeton Landfill requests for changes to operating and discharge procedures

Good afternoon,

This communication is to follow up on one item of Bridgeton Landfill's July 8, 2013 letter requesting several changes to operating and discharge procedures. Item 1 of the July 8 letter requested, "**Extended Discharge on Saturday and Sunday. Under this proposal Bridgeton Landfill would increase Saturday delivery by 50,000 gallons and begin delivery on Sunday, up to 100,000 gallons.**"

As MSD personnel discussed with Bridgeton Landfill representatives at today's status meeting, MSD approves this requested change for deliveries of Bridgeton Landfill leachate to MSD's Bissell Point hauled waste station, beginning this Saturday, July 20, 2013, subject to the following conditions:

- The Saturday and Sunday deliveries will be limited, as requested, to the same amount approved for weekday deliveries.
    - This is currently 100,000 gallons per day.
- The discharge hours will be the same as during the week, currently 7:00 am to 5:30 pm.
    - The last truck must be discharging by 5:00 pm.
- The discharge must be spread evenly over the entire approved discharge day.
- For all deliveries, both on weekdays and on weekends, you will be limited to one leachate truck discharging at a time.
    - This is to prevent surcharging the hauled waste station's lines, causing a spill, and to help equalize the load in the treatment plant.
    - Note that other companies may also be discharging at the same time (only during normal station operating hours).
- On Sundays, and possibly at the end of other days, the entrance gate to the Bissell Point plant may be closed.
    - To gain entry, the truck driver should push the call button and inform the operator who the driver represents, and what is being delivered.
- For deliveries outside normal hauled waste station hours, each truck driver must contact the treatment plant operator at 314-436-8785 before discharging.
    - An operator will come over to receive paperwork, record necessary data, raise the gate, and receive the retain sample.
    - Current normal hauled waste station hours are Monday-Friday 7:00 am-5:30 pm, and Saturday 7:00 am-12:00 noon.
- Additional staff costs related to deliveries outside normal hauled waste station operating hours will be billed to Bridgeton Landfill.
- All other requirements for discharge to MSD's Bissell Point hauled waste station continue to apply.

We will be sending you a formal written correspondence which addresses both the above request and the other request contained in the July 8, 2013 letter. However, we wanted you to be able to begin the weekend deliveries as soon as possible, to help relieve your current operational burden.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

MSD

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, July 12, 2013 6:11 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: Bridgeton Landfill : Submission of Industrial Hygiene Report
Attachments: MSD IH Report_Final_Complete.pdf

Good evening,

On behalf of Bridgeton Landfill, I am submitting the Industrial Hygiene Review prepared by Stantec addressing the air sampling events performed for MSD.

Please note that after production of this report, an error was identified (after the report signatories were no longer available). I wanted to get the report to you today to meet the submission timing we had discussed, but we will produce a corrected copy of this report on Monday. In the meantime, please note that the following correction will be made:

Page 3.5, paragraph 3, Change the value of 130,000 to 687,460

We look forward to your review and any questions or comments.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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INDUSTRIAL HYGIENE EVALUATION OF VAPORS AND GASES ASSOCIATED WITH DISCHARGE OF TREATED LEACHATE FROM THE BRIDGETON LANDFILL, LLC TO THE METROPOLITAN SEWER DISTRICT LIFT STATION

Final Report

Stantec

July 12, 2013

Sign-off Sheet

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This document entitled INDUSTRIAL HYGIENE EVALUATION OF VAPORS AND GASES ASSOCIATED WITH DISCHARGE OF TREATED LEACHATE FROM THE BRIDGETON LANDFILL, LLC TO THE METROPOLITAN SEWER DISTRICT LIFT STATION was prepared by Stantec Consulting Services Inc. for the account of Bridgeton Landfill, LLC. The material in it reflects Stantec's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec Consulting Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

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1.0 Introduction

Several environmental and industrial hygiene studies have been conducted at Bridgeton Landfill LLC (the landfill) and the adjacent St. Louis Metropolitan Sewer District (MSD) lift station located on Old St. Charles Rock Road immediately to the south of the landfill fence-line. These studies included five sampling events to gather data and information to assist in determining whether constituents volatilizing from the leachate that is discharged to the MSD lift station may pose an exposure concern to MSD employees who work in and around the lift station. There are two potential exposure environments for MSD employees while conducting work responsibilities at the lift station: 1) working above ground proximate to the lift station vault and 2) working in the confines of the lift station vault with the vault doors wide open. Studies were conducted on Friday, April 5, Thursday, April 25, Tuesday, April 30, Tuesday, June 18, and Wednesday, June 19, 2013 by Stantec Consulting Services, Inc. under the direction of a Certified Industrial Hygienist (CIH).

1.1 BACKGROUND

A combination of leachate and gas condensate (referred to as leachate) from the landfill is pre-treated on the landfill before being discharged to the MSD lift station. Prior to treatment, the leachate may be stored in frac tanks, which are large, watertight, over-the-road fixed-axle, water storage tanks, designed to contain water and water solutions on a temporary basis and treated in frac tanks or in the 316,000 gallon treatment and handling tank. The pre-treatment process consists of physical agitation and air sparging to drive off volatile materials. These volatile materials then collect in the headspace of the closed tank. The filtration system removes the air and volatiles from the headspace of the tank, and filters them before release to the ambient air.

Some of the treated leachate is currently pumped into a 96,000 gallon storage tank on the landfill property until it can be released into the sewer system for ultimate treatment at the MSD Missouri River Treatment Facility. The leachate is released into the MSD system via piping that leads directly to the lift station vault on Old St Charles Rock Road where it is blended into sewage effluent already present and flowing through the vault. In early June 2013 the lift station vault was improved through installation of a four-gas meter and a scrubber/charcoal filter system that removes volatile chemicals that are released from the liquids moving through the vault and are present in the vault headspace.

On April 5, 2013, before the resumption of discharge of leachate to the MSD, air samples were collected from the headspace inside the leachate treatment tanks and analyzed for volatile organic compounds (VOCs by EPA Method TO-15 + Tentatively Identified Compounds-TICs). These are identified as Bridgeton Landfill Leachate Processing (Sparge) Tanks. Two sets of samples were collected from the headspaces of the tanks above the top of the liquid after agitating/sparging- one set with the charcoal filter blower on, and one set with the charcoal filter blower off. These samples indicated the specific VOCs that may be present in the leachate before transfer to the lift station, and provided a conservative estimate of the range of concentrations that could be present in the air inside the MSD vault as a result of volatilization during discharge. Samples of ambient air were also collected in locations near the treatment tanks where people were working.

On April 25, samples for an extensive list of analytical parameters were collected to characterize constituents present inside the MSD lift station vault before leachate from the Bridgeton Landfill was introduced into the lift station. Samples were collected with the doors of the vault open, and at an elevation of approximately 10-12 feet below ground surface. On April 30, this same sampling protocol was repeated to characterize the air inside the lift station vault during the initial discharge of pre-treated leachate from the landfill. Together these two sampling events were designed to provide an indication of conditions in the vault with and without leachate from the landfill, and what MSD employees may potentially be exposed to upon entering the vault. To some degree, the samples represent a conservative assessment of what could volatilize from the landfill leachate when it arrives at the MSD treatment facility.

After the April sampling events, a scrubber was installed on the lift station vault, intended to draw headspace air containing volatiles from the lift station headspace through a carbon filtration system. After this installation, additional sampling was conducted. On June 18, samples were collected inside the MSD lift station vault with the doors open, while leachate was being discharged and the vault scrubber was operating. The sampling protocol was designed to focus on previously detected constituents and samples were not collected for HCl, HCN, amines, Hg, PAHs and Dioxins/Furans. On June 19, samples were collected outside the vault on the concrete service pad, approximately 5 feet from the lift station vault scrubber discharge/exhaust, with leachate being discharged into the vault. Additionally, during leachate discharge into the vault, a grab sample for VOCs was collected outside the vault from the scrubber exhaust, and inside the vault headspace with the doors closed. These sets of samples provide an indication of conditions inside the lift station vault during leachate discharge and scrubber operation and outside the vault on the concrete service pad during leachate discharge and scrubber operation. The purpose of these samples was to provide updated evaluation of potential worker exposure situations.

2.0 Sampling

During the April 5 sampling of the vapor from the headspace of the leachate treatment frac tanks were collected using SUMMA canisters for subsequent VOC analysis. A total of eight samples were collected of headspace air with the charcoal filtration system operating and not operating. One sample was collected in each of four tanks under both conditions (8 total samples). Additionally, two ambient air samples were collected, one upwind and one downwind from the tanks where sparging was occurring. VOCs were selected for this initial screening because those were the constituents deemed most likely to volatilize from the leachate based upon leachate analytical results.

In order to capture a comprehensive data set for full evaluation of worker exposure conditions, additional more expansive sampling events were conducted prior to and following resumption of discharge into the MSD lift station. On April 25, one series of samples was collected for hydrogen chloride, hydrogen cyanide, mercury, sulfur dioxide, ammonia, aldehydes, carboxylic acids, reduced sulfur compounds, amines, VOCs, polynuclear aromatic hydrocarbon compounds (PAHs), fixed gases, and dioxins and furans. This same set of samples was repeated on April 30 while discharge was occurring.

On June 18 and June 19, samples were collected for sulfur dioxide, ammonia, aldehydes, carboxylic acids, and VOCs. Also on June 19, grab samples just for VOCs were collected in the lift station vault scrubber exhaust stream (outside the vault) and inside the vault, as an attempt to illustrate scrubber effectiveness.

All samples were ambient samples (as opposed to personal samples), following EPA and NIOSH protocols.

- Hydrogen chloride - NIOSH Method 7903
- Hydrogen cyanide - NIOSH 6010
- Mercury - NIOSH 6009
- Sulfur dioxide - OSHA ID 200
- Ammonia - OSHA ID 188
- Aldehydes - EPA TO-11A
- Carboxylic acids - AQL 102 (Columbia Analytical Proprietary Method)
- Reduced sulfur compounds - ASTM D5504
- Amines - AQL 101 (Columbia Analytical Proprietary Method)

- VOCs - EPA TO-15 (plus Tentatively Identified Compounds, TICs)
- Polynuclear aromatic hydrocarbon compounds (PAHs) - EPA TO-13
- Fixed gases (oxygen, nitrogen, hydrogen, methane, CO, CO_2) - EPA 3Cm
- Dioxins and furans - EPA TO-9A

Sample results, and in some cases projected 8-hour time-weighted averages (TWA), were compared to the OSHA Permissible Exposure Limits (PELs), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV®), and National Institute of Occupational Safety and Health (NIOSH) Recommended Exposure Limits (REL). In some instances, American Industrial Hygiene Association (AIHA) Workplace Environmental Exposure Levels (WEEL) and Department of Energy (DOE) WEELs were applied. The applicable occupational exposure limits (OEL) are presented in Table 1 with the sample results.

The ACGIH suggests utilizing a mixture TWA[1] to determine the potential additive health risk from more than one chemical substance having similar toxicological properties. While the VOCs in these studies are far ranging in their toxicological properties, there is some commonality including central nervous system depression and related neurological effects. For that reason, in order to ensure that this evaluation represents a comprehensive risk and exposure assessment, the mixture TLV calculation is applied to the VOCs as another means to determine the potential hazard from multiple VOCs. Where there are no OELs for some compounds in a mixture, the mixture TWA is determined for the VOCs for which OELs exist, and a factor of 10% is added to accommodate the VOCs for which there are no OELs.

1 ACGIH, TLVs® and BEIs® Based on the Documentation of the Threshold Limit Values fort Chemical Substances and Physical Agents & Biological Exposure Indices, Appendix E. ACGIH, Cincinnati, OH 2013

3.0 Results

All sample results are reported in µg/m^3 for ease of comparison to air samples collected during other investigations related to the landfill. . This section summarizes sample results and significant highlights. Table 1 presents analytical results for VOC data collected during head space sampling in the frac tanks (April 5, 2013) and MSD lift station vault (April 25 & 30, 2013 and June 18 & 19, 2013

April 5, 2013. As noted above, the April 5 sampling consisted only of VOC samples. No samples were collected for hydrogen chloride, hydrogen cyanide, mercury, sulfur dioxide, ammonia, aldehydes, carboxylic acids, reduced sulfur compounds, amines, PAHs, or dioxins and furans. Table 1 presents the VOC results from the treatment tank headspace samples collected in April alongside the VOC results for samples taken from inside the lift station vault on April 25 & 30, and June 18 & 19. Occupational exposure limits are provided for all constituents for which appropriate standards or guidelines are available.

The total concentration of VOCs in the four samples collected on April 5, 2013 from the frac tanks with the headspace carbon filtration system off ranged from 444,750 µg/m^3 to 687,460 µg/m^3, with an average of 556,175 µg/m^3. The maximum individual compound concentrations ranged from 92,000 µg/m^3 to 130,000 µg/m^3. The average maximum individual compound concentration was 113,000 µg/m^3. The compounds present in the highest concentrations were ethanol (average concentration 100,750 µg/m^3), acetone (112,500 µg/m^3), 2-butanone (methyl ethyl ketone, MEK) (55,000 µg/m^3), tetrahydrofuran (27,000 µg/m^3), methyl acetate (31,200 µg/m^3), 1-butanol (51,000 µg/m^3), and 2-ethyl-1-hexanol (37,000 µg/m^3).

The total concentration of VOCs in the four sampled frac tanks with the headspace carbon filtration system in operation ranged from 106,266 µg/m^3 to 177,790 µg/m^3, with an average of 129,303 µg/m^3. The maximum individual compound concentrations ranged from 25,000 µg/m^3 to 40,000 µg/m^3. The average maximum individual compound concentration was 30,500 µg/m^3. The compounds present in the highest concentrations (≥ 4,775 µg/m^3) were ethanol (average concentration 30,500 µg/m^3), acetone (23,250 µg/m^3), MEK (9,775 µg/m^3), tetrahydrofuran (4,775 µg/m^3), methyl acetate (5,125 µg/m^3), 1-butanol (13,500 µg/m^3), and 2-ethyl-1-hexanol (12,750 µg/m^3).

Upwind and downwind ambient samples contained minimal concentrations of thirty (30) compounds, concentrations ranging from a trace to 37 µg/m^3. The ambient sample total VOC concentrations were 23 µg/m^3 (upwind) and 138 µg/m^3 (downwind).

April 25, 2013. The April 25 samples were collected inside the MSD lift station vault with no leachate discharge. The samples contained <5.3 µg/m^3 hydrogen chloride (hydrochloric acid, HCl), <23 µg/m^3 hydrogen cyanide (HCN), <0.21 µg/m^3 mercury (Hg), and <13 µg/m^3 sulfur dioxide (SO_2).[2] Ammonia was present at 140 µg/m^3. All other compounds detected were organic compounds including aldehydes, carboxylic acids, VOCs, and PAHs. No sulfur dioxide, dimethyl sulfide, dimethyl disulfide, carbon

2 The < (less than) sign indicates that the analyte, if present, is at a level too low to be accurately quantitated by the method used. The actual amount is less than the reported value.

monoxide, or carbon dioxide was detected

Six aldehydes were detected between 0.37 μg/m^3 and 11 μg/m^3 (propionaldehyde). Six carboxylic acids were detected between 3.1 μg/m^3 and 18 μg/m^3 (butyric acid). Five PAH compounds were detected between 0.0070 μg/m^3 and 1.7 μg/m^3. The total PAH concentration was approximately 2.4 μg/m^3.

The total concentration of VOCs in the sample collected on April 25 was 825 μg/m^3. The maximum individual compound concentration was 130 μg/m^3 (d-Limonene). The TWA mixture is estimated at approximately 0.007. The dioxin 2,3,7,8-tetrachloro-dibenzodioxin (TCDD) TCDD Equivalents (TEQ) was 1.02E-07 μg/m^3.

April 30, 2013. The April 30 samples were collected inside the MSD lift station vault with leachate being discharged into the lift station vault. The samples contained <5.2 μg/m^3 hydrogen chloride (hydrochloric acid, HCl), <25 μg/m^3 hydrogen cyanide (HCN), and <0.19 μg/m^3 mercury (Hg).[1] Sulfur dioxide was detected at 53.4 μg/m^3, ammonia was detected at 130 μg/m^3, dimethyl sulfide was detected at 1,100 μg/m^3, and dimethyl disulfide was detected at 130 μg/m^3. All other materials detected were organic compounds including aldehydes, carboxylic acids, VOCs, and PAHs. No carbon monoxide or carbon dioxide was detected.

Nine aldehydes were detected between 2.1 μg/m^3 and 150 μg/m^3 (acetaldehyde). Formaldehyde was detected at 3.9 μg/m^3. Thirteen carboxylic acids were detected between 3.0 μg/m^3 and 330 μg/m^3 (butyric acid). Six PAH compounds were detected between 0.0048 μg/m^3 and 10 μg/m^3 (naphthalene). The total PAH concentration was approximately 13 μg/m^3.

The total concentration of VOCs in the sample collected on April 30 was 32,444 μg/m^3. The maximum individual compound concentration was 5,700 μg/m^3 (acetone). The mixture TWA is estimated at approximately 0.30. The dioxin 2,3,7,8-tetrachloro-dibenzodioxin (TCDD) TCDD Equivalents (TEQ) was 1.95E-08 μg/m^3.

June 18, 2013. The June 18 samples were collected inside the MSD lift station vault with leachate being discharged into the lift station vault, the headspace filtration scrubber in operation, and the vault doors open. The samples contained sulfur dioxide at 59 μg/m^3, ammonia at 89 μg/m^3, dimethyl sulfide at 970 μg/m^3, and dimethyl disulfide at 110 μg/m^3. All other materials detected were organic compounds including aldehydes, carboxylic acids, VOCs, and PAHs. Because HCl, HCN, Hg, CO, and CO_2 were not previously detected, and were not anticipated in these samples, sampling for those compounds was suspended.

Nine aldehydes were detected between 0.68 μg/m^3 and 98 μg/m^3 (acetaldehyde). Formaldehyde was detected at 9.3 μg/m^3. Fifteen carboxylic acids were detected between 2.7 μg/m^3 and 760 μg/m^3 (butyric acid. The total concentration of VOCs in the sample collected on June 18 was 16,130 μg/m^3. The maximum individual compound concentration was 2,000 μg/m^3 (acetone).. The mixture TWA is estimated at 0.15.

June 19, 2013. The June 19 samples were collected outside the MSD lift station vault on the concrete pad approximately five feet from the scrubber exhaust. Inside the vault, leachate was being discharged and the headspace filtration scrubber was in operation. The vault doors were closed. The samples contained <7.2 μg/m^3 sulfur dioxide, 91 μg/m^3 ammonia, dimethyl sulfide and dimethyl disulfide were

undetected. All other materials detected were organic compounds including aldehydes, VOCs, and PAHs. Samples for HCl, HCN, Hg, CO, and CO_2 were not collected. Carboxylic acids were undetected.

Four aldehydes were detected between 0.96 µg/m^3 and 5.7 µg/m^3 (formaldehyde). As noted, carboxylic acids were undetected.

The total concentration of VOCs in the sample collected on June 19, outside the vault in the scrubber exhaust, was 164 µg/m^3. The maximum individual compound concentration was 44 µg/m^3 (acetonitrile). The mixture TWA is estimated at 0.001.

The grab sample for VOCs, collected outside the MSD lift station vault in the scrubber exhaust stream, contained a total of 1,537 µg/m^3 total VOCs. The maximum individual compound concentration was 610 µg/m^3 (ethanol). Acetone contributed 510 µg/m^3. The mixture TWA is estimated at 0.013.

The grab sample for VOCs, collected inside the MSD lift station vault with leachate being discharged, the scrubber in operation, and vault doors closed, contained a total of 56,045 µg/m^3 total VOCs. The maximum individual compound concentration was 6,900 µg/m^3 (2-ethyl-1-hexanol). Other VOCs contributing significantly to the total VOC concentration included ethanol (3,800 µg/m^3), MEK (3,300 µg/m^3), tetrahydrofuran (2,500 µg/m^3), benzene (2,500 µg/m^3), d-Limonene (2,300 µg/m^3), 2,ethylhexyl-butyrate (2,900 µg/m^3), an unidentified C10-H14 aromatic compound (4,700 µg/m^3), furan (2,300 µg/m^3), dimethyl sulfide (2,700 µg/m^3) and 2-ethylhexylacetate (2,000 µg/m^3). The mixture TWA is estimated at approximately 0.50.

4.0 Discussion and Conclusions

There are two potential exposure environments for MSD employees while conducting work responsibilities at the lift station: 1) working above ground proximate to the lift station vault and 2) working in the confines of the lift station vault with the vault doors wide open. The below ground portion of the lift station vault is essentially a confined space and is not a location where workers are expected to spend a lot of time. Additionally it is not expected that workers would work within the vault with the doors closed. In addition to the above ground and below ground vault at the lift station, MSD personnel could encounter constituents volatilizing from the landfill leachate when it reaches the wastewater treatment facility. However, the leachate is expected to become co-mingled with other waste flowing through the sewer en-route to the treatment plant and become diluted in the process. The physical movement of the waste stream flowing through the sewers is further expected to drive off volatile constituents prior to reaching the treatment facility. Thus potential exposures to MSD employees at the wastewater treatment plant were not directly evaluated and are anticipated to be minimal compared to potential exposures experienced working around the lift station. As such, the conservative approach of this evaluation should provide guidance on the lesser exposures expected at the treatment facilities.

Head space sampling was conducted in the frac tanks and in the lift-station with the doors closed to gain an understanding of the composition and concentration of constituents that may be volatilizing from the leachate. It must be emphasized that no employees are present in the headspace of the leachate treatment tanks or the interior of the lift station vault when the doors are closed. These are not locations where exposure takes place, and the concentrations of volatile constituents found in samples from the leachate tanks and inside the closed lift station vault do not represent what employees are exposed to during their work duties.

As expected, the greatest concentrations of VOCs measured were in the frac tank headspace before the blower to the carbon filtration system was activated. Frac tank sampling indicated that there were a number of VOCs in the leachate that could be anticipated to be present when the leachate is discharged into the lift station. With one exception, the reported concentrations of VOCs were below OELs. One sample collected in Tank 4 (Sample 00404), without the filtration system blower activated, exceeded the ACGIH TLV® for 1-butanol. However, it should be noted that the detection limits for a number of VOCs were elevated in the samples of vapors from the treatment tank headspace. Thus although several compounds, most notably benzene were reported as not detected in the headspace samples, it is almost certain that benzene was present at some concentrations below the elevated detection limits based on the documented presence of this VOC in the landfill source gas.

The blower on the carbon filtration system used on the frac tanks to remove VOCs from the headspace after sparging, reduced the average concentration of VOCs in the headspace of the frac tank to approximately 25% of the original concentration measured with the blower turned off. In addition, sparging/agitation on the landfill prior to release to the lift station, reduces VOC concentrations in the leachate entering the lift station as evidenced by the decreased VOC concentrations in the grab sample collected on June 19, 2013 from the lift station with the doors closed.

Sampling conducted in and around the lift station for VOCs indicated that there were similarities between frac tank sample compounds and leachate discharge sample compounds, however the concentrations

were significantly different. These comparisons indicate that the engineering controls implemented, particularly to exhaust and filter headspace air from the frac tanks and the lift station vault, were successful in significantly reducing the concentrations of VOCs from leachate in the headspace of frac tanks and the lift station vault.

Samples collected inside the lift station vault with the doors open pre-discharge and during discharge, indicated that the concentrations of the studied compounds generally increased when the leachate was discharged into the vault, compared to pre-discharge samples. Sulfur dioxide was detected when leachate was introduced and was absent in the pre-discharge sample. Aldehyde concentrations increased, carboxylic acid concentrations increased, dimethyl sulfide and dimethyl disulfide appeared, and VOC concentrations dramatically increased. However, with the exception of benzene, no concentrations of the sampled compounds exceeded any OSHA, NIOSH, or ACGIH OELs.

Benzene was present in the air inside the lift station vault (doors open) at a concentration of 7.5 $\mu g/m^3$ in the pre-discharge sample, and 570 $\mu g/m^3$ during leachate discharge. The NIOSH recommended REL for benzene is 320 $\mu g/m^3$ as a 10-hour TWA (the OSHA PEL is 3,200 $\mu g/m^3$ as an 8-hr TWA and the ACGIH TLV is 1,600 $\mu g/m^3$). NIOSH has a 15-minutes short term exposure limit (STEL) for benzene of 3,200 $\mu g/m^3$ (OSHA STEL is 16,000 $\mu g/m^3$ and ACGIH STEL is 8,000 $\mu g/m^3$). Based on the NIOSH REL, an individual could be exposed to benzene under the conditions sampled in the lift station vault with the doors open, without personal protective equipment (PPE) for 5.6 hours out of a 10-hour work day, or approximately 4.5 hours out of an 8-hour work day.

Samples collected inside the lift station vault, with the scrubber in operation, indicated that the concentration of formaldehyde increased to slightly less than 50% of the NIOSH REL, and concentrations of dimethyl sulfide and dimethyl disulfide remained similar to concentrations when the scrubber had not yet been installed. The concentrations of VOCs were reduced by approximately half with the scrubber in operation, with one exception. The concentration of benzene remained relatively constant, so benzene exposures would be expected to be similar.

Outside the lift station, with the scrubber in operation and leachate being discharged into the lift station vault, concentrations of all the measured compounds in ambient air were well below all OELs.

The grab samples collected at the scrubber exhaust and inside the vault with the doors closed suggest that the scrubber captures most of the VOCs drawn through its charcoal filter system and may be reducing migration from the air inside the lift station vault to the ambient air above ground.

Appendix A

Laboratory Analytical Reports

A.1 FRAC TANK HEAD SPACE SAMPLING (APRIL 5, 2013)

A.2 MSD LIFT STATION SAMPLING EVENT #1 (APRIL 25 & APRIL 30, 2013)

A.3 MSD LIFT STATION SAMPLING EVENT #2 (JUNE 18 & JUNE 19, 2013)

Table 1. VOC Sample Summary Results for Industrial Hygiene Studies Conducted at Bridgeton Landfill LLC and the Adjacent Metropolitan St. Louis Sewer District (MSD) Lift Station, in Bridgeton, Missouri
Head Space Sampling [1]

VOC Analytes	CAS #	Occupational Exposure Limits			Frac Tank Sampling – Leachate Sparge System Operating								MSD Lift Station Sampling - Inside Vault
					4/5/2013				4/5/2013				6/19/13
					Frac Tank Carbon Filtration System On				Frac Tank Carbon Filtration System Off				Scrubber
					Leachate				Leachate				Leachate
					Grab				Grab				Grab
		OSHA [2]	NIOSH [3]	ACGIH [4]/AIHA [5]	Tank 1	Tank 2	Tank 3	Tank 4	Tank 1	Tank 2	Tank 3	Tank 4	Doors Closed
					02705	01545	03275	02229	02836	02733	01270	00404	619 Series
Propene	115-07-1	NA [6]	NA	860,000	490	300	720	330	3,100	760	2,400	2,400	150
Dichlorodifluoromethane (CFC 12)	75-71-8	4,950,000	4,950,000	4,950,000	<43 [6]	<48	<83	<53	<190	<390	<230	<470	
Chloromethane	74-87-3	206,500	Lowest	103,250	<43	<48	<83	<53	<190	<390	<230	<470	44
Chloroethane	75-00-3	2,600,000	NA	260,000	<43	<48	<83	<53	<190	<390	<230	<470	22
Ethanol	64-17-5	1,880,000	1,880,000	1,880,000	31,000	25,000	40,000	26,000	91,000	92,000	110,000	110,000	3800
Acetonitrile	75,05-8	70,000	35,000	35,000	<43	<48	<83	<53	<190	<390	<230	<470	
Acetone	67-64-1	2,380,000	590,000	1,188,000	23,000	19,000	32,000	19,000	110,000	90,000	120,000	130,000	
Trichlorofluoromethane	75-69-4	5,620,000	5,620,000-C [6]	5,620,000-C	<43	<48	<83	<53	<190	<390	<230	<470	
2-Propanol	67-63-0	980,000	980,000	490,000	4,700	4,200	6,500	4,200	14,000	18,000	19,000	22,000	1500
Methylene chloride	75-09-2	86,840	Lowest	174,000	<43	<48	<83	<53	<190	<390	<230	<470	
2-Butanone (MEK)	78-93-3	590,000	590,000	590,000	8,800	8,200	14,000	8,100	49,000	42,000	61,000	68,000	3300
Ethyl acetate	141-78-6	1,440,000	1,440,000	1,440,000	330	320	640	330	2,400	1,900	3,000	3,800	100
n-Hexane	110-54-3	1,800,000	180,000	180,000	<43	<48	<83	<53	<190	<390	<230	<470	
Chloroform	67-66-3	240,000	9800-STEL [6]	48,000	<43	<48	<83	<53	<190	<390	<230	<470	240
Tetrahydrofuran	109-99-9	590,000	590,000	147,500	4,300	3,900	7,000	3,900	25,000	20,000	28,000	35,000	2500
Benzene	71-43-2	3200, 16,000-STEL	320, 3200-STEL	1600, 7990-STEL	<43	<48	<83	<53	<190	<390	<230	<470	2500
1,4-Dioxane	123-91-1	360,000	3600-C	72,000	350	280	470	300	1,000	1,100	1,300	1,400	120
4-methyl-2-pentanone	108-10-1	410,000	205,000	205,000	150	130	270	140	850	730	1,200	1,500	180
Toluene	108-88-3	754,000	375,000	75,400	<43	<48	<83	<53	<190	<390	<230	<470	380
2-Hexanone	591-78-6	410,000	4,100	20,500	130	130	230	130	730	640	970	1,200	79
n-Butyl acetate	123-86-4	710,000	710,000	710,000	180	180	390	200	1,000	920	1,900	2,400	98
n-Octane	111-65-9	2,350,000	350,000	1,410,000	<43	<48	<83	<53	<190	<390	<230	<470	27
Ethylbenzene	100-41-4	435,000	435,000	87,000	<43	<48	<83	<53	<190	<390	<230	<470	230
Xylenes	179601-23-1	435,000	NA	435,000	<85	<97	<170	<110	<380	<780	<460	<930	460
Bromoform (solid)	75-25-2	5,000	500	500	<43	<48	<83	<53	<190	<390	<230	<470	
o-Xylene	95-47-6	435,000	435,000	435,000	<43	<48	<83	<53	<190	<390	<230	<470	190
n-Nonane	11-84-2	1,050,000	1,050,000	1,050,000	<43	<48	<83	<53	<190	<390	<230	<470	53
Cumene	98-82-8	245,000	245,000	245,000	<43	<48	<83	<53	<190	<390	<230	<470	100
alpha-Pinene	80-56-8	NA	NA	111,400	<43	<48	<83	<53	<190	<390	<230	<470	310
n-Propylbenzene	103-65-1	NA	NA	NA	<43	<48	<83	<53	<190	<390	<230	<470	92
4-Ethyltoluene	622-96-8	NA	NA	NA	<43	<48	<83	<53	<190	<390	<230	<470	150
1,3,5-trimethylbenzene	108-67-8	NA	NA	NA	<43	<48	<83	<53	<190	<390	<230	<470	230
1,2,4-trimethylbenzene	95-63-6	NA	125,000	NA	<43	<48	<83	<53	<190	<390	280	<470	860
1,4-dichlorobenzene	106-46-7	450,000	NA	60,000	<43	<48	<83	<53	<190	<390	370	570	680
d-Limonene	5989-27-5	NA	NA	167,000	83	86	110	72	640	<390	660	990	2300
1,2,4-trichlorobenzene	120-82-1	40,000	40,000	40,000	<43	<48	<83	<53	<190	<390	<230	<470	
Naphthalene	91-20-3	52,400	52,400	52,400	350	350	260	180	410	<390	780	1,100	750
n-Butanal (Butyraldehyde)	123-72-8	NA	NA	73,600	ND	ND	ND	ND	4,400	4,000	ND	8,100	ND
n-Heptanal	111-71-7	NA	NA	NA	ND	ND	1,300	ND	ND	ND	ND	ND	
Acetaldehyde	75-07-0	360,000	NA	45,000	1,800	1,700	3,000	1,700	10,000	9,000	12,000	15,000	1300
Methyl acetate	79-20-9	610,000	610,000	610,000	4,400	4,100	7,800	4,200	28,000	23,000	33,000	41,000	1100
1-Propanol	71-23-8	500,000	500,000	250,000	3,700	3,100	5,300	3,300	13,000	14,000	15,000	17,000	
2-Pentanone	107-87-9	700,000	530,000	530,000-STEL	850	ND	1,400	770	4,900	4,100	5,800	7,300	
2-Methylfuran & isomers		NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	1200
1-Butanol	71-36-3	300,000	150,000-C	60,600	13,000	11,000	18,000	12,000	44,000	42,000	56,000	62,000	1300
2-Butanol	78-92-2	455,000	455,000-STEL	303,000	3,200	3,000	5,100	3,100	13,000	14,000	16,000	19,000	
Methyl propionate	554-12-1	NA	NA	NA	1,000	1,000	2,200	1,100	8,000	6,800	ND	13,000	
Methyl butyrate	623-42-7	NA	NA	NA	1,600	1,600	3,500	1,800	11,000	9,500	17,000	22,000	
Cyclopentanone	120-92-3	NA	NA	NA	ND	ND	ND	ND	ND	2,600	ND	ND	
Isobutanol (2-propanol)	78-83-1	300,000	150,000	150,000	ND	ND	1,300	ND	3,800	ND	4,600	ND	
2-methylcyclopentanone		NA	NA	NA	2,200	2,000	3,100	1,900	9,200	8,000	11,000	13,000	1300
1-Hexanol	111-27-3	NA	NA	NA	930	840	1,500	890	3,200	3,100	4,700	ND	
2-Ethylcyclopentanone		NA	NA	NA	2,700	2,400	3,700	2,300	9,400	7,600	13,000	15,000	1500

Table 1. VOC Sample Summary Results for Industrial Hygiene Studies Conducted at Bridgeton Landfill LLC and the Adjacent Metropolitan St. Louis Sewer District (MSD) Lift Station, in Bridgeton, Missouri

Head Space Sampling [1]

VOC Analytes	CAS #	Occupational Exposure Limits			Frac Tank Sampling – Leachate Sparge System Operating								MSD Lift Station Sampling - Inside Vault
					4/5/2013				4/5/2013				6/19/13
					Frac Tank Carbon Filtration System On				Frac Tank Carbon Filtration System Off				Scrubber
					Leachate				Leachate				Leachate
					Grab				Grab				Grab
		OSHA [2]	NIOSH [3]	ACGIH [4]/AIHA [5]	Tank 1	Tank 2	Tank 3	Tank 4	Tank 1	Tank 2	Tank 3	Tank 4	Doors Closed
					02705	01545	03275	02229	02836	02733	01270	00404	619 Series
2,3-dimethyl-2-cyclopetnen-1-one	1121-05-7	NA	NA	NA	1,000	850	ND	910	ND	ND	ND	ND	
2-methyl-2-cyclopenten-1-one		NA	NA	NA	ND	ND	ND	760	ND	ND	ND	ND	
2-ethyl-1-hexanol	104-76-7	NA	NA	NA	11,000	10,000	18,000	12,000	32,000	29,000	51,000	58,000	6900
Butyl hexanoate		NA	NA	NA	1,100	1,100	ND	ND	ND	ND	ND	ND	2400
Methyl hexanoate	106-70-7	NA	NA	NA	ND	ND	ND	ND	ND	ND	4,400	5,700	
Butyl butyrate		NA	NA	NA	ND	ND	ND	ND	ND	ND	5,100	6,300	1500
2-ethylhexylbutyrate		NA	NA	NA	1,200	1,500	ND	ND	ND	ND	ND	ND	2900
p-Isopropyltoluene (p-cymene)	99-87-6	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	6,700	
3-Ethyltoluene		NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	
2-Ethyltoluene		NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	
n-Decane	124-18-5	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	
m-propyltoluene		NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	
C10-H14 Aromatic compound		NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	4700
C10-H14 Aromatic compound		NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	
n-Undecane	1120-21-4	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	
C10-H12 Compound + 1,2,3,5-TMB		NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	
n-Dodecane	112-40-3	NA	NA	350	ND	ND	ND	ND	ND	ND	ND	ND	
C9-H10-N2 compound		NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	
n-Tridecane	629-50-5	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	
1,3,5-Trisopropylbenzene		NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	
n-Tetradecane	629-59-4	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	
Furan	110-00-9	NA	NA	Lowest [8]	ND	ND	ND	ND	ND	ND	ND	ND	2300
Dimethyl sulfide	75-18-3	NA	NA	25,400, 1,270 [9]	ND	ND	ND	ND	ND	ND	ND	ND	2700
2-Ethylhexylacetate		NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	2000
Dimethyl ether	115-10-6	NA	NA	1,900,000 [9]	ND	ND	ND	ND	ND	ND	ND	ND	
n-Octanol	111-87-5	NA	NA	266,000	ND	ND	ND	ND	ND	ND	ND	ND	
Unidentified compound		NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	1500

1. Head space sampling refers to sampling in the air volume above leachate in a combined space. Results are not indicative of a potential exposure concern as no MSD employee would work in a sealed confined space containing leachate or volatiles. Samples were collected to characterize nature and concentrations of constituents which may be volatilizing from leachate only.
2. OSHA – Occupational Safety and Health Administration
3. NIOSH – National Institute for Occupational Safety and Health
4. ACGIH - American Conference of Governmental Industrial Hygienists
5. AIHA - American Industrial Hygiene Association
6. Not Available
7. "<" Compound Not Detected
8. Lowest feasible concentration due to NIOSH classification as a carcinogen
9. C - Ceiling limit, not to be exceeded
10. STEL - Short Term Exposure Limit (ususally a 15-minute excursion limit)

Table 2. Sample Summary Results for Industrial Hygiene Studies Conducted at Bridgeton Landfill LLC and the Adjacent Metropolitan St. Louis Sewer District (MSD) Lift Station, in Bridgeton, Missouri Ambient Results, MSD Lift Station Vault (Doors Open) Results and Scrubber Efficiency Results

Analytes	CAS #	Occupational Exposure Limits			Ambient			Vault – Doors Open			Scrubber Efficiency	
					Frac Tank Sampling – Leachate Sparge System Operating		MSD Lift Station Sampling	MSD Lift Station Sampling				
					4/5/2013		6/19/2013	4/25/2013	4/30/2013	6/18/2013	6/19/2013	6/19/2013
					Frac Tank Carbon Filtration System On		Scrubber	No Scrubber	No Scrubber	Scrubber	Scrubber	Scrubber
					Leachate		Leachate	No Leachate	Leachate	Leachate	Leachate	Leachate
					Ambient Air Samples			Inside Vault			Scrubber Exhaust Grab	Inside Vault Doors Closed Grab
		OSHA [1]	NIOSH [2]	ACGIH[3] or AIHA[4]	Upwind	Downwind	5' from Scrubber Exhaust	Vault	Vault	Vault	Exhaust	Vault
					01373	01233	619 Series	425 Series	430 Series	618 Series	619 Series	
Hydrogen Chloride – NIOSH 7903												
Hydrogen chloride (hydrochloric acid)	7647-01-0	7,000	7,000	2,800	NS[5]	NS	NS	–[6]	–	NS	NS	NS
Hydrogen Cyanide – NIOSH 6010												
-	74-90-8	11,000	5,000-STEL	5,000-C[7]	NS	NS	NS	–	–	NS	NS	NS
Mercury – NIOSH 6009												
Mercury	7439-97-6	100-C	50	25	NS	NS	NS	–	–	NS	NS	NS
Sulfur Dioxide – OSHA ID 200												
Sulfur dioxide	7446-09-5	13,000	5,000	650-STEL[8]	NS	NS	–	-	53.4	59	NS	NS
Ammonia – OSHA ID 188												
Ammonia	7664-41-7	35,000	18,000	17,500	NS	NS	91	140	130	89	NS	NS
Aldehydes – EPA Method TO11a												
Formaldehyde	50-00-0	921	20	368-C	NS	NS	5.7	1.3	3.9	9.3	NS	NS
Acetaldehyde	75-07-0	360,000	NA[9]	45,000	NS	NS	3.60	3.9	150	98	NS	NS
Propionaldehyde	123-38-6	NA	NA	47,500	NS	NS	–	11	44	15	NS	NS
Butyraldehyde	123-72-8	NA	NA	72,700	NS	NS	–	0.37	49	31	NS	NS
Benzaldehyde	100-52-7	NA	NA	8,700	NS	NS	–	0.39	5.9	0.81	NS	NS
Isovaleraldehyde	590-86-3	NA	NA	NA	NS	NS	–	–	13	3.4	NS	NS
Valeraldehyde	110-62-3	NA	176,000	176,000	NS	NS	–	–	2.1	0.68	NS	NS
m, p-Tolualdehyde	104-87-0	NA	NA	NA	NS	NS	–	–	4.8	ND	NS	NS
n-Hexaldehyde	66-25-1	NA	NA	NA	NS	NS	0.99	1.4	7.8	6.1	NS	NS
2,5-Dimethylbenzaldehyde	5779-94-2	NA	NA	NA	NS	NS	0.96	–	–	7.5	NS	NS
Carboxylic Acids – AQL 102												
Acetic Acid	64-19-7	25,000	25,000	NA	NS	NS	–	–	140	560	NS	NS
Propionic Acid (Propanoic)	79-09-4	30,000	30,000	30,000	NS	NS	–	7.10	120	260	NS	NS
2-Methylpropanoic Acid (Isobutyric)	79-31-2	NA	NA	NA	NS	NS	–	4.90	44	97	NS	NS
Butanoic Acid (Butyric)	107-92-6	NA	NA	NA	NS	NS	–	18.00	330	760	NS	NS
2-Methylbutanoic Acid	116-53-0	NA	NA	NA	NS	NS	–	–	8.2	18	NS	NS
3-Methylbutanoic Acid (Isovaleric)	503-74-2	NA	NA	NA	NS	NS	–	3.30	19	45	NS	NS
Pentanoic Acid (Valeric)	109-52-4	NA	NA	NA	NS	NS	–	3.10	60	140	NS	NS
2-Methylpentanoic Acid	97-61-0	NA	NA	NA	NS	NS	–	–	–	2.7	NS	NS
4-Methylpentanoic Acid (Isocaproic)	646-07-1	NA	NA	NA	NS	NS	–	–	3	6.8	NS	NS
Hexanoic Acid (Caproic)	142-62-1	NA	NA	NA	NS	NS	–	6.50	150	340	NS	NS
Heptanoic Acid (Enanthoic)	111-14-8	NA	NA	NA	NS	NS	–	–	11	38	NS	NS
2-Ethylhexanoic Acid - solid	149-57-5	NA	NA	5000	NS	NS	–	–	4.7	68	NS	NS
Octanoic Acid (Caprylic)	124-07-2	NA	NA	NA	NS	NS	–	–	14	48	NS	NS
Nonanoic Acid (Pelargonic)	112-05-0	NA	NA	NA	NS	NS	–	–	3.2	12	NS	NS
Amines – AQL 101												
Dimethyl Sulfide	75-18-3	NA	NA	25,400, 1,270	NS	NS	–	–	1100	970	NS	NS
Dimethyl Disulfide	624-92-0	NA	NA	1,900, 39	NS	NS	–	–	130	110	NS	NS
Volatile Organic Compounds – EPA TO15 plus TICs												
Propene	115-07-1	NA	NA	860,000	–	3	3.8	3.8	67	56	8.6	150
Dichlorodifluoromethane (CFC 12)	75-71-8	4,950,000	4,950,000	4,950,000	2.2	2.1	2	2	–		1.9	–
Chloromethane	74-87-3	206,500	Lowest[10]	103,250	0.71	–	–	–	–	8.7	4.9	44
Chloroethane	75-00-3	2,600,000	NA	260,000	–	–	–	–	–		12	22
Ethanol	64-17-5	1,880,000	1,880,000	1,880,000	–	36	7.5	7.5	4200	1400	610	3800
Acetonitrile	75.05-8	70,000	35,000	35,000	–	–	5.8	5.8	–	8	4.1	–
Acetone	67-64-1	2,380,000	590,000	1,188,000	11	37	38	38	5700	2000	510	–
Trichlorofluoromethane	75-69-4	5,620,000	5,620,000-C	5,620,000-C	1.3	1.5	1.1	1.1	NS	–	1.6	–
2-Propanol	67-63-0	980,000	980,000	490,000	–	–	–	–	830	410	–	1500
Methylene chloride	75-09-2	86,840	Lowest[9]	174,000	0.82	–	0.7	–	–	–	6.7	–
2-Butanone (MEK)	78-93-3	590,000	590,000	590,000	–	9.5	–	–	3900	900	–	3300
Ethyl acetate	141-78-6	1,440,000	1,440,000	1,440,000	–	–	4.1	–	180	46	–	100
n-Hexane	110-54-3	1,800,000	180,000	180,000	–	–	–	1	–	–	–	–

Table 2. Sample Summary Results for Industrial Hygiene Studies Conducted at Bridgeton Landfill LLC and the Adjacent Metropolitan St. Louis Sewer District (MSD) Lift Station, in Bridgeton, Missouri
Ambient Results, MSD Lift Station Vault (Doors Open) Results and Scrubber Efficiency Results

Analytes	CAS #	Occupational Exposure Limits			Ambient			Vault – Doors Open			Scrubber Efficiency	
					Frac Tank Sampling – Leachate Sparge System Operating		MSD Lift Station Sampling	MSD Lift Station Sampling				
					4/5/2013		6/19/2013	4/25/2013	4/30/2013	6/18/2013	6/19/2013	6/19/2013
					Frac Tank Carbon Filtration System On		Scrubber	No Scrubber	No Scrubber	Scrubber	Scrubber	Scrubber
					Leachate		Leachate	No Leachate	Leachate	Leachate	Leachate	Leachate
					Ambient Air Samples			Inside Vault			Scrubber Exhaust Grab	Inside Vault Doors Closed Grab
		OSHA [1]	NIOSH [2]	ACGIH[3] or AIHA[4]	Upwind	Downwind	5' from Scrubber Exhaust	Vault	Vault	Vault	Exhaust	Vault
					01373	01233	619 Series	425 Series	430 Series	618 Series	619 Series	
Chloroform	67-66-3	240,000	9800-STEL	48,000	–	–	–	1.1	–	7.3	5	240
Tetrahydrofuran	109-99-9	590,000	590,000	147,500	–	4.1	3.8	2.3	1500	670	37	2500
Benzene	71-43-2	3200, 16,000-STEL	320, 3200-STEL	1600, 7990-STEL	–	6.8	8.9	7.5	570	630	0.82	2500
1,4-Dioxane	123-91-1	360,000	3600-C	72,000	–	–	–	–	66	44	–	120
4-methyl-2-pentanone	108-10-1	410,000	205,000	205,000	–	–	–	–	70	48	–	180
Toluene	108-88-3	754,000	375,000	75,400	0.73	–	2	3.5	99	100	–	380
2-Hexanone	591-78-6	410,000	4,100	20,500	–	–	–	–	53	23	–	79
n-Butyl acetate	123-86-4	710,000	710,000	710,000	–	–	–	–	130	31	–	98
n-Octane	111-65-9	2,350,000	350,000	1,410,000	–	–	–	0.75	–	6.3	–	27
Ethylbenzene	100-41-4	435,000	435,000	87,000	–	–	0.66	1.8	61	61	–	230
Xylenes	179601-23-1	435,000	NA	435,000	–	–	–	4.4	180	130	–	460
Bromoform (solid)	75-25-2	5,000	500	500	–	–	–	1.3	–	–	–	–
o-Xylene	95-47-6	435,000	435,000	435,000	–	–	–	2.8	75	54	–	190
n-Nonane	11-84-2	1,050,000	1,050,000	1,050,000	–	–	–	1.3	–	15	–	53
Cumene	98-82-8	245,000	245,000	245,000	–	–	–	3.4	–	27	–	100
alpha-Pinene	80-56-8	NA	NA	111,400	–	–	–	3.3	–	78	–	310
n-Propylbenzene	103-65-1	NA	NA	NA	–	–	–	13	–	25	–	92
4-Ethyltoluene	622-96-8	NA	NA	NA	–	–	–	30	–	43	–	150
1,3,5-trimethylbenzene	108-67-8	NA	NA	NA	–	–	–	27	–	64	–	230
1,2,4-trimethylbenzene	95-63-6	NA	125,000	NA	–	–	–	43	50	250	–	860
1,4-dichlorobenzene	106-46-7	450,000	NA	60,000	–	–	–	11	59	200	–	680
d-Limonene	5989-27-5	NA	NA	187,000	–	–	–	130	160	630	–	2300
1,2,4-trichlorobenzene	120-82-1	40,000	40,000	40,000	–	–	–		–	6.5	–	–
Naphthalene	91-20-3	52,400	52,400	52,400	–	–	–	11	64	240	–	750
VOCs - Tentatively Identified Compounds												
Sulfur dioxide	7446-09-5	13,000	5,000	650-STEL	>440	–	–	–	–	–	–	–
n-Butanal (Butyraldehyde)	123-72-8	NA	NA	73,600	3.8	–	–	–	–	–	–	–
n-Heptanal	111-71-7	NA	NA	NA	2.6	–	–	–	–	–	–	–
Propane	74-98-6	1,800,000	1,800,000	1,800,000	–	3.3	–	–	–	–	–	–
Isobutane	75-28-5	NA	1,900,000	NA	–	3.1	3.1	–	–	–	13	–
Isobutene	115-11-7	NA	NA	NA	–	–	–	–	–	–	11	–
Acetaldehyde	75-07-0	360,000	NA	45,000	–	2.8	–	–	630	480	–	1300
Methyl acetate	79-20-9	610,000	610,000	610,000	–	6.4	–	–	2100	380	35	1100
n-Butane	106-97-8	1,900,000	1,900,000	1,900,000	–	6.6	–	–	–	–	23	–
1-Propanol	71-23-8	500,000	500,000	250,000	–	–	–	–	600	–	–	–
n-Pentane	109-66-0	2,950,000	350,000	1,750,000	–	2.7	–	–	–	–	–	–
2-Pentanone	107-87-9	700,000	530,000	530,000-STEL	–	–	–	–	360	–	–	–
2-Methylfuran & isomers		NA	NA	NA	–	5.3	–	–	480	360	–	1200
1-Butanol	71-36-3	300,000	150,000-C	60,600	–	4.3	–	–	1800	370	–	1300
2-Butanol	78-92-2	455,000	455,000-STEL	303,000	–	–	–	–	600	–	–	–
Cyclohexanone	108-93-0	200,000	100,000	80,000	–	3.1	–	–	–	–	–	–
Methyl propionate	554-12-1	NA	NA	NA	–	–	–	–	950	–	–	–
Methyl butyrate	623-42-7	NA	NA	NA	–	–	–	–	1500	–	–	–
Cyclopentanone	120-92-3	NA	NA	NA	–	–	–	–	–	–	–	–
Isobutanol (2-propanol)	78-83-1	300,000	150,000	150,000	–	–	–	–	–	–	–	–
2-methylcyclopentanone		NA	NA	NA	–	–	–	–	600	360	–	1300
1-Hexanol	111-27-3	NA	NA	NA	–	–	–	–	–	–	–	–
2-Ethylcyclopentanone		NA	NA	NA	–	–	–	–	510	–	–	1500
2,3-dimethyl-2-cyclopetnen-1-one	1121-05-7	NA	NA	NA	–	–	–	–	–	–	–	–
2-methyl-2-cyclopenten-1-one		NA	NA	NA	–	–	–	–	–	–	–	–
2-ethyl-1-hexanol	104-76-7	NA	NA	NA	–	–	–	14	1700	1900	–	6900
Butyl hexanoate		NA	NA	NA	–	–	–	–	–	630	–	2400
Methyl hexanoate	106-70-7	NA	NA	NA	–	–	–	–	–	–	–	–

Table 2. Sample Summary Results for Industrial Hygiene Studies Conducted at Bridgeton Landfill LLC and the Adjacent Metropolitan St. Louis Sewer District (MSD) Lift Station, in Bridgeton, Missouri Ambient Results, MSD Lift Station Vault (Doors Open) Results and Scrubber Efficiency Results

Analytes	CAS #	Occupational Exposure Limits			Ambient			Vault – Doors Open			Scrubber Efficiency	
					Frac Tank Sampling – Leachate Sparge System Operating		MSD Lift Station Sampling	MSD Lift Station Sampling				
					4/5/2013		6/19/2013	4/25/2013	4/30/2013	6/18/2013	6/19/2013	6/19/2013
					Frac Tank Carbon Filtration System On		Scrubber	No Scrubber	No Scrubber	Scrubber	Scrubber	Scrubber
					Leachate		Leachate	No Leachate	Leachate	Leachate	Leachate	Leachate
					Ambient Air Samples			Inside Vault			Scrubber Exhaust Grab	Inside Vault Doors Closed Grab
		OSHA [1]	NIOSH [2]	ACGIH[3] or AIHA[4]	Upwind	Downwind	5' from Scrubber Exhaust	Vault	Vault	Vault	Exhaust	Vault
					01373	01233	619 Series	425 Series	430 Series	618 Series	619 Series	
Butyl butyrate		NA	NA	NA	–	–	–	–	–	440	–	1500
2-ethylhexylbutyrate		NA	NA	NA	–	–	–	–	–	700	–	2900
p-Isopropyltoluene (p-cymene)	99-87-6	NA	NA	NA	–	–	–	100	390	–	–	–
3-Ethyltoluene		NA	NA	NA	–	–	–	67	–	–	–	–
2-Ethyltoluene		NA	NA	NA	–	–	–	28	–	–	–	–
n-Decane	124-18-5	NA	NA	NA	–	–	–	9.6	–	–	–	–
m-propyltoluene		NA	NA	NA	–	–	–	23	–	–	–	–
C10-H14 Aromatic compound		NA	NA	NA	–	–	–	28	–	1300	–	4700
C10-H14 Aromatic compound		NA	NA	NA	–	–	–	17	–	–	–	–
n-Undecane	1120-21-4	NA	NA	NA	–	–	–	50	–	–	–	–
C10-H12 Compound + 1,2,3,5-TMB		NA	NA	NA	–	–	–	12	–	–	–	–
n-Dodecane	112-40-3	NA	NA	350[7]	–	–	–	52	–	–	–	–
C9-H10-N2 compound		NA	NA	NA	–	–	–	18	–	–	–	–
n-Tridecane	629-50-5	NA	NA	NA	–	–	–	25	–	–	–	–
1,3,5-Triisopropylbenzene		NA	NA	NA	–	–	–	12	–	–	–	–
n-Tetradecane	629-59-4	NA	NA	NA	–	–	–	12	–	–	–	–
Furan	110-00-9	NA	NA	Lowest[9]	–	–	4.4	–	910	620	120	2300
Dimethyl sulfide	75-18-3	NA	NA	25,400, 1,270[8]	–	–	–	–	1300	–	–	2700
Dimethylcyclopentane isomer		NA	NA	NA	–	–	–	–	–	–	–	–
Butyl valerate		NA	NA	NA	–	–	–	–	–	–	–	–
2-Ethylhexylacetate		NA	NA	NA	–	–	–	–	–	–	–	2000
Dimethyl ether	115-10-6	NA	NA	1,900,000[6]	–	–	3.4	–	–	–	100	–
Hexamethylcyclotrisiloxane		NA	NA	NA	–	–	3	–	–	–	–	–
n-Octanol	111-87-5	NA	NA	266,000	–	–	3.2	–	–	–	–	–
n-Nonanol		NA	NA	NA	–	–	17	–	–	–	–	–
n-Decanol	112-30-1	NA	NA	NA	–	–	8	–	–	–	–	–
Methoxyethane	540-67-0	NA	NA	NA	–	–	–	–	–	–	32	–
Unidentified compound		NA	NA	NA	–	–	–	–	–	380	–	1500
Polynuclear Aromatic Hydrocarbons (PAHs) – EPA TO13												
Naphthalene	91-20-3	52,400	52,400	52,400	NS	NS	NS	1.70	10	NS	NS	NS
Acenapthene	83-32-9	NA	NA	NA	NS	NS	NS	0.46	2	NS	NS	NS
Fluorene	86-73-7	NA	NA	NA	NS	NS	NS	0.16	0.75	NS	NS	NS
Phenanthrene	85-01-8	200	200	100	NS	NS	NS	0.057	0.3	NS	NS	NS
Anthracene	120-12-7	200	200	100	NS	NS	NS	0.0070	0.034	NS	NS	NS
Fluoranthene	206-44-0	200	200	100	NS	NS	NS	ND	0.0048	NS	NS	NS
Dioxins and Furans – EPA TO9a (Expressed as TCDD Equivalents)												
Dioxins (TCDD TEQ)					NS	NS	NS	1.015E-07	1.95E-08	NS	NS	NS

1. OSHA – Occupational Safety and Health Administration
2. NIOSH – National Institute for Occupational Safety and Health
3. ACGIH - American Conference of Governmental Industrial Hygienists
4. AIHA - American Industrial Hygiene Association
5. "NS" = Not Sampled
6. "ND" = Not Detected
7. C - Ceiling limit, not to be exceeded
8. STEL - Short Term Exposure Limit (ususally a 15-minute excursion limit)
9. "NA" = Not Available
10. Lowest feasible concentration due to NIOSH classification as a carcinogen

Appendix A:
Laboratory Analytical Reports

A.1. Frac Tank Head Space Sampling
April 5, 2013

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LABORATORY REPORT

April 12, 2013

Deborah Gray
Stantec Consulting Services, Inc.
1500 Lake Shore Drive Suite 100
Columbus, OH 43204

RE: CONFIDENTIAL - LANDFILL / 182608005

Dear Deborah:

Enclosed are the results of the samples submitted to our laboratory on April 8, 2013. For your reference, these analyses have been assigned our service request number P1301432.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 4:32 pm, Apr 12, 2013

For Samantha Henningsen
Project Manager

Client: Stantec Consulting Services, Inc. Service Request No: P1301432
Project: CONFIDENTIAL - LANDFILL / 182608005

CASE NARRATIVE

The samples were received intact under chain of custody on April 8, 2013 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds and tentatively identified compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. The method was modified to include the use of helium as a diluent gas in place of zero-grade air for canister pressurization. When necessary, analytical sample volumes were adjusted by a correction factor for canisters pressurized with helium. A summary sheet has been included listing the affected samples. Any analytes flagged with an X are not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

The Relative Percent Difference (RPD) for Propene in the sample duplicate was outside control criteria. However, precision for these compounds was exhibited by the analysis of a Laboratory Control Sample (LCS) and Duplicate Laboratory Control Sample (DLCS). No further corrective action was required.

The Summa canisters were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of Columbia Analytical Services, Inc. dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Columbia Analytical Services, Inc. dba ALS Environmental - Simi Valley

Certifications, Accreditations, and Registrations

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L11-203
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2012039
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	494864
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	CA200007
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-12-3
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA015272012-2
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.caslab.com, www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

DETAIL SUMMARY REPORT

Client: Stantec Consulting Services, Inc.
Service Request: P1301432
Project ID: CONFIDENTIAL - LANDFILL / 182608005

Date Received: 4/8/2013
Time Received: 09:25

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pil (psig)	Pfl (psig)	TO-15 Modified - VOC Cans
01373	P1301432-001	Air	4/5/2013	09:50	SC00413	-0.60	3.60	X
01233	P1301432-002	Air	4/5/2013	10:35	SC00561	-0.92	3.72	X
01545	P1301432-003	Air	4/5/2013	09:28	SC00787	-1.27	4.74	X
02705	P1301432-004	Air	4/5/2013	09:08	SC01529	-0.13	3.98	X
02836	P1301432-005	Air	4/5/2013	11:01	SC00969	-2.41	3.71	X
02733	P1301432-006	Air	4/5/2013	11:20	SC01702	-2.92	3.63	X
02229	P1301432-007	Air	4/5/2013	10:32	SC00825	-1.30	3.64	X
01270	P1301432-008	Air	4/5/2013	11:38	SC01477	-1.32	3.70	X
03275	P1301432-009	Air	4/5/2013	10:13	SC00925	-2.46	3.63	X
00404	P1301432-010	Air	4/5/2013	11:55	SC00112	-1.55	3.72	X

[illegible]ol[illegible]mb[illegible]a[illegible]al[illegible]cal[illegible]c[illegible]s[illegible]c.[illegible]
[illegible]am[illegible]l[illegible]ol[illegible]m[illegible]o[illegible]c[illegible]o[illegible]o[illegible]l[illegible]m[illegible]ss[illegible]a[illegible]o[illegible]
[illegible]o[illegible]al[illegible]s[illegible]s

[illegible]am[illegible]l[illegible]	[illegible]	[illegible]	[illegible]am[illegible]l[illegible] [illegible]ol[illegible]m[illegible]	[illegible]s[illegible] [illegible]ol[illegible]m[illegible]
P1301[illegible]32[illegible]001	[illegible]0.60	3.60	0.913	1.00
P1301[illegible]32[illegible]002	[illegible]0.92	3.72	0.908	1.00
P1301[illegible]32[illegible]003	[illegible]1.27	[illegible]7[illegible]	0.013	0.0150
P1301[illegible]32[illegible]00[illegible]	[illegible]0.13	3.98	0.01[illegible]	0.0150

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Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P1301432

Company Name & Address (Reporting Information): Stantec Consulting Services Inc. 1500 Lake Shore Drive, Suite 100 Columbus, Ohio 43204

Project Name: CONFIDENTIAL - LANDFILL

Project Number: 182608005

Project Manager: Deborah Gray

P.O. # / Billing Information: Same as reporting information. Request results NLT 3:00 PM Eastern Std. Time

Phone: 614-486-4383 Fax: 614-486-4387

Email Address for Result Reporting: Deb.Gray@stantec.com

Sampler (Print & Sign): Michael Roznowski

CAS Contact:

Analysis Method: TO-15

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code #- FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	TO-15		Comments e.g. Actual Preservative or specific Instructions
01373	(1)-1.00	4/5/13	0950	01373	AVG 01905	27.5	5.8	6 L			
01233	(2)-1.41		1035	01233	AVG 02438	26.0	0.0				
01545	(3)-1.51		0928	01545	AVG 02327	27.8	2.5				
02705	(4)-0.31		0908	02705	AVG 01893	28.6	0.0				
02836	(5)-2.62		1101	02836	AVG 01821	28.6	6.2				
02733	(6)-3.17		1120	02733	AVG 02682	29.6	6.0				
02229	(7)-1.48		1032	02229	AVG 02354	27.4	0.0				
01270	(8)-1.56		1138	01270	AVG 02124	28.8	1.7				
03275	(9)-2.66		1013	03275	AVG 02181	24.8	1.8				
00404	(10)-1.74		1155	00404	AVG 02550	27.4	3.0				

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Data Validation Package) 10% Surcharge ____
EDD required Yes / No
Type: ____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Michael B. Roznowski	4/5/13	2:30 pm	[illegible]	4/8/13	0925
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____°C

COC AIR REV 3-11

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Sample Acceptance Check Form

Client: Stantec Consulting Services, Inc. Work order: P1301432
Project: CONFIDENTIAL - LANDFILL / 182608005
Sample(s) received on: 4/8/13 Date opened: 4/8/13 by: RMARTENIES

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt/Preservation Comments
P1301432-001.01	6.0 L Source Can					
P1301432-002.01	6.0 L Source Can					
P1301432-003.01	6.0 L Source Can					
P1301432-004.01	6.0 L Source Can					
P1301432-005.01	6.0 L Source Can					
P1301432-006.01	6.0 L Source Can					
P1301432-007.01	6.0 L Source Can					
P1301432-008.01	6.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

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Sample Acceptance Check Form

Client: Stantec Consulting Services, Inc. Work order: P1301432
Project: CONFIDENTIAL - LANDFILL / 182608005
Sample(s) received on: 4/8/13 Date opened: 4/8/13 by: RMARTENIES

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1301432-009.01	6.0 L Source Can					
P1301432-010.01	6.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01373** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-001

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00413

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.60 Final Pressure (psig): 3.60

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.65	ND	0.38	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.2**	0.65	**0.45**	0.13	
74-87-3	Chloromethane	**0.71**	0.65	**0.34**	0.31	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.65	ND	0.093	
75-01-4	Vinyl Chloride	ND	0.65	ND	0.25	
106-99-0	1,3-Butadiene	ND	0.65	ND	0.29	
74-83-9	Bromomethane	ND	0.65	ND	0.17	
75-00-3	Chloroethane	ND	0.65	ND	0.25	
64-17-5	Ethanol	ND	6.5	ND	3.5	
75-05-8	Acetonitrile	ND	0.65	ND	0.39	
107-02-8	Acrolein	ND	2.6	ND	1.1	
67-64-1	Acetone	**11**	6.5	**4.5**	2.7	
75-69-4	Trichlorofluoromethane	**1.3**	0.65	**0.24**	0.12	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	6.5	ND	2.6	
107-13-1	Acrylonitrile	ND	0.65	ND	0.30	
75-35-4	1,1-Dichloroethene	ND	0.65	ND	0.16	
75-09-2	Methylene Chloride	**0.82**	0.65	**0.24**	0.19	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.65	ND	0.21	
76-13-1	Trichlorotrifluoroethane	ND	0.65	ND	0.085	
75-15-0	Carbon Disulfide	ND	6.5	ND	2.1	
156-60-5	trans-1,2-Dichloroethene	ND	0.65	ND	0.16	
75-34-3	1,1-Dichloroethane	ND	0.65	ND	0.16	
1634-04-4	Methyl tert-Butyl Ether	ND	0.65	ND	0.18	
108-05-4	Vinyl Acetate	ND	6.5	ND	1.8	
78-93-3	2-Butanone (MEK)	ND	6.5	ND	2.2	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01373**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-001

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00413

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.60 Final Pressure (psig): 3.60

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.65	ND	0.16	
141-78-6	Ethyl Acetate	ND	1.3	ND	0.36	
110-54-3	n-Hexane	ND	0.65	ND	0.18	
67-66-3	Chloroform	ND	0.65	ND	0.13	
109-99-9	Tetrahydrofuran (THF)	ND	0.65	ND	0.22	
107-06-2	1,2-Dichloroethane	ND	0.65	ND	0.16	
71-55-6	1,1,1-Trichloroethane	ND	0.65	ND	0.12	
71-43-2	Benzene	ND	0.65	ND	0.20	
56-23-5	Carbon Tetrachloride	ND	0.65	ND	0.10	
110-82-7	Cyclohexane	ND	1.3	ND	0.38	
78-87-5	1,2-Dichloropropane	ND	0.65	ND	0.14	
75-27-4	Bromodichloromethane	ND	0.65	ND	0.097	
79-01-6	Trichloroethene	ND	0.65	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.65	ND	0.18	
80-62-6	Methyl Methacrylate	ND	1.3	ND	0.32	
142-82-5	n-Heptane	ND	0.65	ND	0.16	
10061-01-5	cis-1,3-Dichloropropene	ND	0.65	ND	0.14	
108-10-1	4-Methyl-2-pentanone	ND	0.65	ND	0.16	
10061-02-6	trans-1,3-Dichloropropene	ND	0.65	ND	0.14	
79-00-5	1,1,2-Trichloroethane	ND	0.65	ND	0.12	
108-88-3	Toluene	**0.73**	0.65	**0.19**	0.17	
591-78-6	2-Hexanone	ND	0.65	ND	0.16	
124-48-1	Dibromochloromethane	ND	0.65	ND	0.076	
106-93-4	1,2-Dibromoethane	ND	0.65	ND	0.085	
123-86-4	n-Butyl Acetate	ND	0.65	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01373**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-001

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00413

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.60 Final Pressure (psig): 3.60

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.65	ND	0.14	
127-18-4	Tetrachloroethene	ND	0.65	ND	0.096	
108-90-7	Chlorobenzene	ND	0.65	ND	0.14	
100-41-4	Ethylbenzene	ND	0.65	ND	0.15	
179601-23-1	m,p-Xylenes	ND	1.3	ND	0.30	
75-25-2	Bromoform	ND	0.65	ND	0.063	
100-42-5	Styrene	ND	0.65	ND	0.15	
95-47-6	o-Xylene	ND	0.65	ND	0.15	
111-84-2	n-Nonane	ND	0.65	ND	0.12	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.65	ND	0.095	
98-82-8	Cumene	ND	0.65	ND	0.13	
80-56-8	alpha-Pinene	ND	0.65	ND	0.12	
103-65-1	n-Propylbenzene	ND	0.65	ND	0.13	
622-96-8	4-Ethyltoluene	ND	0.65	ND	0.13	
108-67-8	1,3,5-Trimethylbenzene	ND	0.65	ND	0.13	
95-63-6	1,2,4-Trimethylbenzene	ND	0.65	ND	0.13	
100-44-7	Benzyl Chloride	ND	0.65	ND	0.13	
541-73-1	1,3-Dichlorobenzene	ND	0.65	ND	0.11	
106-46-7	1,4-Dichlorobenzene	ND	0.65	ND	0.11	
95-50-1	1,2-Dichlorobenzene	ND	0.65	ND	0.11	
5989-27-5	d-Limonene	ND	0.65	ND	0.12	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.65	ND	0.067	
120-82-1	1,2,4-Trichlorobenzene	ND	0.65	ND	0.088	
91-20-3	Naphthalene	ND	0.65	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.65	ND	0.061	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01373** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-001

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/9/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: **T**
Container ID: SC00413

Initial Pressure (psig): -0.60 Final Pressure (psig): 3.60

Canister Dilution Factor: 1.30

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
2.04	Sulfur Dioxide	>440	!
8.16	n-Butanal	3.8	
15.25	n-Heptanal	2.6	

T = Analyte is a tentatively identified compound, result is estimated.
! = Previous studies have shown that EPA Method TO-15 is not an appropriate method for quantifying Sulfur Dioxide. The TIC result for this compound is reported as "greater than" since the numeric value has a potential low bias.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01233** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-002

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00561

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.92 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.34

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**3.0**	0.67	**1.7**	0.39	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.67	**0.43**	0.14	
74-87-3	Chloromethane	ND	0.67	ND	0.32	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.67	ND	0.096	
75-01-4	Vinyl Chloride	ND	0.67	ND	0.26	
106-99-0	1,3-Butadiene	ND	0.67	ND	0.30	
74-83-9	Bromomethane	ND	0.67	ND	0.17	
75-00-3	Chloroethane	ND	0.67	ND	0.25	
64-17-5	Ethanol	**36**	6.7	**19**	3.6	
75-05-8	Acetonitrile	ND	0.67	ND	0.40	
107-02-8	Acrolein	ND	2.7	ND	1.2	
67-64-1	Acetone	**37**	6.7	**16**	2.8	
75-69-4	Trichlorofluoromethane	**1.5**	0.67	**0.27**	0.12	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	6.7	ND	2.7	
107-13-1	Acrylonitrile	ND	0.67	ND	0.31	
75-35-4	1,1-Dichloroethene	ND	0.67	ND	0.17	
75-09-2	Methylene Chloride	ND	0.67	ND	0.19	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.67	ND	0.21	
76-13-1	Trichlorotrifluoroethane	ND	0.67	ND	0.087	
75-15-0	Carbon Disulfide	ND	6.7	ND	2.2	
156-60-5	trans-1,2-Dichloroethene	ND	0.67	ND	0.17	
75-34-3	1,1-Dichloroethane	ND	0.67	ND	0.17	
1634-04-4	Methyl tert-Butyl Ether	ND	0.67	ND	0.19	
108-05-4	Vinyl Acetate	ND	6.7	ND	1.9	
78-93-3	2-Butanone (MEK)	**9.5**	6.7	**3.2**	2.3	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01233**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-002

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00561

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.92 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.34

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.67	ND	0.17	
141-78-6	Ethyl Acetate	ND	1.3	ND	0.37	
110-54-3	n-Hexane	ND	0.67	ND	0.19	
67-66-3	Chloroform	ND	0.67	ND	0.14	
109-99-9	Tetrahydrofuran (THF)	**4.1**	0.67	**1.4**	0.23	
107-06-2	1,2-Dichloroethane	ND	0.67	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.67	ND	0.12	
71-43-2	Benzene	**6.8**	0.67	**2.1**	0.21	
56-23-5	Carbon Tetrachloride	ND	0.67	ND	0.11	
110-82-7	Cyclohexane	ND	1.3	ND	0.39	
78-87-5	1,2-Dichloropropane	ND	0.67	ND	0.15	
75-27-4	Bromodichloromethane	ND	0.67	ND	0.10	
79-01-6	Trichloroethene	ND	0.67	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.67	ND	0.19	
80-62-6	Methyl Methacrylate	ND	1.3	ND	0.33	
142-82-5	n-Heptane	ND	0.67	ND	0.16	
10061-01-5	cis-1,3-Dichloropropene	ND	0.67	ND	0.15	
108-10-1	4-Methyl-2-pentanone	ND	0.67	ND	0.16	
10061-02-6	trans-1,3-Dichloropropene	ND	0.67	ND	0.15	
79-00-5	1,1,2-Trichloroethane	ND	0.67	ND	0.12	
108-88-3	Toluene	ND	0.67	ND	0.18	
591-78-6	2-Hexanone	ND	0.67	ND	0.16	
124-48-1	Dibromochloromethane	ND	0.67	ND	0.079	
106-93-4	1,2-Dibromoethane	ND	0.67	ND	0.087	
123-86-4	n-Butyl Acetate	ND	0.67	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01233**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-002

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00561

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.92 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.34

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.67	ND	0.14	
127-18-4	Tetrachloroethene	ND	0.67	ND	0.099	
108-90-7	Chlorobenzene	ND	0.67	ND	0.15	
100-41-4	Ethylbenzene	ND	0.67	ND	0.15	
179601-23-1	m,p-Xylenes	ND	1.3	ND	0.31	
75-25-2	Bromoform	ND	0.67	ND	0.065	
100-42-5	Styrene	ND	0.67	ND	0.16	
95-47-6	o-Xylene	ND	0.67	ND	0.15	
111-84-2	n-Nonane	ND	0.67	ND	0.13	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.67	ND	0.098	
98-82-8	Cumene	ND	0.67	ND	0.14	
80-56-8	alpha-Pinene	ND	0.67	ND	0.12	
103-65-1	n-Propylbenzene	ND	0.67	ND	0.14	
622-96-8	4-Ethyltoluene	ND	0.67	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.67	ND	0.14	
95-63-6	1,2,4-Trimethylbenzene	ND	0.67	ND	0.14	
100-44-7	Benzyl Chloride	ND	0.67	ND	0.13	
541-73-1	1,3-Dichlorobenzene	ND	0.67	ND	0.11	
106-46-7	1,4-Dichlorobenzene	ND	0.67	ND	0.11	
95-50-1	1,2-Dichlorobenzene	ND	0.67	ND	0.11	
5989-27-5	d-Limonene	ND	0.67	ND	0.12	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.67	ND	0.069	
120-82-1	1,2,4-Trichlorobenzene	ND	0.67	ND	0.090	
91-20-3	Naphthalene	ND	0.67	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.67	ND	0.063	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01233** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-002

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/9/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: T
Container ID: SC00561

Initial Pressure (psig): -0.92 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.34

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
1.93	Propane	3.3	
2.45	Isobutane	3.1	
2.49	Acetaldehyde	2.8	
2.91	n-Butane	6.6	
5.42	n-Pentane	2.7	
6.21	Methyl Acetate	6.4	
8.87	2-Methylfuran	5.3	
10.69	1-Butanol	4.3	
15.09	Cyclohexanone	3.1	

T = Analyte is a tentatively identified compound, result is estimated.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01545** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-003

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00787

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 0.015 Liter(s)

Initial Pressure (psig): -1.27 Final Pressure (psig): 4.74

Canister Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**300**	48	**170**	28	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	48	ND	9.8	
74-87-3	Chloromethane	ND	48	ND	23	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	48	ND	6.9	
75-01-4	Vinyl Chloride	ND	48	ND	19	
106-99-0	1,3-Butadiene	ND	48	ND	22	
74-83-9	Bromomethane	ND	48	ND	12	
75-00-3	Chloroethane	ND	48	ND	18	
64-17-5	Ethanol	**25,000**	480	**13,000**	260	
75-05-8	Acetonitrile	ND	48	ND	29	
107-02-8	Acrolein	ND	190	ND	84	
67-64-1	Acetone	**19,000**	480	**8,200**	200	
75-69-4	Trichlorofluoromethane	ND	48	ND	8.6	
67-63-0	2-Propanol (Isopropyl Alcohol)	**4,200**	480	**1,700**	200	
107-13-1	Acrylonitrile	ND	48	ND	22	
75-35-4	1,1-Dichloroethene	ND	48	ND	12	
75-09-2	Methylene Chloride	ND	48	ND	14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	48	ND	15	
76-13-1	Trichlorotrifluoroethane	ND	48	ND	6.3	
75-15-0	Carbon Disulfide	ND	480	ND	160	
156-60-5	trans-1,2-Dichloroethene	ND	48	ND	12	
75-34-3	1,1-Dichloroethane	ND	48	ND	12	
1634-04-4	Methyl tert-Butyl Ether	ND	48	ND	13	
108-05-4	Vinyl Acetate	ND	480	ND	140	
78-93-3	2-Butanone (MEK)	**8,200**	480	**2,800**	160	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01545**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-003

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00787

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 0.015 Liter(s)

Initial Pressure (psig): -1.27 Final Pressure (psig): 4.74

Canister Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	48	ND	12	
141-78-6	Ethyl Acetate	**320**	97	**88**	27	
110-54-3	n-Hexane	ND	48	ND	14	
67-66-3	Chloroform	ND	48	ND	9.9	
109-99-9	Tetrahydrofuran (THF)	**3,900**	48	**1,300**	16	
107-06-2	1,2-Dichloroethane	ND	48	ND	12	
71-55-6	1,1,1-Trichloroethane	ND	48	ND	8.9	
71-43-2	Benzene	ND	48	ND	15	
56-23-5	Carbon Tetrachloride	ND	48	ND	7.7	
110-82-7	Cyclohexane	ND	97	ND	28	
78-87-5	1,2-Dichloropropane	ND	48	ND	10	
75-27-4	Bromodichloromethane	ND	48	ND	7.2	
79-01-6	Trichloroethene	ND	48	ND	9.0	
123-91-1	1,4-Dioxane	**280**	48	**78**	13	
80-62-6	Methyl Methacrylate	ND	97	ND	24	
142-82-5	n-Heptane	ND	48	ND	12	
10061-01-5	cis-1,3-Dichloropropene	ND	48	ND	11	
108-10-1	4-Methyl-2-pentanone	**130**	48	**33**	12	
10061-02-6	trans-1,3-Dichloropropene	ND	48	ND	11	
79-00-5	1,1,2-Trichloroethane	ND	48	ND	8.9	
108-88-3	Toluene	ND	48	ND	13	
591-78-6	2-Hexanone	**130**	48	**31**	12	
124-48-1	Dibromochloromethane	ND	48	ND	5.7	
106-93-4	1,2-Dibromoethane	ND	48	ND	6.3	
123-86-4	n-Butyl Acetate	**180**	48	**38**	10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01545**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-003

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00787

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 0.015 Liter(s)

Initial Pressure (psig): -1.27 Final Pressure (psig): 4.74

Canister Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	48	ND	10	
127-18-4	Tetrachloroethene	ND	48	ND	7.1	
108-90-7	Chlorobenzene	ND	48	ND	10	
100-41-4	Ethylbenzene	ND	48	ND	11	
179601-23-1	m,p-Xylenes	ND	97	ND	22	
75-25-2	Bromoform	ND	48	ND	4.7	
100-42-5	Styrene	ND	48	ND	11	
95-47-6	o-Xylene	ND	48	ND	11	
111-84-2	n-Nonane	ND	48	ND	9.2	
79-34-5	1,1,2,2-Tetrachloroethane	ND	48	ND	7.0	
98-82-8	Cumene	ND	48	ND	9.8	
80-56-8	alpha-Pinene	ND	48	ND	8.7	
103-65-1	n-Propylbenzene	ND	48	ND	9.8	
622-96-8	4-Ethyltoluene	ND	48	ND	9.8	
108-67-8	1,3,5-Trimethylbenzene	ND	48	ND	9.8	
95-63-6	1,2,4-Trimethylbenzene	ND	48	ND	9.8	
100-44-7	Benzyl Chloride	ND	48	ND	9.3	
541-73-1	1,3-Dichlorobenzene	ND	48	ND	8.0	
106-46-7	1,4-Dichlorobenzene	ND	48	ND	8.0	
95-50-1	1,2-Dichlorobenzene	ND	48	ND	8.0	
5989-27-5	d-Limonene	**86**	48	**15**	8.7	
96-12-8	1,2-Dibromo-3-chloropropane	ND	48	ND	5.0	
120-82-1	1,2,4-Trichlorobenzene	ND	48	ND	6.5	
91-20-3	Naphthalene	**350**	48	**66**	9.2	
87-68-3	Hexachlorobutadiene	ND	48	ND	4.5	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01545** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-003

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/9/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.015 Liter(s)
Test Notes: **T**
Container ID: SC00787

Initial Pressure (psig): -1.27 Final Pressure (psig): 4.74

Canister Dilution Factor: 1.45

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
2.50	Acetaldehyde	**1,700**	
6.21	Methyl Acetate	**4,100**	
7.58	1-Propanol	**3,100**	
8.85	2-Butanol	**3,000**	
9.67	Methyl Propionate	**1,000**	
10.75	1-Butanol	**11,000**	
12.14	Methyl Butyrate	**1,600**	
14.32	2-Methylcyclopentanone	**2,000**	
14.86	1-Hexanol	**840**	
15.73	2-Ethylcyclopentanone	**2,400**	
16.35	2,3-Dimethyl-2-Cyclopenten-1-one	**850**	
16.78	2-Ethyl-1-hexanol	**10,000**	
16.82	Unidentified Compound	**950**	
18.19	Butyl Hexanoate	**1,100**	
19.26	2-Ethylhexylbutyrate	**1,500**	

T = Analyte is a tentatively identified compound, result is estimated.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02705**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-004

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC01529

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 0.015 Liter(s)

Initial Pressure (psig): -0.13 Final Pressure (psig): 3.98

Canister Dilution Factor: 1.28

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**490**	43	**290**	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	43	ND	8.6	
74-87-3	Chloromethane	ND	43	ND	21	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	43	ND	6.1	
75-01-4	Vinyl Chloride	ND	43	ND	17	
106-99-0	1,3-Butadiene	ND	43	ND	19	
74-83-9	Bromomethane	ND	43	ND	11	
75-00-3	Chloroethane	ND	43	ND	16	
64-17-5	Ethanol	**31,000**	430	**16,000**	230	
75-05-8	Acetonitrile	ND	43	ND	25	
107-02-8	Acrolein	ND	170	ND	74	
67-64-1	Acetone	**23,000**	430	**9,500**	180	
75-69-4	Trichlorofluoromethane	ND	43	ND	7.6	
67-63-0	2-Propanol (Isopropyl Alcohol)	**4,700**	430	**1,900**	170	
107-13-1	Acrylonitrile	ND	43	ND	20	
75-35-4	1,1-Dichloroethene	ND	43	ND	11	
75-09-2	Methylene Chloride	ND	43	ND	12	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	43	ND	14	
76-13-1	Trichlorotrifluoroethane	ND	43	ND	5.6	
75-15-0	Carbon Disulfide	ND	430	ND	140	
156-60-5	trans-1,2-Dichloroethene	ND	43	ND	11	
75-34-3	1,1-Dichloroethane	ND	43	ND	11	
1634-04-4	Methyl tert-Butyl Ether	ND	43	ND	12	
108-05-4	Vinyl Acetate	ND	430	ND	120	
78-93-3	2-Butanone (MEK)	**8,800**	430	**3,000**	140	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02705** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-004

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/9/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.015 Liter(s)
Test Notes:
Container ID: SC01529

Initial Pressure (psig): -0.13 Final Pressure (psig): 3.98

Canister Dilution Factor: 1.28

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	43	ND	11	
141-78-6	Ethyl Acetate	**330**	85	**91**	24	
110-54-3	n-Hexane	ND	43	ND	12	
67-66-3	Chloroform	ND	43	ND	8.7	
109-99-9	Tetrahydrofuran (THF)	**4,300**	43	**1,500**	14	
107-06-2	1,2-Dichloroethane	ND	43	ND	11	
71-55-6	1,1,1-Trichloroethane	ND	43	ND	7.8	
71-43-2	Benzene	ND	43	ND	13	
56-23-5	Carbon Tetrachloride	ND	43	ND	6.8	
110-82-7	Cyclohexane	ND	85	ND	25	
78-87-5	1,2-Dichloropropane	ND	43	ND	9.2	
75-27-4	Bromodichloromethane	ND	43	ND	6.4	
79-01-6	Trichloroethene	ND	43	ND	7.9	
123-91-1	1,4-Dioxane	**350**	43	**97**	12	
80-62-6	Methyl Methacrylate	ND	85	ND	21	
142-82-5	n-Heptane	ND	43	ND	10	
10061-01-5	cis-1,3-Dichloropropene	ND	43	ND	9.4	
108-10-1	4-Methyl-2-pentanone	**150**	43	**36**	10	
10061-02-6	trans-1,3-Dichloropropene	ND	43	ND	9.4	
79-00-5	1,1,2-Trichloroethane	ND	43	ND	7.8	
108-88-3	Toluene	ND	43	ND	11	
591-78-6	2-Hexanone	**130**	43	**32**	10	
124-48-1	Dibromochloromethane	ND	43	ND	5.0	
106-93-4	1,2-Dibromoethane	ND	43	ND	5.6	
123-86-4	n-Butyl Acetate	**180**	43	**37**	9.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02705**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-004

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC01529

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 0.015 Liter(s)

Initial Pressure (psig): -0.13 Final Pressure (psig): 3.98

Canister Dilution Factor: 1.28

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	43	ND	9.1	
127-18-4	Tetrachloroethene	ND	43	ND	6.3	
108-90-7	Chlorobenzene	ND	43	ND	9.3	
100-41-4	Ethylbenzene	ND	43	ND	9.8	
179601-23-1	m,p-Xylenes	ND	85	ND	20	
75-25-2	Bromoform	ND	43	ND	4.1	
100-42-5	Styrene	ND	43	ND	10	
95-47-6	o-Xylene	ND	43	ND	9.8	
111-84-2	n-Nonane	ND	43	ND	8.1	
79-34-5	1,1,2,2-Tetrachloroethane	ND	43	ND	6.2	
98-82-8	Cumene	ND	43	ND	8.7	
80-56-8	alpha-Pinene	ND	43	ND	7.7	
103-65-1	n-Propylbenzene	ND	43	ND	8.7	
622-96-8	4-Ethyltoluene	ND	43	ND	8.7	
108-67-8	1,3,5-Trimethylbenzene	ND	43	ND	8.7	
95-63-6	1,2,4-Trimethylbenzene	ND	43	ND	8.7	
100-44-7	Benzyl Chloride	ND	43	ND	8.2	
541-73-1	1,3-Dichlorobenzene	ND	43	ND	7.1	
106-46-7	1,4-Dichlorobenzene	ND	43	ND	7.1	
95-50-1	1,2-Dichlorobenzene	ND	43	ND	7.1	
5989-27-5	d-Limonene	**83**	43	**15**	7.7	
96-12-8	1,2-Dibromo-3-chloropropane	ND	43	ND	4.4	
120-82-1	1,2,4-Trichlorobenzene	ND	43	ND	5.8	
91-20-3	Naphthalene	**350**	43	**66**	8.1	
87-68-3	Hexachlorobutadiene	ND	43	ND	4.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02705** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-004

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/9/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.015 Liter(s)
Test Notes: T
Container ID: SC01529

Initial Pressure (psig): -0.13 Final Pressure (psig): 3.98

Canister Dilution Factor: 1.28

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
2.51	Acetaldehyde	1,800	
6.22	Methyl Acetate	4,400	
7.60	1-Propanol	3,700	
8.86	2-Butanol	3,200	
9.68	Methyl Propionate	1,000	
10.77	1-Butanol	13,000	
11.07	2-Pentanone	850	
12.14	Methyl Butyrate	1,600	
14.32	2-Methylcyclopentanone	2,200	
14.86	1-Hexanol	930	
15.73	2-Ethylcyclopentanone	2,700	
16.35	2,3-Dimethyl-2-Cyclopenten-1-one	1,000	
16.78	2-Ethyl-1-hexanol	11,000	
18.19	Butyl Hexanoate	1,100	
19.26	2-Ethylhexylbutyrate	1,200	

T = Analyte is a tentatively identified compound, result is estimated.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02836** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-005

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00969

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 0.0040 Liter(s)
0.0020 Liter(s)

Initial Pressure (psig): -2.41 Final Pressure (psig): 3.71

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**3,100**	190	**1,800**	110	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	190	ND	38	
74-87-3	Chloromethane	ND	190	ND	91	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	190	ND	27	
75-01-4	Vinyl Chloride	ND	190	ND	73	
106-99-0	1,3-Butadiene	ND	190	ND	85	
74-83-9	Bromomethane	ND	190	ND	48	
75-00-3	Chloroethane	ND	190	ND	71	
64-17-5	Ethanol	**91,000**	1,900	**48,000**	1,000	
75-05-8	Acetonitrile	ND	190	ND	110	
107-02-8	Acrolein	ND	750	ND	330	
67-64-1	Acetone	**110,000**	1,900	**46,000**	790	
75-69-4	Trichlorofluoromethane	ND	190	ND	33	
67-63-0	2-Propanol (Isopropyl Alcohol)	**14,000**	1,900	**5,800**	760	
107-13-1	Acrylonitrile	ND	190	ND	86	
75-35-4	1,1-Dichloroethene	ND	190	ND	47	
75-09-2	Methylene Chloride	ND	190	ND	54	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	190	ND	60	
76-13-1	Trichlorotrifluoroethane	ND	190	ND	24	
75-15-0	Carbon Disulfide	ND	1,900	ND	600	
156-60-5	trans-1,2-Dichloroethene	ND	190	ND	47	
75-34-3	1,1-Dichloroethane	ND	190	ND	46	
1634-04-4	Methyl tert-Butyl Ether	ND	190	ND	52	
108-05-4	Vinyl Acetate	ND	1,900	ND	530	
78-93-3	2-Butanone (MEK)	**49,000**	3,800	**17,000**	1,300	**D**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02836** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-005

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/9/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.0040 Liter(s)
Test Notes: 0.0020 Liter(s)
Container ID: SC00969

Initial Pressure (psig): -2.41 Final Pressure (psig): 3.71

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	190	ND	47	
141-78-6	Ethyl Acetate	**2,400**	380	**680**	100	
110-54-3	n-Hexane	ND	190	ND	53	
67-66-3	Chloroform	ND	190	ND	38	
109-99-9	Tetrahydrofuran (THF)	**25,000**	190	**8,400**	64	
107-06-2	1,2-Dichloroethane	ND	190	ND	46	
71-55-6	1,1,1-Trichloroethane	ND	190	ND	34	
71-43-2	Benzene	ND	190	ND	59	
56-23-5	Carbon Tetrachloride	ND	190	ND	30	
110-82-7	Cyclohexane	ND	380	ND	110	
78-87-5	1,2-Dichloropropane	ND	190	ND	41	
75-27-4	Bromodichloromethane	ND	190	ND	28	
79-01-6	Trichloroethene	ND	190	ND	35	
123-91-1	1,4-Dioxane	**1,000**	190	**290**	52	
80-62-6	Methyl Methacrylate	ND	380	ND	92	
142-82-5	n-Heptane	ND	190	ND	46	
10061-01-5	cis-1,3-Dichloropropene	ND	190	ND	41	
108-10-1	4-Methyl-2-pentanone	**850**	190	**210**	46	
10061-02-6	trans-1,3-Dichloropropene	ND	190	ND	41	
79-00-5	1,1,2-Trichloroethane	ND	190	ND	34	
108-88-3	Toluene	ND	190	ND	50	
591-78-6	2-Hexanone	**730**	190	**180**	46	
124-48-1	Dibromochloromethane	ND	190	ND	22	
106-93-4	1,2-Dibromoethane	ND	190	ND	24	
123-86-4	n-Butyl Acetate	**1,000**	190	**220**	39	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02836**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-005

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00969

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 0.0040 Liter(s)
0.0020 Liter(s)

Initial Pressure (psig): -2.41 Final Pressure (psig): 3.71

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	190	ND	40	
127-18-4	Tetrachloroethene	ND	190	ND	28	
108-90-7	Chlorobenzene	ND	190	ND	41	
100-41-4	Ethylbenzene	ND	190	ND	43	
179601-23-1	m,p-Xylenes	ND	380	ND	86	
75-25-2	Bromoform	ND	190	ND	18	
100-42-5	Styrene	ND	190	ND	44	
95-47-6	o-Xylene	ND	190	ND	43	
111-84-2	n-Nonane	ND	190	ND	36	
79-34-5	1,1,2,2-Tetrachloroethane	ND	190	ND	27	
98-82-8	Cumene	ND	190	ND	38	
80-56-8	alpha-Pinene	ND	190	ND	34	
103-65-1	n-Propylbenzene	ND	190	ND	38	
622-96-8	4-Ethyltoluene	ND	190	ND	38	
108-67-8	1,3,5-Trimethylbenzene	ND	190	ND	38	
95-63-6	1,2,4-Trimethylbenzene	ND	190	ND	38	
100-44-7	Benzyl Chloride	ND	190	ND	36	
541-73-1	1,3-Dichlorobenzene	ND	190	ND	31	
106-46-7	1,4-Dichlorobenzene	ND	190	ND	31	
95-50-1	1,2-Dichlorobenzene	ND	190	ND	31	
5989-27-5	d-Limonene	**640**	190	**110**	34	
96-12-8	1,2-Dibromo-3-chloropropane	ND	190	ND	19	
120-82-1	1,2,4-Trichlorobenzene	ND	190	ND	25	
91-20-3	Naphthalene	**410**	190	**79**	36	
87-68-3	Hexachlorobutadiene	ND	190	ND	18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02836** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-005

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/9/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.0040 Liter(s)
Test Notes: **T** 0.0020 Liter(s)
Container ID: SC00969

Initial Pressure (psig): -2.41 Final Pressure (psig): 3.71

Canister Dilution Factor: 1.50

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
2.52	Acetaldehyde	**10,000**	
6.22	Methyl Acetate	**28,000**	
7.59	1-Propanol	**13,000**	
8.15	n-Butanal	**4,400**	
8.86	2-Butanol	**13,000**	
9.68	Methyl Propionate	**8,000**	
9.72	Isobutanol	**3,800**	
10.76	1-Butanol	**44,000**	
11.07	2-Pentanone	**4,900**	
12.14	Methyl Butyrate	**11,000**	
14.32	2-Methylcyclopentanone	**9,200**	
14.86	1-Hexanol	**3,200**	
15.73	2-Ethylcyclopentanone	**9,400**	
16.77	2-Ethyl-1-hexanol	**32,000**	
16.83	Unidentified Compound	**3,300**	

T = Analyte is a tentatively identified compound, result is estimated.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02733** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-006

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC01702

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 0.0020 Liter(s)

Initial Pressure (psig): -2.92 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.56

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**760**	390	**440**	230	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	390	ND	79	
74-87-3	Chloromethane	ND	390	ND	190	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	390	ND	56	
75-01-4	Vinyl Chloride	ND	390	ND	150	
106-99-0	1,3-Butadiene	ND	390	ND	180	
74-83-9	Bromomethane	ND	390	ND	100	
75-00-3	Chloroethane	ND	390	ND	150	
64-17-5	Ethanol	**92,000**	3,900	**49,000**	2,100	
75-05-8	Acetonitrile	ND	390	ND	230	
107-02-8	Acrolein	ND	1,600	ND	680	
67-64-1	Acetone	**90,000**	3,900	**38,000**	1,600	
75-69-4	Trichlorofluoromethane	ND	390	ND	69	
67-63-0	2-Propanol (Isopropyl Alcohol)	**18,000**	3,900	**7,200**	1,600	
107-13-1	Acrylonitrile	ND	390	ND	180	
75-35-4	1,1-Dichloroethene	ND	390	ND	98	
75-09-2	Methylene Chloride	ND	390	ND	110	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	390	ND	120	
76-13-1	Trichlorotrifluoroethane	ND	390	ND	51	
75-15-0	Carbon Disulfide	ND	3,900	ND	1,300	
156-60-5	trans-1,2-Dichloroethene	ND	390	ND	98	
75-34-3	1,1-Dichloroethane	ND	390	ND	96	
1634-04-4	Methyl tert-Butyl Ether	ND	390	ND	110	
108-05-4	Vinyl Acetate	ND	3,900	ND	1,100	
78-93-3	2-Butanone (MEK)	**42,000**	3,900	**14,000**	1,300	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02733** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-006

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/9/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.0020 Liter(s)
Test Notes:
Container ID: SC01702

Initial Pressure (psig): -2.92 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.56

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	390	ND	98	
141-78-6	Ethyl Acetate	**1,900**	780	**530**	220	
110-54-3	n-Hexane	ND	390	ND	110	
67-66-3	Chloroform	ND	390	ND	80	
109-99-9	Tetrahydrofuran (THF)	**20,000**	390	**6,900**	130	
107-06-2	1,2-Dichloroethane	ND	390	ND	96	
71-55-6	1,1,1-Trichloroethane	ND	390	ND	72	
71-43-2	Benzene	ND	390	ND	120	
56-23-5	Carbon Tetrachloride	ND	390	ND	62	
110-82-7	Cyclohexane	ND	780	ND	230	
78-87-5	1,2-Dichloropropane	ND	390	ND	84	
75-27-4	Bromodichloromethane	ND	390	ND	58	
79-01-6	Trichloroethene	ND	390	ND	73	
123-91-1	1,4-Dioxane	**1,100**	390	**300**	110	
80-62-6	Methyl Methacrylate	ND	780	ND	190	
142-82-5	n-Heptane	ND	390	ND	95	
10061-01-5	cis-1,3-Dichloropropene	ND	390	ND	86	
108-10-1	4-Methyl-2-pentanone	**730**	390	**180**	95	
10061-02-6	trans-1,3-Dichloropropene	ND	390	ND	86	
79-00-5	1,1,2-Trichloroethane	ND	390	ND	72	
108-88-3	Toluene	ND	390	ND	100	
591-78-6	2-Hexanone	**640**	390	**160**	95	
124-48-1	Dibromochloromethane	ND	390	ND	46	
106-93-4	1,2-Dibromoethane	ND	390	ND	51	
123-86-4	n-Butyl Acetate	**920**	390	**190**	82	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02733**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-006

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC01702

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/9/13
Volume(s) Analyzed: 0.0020 Liter(s)

Initial Pressure (psig): -2.92 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.56

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	390	ND	84	
127-18-4	Tetrachloroethene	ND	390	ND	58	
108-90-7	Chlorobenzene	ND	390	ND	85	
100-41-4	Ethylbenzene	ND	390	ND	90	
179601-23-1	m,p-Xylenes	ND	780	ND	180	
75-25-2	Bromoform	ND	390	ND	38	
100-42-5	Styrene	ND	390	ND	92	
95-47-6	o-Xylene	ND	390	ND	90	
111-84-2	n-Nonane	ND	390	ND	74	
79-34-5	1,1,2,2-Tetrachloroethane	ND	390	ND	57	
98-82-8	Cumene	ND	390	ND	79	
80-56-8	alpha-Pinene	ND	390	ND	70	
103-65-1	n-Propylbenzene	ND	390	ND	79	
622-96-8	4-Ethyltoluene	ND	390	ND	79	
108-67-8	1,3,5-Trimethylbenzene	ND	390	ND	79	
95-63-6	1,2,4-Trimethylbenzene	ND	390	ND	79	
100-44-7	Benzyl Chloride	ND	390	ND	75	
541-73-1	1,3-Dichlorobenzene	ND	390	ND	65	
106-46-7	1,4-Dichlorobenzene	ND	390	ND	65	
95-50-1	1,2-Dichlorobenzene	ND	390	ND	65	
5989-27-5	d-Limonene	ND	390	ND	70	
96-12-8	1,2-Dibromo-3-chloropropane	ND	390	ND	40	
120-82-1	1,2,4-Trichlorobenzene	ND	390	ND	53	
91-20-3	Naphthalene	ND	390	ND	74	
87-68-3	Hexachlorobutadiene	ND	390	ND	37	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02733** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-006

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/9/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.0020 Liter(s)
Test Notes: **T**
Container ID: SC01702

Initial Pressure (psig): -2.92 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.56

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
2.49	Acetaldehyde	**9,000**	
6.20	Methyl Acetate	**23,000**	
7.54	1-Propanol	**14,000**	
8.15	n-Butanal	**4,000**	
8.84	2-Butanol	**14,000**	
9.67	Methyl Propionate	**6,800**	
10.72	1-Butanol	**42,000**	
11.07	2-Pentanone	**4,100**	
12.14	Methyl Butyrate	**9,500**	
13.33	Cyclopentanone	**2,600**	
14.32	2-Methylcyclopentanone	**8,000**	
14.86	1-Hexanol	**3,100**	
15.73	2-Ethylcyclopentanone	**7,600**	
16.77	2-Ethyl-1-hexanol	**29,000**	
16.83	Unidentified Compound	**2,400**	

T = Analyte is a tentatively identified compound, result is estimated.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02229** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-007

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/10/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.013 Liter(s)
Test Notes:
Container ID: SC00825

Initial Pressure (psig): -1.30 Final Pressure (psig): 3.64

Canister Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**330**	53	**190**	31	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	53	ND	11	
74-87-3	Chloromethane	ND	53	ND	26	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	53	ND	7.5	
75-01-4	Vinyl Chloride	ND	53	ND	21	
106-99-0	1,3-Butadiene	ND	53	ND	24	
74-83-9	Bromomethane	ND	53	ND	14	
75-00-3	Chloroethane	ND	53	ND	20	
64-17-5	Ethanol	**26,000**	530	**14,000**	280	
75-05-8	Acetonitrile	ND	53	ND	31	
107-02-8	Acrolein	ND	210	ND	92	
67-64-1	Acetone	**19,000**	530	**8,000**	220	
75-69-4	Trichlorofluoromethane	ND	53	ND	9.4	
67-63-0	2-Propanol (Isopropyl Alcohol)	**4,200**	530	**1,700**	210	
107-13-1	Acrylonitrile	ND	53	ND	24	
75-35-4	1,1-Dichloroethene	ND	53	ND	13	
75-09-2	Methylene Chloride	ND	53	ND	15	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	53	ND	17	
76-13-1	Trichlorotrifluoroethane	ND	53	ND	6.9	
75-15-0	Carbon Disulfide	ND	530	ND	170	
156-60-5	trans-1,2-Dichloroethene	ND	53	ND	13	
75-34-3	1,1-Dichloroethane	ND	53	ND	13	
1634-04-4	Methyl tert-Butyl Ether	ND	53	ND	15	
108-05-4	Vinyl Acetate	ND	530	ND	150	
78-93-3	2-Butanone (MEK)	**8,100**	530	**2,700**	180	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02229** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-007

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/10/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.013 Liter(s)
Test Notes:
Container ID: SC00825

Initial Pressure (psig): -1.30 Final Pressure (psig): 3.64

Canister Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	53	ND	13	
141-78-6	Ethyl Acetate	**330**	110	**92**	29	
110-54-3	n-Hexane	ND	53	ND	15	
67-66-3	Chloroform	ND	53	ND	11	
109-99-9	Tetrahydrofuran (THF)	**3,900**	53	**1,300**	18	
107-06-2	1,2-Dichloroethane	ND	53	ND	13	
71-55-6	1,1,1-Trichloroethane	ND	53	ND	9.7	
71-43-2	Benzene	ND	53	ND	17	
56-23-5	Carbon Tetrachloride	ND	53	ND	8.4	
110-82-7	Cyclohexane	ND	110	ND	31	
78-87-5	1,2-Dichloropropane	ND	53	ND	11	
75-27-4	Bromodichloromethane	ND	53	ND	7.9	
79-01-6	Trichloroethene	ND	53	ND	9.8	
123-91-1	1,4-Dioxane	**300**	53	**84**	15	
80-62-6	Methyl Methacrylate	ND	110	ND	26	
142-82-5	n-Heptane	ND	53	ND	13	
10061-01-5	cis-1,3-Dichloropropene	ND	53	ND	12	
108-10-1	4-Methyl-2-pentanone	**140**	53	**34**	13	
10061-02-6	trans-1,3-Dichloropropene	ND	53	ND	12	
79-00-5	1,1,2-Trichloroethane	ND	53	ND	9.7	
108-88-3	Toluene	ND	53	ND	14	
591-78-6	2-Hexanone	**130**	53	**31**	13	
124-48-1	Dibromochloromethane	ND	53	ND	6.2	
106-93-4	1,2-Dibromoethane	ND	53	ND	6.9	
123-86-4	n-Butyl Acetate	**200**	53	**41**	11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02229**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-007

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00825

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.013 Liter(s)

Initial Pressure (psig): -1.30 Final Pressure (psig): 3.64

Canister Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	53	ND	11	
127-18-4	Tetrachloroethene	ND	53	ND	7.8	
108-90-7	Chlorobenzene	ND	53	ND	11	
100-41-4	Ethylbenzene	ND	53	ND	12	
179601-23-1	m,p-Xylenes	ND	110	ND	24	
75-25-2	Bromoform	ND	53	ND	5.1	
100-42-5	Styrene	ND	53	ND	12	
95-47-6	o-Xylene	ND	53	ND	12	
111-84-2	n-Nonane	ND	53	ND	10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	53	ND	7.7	
98-82-8	Cumene	ND	53	ND	11	
80-56-8	alpha-Pinene	ND	53	ND	9.5	
103-65-1	n-Propylbenzene	ND	53	ND	11	
622-96-8	4-Ethyltoluene	ND	53	ND	11	
108-67-8	1,3,5-Trimethylbenzene	ND	53	ND	11	
95-63-6	1,2,4-Trimethylbenzene	ND	53	ND	11	
100-44-7	Benzyl Chloride	ND	53	ND	10	
541-73-1	1,3-Dichlorobenzene	ND	53	ND	8.8	
106-46-7	1,4-Dichlorobenzene	ND	53	ND	8.8	
95-50-1	1,2-Dichlorobenzene	ND	53	ND	8.8	
5989-27-5	d-Limonene	**72**	53	**13**	9.5	
96-12-8	1,2-Dibromo-3-chloropropane	ND	53	ND	5.5	
120-82-1	1,2,4-Trichlorobenzene	ND	53	ND	7.1	
91-20-3	Naphthalene	**180**	53	**35**	10	
87-68-3	Hexachlorobutadiene	ND	53	ND	4.9	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **02229** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-007

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/10/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.013 Liter(s)
Test Notes: T
Container ID: SC00825

Initial Pressure (psig): -1.30 Final Pressure (psig): 3.64

Canister Dilution Factor: 1.37

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
2.50	Acetaldehyde	1,700	
6.21	Methyl Acetate	4,200	
7.58	1-Propanol	3,300	
8.85	2-Butanol	3,100	
9.67	Methyl Propionate	1,100	
10.76	1-Butanol	12,000	
11.07	2-Pentanone	770	
12.14	Methyl Butyrate	1,800	
14.32	2-Methylcyclopentanone	1,900	
14.86	1-Hexanol	890	
15.22	2-Methyl-2-Cyclopentanone-1-one	760	
15.73	2-Ethylcyclopentanone	2,300	
16.35	2,3-Dimethyl-2-Cyclopenten-1-one	910	
16.78	2-Ethyl-1-hexanol	12,000	
16.82	Unidentified Compound	890	

T = Analyte is a tentatively identified compound, result is estimated.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01270** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-008

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC01477

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.0030 Liter(s)
0.0020 Liter(s)

Initial Pressure (psig): -1.32 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**2,400**	230	**1,400**	130	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	230	ND	47	
74-87-3	Chloromethane	ND	230	ND	110	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	230	ND	33	
75-01-4	Vinyl Chloride	ND	230	ND	90	
106-99-0	1,3-Butadiene	ND	230	ND	100	
74-83-9	Bromomethane	ND	230	ND	59	
75-00-3	Chloroethane	ND	230	ND	87	
64-17-5	Ethanol	**110,000**	2,300	**57,000**	1,200	
75-05-8	Acetonitrile	ND	230	ND	140	
107-02-8	Acrolein	ND	920	ND	400	
67-64-1	Acetone	**120,000**	2,300	**48,000**	970	
75-69-4	Trichlorofluoromethane	ND	230	ND	41	
67-63-0	2-Propanol (Isopropyl Alcohol)	**19,000**	2,300	**7,700**	940	
107-13-1	Acrylonitrile	ND	230	ND	110	
75-35-4	1,1-Dichloroethene	ND	230	ND	58	
75-09-2	Methylene Chloride	ND	230	ND	66	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	230	ND	74	
76-13-1	Trichlorotrifluoroethane	ND	230	ND	30	
75-15-0	Carbon Disulfide	ND	2,300	ND	740	
156-60-5	trans-1,2-Dichloroethene	ND	230	ND	58	
75-34-3	1,1-Dichloroethane	ND	230	ND	57	
1634-04-4	Methyl tert-Butyl Ether	ND	230	ND	64	
108-05-4	Vinyl Acetate	ND	2,300	ND	650	
78-93-3	2-Butanone (MEK)	**61,000**	3,500	**21,000**	1,200	**D**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01270** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-008

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC01477

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.0030 Liter(s)
0.0020 Liter(s)

Initial Pressure (psig): -1.32 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	230	ND	58	
141-78-6	Ethyl Acetate	**3,000**	460	**820**	130	
110-54-3	n-Hexane	ND	230	ND	65	
67-66-3	Chloroform	ND	230	ND	47	
109-99-9	Tetrahydrofuran (THF)	**28,000**	230	**9,500**	78	
107-06-2	1,2-Dichloroethane	ND	230	ND	57	
71-55-6	1,1,1-Trichloroethane	ND	230	ND	42	
71-43-2	Benzene	ND	230	ND	72	
56-23-5	Carbon Tetrachloride	ND	230	ND	37	
110-82-7	Cyclohexane	ND	460	ND	130	
78-87-5	1,2-Dichloropropane	ND	230	ND	50	
75-27-4	Bromodichloromethane	ND	230	ND	34	
79-01-6	Trichloroethene	ND	230	ND	43	
123-91-1	1,4-Dioxane	**1,300**	230	**360**	64	
80-62-6	Methyl Methacrylate	ND	460	ND	110	
142-82-5	n-Heptane	ND	230	ND	56	
10061-01-5	cis-1,3-Dichloropropene	ND	230	ND	51	
108-10-1	4-Methyl-2-pentanone	**1,200**	230	**290**	56	
10061-02-6	trans-1,3-Dichloropropene	ND	230	ND	51	
79-00-5	1,1,2-Trichloroethane	ND	230	ND	42	
108-88-3	Toluene	ND	230	ND	61	
591-78-6	2-Hexanone	**970**	230	**240**	56	
124-48-1	Dibromochloromethane	ND	230	ND	27	
106-93-4	1,2-Dibromoethane	ND	230	ND	30	
123-86-4	n-Butyl Acetate	**1,900**	230	**390**	48	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01270**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-008

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC01477

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.0030 Liter(s)
0.0020 Liter(s)

Initial Pressure (psig): -1.32 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	230	ND	49	
127-18-4	Tetrachloroethene	ND	230	ND	34	
108-90-7	Chlorobenzene	ND	230	ND	50	
100-41-4	Ethylbenzene	ND	230	ND	53	
179601-23-1	m,p-Xylenes	ND	460	ND	110	
75-25-2	Bromoform	ND	230	ND	22	
100-42-5	Styrene	ND	230	ND	54	
95-47-6	o-Xylene	ND	230	ND	53	
111-84-2	n-Nonane	ND	230	ND	44	
79-34-5	1,1,2,2-Tetrachloroethane	ND	230	ND	34	
98-82-8	Cumene	ND	230	ND	47	
80-56-8	alpha-Pinene	ND	230	ND	41	
103-65-1	n-Propylbenzene	ND	230	ND	47	
622-96-8	4-Ethyltoluene	ND	230	ND	47	
108-67-8	1,3,5-Trimethylbenzene	ND	230	ND	47	
95-63-6	1,2,4-Trimethylbenzene	**280**	230	**57**	47	
100-44-7	Benzyl Chloride	ND	230	ND	44	
541-73-1	1,3-Dichlorobenzene	ND	230	ND	38	
106-46-7	1,4-Dichlorobenzene	**370**	230	**62**	38	
95-50-1	1,2-Dichlorobenzene	ND	230	ND	38	
5989-27-5	d-Limonene	**660**	230	**120**	41	
96-12-8	1,2-Dibromo-3-chloropropane	ND	230	ND	24	
120-82-1	1,2,4-Trichlorobenzene	ND	230	ND	31	
91-20-3	Naphthalene	**780**	230	**150**	44	
87-68-3	Hexachlorobutadiene	ND	230	ND	22	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **01270** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-008

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes: T
Container ID: SC01477

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.0030 Liter(s)
0.0020 Liter(s)

Initial Pressure (psig): -1.32 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.38

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
2.52	Acetaldehyde	**12,000**	
6.22	Methyl Acetate	**33,000**	
7.59	1-Propanol	**15,000**	
8.86	2-Butanol	**16,000**	
9.72	Isobutanol	**4,600**	
10.76	1-Butanol	**56,000**	
11.07	2-Pentanone	**5,800**	
12.14	Methyl Butyrate	**17,000**	
14.32	2-Methylcyclopentanone	**11,000**	
14.86	1-Hexanol	**4,700**	
15.57	Methyl Hexanoate	**4,400**	
15.73	2-Ethylcyclopentanone	**13,000**	
16.38	Butyl Butyrate	**5,100**	
16.78	2-Ethyl-1-hexanol	**51,000**	
16.83	Unidentified Compound	**5,200**	

T = Analyte is a tentatively identified compound, result is estimated.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **03275**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-009

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00925

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.0090 Liter(s)

Initial Pressure (psig): -2.46 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**720**	83	**420**	48	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	83	ND	17	
74-87-3	Chloromethane	ND	83	ND	40	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	83	ND	12	
75-01-4	Vinyl Chloride	ND	83	ND	33	
106-99-0	1,3-Butadiene	ND	83	ND	38	
74-83-9	Bromomethane	ND	83	ND	21	
75-00-3	Chloroethane	ND	83	ND	32	
64-17-5	Ethanol	**40,000**	830	**21,000**	440	
75-05-8	Acetonitrile	ND	83	ND	50	
107-02-8	Acrolein	ND	330	ND	150	
67-64-1	Acetone	**32,000**	830	**14,000**	350	
75-69-4	Trichlorofluoromethane	ND	83	ND	15	
67-63-0	2-Propanol (Isopropyl Alcohol)	**6,500**	830	**2,600**	340	
107-13-1	Acrylonitrile	ND	83	ND	38	
75-35-4	1,1-Dichloroethene	ND	83	ND	21	
75-09-2	Methylene Chloride	ND	83	ND	24	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	83	ND	27	
76-13-1	Trichlorotrifluoroethane	ND	83	ND	11	
75-15-0	Carbon Disulfide	ND	830	ND	270	
156-60-5	trans-1,2-Dichloroethene	ND	83	ND	21	
75-34-3	1,1-Dichloroethane	ND	83	ND	21	
1634-04-4	Methyl tert-Butyl Ether	ND	83	ND	23	
108-05-4	Vinyl Acetate	ND	830	ND	240	
78-93-3	2-Butanone (MEK)	**14,000**	830	**4,900**	280	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **03275** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-009

Test Code: EPA TO-15:Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00925

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.0090 Liter(s)

Initial Pressure (psig): -2.46 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	83	ND	21	
141-78-6	Ethyl Acetate	**640**	170	**180**	46	
110-54-3	n-Hexane	ND	83	ND	24	
67-66-3	Chloroform	ND	83	ND	17	
109-99-9	Tetrahydrofuran (THF)	**7,000**	83	**2,400**	28	
107-06-2	1,2-Dichloroethane	ND	83	ND	21	
71-55-6	1,1,1-Trichloroethane	ND	83	ND	15	
71-43-2	Benzene	ND	83	ND	26	
56-23-5	Carbon Tetrachloride	ND	83	ND	13	
110-82-7	Cyclohexane	ND	170	ND	48	
78-87-5	1,2-Dichloropropane	ND	83	ND	18	
75-27-4	Bromodichloromethane	ND	83	ND	12	
79-01-6	Trichloroethene	ND	83	ND	16	
123-91-1	1,4-Dioxane	**470**	83	**130**	23	
80-62-6	Methyl Methacrylate	ND	170	ND	41	
142-82-5	n-Heptane	ND	83	ND	20	
10061-01-5	cis-1,3-Dichloropropene	ND	83	ND	18	
108-10-1	4-Methyl-2-pentanone	**270**	83	**67**	20	
10061-02-6	trans-1,3-Dichloropropene	ND	83	ND	18	
79-00-5	1,1,2-Trichloroethane	ND	83	ND	15	
108-88-3	Toluene	ND	83	ND	22	
591-78-6	2-Hexanone	**230**	83	**56**	20	
124-48-1	Dibromochloromethane	ND	83	ND	9.8	
106-93-4	1,2-Dibromoethane	ND	83	ND	11	
123-86-4	n-Butyl Acetate	**390**	83	**81**	18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **03275**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-009

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00925

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.0090 Liter(s)

Initial Pressure (psig): -2.46 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	83	ND	18	
127-18-4	Tetrachloroethene	ND	83	ND	12	
108-90-7	Chlorobenzene	ND	83	ND	18	
100-41-4	Ethylbenzene	ND	83	ND	19	
179601-23-1	m,p-Xylenes	ND	170	ND	38	
75-25-2	Bromoform	ND	83	ND	8.1	
100-42-5	Styrene	ND	83	ND	20	
95-47-6	o-Xylene	ND	83	ND	19	
111-84-2	n-Nonane	ND	83	ND	16	
79-34-5	1,1,2,2-Tetrachloroethane	ND	83	ND	12	
98-82-8	Cumene	ND	83	ND	17	
80-56-8	alpha-Pinene	ND	83	ND	15	
103-65-1	n-Propylbenzene	ND	83	ND	17	
622-96-8	4-Ethyltoluene	ND	83	ND	17	
108-67-8	1,3,5-Trimethylbenzene	ND	83	ND	17	
95-63-6	1,2,4-Trimethylbenzene	ND	83	ND	17	
100-44-7	Benzyl Chloride	ND	83	ND	16	
541-73-1	1,3-Dichlorobenzene	ND	83	ND	14	
106-46-7	1,4-Dichlorobenzene	ND	83	ND	14	
95-50-1	1,2-Dichlorobenzene	ND	83	ND	14	
5989-27-5	d-Limonene	**110**	83	**21**	15	
96-12-8	1,2-Dibromo-3-chloropropane	ND	83	ND	8.6	
120-82-1	1,2,4-Trichlorobenzene	ND	83	ND	11	
91-20-3	Naphthalene	**260**	83	**49**	16	
87-68-3	Hexachlorobutadiene	ND	83	ND	7.8	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **03275** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-009

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/10/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.0090 Liter(s)
Test Notes: T
Container ID: SC00925

Initial Pressure (psig): -2.46 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.50

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
2.52	Acetaldehyde	**3,000**	
6.21	Methyl Acetate	**7,800**	
7.59	1-Propanol	**5,300**	
8.15	n-Butanal	**1,300**	
8.85	2-Butanol	**5,100**	
9.68	Methyl Propionate	**2,200**	
9.72	Isobutanol	**1,300**	
10.76	1-Butanol	**18,000**	
11.07	2-Pentanone	**1,400**	
12.14	Methyl Butyrate	**3,500**	
14.32	2-Methylcyclopentanone	**3,100**	
14.86	1-Hexanol	**1,500**	
15.73	2-Ethylcyclopentanone	**3,700**	
16.78	2-Ethyl-1-hexanol	**18,000**	
16.83	Unidentified Compound	**1,400**	

T = Analyte is a tentatively identified compound, result is estimated.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **00404** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-010

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00112

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.0015 Liter(s)

Initial Pressure (psig): -1.55 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.40

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**2,400**	470	**1,400**	270	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	470	ND	94	
74-87-3	Chloromethane	ND	470	ND	230	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	470	ND	67	
75-01-4	Vinyl Chloride	ND	470	ND	180	
106-99-0	1,3-Butadiene	ND	470	ND	210	
74-83-9	Bromomethane	ND	470	ND	120	
75-00-3	Chloroethane	ND	470	ND	180	
64-17-5	Ethanol	**110,000**	4,700	**61,000**	2,500	
75-05-8	Acetonitrile	ND	470	ND	280	
107-02-8	Acrolein	ND	1,900	ND	810	
67-64-1	Acetone	**130,000**	4,700	**57,000**	2,000	
75-69-4	Trichlorofluoromethane	ND	470	ND	83	
67-63-0	2-Propanol (Isopropyl Alcohol)	**22,000**	4,700	**8,800**	1,900	
107-13-1	Acrylonitrile	ND	470	ND	220	
75-35-4	1,1-Dichloroethene	ND	470	ND	120	
75-09-2	Methylene Chloride	ND	470	ND	130	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	470	ND	150	
76-13-1	Trichlorotrifluoroethane	ND	470	ND	61	
75-15-0	Carbon Disulfide	ND	4,700	ND	1,500	
156-60-5	trans-1,2-Dichloroethene	ND	470	ND	120	
75-34-3	1,1-Dichloroethane	ND	470	ND	120	
1634-04-4	Methyl tert-Butyl Ether	ND	470	ND	130	
108-05-4	Vinyl Acetate	ND	4,700	ND	1,300	
78-93-3	2-Butanone (MEK)	**68,000**	4,700	**23,000**	1,600	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **00404** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-010

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/10/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.0015 Liter(s)
Test Notes:
Container ID: SC00112

Initial Pressure (psig): -1.55 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.40

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	470	ND	120	
141-78-6	Ethyl Acetate	**3,800**	930	**1,100**	260	
110-54-3	n-Hexane	ND	470	ND	130	
67-66-3	Chloroform	ND	470	ND	96	
109-99-9	Tetrahydrofuran (THF)	**35,000**	470	**12,000**	160	
107-06-2	1,2-Dichloroethane	ND	470	ND	120	
71-55-6	1,1,1-Trichloroethane	ND	470	ND	86	
71-43-2	Benzene	ND	470	ND	150	
56-23-5	Carbon Tetrachloride	ND	470	ND	74	
110-82-7	Cyclohexane	ND	930	ND	270	
78-87-5	1,2-Dichloropropane	ND	470	ND	100	
75-27-4	Bromodichloromethane	ND	470	ND	70	
79-01-6	Trichloroethene	ND	470	ND	87	
123-91-1	1,4-Dioxane	**1,400**	470	**380**	130	
80-62-6	Methyl Methacrylate	ND	930	ND	230	
142-82-5	n-Heptane	ND	470	ND	110	
10061-01-5	cis-1,3-Dichloropropene	ND	470	ND	100	
108-10-1	4-Methyl-2-pentanone	**1,500**	470	**370**	110	
10061-02-6	trans-1,3-Dichloropropene	ND	470	ND	100	
79-00-5	1,1,2-Trichloroethane	ND	470	ND	86	
108-88-3	Toluene	ND	470	ND	120	
591-78-6	2-Hexanone	**1,200**	470	**300**	110	
124-48-1	Dibromochloromethane	ND	470	ND	55	
106-93-4	1,2-Dibromoethane	ND	470	ND	61	
123-86-4	n-Butyl Acetate	**2,400**	470	**510**	98	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **00404**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P1301432-010

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00112

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.0015 Liter(s)

Initial Pressure (psig): -1.55 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.40

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	470	ND	100	
127-18-4	Tetrachloroethene	ND	470	ND	69	
108-90-7	Chlorobenzene	ND	470	ND	100	
100-41-4	Ethylbenzene	ND	470	ND	110	
179601-23-1	m,p-Xylenes	ND	930	ND	210	
75-25-2	Bromoform	ND	470	ND	45	
100-42-5	Styrene	ND	470	ND	110	
95-47-6	o-Xylene	ND	470	ND	110	
111-84-2	n-Nonane	ND	470	ND	89	
79-34-5	1,1,2,2-Tetrachloroethane	ND	470	ND	68	
98-82-8	Cumene	ND	470	ND	95	
80-56-8	alpha-Pinene	ND	470	ND	84	
103-65-1	n-Propylbenzene	ND	470	ND	95	
622-96-8	4-Ethyltoluene	ND	470	ND	95	
108-67-8	1,3,5-Trimethylbenzene	ND	470	ND	95	
95-63-6	1,2,4-Trimethylbenzene	ND	470	ND	95	
100-44-7	Benzyl Chloride	ND	470	ND	90	
541-73-1	1,3-Dichlorobenzene	ND	470	ND	78	
106-46-7	1,4-Dichlorobenzene	**570**	470	**96**	78	
95-50-1	1,2-Dichlorobenzene	ND	470	ND	78	
5989-27-5	d-Limonene	**990**	470	**180**	84	
96-12-8	1,2-Dibromo-3-chloropropane	ND	470	ND	48	
120-82-1	1,2,4-Trichlorobenzene	ND	470	ND	63	
91-20-3	Naphthalene	**1,100**	470	**210**	89	
87-68-3	Hexachlorobutadiene	ND	470	ND	44	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **00404** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-010

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/10/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.0015 Liter(s)
Test Notes: **T**
Container ID: SC00112

Initial Pressure (psig): -1.55 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.40

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
2.51	Acetaldehyde	**15,000**	
6.21	Methyl Acetate	**41,000**	
7.55	1-Propanol	**17,000**	
8.15	n-Butanal	**8,100**	
8.84	2-Butanol	**19,000**	
9.67	Methyl Propionate	**13,000**	
10.73	1-Butanol	**62,000**	
11.07	2-Pentanone	**7,300**	
12.14	Methyl Butyrate	**22,000**	
14.32	2-Methylcyclopentanone	**13,000**	
15.57	Methyl Hexanoate	**5,700**	
15.73	2-Ethylcyclopentanone	**15,000**	
16.38	Butyl Butyrate	**6,300**	
16.77	2-Ethyl-1-hexanol	**56,000**	
16.84	p-Isopropyltoluene	**6,700**	

T = Analyte is a tentatively identified compound, result is estimated.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P130409-MB

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/9/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	ND	2.0	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P130409-MB

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/9/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P130409-MB

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 4/9/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
91-20-3	Naphthalene	ND	0.50	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P130409-MB

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/9/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
	No Compounds Detected		

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P130410-MB

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 4/10/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	ND	2.0	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P130410-MB

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/10/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432
CAS Sample ID: P130410-MB

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 4/10/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
91-20-3	Naphthalene	ND	0.50	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P130410-MB

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/10/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
	No Compounds Detected		

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SURROGATE SPIKE RECOVERY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005**

CAS Project ID: P1301432

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister(s)
Test Notes:

Date(s) Collected: 4/5/13
Date(s) Received: 4/8/13
Date(s) Analyzed: 4/9 - 4/10/13

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P130409-MB	101	102	97	70-130	
Method Blank	P130410-MB	102	102	97	70-130	
Lab Control Sample	P130409-LCS	99	100	101	70-130	
Lab Control Sample	P130410-LCS	97	105	95	70-130	
01373	P1301432-001	100	101	99	70-130	
01233	P1301432-002	99	101	100	70-130	
01545	P1301432-003	97	95	107	70-130	
02705	P1301432-004	94	93	108	70-130	
02836	P1301432-005	98	96	105	70-130	
02733	P1301432-006	99	98	102	70-130	
02229	P1301432-007	96	95	106	70-130	
01270	P1301432-008	97	94	108	70-130	
03275	P1301432-009	97	94	109	70-130	
00404	P1301432-010	98	95	107	70-130	
00404	P1301432-010DUP	95	100	98	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P130409-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/09/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	204	220	108	58-139	
75-71-8	Dichlorodifluoromethane (CFC 12)	202	199	99	63-115	
74-87-3	Chloromethane	196	199	102	58-122	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	206	204	99	65-115	
75-01-4	Vinyl Chloride	200	204	102	64-122	
106-99-0	1,3-Butadiene	210	241	115	57-141	
74-83-9	Bromomethane	200	208	104	68-122	
75-00-3	Chloroethane	202	208	103	66-120	
64-17-5	Ethanol	958	965	101	58-126	
75-05-8	Acetonitrile	202	208	103	64-136	
107-02-8	Acrolein	204	213	104	58-129	
67-64-1	Acetone	1,040	1020	98	60-114	
75-69-4	Trichlorofluoromethane	210	194	92	62-107	
67-63-0	2-Propanol (Isopropyl Alcohol)	396	346	87	54-118	
107-13-1	Acrylonitrile	206	230	112	72-143	
75-35-4	1,1-Dichloroethene	218	227	104	69-119	
75-09-2	Methylene Chloride	212	195	92	64-113	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	214	178	83	59-131	
76-13-1	Trichlorotrifluoroethane	212	215	101	69-117	
75-15-0	Carbon Disulfide	208	196	94	65-115	
156-60-5	trans-1,2-Dichloroethene	202	220	109	70-126	
75-34-3	1,1-Dichloroethane	206	205	100	68-116	
1634-04-4	Methyl tert-Butyl Ether	204	207	101	69-120	
108-05-4	Vinyl Acetate	988	1050	106	58-160	
78-93-3	2-Butanone (MEK)	212	216	102	70-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P130409-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/09/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	214	**221**	**103**	70-119	
141-78-6	Ethyl Acetate	412	**436**	**106**	72-129	
110-54-3	n-Hexane	206	**193**	**94**	63-115	
67-66-3	Chloroform	222	**213**	**96**	68-110	
109-99-9	Tetrahydrofuran (THF)	208	**231**	**111**	60-126	
107-06-2	1,2-Dichloroethane	208	**209**	**100**	69-118	
71-55-6	1,1,1-Trichloroethane	204	**209**	**102**	68-120	
71-43-2	Benzene	208	**192**	**92**	69-117	
56-23-5	Carbon Tetrachloride	212	**222**	**105**	65-134	
110-82-7	Cyclohexane	402	**405**	**101**	69-114	
78-87-5	1,2-Dichloropropane	204	**206**	**101**	70-116	
75-27-4	Bromodichloromethane	204	**215**	**105**	71-126	
79-01-6	Trichloroethene	198	**206**	**104**	71-119	
123-91-1	1,4-Dioxane	206	**202**	**98**	72-126	
80-62-6	Methyl Methacrylate	414	**442**	**107**	75-136	
142-82-5	n-Heptane	202	**201**	**100**	70-117	
10061-01-5	cis-1,3-Dichloropropene	196	**210**	**107**	75-132	
108-10-1	4-Methyl-2-pentanone	210	**224**	**107**	70-133	
10061-02-6	trans-1,3-Dichloropropene	218	**242**	**111**	78-136	
79-00-5	1,1,2-Trichloroethane	202	**206**	**102**	72-119	
108-88-3	Toluene	208	**198**	**95**	65-116	
591-78-6	2-Hexanone	228	**232**	**102**	62-132	
124-48-1	Dibromochloromethane	216	**234**	**108**	66-140	
106-93-4	1,2-Dibromoethane	208	**216**	**104**	69-130	
123-86-4	n-Butyl Acetate	228	**235**	**103**	63-136	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** — CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** — CAS Sample ID: P130409-LCS

Test Code: EPA TO-15 Modified — Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 — Date Received: NA
Analyst: Elsa Moctezuma — Date Analyzed: 4/09/13
Sample Type: 6.0 L Summa Canister — Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	206	**207**	**100**	66-118	
127-18-4	Tetrachloroethene	190	**191**	**101**	63-123	
108-90-7	Chlorobenzene	208	**209**	**100**	66-118	
100-41-4	Ethylbenzene	206	**205**	**100**	66-119	
179601-23-1	m,p-Xylenes	412	**405**	**98**	64-118	
75-25-2	Bromoform	216	**231**	**107**	64-140	
100-42-5	Styrene	208	**213**	**102**	68-132	
95-47-6	o-Xylene	200	**200**	**100**	65-120	
111-84-2	n-Nonane	202	**201**	**100**	64-117	
79-34-5	1,1,2,2-Tetrachloroethane	198	**204**	**103**	63-128	
98-82-8	Cumene	196	**194**	**99**	65-121	
80-56-8	alpha-Pinene	192	**199**	**104**	66-123	
103-65-1	n-Propylbenzene	198	**195**	**98**	65-121	
622-96-8	4-Ethyltoluene	204	**192**	**94**	64-122	
108-67-8	1,3,5-Trimethylbenzene	208	**208**	**100**	64-125	
95-63-6	1,2,4-Trimethylbenzene	200	**213**	**107**	64-131	
100-44-7	Benzyl Chloride	206	**245**	**119**	67-146	
541-73-1	1,3-Dichlorobenzene	206	**209**	**101**	64-130	
106-46-7	1,4-Dichlorobenzene	212	**199**	**94**	61-124	
95-50-1	1,2-Dichlorobenzene	204	**200**	**98**	63-126	
5989-27-5	d-Limonene	206	**228**	**111**	62-133	
96-12-8	1,2-Dibromo-3-chloropropane	202	**221**	**109**	62-155	
120-82-1	1,2,4-Trichlorobenzene	200	**205**	**103**	59-146	
91-20-3	Naphthalene	178	**190**	**107**	56-143	
87-68-3	Hexachlorobutadiene	208	**201**	**97**	58-133	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P130410-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/10/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	204	**213**	**104**	58-139	
75-71-8	Dichlorodifluoromethane (CFC 12)	202	**197**	**98**	63-115	
74-87-3	Chloromethane	196	**197**	**101**	58-122	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	206	**202**	**98**	65-115	
75-01-4	Vinyl Chloride	200	**204**	**102**	64-122	
106-99-0	1,3-Butadiene	210	**237**	**113**	57-141	
74-83-9	Bromomethane	200	**208**	**104**	68-122	
75-00-3	Chloroethane	202	**207**	**102**	66-120	
64-17-5	Ethanol	958	**972**	**101**	58-126	
75-05-8	Acetonitrile	202	**207**	**102**	64-136	
107-02-8	Acrolein	204	**212**	**104**	58-129	
67-64-1	Acetone	1,040	**1010**	**97**	60-114	
75-69-4	Trichlorofluoromethane	210	**193**	**92**	62-107	
67-63-0	2-Propanol (Isopropyl Alcohol)	396	**349**	**88**	54-118	
107-13-1	Acrylonitrile	206	**230**	**112**	72-143	
75-35-4	1,1-Dichloroethene	218	**226**	**104**	69-119	
75-09-2	Methylene Chloride	212	**197**	**93**	64-113	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	214	**177**	**83**	59-131	
76-13-1	Trichlorotrifluoroethane	212	**213**	**100**	69-117	
75-15-0	Carbon Disulfide	208	**196**	**94**	65-115	
156-60-5	trans-1,2-Dichloroethene	202	**220**	**109**	70-126	
75-34-3	1,1-Dichloroethane	206	**206**	**100**	68-116	
1634-04-4	Methyl tert-Butyl Ether	204	**213**	**104**	69-120	
108-05-4	Vinyl Acetate	988	**1050**	**106**	58-160	
78-93-3	2-Butanone (MEK)	212	**218**	**103**	70-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P130410-LCS

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	214	**222**	**104**	70-119	
141-78-6	Ethyl Acetate	412	**443**	**108**	72-129	
110-54-3	n-Hexane	206	**195**	**95**	63-115	
67-66-3	Chloroform	222	**215**	**97**	68-110	
109-99-9	Tetrahydrofuran (THF)	208	**231**	**111**	60-126	
107-06-2	1,2-Dichloroethane	208	**210**	**101**	69-118	
71-55-6	1,1,1-Trichloroethane	204	**213**	**104**	68-120	
71-43-2	Benzene	208	**196**	**94**	69-117	
56-23-5	Carbon Tetrachloride	212	**225**	**106**	65-134	
110-82-7	Cyclohexane	402	**412**	**102**	69-114	
78-87-5	1,2-Dichloropropane	204	**208**	**102**	70-116	
75-27-4	Bromodichloromethane	204	**218**	**107**	71-126	
79-01-6	Trichloroethene	198	**211**	**107**	71-119	
123-91-1	1,4-Dioxane	206	**207**	**100**	72-126	
80-62-6	Methyl Methacrylate	414	**451**	**109**	75-136	
142-82-5	n-Heptane	202	**204**	**101**	70-117	
10061-01-5	cis-1,3-Dichloropropene	196	**213**	**109**	75-132	
108-10-1	4-Methyl-2-pentanone	210	**228**	**109**	70-133	
10061-02-6	trans-1,3-Dichloropropene	218	**244**	**112**	78-136	
79-00-5	1,1,2-Trichloroethane	202	**211**	**104**	72-119	
108-88-3	Toluene	208	**212**	**102**	65-116	
591-78-6	2-Hexanone	228	**247**	**108**	62-132	
124-48-1	Dibromochloromethane	216	**254**	**118**	66-140	
106-93-4	1,2-Dibromoethane	208	**234**	**113**	69-130	
123-86-4	n-Butyl Acetate	228	**251**	**110**	63-136	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P130410-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/10/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	206	**220**	**107**	66-118	
127-18-4	Tetrachloroethene	190	**206**	**108**	63-123	
108-90-7	Chlorobenzene	208	**224**	**108**	66-118	
100-41-4	Ethylbenzene	206	**221**	**107**	66-119	
179601-23-1	m,p-Xylenes	412	**434**	**105**	64-118	
75-25-2	Bromoform	216	**243**	**113**	64-140	
100-42-5	Styrene	208	**229**	**110**	68-132	
95-47-6	o-Xylene	200	**216**	**108**	65-120	
111-84-2	n-Nonane	202	**214**	**106**	64-117	
79-34-5	1,1,2,2-Tetrachloroethane	198	**219**	**111**	63-128	
98-82-8	Cumene	196	**207**	**106**	65-121	
80-56-8	alpha-Pinene	192	**214**	**111**	66-123	
103-65-1	n-Propylbenzene	198	**209**	**106**	65-121	
622-96-8	4-Ethyltoluene	204	**232**	**114**	64-122	
108-67-8	1,3,5-Trimethylbenzene	208	**224**	**108**	64-125	
95-63-6	1,2,4-Trimethylbenzene	200	**228**	**114**	64-131	
100-44-7	Benzyl Chloride	206	**262**	**127**	67-146	
541-73-1	1,3-Dichlorobenzene	206	**223**	**108**	64-130	
106-46-7	1,4-Dichlorobenzene	212	**214**	**101**	61-124	
95-50-1	1,2-Dichlorobenzene	204	**214**	**105**	63-126	
5989-27-5	d-Limonene	206	**245**	**119**	62-133	
96-12-8	1,2-Dibromo-3-chloropropane	202	**236**	**117**	62-155	
120-82-1	1,2,4-Trichlorobenzene	200	**219**	**110**	59-146	
91-20-3	Naphthalene	178	**202**	**113**	56-143	
87-68-3	Hexachlorobutadiene	208	**213**	**102**	58-133	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **00404** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-010DUP

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00112

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.0015 Liter(s)

Initial Pressure (psig): -1.55 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.40

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
Propene	2,410	1,400	1,350	786	1880	**56**	25	**R**
Dichlorodifluoromethane (CFC 12)	ND	ND	ND	ND	-	-	25	
Chloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	ND	ND	ND	-	-	25	
Vinyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Butadiene	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Ethanol	114,000	60,800	117,000	62,200	115500	**3**	25	
Acetonitrile	ND	ND	ND	ND	-	-	25	
Acrolein	ND	ND	ND	ND	-	-	25	
Acetone	134,000	56,600	139,000	58,400	136500	**4**	25	
Trichlorofluoromethane	ND	ND	ND	ND	-	-	25	
2-Propanol (Isopropyl Alcohol)	21,500	8,770	24,000	9,750	22750	**11**	25	
Acrylonitrile	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	ND	ND	ND	ND	-	-	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	ND	ND	-	-	25	
Trichlorotrifluoroethane	ND	ND	ND	ND	-	-	25	
Carbon Disulfide	ND	ND	ND	ND	-	-	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	
Vinyl Acetate	ND	ND	ND	ND	-	-	25	
2-Butanone (MEK)	68,300	23,200	68,400	23,200	68350	**0.1**	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
R = Duplicate precision not met.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **00404** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-010DUP

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00112

Date Collected: 4/5/13
Date Received: 4/8/13
Date Analyzed: 4/10/13
Volume(s) Analyzed: 0.0015 Liter(s)

Initial Pressure (psig): -1.55 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.40

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Ethyl Acetate	3,810	1,060	3,800	1,060	3805	**0.3**	25	
n-Hexane	ND	ND	ND	ND	-	-	25	
Chloroform	ND	ND	ND	ND	-	-	25	
Tetrahydrofuran (THF)	34,600	11,700	35,100	11,900	34850	**1**	25	
1,2-Dichloroethane	ND	ND	ND	ND	-	-	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Benzene	ND	ND	ND	ND	-	-	25	
Carbon Tetrachloride	ND	ND	ND	ND	-	-	25	
Cyclohexane	ND	ND	ND	ND	-	-	25	
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
Trichloroethene	ND	ND	ND	ND	-	-	25	
1,4-Dioxane	1,390	385	1,480	411	1435	**6**	25	
Methyl Methacrylate	ND	ND	ND	ND	-	-	25	
n-Heptane	ND	ND	ND	ND	-	-	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	1,500	367	1,530	375	1515	**2**	25	
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
1,1,2-Trichloroethane	ND	ND	ND	ND	-	-	25	
Toluene	ND	ND	ND	ND	-	-	25	
2-Hexanone	1,210	295	1,360	333	1285	**12**	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	
n-Butyl Acetate	2,400	506	2,680	564	2540	**11**	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **00404** CAS Project ID: P1301432
Client Project ID: **CONFIDENTIAL - LANDFILL / 182608005** CAS Sample ID: P1301432-010DUP

Test Code: EPA TO-15 Modified Date Collected: 4/5/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/8/13
Analyst: Elsa Moctezuma Date Analyzed: 4/10/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.0015 Liter(s)
Test Notes:
Container ID: SC00112

Initial Pressure (psig): -1.55 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.40

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
n-Octane	ND	ND	ND	ND	-	-	25	
Tetrachloroethene	ND	ND	ND	ND	-	-	25	
Chlorobenzene	ND	ND	ND	ND	-	-	25	
Ethylbenzene	ND	ND	ND	ND	-	-	25	
m,p-Xylenes	ND	ND	ND	ND	-	-	25	
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	ND	ND	ND	ND	-	-	25	
o-Xylene	ND	ND	ND	ND	-	-	25	
n-Nonane	ND	ND	ND	ND	-	-	25	
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	
Cumene	ND	ND	ND	ND	-	-	25	
alpha-Pinene	ND	ND	ND	ND	-	-	25	
n-Propylbenzene	ND	ND	ND	ND	-	-	25	
4-Ethyltoluene	ND	ND	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
Benzyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	574	95.5	627	104	600.5	**9**	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
d-Limonene	986	177	1,080	194	1033	**9**	25	
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Naphthalene	1,120	214	1,000	192	1060	**11**	25	
Hexachlorobutadiene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

A.2. MSD Lift Station Sampling Event #1
April 25 & April 30, 2013

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LABORATORY REPORT

May 13, 2013

Deborah Gray
Stantec Consulting Services, Inc.
1500 Lake Shore Drive Suite 100
Columbus, OH 43204

RE: Bridgeton Landfill / 182608005

Dear Deborah:

Enclosed are the results of the samples submitted to our laboratory on April 27, 2013. The samples were sent out for partial analysis to our Houston facility. Please find their report attached. The samples were also sent out for partial analysis to our Salt Lake City facility. Please find their report (WO#XXXXX) attached. For your reference, these analyses have been assigned our service request number P1301791.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Samantha Henningsen

By Samantha Henningsen at 3:51 pm, May 13, 2013

Samantha Henningsen
Project Manager

Client: Stantec Consulting Services, Inc.
Project: Bridgeton Landfill / 182608005

Service Request No: P1301791

CASE NARRATIVE

The samples were received intact under chain of custody on April 27, 2013 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Aldehyde Analysis

The DNPH silica gel tube samples were analyzed for aldehydes according to EPA Method TO-11A using high performance liquid chromatography (HPLC). This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

The upper control criterion was exceeded for o-Tolualdehyde in the Continuing Calibration Verification (CCV) analyzed on May 01, 2013. Since the apparent problem equates to a potential high bias and the field sample(s) analyzed in this sequence did not contain the analyte(s) in question, the data quality is not affected. No corrective action was required.

Amine Analysis

The Alumina tube samples were analyzed for amines using a gas chromatograph equipped with a nitrogen phosphorus detector (NPD). This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Ammonia Analysis

The Anasorb 747 tube samples were prepared in accordance with OSHA ID-188 and analyzed for ammonia in air by Ion Selective Electrode per OSHA ID-164. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Carboxylic Acids Analysis

The Silica gel tube samples were analyzed for carboxylic acids using combined gas chromatography/mass spectrometry (GC/MS) in accordance with laboratory operating procedures. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Fixed Gases Analysis

The Silonite Canister samples were analyzed for fixed gases (hydrogen, oxygen/argon, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This method is not included on the laboratory's NELAP scope of accreditation.

Client: Stantec Consulting Services, Inc.
Project: Bridgeton Landfill / 182608005

Service Request No: P1301791

Polynuclear Aromatic Hydrocarbon Analysis

The high volume PUF/XAD-2 samples were analyzed for polynuclear aromatic hydrocarbons (PAHs). The extracts were analyzed according to the methodology outlined in EPA Method TO-13A using combined gas chromatography/mass spectrometry (GC/MS). This method is not included on the laboratory's DoD-ELAP scope of accreditation.

The upper control criterion was exceeded for multiple analytes in the Laboratory Control Sample (LCS) and Duplicate Laboratory Control Sample (LCSD) analyzed on May 6, 2013. The analyte(s) in question were not detected in the associated field samples. Since the error associated with the elevated recovery equates to a high bias, the sample data has not been significantly affected. The data has been flagged accordingly. No corrective action was required.

NELAC requirements for compliance with EPA TO-13A state a duplicate sample must be analyzed. However, this is dependent upon the client submitting a secondary sample for extraction and analysis. Sample extraction was performed at the laboratory's off-site extraction facility located at 2360 Shasta Way, Suite G, Simi Valley, CA 93065.

Sulfur Analysis

The Silonite Canister samples were also analyzed for twenty sulfur compounds per ASTM D 5504-08 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). All compounds with the exception of hydrogen sulfide and carbonyl sulfide are quantitated against the initial calibration curve for methyl mercaptan. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Volatile Organic Compound Analysis

The Silonite Canister samples were also analyzed for volatile organic compounds and tentatively identified compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. Any analytes flagged with an X are not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

The Summa canisters were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of Columbia Analytical Services, Inc. dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Columbia Analytical Services, Inc. dba ALS Environmental - Simi Valley

Certifications, Accreditations, and Registrations

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L11-203
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2012039
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	494864
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	CA200007
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-12-3
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA015272012-2
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.caslab.com, www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

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P1301791□017	□1.97	3.61	0.89□	1.00
P1301791□018	□1□□0	□02	0.718	1.00

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Columbia Analytical Services

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P1301791

CAS Contact: SAMANTHA HENNINGSEN

Company Name & Address (Reporting Information): STANTEC CONSULTING, 1500 LAKE SHORE DRIVE, SUITE 100 COLUMBUS, OH 43204

Project Name: BRIDGETON LANDFILL

Project Number: 182608005

Project Manager: DEB GRAY

P.O. # / Billing Information: SAME

Phone: 614 486 4383 Fax: 614 486 4387

Email Address for Result Reporting: deb.gray@STANTEC.com

Sampler (Print & Sign): CHRIS LA LONDE

Analysis Method/Analytes

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Sample Type (Air/Tube/Solid)	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller (Bar code - FC #)	ML Sample Volume	Analysis Method	Comments e.g. Actual Preservative or specific instructions
425-1 HCL	1	4/25/13	16:55	AIR			97,332 mL	NIOSH 7903	
425-2 ALD	2		16:55				290,763 mL	EPA TO-11a	
425-3 HCN	3		16:55				15,822 mL	NIOSH 6010	
425-4 AMINE	4		16:57				99,332 mL	AQL 101	
425-5 HG	5		16:56				47,009 mL	NIOSH 6009	
425-6 NH4	6		16:57				123,067 mL	OSHA ID 188	
425-7 CARBOX	7		16:55				96,123 mL	AQL 102	
425-8 SO2	8		16:56				46,167 mL	OSHA ID 200	
425-9 HCL B	9	4/25/13	15:55	AIR			FB	NIOSH 7903	
425-10 ALD B	10		15:56				FB	EPA TO-11a	
425-11 HCN B	11		15:57				FB	NIOSH 6010	
425-12 AMINE B	12		15:58				FB	~~NIOSH 7903~~	AQL 101
425-13 HG B	13		15:59				FB	NIOSH 6009	

Report Tier Levels - please select
Tier I - (Results/Default if not specified) ____
Tier II (Results + QC) ____
Tier III (Data Validation Package) 10% Surcharge ____
Tier V (client specified) ____

EDD required Yes / No
Type: ____ EDD Units: ____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	4/26/13	11:30		4/27	1022
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature 4 °C

MSD 025861

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Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P130171a1

Company Name & Address (Reporting Information): STANTEC CONSULTING, 1500 LAKE SHORE DRIVE, SUITE 100 COLUMBUS, OHIO 43204

Project Name: BRIDGETON LANDFILL

Project Number: 182608005

CAS Contact: SAMANTHA HENNINKSEN

Project Manager: DEB GRAY

P.O. # / Billing Information: SAME

Phone: 614 486 4383 Fax: 614 486 4387

Email Address for Result Reporting: deb.gray@Stantec.com

Sampler (Print & Sign): CHRIS LA LONDE

Analysis Method/Analytes

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Sample Type (Air/Tube/Solid)	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller (Bar code - FC #)	Sample Volume				Comments e.g. Actual Preservative or specific instructions
425-14 NH4B	14	4/25/13	16:00	AIR			FB	OSHA ID 188			
425-15 CARBOXB	15	4/25/13	16:01	AIR			FB	AQL 102			
425-16 SO2B	16	4/25/13	16:02	AIR			FB	OSHA ID 200			
							PSI	PSI			
							START PRESSURE	END PRESSURE			
425-SU-1	17	4/25/13	17:47	AIR	SN 13987	SFC000055	-14.64	-2.7	EPA TO-15 + TICS		
425-SU-B	18	4/25/13	16:03	AIR	SN 13695	SFC "NA"	-14.3	-14.3	ASTM D5504		
									EPA 3C M		
					MEDIA ID	PUF SAMPLER				↳ ALL METHODS BOTH CANS	
425-PUF-1DF	19	4/25/13	17:07	AIR	110-12-06	#1059	133,996	LITERS*	EPA	TO-9	
425-PUF-2P	20		17:07		HX-127	#1058	134,680	LITERS*	EPA	TO-13	
425-PUF-BDF	21		17:30			NA	FB		EPA	TO-9	
425-PUF-BP	22		17:30			NA	FB		EPA	TO-13	

Report Tier Levels - please select
Tier I - (Results/Default if not specified) ____
Tier II (Results + QC) ____
Tier III (Data Validation Package) 10% Surcharge ____
Tier V (client specified) ____

EDD required Yes / No
Type: ____ EDD Units: ____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date: 4/26/13	Time: 11:30	Received by: (Signature)	Date: 4/27/13	Time: 1022
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____ °C

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Sample Acceptance Check Form

Client: Stantec Consulting Services, Inc. Work order: P1301791

Project: Bridgeton Landfill / 182608005

Sample(s) received on: 4/27/13 Date opened: 4/27/13 by: MZAMORA

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: 4° C Blank Temperature: ° C **Gel Packs**			
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☒	☐	☐
	Do they contain moisture?	☐	☒	☐
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1301791-001.01	Silica Gel Tube					
P1301791-002.02	Silica Gel DNPH Tube					
P1301791-003.02	Solid Sorbent (Custom) Tube					
P1301791-004.03	Treated Alumina Tube					
P1301791-005.02	Solid Sorbent (Custom) Tube					
P1301791-006.01	Anasorb 747 Tube					
P1301791-007.01	Silica Gel (C. Acids)					
P1301791-008.01	Silica Gel (260/520) Tube					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

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Sample Acceptance Check Form

Client: Stantec Consulting Services, Inc. Work order: P1301791
Project: Bridgeton Landfill / 182608005
Sample(s) received on: 4/27/13 Date opened: 4/27/13 by: MZAMORA

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1301791-009.01	Silica Gel Tube					
P1301791-010.02	Silica Gel DNPH Tube					
P1301791-011.02	Solid Sorbent (Custom) Tube					
P1301791-012.03	Treated Alumina Tube					
P1301791-013.02	Solid Sorbent (Custom) Tube					
P1301791-014.01	Anasorb 747 Tube					
P1301791-015.01	Silica Gel (C. Acids)					
P1301791-016.01	Silica Gel (260/520) Tube					
P1301791-017.01	6.0 L Silonite Can					
P1301791-018.01	6.0 L Silonite Can					
P1301791-019.01	PUF/Filter (High Vol)					
P1301791-020.01	PUF/XAD-2/Filter (High Vol)					
P1301791-021.01	PUF/Filter (High Vol)					
P1301791-022.01	PUF/XAD-2/Filter (High Vol)					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

MSD 025864

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-2 ALD**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-002

Test Code: EPA Method TO-11A
Instrument ID: Agilent Infinity LC 1220/LC3
Analyst: Lusine Hakobyan
Sample Type: Silica Gel DNPH Tube
Test Notes: **BC**

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/1/13
Desorption Volume: 1.0 ml
Volume Sampled: 290.763 Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	380	**1.3**	0.34	**1.1**	0.28	
75-07-0	Acetaldehyde	1,100	**3.9**	0.34	**2.2**	0.19	**BT**
123-38-6	Propionaldehyde	3,200	**11**	0.34	**4.6**	0.14	**BT**
4170-30-3	Crotonaldehyde, Total	< 100	ND	0.34	ND	0.12	
123-72-8	Butyraldehyde	110	**0.37**	0.34	**0.12**	0.12	
100-52-7	Benzaldehyde	110	**0.39**	0.34	**0.090**	0.079	
590-86-3	Isovaleraldehyde	< 100	ND	0.34	ND	0.098	
110-62-3	Valeraldehyde	< 100	ND	0.34	ND	0.098	
529-20-4	o-Tolualdehyde	< 100	ND	0.34	ND	0.070	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	ND	0.69	ND	0.14	
66-25-1	n-Hexaldehyde	400	**1.4**	0.34	**0.33**	0.084	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	ND	0.34	ND	0.063	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
BT = Results indicated possible breakthrough; back section > 10% front section.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-10 ALD B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-010

Test Code: EPA Method TO-11A
Instrument ID: Agilent Infinity LC 1220/LC3
Analyst: Lusine Hakobyan
Sample Type: Silica Gel DNPH Tube
Test Notes: **BC**

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/1/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	< 100	NA	NA	NA	NA	
75-07-0	Acetaldehyde	< 100	NA	NA	NA	NA	
123-38-6	Propionaldehyde	< 100	NA	NA	NA	NA	
4170-30-3	Crotonaldehyde, Total	< 100	NA	NA	NA	NA	
123-72-8	Butyraldehyde	< 100	NA	NA	NA	NA	
100-52-7	Benzaldehyde	< 100	NA	NA	NA	NA	
590-86-3	Isovaleraldehyde	< 100	NA	NA	NA	NA	
110-62-3	Valeraldehyde	< 100	NA	NA	NA	NA	
529-20-4	o-Tolualdehyde	< 100	NA	NA	NA	NA	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	NA	NA	NA	NA	
66-25-1	n-Hexaldehyde	< 100	NA	NA	NA	NA	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
NA = Not applicable.

MSD 025866

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130501-MB

Test Code: EPA Method TO-11A
Instrument ID: Agilent Infinity LC 1220/LC3
Analyst: Lusine Hakobyan
Sample Type: Silica Gel DNPH Tube
Test Notes: **BC**

Date Collected: NA
Date Received: NA
Date Analyzed: 05/01/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	< 100	NA	NA	NA	NA	
75-07-0	Acetaldehyde	< 100	NA	NA	NA	NA	
123-38-6	Propionaldehyde	< 100	NA	NA	NA	NA	
4170-30-3	Crotonaldehyde, Total	< 100	NA	NA	NA	NA	
123-72-8	Butyraldehyde	< 100	NA	NA	NA	NA	
100-52-7	Benzaldehyde	< 100	NA	NA	NA	NA	
590-86-3	Isovaleraldehyde	< 100	NA	NA	NA	NA	
110-62-3	Valeraldehyde	< 100	NA	NA	NA	NA	
529-20-4	o-Tolualdehyde	< 100	NA	NA	NA	NA	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	NA	NA	NA	NA	
66-25-1	n-Hexaldehyde	< 100	NA	NA	NA	NA	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
NA = Not applicable.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-4 AMINE**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-004

Test Code: GC/NPD
Instrument ID: Agilent 6890N/GC15/NPD
Analyst: Zheng Wang
Sampling Media: Treated Alumina Tube
Test Notes: **BC, DE**

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/10/13
Desorption Volume: 2.0 ml
Volume Sampled: 99.332 Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
124-40-3	Dimethylamine	< 0.53	ND	5.3	ND	2.9	
75-04-7	Ethylamine	< 0.55	ND	5.5	ND	3.0	
75-50-3	Trimethylamine	< 0.52	ND	5.2	ND	2.2	
75-31-0	Isopropylamine	< 0.52	ND	5.3	ND	2.2	
75-64-9	tert-Butylamine	< 1.1	ND	11	ND	3.5	
107-10-8	n-Propylamine	< 0.55	ND	5.6	ND	2.3	
109-89-7	Diethylamine	< 0.52	ND	5.2	ND	1.7	
13952-84-6	sec-Butylamine	< 0.53	ND	5.3	ND	1.8	
78-81-9	Isobutylamine	< 0.54	ND	5.4	ND	1.8	
109-73-9	n-Butylamine	< 0.53	ND	5.4	ND	1.8	
108-18-9	Diisopropylamine	< 0.51	ND	5.1	ND	1.2	
121-44-8	Triethylamine	< 0.51	ND	5.2	ND	1.2	
142-84-7	Dipropylamine	< 0.52	ND	5.2	ND	1.3	

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DE = Results reported are corrected for desorption efficiency.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-12 Amine B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-012

Test Code: GC/NPD
Instrument ID: Agilent 6890N/GC15/NPD
Analyst: Zheng Wang
Sampling Media: Treated Alumina Tube
Test Notes: **BC, DE**

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/10/13
Desorption Volume: 2.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
124-40-3	Dimethylamine	< 0.53	NA	NA	NA	NA	
75-04-7	Ethylamine	< 0.55	NA	NA	NA	NA	
75-50-3	Trimethylamine	< 0.52	NA	NA	NA	NA	
75-31-0	Isopropylamine	< 0.52	NA	NA	NA	NA	
75-64-9	tert-Butylamine	< 1.1	NA	NA	NA	NA	
107-10-8	n-Propylamine	< 0.55	NA	NA	NA	NA	
109-89-7	Diethylamine	< 0.52	NA	NA	NA	NA	
13952-84-6	sec-Butylamine	< 0.53	NA	NA	NA	NA	
78-81-9	Isobutylamine	< 0.54	NA	NA	NA	NA	
109-73-9	n-Butylamine	< 0.53	NA	NA	NA	NA	
108-18-9	Diisopropylamine	< 0.51	NA	NA	NA	NA	
121-44-8	Triethylamine	< 0.51	NA	NA	NA	NA	
142-84-7	Dipropylamine	< 0.52	NA	NA	NA	NA	

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DE = Results reported are corrected for desorption efficiency.
NA = Not applicable.

MSD 025869

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130509-MB

Test Code: GC/NPD
Instrument ID: Agilent 6890N/GC15/NPD
Analyst: Zheng Wang
Sampling Media: Treated Alumina Tube
Test Notes: **BC, DE**

Date Collected: NA
Date Received: NA
Date Analyzed: 5/9/13
Desorption Volume: 2.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
124-40-3	Dimethylamine	< 0.53	NA	NA	NA	NA	
75-04-7	Ethylamine	< 0.55	NA	NA	NA	NA	
75-50-3	Trimethylamine	< 0.52	NA	NA	NA	NA	
75-31-0	Isopropylamine	< 0.52	NA	NA	NA	NA	
75-64-9	tert-Butylamine	< 1.1	NA	NA	NA	NA	
107-10-8	n-Propylamine	< 0.55	NA	NA	NA	NA	
109-89-7	Diethylamine	< 0.52	NA	NA	NA	NA	
13952-84-6	sec-Butylamine	< 0.53	NA	NA	NA	NA	
78-81-9	Isobutylamine	< 0.54	NA	NA	NA	NA	
109-73-9	n-Butylamine	< 0.53	NA	NA	NA	NA	
108-18-9	Diisopropylamine	< 0.51	NA	NA	NA	NA	
121-44-8	Triethylamine	< 0.51	NA	NA	NA	NA	
142-84-7	Dipropylamine	< 0.52	NA	NA	NA	NA	

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MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
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LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130509-DLCS

Test Code: GC/NPD
Instrument ID: Agilent 6890N/GC15/NPD
Analyst: Zheng Wang
Sampling Media: Treated Alumina Tube
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/09/13
Volume(s) Analyzed: NA Liter(s)

CAS #	Compound	Spike Amount LCS / DLCS µg/ml	Result LCS µg/ml	Result DLCS µg/ml	% Recovery LCS	% Recovery DLCS	CAS Acceptance Limits	RPD	RPD Limit	Data Qualifier
124-40-3	Dimethylamine	10.2	10.1	10	**99**	**98**	57-129	1	19	
75-04-7	Ethylamine	9.20	8.80	8.78	**96**	**95**	52-127	1	18	
75-50-3	Trimethylamine	9.05	9.12	9.10	**101**	**101**	44-139	0	35	
75-31-0	Isopropylamine	8.62	8.96	8.70	**104**	**101**	64-127	3	16	
75-64-9	tert-Butylamine	8.66	9.00	8.72	**104**	**101**	65-129	3	20	
107-10-8	n-Propylamine	9.09	9.09	8.71	**100**	**96**	57-127	4	14	
109-89-7	Diethylamine	8.72	8.94	8.75	**103**	**100**	65-128	3	16	
13952-84-6	sec-Butylamine	8.69	9.34	8.82	**107**	**101**	68-125	6	14	
78-81-9	Isobutylamine	8.83	9.11	8.69	**103**	**98**	65-125	5	15	
109-73-9	n-Butylamine	9.59	9.69	9.07	**101**	**95**	68-123	6	16	
108-18-9	Diisopropylamine	8.93	8.87	8.21	**99**	**92**	63-128	7	17	
121-44-8	Triethylamine	8.65	8.69	8.36	**100**	**97**	65-125	3	19	
142-84-7	Dipropylamine	8.94	9.48	9.26	**106**	**104**	70-125	2	14	

Client: **Stantec Consulting Services, Inc.**
Client Project ID: **Bridgeton Landfill / 182608005**
CAS Project ID: P1301791

Ammonia

Test Code: OSHA ID-188/ID-164
Instrument ID: PH01/Thermo Orion 920A+/Ammonia ISE
Analyst: Sue Anderson
Sampling Media: Anasorb 747 Tube(s) (Sulfuric Treated)
Test Notes: **BC, DE**

Date(s) Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/2/13
Desorption Volume: 0.10 Liter(s)

Client Sample ID	CAS Sample ID	Sample Volume Liter(s)	Dilution Factor	Result mg/Tube	Result mg/m³	MRL mg/m³	**Result ppmV**	MRL ppmV	Data Qualifier
425-6 NH4	P1301791-006	123.067	1.0	0.017	**0.14**	0.087	**0.20**	0.12	
425-14 NH4 B	P1301791-014	NA	1.0	< 0.011	NA	NA	NA	NA	
Method Blank	P130502-MB	NA	1.0	< 0.011	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130502-LCS, P130502-DLCS

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary

Test Code: OSHA ID-188/ID-164
Instrument ID: PH01/Thermo Orion 920A+/Ammonia ISE
Analyst: Sue Anderson
Sampling Media: Anasorb 747 Tube(s) (Sulfuric Treated)
Test Notes:

Date Sampled: N/A
Date Received: N/A
Date Analyzed: 5/02/13
Volume(s) Analyzed: N/A

Compound	Spike Amount LCS / DLCS mg/L	Result LCS mg/L	Result DLCS mg/L	% Recovery LCS	% Recovery DLCS	CAS Acceptance Limits	Relative Percent Difference	RPD Limit	Data Qualifier
Ammonia	1.00	1.02	1.01	102	101	80-104	1	5	

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-7 CARBOX**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-007

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes: **BC, DE**

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/8/13
Desorption Volume: 1.0 ml
Volume Sampled: 96.123 Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
64-19-7	Acetic Acid	< 2.0	ND	21	ND	8.4	
79-09-4	Propionic Acid (Propanoic)	0.68	**7.1**	2.5	**2.3**	0.83	
79-31-2	2-Methylpropanoic Acid (Isobutyric)	0.47	**4.9**	2.5	**1.4**	0.71	
107-92-6	Butanoic Acid (Butyric)	1.8	**18**	2.5	**5.1**	0.70	
116-53-0	2-Methylbutanoic Acid	< 0.24	ND	2.5	ND	0.60	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	0.32	**3.3**	2.5	**0.80**	0.61	
109-52-4	Pentanoic Acid (Valeric)	0.30	**3.1**	2.6	**0.75**	0.62	
97-61-0	2-Methylpentanoic Acid	< 0.24	ND	2.5	ND	0.53	
105-43-1	3-Methylpentanoic Acid	< 0.25	ND	2.6	ND	0.54	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	< 0.24	ND	2.5	ND	0.53	
142-62-1	Hexanoic Acid (Caproic)	0.62	**6.5**	2.6	**1.4**	0.54	
111-14-8	Heptanoic Acid (Enanthoic)	< 0.24	ND	2.5	ND	0.47	
149-57-5	2-Ethylhexanoic Acid	< 0.25	ND	2.5	ND	0.43	
98-89-5	Cyclohexanecarboxylic Acid	< 0.24	ND	2.5	ND	0.48	
124-07-2	Octanoic Acid (Caprylic)	< 0.24	ND	2.5	ND	0.42	
65-85-0	Benzoic Acid	< 0.26	ND	2.7	ND	0.53	
112-05-0	Nonanoic Acid (Pelargonic)	< 0.25	ND	2.6	ND	0.40	

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-15 Carbox B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-015

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes: **BC, DE**

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/8/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
64-19-7	Acetic Acid	< 2.0	NA	NA	NA	NA	
79-09-4	Propionic Acid (Propanoic)	< 0.24	NA	NA	NA	NA	
79-31-2	2-Methylpropanoic Acid (Isobutyric)	< 0.25	NA	NA	NA	NA	
107-92-6	Butanoic Acid (Butyric)	< 0.24	NA	NA	NA	NA	
116-53-0	2-Methylbutanoic Acid	< 0.24	NA	NA	NA	NA	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	< 0.25	NA	NA	NA	NA	
109-52-4	Pentanoic Acid (Valeric)	< 0.25	NA	NA	NA	NA	
97-61-0	2-Methylpentanoic Acid	< 0.24	NA	NA	NA	NA	
105-43-1	3-Methylpentanoic Acid	< 0.25	NA	NA	NA	NA	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	< 0.24	NA	NA	NA	NA	
142-62-1	Hexanoic Acid (Caproic)	< 0.25	NA	NA	NA	NA	
111-14-8	Heptanoic Acid (Enanthoic)	< 0.24	NA	NA	NA	NA	
149-57-5	2-Ethylhexanoic Acid	< 0.25	NA	NA	NA	NA	
98-89-5	Cyclohexanecarboxylic Acid	< 0.24	NA	NA	NA	NA	
124-07-2	Octanoic Acid (Caprylic)	< 0.24	NA	NA	NA	NA	
65-85-0	Benzoic Acid	< 0.26	NA	NA	NA	NA	
112-05-0	Nonanoic Acid (Pelargonic)	< 0.25	NA	NA	NA	NA	

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130508-MB

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes: **BC, DE**

Date Collected: NA
Date Received: NA
Date Analyzed: 5/8/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
64-19-7	Acetic Acid	< 2.0	NA	NA	NA	NA	
79-09-4	Propionic Acid (Propanoic)	< 0.24	NA	NA	NA	NA	
79-31-2	2-Methylpropanoic Acid (Isobutyric)	< 0.25	NA	NA	NA	NA	
107-92-6	Butanoic Acid (Butyric)	< 0.24	NA	NA	NA	NA	
116-53-0	2-Methylbutanoic Acid	< 0.24	NA	NA	NA	NA	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	< 0.25	NA	NA	NA	NA	
109-52-4	Pentanoic Acid (Valeric)	< 0.25	NA	NA	NA	NA	
97-61-0	2-Methylpentanoic Acid	< 0.24	NA	NA	NA	NA	
105-43-1	3-Methylpentanoic Acid	< 0.25	NA	NA	NA	NA	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	< 0.24	NA	NA	NA	NA	
142-62-1	Hexanoic Acid (Caproic)	< 0.25	NA	NA	NA	NA	
111-14-8	Heptanoic Acid (Enanthoic)	< 0.24	NA	NA	NA	NA	
149-57-5	2-Ethylhexanoic Acid	< 0.25	NA	NA	NA	NA	
98-89-5	Cyclohexanecarboxylic Acid	< 0.24	NA	NA	NA	NA	
124-07-2	Octanoic Acid (Caprylic)	< 0.24	NA	NA	NA	NA	
65-85-0	Benzoic Acid	< 0.26	NA	NA	NA	NA	
112-05-0	Nonanoic Acid (Pelargonic)	< 0.25	NA	NA	NA	NA	

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LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130508-DLCS

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/08/13
Volume(s) Analyzed: NA Liter(s)

CAS #	Compound	Spike Amount LCS / DLCS µg/ml	Result LCS µg/ml	Result DLCS µg/ml	% Recovery LCS	% Recovery DLCS	CAS Acceptance Limits	RPD	RPD Limit	Data Qualifier
64-19-7	Acetic Acid	21.5	19.8	20.4	**92**	**95**	66-135	3	26	
79-09-4	Propionic Acid (Propanoic)	10.2	10.1	10.4	**99**	**102**	76-126	3	14	
79-31-2	2-Methylpropanoic Acid (Isobutyric)	10.9	11.0	11.0	**101**	**101**	84-118	0	13	
107-92-6	Butanoic Acid (Butyric)	10.4	9.89	10.1	**95**	**97**	85-117	2	11	
116-53-0	2-Methylbutanoic Acid	10.6	10.1	10.0	**95**	**94**	87-116	1	11	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	11.3	10.5	10.7	**93**	**95**	88-114	2	10	
109-52-4	Pentanoic Acid (Valeric)	10.6	9.83	10.0	**93**	**94**	89-113	1	11	
97-61-0	2-Methylpentanoic Acid	11.3	10.6	10.4	**94**	**92**	88-113	2	10	
105-43-1	3-Methylpentanoic Acid	11.3	10.4	10.6	**92**	**94**	88-113	2	10	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	11.2	10.4	10.7	**93**	**96**	89-113	3	11	
142-62-1	Hexanoic Acid (Caproic)	11.0	10.3	10.3	**94**	**94**	87-114	0	11	
111-14-8	Heptanoic Acid (Enanthoic)	9.01	8.49	8.77	**94**	**97**	84-116	3	10	
149-57-5	2-Ethylhexanoic Acid	8.27	6.86	7.32	**83**	**89**	82-111	7	12	
98-89-5	Cyclohexanecarboxylic Acid	6.93	6.39	6.53	**92**	**94**	85-115	2	10	
124-07-2	Octanoic Acid (Caprylic)	8.70	8.13	8.27	**93**	**95**	84-116	2	11	
65-85-0	Benzoic Acid	8.64	6.28	7.08	**73**	**82**	72-109	12	13	
112-05-0	Nonanoic Acid (Pelargonic)	8.80	8.39	8.49	**95**	**96**	84-116	1	10	

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-SV-1**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-017

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Jennifer Young
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00356

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/1/13
Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): -1.97 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.44

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.14	
7782-44-7	**Oxygen +**			
7440-37-1	**Argon**	**22.0**	0.14	
7727-37-9	**Nitrogen**	**77.9**	0.14	
630-08-0	Carbon Monoxide	ND	0.14	
74-82-8	Methane	ND	0.14	
124-38-9	Carbon Dioxide	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-SV-B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-018

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Jennifer Young
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00323

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/1/13
Volume(s) Analyzed: 0.10 ml(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen +			
7440-37-1	Argon	ND	0.10	
7727-37-9	**Nitrogen**	**0.263**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130501-MB

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Jennifer Young
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/01/13
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen +			
7440-37-1	Argon	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130501-LCS

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Jennifer Young
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/01/13
Volume(s) Analyzed: NA ml(s)

CAS #	Compound	Spike Amount ppmV	Result ppmV	% Recovery	CAS Acceptance Limits	Data Qualifier
1333-74-0	Hydrogen	40,000	**39,400**	**99**	75-117	
7782-44-7	Oxygen +					
7440-37-1	Argon	50,000	**54,300**	**109**	85-111	
7727-37-9	Nitrogen	50,000	**54,100**	**108**	85-114	
630-08-0	Carbon Monoxide	50,000	**53,300**	**107**	85-119	
74-82-8	Methane	40,000	**41,500**	**104**	90-114	
124-38-9	Carbon Dioxide	50,000	**49,800**	**100**	84-113	

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-PUF-2P**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-020

Test Code: EPA TO-13A Modified
Instrument ID: HP 5890II+/HP5972A/MS15
Analyst: Madeleine Dangazyan
Sampling Media: PUF/XAD-2/Filter (Hi_Vol) Cartridge
Test Notes:

Date Collected: 4/25/13
Date Received: 4/27/13
Date Extracted: 5/2/13
Date Analyzed: 5/6/13
Final Volume: 1.0 ml
Volume Sampled: 134680 Liter(s)

Dilution Factor: 1.00
Dilution Factor: 10.0

CAS #	Compound	Result µg/Cartridge	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
91-20-3	Naphthalene	230	**1.7**	0.37	**0.33**	0.071	**D**
208-96-8	Acenaphthylene	< 0.50	ND	0.0037	ND	0.00060	
83-32-9	Acenaphthene	62	**0.46**	0.037	**0.073**	0.0059	**D**
86-73-7	Fluorene	21	**0.16**	0.0037	**0.023**	0.00055	
85-01-8	Phenanthrene	7.7	**0.057**	0.0037	**0.0078**	0.00051	
120-12-7	Anthracene	0.94	**0.0070**	0.0037	**0.00096**	0.00051	
206-44-0	Fluoranthene	< 0.50	ND	0.0037	ND	0.00045	
129-00-0	Pyrene	< 0.50	ND	0.0037	ND	0.00045	
56-55-3	Benz(a)anthracene	< 0.50	ND	0.0037	ND	0.00040	
218-01-9	Chrysene	< 0.50	ND	0.0037	ND	0.00040	
205-99-2	Benzo(b)fluoranthene	< 0.50	ND	0.0037	ND	0.00036	**L**
207-08-9	Benzo(k)fluoranthene	< 0.50	ND	0.0037	ND	0.00036	**L**
50-32-8	Benzo(a)pyrene	< 0.50	ND	0.0037	ND	0.00036	**L**
193-39-5	Indeno(1,2,3-cd)pyrene	< 0.50	ND	0.0037	ND	0.00033	**L**
53-70-3	Dibenz(a,h)anthracene	< 0.50	ND	0.0037	ND	0.00033	**L**
191-24-2	Benzo(g,h,i)perylene	< 0.50	ND	0.0037	ND	0.00033	**L**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-PUF-BP**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-022

Test Code: EPA TO-13A Modified
Instrument ID: HP 5890II+/HP5972A/MS15
Analyst: Madeleine Dangazyan
Sampling Media: PUF/XAD-2/Filter (Hi_Vol) Cartridge
Test Notes:

Date Collected: 4/25/13
Date Received: 4/27/13
Date Extracted: 5/2/13
Date Analyzed: 5/6/13
Final Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Cartridge	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
91-20-3	Naphthalene	< 5.0	NA	NA	NA	NA	
208-96-8	Acenaphthylene	< 0.50	NA	NA	NA	NA	
83-32-9	Acenaphthene	< 0.50	NA	NA	NA	NA	
86-73-7	Fluorene	< 0.50	NA	NA	NA	NA	
85-01-8	Phenanthrene	< 0.50	NA	NA	NA	NA	
120-12-7	Anthracene	< 0.50	NA	NA	NA	NA	
206-44-0	Fluoranthene	< 0.50	NA	NA	NA	NA	
129-00-0	Pyrene	< 0.50	NA	NA	NA	NA	
56-55-3	Benz(a)anthracene	< 0.50	NA	NA	NA	NA	
218-01-9	Chrysene	< 0.50	NA	NA	NA	NA	
205-99-2	Benzo(b)fluoranthene	< 0.50	NA	NA	NA	NA	L
207-08-9	Benzo(k)fluoranthene	< 0.50	NA	NA	NA	NA	L
50-32-8	Benzo(a)pyrene	< 0.50	NA	NA	NA	NA	L
193-39-5	Indeno(1,2,3-cd)pyrene	< 0.50	NA	NA	NA	NA	L
53-70-3	Dibenz(a,h)anthracene	< 0.50	NA	NA	NA	NA	L
191-24-2	Benzo(g,h,i)perylene	< 0.50	NA	NA	NA	NA	L

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.
NA = Not applicable.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130502-MB

Test Code: EPA TO-13A Modified
Instrument ID: HP 5890II+/HP5972A/MS15
Analyst: Madeleine Dangazyan
Sampling Media: PUF/XAD-2/Filter (Hi_Vol) Cartridge
Test Notes:

Date Collected: NA
Date Received: NA
Date Extracted: 5/02/13
Date Analyzed: 5/06/13
Final Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Cartridge	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
91-20-3	Naphthalene	< 5.0	NA	NA	NA	NA	
208-96-8	Acenaphthylene	< 0.50	NA	NA	NA	NA	
83-32-9	Acenaphthene	< 0.50	NA	NA	NA	NA	
86-73-7	Fluorene	< 0.50	NA	NA	NA	NA	
85-01-8	Phenanthrene	< 0.50	NA	NA	NA	NA	
120-12-7	Anthracene	< 0.50	NA	NA	NA	NA	
206-44-0	Fluoranthene	< 0.50	NA	NA	NA	NA	
129-00-0	Pyrene	< 0.50	NA	NA	NA	NA	
56-55-3	Benz(a)anthracene	< 0.50	NA	NA	NA	NA	
218-01-9	Chrysene	< 0.50	NA	NA	NA	NA	
205-99-2	Benzo(b)fluoranthene	< 0.50	NA	NA	NA	NA	L
207-08-9	Benzo(k)fluoranthene	< 0.50	NA	NA	NA	NA	L
50-32-8	Benzo(a)pyrene	< 0.50	NA	NA	NA	NA	L
193-39-5	Indeno(1,2,3-cd)pyrene	< 0.50	NA	NA	NA	NA	L
53-70-3	Dibenz(a,h)anthracene	< 0.50	NA	NA	NA	NA	L
191-24-2	Benzo(g,h,i)perylene	< 0.50	NA	NA	NA	NA	L

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.
NA = Not applicable.

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SURROGATE SPIKE RECOVERY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Project ID: **Bridgeton Landfill / 182608005**
CAS Project ID: P1301791

Test Code: EPA TO-13A Modified
Instrument ID: HP 5890II+/HP5972A/MS15
Analyst: Madeleine Dangazyan
Sampling Media: PUF/XAD-2/Filter (Hi_Vol) Cartridge(s)
Test Notes:

Date(s) Collected: 4/25/13
Date(s) Received: 4/27/13
Date(s) Extracted: 5/02/13
Date(s) Analyzed: 5/6/13

Client Sample ID	CAS Sample ID	Fluorene-d10 % Recovered	Fluorene-d10 Acceptance Limits	Pyrene-d10 % Recovered	Pyrene-d10 Acceptance Limits	Data Qualifier
Method Blank	P130502-MB	**67**	60-120	**98**	60-120	
Lab Control Sample	P130502-LCS	**75**	60-120	**101**	60-120	
Duplicate Lab Control Sample	P130502-DLCS	**72**	60-120	**103**	60-120	
425-PUF-2P	P1301791-020	**69**	60-120	**94**	60-120	
425-PUF-BP	P1301791-022	**72**	60-120	**95**	60-120	

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LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130502-DLCS

Test Code: EPA TO-13A Modified
Instrument ID: HP 5890II+/HP5972A/MS15
Analyst: Madeleine Dangazyan
Sampling Media: PUF/XAD-2/Filter (Hi_Vol) Cartridge
Test Notes:

Date Collected: NA
Date Received: NA
Date Extracted: 5/2/13
Date Analyzed: 5/06/13
Volume(s) Analyzed: NA Liter(s)

CAS #	Compound	Spike Amount LCS / DLCS µg/ml	Result LCS µg/ml	Result DLCS µg/ml	% Recovery LCS	% Recovery DLCS	CAS Acceptance Limits	RPD	RPD Limit	Data Qualifier
91-20-3	Naphthalene	5.00	3.83	3.67	**77**	**73**	60-120	5	20	
208-96-8	Acenaphthylene	5.00	3.63	3.36	**73**	**67**	60-120	9	23	
83-32-9	Acenaphthene	5.00	3.80	3.72	**76**	**74**	60-120	3	30	
86-73-7	Fluorene	5.00	4.03	3.69	**81**	**74**	60-120	9	21	
85-01-8	Phenanthrene	5.00	4.63	4.75	**93**	**95**	60-120	2	18	
120-12-7	Anthracene	5.00	4.25	4.17	**85**	**83**	60-120	2	17	
206-44-0	Fluoranthene	5.00	4.80	5.04	**96**	**101**	60-120	5	13	
129-00-0	Pyrene	5.00	4.84	5.01	**97**	**100**	60-120	3	13	
56-55-3	Benz(a)anthracene	5.00	4.48	4.40	**90**	**88**	60-120	2	9	
218-01-9	Chrysene	5.00	4.38	4.21	**88**	**84**	60-120	5	10	
205-99-2	Benzo(b)fluoranthene	5.00	5.47	6.59	**109**	**132**	60-120	19	24	**L**
207-08-9	Benzo(k)fluoranthene	5.00	6.46	6.41	**129**	**128**	60-120	0.8	18	**L**
50-32-8	Benzo(a)pyrene	5.00	5.96	6.04	**119**	**121**	60-120	2	12	**L**
193-39-5	Indeno(1,2,3-cd)pyrene	5.00	6.28	6.05	**126**	**121**	60-120	4	28	**L**
53-70-3	Dibenz(a,h)anthracene	5.00	6.44	6.39	**129**	**128**	60-120	0.8	17	**L**
191-24-2	Benzo(g,h,i)perylene	5.00	6.50	6.48	**130**	**130**	60-120	0	16	**L**

L = Laboratory control sample recovery outside the specified limits, results may be biased high.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-SV-1**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-017

Test Code: ASTM D 5504-08
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00356

Date Collected: 4/25/13
Time Collected: 17:47
Date Received: 4/27/13
Date Analyzed: 5/1/13
Time Analyzed: 12:20
Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -1.97 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	10	ND	7.2	
463-58-1	Carbonyl Sulfide	ND	18	ND	7.2	
74-93-1	Methyl Mercaptan	ND	14	ND	7.2	
75-08-1	Ethyl Mercaptan	ND	18	ND	7.2	
75-18-3	Dimethyl Sulfide	ND	18	ND	7.2	
75-15-0	Carbon Disulfide	ND	11	ND	3.6	
75-33-2	Isopropyl Mercaptan	ND	22	ND	7.2	
75-66-1	tert-Butyl Mercaptan	ND	27	ND	7.2	
107-03-9	n-Propyl Mercaptan	ND	22	ND	7.2	
624-89-5	Ethyl Methyl Sulfide	ND	22	ND	7.2	
110-02-1	Thiophene	ND	25	ND	7.2	
513-44-0	Isobutyl Mercaptan	ND	27	ND	7.2	
352-93-2	Diethyl Sulfide	ND	27	ND	7.2	
109-79-5	n-Butyl Mercaptan	ND	27	ND	7.2	
624-92-0	Dimethyl Disulfide	ND	14	ND	3.6	
616-44-4	3-Methylthiophene	ND	29	ND	7.2	
110-01-0	Tetrahydrothiophene	ND	26	ND	7.2	
638-02-8	2,5-Dimethylthiophene	ND	33	ND	7.2	
872-55-9	2-Ethylthiophene	ND	33	ND	7.2	
110-81-6	Diethyl Disulfide	ND	18	ND	3.6	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-SV-B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-018

Test Code: ASTM D 5504-08
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00323

Date Collected: 4/25/13
Time Collected: 16:03
Date Received: 4/27/13
Date Analyzed: 5/1/13
Time Analyzed: 12:36
Volume(s) Analyzed: 1.0 ml(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	ND	5.0	
463-58-1	Carbonyl Sulfide	ND	12	ND	5.0	
74-93-1	Methyl Mercaptan	ND	9.8	ND	5.0	
75-08-1	Ethyl Mercaptan	ND	13	ND	5.0	
75-18-3	Dimethyl Sulfide	ND	13	ND	5.0	
75-15-0	Carbon Disulfide	ND	7.8	ND	2.5	
75-33-2	Isopropyl Mercaptan	ND	16	ND	5.0	
75-66-1	tert-Butyl Mercaptan	ND	18	ND	5.0	
107-03-9	n-Propyl Mercaptan	ND	16	ND	5.0	
624-89-5	Ethyl Methyl Sulfide	ND	16	ND	5.0	
110-02-1	Thiophene	ND	17	ND	5.0	
513-44-0	Isobutyl Mercaptan	ND	18	ND	5.0	
352-93-2	Diethyl Sulfide	ND	18	ND	5.0	
109-79-5	n-Butyl Mercaptan	ND	18	ND	5.0	
624-92-0	Dimethyl Disulfide	ND	9.6	ND	2.5	
616-44-4	3-Methylthiophene	ND	20	ND	5.0	
110-01-0	Tetrahydrothiophene	ND	18	ND	5.0	
638-02-8	2,5-Dimethylthiophene	ND	23	ND	5.0	
872-55-9	2-Ethylthiophene	ND	23	ND	5.0	
110-81-6	Diethyl Disulfide	ND	12	ND	2.5	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130501-MB

Test Code: ASTM D 5504-08
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Time Collected: NA
Date Received: NA
Date Analyzed: 5/01/13
Time Analyzed: 08:09
Volume(s) Analyzed: 1.0 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	ND	5.0	
463-58-1	Carbonyl Sulfide	ND	12	ND	5.0	
74-93-1	Methyl Mercaptan	ND	9.8	ND	5.0	
75-08-1	Ethyl Mercaptan	ND	13	ND	5.0	
75-18-3	Dimethyl Sulfide	ND	13	ND	5.0	
75-15-0	Carbon Disulfide	ND	7.8	ND	2.5	
75-33-2	Isopropyl Mercaptan	ND	16	ND	5.0	
75-66-1	tert-Butyl Mercaptan	ND	18	ND	5.0	
107-03-9	n-Propyl Mercaptan	ND	16	ND	5.0	
624-89-5	Ethyl Methyl Sulfide	ND	16	ND	5.0	
110-02-1	Thiophene	ND	17	ND	5.0	
513-44-0	Isobutyl Mercaptan	ND	18	ND	5.0	
352-93-2	Diethyl Sulfide	ND	18	ND	5.0	
109-79-5	n-Butyl Mercaptan	ND	18	ND	5.0	
624-92-0	Dimethyl Disulfide	ND	9.6	ND	2.5	
616-44-4	3-Methylthiophene	ND	20	ND	5.0	
110-01-0	Tetrahydrothiophene	ND	18	ND	5.0	
638-02-8	2,5-Dimethylthiophene	ND	23	ND	5.0	
872-55-9	2-Ethylthiophene	ND	23	ND	5.0	
110-81-6	Diethyl Disulfide	ND	12	ND	2.5	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130501-LCS

Test Code: ASTM D 5504-08
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/01/13
Volume(s) Analyzed: NA ml(s)

CAS #	Compound	Spike Amount ppbV	Result ppbV	% Recovery	CAS Acceptance Limits	Data Qualifier
7783-06-4	Hydrogen Sulfide	2,050	**1,890**	**92**	63-140	
463-58-1	Carbonyl Sulfide	2,020	**1,740**	**86**	63-138	
74-93-1	Methyl Mercaptan	1,890	**1,780**	**94**	63-144	

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-SV-1**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-017

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00356

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/4/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.97 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**3.8**	0.72	**2.2**	0.42	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.72	**0.41**	0.15	
74-87-3	Chloromethane	ND	0.72	ND	0.35	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.72	ND	0.10	
75-01-4	Vinyl Chloride	ND	0.72	ND	0.28	
106-99-0	1,3-Butadiene	ND	0.72	ND	0.33	
74-83-9	Bromomethane	ND	0.72	ND	0.19	
75-00-3	Chloroethane	ND	0.72	ND	0.27	
64-17-5	Ethanol	**7.5**	7.2	**4.0**	3.8	
75-05-8	Acetonitrile	**5.8**	0.72	**3.5**	0.43	
107-02-8	Acrolein	ND	2.9	ND	1.3	
67-64-1	Acetone	**38**	7.2	**16**	3.0	
75-69-4	Trichlorofluoromethane	**1.1**	0.72	**0.19**	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	7.2	ND	2.9	
107-13-1	Acrylonitrile	ND	0.72	ND	0.33	
75-35-4	1,1-Dichloroethene	ND	0.72	ND	0.18	
75-09-2	Methylene Chloride	ND	0.72	ND	0.21	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.72	ND	0.23	
76-13-1	Trichlorotrifluoroethane	ND	0.72	ND	0.094	
75-15-0	Carbon Disulfide	ND	7.2	ND	2.3	
156-60-5	trans-1,2-Dichloroethene	ND	0.72	ND	0.18	
75-34-3	1,1-Dichloroethane	ND	0.72	ND	0.18	
1634-04-4	Methyl tert-Butyl Ether	ND	0.72	ND	0.20	
108-05-4	Vinyl Acetate	ND	7.2	ND	2.0	
78-93-3	2-Butanone (MEK)	ND	7.2	ND	2.4	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-SV-1**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-017

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00356

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/4/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.97 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.72	ND	0.18	
141-78-6	Ethyl Acetate	ND	1.4	ND	0.40	
110-54-3	n-Hexane	**1.0**	0.72	**0.29**	0.20	
67-66-3	Chloroform	**1.1**	0.72	**0.23**	0.15	
109-99-9	Tetrahydrofuran (THF)	**2.3**	0.72	**0.79**	0.24	
107-06-2	1,2-Dichloroethane	ND	0.72	ND	0.18	
71-55-6	1,1,1-Trichloroethane	ND	0.72	ND	0.13	
71-43-2	Benzene	**7.5**	0.72	**2.4**	0.23	
56-23-5	Carbon Tetrachloride	ND	0.72	ND	0.11	
110-82-7	Cyclohexane	ND	1.4	ND	0.42	
78-87-5	1,2-Dichloropropane	ND	0.72	ND	0.16	
75-27-4	Bromodichloromethane	ND	0.72	ND	0.11	
79-01-6	Trichloroethene	ND	0.72	ND	0.13	
123-91-1	1,4-Dioxane	ND	0.72	ND	0.20	
80-62-6	Methyl Methacrylate	ND	1.4	ND	0.35	
142-82-5	n-Heptane	ND	0.72	ND	0.18	
10061-01-5	cis-1,3-Dichloropropene	ND	0.72	ND	0.16	
108-10-1	4-Methyl-2-pentanone	ND	0.72	ND	0.18	
10061-02-6	trans-1,3-Dichloropropene	ND	0.72	ND	0.16	
79-00-5	1,1,2-Trichloroethane	ND	0.72	ND	0.13	
108-88-3	Toluene	**3.5**	0.72	**0.93**	0.19	
591-78-6	2-Hexanone	ND	0.72	ND	0.18	
124-48-1	Dibromochloromethane	ND	0.72	ND	0.085	
106-93-4	1,2-Dibromoethane	ND	0.72	ND	0.094	
123-86-4	n-Butyl Acetate	ND	0.72	ND	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-SV-1**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-017

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00356

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/4/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.97 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	**0.75**	0.72	**0.16**	0.15	
127-18-4	Tetrachloroethene	ND	0.72	ND	0.11	
108-90-7	Chlorobenzene	ND	0.72	ND	0.16	
100-41-4	Ethylbenzene	**1.8**	0.72	**0.42**	0.17	
179601-23-1	m,p-Xylenes	**4.4**	1.4	**1.0**	0.33	
75-25-2	Bromoform	**1.3**	0.72	**0.13**	0.070	
100-42-5	Styrene	ND	0.72	ND	0.17	
95-47-6	o-Xylene	**2.8**	0.72	**0.64**	0.17	
111-84-2	n-Nonane	**1.3**	0.72	**0.24**	0.14	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.72	ND	0.10	
98-82-8	Cumene	**3.4**	0.72	**0.69**	0.15	
80-56-8	alpha-Pinene	**3.3**	0.72	**0.59**	0.13	
103-65-1	n-Propylbenzene	**13**	0.72	**2.7**	0.15	
622-96-8	4-Ethyltoluene	**30**	0.72	**6.1**	0.15	
108-67-8	1,3,5-Trimethylbenzene	**27**	0.72	**5.4**	0.15	
95-63-6	1,2,4-Trimethylbenzene	**43**	0.72	**8.8**	0.15	
100-44-7	Benzyl Chloride	ND	0.72	ND	0.14	
541-73-1	1,3-Dichlorobenzene	ND	0.72	ND	0.12	
106-46-7	1,4-Dichlorobenzene	**11**	0.72	**1.8**	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.72	ND	0.12	
5989-27-5	d-Limonene	**130**	0.72	**23**	0.13	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.72	ND	0.075	
120-82-1	1,2,4-Trichlorobenzene	ND	0.72	ND	0.097	
91-20-3	Naphthalene	**11**	0.72	**2.0**	0.14	
87-68-3	Hexachlorobutadiene	ND	0.72	ND	0.068	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-SV-1** CAS Project ID: P1301791
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P1301791-017

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: 4/25/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/27/13
Analyst: Elsa Moctezuma Date Analyzed: 5/4/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: T
Container ID: AS00356

Initial Pressure (psig): -1.97 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.44

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
16.16	3-Ethyltoluene	67	
16.37	2-Ethyltoluene	28	
16.63	n-Decane	9.6	
16.77	2-Ethyl-1-hexanol	14	
16.85	p-Isopropyltoluene	100	
17.10	m-Propyltoluene	23	
17.15	C10H14 Aromatic Compound	28	
17.43	C10H14 Aromatic Compound	17	
17.58	n-Undecane	50	
18.07	C10H12 Compound + 1,2,3,5-Tetramethylbenzene	12	
18.42	n-Dodecane	52	
18.55	C9H10N2 Compound	18	
19.19	n-Tridecane	25	
19.41	1,3,5-Triisopropylbenzene	12	
19.90	n-Tetradecane	12	

T = Analyte is a tentatively identified compound, result is estimated.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-SV-B** CAS Project ID: P1301791
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P1301791-018

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00323

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/4/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	ND	2.0	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-SV-B** CAS Project ID: P1301791
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P1301791-018

Test Code: EPA TO-15 Modified Date Collected: 4/25/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/27/13
Analyst: Elsa Moctezuma Date Analyzed: 5/4/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00323

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-SV-B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P1301791-018

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00323

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/4/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound[1]	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
91-20-3	Naphthalene	ND	0.50	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **425-SV-B** CAS Project ID: P1301791
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P1301791-018

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes: **T**
Container ID: AS00323

Date Collected: 4/25/13
Date Received: 4/27/13
Date Analyzed: 5/4/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
14.41	Hexamethylcyclotrisiloxane	**3.8**	

T = Analyte is a tentatively identified compound, result is estimated.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130504-MB

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/4/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	ND	2.0	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130504-MB

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/4/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130504-MB

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/4/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
91-20-3	Naphthalene	ND	0.50	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** CAS Project ID: P1301791
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P130504-MB

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 5/4/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
	No Compounds Detected		

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SURROGATE SPIKE RECOVERY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Project ID: **Bridgeton Landfill / 182608005**
CAS Project ID: P1301791

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister(s)
Test Notes:

Date(s) Collected: 4/25/13
Date(s) Received: 4/27/13
Date(s) Analyzed: 5/4/13

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P130504-MB	**99**	**100**	**107**	70-130	
Lab Control Sample	P130504-LCS	**97**	**103**	**102**	70-130	
425-SV-1	P1301791-017	**95**	**104**	**103**	70-130	
425-SV-B	P1301791-018	**96**	**103**	**103**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

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LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301791
CAS Sample ID: P130504-LCS

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/04/13
Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	204	192	94	58-139	
75-71-8	Dichlorodifluoromethane (CFC 12)	202	193	96	63-115	
74-87-3	Chloromethane	196	189	96	58-122	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	206	200	97	65-115	
75-01-4	Vinyl Chloride	200	197	99	64-122	
106-99-0	1,3-Butadiene	210	239	114	57-141	
74-83-9	Bromomethane	200	204	102	68-122	
75-00-3	Chloroethane	202	200	99	66-120	
64-17-5	Ethanol	958	958	100	58-126	
75-05-8	Acetonitrile	202	199	99	64-136	
107-02-8	Acrolein	204	203	100	58-129	
67-64-1	Acetone	1,040	973	94	60-114	
75-69-4	Trichlorofluoromethane	210	188	90	62-107	
67-63-0	2-Propanol (Isopropyl Alcohol)	396	352	89	54-118	
107-13-1	Acrylonitrile	206	220	107	72-143	
75-35-4	1,1-Dichloroethene	218	220	101	69-119	
75-09-2	Methylene Chloride	212	190	90	64-113	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	214	161	75	59-131	
76-13-1	Trichlorotrifluoroethane	212	211	100	69-117	
75-15-0	Carbon Disulfide	208	189	91	65-115	
156-60-5	trans-1,2-Dichloroethene	202	210	104	70-126	
75-34-3	1,1-Dichloroethane	206	197	96	68-116	
1634-04-4	Methyl tert-Butyl Ether	204	204	100	69-120	
108-05-4	Vinyl Acetate	988	1020	103	58-160	
78-93-3	2-Butanone (MEK)	212	209	99	70-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1301791
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P130504-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 5/04/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	214	**213**	**100**	70-119	
141-78-6	Ethyl Acetate	412	**422**	**102**	72-129	
110-54-3	n-Hexane	206	**186**	**90**	63-115	
67-66-3	Chloroform	222	**207**	**93**	68-110	
109-99-9	Tetrahydrofuran (THF)	208	**223**	**107**	60-126	
107-06-2	1,2-Dichloroethane	208	**202**	**97**	69-118	
71-55-6	1,1,1-Trichloroethane	204	**207**	**101**	68-120	
71-43-2	Benzene	208	**190**	**91**	69-117	
56-23-5	Carbon Tetrachloride	212	**220**	**104**	65-134	
110-82-7	Cyclohexane	402	**399**	**99**	69-114	
78-87-5	1,2-Dichloropropane	204	**201**	**99**	70-116	
75-27-4	Bromodichloromethane	204	**212**	**104**	71-126	
79-01-6	Trichloroethene	198	**206**	**104**	71-119	
123-91-1	1,4-Dioxane	206	**201**	**98**	72-126	
80-62-6	Methyl Methacrylate	414	**438**	**106**	75-136	
142-82-5	n-Heptane	202	**198**	**98**	70-117	
10061-01-5	cis-1,3-Dichloropropene	196	**207**	**106**	75-132	
108-10-1	4-Methyl-2-pentanone	210	**218**	**104**	70-133	
10061-02-6	trans-1,3-Dichloropropene	218	**238**	**109**	78-136	
79-00-5	1,1,2-Trichloroethane	202	**206**	**102**	72-119	
108-88-3	Toluene	208	**199**	**96**	65-116	
591-78-6	2-Hexanone	228	**227**	**100**	62-132	
124-48-1	Dibromochloromethane	216	**241**	**112**	66-140	
106-93-4	1,2-Dibromoethane	208	**219**	**105**	69-130	
123-86-4	n-Butyl Acetate	228	**230**	**101**	63-136	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1301791
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P130504-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 5/04/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	206	**204**	**99**	66-118	
127-18-4	Tetrachloroethene	190	**195**	**103**	63-123	
108-90-7	Chlorobenzene	208	**212**	**102**	66-118	
100-41-4	Ethylbenzene	206	**205**	**100**	66-119	
179601-23-1	m,p-Xylenes	412	**405**	**98**	64-118	
75-25-2	Bromoform	216	**234**	**108**	64-140	
100-42-5	Styrene	208	**212**	**102**	68-132	
95-47-6	o-Xylene	200	**202**	**101**	65-120	
111-84-2	n-Nonane	202	**196**	**97**	64-117	
79-34-5	1,1,2,2-Tetrachloroethane	198	**206**	**104**	63-128	
98-82-8	Cumene	196	**195**	**99**	65-121	
80-56-8	alpha-Pinene	192	**201**	**105**	66-123	
103-65-1	n-Propylbenzene	198	**196**	**99**	65-121	
622-96-8	4-Ethyltoluene	204	**201**	**99**	64-122	
108-67-8	1,3,5-Trimethylbenzene	208	**211**	**101**	64-125	
95-63-6	1,2,4-Trimethylbenzene	200	**215**	**108**	64-131	
100-44-7	Benzyl Chloride	206	**240**	**117**	67-146	
541-73-1	1,3-Dichlorobenzene	206	**210**	**102**	64-130	
106-46-7	1,4-Dichlorobenzene	212	**202**	**95**	61-124	
95-50-1	1,2-Dichlorobenzene	204	**204**	**100**	63-126	
5989-27-5	d-Limonene	206	**229**	**111**	62-133	
96-12-8	1,2-Dibromo-3-chloropropane	202	**231**	**114**	62-155	
120-82-1	1,2,4-Trichlorobenzene	200	**224**	**112**	59-146	
91-20-3	Naphthalene	178	**209**	**117**	56-143	
87-68-3	Hexachlorobutadiene	208	**216**	**104**	58-133	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

May 13, 2013 Service Request No: P1301791

Samantha Henningsen
Columbia Analytical Services
2655 Park Center Drive, Suite A
Simi Valley, CA 93065

Laboratory Results for: Stantec Consulting Services, Inc.

Dear Samantha:

Enclosed are the results of the sample(s) submitted to our laboratory on April 30, 2013. For your reference, these analyses have been assigned our service request number P1301791.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided.
All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the 2009 TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My direct line is 281-994-2970. You may also contact me via email at Nicole.Brown@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental

Nicole Brown
Project Manager

Nicole Brown

Digitally signed
by Nicole Brown
Date: 2013.05.13
17:11:57 -05'00'

For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com

ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
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MSD 025908

ALS Environmental

Client:	ALS Environmental – Simi Valley, CA	**Service Request No.:**	P1301791
Project:	Bridgeton Landfill 182608005 Stantec Consulting Services, Inc.	**Date Received:**	04/30/13
Sample Matrix:	air		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Two air samples were received for analysis at ALS Environmental on 04/30/13.

Please note the reporting forms are currently referencing the date ALS-Simi Valley received the samples (04/27/13) and not the date ALS-Houston received the samples (04/30/13).

The following discrepancies were noted upon initial sample inspection: no custody seals on cooler. The exceptions are also noted on the cooler receipt and preservation form included in this data package.

The samples were received at 0°C in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

B flags – Method Blanks

The Method Blank EQ1300249-01 contained low levels of various compounds below the Method Reporting Limit (MRL). The associated compounds in the samples are flagged with 'B' flags.

MS/MSD

EQ1300249: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of an MS/MSD for this extraction batch. The batch quality control criteria were met.

C flags – 2378-TCDF Confirmation

Confirmation of the TCDF compound: When 2378-TCDF is detected on the DB-5 column, confirmation analyses are performed on a second column (DB-225.) The results from both the DB-5 column and the DB-225 column are included in this data package.

The valid result for the 2378-TCDF compound is reported from the confirmation column.

The confirmation results have been included on the Total TEQ summary pages.

Y flags – Labeled Standards

Samples that had recoveries of labeled standards outside the acceptance limits are flagged with 'Y' flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1, making these data acceptable.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- 2378-TCDF from the DB-225 column, when confirmation required
- Non-detected compounds are not included in the 'Total'

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: Stantec Consulting Services, Inc.
Project: Bridgeton Landfill/182608005

Service Request: P1301791

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
P1301791-001	425-1 HCL	4/25/13	16:55
P1301791-002	425-2 ALD	4/25/13	16:55
P1301791-003	425-3 HCN	4/25/13	16:55
P1301791-004	425-4 AMINE	4/25/13	16:57
P1301791-005	425-5 HG	4/25/13	16:56
P1301791-006	425-6 NH4	4/25/13	16:57
P1301791-007	425-7 CARBOX	4/25/13	16:55
P1301791-008	425-8 SO2	4/25/13	16:56
P1301791-009	425-9 HCL B	4/25/13	15:55
P1301791-010	425-10 ALD B	4/25/13	15:56
P1301791-011	425-11 HCN B	4/25/13	15:57
P1301791-012	425-12 Amine B	4/25/13	15:58
P1301791-013	425-13 Hg B	4/25/13	15:59
P1301791-014	425-14 NH4 B	4/25/13	16:00
P1301791-015	425-15 Carbox B	4/25/13	16:01
P1301791-016	425-16 SO2 B	4/25/13	16:02
P1301791-017	425-SV-1	4/25/13	17:47
P1301791-018	425-SV-B	4/25/13	16:03
P1301791-019	425-PUF-1DF	4/25/13	17:07
P1301791-020	425-PUF-2P	4/25/13	17:07
P1301791-021	425-PUF-BDF	4/25/13	17:30
P1301791-022	425-PUF-BP	4/25/13	17:30

Laboratory Certifications
2012-2013

STATE/PROGRAM	AGENCY	CERT#	EXP DATE	CERTIFIED?
ARIZONA	AZ-DHS	AZ0725	05/27/13	Yes
ARKANSAS	ADEQ	12-035-0	06/16/13	Yes
CALIFORNIA	CA-ELAP	2452	02/28/15	Yes
DOD ELAP	A2LA	2897.01	11/30/13	Yes
FLORIDA/NELAP	FL-DOHS	E87611	06/30/13	Yes
HAWAII	HI-DOH	N/A	06/30/13	Yes
ILLINOIS/NELAP	IL-EPA	003004	10/06/13	Yes
ISO 17025	A2LA	2897.01	11/30/13	Yes
KANSAS	KS-DHE	E-10406	01/31/14	Yes
LOUISIANA/NELAP	LELAP	03048	06/30/13	Yes
LOUISIANA/NELAP	LDHH	LA120014	12/31/13	Yes
MAINE	ME-DOHS	2012017	06/05/13	Yes
MARYLAND	MDE	343	06/30/13	Yes
MICHIGAN	MIDEQ	9971	06/30/13	Yes
MINNESOTA	MDH	048-999-427	12/31/13	Yes
NEVADA	NDEP	TX014112013A	07/31/13	Yes
NEW JERSEY	NJDEP	TX008	06/30/13	Yes
NEW MEXICO	NMED-DWB	N/A	06/30/13	Yes
NEW YORK/NELAP	NY-DOH	11707	04/01/13	Yes
OKLAHOMA	OKDEQ	2012-133	08/31/13	Yes
OREGON/NELAP	ORELAP	TX200002-009	03/24/14	Yes
PENNSYLVANIA/NELAP	PLAP	004	06/30/13	Yes
SOIL IMPORT PERMIT	USDA	P330-12-00002	01/13/15	Yes
TENNESSEE	TNDEC	TN04016	06/30/13	Yes
TEXAS/NELAP	TCEQ	T104704216-12-3	06/30/13	Yes
UTAH/NELAP	UTELCP	TX014112013-2	06/30/13	Yes
WASHINGTON/NELAP	WA-Ecology	C819-12	11/14/13	Yes
WEST VIRGINIA	WVDEP	347	06/30/13	Yes

Abbreviations, Acronyms & Definitions

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

Data Qualifier Flags – Dioxin/Furans

- **B** Indicates the associated analyte is found in the method blank, as well as in the sample.

- **C** Confirmation of the TCDF compound: When 2378-TCDF is detected on the DB-5 column, confirmation analyses are performed on a second column (DB-225). The results from both the DB-5 column and the DB-225 column are included in this data package. The results from the DB-225 analyses should be used to evaluate the 2378-TCDF in the samples. The confirmed result should be used in determining the TEQ value for TCDF.

- **E** Indicates an estimated value – used when the analyte concentration exceeds the upper end of the linear calibration range.

- **J** Indicates an estimated value – used when the analyte concentration is below the method reporting limit (MRL) and above the estimated detection limit (EDL).

- **K** EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

- **U** Indicates the compound was analyzed and not detected

- **Y** Samples that had recoveries of labeled standards outside the acceptance limits are flagged with 'Y'. In all cases, the signal-to-noise ratios are greater than 10:1, making these data acceptable.

- **ND** Indicates concentration is reported as 'Not Detected.'

- **S** Peak is saturated; data not reportable.

- **Q** Lock-mass interference by ether compounds.

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID P1301791 (DB-5) DB-225 SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
5/13/13	cee	-019, -021

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
05/13/13	uk	019, 021

PEER REVIEW PAGE.DOC

ALS Environmental

Analytical Results

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ALS ENVIRONMENTAL

Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301791
Project:	Bridgeton Landfill/182608005	**Date Collected:**	4/25/13 1707
Sample Matrix:	Air	**Date Received:**	4/27/13
Sample Name:	425-PUF-1DF	**Units:**	pg
Lab Code:	P1301791-019	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 1917
Prep Method:	Method	**Date Extracted:**	5/1/13
Sample Amount:	1.0000each	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163813	**Blank File Name:**	P163811
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.32	10.0			1
1,2,3,7,8-PeCDD	7.42	BJ	0.428	50.0	1.68	1.000	1
1,2,3,4,7,8-HxCDD	5.70	JK	0.423	50.0	1.46	0.998	1
1,2,3,6,7,8-HxCDD	6.71	BJK	0.358	50.0	1.74	1.000	1
1,2,3,7,8,9-HxCDD	6.42	BJK	0.367	50.0	0.88	1.008	1
1,2,3,4,6,7,8-HpCDD	49.7	BJ	0.884	50.0	1.16	1.000	1
OCDD	445	B	0.763	100	0.83	1.000	1
2,3,7,8-TCDF	1.42	CJK	0.757	10.0	1.50	1.001	1
1,2,3,7,8-PeCDF	5.23	J	0.404	50.0	1.65	1.000	1
2,3,4,7,8-PeCDF	4.40	JK	0.432	50.0	2.21	1.022	1
1,2,3,4,7,8-HxCDF	4.98	BJ	0.348	50.0	1.18	0.997	1
1,2,3,6,7,8-HxCDF	5.24	BJK	0.290	50.0	1.45	1.000	1
1,2,3,7,8,9-HxCDF	3.00	BJK	0.400	50.0	3.45	1.033	1
2,3,4,6,7,8-HxCDF	4.95	JK	0.340	50.0	0.91	1.013	1
1,2,3,4,6,7,8-HpCDF	12.5	BJ	0.792	50.0	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	6.32	JK	1.08	50.0	1.29	1.036	1
OCDF	27.6	BJ	1.87	100	0.86	1.004	1
Total Tetra-Dioxins	ND	U	1.32	10.0			1
Total Penta-Dioxins	7.42	J	0.428	50.0	1.68		1
Total Hexa-Dioxins	5.54	J	0.381	50.0	1.28		1
Total Hepta-Dioxins	104		0.884	50.0	0.99		1
Total Tetra-Furans	2.29	J	0.757	10.0	0.86		1
Total Penta-Furans	8.27	J	0.418	50.0	1.73		1
Total Hexa-Furans	6.72	J	0.340	50.0	1.15		1
Total Hepta-Furans	12.5	J	0.910	50.0	1.04		1

ALS ENVIRONMENTAL

Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301791
Project:	Bridgeton Landfill/182608005	**Date Collected:**	4/25/13 1707
Sample Matrix:	Air	**Date Received:**	4/27/13
Sample Name:	425-PUF-1DF	**Units:**	Percent
Lab Code:	P1301791-019	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 1917
Prep Method:	Method	**Date Extracted:**	5/1/13
Sample Amount:	1.0000each	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163813	**Blank File Name:**	P163811
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	4000	2781.169	70		50-120	0.77	1.007
13C-1,2,3,7,8-PeCDD	4000	3085.502	77		50-120	1.55	1.158
13C-1,2,3,6,7,8-HxCDD	4000	2878.134	72		50-120	1.24	0.993
13C-1,2,3,4,6,7,8-HpCDD	4000	2680.902	67		40-120	1.06	1.070
13C-OCDD	8000	4858.607	61		40-120	0.88	1.156
13C-2,3,7,8-TCDF	4000	2423.871	61		50-120	0.76	0.980
13C-1,2,3,7,8-PeCDF	4000	2693.786	67		50-120	1.54	1.122
13C-1,2,3,6,7,8-HxCDF	4000	2621.143	66		50-120	0.51	0.975
13C-1,2,3,4,6,7,8-HpCDF	4000	2268.539	57		40-120	0.44	1.045
37Cl-2,3,7,8-TCDD	4000	4485.695	112		50-120	NA	1.001
13C-1,2,3,4,7,8-HxCDD	4000	4857.849	121	Y	50-120	1.22	0.998
13C-2,3,4,7,8-PeCDF	4000	3870.478	97		50-120	1.53	1.022
13C-1,2,3,4,7,8-HxCDF	4000	4251.909	106		50-120	0.51	0.997
13C-1,2,3,4,7,8,9-HpCDF	4000	4468.450	112		40-120	0.44	1.035
13C-1,2,3,7,8,9-HxCDF	4000	2834.863	71		50-120	0.51	1.006

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Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301791
Project:	Bridgeton Landfill/182608005	**Date Collected:**	4/25/13 1707
Sample Matrix:	Air	**Date Received:**	4/27/13
Sample Name:	425-PUF-1DF	**Units:**	pg
Lab Code:	P1301791-019	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method: TO-9A
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	1.32	10.0	1	1	
1,2,3,7,8-PeCDD	**7.42**	0.428	50.0	1	1	7.42
1,2,3,4,7,8-HxCDD	**5.70**	0.423	50.0	1	0.1	0.570
1,2,3,6,7,8-HxCDD	**6.71**	0.358	50.0	1	0.1	0.671
1,2,3,7,8,9-HxCDD	**6.42**	0.367	50.0	1	0.1	0.642
1,2,3,4,6,7,8-HpCDD	**49.7**	0.884	50.0	1	0.01	0.497
OCDD	**445**	0.763	100	1	0.0003	0.134
2,3,7,8-TCDF	**1.42**	0.757	10.0	1	0.1	0.142
1,2,3,7,8-PeCDF	**5.23**	0.404	50.0	1	0.03	0.157
2,3,4,7,8-PeCDF	**4.40**	0.432	50.0	1	0.3	1.32
1,2,3,4,7,8-HxCDF	**4.98**	0.348	50.0	1	0.1	0.498
1,2,3,6,7,8-HxCDF	**5.24**	0.290	50.0	1	0.1	0.524
1,2,3,7,8,9-HxCDF	**3.00**	0.400	50.0	1	0.1	0.300
2,3,4,6,7,8-HxCDF	**4.95**	0.340	50.0	1	0.1	0.495
1,2,3,4,6,7,8-HpCDF	**12.5**	0.792	50.0	1	0.01	0.125
1,2,3,4,7,8,9-HpCDF	**6.32**	1.08	50.0	1	0.01	0.0632
OCDF	**27.6**	1.87	100	1	0.0003	0.00828
		Total TEQ				13.6

2005 WHO TEFs, ND = 0

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Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301791
Project:	Bridgeton Landfill/182608005	**Date Collected:**	4/25/13 1730
Sample Matrix:	Air	**Date Received:**	4/27/13
Sample Name:	425-PUF-BDF	**Units:**	pg
Lab Code:	P1301791-021	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 2005
Prep Method:	Method	**Date Extracted:**	5/1/13
Sample Amount:	1.0000each	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163814	**Blank File Name:**	P163811
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.37	10.0			1
1,2,3,7,8-PeCDD	**2.18**	BJ	0.472	50.0	1.57	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.358	50.0			1
1,2,3,6,7,8-HxCDD	**1.61**	BJK	0.303	50.0	0.65	1.000	1
1,2,3,7,8,9-HxCDD	**1.59**	BJK	0.310	50.0	1.47	1.007	1
1,2,3,4,6,7,8-HpCDD	**3.26**	BJK	0.528	50.0	1.36	1.000	1
OCDD	**9.08**	BJ	1.19	100	0.99	1.000	1
2,3,7,8-TCDF	ND	U	0.725	10.0			1
1,2,3,7,8-PeCDF	**1.30**	JK	0.331	50.0	1.24	1.000	1
2,3,4,7,8-PeCDF	**0.964**	JK	0.353	50.0	1.07	1.022	1
1,2,3,4,7,8-HxCDF	**0.935**	BJK	0.191	50.0	0.84	0.998	1
1,2,3,6,7,8-HxCDF	**1.42**	BJ	0.159	50.0	1.28	1.000	1
1,2,3,7,8,9-HxCDF	**1.58**	BJ	0.220	50.0	1.11	1.033	1
2,3,4,6,7,8-HxCDF	**0.645**	JK	0.186	50.0	1.81	1.013	1
1,2,3,4,6,7,8-HpCDF	**2.01**	BJK	0.398	50.0	1.23	1.000	1
1,2,3,4,7,8,9-HpCDF	**1.90**	JK	0.540	50.0	2.19	1.035	1
OCDF	**2.70**	BJK	1.47	100	0.54	1.004	1
Total Tetra-Dioxins	ND	U	1.37	10.0			1
Total Penta-Dioxins	**2.18**	J	0.472	50.0	1.57		1
Total Hexa-Dioxins	ND	U	0.322	50.0			1
Total Hepta-Dioxins	**3.92**	J	0.528	50.0	1.15		1
Total Tetra-Furans	ND	U	0.725	10.0			1
Total Penta-Furans	ND	U	0.341	50.0			1
Total Hexa-Furans	**3.00**	J	0.187	50.0	1.28		1
Total Hepta-Furans	ND	U	0.458	50.0			1

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Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301791
Project:	Bridgeton Landfill/182608005	**Date Collected:**	4/25/13 1730
Sample Matrix:	Air	**Date Received:**	4/27/13
Sample Name:	425-PUF-BDF	**Units:**	Percent
Lab Code:	P1301791-021	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 2005
Prep Method:	Method	**Date Extracted:**	5/1/13
Sample Amount:	1.0000each	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163814	**Blank File Name:**	P163811
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	4000	2697.411	67		50-120	0.78	1.007
13C-1,2,3,7,8-PeCDD	4000	3193.771	80		50-120	1.55	1.158
13C-1,2,3,6,7,8-HxCDD	4000	3000.802	75		50-120	1.25	0.993
13C-1,2,3,4,6,7,8-HpCDD	4000	2738.389	68		40-120	1.04	1.070
13C-OCDD	8000	5272.021	66		40-120	0.89	1.156
13C-2,3,7,8-TCDF	4000	2471.075	62		50-120	0.76	0.980
13C-1,2,3,7,8-PeCDF	4000	2772.290	69		50-120	1.53	1.122
13C-1,2,3,6,7,8-HxCDF	4000	2585.306	65		50-120	0.51	0.975
13C-1,2,3,4,6,7,8-HpCDF	4000	2327.899	58		40-120	0.44	1.045
37Cl-2,3,7,8-TCDD	4000	4523.416	113		50-120	NA	1.001
13C-1,2,3,4,7,8-HxCDD	4000	4379.107	109		50-120	1.22	0.998
13C-2,3,4,7,8-PeCDF	4000	4163.464	104		50-120	1.53	1.022
13C-1,2,3,4,7,8-HxCDF	4000	4070.327	102		50-120	0.51	0.997
13C-1,2,3,4,7,8,9-HpCDF	4000	4499.829	112		40-120	0.43	1.035
13C-1,2,3,7,8,9-HxCDF	4000	2794.185	70		50-120	0.51	1.006

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Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301791
Project:	Bridgeton Landfill/182608005	**Date Collected:**	4/25/13 1730
Sample Matrix:	Air	**Date Received:**	4/27/13
Sample Name:	425-PUF-BDF	**Units:**	pg
Lab Code:	P1301791-021	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method: TO-9A
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	1.37	10.0	1	1	
1,2,3,7,8-PeCDD	**2.18**	0.472	50.0	1	1	2.18
1,2,3,4,7,8-HxCDD	ND	0.358	50.0	1	0.1	
1,2,3,6,7,8-HxCDD	**1.61**	0.303	50.0	1	0.1	0.161
1,2,3,7,8,9-HxCDD	**1.59**	0.310	50.0	1	0.1	0.159
1,2,3,4,6,7,8-HpCDD	**3.26**	0.528	50.0	1	0.01	0.0326
OCDD	**9.08**	1.19	100	1	0.0003	0.00272
2,3,7,8-TCDF	ND	0.725	10.0	1	0.1	
1,2,3,7,8-PeCDF	**1.30**	0.331	50.0	1	0.03	0.0390
2,3,4,7,8-PeCDF	**0.964**	0.353	50.0	1	0.3	0.289
1,2,3,4,7,8-HxCDF	**0.935**	0.191	50.0	1	0.1	0.0935
1,2,3,6,7,8-HxCDF	**1.42**	0.159	50.0	1	0.1	0.142
1,2,3,7,8,9-HxCDF	**1.58**	0.220	50.0	1	0.1	0.158
2,3,4,6,7,8-HxCDF	**0.645**	0.186	50.0	1	0.1	0.0645
1,2,3,4,6,7,8-HpCDF	**2.01**	0.398	50.0	1	0.01	0.0201
1,2,3,4,7,8,9-HpCDF	**1.90**	0.540	50.0	1	0.01	0.0190
OCDF	**2.70**	1.47	100	1	0.0003	0.000810
		Total TEQ				3.36

2005 WHO TEFs, ND = 0

ALS ENVIRONMENTAL

Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301791
Project:	Bridgeton Landfill/182608005	**Date Collected:**	NA
Sample Matrix:	Air	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1300249-01	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 1743
Prep Method:	Method	**Date Extracted:**	5/1/13
Sample Amount:	1.0000each	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163811	**Blank File Name:**	P163811
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	2.09	10.0			1
1,2,3,7,8-PeCDD	**2.39**	JK	0.642	50.0	1.85	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.470	50.0			1
1,2,3,6,7,8-HxCDD	**2.16**	J	0.398	50.0	1.29	1.000	1
1,2,3,7,8,9-HxCDD	**2.45**	JK	0.407	50.0	0.97	1.007	1
1,2,3,4,6,7,8-HpCDD	**3.54**	JK	0.546	50.0	1.37	1.000	1
OCDD	**15.3**	JK	1.55	100	0.70	1.000	1
2,3,7,8-TCDF	ND	U	0.694	10.0			1
1,2,3,7,8-PeCDF	ND	U	0.396	50.0			1
2,3,4,7,8-PeCDF	ND	U	0.423	50.0			1
1,2,3,4,7,8-HxCDF	**0.960**	JK	0.642	50.0	0.49	0.997	1
1,2,3,6,7,8-HxCDF	**0.889**	JK	0.534	50.0	0.90	1.000	1
1,2,3,7,8,9-HxCDF	**1.62**	J	0.739	50.0	1.28	1.033	1
2,3,4,6,7,8-HxCDF	ND	U	0.626	50.0			1
1,2,3,4,6,7,8-HpCDF	**1.50**	JK	0.409	50.0	0.80	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.554	50.0			1
OCDF	**5.78**	J	1.84	100	0.98	1.004	1
Total Tetra-Dioxins	ND	U	2.09	10.0			1
Total Penta-Dioxins	ND	U	0.642	50.0			1
Total Hexa-Dioxins	**2.16**	J	0.423	50.0	1.29		1
Total Hepta-Dioxins	**3.98**	J	0.546	50.0	1.00		1
Total Tetra-Furans	ND	U	0.694	10.0			1
Total Penta-Furans	ND	U	0.409	50.0			1
Total Hexa-Furans	**1.62**	J	0.628	50.0	1.28		1
Total Hepta-Furans	ND	U	0.470	50.0			1

ALS ENVIRONMENTAL

Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301791
Project:	Bridgeton Landfill/182608005	**Date Collected:**	NA
Sample Matrix:	Air	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1300249-01	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 1743
Prep Method:	Method	**Date Extracted:**	5/1/13
Sample Amount:	1.0000each	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163811	**Blank File Name:**	P163811
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	4000	2531.168	63		50-120	0.77	1.007
13C-1,2,3,7,8-PeCDD	4000	2987.539	75		50-120	1.54	1.157
13C-1,2,3,6,7,8-HxCDD	4000	2965.290	74		50-120	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	4000	2659.033	66		40-120	1.06	1.070
13C-OCDD	8000	4978.137	62		40-120	0.88	1.156
13C-2,3,7,8-TCDF	4000	2136.446	53		50-120	0.76	0.980
13C-1,2,3,7,8-PeCDF	4000	2532.852	63		50-120	1.55	1.122
13C-1,2,3,6,7,8-HxCDF	4000	2513.985	63		50-120	0.49	0.975
13C-1,2,3,4,6,7,8-HpCDF	4000	2190.855	55		40-120	0.44	1.045
37Cl-2,3,7,8-TCDD	4000	4376.819	109		50-120	NA	1.001
13C-1,2,3,4,7,8-HxCDD	4000	4046.888	101		50-120	1.25	0.998
13C-2,3,4,7,8-PeCDF	4000	3911.892	98		50-120	1.55	1.022
13C-1,2,3,4,7,8-HxCDF	4000	3940.359	99		50-120	0.54	0.997
13C-1,2,3,4,7,8,9-HpCDF	4000	4647.091	116		40-120	0.43	1.035
13C-1,2,3,7,8,9-HxCDF	4000	2581.840	65		50-120	0.51	1.006

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Accuracy and Precision

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ALS ENVIRONMENTAL

QA/QC Report

Client: Stantec Consulting Group, Inc.
Project: Bridgeton Landfill/182608005
Sample Matrix: Air

Service Request: P1301791
Date Analyzed: 5/10/13

Lab Control Sample Summary
Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method: TO-9A
Prep Method: Method

Units: pg
Basis: NA

Extraction Lot: 181963

	Lab Control Sample EQ1300249-02			Duplicate Lab Control Sample EQ1300249-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2,3,7,8-TCDD	185	200	93	186	200	93	70 - 130	<1	30
1,2,3,7,8-PeCDD	954	1000	95	965	1000	97	70 - 130	2	30
1,2,3,4,7,8-HxCDD	1010	1000	101	1020	1000	102	70 - 130	<1	30
1,2,3,6,7,8-HxCDD	916	1000	92	929	1000	93	70 - 130	1	30
1,2,3,7,8,9-HxCDD	844	1000	84	853	1000	85	70 - 130	1	30
1,2,3,4,6,7,8-HpCDD	907	1000	91	912	1000	91	70 - 130	<1	30
OCDD	1820	2000	91	1850	2000	92	70 - 130	1	30
2,3,7,8-TCDF	176	200	88	176	200	88	70 - 130	<1	30
1,2,3,7,8-PeCDF	896	1000	90	897	1000	90	70 - 130	<1	30
2,3,4,7,8-PeCDF	896	1000	90	879	1000	88	70 - 130	2	30
1,2,3,4,7,8-HxCDF	933	1000	93	928	1000	93	70 - 130	<1	30
1,2,3,6,7,8-HxCDF	890	1000	89	890	1000	89	70 - 130	<1	30
1,2,3,7,8,9-HxCDF	920	1000	92	947	1000	95	70 - 130	3	30
2,3,4,6,7,8-HxCDF	901	1000	90	892	1000	89	70 - 130	1	30
1,2,3,4,6,7,8-HpCDF	902	1000	90	907	1000	91	70 - 130	1	30
1,2,3,4,7,8,9-HpCDF	1060	1000	106	1040	1000	104	70 - 130	2	30
OCDF	1790	2000	90	1810	2000	91	70 - 130	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS ENVIRONMENTAL

Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301791
Project:	Bridgeton Landfill/182608005	**Date Collected:**	NA
Sample Matrix:	Air	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1300249-02	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 2228
Prep Method:	Method	**Date Extracted:**	5/1/13
Sample Amount:	1.0000each	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163817	**Blank File Name:**	P163811
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**742**		0.679	10.0	0.72	1.001	1
1,2,3,7,8-PeCDD	**520**		0.301	50.0	1.51	1.000	1
1,2,3,4,7,8-HxCDD	**7676**		0.0880	50.0	1.24	0.998	1
1,2,3,6,7,8-HxCDD	**571**		0.0750	50.0	1.25	1.000	1
1,2,3,7,8,9-HxCDD	**400**		0.0760	50.0	1.24	1.008	1
1,2,3,4,6,7,8-HpCDD	**569**		0.222	50.0	1.03	1.000	1
OCDD	**7436**		0.321	100	0.87	1.000	1
2,3,7,8-TCDF	**791**		0.408	10.0	0.74	1.001	1
1,2,3,7,8-PeCDF	**451**		0.190	50.0	1.52	1.000	1
2,3,4,7,8-PeCDF	**451**		0.204	50.0	1.53	1.021	1
1,2,3,4,7,8-HxCDF	**588**		0.211	50.0	1.20	0.998	1
1,2,3,6,7,8-HxCDF	**456**		0.175	50.0	1.20	1.000	1
1,2,3,7,8,9-HxCDF	**536**		0.242	50.0	1.20	1.033	1
2,3,4,6,7,8-HxCDF	**567**		0.205	50.0	1.23	1.013	1
1,2,3,4,6,7,8-HpCDF	**563**		1.03	50.0	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**7616**		1.39	50.0	1.04	1.035	1
OCDF	**7956**		0.731	100	0.88	1.004	1
Total Tetra-Dioxins	**742**		0.679	10.0	0.72		1
Total Penta-Dioxins	**520**		0.301	50.0	1.51		1
Total Hexa-Dioxins	**3996**		0.0790	50.0	1.24		1
Total Hepta-Dioxins	**577**		0.222	50.0	0.92		1
Total Tetra-Furans	**758**		0.408	10.0	0.84		1
Total Penta-Furans	**7406**		0.196	50.0	1.59		1
Total Hexa-Furans	**8106**		0.205	50.0	1.20		1
Total Hepta-Furans	**7516**		1.18	50.0	1.03		1

ALS ENVIRONMENTAL

Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301791
Project:	Bridgeton Landfill/182608005	**Date Collected:**	NA
Sample Matrix:	Air	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1300249-02	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 2228
Prep Method:	Method	**Date Extracted:**	5/1/13
Sample Amount:	1.0000each	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163817	**Blank File Name:**	P163811
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	4000	2585.212	65		50-120	0.77	1.007
13C-1,2,3,7,8-PeCDD	4000	2902.443	73		50-120	1.54	1.157
13C-1,2,3,6,7,8-HxCDD	4000	2857.460	71		50-120	1.25	0.992
13C-1,2,3,4,6,7,8-HpCDD	4000	2561.018	64		40-120	1.05	1.070
13C-OCDD	8000	4725.124	59		40-120	0.89	1.156
13C-2,3,7,8-TCDF	4000	2223.338	56		50-120	0.77	0.980
13C-1,2,3,7,8-PeCDF	4000	2498.861	62		50-120	1.54	1.122
13C-1,2,3,6,7,8-HxCDF	4000	2432.952	61		50-120	0.51	0.974
13C-1,2,3,4,6,7,8-HpCDF	4000	2178.717	54		40-120	0.45	1.045
37Cl-2,3,7,8-TCDD	4000	4379.855	109		50-120	NA	1.001
13C-1,2,3,4,7,8-HxCDD	4000	4586.419	115		50-120	1.24	0.998
13C-2,3,4,7,8-PeCDF	4000	3980.877	100		50-120	1.54	1.021
13C-1,2,3,4,7,8-HxCDF	4000	4180.304	105		50-120	0.51	0.998
13C-1,2,3,4,7,8,9-HpCDF	4000	4499.615	112		40-120	0.43	1.035
13C-1,2,3,7,8,9-HxCDF	4000	2581.387	65		50-120	0.51	1.006

ALS ENVIRONMENTAL

Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301791
Project:	Bridgeton Landfill/182608005	**Date Collected:**	NA
Sample Matrix:	Air	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1300249-03	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 2316
Prep Method:	Method	**Date Extracted:**	5/1/13
Sample Amount:	1.0000each	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163818	**Blank File Name:**	P163811
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**741**		0.947	10.0	0.71	1.001	1
1,2,3,7,8-PeCDD	**512**		0.320	50.0	1.54	1.001	1
1,2,3,4,7,8-HxCDD	**7636**		0.131	50.0	1.21	0.998	1
1,2,3,6,7,8-HxCDD	**535**		0.111	50.0	1.25	1.000	1
1,2,3,7,8,9-HxCDD	**428**		0.114	50.0	1.27	1.008	1
1,2,3,4,6,7,8-HpCDD	**573**		0.221	50.0	1.02	1.000	1
OCDD	**7426**		0.596	100	0.88	1.000	1
2,3,7,8-TCDF	**791**		0.281	10.0	0.74	1.001	1
1,2,3,7,8-PeCDF	**459**		0.307	50.0	1.58	1.000	1
2,3,4,7,8-PeCDF	**495**		0.328	50.0	1.52	1.022	1
1,2,3,4,7,8-HxCDF	**534**		0.243	50.0	1.22	0.998	1
1,2,3,6,7,8-HxCDF	**456**		0.202	50.0	1.22	1.000	1
1,2,3,7,8,9-HxCDF	**509**		0.278	50.0	1.22	1.033	1
2,3,4,6,7,8-HxCDF	**453**		0.236	50.0	1.20	1.013	1
1,2,3,4,6,7,8-HpCDF	**569**		0.963	50.0	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	**7606**		1.31	50.0	1.03	1.035	1
OCDF	**7476**		0.944	100	0.90	1.004	1
Total Tetra-Dioxins	**741**		0.947	10.0	0.71		1
Total Penta-Dioxins	**512**		0.320	50.0	1.54		1
Total Hexa-Dioxins	**3466**		0.118	50.0	1.21		1
Total Hepta-Dioxins	**579**		0.221	50.0	1.13		1
Total Tetra-Furans	**791**		0.281	10.0	0.74		1
Total Penta-Furans	**7476**		0.318	50.0	1.56		1
Total Hexa-Furans	**8116**		0.237	50.0	1.24		1
Total Hepta-Furans	**7526**		1.11	50.0	1.02		1

ALS ENVIRONMENTAL

Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301791
Project:	Bridgeton Landfill/182608005	**Date Collected:**	NA
Sample Matrix:	Air	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1300249-03	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 2316
Prep Method:	Method	**Date Extracted:**	5/1/13
Sample Amount:	1.0000each	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163818	**Blank File Name:**	P163811
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	4000	2533.685	63		50-120	0.77	1.007
13C-1,2,3,7,8-PeCDD	4000	2827.523	71		50-120	1.55	1.157
13C-1,2,3,6,7,8-HxCDD	4000	2788.586	70		50-120	1.25	0.992
13C-1,2,3,4,6,7,8-HpCDD	4000	2475.160	62		40-120	1.05	1.070
13C-OCDD	8000	4605.049	58		40-120	0.87	1.155
13C-2,3,7,8-TCDF	4000	2193.878	55		50-120	0.77	0.980
13C-1,2,3,7,8-PeCDF	4000	2465.003	62		50-120	1.55	1.122
13C-1,2,3,6,7,8-HxCDF	4000	2365.597	59		50-120	0.51	0.974
13C-1,2,3,4,6,7,8-HpCDF	4000	2129.129	53		40-120	0.44	1.045
37Cl-2,3,7,8-TCDD	4000	4431.417	111		50-120	NA	1.001
13C-1,2,3,4,7,8-HxCDD	4000	4639.725	116		50-120	1.23	0.998
13C-2,3,4,7,8-PeCDF	4000	3961.637	99		50-120	1.54	1.022
13C-1,2,3,4,7,8-HxCDF	4000	4193.797	105		50-120	0.51	0.998
13C-1,2,3,4,7,8,9-HpCDF	4000	4459.502	111		40-120	0.43	1.035
13C-1,2,3,7,8,9-HxCDF	4000	2555.239	64		50-120	0.52	1.006

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Chain of Custody

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Intra-Network Chain of Custody

2655 Park Center Drive, Suite A • Simi Valley, CA 93065 • 805-526-7161 • FAX 805-526-7270

ALS Contact: Samantha Henningsen

Project Name: Bridgeton Landfill
Project Number: 182608005
Project Manager: Deborah Gray
Company: Stantec Consulting Services, Inc.

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Dioxins and Furans TO-9A
P1301791-019	425-PUF-1DF	1	Air	4/25/13	1707	4/27/13	HOUSTON	II
P1301791-021	425-PUF-BDF	1	Air	4/25/13	1730	4/27/13	HOUSTON	II

Test Comments
Dioxins and Furans - TO-9A P1301791-019,21 17 Dioxin/Furans

Folder Comments:
1L canisters are potentially VERY HOT.

Special Instructions/Comments	Turnaround Requirements	Report Requirements	Invoice Information
958 0/-1 S/N. 122463441	____ RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 ✓ STANDARD Requested FAX Date: _____ Requested Report Date: 05/19/13	____ I. Results Only ✓ II. Results + QC Summaries ____ III. Results + QC and Calibration Summaries ____ IV. Data Validation Report with Raw Data PQL/MDL/J N EDD N	PO# P1301791 Bill to

Relinquished By: [signature] 4/26/13 1530 Received By: [signature] 4/30/13 950 Airbill Number: 5488 8282 0086

MSD 025932

Cooler Receipt Form

Project Chemist: NB

Client/Project: Stantec Consulting Services; Bridgeton Landfill

Service Request: P1301791

Date/Time Received: 04/30/13 09:50:00

Date/Time Logged in: 04/30/13 11:03:00

Technician: AL

Technician: AL

1. Method of delivery: ○ US Mail ◉ Fed Ex ○ UPS ○ DHL ○ Courier ○ Client

2. Samples received in: ◉ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ◉ No ○ N/A

Were they intact? ○ Yes ◉ No ○ N/A

Were they signed and dated? ○ Yes ◉ No ○ N/A

If yes, how many and where? No Seals

4. Method of delivery: ○ Inserts ☑ Baggies ☑ Bubble Wrap ☑ Gel Packs ○ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ◉ No

Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?	Filed
548882820986		Apr 30, 2013	0958	AL	0/-1	☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ◉ Yes ○ No ○ N/A

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ◉ Yes ○ No ○ N/A

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ◉ Yes ○ No ○ N/A

9. Were appropriate bottles/containers and volumes received for the requested tests? ◉ Yes ○ No ○ N/A

10. Did sample labels and tags agree with custody documents? ◉ Yes ○ No ○ N/A

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Broken	Date	Technician
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		

Notes, Discrepancies, & Resolutions:

Print Form

Reset Form

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental - Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample
- ✓ The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report.

Service Request Summary

Folder #: P1301791
Client Name: Stantec Consulting Group, Inc.
Project Name: Bridgeton Landfill
Project Number: 182608005

Report To: Deborah Gray
Stantec Consulting Services, Inc.
1500 Lake Shore Drive Suite 100
Columbus, OH 43204
Phone Number: 614-486-4383
Cell Number: 614-738-0791
Fax Number:
E-mail: deb.gray@stantec.com

Project Chemist: Nicole Brown
Originating Lab: SIMIVALLEY
Logged By: MZAMORA
Date Received: 4/27/13
Internal Due Date: 5/13/13
QAP: LAB QAP
Qualifier Set: CAS Standard
Formset: CAS Standard
Merged?: Y
Report to MDL?: N
P.O. Number:
EDD: No EDD Specified

4 - 1 each-Tube Solid Sorbent (Custom)
2 - 1 each-Tube Silica Gel (260/520)
2 - 1 each-Tube Silica Gel (C. Acids)
2 - 1 each-Tube DNPH Silica Gel
2 - 1 each-Cartridge PUF/Filter (High Volume)
2 - 1 each-Cartridge PUF/XAD-2/Filter (Hi_Vol)
2 - 1 each-Tube Alumina
2 - 1 each-Tube Anasorb747 (H2SO4)250/500
2 - 1 each-Tube Silica Gel
2 - 6.0 L-Summa Canister Ambient Silonite SC

Location: SUBBED-OUT, P-04, E-Disposed, Shasta Lab, P-Disposed, P-126

Pressure Gas: Helium

					SIMIVALLEY	SIMIVALLEY		SIMIVALLEY		SIMIVALLEY		SIMIVALLEY	SVM	Salt Lake City ALS	
CAS Samp No	Client Samp No.	Matrix	Collected		OSHA ID-164 Modified/ Ammonia	Amines/ Amines	TO-11A/ Carbonyls	Carbox Acids/ Carboxy Acids	TO-13A/ PAH Scan Hi Vol	3C Modified/ Fxd Gases Can	ASTM D5504-08/ Sulfur Can	TO-15 Modified/ VOC Cans	TO-9A/ Dioxins and Furans	None/ Misc Out 2	None/ Misc Out 3
P1301791-001	425-1 HCL	Air	4/25/13	1655											
P1301791-002	425-2 ALD	Air	4/25/13	1655			II								
P1301791-003	425-3 HCN	Air	4/25/13	1655											II
P1301791-004	425-4 AMINE	Air	4/25/13	1657		II									
P1301791-005	425-5 HG	Air	4/25/13	1656										II	
P1301791-006	425-6 NH4	Air	4/25/13	1657	II										
P1301791-007	425-7 CARBOX	Air	4/25/13	1655				II							
P1301791-008	425-8 SO2	Air	4/25/13	1656											
P1301791-009	425-9 HCL B	Air	4/25/13	1555											
P1301791-010	425-10 ALD B	Air	4/25/13	1556			II								
P1301791-011	425-11 HCN B	Air	4/25/13	1557											II
P1301791-012	425-12 Amine B	Air	4/25/13	1558		II									
P1301791-013	425-13 Hg B	Air	4/25/13	1559										II	
P1301791-014	425-14 NH4 B	Air	4/25/13	1600	II										
P1301791-015	425-15 Carbox B	Air	4/25/13	1601				II							
P1301791-016	425-16 SO2 B	Air	4/25/13	1602											
P1301791-017	425-SV-1	Air	4/25/13	1747						II	II	II			
P1301791-018	425-SV-B	Air	4/25/13	1603						II	II	II			
P1301791-019	425-PUF-1DF	Air	4/25/13	1707									II		
P1301791-020	425-PUF-2P	Air	4/25/13	1707					II						
P1301791-021	425-PUF-BDF	Air	4/25/13	1730									II		

MSD 025935

CAS Samp No.	Client Samp No.	Matrix	Collected		Salt Lake City ALS	
					None/ Misc Out 4	None/ Misc Out 5
P1301791-001	425-1 HCL	Air	4/25/13	1655	II	
P1301791-002	425-2 ALD	Air	4/25/13	1655		
P1301791-003	425-3 HCN	Air	4/25/13	1655		
P1301791-004	425-4 AMINE	Air	4/25/13	1657		
P1301791-005	425-5 HG	Air	4/25/13	1656		
P1301791-006	425-6 NH4	Air	4/25/13	1657		
P1301791-007	425-7 CARBOX	Air	4/25/13	1655		
P1301791-008	425-8 SO2	Air	4/25/13	1656		II
P1301791-009	425-9 HCL B	Air	4/25/13	1555	II	
P1301791-010	425-10 ALD B	Air	4/25/13	1556		
P1301791-011	425-11 HCN B	Air	4/25/13	1557		
P1301791-012	425-12 Amine B	Air	4/25/13	1558		
P1301791-013	425-13 Hg B	Air	4/25/13	1559		
P1301791-014	425-14 NH4 B	Air	4/25/13	1600		
P1301791-015	425-15 Carbox B	Air	4/25/13	1601		
P1301791-016	425-16 SO2 B	Air	4/25/13	1602		II
P1301791-017	425-SV-1	Air	4/25/13	1747		
P1301791-018	425-SV-B	Air	4/25/13	1603		
P1301791-019	425-PUF-1DF	Air	4/25/13	1707		
P1301791-020	425-PUF-2P	Air	4/25/13	1707		
P1301791-021	425-PUF-BDF	Air	4/25/13	1730		

Service Request Summary

Folder #:	**P1301791**
Client Name:	Stantec Consulting Group, Inc.
Project Name:	Bridgeton Landfill
Project Number:	182608005
Report To:	Deborah Gray Stantec Consulting Services, Inc. 1500 Lake Shore Drive Suite 100 Columbus, OH 43204
Phone Number:	614-486-4383
Cell Number:	614-738-0791
Fax Number:	
E-mail:	deb.gray@stantec.com

Project Chemist:	Nicole Brown
Originating Lab:	SIMIVALLEY
Logged By:	MZAMORA
Date Received:	4/27/13
Internal Due Date:	5/13/13
QAP:	LAB QAP
Qualifier Set:	CAS Standard
Formset:	CAS Standard
Merged?:	Y
Report to MDL?:	N
P.O. Number:	
EDD:	No EDD Specified

4	- 1 each-Tube Solid Sorbent (Custom)
2	- 1 each-Tube Silica Gel (260/520)
2	- 1 each-Tube Silica Gel (C. Acids)
2	- 1 each-Tube DNPH Silica Gel
2	- 1 each-Cartridge PUF/Filter (High Volume)
2	- 1 each-Cartridge PUF/XAD-2/Filter (Hi_Vol)
2	- 1 each-Tube Alumina
2	- 1 each-Tube Anasorb747 (H2SO4)250/500
2	- 1 each-Tube Silica Gel
2	- 6.0 L-Summa Canister Ambient Silonite SC

Location: SUBBED-OUT, P-04, E-Disposed, Shasta Lab, P-Disposed, P-126

Pressure Gas: Helium

					SIMIVALLEY	SIMIVALLEY		SIMIVALLEY		SIMIVALLEY		SIMIVALLEY	SVM	Salt Lake City ALS	
					OSHA ID-164 Modified/ Ammonia	Amines/ Amines	TO-11A/ Carbonyls	Carbox Acids/ Carboxy Acids	TO-13A/ PAH Scan Hi Vol	3C Modified/ Fxd Gases Can	ASTM D5504-08/ Sulfur Can	TO-15 Modified/ VOC Cans	TO-9A/ Dioxins and Furans	None/ Misc Out 2	None/ Misc Out 3
P1301791-022	425-PUF-BP	Air	4/25/13	1730					II						

Folder Comments:

1L canisters are potentially VERY HOT.

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GC	Carbonyls/TO-11A	2, 10	Aldehydes analysis
Semivoa GCMS	Dioxins and Furans/TO-9A	19, 21	17 Dioxin/Furans
Semivoa GCMS	PAH Scan Hi Vol/TO-13A	20, 22	all PAHs
SubLab	Misc Out 2/None	5, 13	NIOSH 6009 - Hg
SubLab	Misc Out 3/None	3, 11	HCN
SubLab	Misc Out 4/None	1, 9	NIOSH 7903 - HCl
SubLab	Misc Out 5/None	8, 16	OSHA 200 - Sulfur Dioxide (tube 226-80)
VOA GC AIR	Fxd Gases Can/3C Modified	17-18	CH4, CO, CO2, H2, O2, N2
VOA GC AIR	Sulfur Can/ASTM D5504-08	17-18	20 Reduced Sulfur Compounds
VOA GCMS AIR	VOC Cans/TO-15 Modified	17-18	Standard 75 compounds + TICs

					Salt Lake City ALS	
					None/ Misc Out 4	None/ Misc Out 5
P1301791-022	425-PUF-BP	Air	4/25/13	1730		

Preparation Information Benchsheet

Prep Run#: 181963 **Prep WorkFlow:** OrgExtDioxA(7) **Status:** Prepped
Team: Semivoa GCMS/WMCDONOUGH **Prep Method:** Method **Prep Date/Time:** 5/1/13 11:00 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Sample Description
1	EQ1300249-01	MB		TO-9A/Dioxins and Furans		Air	1.0000each	
2	EQ1300249-02	LCS		TO-9A/Dioxins and Furans		Air	1.0000each	
3	EQ1300249-03	DLCS		TO-9A/Dioxins and Furans		Air	1.0000each	
4	P1301791-019	425-PUF-1DF	.01	TO-9A/Dioxins and Furans		Air	1.0000each	PUF
5	P1301791-021	425-PUF-BDF	.01	TO-9A/Dioxins and Furans		Air	1.0000each	PUF

Spiking Solutions

Name: 23/TO-9A Alternate Working Solution Inventory ID 53663 Logbook Ref: 53663 HLEUNG 1/15/13 Expires On: 01/15/2014

EQ1300249-01 40.00µL EQ1300249-02 40.00µL EQ1300249-03 40.00µL P1301791-019 40.00µL P1301791-021 40.00µL

Name: 23/TO-9A Internal Working Solution Inventory ID 53664 Logbook Ref: 53664 HLEUNG 1/15/13 Expires On: 01/15/2014

EQ1300249-01 40.00µL EQ1300249-02 40.00µL EQ1300249-03 40.00µL P1301791-019 40.00µL P1301791-021 40.00µL

Name: 23/TO-9A Surrogate Working Solution Inventory ID 53735 Logbook Ref: 53735 HLEUNG 23/TO-9A Sur. Wor Expires On: 01/15/2014

EQ1300249-01 40.00µL EQ1300249-02 40.00µL EQ1300249-03 40.00µL P1301791-019 40.00µL P1301791-021 40.00µL

Name: 1613B Matrix Working Standard Inventory ID 55484 Logbook Ref: 55484 HLEUNG 3/12/13 WT WM Expires On: 03/12/2014

EQ1300249-02 100.00µL EQ1300249-03 100.00µL

Preparation Materials

Carbon, High Purity	AL 04/23/13 (57045)	Ethyl Acetate 99.9% Minimum EtOAc	MR 4/15/13 (56708)	Glass Wool	C2-87-4 rp (51333)
Hexanes 95%	AL 04/18/13 (56878)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	MR 4/12/13 (56637)	Sodium Chloride Reagent Grade NaCl	C2-65-5 (38670)
Sodium Hydroxide Reagent Grade NaOH	C2-73-7 (53023)	Sodium Sulfate Anhydrous Reagent Grade Na2SO4	MR 4/15/13 (56710)	Tridecane (n-Tridecane)	MR 4/15/13 (56663)
Silica Gel Reagent Grade	AL 02/12/13 (54685)	sulfuric acid	MR 4/10/13 (56549)	Toluene 99.9% Minimum	MR 4/10/13 (56590)

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	5/1/13 11:00	Started:	5/8/13 08:15	Started:	5/8/13 11:45	Started:	5/8/13 17:30
Finished:	5/2/13 07:30	Finished:	5/8/13 08:30	Finished:	5/8/13 13:15	Finished:	5/8/13 18:00
By:	HLEUNG	By:	HLEUNG	By:	HLEUNG	By:	HLEUNG
Comments		Comments		Comments		Comments	

MSD 025939

Preparation Information Benchsheet

Prep Run#: 181963
Team: Semivoa GCMS/WMCDONOUGH

Prep WorkFlow: OrgExtDioxA(7)
Prep Method: Method

Status: Prepped
Prep Date/Time: 5/1/13 11:00 AM

Comments:

Reviewed By: TL Date: 5/9/13

Chain of Custody

Relinquished By:		Date:	
Received By:		Date:	

Extracts Examined
Yes No

MSD 025940

ANALYTICAL REPORT

Report Date: May 07, 2013

Deborah Grey
Stantec Consulting Services
1500 Lake Shore Dr. Suite 100
Columbus, OH 43204

Phone: (614) 486-4383

E-mail: deb.gray@stantec.com

Workorder: **34-1312196**
Client Project ID: 182608005/Bridgeton Landfill
Purchase Order: 182608005
Project Manager: Paul Pope

Analytical Results

Sample ID: **425-1 HCL** | Media: SKC 226-10-03 Sorbent Tube, Treated Silica Gel Tube | Collected: 04/25/2013
Lab ID: 1312196001 | Sampling Location: Bridgeton Landfill | Received: 04/30/2013

Method: NIOSH 7903 | **Sampling Parameter: Air Volume 97332 mL** | **Analyzed:** 05/02/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Hydrochloric acid	<0.52	<0.0053	<0.0036	0.52

Sample ID: **425-3 HCN** | Media: SKC 226-28, Soda Lime-200/600 | Collected: 04/25/2013
Lab ID: 1312196002 | Sampling Location: Bridgeton Landfill | Received: 04/30/2013

Method: NIOSH 6010 | **Sampling Parameter: Air Volume 15822 mL** | **Analyzed:** 05/07/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Hydrogen Cyanide	<0.37	<0.023	<0.021	0.37

Sample ID: **425-5 HG** | Media: SKC 226-17-1A, Hopcalite Tube | Collected: 04/25/2013
Lab ID: 1312196003 | Sampling Location: Bridgeton Landfill | Received: 04/30/2013

Method: NIOSH 6009 | **Sampling Parameter: Air Volume 47009 mL** | **Analyzed:** 05/06/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Mercury	<0.010	<0.00021	<0.000026	0.010

Sample ID: **425-8 S02** | Media: SKC 226-80, KOH-Treated Anasorb 747 | Collected: 04/25/2013
Lab ID: 1312196004 | Sampling Location: Bridgeton Landfill | Received: 04/30/2013

Method: OSHA ID-200 | **Sampling Parameter: Air Volume 46162 mL** | **Analyzed:** 05/03/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Sulfur dioxide	**0.59**	**0.013**	**0.0049**	0.34

ANALYTICAL REPORT

Workorder: **34-1312196**
Client Project ID: 182608005/Bridgeton Landfill
Purchase Order: 182608005
Project Manager: Paul Pope

Analytical Results

Sample ID: **425-9 HCL B** Media: SKC 226-10-03 Sorbent Tube, Treated Silica Gel Tube Collected: 04/25/2013
Received: 04/30/2013
Lab ID: 1312196005 Sampling Location: Bridgeton Landfill

Method: NIOSH 7903 **Sampling Parameter: Air Volume Not Provided** **Analyzed:** 05/02/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Hydrochloric acid	<0.52	NA	NA	0.52

Sample ID: **425-11 HCN B** Media: SKC 226-28, Soda Lime-200/600 Collected: 04/25/2013
Lab ID: 1312196006 Sampling Location: Bridgeton Landfill Received: 04/30/2013

Method: NIOSH 6010 **Sampling Parameter: Air Volume Not Provided** **Analyzed:** 05/07/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Hydrogen Cyanide	<0.37	NA	NA	0.37

Sample ID: **425-13 HgB** Media: SKC 226-17-1A, Hopcalite Tube Collected: 04/25/2013
Lab ID: 1312196007 Sampling Location: Bridgeton Landfill Received: 04/30/2013

Method: NIOSH 6009 **Sampling Parameter: Air Volume Not Provided** **Analyzed:** 05/06/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Mercury	<0.010	NA	NA	0.010

Sample ID: **425-16 S02B** Media: SKC 226-80, KOH-Treated Anasorb 747 Collected: 04/25/2013
Received: 04/30/2013
Lab ID: 1312196008 Sampling Location: Bridgeton Landfill

Method: OSHA ID-200 **Sampling Parameter: Air Volume Not Provided** **Analyzed:** 05/03/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Sulfur dioxide	<0.34	NA	NA	0.34

Comments

Quality Control: NIOSH 7903 - (HBN: 106211)

The LCS, LCSD and all field sample results have been media blank corrected with the LMB for nitric, sulfuric and phosphoric acids.

The LCS recovery for phosphoric acid was outside of historical limits but was inside of method limits.

Quality Control: OSHA ID-200 - (HBN: 106260)

The LCS, LCSD and all field sample results have been media blank corrected with the LMB.

Report Authorization

Method	Analyst	Peer Review
NIOSH 6009	Christopher R. Hansen	Kevin Tucker
NIOSH 6010	Mary N. Karanu	Elijah Gregory

ANALYTICAL REPORT

Workorder: **34-1312196**
Client Project ID: 182608005/Bridgeton Landfill
Purchase Order: 182608005
Project Manager: Paul Pope

Report Authorization

Method	Analyst	Peer Review
NIOSH 7903	Neil Brasfield	Thomas T. McKay
OSHA ID-200	Neil Brasfield	Thomas T. McKay

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	ACLASS (DoD ELAP)	ADE-1420	http://www.aclasscorp.com
	Utah (NELAC)	DATA1	http://health.utah.gov/lab/labimp/
	Nevada	UT00009	http://ndep.nv.gov/bsdw/labservice.htm
	Oklahoma	UT00009	http://www.deq.state.ok.us/CSDnew/
	Iowa	IA# 376	http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx
	Florida (TNI)	E871067	http://www.dep.state.fl.us/labs/bars/sas/qa/
	Texas (TNI)	T104704456-11-1	http://www.tceq.texas.gov/field/qa/lab_accred_certif.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	http://www.aihaaccreditedlabs.org
Lead Testing:			
CPSC	ACLASS (ISO 17025, CPSC)	ADE-1420	http://www.aclasscorp.com
Soil, Dust, Paint ,Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	http://www.aihaaccreditedlabs.org
Dietary Supplements	ACLASS (ISO 17025)	ADE-1420	http://www.aclasscorp.com

Definitions

LOD = Limit of Detection = MDL = Method Detection Limit, A statistical estimate of method/media/instrument sensitivity.
LOQ = Limit of Quantitation = RL = Reporting Limit, A verified value of method/media/instrument sensitivity.
ND = Not Detected, Testing result not detected above the LOD or LOQ.
** No result could be reported, see sample comments for details.
< This testing result is less than the numerical value.
( ) This testing result is between the LOD and LOQ and has higher analytical uncertainty than values at or above the LOQ.

Columbia Analytical Services
Now part of the ALS Group
2655 Park Center Drive, Suite A, Simi Valley, CA 93065 | 805.526.7161 | www.caslab.com

LABORATORY REPORT

May 23, 2013

Deborah Gray
Stantec Consulting Services, Inc.
1500 Lake Shore Drive Suite 100
Columbus, OH 43204

RE: Bridgeton Landfill / 182608005

Dear Deborah:

Enclosed are the results of the samples submitted to our laboratory on May 2, 2013. For your reference, these analyses have been assigned our service request number P1301885.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Samantha Henningsen
By Samantha Henningsen at 3:48 pm, May 23, 2013

Samantha Henningsen
Project Manager

Client: Stantec Consulting Services, Inc.
Project: Bridgeton Landfill / 182608005

Service Request No: P1301885

CASE NARRATIVE

The samples were received intact under chain of custody on May 2, 2013 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Aldehyde Analysis

The DNPH silica gel tube samples were analyzed for aldehydes according to EPA Method TO-11A using high performance liquid chromatography (HPLC). This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

The upper control criterion was exceeded for o-Tolualdehyde in the Continuing Calibration Verification (CCV) analyzed on May 08, 2013. Since the apparent problem equates to a potential high bias and the field sample(s) analyzed in this sequence did not contain the analyte(s) in question, the data quality is not affected. No corrective action was required.

Amine Analysis

The samples were analyzed for amines using a gas chromatograph equipped with a nitrogen phosphorus detector (NPD). This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

The upper control criterion was exceeded for multiple analytes in the Continuing Calibration Verification (CCV) analyzed on May 9, 2013. Since the apparent problem equates to a potential high bias and the field sample(s) analyzed in this sequence did not contain the analyte(s) in question, the data quality is not affected. No corrective action was required.

Ammonia Analysis

The Anasorb 747 tube samples were prepared in accordance with OSHA ID-188 and analyzed for ammonia in air by Ion Selective Electrode per OSHA ID-164. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Carboxylic Acids Analysis

The Silica gel tube samples were analyzed for carboxylic acids using combined gas chromatography/mass spectrometry (GC/MS) in accordance with laboratory operating procedures. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Client: Stantec Consulting Services, Inc.
Project: Bridgeton Landfill / 182608005

Service Request No: P1301885

Fixed Gases Analysis

The Silonite Canister samples were analyzed for fixed gases (hydrogen, oxygen/argon, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This method is not included on the laboratory's NELAP scope of accreditation.

Polynuclear Aromatic Hydrocarbon Analysis

The high volume PUF/XAD-2 samples were analyzed for polynuclear aromatic hydrocarbons (PAHs). The extracts were analyzed according to the methodology outlined in EPA Method TO-13A using combined gas chromatography/mass spectrometry (GC/MS). This method is not included on the laboratory's DoD-ELAP scope of accreditation.

The surrogate control criterion was exceeded for fluorene-d10 in sample with a laboratory ID P1301885-022 due to matrix interferences. Due to the presence of non-target background components that prevented adequate resolution of the surrogate, accurate quantitation was not possible and the associated data has been qualified. No further corrective action was appropriate.

NELAC requirements for compliance with EPA TO-13A state a duplicate sample must be analyzed. However, this is dependent upon the client submitting a secondary sample for extraction and analysis. Sample extraction was performed at the laboratory's off-site extraction facility located at 2360 Shasta Way, Suite G, Simi Valley, CA 93065.

Sulfur Analysis

The Silonite Canister samples were also analyzed for twenty sulfur compounds per ASTM D 5504-08 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). All compounds with the exception of hydrogen sulfide and carbonyl sulfide are quantitated against the initial calibration curve for methyl mercaptan. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Volatile Organic Compound Analysis

The Silonite Canister samples were also analyzed for volatile organic compounds and tentatively identified compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. Any analytes flagged with an X are not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

The Summa canisters were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

Client: Stantec Consulting Services, Inc.
Project: Bridgeton Landfill / 182608005

Service Request No: P1301885

Hydrogen Chloride, Hydrogen Cyanide, Mercury, and Sulfur Dioxide Analysis

The analysis for hydrogen chloride (NIOSH 7903), hydrogen cyanide (NIOSH 6010), mercury (NIOSH 6009), and sulfur dioxide (OSHA ID 200) were run at the ALS Salt Lake City, UT facility. Results were reported under separate project number 1312918, issued on May 15, 2013.

Dioxins and Furans Analysis

The analysis for dioxins and furans by EPA method TO-9A was run at the ALS HRMS Houston, TX facility. Results were reported under separate project number P1301885, issued on May 15, 2013.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of Columbia Analytical Services, Inc. dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Columbia Analytical Services, Inc. dba ALS Environmental - Simi Valley

Certifications, Accreditations, and Registrations

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L11-203
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2012039
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	494864
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	CA200007
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-12-3
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA015272012-2
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.caslab.com, www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

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[illegible]am[illegible]l[illegible]ol[illegible]m[illegible]o[illegible]c[illegible]o[illegible]o[illegible]l[illegible]m[illegible]ss[illegible]a[illegible]o[illegible]
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P1301885[illegible]017	[illegible]1.66	[illegible]39	0.027	0.0300
P1301885[illegible]018	[illegible]1[illegible]32	3.92	0.719	1.00

Vali[illegible]ati[illegible]n Date[illegible]10[illegible]13[illegible]09
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MSD 025949

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Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. 8130 1885

CAS Contact: SAMANTHA HENNINGSEN

Company Name & Address (Reporting Information): STANTEC CONSULTING, 1500 LAKE SHORE DRIVE, SUITE 100 COLUMBUS OH 43204

Project Name: BRIDGETON LANDFILL

Project Number: 182608005

Project Manager: Deb Gray

P.O. # / Billing Information: SAME

Phone: 614 486 4383 Fax: 614 486 4387

Email Address for Result Reporting: deb.gray@stantec.com

Sampler (Print & Sign): CHRIS LALONDE

Analysis Method/Analytes

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Sample Type (Air/Tube/Solid)	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller (Bar code - FC #)	Sample Volume (mL)				Comments e.g. Actual Preservative or specific instructions
430-1 HCL	1	4/30/13	19:01	AIR	NA	NA	99,545	mL	NIOSH	7903	
430-2 ALD	2		19:01				286,680	mL	EPA	TO 11a	
430-3 HCN	3		19:02				15,812	mL	NIOSH	6010	
430-4 AMINE	4		19:02				96,024	mL	AQL	101	
430-5 HG	5		19:02				54,024	mL	NIOSH	6009	
430-6 NH4	6		19:02				121,548	mL	OSHA	ID188	
430-7 CARBOX	7		19:03				98,100	mL	AQL	102	
430-8 SO2	8		19:03				39,312	mL	OSHA	ID200	
430-9 HCL B	9	4/30/13	19:00	AIR	NA	NA	FIELD	BLANK	NIOSH	7903	
430-10 ALD B	10		19:00						EPA	TO 11a	
430-11 HCN B	11		19:00						NIOSH	6010	
430-12 AMINE B	12		18:59						AQL	101	
430-13 HG B	13		18:59						NIOSH	6009	

Report Tier Levels - please select
Tier I - (Results/Default if not specified) ____
Tier II (Results + QC) ____
Tier III (Data Validation Package) 10% Surcharge ____
Tier V (client specified) ____
EDD required Yes / No
Type: ____ EDD Units: ____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	5/1/13	11:00		5/2/13	1000
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____ °C

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Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. PB31885

CAS Contact: SAMANTHA HENNINGSEN

Company Name & Address (Reporting Information): STANTEC CONSULTING, 1500 LAKE SHORE DRIVE, SUITE 100, COLUMBUS OH 43204

Project Name: BRIDGETON LANDFILL

Project Number: 182608005

Project Manager: Deb Gray

P.O. # / Billing Information: SAME

Phone: 614 486 4383 Fax: 614 486 4387

Email Address for Result Reporting: deb.gray@stantec.com

Sampler (Print & Sign): CHRIS LALONDE / [signature]

Analysis Method/Analytes

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Sample Type (Air/Tube/Solid)	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller (Bar code - FC #)	Sample Volume				Comments e.g. Actual Preservative or specific instructions
430-14 NH4 B	14	4/30/13	18:59	AIR	NA	NA	FIELD	BLANK	OSHA	ID188	
430-15 CARBOX B	15	⊥	18:58	⊥	⊥	⊥	⊥	⊥	AQL	102	
430-16 SO2 B	16	⊥	18:58	⊥	⊥	⊥	⊥	⊥	OSHA	ID200	
							START PSI	END PSI			
430 SU 1	17 -1.23	4/30/13	22:50	AIR	12921	SFC00057	-14.4	-1.93	EPA	TO15+	TICS *
430 SU B	18 HH54	⊥	23:15	⊥	11542	NA	-14.38	-14.38	ASTM	D5504	*
									EPA	3cM	*
											All methods Both CANS
					MEDIA ID	SAMPLER ID	UNITS	LITERS *			
430-PUF-1DF	19	4/30/13	22:50	AIR	110-12-07	1059	127,000	LITERS	EPA	TO9a	
430-PUF-2P	20	⊥	22:50	⊥	HX 157	1058	141,120	LITERS	EPA	TO13	
430-PUF-DF B	21	⊥	23:16	⊥	110-12-05	NA	FIELD	BLANK	EPA	TO9a	
430-PUF-P B	22	⊥	23:16	⊥	HX-011	⊥	FIELD	BLANK	EPA	TO13	

Report Tier Levels - please select
Tier I - (Results/Default if not specified) ____
Tier II (Results + QC) ____
Tier III (Data Validation Package) 10% Surcharge ____
Tier V (client specified) ____

EDD required Yes / No
Type: ____ EDD Units: ____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	5/1/13	11:00a	[signature]	5/2/13	1000
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature 5 °C

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Sample Acceptance Check Form

Client: Stantec Consulting Services, Inc. Work order: P1301885

Project: Bridgeton Landfill / 182608005

Sample(s) received on: 5/2/13 Date opened: 5/2/13 by: MZAMORA

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: 5° C Blank Temperature: ° C			
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☒	☐	☐
	Do they contain moisture?	☐	☒	☐
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1301885-001.01	Silica Gel Tube					
P1301885-002.02	Silica Gel DNPH Tube					
P1301885-003.02	Solid Sorbent (Custom) Tube					
P1301885-004.03	Treated Alumina Tube					
P1301885-005.02	Solid Sorbent (Custom) Tube					
P1301885-006.04	Anasorb 747 Tube					
P1301885-007.01	Silica Gel (C. Acids)					
P1301885-008.01	Silica Gel (260/520) Tube					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

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Sample Acceptance Check Form

Client: Stantec Consulting Services, Inc. Work order: P1301885
Project: Bridgeton Landfill / 182608005
Sample(s) received on: 5/2/13 Date opened: 5/2/13 by: MZAMORA

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1301885-009.01	Silica Gel Tube					
P1301885-010.02	Silica Gel DNPH Tube					
P1301885-011.02	Solid Sorbent (Custom) Tube					
P1301885-012.03	Treated Alumina Tube					
P1301885-013.02	Solid Sorbent (Custom) Tube					
P1301885-014.04	Anasorb 747 Tube					
P1301885-015.01	Silica Gel (C. Acids)					
P1301885-016.01	Silica Gel (260/520) Tube					
P1301885-017.01	6.0 L Silonite Can					
P1301885-018.01	6.0 L Silonite Can					
P1301885-019.01	PUF/Filter (High Vol)					
P1301885-020.01	PUF/XAD-2/Filter (High Vol)					
P1301885-021.01	PUF/Filter (High Vol)					
P1301885-022.01	PUF/XAD-2/Filter (High Vol)					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-2 ALD**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-002

Test Code: EPA Method TO-11A
Instrument ID: Agilent Infinity LC 1220/LC3
Analyst: Lusine Hakobyan
Sample Type: Silica Gel DNPH Tube
Test Notes: **BC**

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/8/13
Desorption Volume: 1.0 ml
Volume Sampled: 286.680 Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	1,100	**3.9**	0.35	**3.2**	0.28	**BT**
75-07-0	Acetaldehyde	44,000	**150**	0.35	**86**	0.19	**BT**
123-38-6	Propionaldehyde	13,000	**44**	0.35	**19**	0.15	**BT**
4170-30-3	Crotonaldehyde, Total	< 100	ND	0.35	ND	0.12	
123-72-8	Butyraldehyde	14,000	**49**	0.35	**17**	0.12	**BT**
100-52-7	Benzaldehyde	1,700	**5.9**	0.35	**1.4**	0.080	**BT**
590-86-3	Isovaleraldehyde	3,600	**13**	0.35	**3.6**	0.099	**BT, M**
110-62-3	Valeraldehyde	610	**2.1**	0.35	**0.61**	0.099	**BT, M**
529-20-4	o-Tolualdehyde	< 100	ND	0.35	ND	0.071	
620-23-5							
104-87-0	m,p-Tolualdehyde	1,400	**4.8**	0.70	**0.97**	0.14	**BT**
66-25-1	n-Hexaldehyde	2,200	**7.8**	0.35	**1.9**	0.085	**BT**
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	ND	0.35	ND	0.064	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
BT = Results indicated possible breakthrough; back section > 10% front section.
M = Matrix interference; results may be biased high.

MSD 025954

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-10 ALD B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-010

Test Code: EPA Method TO-11A
Instrument ID: Agilent Infinity LC 1220/LC3
Analyst: Lusine Hakobyan
Sample Type: Silica Gel DNPH Tube
Test Notes: **BC**

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/8/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	< 100	NA	NA	NA	NA	
75-07-0	Acetaldehyde	< 100	NA	NA	NA	NA	
123-38-6	Propionaldehyde	< 100	NA	NA	NA	NA	
4170-30-3	Crotonaldehyde, Total	< 100	NA	NA	NA	NA	
123-72-8	Butyraldehyde	< 100	NA	NA	NA	NA	
100-52-7	Benzaldehyde	< 100	NA	NA	NA	NA	
590-86-3	Isovaleraldehyde	< 100	NA	NA	NA	NA	
110-62-3	Valeraldehyde	< 100	NA	NA	NA	NA	
529-20-4	o-Tolualdehyde	< 100	NA	NA	NA	NA	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	NA	NA	NA	NA	
66-25-1	n-Hexaldehyde	< 100	NA	NA	NA	NA	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
NA = Not applicable.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130508-MB

Test Code: EPA Method TO-11A
Instrument ID: Agilent Infinity LC 1220/LC3
Analyst: Lusine Hakobyan
Sample Type: Silica Gel DNPH Tube
Test Notes: **BC**

Date Collected: NA
Date Received: NA
Date Analyzed: 05/08/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	< 100	NA	NA	NA	NA	
75-07-0	Acetaldehyde	< 100	NA	NA	NA	NA	
123-38-6	Propionaldehyde	< 100	NA	NA	NA	NA	
4170-30-3	Crotonaldehyde, Total	< 100	NA	NA	NA	NA	
123-72-8	Butyraldehyde	< 100	NA	NA	NA	NA	
100-52-7	Benzaldehyde	< 100	NA	NA	NA	NA	
590-86-3	Isovaleraldehyde	< 100	NA	NA	NA	NA	
110-62-3	Valeraldehyde	< 100	NA	NA	NA	NA	
529-20-4	o-Tolualdehyde	< 100	NA	NA	NA	NA	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	NA	NA	NA	NA	
66-25-1	n-Hexaldehyde	< 100	NA	NA	NA	NA	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
NA = Not applicable.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-4 Amine**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-004

Test Code: GC/NPD
Instrument ID: Agilent 6890N/GC15/NPD
Analyst: Zheng Wang
Sampling Media: Treated Alumina Tube
Test Notes: **BC, DE**

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/10/13
Desorption Volume: 2.0 ml
Volume Sampled: 96.024 Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
124-40-3	Dimethylamine	< 0.53	ND	5.5	ND	3.0	
75-04-7	Ethylamine	< 0.55	ND	5.7	ND	3.1	
75-50-3	Trimethylamine	< 0.52	ND	5.4	ND	2.2	
75-31-0	Isopropylamine	< 0.52	ND	5.5	ND	2.3	
75-64-9	tert-Butylamine	< 1.1	ND	11	ND	3.7	
107-10-8	n-Propylamine	< 0.55	ND	5.7	ND	2.4	
109-89-7	Diethylamine	< 0.52	ND	5.4	ND	1.8	
13952-84-6	sec-Butylamine	< 0.53	ND	5.5	ND	1.8	
78-81-9	Isobutylamine	< 0.54	ND	5.6	ND	1.9	
109-73-9	n-Butylamine	< 0.53	ND	5.6	ND	1.9	
108-18-9	Diisopropylamine	< 0.51	ND	5.3	ND	1.3	
121-44-8	Triethylamine	< 0.51	ND	5.3	ND	1.3	
142-84-7	Dipropylamine	< 0.52	ND	5.4	ND	1.3	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-12 Amine B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-012

Test Code: GC/NPD
Instrument ID: Agilent 6890N/GC15/NPD
Analyst: Zheng Wang
Sampling Media: Treated Alumina Tube
Test Notes: **BC, DE**

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/10/13
Desorption Volume: 2.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
124-40-3	Dimethylamine	< 0.53	NA	NA	NA	NA	
75-04-7	Ethylamine	< 0.55	NA	NA	NA	NA	
75-50-3	Trimethylamine	< 0.52	NA	NA	NA	NA	
75-31-0	Isopropylamine	< 0.52	NA	NA	NA	NA	
75-64-9	tert-Butylamine	< 1.1	NA	NA	NA	NA	
107-10-8	n-Propylamine	< 0.55	NA	NA	NA	NA	
109-89-7	Diethylamine	< 0.52	NA	NA	NA	NA	
13952-84-6	sec-Butylamine	< 0.53	NA	NA	NA	NA	
78-81-9	Isobutylamine	< 0.54	NA	NA	NA	NA	
109-73-9	n-Butylamine	< 0.53	NA	NA	NA	NA	
108-18-9	Diisopropylamine	< 0.51	NA	NA	NA	NA	
121-44-8	Triethylamine	< 0.51	NA	NA	NA	NA	
142-84-7	Dipropylamine	< 0.52	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.
NA = Not applicable.

MSD 025958

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130509-MB

Test Code: GC/NPD
Instrument ID: Agilent 6890N/GC15/NPD
Analyst: Zheng Wang
Sampling Media: Treated Alumina Tube
Test Notes: **BC, DE**

Date Collected: NA
Date Received: NA
Date Analyzed: 5/9/13
Desorption Volume: 2.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
124-40-3	Dimethylamine	< 0.53	NA	NA	NA	NA	
75-04-7	Ethylamine	< 0.55	NA	NA	NA	NA	
75-50-3	Trimethylamine	< 0.52	NA	NA	NA	NA	
75-31-0	Isopropylamine	< 0.52	NA	NA	NA	NA	
75-64-9	tert-Butylamine	< 1.1	NA	NA	NA	NA	
107-10-8	n-Propylamine	< 0.55	NA	NA	NA	NA	
109-89-7	Diethylamine	< 0.52	NA	NA	NA	NA	
13952-84-6	sec-Butylamine	< 0.53	NA	NA	NA	NA	
78-81-9	Isobutylamine	< 0.54	NA	NA	NA	NA	
109-73-9	n-Butylamine	< 0.53	NA	NA	NA	NA	
108-18-9	Diisopropylamine	< 0.51	NA	NA	NA	NA	
121-44-8	Triethylamine	< 0.51	NA	NA	NA	NA	
142-84-7	Dipropylamine	< 0.52	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
NA = Not applicable.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.

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LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Duplicate Lab Control Sample** — CAS Project ID: P1301885
Client Project ID: **Bridgeton Landfill / 182608005** — CAS Sample ID: P130509-DLCS

Test Code: GC/NPD — Date Collected: NA
Instrument ID: Agilent 6890N/GC15/NPD — Date Received: NA
Analyst: Zheng Wang — Date Analyzed: 5/09/13
Sampling Media: Treated Alumina Tube — Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/ml	Result LCS µg/ml	Result DLCS µg/ml	% Recovery LCS	% Recovery DLCS	CAS Acceptance Limits	RPD	RPD Limit	Data Qualifier
124-40-3	Dimethylamine	10.2	10.1	10.0	**99**	**98**	57-129	1	19	
75-04-7	Ethylamine	9.20	8.80	8.78	**96**	**95**	52-127	1	18	
75-50-3	Trimethylamine	9.05	9.12	9.10	**101**	**101**	44-139	0	35	
75-31-0	Isopropylamine	8.62	8.96	8.70	**104**	**101**	64-127	3	16	
75-64-9	tert-Butylamine	8.66	9.00	8.72	**104**	**101**	65-129	3	20	
107-10-8	n-Propylamine	9.09	9.09	8.71	**100**	**96**	57-127	4	14	
109-89-7	Diethylamine	8.72	8.94	8.75	**103**	**100**	65-128	3	16	
13952-84-6	sec-Butylamine	8.69	9.34	8.82	**107**	**101**	68-125	6	14	
78-81-9	Isobutylamine	8.83	9.11	8.69	**103**	**98**	65-125	5	15	
109-73-9	n-Butylamine	9.59	9.69	9.07	**101**	**95**	68-123	6	16	
108-18-9	Diisopropylamine	8.93	8.87	8.21	**99**	**92**	63-128	7	17	
121-44-8	Triethylamine	8.65	8.69	8.36	**100**	**97**	65-125	3	19	
142-84-7	Dipropylamine	8.94	9.48	9.26	**106**	**104**	70-125	2	14	

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Client: **Stantec Consulting Services, Inc.**
Client Project ID: **Bridgeton Landfill / 182608005**
CAS Project ID: P1301885

Ammonia

Test Code: OSHA ID-188/ID-164
Instrument ID: PH01/Thermo Orion 920A+/Ammonia ISE
Analyst: Sue Anderson
Sampling Media: Anasorb 747 Tube(s) (Sulfuric Treated)
Test Notes: **BC, DE**

Date(s) Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/9/13
Desorption Volume: 0.10 Liter(s)

Client Sample ID	CAS Sample ID	Sample Volume Liter(s)	Dilution Factor	Result mg/Tube	Result mg/m³	MRL mg/m³	**Result ppmV**	MRL ppmV	Data Qualifier
430-6 NH4	P1301885-006	121.548	1.0	0.016	**0.13**	0.088	**0.19**	0.13	
430-14 NH4 B	P1301885-014	NA	1.0	< 0.011	NA	NA	NA	NA	
Method Blank	P130509-MB	NA	1.0	< 0.011	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
NA = Not applicable.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130509-LCS, P130509-DLCS

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary

Test Code: OSHA ID-188/ID-164
Instrument ID: PH01/Thermo Orion 920A+/Ammonia ISE
Analyst: Sue Anderson
Sampling Media: Anasorb 747 Tube(s) (Sulfuric Treated)
Test Notes:

Date Sampled: N/A
Date Received: N/A
Date Analyzed: 5/09/13
Volume(s) Analyzed: N/A

Compound	Spike Amount LCS / DLCS mg/L	Result LCS mg/L	Result DLCS mg/L	% Recovery LCS	% Recovery DLCS	CAS Acceptance Limits	Relative Percent Difference	RPD Limit	Data Qualifier
Ammonia	1.00	0.945	0.960	95	96	80-104	1	5	

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-7 Carbox**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-007

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes: **BC, DE**

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/8/13
Desorption Volume: 1.0 ml
Volume Sampled: 98.100 Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
64-19-7	Acetic Acid	14	**140**	20	**58**	8.2	**BT**
79-09-4	Propionic Acid (Propanoic)	12	**120**	2.5	**41**	0.82	**BT**
79-31-2	2-Methylpropanoic Acid (Isobutyric)	4.3	**44**	2.5	**12**	0.69	
107-92-6	Butanoic Acid (Butyric)	32	**330**	2.5	**91**	0.69	
116-53-0	2-Methylbutanoic Acid	0.80	**8.2**	2.5	**2.0**	0.59	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	1.9	**19**	2.5	**4.5**	0.60	
109-52-4	Pentanoic Acid (Valeric)	5.9	**60**	2.5	**14**	0.60	**BT**
97-61-0	2-Methylpentanoic Acid	< 0.24	ND	2.5	ND	0.52	
105-43-1	3-Methylpentanoic Acid	< 0.25	ND	2.5	ND	0.53	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	0.29	**3.0**	2.5	**0.62**	0.52	
142-62-1	Hexanoic Acid (Caproic)	14	**150**	2.5	**31**	0.53	**BT**
111-14-8	Heptanoic Acid (Enanthoic)	1.1	**11**	2.5	**2.0**	0.46	
149-57-5	2-Ethylhexanoic Acid	0.46	**4.7**	2.5	**0.80**	0.42	
98-89-5	Cyclohexanecarboxylic Acid	< 0.24	ND	2.5	ND	0.47	
124-07-2	Octanoic Acid (Caprylic)	1.3	**14**	2.5	**2.3**	0.42	**BT**
65-85-0	Benzoic Acid	< 0.26	ND	2.6	ND	0.52	
112-05-0	Nonanoic Acid (Pelargonic)	0.31	**3.2**	2.5	**0.49**	0.39	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.
BT = Results indicated possible breakthrough; back section ≥10% front section.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-15 Carbox B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-015

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes: **BC, DE**

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/8/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
64-19-7	Acetic Acid	< 2.0	NA	NA	NA	NA	
79-09-4	Propionic Acid (Propanoic)	< 0.24	NA	NA	NA	NA	
79-31-2	2-Methylpropanoic Acid (Isobutyric)	< 0.25	NA	NA	NA	NA	
107-92-6	Butanoic Acid (Butyric)	< 0.24	NA	NA	NA	NA	
116-53-0	2-Methylbutanoic Acid	< 0.24	NA	NA	NA	NA	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	< 0.25	NA	NA	NA	NA	
109-52-4	Pentanoic Acid (Valeric)	< 0.25	NA	NA	NA	NA	
97-61-0	2-Methylpentanoic Acid	< 0.24	NA	NA	NA	NA	
105-43-1	3-Methylpentanoic Acid	< 0.25	NA	NA	NA	NA	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	< 0.24	NA	NA	NA	NA	
142-62-1	Hexanoic Acid (Caproic)	< 0.25	NA	NA	NA	NA	
111-14-8	Heptanoic Acid (Enanthoic)	< 0.24	NA	NA	NA	NA	
149-57-5	2-Ethylhexanoic Acid	< 0.25	NA	NA	NA	NA	
98-89-5	Cyclohexanecarboxylic Acid	< 0.24	NA	NA	NA	NA	
124-07-2	Octanoic Acid (Caprylic)	< 0.24	NA	NA	NA	NA	
65-85-0	Benzoic Acid	< 0.26	NA	NA	NA	NA	
112-05-0	Nonanoic Acid (Pelargonic)	< 0.25	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.
NA = Not applicable.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130508-MB

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes: **BC, DE**

Date Collected: NA
Date Received: NA
Date Analyzed: 5/8/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
64-19-7	Acetic Acid	< 2.0	NA	NA	NA	NA	
79-09-4	Propionic Acid (Propanoic)	< 0.24	NA	NA	NA	NA	
79-31-2	2-Methylpropanoic Acid (Isobutyric)	< 0.25	NA	NA	NA	NA	
107-92-6	Butanoic Acid (Butyric)	< 0.24	NA	NA	NA	NA	
116-53-0	2-Methylbutanoic Acid	< 0.24	NA	NA	NA	NA	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	< 0.25	NA	NA	NA	NA	
109-52-4	Pentanoic Acid (Valeric)	< 0.25	NA	NA	NA	NA	
97-61-0	2-Methylpentanoic Acid	< 0.24	NA	NA	NA	NA	
105-43-1	3-Methylpentanoic Acid	< 0.25	NA	NA	NA	NA	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	< 0.24	NA	NA	NA	NA	
142-62-1	Hexanoic Acid (Caproic)	< 0.25	NA	NA	NA	NA	
111-14-8	Heptanoic Acid (Enanthoic)	< 0.24	NA	NA	NA	NA	
149-57-5	2-Ethylhexanoic Acid	< 0.25	NA	NA	NA	NA	
98-89-5	Cyclohexanecarboxylic Acid	< 0.24	NA	NA	NA	NA	
124-07-2	Octanoic Acid (Caprylic)	< 0.24	NA	NA	NA	NA	
65-85-0	Benzoic Acid	< 0.26	NA	NA	NA	NA	
112-05-0	Nonanoic Acid (Pelargonic)	< 0.25	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
NA = Not applicable.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.

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LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130508-DLCS

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/08/13
Volume(s) Analyzed: NA Liter(s)

CAS #	Compound	Spike Amount LCS / DLCS µg/ml	Result LCS µg/ml	Result DLCS µg/ml	% Recovery LCS	% Recovery DLCS	CAS Acceptance Limits	RPD	RPD Limit	Data Qualifier
64-19-7	Acetic Acid	21.5	19.8	20.4	**92**	**95**	66-135	3	26	
79-09-4	Propionic Acid (Propanoic)	10.2	10.1	10.4	**99**	**102**	76-126	3	14	
79-31-2	2-Methylpropanoic Acid (Isobutyric)	10.9	11.0	11.0	**101**	**101**	84-118	0	13	
107-92-6	Butanoic Acid (Butyric)	10.4	9.89	10.1	**95**	**97**	85-117	2	11	
116-53-0	2-Methylbutanoic Acid	10.6	10.1	10.0	**95**	**94**	87-116	1	11	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	11.3	10.5	10.7	**93**	**95**	88-114	2	10	
109-52-4	Pentanoic Acid (Valeric)	10.6	9.83	10.0	**93**	**94**	89-113	1	11	
97-61-0	2-Methylpentanoic Acid	11.3	10.6	10.4	**94**	**92**	88-113	2	10	
105-43-1	3-Methylpentanoic Acid	11.3	10.4	10.6	**92**	**94**	88-113	2	10	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	11.2	10.4	10.7	**93**	**96**	89-113	3	11	
142-62-1	Hexanoic Acid (Caproic)	11.0	10.3	10.3	**94**	**94**	87-114	0	11	
111-14-8	Heptanoic Acid (Enanthoic)	9.01	8.49	8.77	**94**	**97**	84-116	3	10	
149-57-5	2-Ethylhexanoic Acid	8.27	6.86	7.32	**83**	**89**	82-111	7	12	
98-89-5	Cyclohexanecarboxylic Acid	6.93	6.39	6.53	**92**	**94**	85-115	2	10	
124-07-2	Octanoic Acid (Caprylic)	8.70	8.13	8.27	**93**	**95**	84-116	2	11	
65-85-0	Benzoic Acid	8.64	6.28	7.08	**73**	**82**	72-109	12	13	
112-05-0	Nonanoic Acid (Pelargonic)	8.80	8.39	8.49	**95**	**96**	84-116	1	10	

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430 SU 1**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-017

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00239

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/7/13
Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): -1.66 Final Pressure (psig): 4.39

Canister Dilution Factor: 1.46

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.15	
7782-44-7	**Oxygen +**			
7440-37-1	**Argon**	**22.0**	0.15	
7727-37-9	**Nitrogen**	**77.9**	0.15	
630-08-0	Carbon Monoxide	ND	0.15	
74-82-8	Methane	ND	0.15	
124-38-9	Carbon Dioxide	ND	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-SU B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-018

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00173

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/7/13
Volume(s) Analyzed: 0.10 ml(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen +			
7440-37-1	Argon	ND	0.10	
7727-37-9	**Nitrogen**	**0.353**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130507-MB

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/07/13
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen +			
7440-37-1	Argon	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130507-LCS

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/07/13
Volume(s) Analyzed: NA ml(s)

CAS #	Compound	Spike Amount ppmV	Result ppmV	% Recovery	CAS Acceptance Limits	Data Qualifier
1333-74-0	Hydrogen	40,000	**41,200**	**103**	75-117	
7782-44-7	Oxygen +					
7440-37-1	Argon	40,000	**42,300**	**106**	85-111	
7727-37-9	Nitrogen	50,000	**51,700**	**103**	85-114	
630-08-0	Carbon Monoxide	50,000	**53,200**	**106**	85-119	
74-82-8	Methane	40,000	**41,500**	**104**	90-114	
124-38-9	Carbon Dioxide	50,000	**51,400**	**103**	84-113	

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-PUF-2P**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-020

Test Code: EPA TO-13A Modified
Instrument ID: HP 5890II+/HP5972A/MS15
Analyst: Madeleine Dangazyan
Sampling Media: PUF/XAD-2/Filter (Hi_Vol) Cartridge
Test Notes:

Date Collected: 4/30/13
Date Received: 5/2/13
Date Extracted: 5/7/13
Date Analyzed: 5/9/13
Final Volume: 1.0 ml
Volume Sampled: 141120 Liter(s)

Dilution Factor: 1.00
Dilution Factor: 20.0
Dilution Factor: 50.0

CAS #	Compound	Result µg/Cartridge	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
91-20-3	Naphthalene	1,500	**10**	1.8	**2.0**	0.34	**D, M**
208-96-8	Acenaphthylene	< 0.50	ND	0.0035	ND	0.00057	
83-32-9	Acenaphthene	280	**2.0**	0.071	**0.31**	0.011	**D**
86-73-7	Fluorene	110	**0.75**	0.071	**0.11**	0.010	**D**
85-01-8	Phenanthrene	42	**0.30**	0.071	**0.041**	0.0097	**D**
120-12-7	Anthracene	4.9	**0.034**	0.0035	**0.0047**	0.00049	
206-44-0	Fluoranthene	0.68	**0.0048**	0.0035	**0.00058**	0.00043	
129-00-0	Pyrene	< 0.50	ND	0.0035	ND	0.00043	
56-55-3	Benz(a)anthracene	< 0.50	ND	0.0035	ND	0.00038	
218-01-9	Chrysene	< 0.50	ND	0.0035	ND	0.00038	
205-99-2	Benzo(b)fluoranthene	< 0.50	ND	0.0035	ND	0.00034	
207-08-9	Benzo(k)fluoranthene	< 0.50	ND	0.0035	ND	0.00034	
50-32-8	Benzo(a)pyrene	< 0.50	ND	0.0035	ND	0.00034	
193-39-5	Indeno(1,2,3-cd)pyrene	< 0.50	ND	0.0035	ND	0.00031	
53-70-3	Dibenz(a,h)anthracene	< 0.50	ND	0.0035	ND	0.00031	
191-24-2	Benzo(g,h,i)perylene	< 0.50	ND	0.0035	ND	0.00031	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.
M = Matrix interference; results may be biased high.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-PUF-P B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-022

Test Code: EPA TO-13A Modified
Instrument ID: HP 5890II+/HP5972A/MS15
Analyst: Madeleine Dangazyan
Sampling Media: PUF/XAD-2 (High Volume) Cartridge
Test Notes:

Date Collected: 4/30/13
Date Received: 5/2/13
Date Extracted: 5/7/13
Date Analyzed: 5/9/13
Final Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Cartridge	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
91-20-3	Naphthalene	< 5.0	NA	NA	NA	NA	
208-96-8	Acenaphthylene	< 0.50	NA	NA	NA	NA	
83-32-9	Acenaphthene	< 0.50	NA	NA	NA	NA	
86-73-7	Fluorene	< 0.50	NA	NA	NA	NA	
85-01-8	Phenanthrene	< 0.50	NA	NA	NA	NA	
120-12-7	Anthracene	< 0.50	NA	NA	NA	NA	
206-44-0	Fluoranthene	< 0.50	NA	NA	NA	NA	
129-00-0	Pyrene	< 0.50	NA	NA	NA	NA	
56-55-3	Benz(a)anthracene	< 0.50	NA	NA	NA	NA	
218-01-9	Chrysene	< 0.50	NA	NA	NA	NA	
205-99-2	Benzo(b)fluoranthene	< 0.50	NA	NA	NA	NA	
207-08-9	Benzo(k)fluoranthene	< 0.50	NA	NA	NA	NA	
50-32-8	Benzo(a)pyrene	< 0.50	NA	NA	NA	NA	
193-39-5	Indeno(1,2,3-cd)pyrene	< 0.50	NA	NA	NA	NA	
53-70-3	Dibenz(a,h)anthracene	< 0.50	NA	NA	NA	NA	
191-24-2	Benzo(g,h,i)perylene	< 0.50	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
NA = Not applicable.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130507-MB

Test Code: EPA TO-13A Modified
Instrument ID: HP 5890II+/HP5972A/MS15
Analyst: Madeleine Dangazyan
Sampling Media: PUF/XAD-2/Filter (Hi_Vol) Cartridge
Test Notes:

Date Collected: NA
Date Received: NA
Date Extracted: 5/07/13
Date Analyzed: 5/09/13
Final Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Cartridge	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
91-20-3	Naphthalene	< 5.0	NA	NA	NA	NA	
208-96-8	Acenaphthylene	< 0.50	NA	NA	NA	NA	
83-32-9	Acenaphthene	< 0.50	NA	NA	NA	NA	
86-73-7	Fluorene	< 0.50	NA	NA	NA	NA	
85-01-8	Phenanthrene	< 0.50	NA	NA	NA	NA	
120-12-7	Anthracene	< 0.50	NA	NA	NA	NA	
206-44-0	Fluoranthene	< 0.50	NA	NA	NA	NA	
129-00-0	Pyrene	< 0.50	NA	NA	NA	NA	
56-55-3	Benz(a)anthracene	< 0.50	NA	NA	NA	NA	
218-01-9	Chrysene	< 0.50	NA	NA	NA	NA	
205-99-2	Benzo(b)fluoranthene	< 0.50	NA	NA	NA	NA	
207-08-9	Benzo(k)fluoranthene	< 0.50	NA	NA	NA	NA	
50-32-8	Benzo(a)pyrene	< 0.50	NA	NA	NA	NA	
193-39-5	Indeno(1,2,3-cd)pyrene	< 0.50	NA	NA	NA	NA	
53-70-3	Dibenz(a,h)anthracene	< 0.50	NA	NA	NA	NA	
191-24-2	Benzo(g,h,i)perylene	< 0.50	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
NA = Not applicable.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Project ID: **Bridgeton Landfill / 182608005** CAS Project ID: P1301885

Test Code: EPA TO-13A Modified
Instrument ID: HP 5890II+/HP5972A/MS15
Analyst: Madeleine Dangazyan
Sampling Media: PUF/XAD-2/Filter (Hi_Vol) Cartridge(s)
Test Notes:

Date(s) Collected: 4/30/13
Date(s) Received: 5/2/13
Date(s) Extracted: 5/07/13
Date(s) Analyzed: 5/9/13

Client Sample ID	CAS Sample ID	Fluorene-d10 % Recovered	Fluorene-d10 Acceptance Limits	Pyrene-d10 % Recovered	Pyrene-d10 Acceptance Limits	Data Qualifier
Method Blank	P130507-MB	**68**	60-120	**94**	60-120	
Lab Control Sample	P130507-LCS	**69**	60-120	**102**	60-120	
Duplicate Lab Control Sample	P130507-DLCS	**72**	60-120	**99**	60-120	
430-PUF-2P	P1301885-020	**147**	60-120	**101**	60-120	**S**
430-PUF-P B	P1301885-022	**67**	60-120	**99**	60-120	

S = Surrogate recovery not within specified limits.

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LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130507-DLCS

Test Code: EPA TO-13A Modified
Instrument ID: HP 5890II+/HP5972A/MS15
Analyst: Madeleine Dangazyan
Sampling Media: PUF/XAD-2/Filter (Hi_Vol) Cartridge
Test Notes:

Date Collected: NA
Date Received: NA
Date Extracted: 5/7/13
Date Analyzed: 5/09/13
Volume(s) Analyzed: NA Liter(s)

CAS #	Compound	Spike Amount LCS / DLCS µg/ml	Result LCS µg/ml	Result DLCS µg/ml	% Recovery LCS	% Recovery DLCS	CAS Acceptance Limits	RPD	RPD Limit	Data Qualifier
91-20-3	Naphthalene	5.00	3.86	3.74	77	75	60-120	3	20	
208-96-8	Acenaphthylene	5.00	3.28	3.39	66	68	60-120	3	23	
83-32-9	Acenaphthene	5.00	3.46	3.67	69	73	60-120	6	30	
86-73-7	Fluorene	5.00	3.48	3.47	70	69	60-120	1	21	
85-01-8	Phenanthrene	5.00	4.73	4.50	95	90	60-120	5	18	
120-12-7	Anthracene	5.00	4.03	3.86	81	77	60-120	5	17	
206-44-0	Fluoranthene	5.00	4.81	4.66	96	93	60-120	3	13	
129-00-0	Pyrene	5.00	4.72	4.71	94	94	60-120	0	13	
56-55-3	Benz(a)anthracene	5.00	4.38	4.42	88	88	60-120	0	9	
218-01-9	Chrysene	5.00	4.24	4.23	85	85	60-120	0	10	
205-99-2	Benzo(b)fluoranthene	5.00	4.67	4.60	93	92	60-120	1	24	
207-08-9	Benzo(k)fluoranthene	5.00	4.88	4.91	98	98	60-120	0	18	
50-32-8	Benzo(a)pyrene	5.00	4.74	4.69	95	94	60-120	1	12	
193-39-5	Indeno(1,2,3-cd)pyrene	5.00	4.59	4.76	92	95	60-120	3	28	
53-70-3	Dibenz(a,h)anthracene	5.00	4.88	4.65	98	93	60-120	5	17	
191-24-2	Benzo(g,h,i)perylene	5.00	4.73	4.84	95	97	60-120	2	16	

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430 SU 1**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-017

Test Code: ASTM D 5504-08
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00239

Date Collected: 4/30/13
Time Collected: 22:50
Date Received: 5/2/13
Date Analyzed: 5/7/13
Time Analyzed: 13:10
Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -1.66 Final Pressure (psig): 4.39

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	10	ND	7.3	
463-58-1	Carbonyl Sulfide	ND	18	ND	7.3	
74-93-1	Methyl Mercaptan	ND	14	ND	7.3	
75-08-1	Ethyl Mercaptan	ND	19	ND	7.3	
75-18-3	Dimethyl Sulfide	**1,100**	19	**450**	7.3	
75-15-0	Carbon Disulfide	ND	11	ND	3.7	
75-33-2	Isopropyl Mercaptan	ND	23	ND	7.3	
75-66-1	tert-Butyl Mercaptan	ND	27	ND	7.3	
107-03-9	n-Propyl Mercaptan	ND	23	ND	7.3	
624-89-5	Ethyl Methyl Sulfide	ND	23	ND	7.3	
110-02-1	Thiophene	ND	25	ND	7.3	
513-44-0	Isobutyl Mercaptan	ND	27	ND	7.3	
352-93-2	Diethyl Sulfide	ND	27	ND	7.3	
109-79-5	n-Butyl Mercaptan	ND	27	ND	7.3	
624-92-0	Dimethyl Disulfide	**130**	14	**35**	3.7	
616-44-4	3-Methylthiophene	ND	29	ND	7.3	
110-01-0	Tetrahydrothiophene	ND	26	ND	7.3	
638-02-8	2,5-Dimethylthiophene	ND	33	ND	7.3	
872-55-9	2-Ethylthiophene	ND	33	ND	7.3	
110-81-6	Diethyl Disulfide	ND	18	ND	3.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-SU B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-018

Test Code: ASTM D 5504-08
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00173

Date Collected: 4/30/13
Time Collected: 23:15
Date Received: 5/2/13
Date Analyzed: 5/7/13
Time Analyzed: 13:26
Volume(s) Analyzed: 1.0 ml(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	ND	5.0	
463-58-1	Carbonyl Sulfide	ND	12	ND	5.0	
74-93-1	Methyl Mercaptan	ND	9.8	ND	5.0	
75-08-1	Ethyl Mercaptan	ND	13	ND	5.0	
75-18-3	Dimethyl Sulfide	ND	13	ND	5.0	
75-15-0	Carbon Disulfide	ND	7.8	ND	2.5	
75-33-2	Isopropyl Mercaptan	ND	16	ND	5.0	
75-66-1	tert-Butyl Mercaptan	ND	18	ND	5.0	
107-03-9	n-Propyl Mercaptan	ND	16	ND	5.0	
624-89-5	Ethyl Methyl Sulfide	ND	16	ND	5.0	
110-02-1	Thiophene	ND	17	ND	5.0	
513-44-0	Isobutyl Mercaptan	ND	18	ND	5.0	
352-93-2	Diethyl Sulfide	ND	18	ND	5.0	
109-79-5	n-Butyl Mercaptan	ND	18	ND	5.0	
624-92-0	Dimethyl Disulfide	ND	9.6	ND	2.5	
616-44-4	3-Methylthiophene	ND	20	ND	5.0	
110-01-0	Tetrahydrothiophene	ND	18	ND	5.0	
638-02-8	2,5-Dimethylthiophene	ND	23	ND	5.0	
872-55-9	2-Ethylthiophene	ND	23	ND	5.0	
110-81-6	Diethyl Disulfide	ND	12	ND	2.5	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130507-MB

Test Code: ASTM D 5504-08
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Time Collected: NA
Date Received: NA
Date Analyzed: 5/07/13
Time Analyzed: 08:11
Volume(s) Analyzed: 1.0 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	ND	5.0	
463-58-1	Carbonyl Sulfide	ND	12	ND	5.0	
74-93-1	Methyl Mercaptan	ND	9.8	ND	5.0	
75-08-1	Ethyl Mercaptan	ND	13	ND	5.0	
75-18-3	Dimethyl Sulfide	ND	13	ND	5.0	
75-15-0	Carbon Disulfide	ND	7.8	ND	2.5	
75-33-2	Isopropyl Mercaptan	ND	16	ND	5.0	
75-66-1	tert-Butyl Mercaptan	ND	18	ND	5.0	
107-03-9	n-Propyl Mercaptan	ND	16	ND	5.0	
624-89-5	Ethyl Methyl Sulfide	ND	16	ND	5.0	
110-02-1	Thiophene	ND	17	ND	5.0	
513-44-0	Isobutyl Mercaptan	ND	18	ND	5.0	
352-93-2	Diethyl Sulfide	ND	18	ND	5.0	
109-79-5	n-Butyl Mercaptan	ND	18	ND	5.0	
624-92-0	Dimethyl Disulfide	ND	9.6	ND	2.5	
616-44-4	3-Methylthiophene	ND	20	ND	5.0	
110-01-0	Tetrahydrothiophene	ND	18	ND	5.0	
638-02-8	2,5-Dimethylthiophene	ND	23	ND	5.0	
872-55-9	2-Ethylthiophene	ND	23	ND	5.0	
110-81-6	Diethyl Disulfide	ND	12	ND	2.5	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130507-LCS

Test Code: ASTM D 5504-08
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/07/13
Volume(s) Analyzed: NA ml(s)

CAS #	Compound	Spike Amount ppbV	Result ppbV	% Recovery	CAS Acceptance Limits	Data Qualifier
7783-06-4	Hydrogen Sulfide	2,050	**1,900**	**93**	63-140	
463-58-1	Carbonyl Sulfide	2,020	**1,780**	**88**	63-138	
74-93-1	Methyl Mercaptan	1,890	**1,790**	**95**	63-144	

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430 SU 1** CAS Project ID: P1301885
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P1301885-017

Test Code: EPA TO-15 Modified Date Collected: 4/30/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/2/13
Analyst: John Rice Date Analyzed: 5/13/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.030 Liter(s)
Test Notes:
Container ID: AS00239

Initial Pressure (psig): -1.66 Final Pressure (psig): 4.39

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**67**	24	**39**	14	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	24	ND	4.9	
74-87-3	Chloromethane	ND	24	ND	12	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	24	ND	3.5	
75-01-4	Vinyl Chloride	ND	24	ND	9.5	
106-99-0	1,3-Butadiene	ND	24	ND	11	
74-83-9	Bromomethane	ND	24	ND	6.3	
75-00-3	Chloroethane	ND	24	ND	9.2	
64-17-5	Ethanol	**4,200**	240	**2,200**	130	
75-05-8	Acetonitrile	ND	24	ND	14	
107-02-8	Acrolein	ND	97	ND	42	
67-64-1	Acetone	**5,700**	240	**2,400**	100	
75-69-4	Trichlorofluoromethane	ND	24	ND	4.3	
67-63-0	2-Propanol (Isopropyl Alcohol)	**830**	240	**340**	99	
107-13-1	Acrylonitrile	ND	24	ND	11	
75-35-4	1,1-Dichloroethene	ND	24	ND	6.1	
75-09-2	Methylene Chloride	ND	24	ND	7.0	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	24	ND	7.8	
76-13-1	Trichlorotrifluoroethane	ND	24	ND	3.2	
75-15-0	Carbon Disulfide	ND	240	ND	78	
156-60-5	trans-1,2-Dichloroethene	ND	24	ND	6.1	
75-34-3	1,1-Dichloroethane	ND	24	ND	6.0	
1634-04-4	Methyl tert-Butyl Ether	ND	24	ND	6.8	
108-05-4	Vinyl Acetate	ND	240	ND	69	
78-93-3	2-Butanone (MEK)	**3,900**	240	**1,300**	83	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430 SU 1** CAS Project ID: P1301885
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P1301885-017

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00239

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/13/13
Volume(s) Analyzed: 0.030 Liter(s)

Initial Pressure (psig): -1.66 Final Pressure (psig): 4.39

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	24	ND	6.1	
141-78-6	Ethyl Acetate	**180**	49	**50**	14	
110-54-3	n-Hexane	ND	24	ND	6.9	
67-66-3	Chloroform	ND	24	ND	5.0	
109-99-9	Tetrahydrofuran (THF)	**1,500**	24	**520**	8.3	
107-06-2	1,2-Dichloroethane	ND	24	ND	6.0	
71-55-6	1,1,1-Trichloroethane	ND	24	ND	4.5	
71-43-2	Benzene	**570**	24	**180**	7.6	
56-23-5	Carbon Tetrachloride	ND	24	ND	3.9	
110-82-7	Cyclohexane	ND	49	ND	14	
78-87-5	1,2-Dichloropropane	ND	24	ND	5.3	
75-27-4	Bromodichloromethane	ND	24	ND	3.6	
79-01-6	Trichloroethene	ND	24	ND	4.5	
123-91-1	1,4-Dioxane	**66**	24	**18**	6.8	
80-62-6	Methyl Methacrylate	ND	49	ND	12	
142-82-5	n-Heptane	ND	24	ND	5.9	
10061-01-5	cis-1,3-Dichloropropene	ND	24	ND	5.4	
108-10-1	4-Methyl-2-pentanone	**70**	24	**17**	5.9	
10061-02-6	trans-1,3-Dichloropropene	ND	24	ND	5.4	
79-00-5	1,1,2-Trichloroethane	ND	24	ND	4.5	
108-88-3	Toluene	**99**	24	**26**	6.5	
591-78-6	2-Hexanone	**53**	24	**13**	5.9	
124-48-1	Dibromochloromethane	ND	24	ND	2.9	
106-93-4	1,2-Dibromoethane	ND	24	ND	3.2	
123-86-4	n-Butyl Acetate	**130**	24	**28**	5.1	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430 SU 1**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-017

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00239

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/13/13
Volume(s) Analyzed: 0.030 Liter(s)

Initial Pressure (psig): -1.66 Final Pressure (psig): 4.39

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	24	ND	5.2	
127-18-4	Tetrachloroethene	ND	24	ND	3.6	
108-90-7	Chlorobenzene	ND	24	ND	5.3	
100-41-4	Ethylbenzene	**61**	24	**14**	5.6	
179601-23-1	m,p-Xylenes	**180**	49	**40**	11	
75-25-2	Bromoform	ND	24	ND	2.4	
100-42-5	Styrene	ND	24	ND	5.7	
95-47-6	o-Xylene	**75**	24	**17**	5.6	
111-84-2	n-Nonane	ND	24	ND	4.6	
79-34-5	1,1,2,2-Tetrachloroethane	ND	24	ND	3.5	
98-82-8	Cumene	ND	24	ND	5.0	
80-56-8	alpha-Pinene	ND	24	ND	4.4	
103-65-1	n-Propylbenzene	ND	24	ND	5.0	
622-96-8	4-Ethyltoluene	ND	24	ND	5.0	
108-67-8	1,3,5-Trimethylbenzene	ND	24	ND	5.0	
95-63-6	1,2,4-Trimethylbenzene	**50**	24	**10**	5.0	
100-44-7	Benzyl Chloride	ND	24	ND	4.7	
541-73-1	1,3-Dichlorobenzene	ND	24	ND	4.0	
106-46-7	1,4-Dichlorobenzene	**59**	24	**9.7**	4.0	
95-50-1	1,2-Dichlorobenzene	ND	24	ND	4.0	
5989-27-5	d-Limonene	**160**	24	**30**	4.4	
96-12-8	1,2-Dibromo-3-chloropropane	ND	24	ND	2.5	
120-82-1	1,2,4-Trichlorobenzene	ND	24	ND	3.3	
91-20-3	Naphthalene	**64**	24	**12**	4.6	
87-68-3	Hexachlorobutadiene	ND	24	ND	2.3	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430 SU 1** CAS Project ID: P1301885
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P1301885-017

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes: T
Container ID: AS00239

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/13/13
Volume(s) Analyzed: 0.030 Liter(s)

Initial Pressure (psig): -1.66 Final Pressure (psig): 4.39

Canister Dilution Factor: 1.46

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
4.56	Acetaldehyde	**630**	
7.31	Furan	**910**	
7.88	Dimethyl Sulfide	**1,300**	
8.14	Methyl Acetate	**2,100**	
9.15	1-Propanol	**600**	
10.44	2-Butanol	**600**	
10.62	Methylfuran Isomer	**480**	
11.31	Methyl Propionate	**950**	
12.29	1-Butanol	**1,800**	
12.79	2-Pentanone	**360**	
13.83	Methyl Butyrate	**1,500**	
16.12	2-Methylcyclopentanone	**600**	
17.64	2-Ethylcyclopentanone	**510**	
18.72	2-Ethyl-1-hexanol	**1,700**	
18.85	p-Cymene	**390**	

T = Analyte is a tentatively identified compound, result is estimated.

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RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-SU B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-018

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00173

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/13/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	ND	2.0	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-SU B** CAS Project ID: P1301885
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P1301885-018

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00173

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/13/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-SU B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-018

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00173

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/13/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
91-20-3	Naphthalene	ND	0.50	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-SU B** CAS Project ID: P1301885
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P1301885-018

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: 4/30/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/2/13
Analyst: John Rice Date Analyzed: 5/13/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00173

Canister Dilution Factor: 1.00

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
	No Compounds Detected		

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130513-MB

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/13/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	ND	2.0	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130513-MB

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/13/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P130513-MB

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 5/13/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
91-20-3	Naphthalene	ND	0.50	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** CAS Project ID: P1301885
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P130513-MB

Tentatively Identified Compounds

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: John Rice Date Analyzed: 5/13/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
	No Compounds Detected		

SURROGATE SPIKE RECOVERY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Project ID: **Bridgeton Landfill / 182608005** CAS Project ID: P1301885

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date(s) Collected: 4/30/13
Analyst: John Rice Date(s) Received: 5/2/13
Sample Type: 6.0 L Summa Canister(s) Date(s) Analyzed: 5/13/13
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P130513-MB	**91**	**104**	**107**	70-130	
Lab Control Sample	P130513-LCS	**92**	**104**	**108**	70-130	
430 SU 1	P1301885-017	**94**	**105**	**109**	70-130	
430-SU B	P1301885-018	**93**	**104**	**112**	70-130	
430-SU B	P1301885-018DUP	**91**	**106**	**109**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1301885
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P130513-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: John Rice Date Analyzed: 5/13/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	204	200	98	58-139	
75-71-8	Dichlorodifluoromethane (CFC 12)	202	195	97	63-115	
74-87-3	Chloromethane	196	158	81	58-122	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	206	189	92	65-115	
75-01-4	Vinyl Chloride	200	171	86	64-122	
106-99-0	1,3-Butadiene	210	193	92	57-141	
74-83-9	Bromomethane	200	182	91	68-122	
75-00-3	Chloroethane	202	178	88	66-120	
64-17-5	Ethanol	958	839	88	58-126	
75-05-8	Acetonitrile	202	181	90	64-136	
107-02-8	Acrolein	204	198	97	58-129	
67-64-1	Acetone	1,040	908	87	60-114	
75-69-4	Trichlorofluoromethane	210	173	82	62-107	
67-63-0	2-Propanol (Isopropyl Alcohol)	396	327	83	54-118	
107-13-1	Acrylonitrile	206	225	109	72-143	
75-35-4	1,1-Dichloroethene	218	207	95	69-119	
75-09-2	Methylene Chloride	212	194	92	64-113	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	214	198	93	59-131	
76-13-1	Trichlorotrifluoroethane	212	209	99	69-117	
75-15-0	Carbon Disulfide	208	193	93	65-115	
156-60-5	trans-1,2-Dichloroethene	202	185	92	70-126	
75-34-3	1,1-Dichloroethane	206	184	89	68-116	
1634-04-4	Methyl tert-Butyl Ether	204	201	99	69-120	
108-05-4	Vinyl Acetate	988	1110	112	58-160	
78-93-3	2-Butanone (MEK)	212	235	111	70-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1301885
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P130513-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: John Rice Date Analyzed: 5/13/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	214	**195**	**91**	70-119	
141-78-6	Ethyl Acetate	412	**456**	**111**	72-129	
110-54-3	n-Hexane	206	**184**	**89**	63-115	
67-66-3	Chloroform	222	**194**	**87**	68-110	
109-99-9	Tetrahydrofuran (THF)	208	**196**	**94**	60-126	
107-06-2	1,2-Dichloroethane	208	**188**	**90**	69-118	
71-55-6	1,1,1-Trichloroethane	204	**189**	**93**	68-120	
71-43-2	Benzene	208	**182**	**88**	69-117	
56-23-5	Carbon Tetrachloride	212	**211**	**100**	65-134	
110-82-7	Cyclohexane	402	**374**	**93**	69-114	
78-87-5	1,2-Dichloropropane	204	**181**	**89**	70-116	
75-27-4	Bromodichloromethane	204	**196**	**96**	71-126	
79-01-6	Trichloroethene	198	**198**	**100**	71-119	
123-91-1	1,4-Dioxane	206	**231**	**112**	72-126	
80-62-6	Methyl Methacrylate	414	**516**	**125**	75-136	
142-82-5	n-Heptane	202	**189**	**94**	70-117	
10061-01-5	cis-1,3-Dichloropropene	196	**224**	**114**	75-132	
108-10-1	4-Methyl-2-pentanone	210	**214**	**102**	70-133	
10061-02-6	trans-1,3-Dichloropropene	218	**245**	**112**	78-136	
79-00-5	1,1,2-Trichloroethane	202	**197**	**98**	72-119	
108-88-3	Toluene	208	**206**	**99**	65-116	
591-78-6	2-Hexanone	228	**236**	**104**	62-132	
124-48-1	Dibromochloromethane	216	**241**	**112**	66-140	
106-93-4	1,2-Dibromoethane	208	**234**	**113**	69-130	
123-86-4	n-Butyl Acetate	228	**240**	**105**	63-136	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1301885
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P130513-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: John Rice Date Analyzed: 5/13/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	206	**196**	**95**	66-118	
127-18-4	Tetrachloroethene	190	**198**	**104**	63-123	
108-90-7	Chlorobenzene	208	**212**	**102**	66-118	
100-41-4	Ethylbenzene	206	**216**	**105**	66-119	
179601-23-1	m,p-Xylenes	412	**406**	**99**	64-118	
75-25-2	Bromoform	216	**245**	**113**	64-140	
100-42-5	Styrene	208	**246**	**118**	68-132	
95-47-6	o-Xylene	200	**203**	**102**	65-120	
111-84-2	n-Nonane	202	**188**	**93**	64-117	
79-34-5	1,1,2,2-Tetrachloroethane	198	**198**	**100**	63-128	
98-82-8	Cumene	196	**204**	**104**	65-121	
80-56-8	alpha-Pinene	192	**198**	**103**	66-123	
103-65-1	n-Propylbenzene	198	**204**	**103**	65-121	
622-96-8	4-Ethyltoluene	204	**207**	**101**	64-122	
108-67-8	1,3,5-Trimethylbenzene	208	**207**	**100**	64-125	
95-63-6	1,2,4-Trimethylbenzene	200	**216**	**108**	64-131	
100-44-7	Benzyl Chloride	206	**244**	**118**	67-146	
541-73-1	1,3-Dichlorobenzene	206	**234**	**114**	64-130	
106-46-7	1,4-Dichlorobenzene	212	**219**	**103**	61-124	
95-50-1	1,2-Dichlorobenzene	204	**213**	**104**	63-126	
5989-27-5	d-Limonene	206	**220**	**107**	62-133	
96-12-8	1,2-Dibromo-3-chloropropane	202	**238**	**118**	62-155	
120-82-1	1,2,4-Trichlorobenzene	200	**227**	**114**	59-146	
91-20-3	Naphthalene	178	**199**	**112**	56-143	
87-68-3	Hexachlorobutadiene	208	**215**	**103**	58-133	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-SU B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-018DUP

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00173

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/13/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
Propene	ND	ND	ND	ND	-	-	25	
Dichlorodifluoromethane (CFC 12)	ND	ND	ND	ND	-	-	25	
Chloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	ND	ND	ND	-	-	25	
Vinyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Butadiene	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Ethanol	ND	ND	ND	ND	-	-	25	
Acetonitrile	ND	ND	ND	ND	-	-	25	
Acrolein	ND	ND	ND	ND	-	-	25	
Acetone	ND	ND	ND	ND	-	-	25	
Trichlorofluoromethane	ND	ND	ND	ND	-	-	25	
2-Propanol (Isopropyl Alcohol)	ND	ND	ND	ND	-	-	25	
Acrylonitrile	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	ND	ND	ND	ND	-	-	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	ND	ND	-	-	25	
Trichlorotrifluoroethane	ND	ND	ND	ND	-	-	25	
Carbon Disulfide	ND	ND	ND	ND	-	-	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	
Vinyl Acetate	ND	ND	ND	ND	-	-	25	
2-Butanone (MEK)	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-SU B**
Client Project ID: **Bridgeton Landfill / 182608005**

CAS Project ID: P1301885
CAS Sample ID: P1301885-018DUP

Test Code: EPA TO-15 Modified
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00173

Date Collected: 4/30/13
Date Received: 5/2/13
Date Analyzed: 5/13/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Ethyl Acetate	ND	ND	ND	ND	-	-	25	
n-Hexane	ND	ND	ND	ND	-	-	25	
Chloroform	ND	ND	ND	ND	-	-	25	
Tetrahydrofuran (THF)	ND	ND	ND	ND	-	-	25	
1,2-Dichloroethane	ND	ND	ND	ND	-	-	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Benzene	ND	ND	ND	ND	-	-	25	
Carbon Tetrachloride	ND	ND	ND	ND	-	-	25	
Cyclohexane	ND	ND	ND	ND	-	-	25	
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
Trichloroethene	ND	ND	ND	ND	-	-	25	
1,4-Dioxane	ND	ND	ND	ND	-	-	25	
Methyl Methacrylate	ND	ND	ND	ND	-	-	25	
n-Heptane	ND	ND	ND	ND	-	-	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	ND	ND	ND	ND	-	-	25	
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
1,1,2-Trichloroethane	ND	ND	ND	ND	-	-	25	
Toluene	ND	ND	ND	ND	-	-	25	
2-Hexanone	ND	ND	ND	ND	-	-	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	
n-Butyl Acetate	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **430-SU B** CAS Project ID: P1301885
Client Project ID: **Bridgeton Landfill / 182608005** CAS Sample ID: P1301885-018DUP

Test Code: EPA TO-15 Modified Date Collected: 4/30/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/2/13
Analyst: John Rice Date Analyzed: 5/13/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00173

Canister Dilution Factor: 1.00

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
n-Octane	ND	ND	ND	ND	-	-	25	
Tetrachloroethene	ND	ND	ND	ND	-	-	25	
Chlorobenzene	ND	ND	ND	ND	-	-	25	
Ethylbenzene	ND	ND	ND	ND	-	-	25	
m,p-Xylenes	ND	ND	ND	ND	-	-	25	
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	ND	ND	ND	ND	-	-	25	
o-Xylene	ND	ND	ND	ND	-	-	25	
n-Nonane	ND	ND	ND	ND	-	-	25	
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	
Cumene	ND	ND	ND	ND	-	-	25	
alpha-Pinene	ND	ND	ND	ND	-	-	25	
n-Propylbenzene	ND	ND	ND	ND	-	-	25	
4-Ethyltoluene	ND	ND	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
Benzyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
d-Limonene	ND	ND	ND	ND	-	-	25	
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Naphthalene	ND	ND	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

May 15, 2013 Service Request No: P1301885

Samantha Henningsen
Columbia Analytical Services
2655 Park Center Drive, Suite A
Simi Valley, CA 93065

Laboratory Results for: Stantec Consulting Services, Inc.

Dear Samantha:

Enclosed are the results of the sample(s) submitted to our laboratory on May 04, 2013. For your reference, these analyses have been assigned our service request number P1301885.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided.
All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the 2009 TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My direct line is 281-994-2970. You may also contact me via email at Nicole.Brown@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental

Nicole Brown
Project Manager

Nicole Brown Digitally signed by Nicole Brown Date: 2013.05.15 13:05:28 -05'00'

For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com.

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MSD 025999

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Certificate of Analysis

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19408 Park Row, Suite 320, Houston, TX 77084
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ALS Environmental

Client:	ALS Environmental – Simi Valley, CA	**Service Request No.:**	P1301885
Project:	Bridgeton Landfill - 182608005	**Date Received:**	05/04/13
Sample Matrix:	Air		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Two air samples were received for analysis at ALS Environmental on 05/04/13.

Please note the reporting forms are currently referencing the date ALS-Simi Valley received the samples (05/02/13) and not the date ALS-Houston received the samples (05/04/13).

The following discrepancies were noted upon initial sample inspection: no custody seals on cooler. The exceptions are also noted on the cooler receipt and preservation form included in this data package.

The samples were received at 2°C in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

B flags – Method Blanks

The Method Blank EQ1300261-01 contained low levels of various compounds below the Method Reporting Limit (MRL). The associated compounds in the samples are flagged with 'B' flags.

MS/MSD

EQ1300261: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of an MS/MSD for this extraction batch. The batch quality control criteria were met.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- Non-detected compounds are not included in the 'Total'

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: Stantec Consulting Services, Inc.
Project: Bridgeton Landfill/182608005

Service Request: P1301885

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
P1301885-001	430-1 HCL	4/30/13	19:01
P1301885-002	430-2 ALD	4/30/13	19:01
P1301885-003	430-3 HCN	4/30/13	19:02
P1301885-004	430-4 Amine	4/30/13	19:02
P1301885-005	430-5 HG	4/30/13	19:02
P1301885-006	430-6 NH4	4/30/13	19:02
P1301885-007	430-7 Carbox	4/30/13	19:03
P1301885-008	430-8 SO2	4/30/13	19:03
P1301885-009	430-9 HCL B	4/30/13	19:00
P1301885-010	430-10 ALD B	4/30/13	19:00
P1301885-011	430-11 HCN B	4/30/13	19:00
P1301885-012	430-12 Amine B	4/30/13	18:59
P1301885-013	430-13 HG B	4/30/13	18:59
P1301885-014	430-14 NH4 B	4/30/13	18:59
P1301885-015	430-15 Carbox B	4/30/13	18:58
P1301885-016	430-16 SO2 B	4/30/13	18:58
P1301885-017	430 SU 1	4/30/13	22:50
P1301885-018	430-SU B	4/30/13	23:15
P1301885-019	430-PUF-1DF	4/30/13	22:50
P1301885-020	430-PUF-2P	4/30/13	22:50
P1301885-021	430-PUF-DF B	4/30/13	23:16
P1301885-022	430-PUF-P B	4/30/13	23:16

Laboratory Certifications
2012-2013

STATE/PROGRAM	AGENCY	CERT#	EXP DATE	CERTIFIED?
ARIZONA	AZ-DHS	AZ0725	05/27/13	Yes
ARKANSAS	ADEQ	12-035-0	06/16/13	Yes
CALIFORNIA	CA-ELAP	2452	02/28/15	Yes
DOD ELAP	A2LA	2897.01	11/30/13	Yes
FLORIDA/NELAP	FL-DOHS	E87611	06/30/13	Yes
HAWAII	HI-DOH	N/A	06/30/13	Yes
ILLINOIS/NELAP	IL-EPA	003004	10/06/13	Yes
ISO 17025	A2LA	2897.01	11/30/13	Yes
KANSAS	KS-DHE	E-10406	01/31/14	Yes
LOUISIANA/NELAP	LELAP	03048	06/30/13	Yes
LOUISIANA/NELAP	LDHH	LA120014	12/31/13	Yes
MAINE	ME-DOHS	2012017	06/05/13	Yes
MARYLAND	MDE	343	06/30/13	Yes
MICHIGAN	MIDEQ	9971	06/30/13	Yes
MINNESOTA	MDH	048-999-427	12/31/13	Yes
NEVADA	NDEP	TX014112013A	07/31/13	Yes
NEW JERSEY	NJDEP	TX008	06/30/13	Yes
NEW MEXICO	NMED-DWB	N/A	06/30/13	Yes
NEW YORK/NELAP	NY-DOH	11707	04/01/13	Yes
OKLAHOMA	OKDEQ	2012-133	08/31/13	Yes
OREGON/NELAP	ORELAP	TX200002-009	03/24/14	Yes
PENNSYLVANIA/NELAP	PLAP	004	06/30/13	Yes
SOIL IMPORT PERMIT	USDA	P330-12-00002	01/13/15	Yes
TENNESSEE	TNDEC	TN04016	06/30/13	Yes
TEXAS/NELAP	TCEQ	T104704216-12-3	06/30/13	Yes
UTAH/NELAP	UTELCP	TX014112013-2	06/30/13	Yes
WASHINGTON/NELAP	WA-Ecology	C819-12	11/14/13	Yes
WEST VIRGINIA	WVDEP	347	06/30/13	Yes

Abbreviations, Acronyms & Definitions

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

Data Qualifier Flags – Dioxin/Furans

- **B** Indicates the associated analyte is found in the method blank, as well as in the sample.

- **C** Confirmation of the TCDF compound: When 2378-TCDF is detected on the DB-5 column, confirmation analyses are performed on a second column (DB-225). The results from both the DB-5 column and the DB-225 column are included in this data package. The results from the DB-225 analyses should be used to evaluate the 2378-TCDF in the samples. The confirmed result should be used in determining the TEQ value for TCDF.

- **E** Indicates an estimated value – used when the analyte concentration exceeds the upper end of the linear calibration range.

- **J** Indicates an estimated value – used when the analyte concentration is below the method reporting limit (MRL) and above the estimated detection limit (EDL).

- **K** EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

- **U** Indicates the compound was analyzed and not detected

- **Y** Samples that had recoveries of labeled standards outside the acceptance limits are flagged with 'Y'. In all cases, the signal-to-noise ratios are greater than 10:1, making these data acceptable.

- **ND** Indicates concentration is reported as 'Not Detected.'

- **S** Peak is saturated; data not reportable.

- **Q** Lock-mass interference by ether compounds.

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID P1301885 (DB-5) DB-225 SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
5/13/13	cee	-019, -021

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
05/14/13	UK	019, 021

PEER REVIEW PAGE.DOC

ALS Environmental

Analytical Results

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ALS ENVIRONMENTAL

Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301885
Project:	Bridgeton Landfill/182608005	**Date Collected:**	4/30/13 2250
Sample Matrix:	Air	**Date Received:**	5/ 2/13
Sample Name:	430-PUF-1DF	**Units:**	pg
Lab Code:	P1301885-019	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 2053
Prep Method:	Method	**Date Extracted:**	5/6/13
Sample Amount:	1.0000	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163815	**Blank File Name:**	P163812
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.969	10.0			1
1,2,3,7,8-PeCDD	**1.54**	BJK	0.802	50.0	0.98	1.000	1
1,2,3,4,7,8-HxCDD	**0.917**	JK	0.506	50.0	1.03	0.998	1
1,2,3,6,7,8-HxCDD	**1.75**	JK	0.428	50.0	1.65	1.000	1
1,2,3,7,8,9-HxCDD	**1.57**	BJ	0.438	50.0	1.11	1.008	1
1,2,3,4,6,7,8-HpCDD	**11.3**	BJ	0.223	50.0	1.09	1.000	1
OCDD	**93.8**	BJ	1.10	100	0.94	1.000	1
2,3,7,8-TCDF	ND	U	0.624	10.0			1
1,2,3,7,8-PeCDF	**1.25**	JK	0.391	50.0	1.84	1.000	1
2,3,4,7,8-PeCDF	ND	U	0.417	50.0			1
1,2,3,4,7,8-HxCDF	**1.08**	BJK	0.284	50.0	1.58	0.998	1
1,2,3,6,7,8-HxCDF	**0.684**	BJK	0.236	50.0	1.63	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.326	50.0			1
2,3,4,6,7,8-HxCDF	**1.10**	BJK	0.276	50.0	1.00	1.013	1
1,2,3,4,6,7,8-HpCDF	**5.18**	BJ	0.367	50.0	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.496	50.0			1
OCDF	**7.34**	J	1.92	100	0.81	1.004	1
Total Tetra-Dioxins	ND	U	0.969	10.0			1
Total Penta-Dioxins	ND	U	0.802	50.0			1
Total Hexa-Dioxins	**1.57**	J	0.455	50.0	1.11		1
Total Hepta-Dioxins	**28.2**	J	0.223	50.0	1.10		1
Total Tetra-Furans	**2.33**	J	0.624	10.0	0.86		1
Total Penta-Furans	ND	U	0.403	50.0			1
Total Hexa-Furans	**2.26**	J	0.277	50.0	1.06		1
Total Hepta-Furans	**8.72**	J	0.422	50.0	1.05		1

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Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301885
Project:	Bridgeton Landfill/182608005	**Date Collected:**	4/30/13 2250
Sample Matrix:	Air	**Date Received:**	5/ 2/13
Sample Name:	430-PUF-1DF	**Units:**	Percent
Lab Code:	P1301885-019	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 2053
Prep Method:	Method	**Date Extracted:**	5/6/13
Sample Amount:	1.0000	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163815	**Blank File Name:**	P163812
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	4000	2963.332	74		50-120	0.76	1.007
13C-1,2,3,7,8-PeCDD	4000	3345.031	84		50-120	1.55	1.158
13C-1,2,3,6,7,8-HxCDD	4000	3015.585	75		50-120	1.24	0.992
13C-1,2,3,4,6,7,8-HpCDD	4000	2766.033	69		40-120	1.05	1.070
13C-OCDD	8000	4748.891	59		40-120	0.89	1.156
13C-2,3,7,8-TCDF	4000	2428.792	61		50-120	0.77	0.980
13C-1,2,3,7,8-PeCDF	4000	2883.446	72		50-120	1.53	1.122
13C-1,2,3,6,7,8-HxCDF	4000	2669.420	67		50-120	0.52	0.974
13C-1,2,3,4,6,7,8-HpCDF	4000	2332.606	58		40-120	0.45	1.045
37Cl-2,3,7,8-TCDD	4000	4391.810	110		50-120	NA	1.000
13C-1,2,3,4,7,8-HxCDD	4000	4454.876	111		50-120	1.23	0.998
13C-2,3,4,7,8-PeCDF	4000	3540.231	89		50-120	1.54	1.021
13C-1,2,3,4,7,8-HxCDF	4000	4057.462	101		50-120	0.51	0.998
13C-1,2,3,4,7,8,9-HpCDF	4000	4366.479	109		40-120	0.43	1.035
13C-1,2,3,7,8,9-HxCDF	4000	2748.171	69		50-120	0.51	1.006

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Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301885
Project:	Bridgeton Landfill/182608005	**Date Collected:**	4/30/13 2250
Sample Matrix:	Air	**Date Received:**	5/ 2/13
Sample Name:	430-PUF-1DF	**Units:**	pg
Lab Code:	P1301885-019	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method: TO-9A
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.969	10.0	1	1	
1,2,3,7,8-PeCDD	**1.54**	0.802	50.0	1	1	1.54
1,2,3,4,7,8-HxCDD	**0.917**	0.506	50.0	1	0.1	0.0917
1,2,3,6,7,8-HxCDD	**1.75**	0.428	50.0	1	0.1	0.175
1,2,3,7,8,9-HxCDD	**1.57**	0.438	50.0	1	0.1	0.157
1,2,3,4,6,7,8-HpCDD	**11.3**	0.223	50.0	1	0.01	0.113
OCDD	**93.8**	1.10	100	1	0.0003	0.0281
2,3,7,8-TCDF	ND	0.624	10.0	1	0.1	
1,2,3,7,8-PeCDF	**1.25**	0.391	50.0	1	0.03	0.0375
2,3,4,7,8-PeCDF	ND	0.417	50.0	1	0.3	
1,2,3,4,7,8-HxCDF	**1.08**	0.284	50.0	1	0.1	0.108
1,2,3,6,7,8-HxCDF	**0.684**	0.236	50.0	1	0.1	0.0684
1,2,3,7,8,9-HxCDF	ND	0.326	50.0	1	0.1	
2,3,4,6,7,8-HxCDF	**1.10**	0.276	50.0	1	0.1	0.110
1,2,3,4,6,7,8-HpCDF	**5.18**	0.367	50.0	1	0.01	0.0518
1,2,3,4,7,8,9-HpCDF	ND	0.496	50.0	1	0.01	
OCDF	**7.34**	1.92	100	1	0.0003	0.00220
		Total TEQ				2.48

2005 WHO TEFs, ND = 0

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Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301885
Project:	Bridgeton Landfill/182608005	**Date Collected:**	4/30/13 2316
Sample Matrix:	Air	**Date Received:**	5/ 2/13
Sample Name:	430-PUF-DF B	**Units:**	pg
Lab Code:	P1301885-021	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 2140
Prep Method:	Method	**Date Extracted:**	5/6/13
Sample Amount:	1.0000	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163816	**Blank File Name:**	P163812
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.980	10.0			1
1,2,3,7,8-PeCDD	**1.66**	BJK	0.454	50.0	1.28	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.600	50.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.508	50.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.520	50.0			1
1,2,3,4,6,7,8-HpCDD	**2.20**	BJ	0.681	50.0	1.10	1.000	1
OCDD	**5.64**	BJK	0.953	100	1.16	1.000	1
2,3,7,8-TCDF	ND	U	0.455	10.0			1
1,2,3,7,8-PeCDF	**1.14**	JK	0.235	50.0	1.09	1.000	1
2,3,4,7,8-PeCDF	ND	U	0.252	50.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.219	50.0			1
1,2,3,6,7,8-HxCDF	**0.901**	BJ	0.182	50.0	1.14	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.252	50.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.213	50.0			1
1,2,3,4,6,7,8-HpCDF	**1.49**	BJK	0.841	50.0	1.51	1.001	1
1,2,3,4,7,8,9-HpCDF	ND	U	1.14	50.0			1
OCDF	ND	U	1.40	100			1
Total Tetra-Dioxins	ND	U	0.980	10.0			1
Total Penta-Dioxins	ND	U	0.454	50.0			1
Total Hexa-Dioxins	ND	U	0.540	50.0			1
Total Hepta-Dioxins	**4.79**	J	0.681	50.0	1.08		1
Total Tetra-Furans	ND	U	0.455	10.0			1
Total Penta-Furans	ND	U	0.243	50.0			1
Total Hexa-Furans	**0.901**	J	0.213	50.0	1.14		1
Total Hepta-Furans	ND	U	0.966	50.0			1

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Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301885
Project:	Bridgeton Landfill/182608005	**Date Collected:**	4/30/13 2316
Sample Matrix:	Air	**Date Received:**	5/ 2/13
Sample Name:	430-PUF-DF B	**Units:**	Percent
Lab Code:	P1301885-021	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 2140
Prep Method:	Method	**Date Extracted:**	5/6/13
Sample Amount:	1.0000	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163816	**Blank File Name:**	P163812
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	4000	2786.038	70		50-120	0.77	1.007
13C-1,2,3,7,8-PeCDD	4000	3063.046	77		50-120	1.54	1.158
13C-1,2,3,6,7,8-HxCDD	4000	2818.498	70		50-120	1.24	0.992
13C-1,2,3,4,6,7,8-HpCDD	4000	2702.522	68		40-120	1.04	1.070
13C-OCDD	8000	4989.759	62		40-120	0.88	1.156
13C-2,3,7,8-TCDF	4000	2419.670	60		50-120	0.76	0.980
13C-1,2,3,7,8-PeCDF	4000	2644.996	66		50-120	1.55	1.122
13C-1,2,3,6,7,8-HxCDF	4000	2558.411	64		50-120	0.51	0.975
13C-1,2,3,4,6,7,8-HpCDF	4000	2301.712	58		40-120	0.44	1.045
37Cl-2,3,7,8-TCDD	4000	4328.649	108		50-120	NA	1.001
13C-1,2,3,4,7,8-HxCDD	4000	4728.974	118		50-120	1.24	0.998
13C-2,3,4,7,8-PeCDF	4000	3836.931	96		50-120	1.54	1.021
13C-1,2,3,4,7,8-HxCDF	4000	4260.283	107		50-120	0.51	0.997
13C-1,2,3,4,7,8,9-HpCDF	4000	4422.975	111		40-120	0.43	1.035
13C-1,2,3,7,8,9-HxCDF	4000	2538.459	63		50-120	0.52	1.006

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Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301885
Project:	Bridgeton Landfill/182608005	**Date Collected:**	4/30/13 2316
Sample Matrix:	Air	**Date Received:**	5/ 2/13
Sample Name:	430-PUF-DF B	**Units:**	pg
Lab Code:	P1301885-021	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method: TO-9A
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.980	10.0	1	1	
1,2,3,7,8-PeCDD	**1.66**	0.454	50.0	1	1	1.66
1,2,3,4,7,8-HxCDD	ND	0.600	50.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.508	50.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.520	50.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	**2.20**	0.681	50.0	1	0.01	0.0220
OCDD	**5.64**	0.953	100	1	0.0003	0.00169
2,3,7,8-TCDF	ND	0.455	10.0	1	0.1	
1,2,3,7,8-PeCDF	**1.14**	0.235	50.0	1	0.03	0.0342
2,3,4,7,8-PeCDF	ND	0.252	50.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	0.219	50.0	1	0.1	
1,2,3,6,7,8-HxCDF	**0.901**	0.182	50.0	1	0.1	0.0901
1,2,3,7,8,9-HxCDF	ND	0.252	50.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.213	50.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	**1.49**	0.841	50.0	1	0.01	0.0149
1,2,3,4,7,8,9-HpCDF	ND	1.14	50.0	1	0.01	
OCDF	ND	1.40	100	1	0.0003	
		Total TEQ				1.82

2005 WHO TEFs, ND = 0

ALS ENVIRONMENTAL

Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301885
Project:	Bridgeton Landfill/182608005	**Date Collected:**	NA
Sample Matrix:	Air	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1300261-01	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 1829
Prep Method:	Method	**Date Extracted:**	5/6/13
Sample Amount:	1.0000	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163812	**Blank File Name:**	P163812
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.12	10.0			1
1,2,3,7,8-PeCDD	**1.70**	JK	0.407	50.0	2.03	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.463	50.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.392	50.0			1
1,2,3,7,8,9-HxCDD	**0.993**	JK	0.401	50.0	1.53	1.007	1
1,2,3,4,6,7,8-HpCDD	**4.20**	J	0.204	50.0	0.91	1.000	1
OCDD	**10.8**	J	0.952	100	0.92	1.000	1
2,3,7,8-TCDF	ND	U	0.496	10.0			1
1,2,3,7,8-PeCDF	ND	U	0.444	50.0			1
2,3,4,7,8-PeCDF	ND	U	0.474	50.0			1
1,2,3,4,7,8-HxCDF	**0.775**	J	0.244	50.0	1.14	0.997	1
1,2,3,6,7,8-HxCDF	**1.13**	JK	0.204	50.0	0.75	1.000	1
1,2,3,7,8,9-HxCDF	**1.02**	JK	0.280	50.0	0.82	1.032	1
2,3,4,6,7,8-HxCDF	**0.641**	JK	0.238	50.0	1.01	1.013	1
1,2,3,4,6,7,8-HpCDF	**2.63**	JK	0.643	50.0	0.78	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.870	50.0			1
OCDF	ND	U	1.37	100			1
Total Tetra-Dioxins	ND	U	1.12	10.0			1
Total Penta-Dioxins	ND	U	0.407	50.0			1
Total Hexa-Dioxins	ND	U	0.416	50.0			1
Total Hepta-Dioxins	**4.20**	J	0.204	50.0	0.91		1
Total Tetra-Furans	ND	U	0.496	10.0			1
Total Penta-Furans	ND	U	0.458	50.0			1
Total Hexa-Furans	**0.775**	J	0.238	50.0	1.14		1
Total Hepta-Furans	ND	U	0.739	50.0			1

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Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301885
Project:	Bridgeton Landfill/182608005	**Date Collected:**	NA
Sample Matrix:	Air	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1300261-01	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/10/13 1829
Prep Method:	Method	**Date Extracted:**	5/6/13
Sample Amount:	1.0000	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163812	**Blank File Name:**	P163812
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	4000	2725.303	68		50-120	0.78	1.007
13C-1,2,3,7,8-PeCDD	4000	3066.826	77		50-120	1.55	1.158
13C-1,2,3,6,7,8-HxCDD	4000	2841.582	71		50-120	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	4000	2554.050	64		40-120	1.05	1.070
13C-OCDD	8000	4556.263	57		40-120	0.88	1.156
13C-2,3,7,8-TCDF	4000	2367.208	59		50-120	0.77	0.980
13C-1,2,3,7,8-PeCDF	4000	2607.080	65		50-120	1.56	1.122
13C-1,2,3,6,7,8-HxCDF	4000	2510.923	63		50-120	0.51	0.975
13C-1,2,3,4,6,7,8-HpCDF	4000	2174.473	54		40-120	0.44	1.045
37Cl-2,3,7,8-TCDD	4000	4226.367	106		50-120	NA	1.001
13C-1,2,3,4,7,8-HxCDD	4000	4200.492	105		50-120	1.24	0.998
13C-2,3,4,7,8-PeCDF	4000	3860.412	97		50-120	1.53	1.022
13C-1,2,3,4,7,8-HxCDF	4000	3915.945	98		50-120	0.51	0.997
13C-1,2,3,4,7,8,9-HpCDF	4000	4321.759	108		40-120	0.44	1.035
13C-1,2,3,7,8,9-HxCDF	4000	2645.174	66		50-120	0.51	1.006

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Accuracy and Precision

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ALS ENVIRONMENTAL

QA/QC Report

Client: Stantec Consulting Group, Inc.
Project: Bridgeton Landfill/182608005
Sample Matrix: Air

Service Request: P1301885
Date Analyzed: 5/11/13

Lab Control Sample Summary
Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method: TO-9A
Prep Method: Method

Units: pg
Basis: NA

Extraction Lot: 182252

	Lab Control Sample EQ1300261-02			Duplicate Lab Control Sample EQ1300261-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2,3,7,8-TCDD	191	200	96	188	200	94	70 - 130	2	30
1,2,3,7,8-PeCDD	953	1000	95	943	1000	94	70 - 130	1	30
1,2,3,4,7,8-HxCDD	1040	1000	104	996	1000	100	70 - 130	4	30
1,2,3,6,7,8-HxCDD	921	1000	92	904	1000	90	70 - 130	2	30
1,2,3,7,8,9-HxCDD	934	1000	93	853	1000	85	70 - 130	9	30
1,2,3,4,6,7,8-HpCDD	904	1000	90	885	1000	89	70 - 130	1	30
OCDD	1790	2000	90	1780	2000	89	70 - 130	1	30
2,3,7,8-TCDF	174	200	87	165	200	82	70 - 130	6	30
1,2,3,7,8-PeCDF	924	1000	92	891	1000	89	70 - 130	3	30
2,3,4,7,8-PeCDF	823	1000	82	847	1000	85	70 - 130	4	30
1,2,3,4,7,8-HxCDF	936	1000	94	924	1000	92	70 - 130	2	30
1,2,3,6,7,8-HxCDF	881	1000	88	872	1000	87	70 - 130	1	30
1,2,3,7,8,9-HxCDF	1020	1000	102	914	1000	91	70 - 130	11	30
2,3,4,6,7,8-HxCDF	922	1000	92	909	1000	91	70 - 130	1	30
1,2,3,4,6,7,8-HpCDF	905	1000	90	889	1000	89	70 - 130	1	30
1,2,3,4,7,8,9-HpCDF	1110	1000	111	1030	1000	103	70 - 130	7	30
OCDF	1820	2000	91	1770	2000	89	70 - 130	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS ENVIRONMENTAL

Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301885
Project:	Bridgeton Landfill/182608005	**Date Collected:**	NA
Sample Matrix:	Air	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1300261-02	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/11/13 0003
Prep Method:	Method	**Date Extracted:**	5/6/13
Sample Amount:	1.0000	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163819	**Blank File Name:**	P163812
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**191**		0.633	10.0	0.74	1.000	1
1,2,3,7,8-PeCDD	**953**		0.314	50.0	1.57	1.000	1
1,2,3,4,7,8-HxCDD	**1040**		0.124	50.0	1.22	0.998	1
1,2,3,6,7,8-HxCDD	**921**		0.106	50.0	1.24	1.000	1
1,2,3,7,8,9-HxCDD	**934**		0.107	50.0	1.22	1.008	1
1,2,3,4,6,7,8-HpCDD	**904**		0.340	50.0	1.01	1.000	1
OCDD	**1790**		0.224	100	0.87	1.000	1
2,3,7,8-TCDF	**174**		0.262	10.0	0.74	1.001	1
1,2,3,7,8-PeCDF	**924**		0.220	50.0	1.54	1.000	1
2,3,4,7,8-PeCDF	**823**		0.234	50.0	1.52	1.022	1
1,2,3,4,7,8-HxCDF	**936**		0.189	50.0	1.21	0.998	1
1,2,3,6,7,8-HxCDF	**881**		0.156	50.0	1.24	1.000	1
1,2,3,7,8,9-HxCDF	**1020**		0.215	50.0	1.24	1.033	1
2,3,4,6,7,8-HxCDF	**922**		0.183	50.0	1.22	1.013	1
1,2,3,4,6,7,8-HpCDF	**905**		0.735	50.0	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**1110**		0.995	50.0	1.02	1.035	1
OCDF	**1820**		1.02	100	0.90	1.004	1
Total Tetra-Dioxins	**191**		0.633	10.0	0.74		1
Total Penta-Dioxins	**953**		0.314	50.0	1.57		1
Total Hexa-Dioxins	**2890**		0.111	50.0	1.22		1
Total Hepta-Dioxins	**904**		0.340	50.0	1.01		1
Total Tetra-Furans	**174**		0.262	10.0	0.74		1
Total Penta-Furans	**1750**		0.227	50.0	1.54		1
Total Hexa-Furans	**3760**		0.183	50.0	1.21		1
Total Hepta-Furans	**2010**		0.845	50.0	1.03		1

ALS ENVIRONMENTAL

Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301885
Project:	Bridgeton Landfill/182608005	**Date Collected:**	NA
Sample Matrix:	Air	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1300261-02	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/11/13 0003
Prep Method:	Method	**Date Extracted:**	5/6/13
Sample Amount:	1.0000	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163819	**Blank File Name:**	P163812
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	4000	2978.707	74		50-120	0.77	1.007
13C-1,2,3,7,8-PeCDD	4000	3356.392	84		50-120	1.54	1.158
13C-1,2,3,6,7,8-HxCDD	4000	3076.876	77		50-120	1.25	0.992
13C-1,2,3,4,6,7,8-HpCDD	4000	2903.487	73		40-120	1.06	1.070
13C-OCDD	8000	5012.563	63		40-120	0.88	1.156
13C-2,3,7,8-TCDF	4000	2402.365	60		50-120	0.77	0.980
13C-1,2,3,7,8-PeCDF	4000	2872.440	72		50-120	1.55	1.122
13C-1,2,3,6,7,8-HxCDF	4000	2662.262	67		50-120	0.51	0.974
13C-1,2,3,4,6,7,8-HpCDF	4000	2367.520	59		40-120	0.43	1.045
37Cl-2,3,7,8-TCDD	4000	4238.639	106		50-120	NA	1.000
13C-1,2,3,4,7,8-HxCDD	4000	4631.742	116		50-120	1.23	0.998
13C-2,3,4,7,8-PeCDF	4000	3547.512	89		50-120	1.53	1.021
13C-1,2,3,4,7,8-HxCDF	4000	4104.729	103		50-120	0.51	0.997
13C-1,2,3,4,7,8,9-HpCDF	4000	4574.316	114		40-120	0.43	1.035
13C-1,2,3,7,8,9-HxCDF	4000	2870.145	72		50-120	0.51	1.006

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Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301885
Project:	Bridgeton Landfill/182608005	**Date Collected:**	NA
Sample Matrix:	Air	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1300261-03	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/11/13 0051
Prep Method:	Method	**Date Extracted:**	5/6/13
Sample Amount:	1.0000	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163820	**Blank File Name:**	P163812
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**188**		1.01	10.0	0.72	1.001	1
1,2,3,7,8-PeCDD	**943**		0.260	50.0	1.58	1.000	1
1,2,3,4,7,8-HxCDD	**996**		0.392	50.0	1.25	0.998	1
1,2,3,6,7,8-HxCDD	**904**		0.331	50.0	1.26	1.000	1
1,2,3,7,8,9-HxCDD	**853**		0.340	50.0	1.29	1.008	1
1,2,3,4,6,7,8-HpCDD	**885**		0.201	50.0	1.03	1.000	1
OCDD	**1780**		0.226	100	0.87	1.000	1
2,3,7,8-TCDF	**165**		0.377	10.0	0.76	1.001	1
1,2,3,7,8-PeCDF	**891**		0.191	50.0	1.58	1.000	1
2,3,4,7,8-PeCDF	**847**		0.204	50.0	1.54	1.022	1
1,2,3,4,7,8-HxCDF	**924**		0.262	50.0	1.24	0.998	1
1,2,3,6,7,8-HxCDF	**872**		0.219	50.0	1.24	1.000	1
1,2,3,7,8,9-HxCDF	**914**		0.301	50.0	1.21	1.032	1
2,3,4,6,7,8-HxCDF	**909**		0.256	50.0	1.25	1.013	1
1,2,3,4,6,7,8-HpCDF	**889**		1.51	50.0	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	**1030**		2.04	50.0	1.02	1.035	1
OCDF	**1770**		0.569	100	0.88	1.005	1
Total Tetra-Dioxins	**188**		1.01	10.0	0.72		1
Total Penta-Dioxins	**943**		0.260	50.0	1.58		1
Total Hexa-Dioxins	**2750**		0.352	50.0	1.25		1
Total Hepta-Dioxins	**885**		0.201	50.0	1.03		1
Total Tetra-Furans	**165**		0.377	10.0	0.76		1
Total Penta-Furans	**1740**		0.197	50.0	1.61		1
Total Hexa-Furans	**3620**		0.256	50.0	1.24		1
Total Hepta-Furans	**1920**		1.73	50.0	1.01		1

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Analytical Report

Client:	Stantec Consulting Group, Inc.	**Service Request:**	P1301885
Project:	Bridgeton Landfill/182608005	**Date Collected:**	NA
Sample Matrix:	Air	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1300261-03	**Basis:**	NA

Polychlorinated, Polybrominated, Brominated/Chlorinated Dibenzo-p-Dioxins, Dibenzofurans in Amb. Air

Analytical Method:	TO-9A	**Date Analyzed:**	5/11/13 0051
Prep Method:	Method	**Date Extracted:**	5/6/13
Sample Amount:	1.0000	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163820	**Blank File Name:**	P163812
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163808

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	4000	2925.358	73		50-120	0.78	1.007
13C-1,2,3,7,8-PeCDD	4000	3281.681	82		50-120	1.53	1.158
13C-1,2,3,6,7,8-HxCDD	4000	3058.593	76		50-120	1.25	0.992
13C-1,2,3,4,6,7,8-HpCDD	4000	2781.324	70		40-120	1.05	1.070
13C-OCDD	8000	5033.094	63		40-120	0.89	1.156
13C-2,3,7,8-TCDF	4000	2460.883	62		50-120	0.77	0.980
13C-1,2,3,7,8-PeCDF	4000	2845.076	71		50-120	1.55	1.122
13C-1,2,3,6,7,8-HxCDF	4000	2624.859	66		50-120	0.52	0.975
13C-1,2,3,4,6,7,8-HpCDF	4000	2376.194	59		40-120	0.44	1.045
37Cl-2,3,7,8-TCDD	4000	4225.193	106		50-120	NA	1.001
13C-1,2,3,4,7,8-HxCDD	4000	4470.274	112		50-120	1.24	0.998
13C-2,3,4,7,8-PeCDF	4000	3687.546	92		50-120	1.54	1.021
13C-1,2,3,4,7,8-HxCDF	4000	4069.426	102		50-120	0.51	0.998
13C-1,2,3,4,7,8,9-HpCDF	4000	4338.610	108		40-120	0.43	1.035
13C-1,2,3,7,8,9-HxCDF	4000	2553.345	64		50-120	0.51	1.006

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Chain of Custody

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Intra-Network Chain of Custody

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ALS Contact: Samantha Henningsen

Project Name: Bridgeton Landfill
Project Number: 182608005
Project Manager: Deborah Gray
Company: Stantec Consulting Services, Inc.

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Dioxins and Furans TO-9A
P1301885-019	430-PUF-1DF		Air	4/30/13	2250	5/2/13	HOUSTON	II
P1301885-021	430-PUF-DF B		Air	4/30/13	2316	5/2/13	HOUSTON	II

2°C

Test Comments

Dioxins and Furans - TO-9A P1301885-019,21 17 Dioxin/Furans

Folder Comments:

1L canisters are potentially VERY HOT.

Please Address Report to:
S Deborah L. Gray
Stantec Consulting Services, Inc.
1500 Lake Shore Drive Suite 100
Columbus OH 43204

Issue Report directly to client:
Deb.Gray@stantec.com; johnreiter@reiterih.com;
samantha.henningsen@alsglobal.com

Invoice: samantha.henningsen@alsglobal.com

Turnaround Requirements

____RUSH (Surcharges Apply)

PLEASE CIRCLE WORK DAYS
1 2 3 4 5

X STANDARD

Requested FAX Date: _____

Requested Report Date: 05/20/13

Report Requirements

___ I. Results Only

X II. Results + QC Summaries

___ III. Results + QC and Calibration Summaries

___ IV. Data Validation Report with Raw Data

PQL/MDL/J N
EDD N Y - EQuis TBD

Invoice Information

PO# P1301885

Bill to

Relinquished By: [signature] 5/3/13 1405 Received By: Carlos I. Diaz [signature] 5:37 5-4-13 Airbill Number: 5488828 21798

P1301885

Cooler Receipt Form

Project Chemist: NB

Client/Project: Stantec Consulting Services; Bridgeton Landfill

Service Request: P1301885

Date/Time Received: 05/04/13 09:37:00

Date/Time Logged in: 05/06/13 08:19:00

Technician: CID

Technician: AL

1. Method of delivery: ○ US Mail ◉ Fed Ex ○ UPS ○ DHL ○ Courier ○ Client

2. Samples received in: ◉ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ◉ No ○ N/A

Were they intact? ○ Yes ◉ No ○ N/A

Were they signed and dated? ○ Yes ◉ No ○ N/A

If yes, how many and where? no Seals

4. Method of delivery: ○ Inserts ○ Baggies ☑ Bubble Wrap ☑ Gel Packs ○ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No

Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?	Filed
548882821798		May 6, 2013	0937	CID	3/2	☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ◉ Yes ○ No ○ N/A

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ◉ Yes ○ No ○ N/A

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ◉ Yes ○ No ○ N/A

9. Were appropriate bottles/containers and volumes received for the requested tests? ◉ Yes ○ No ○ N/A

10. Did sample labels and tags agree with custody documents? ◉ Yes ○ No ○ N/A

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Broken	Date	Technician
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		

Notes, Discrepancies, & Resolutions:

Print Form

Reset Form

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental - Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample
- ✓ The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report.

Service Request Summary

Folder #: P1301885
Client Name: Stantec Consulting Group, Inc.
Project Name: Bridgeton Landfill
Project Number: 182608005

Report To: Deborah Gray
Stantec Consulting Services, Inc.
1500 Lake Shore Drive Suite 100
Columbus, OH 43204
Phone Number: 614-486-4383
Cell Number: 614-738-0791
Fax Number:
E-mail: deb.gray@stantec.com

Project Chemist: Nicole Brown
Originating Lab: SIMIVALLEY
Logged By: MZAMORA
Date Received: 5/ 2/13
Internal Due Date: 5/24/13
QAP: LAB QAP
Qualifier Set: CAS Standard
Formset: CAS Standard
Merged?: N,Y
Report to MDL?: N,Y
P.O. Number:
EDD: No EDD Specified

4 - 1 each-Tube Solid Sorbent (Custom)
2 - 1 each-Tube Silica Gel (260/520)
2 - 1 each-Tube Silica Gel (C. Acids)
2 - 1 each-Tube DNPH Silica Gel
2 - 1 each-Cartridge PUF/Filter (High Volume)
2 - 1 each-Cartridge PUF/XAD-2/Filter (Hi_Vol)
2 - 1 each-Tube Alumina
2 - 1 each-Tube Anasorb747 (H2SO4)250/500
2 - 1 each-Tube Silica Gel
2 - 6.0 L-Summa Canister Ambient Silonite SC

Location: SUBBED-OUT, P-04, E-Disposed, Shasta Lab, P-Disposed, P-113

Pressure Gas: Helium

					SIMIVALLEY	SIMIVALLEY		SIMIVALLEY		SIMIVALLEY		SIMIVALLEY	SVM	Salt Lake City ALS	
CAS Samp No	Client Samp No.	Matrix	Collected		OSHA ID-164 Modified/ Ammonia	Amines/ Amines	TO-11A/ Carbonyls	Carbox Acids/ Carboxy Acids	TO-13A/ PAH Scan Hi Vol	3C Modified/ Fxd Gases Can	ASTM D5504-08/ Sulfur Can	TO-15 Modified/ VOC Cans	TO-9A/ Dioxins and Furans	None/ Misc Out 2	None/ Misc Out 3
P1301885-001	430-1 HCL	Air	4/30/13	1901											
P1301885-002	430-2 ALD	Air	4/30/13	1901			II								
P1301885-003	430-3 HCN	Air	4/30/13	1902											II
P1301885-004	430-4 Amine	Air	4/30/13	1902		II									
P1301885-005	430-5 HG	Air	4/30/13	1902										II	
P1301885-006	430-6 NH4	Air	4/30/13	1902	II										
P1301885-007	430-7 Carbox	Air	4/30/13	1903				II							
P1301885-008	430-8 SO2	Air	4/30/13	1903											
P1301885-009	430-9 HCL B	Air	4/30/13	1900											
P1301885-010	430-10 ALD B	Air	4/30/13	1900			II								
P1301885-011	430-11 HCN B	Air	4/30/13	1900											II
P1301885-012	430-12 Amine B	Air	4/30/13	1859		II									
P1301885-013	430-13 HG B	Air	4/30/13	1859										II	
P1301885-014	430-14 NH4 B	Air	4/30/13	1859	II										
P1301885-015	430-15 Carbox B	Air	4/30/13	1858				II							
P1301885-016	430-16 SO2 B	Air	4/30/13	1858											
P1301885-017	430 SU 1	Air	4/30/13	2250						II	II	II			
P1301885-018	430-SU B	Air	4/30/13	2315						II	II	II			
P1301885-019	430-PUF-1DF	Air	4/30/13	2250									II		
P1301885-020	430-PUF-2P	Air	4/30/13	2250					II						
P1301885-021	430-PUF-DF B	Air	4/30/13	2316									II		

MSD 026027

CAS Samp No.	Client Samp No.	Matrix	Collected		Salt Lake City ALS None/ Misc Out 4	Salt Lake City ALS None/ Misc Out 5
P1301885-001	430-1 HCL	Air	4/30/13	1901	II	
P1301885-002	430-2 ALD	Air	4/30/13	1901		
P1301885-003	430-3 HCN	Air	4/30/13	1902		
P1301885-004	430-4 Amine	Air	4/30/13	1902		
P1301885-005	430-5 HG	Air	4/30/13	1902		
P1301885-006	430-6 NH4	Air	4/30/13	1902		
P1301885-007	430-7 Carbox	Air	4/30/13	1903		
P1301885-008	430-8 SO2	Air	4/30/13	1903		II
P1301885-009	430-9 HCL B	Air	4/30/13	1900	II	
P1301885-010	430-10 ALD B	Air	4/30/13	1900		
P1301885-011	430-11 HCN B	Air	4/30/13	1900		
P1301885-012	430-12 Amine B	Air	4/30/13	1859		
P1301885-013	430-13 HG B	Air	4/30/13	1859		
P1301885-014	430-14 NH4 B	Air	4/30/13	1859		
P1301885-015	430-15 Carbox B	Air	4/30/13	1858		
P1301885-016	430-16 SO2 B	Air	4/30/13	1858		II
P1301885-017	430 SU 1	Air	4/30/13	2250		
P1301885-018	430-SU B	Air	4/30/13	2315		
P1301885-019	430-PUF-1DF	Air	4/30/13	2250		
P1301885-020	430-PUF-2P	Air	4/30/13	2250		
P1301885-021	430-PUF-DF B	Air	4/30/13	2316		

Service Request Summary

Folder #: P1301885
Client Name: Stantec Consulting Group, Inc.
Project Name: Bridgeton Landfill
Project Number: 182608005

Report To: Deborah Gray
Stantec Consulting Services, Inc.
1500 Lake Shore Drive Suite 100
Columbus, OH 43204
Phone Number: 614-486-4383
Cell Number: 614-738-0791
Fax Number:
E-mail: deb.gray@stantec.com

Project Chemist: Nicole Brown
Originating Lab: SIMIVALLEY
Logged By: MZAMORA
Date Received: 5/ 2/13
Internal Due Date: 5/24/13
QAP: LAB QAP
Qualifier Set: CAS Standard
Formset: CAS Standard
Merged?: N,Y
Report to MDL?: N,Y
P.O. Number:
EDD: No EDD Specified

4	- 1 each-Tube Solid Sorbent (Custom)
2	- 1 each-Tube Silica Gel (260/520)
2	- 1 each-Tube Silica Gel (C. Acids)
2	- 1 each-Tube DNPH Silica Gel
2	- 1 each-Cartridge PUF/Filter (High Volume)
2	- 1 each-Cartridge PUF/XAD-2/Filter (Hi_Vol)
2	- 1 each-Tube Alumina
2	- 1 each-Tube Anasorb747 (H2SO4)250/500
2	- 1 each-Tube Silica Gel
2	- 6.0 L-Summa Canister Ambient Silonite SC

Location: SUBBED-OUT, P-04, E-Disposed, Shasta Lab, P-Disposed, P-113

Pressure Gas: Helium

					SIMIVALLEY	SIMIVALLEY		SIMIVALLEY		SIMIVALLEY		SIMIVALLEY	SVM	Salt Lake City ALS	
					OSHA ID-164 Modified/ Ammonia	Amines/ Amines	TO-11A/ Carbonyls	Carbox Acids/ Carboxy Acids	TO-13A/ PAH Scan Hi Vol	3C Modified/ Fxd Gases Can	ASTM D5504-08/ Sulfur Can	TO-15 Modified/ VOC Cans	TO-9A/ Dioxins and Furans	None/ Misc Out 2	None/ Misc Out 3
P1301885-022	430-PUF-P B	Air	4/30/13	2316					II						

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GC	Carbonyls/TO-11A	2, 10	Aldehydes analysis
Semivoa GCMS	Dioxins and Furans/TO-9A	19, 21	17 Dioxin/Furans
Semivoa GCMS	PAH Scan Hi Vol/TO-13A	20, 22	all PAHs
SubLab	Misc Out 2/None	5, 13	Hg
SubLab	Misc Out 3/None	3, 11	HCN
SubLab	Misc Out 4/None	1, 9	NIOSH 7903 - HCl
SubLab	Misc Out 5/None	8, 16	OSHA 200 - Sulfur Dioxide (tube 226-80)
VOA GC AIR	Fxd Gases Can/3C Modified	17-18	CH4, CO, CO2, H2, O2, N2
VOA GC AIR	Sulfur Can/ASTM D5504-08	17-18	20 Reduced Sulfur Compounds
VOA GCMS AIR	VOC Cans/TO-15 Modified	17-18	Standard 75 compounds + TICs

MSD 026029

					Salt Lake City ALS.	
					None/ Misc Out 4	None/ Misc Out 5
P1301885-022	430-PUF-P B	Air	4/30/13	2316		

Preparation Information Benchsheet

Prep Run#: 182252 **Prep WorkFlow:** OrgExtDioxA(7) **Status:** Prepped
Team: Semivoa GCMS/WMCDONOUGH **Prep Method:** Method **Prep Date/Time:** 5/6/13 12:30 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Sample Description
1	EQ1300261-01	MB		TO-9A/Dioxins and Furans		Air	1.0000	
2	EQ1300261-02	LCS		TO-9A/Dioxins and Furans		Air	1.0000	
3	EQ1300261-03	DLCS		TO-9A/Dioxins and Furans		Air	1.0000	
4	P1301885-019	430-PUF-1DF	.01	TO-9A/Dioxins and Furans		Air	1.0000	PUF Trap, Sodium Sulfate
5	P1301885-021	430-PUF-DF B	.01	TO-9A/Dioxins and Furans		Air	1.0000	PUF Trap, Sodium Sulfate

Spiking Solutions

Name: 23/TO-9A Alternate Working Solution Inventory ID 53663 Logbook Ref: 53663 HLEUNG 1/15/13 Expires On: 01/15/2014

EQ1300261-01 40.00µL EQ1300261-02 40.00µL EQ1300261-03 40.00µL P1301885-019 40.00µL P1301885-021 40.00µL

Name: 23/TO-9A Internal Working Solution Inventory ID 53664 Logbook Ref: 53664 HLEUNG 1/15/13 Expires On: 01/15/2014

EQ1300261-01 40.00µL EQ1300261-02 40.00µL EQ1300261-03 40.00µL P1301885-019 40.00µL P1301885-021 40.00µL

Name: 23/TO-9A Surrogate Working Solution Inventory ID 53735 Logbook Ref: 53735 HLEUNG 23/TO-9A Sur. Wor Expires On: 01/15/2014

P1301885-019 40.00µL P1301885-021 40.00µL

Name: 1613B Matrix Working Standard Inventory ID 57253 Logbook Ref: 57253 HLEUNG 4/30/13 WT WM Expires On: 04/30/2014

EQ1300261-02 100.00µL EQ1300261-03 100.00µL

Name: 23/TO-9A Surrogate Working Solution Inventory ID 57330 Logbook Ref: 57330 HLEUNG 5/1/13 WT WM Expires On: 05/01/2014

EQ1300261-01 40.00µL EQ1300261-02 40.00µL EQ1300261-03 40.00µL

Preparation Materials

Carbon, High Purity	AL 04/23/13 (57045)	Ethyl Acetate 99.9% Minimum EtOAc	MR 4/15/13 (56708)	Glass Wool	C2-87-4 rp (51333)
Hexanes 95%	AL 04/18/13 (56878)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	MR 4/12/13 (56637)	Sodium Chloride Reagent Grade NaCl	C2-65-5 (38670)
Sodium Hydroxide Reagent Grade NaOH	C2-73-7 (53023)	Sodium Sulfate Anhydrous Reagent Grade Na2SO4	MR 4/15/13 (56710)	Tridecane (n-Tridecane)	55438 (55438)
Silica Gel Reagent Grade	AL 02/12/13 (54685)	sulfuric acid	MR 4/10/13 (56549)	Toluene 99.9% Minimum	MR 4/10/13 (56590)

MSD 026031

Preparation Information Benchsheet

Prep Run#: 182252
Team: Semivoa GCMS/WMCDONOUGH

Prep WorkFlow: OrgExtDioxA(7)
Prep Method: Method

Status: Prepped
Prep Date/Time: 5/6/13 12:30 AM

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	5/6/13 00:30	Started:	5/10/13 05:15	Started:	5/10/13 07:00	Started:	5/10/13 12:00
Finished:	5/7/13 07:30	Finished:	5/10/13 05:28	Finished:	5/10/13 09:00	Finished:	5/10/13 13:00
By:	WMCDONOUGH	By:	CDIAZ	By:	CDIAZ	By:	CDIAZ
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: TL Date: 5/13/13

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

ANALYTICAL REPORT

Report Date: May 07, 2013

Deborah Grey
Stantec Consulting Services
1500 Lake Shore Dr. Suite 100
Columbus, OH 43204

Phone: (614) 486-4383

E-mail: deb.gray@stantec.com

Workorder: **34-1312196**
Client Project ID: 182608005/Bridgeton Landfill
Purchase Order: 182608005
Project Manager: Paul Pope

Analytical Results

Sample ID: **425-1 HCL** | Media: SKC 226-10-03 Sorbent Tube, Treated Silica Gel Tube | Collected: 04/25/2013
Lab ID: 1312196001 | Sampling Location: Bridgeton Landfill | Received: 04/30/2013

Method: NIOSH 7903 | **Sampling Parameter: Air Volume 97332 mL** | **Analyzed:** 05/02/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Hydrochloric acid	<0.52	<0.0053	<0.0036	0.52

Sample ID: **425-3 HCN** | Media: SKC 226-28, Soda Lime-200/600 | Collected: 04/25/2013
Lab ID: 1312196002 | Sampling Location: Bridgeton Landfill | Received: 04/30/2013

Method: NIOSH 6010 | **Sampling Parameter: Air Volume 15822 mL** | **Analyzed:** 05/07/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Hydrogen Cyanide	<0.37	<0.023	<0.021	0.37

Sample ID: **425-5 HG** | Media: SKC 226-17-1A, Hopcalite Tube | Collected: 04/25/2013
Lab ID: 1312196003 | Sampling Location: Bridgeton Landfill | Received: 04/30/2013

Method: NIOSH 6009 | **Sampling Parameter: Air Volume 47009 mL** | **Analyzed:** 05/06/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Mercury	<0.010	<0.00021	<0.000026	0.010

Sample ID: **425-8 S02** | Media: SKC 226-80, KOH-Treated Anasorb 747 | Collected: 04/25/2013
Lab ID: 1312196004 | Sampling Location: Bridgeton Landfill | Received: 04/30/2013

Method: OSHA ID-200 | **Sampling Parameter: Air Volume 46162 mL** | **Analyzed:** 05/03/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Sulfur dioxide	**0.59**	**0.013**	**0.0049**	0.34

ANALYTICAL REPORT

Workorder: **34-1312196**
Client Project ID: 182608005/Bridgeton Landfill
Purchase Order: 182608005
Project Manager: Paul Pope

Analytical Results

Sample ID: **425-9 HCL B** Media: SKC 226-10-03 Sorbent Tube, Treated Silica Gel Tube Collected: 04/25/2013
Received: 04/30/2013
Lab ID: 1312196005 Sampling Location: Bridgeton Landfill

Method: NIOSH 7903 **Sampling Parameter: Air Volume Not Provided** **Analyzed:** 05/02/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Hydrochloric acid	<0.52	NA	NA	0.52

Sample ID: **425-11 HCN B** Media: SKC 226-28, Soda Lime-200/600 Collected: 04/25/2013
Lab ID: 1312196006 Sampling Location: Bridgeton Landfill Received: 04/30/2013

Method: NIOSH 6010 **Sampling Parameter: Air Volume Not Provided** **Analyzed:** 05/07/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Hydrogen Cyanide	<0.37	NA	NA	0.37

Sample ID: **425-13 HgB** Media: SKC 226-17-1A, Hopcalite Tube Collected: 04/25/2013
Lab ID: 1312196007 Sampling Location: Bridgeton Landfill Received: 04/30/2013

Method: NIOSH 6009 **Sampling Parameter: Air Volume Not Provided** **Analyzed:** 05/06/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Mercury	<0.010	NA	NA	0.010

Sample ID: **425-16 S02B** Media: SKC 226-80, KOH-Treated Anasorb 747 Collected: 04/25/2013
Received: 04/30/2013
Lab ID: 1312196008 Sampling Location: Bridgeton Landfill

Method: OSHA ID-200 **Sampling Parameter: Air Volume Not Provided** **Analyzed:** 05/03/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Sulfur dioxide	<0.34	NA	NA	0.34

Comments

Quality Control: NIOSH 7903 - (HBN: 106211)

The LCS, LCSD and all field sample results have been media blank corrected with the LMB for nitric, sulfuric and phosphoric acids.

The LCS recovery for phosphoric acid was outside of historical limits but was inside of method limits.

Quality Control: OSHA ID-200 - (HBN: 106260)

The LCS, LCSD and all field sample results have been media blank corrected with the LMB.

Report Authorization

Method	Analyst	Peer Review
NIOSH 6009	Christopher R. Hansen	Kevin Tucker
NIOSH 6010	Mary N. Karanu	Elijah Gregory

ANALYTICAL REPORT

Workorder: **34-1312196**
Client Project ID: 182608005/Bridgeton Landfill
Purchase Order: 182608005
Project Manager: Paul Pope

Report Authorization

Method	Analyst	Peer Review
NIOSH 7903	Neil Brasfield	Thomas T. McKay
OSHA ID-200	Neil Brasfield	Thomas T. McKay

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	ACLASS (DoD ELAP)	ADE-1420	http://www.aclasscorp.com
	Utah (NELAC)	DATA1	http://health.utah.gov/lab/labimp/
	Nevada	UT00009	http://ndep.nv.gov/bsdw/labservice.htm
	Oklahoma	UT00009	http://www.deq.state.ok.us/CSDnew/
	Iowa	IA# 376	http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx
	Florida (TNI)	E871067	http://www.dep.state.fl.us/labs/bars/sas/qa/
	Texas (TNI)	T104704456-11-1	http://www.tceq.texas.gov/field/qa/lab_accred_certif.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	http://www.aihaaccreditedlabs.org
Lead Testing:			
CPSC	ACLASS (ISO 17025, CPSC)	ADE-1420	http://www.aclasscorp.com
Soil, Dust, Paint ,Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	http://www.aihaaccreditedlabs.org
Dietary Supplements	ACLASS (ISO 17025)	ADE-1420	http://www.aclasscorp.com

Definitions

LOD = Limit of Detection = MDL = Method Detection Limit, A statistical estimate of method/media/instrument sensitivity.
LOQ = Limit of Quantitation = RL = Reporting Limit, A verified value of method/media/instrument sensitivity.
ND = Not Detected, Testing result not detected above the LOD or LOQ.
** No result could be reported, see sample comments for details.
< This testing result is less than the numerical value.
( ) This testing result is between the LOD and LOQ and has higher analytical uncertainty than values at or above the LOQ.

A.3. MSD Lift Station Sampling Event #2
June 18 & June 19, 2013

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 508 526 7270
www.alsglobal.com

LABORATORY REPORT

July 3, 2013

Deborah Gray
Stantec Consulting Services, Inc.
1500 Lake Shore Drive Suite 100
Columbus, OH 43204

RE: Bridgeton Landfill / 182608005

Dear Deborah:

Enclosed are the results of the samples submitted to our laboratory on June 20, 2013. For your reference, these analyses have been assigned our service request number P1302635.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Samantha Henningsen at 2:03 pm, Jul 03, 2013

Samantha Henningsen
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 508 526 7270
www.alsglobal.com

Client: Stantec Consulting Services, Inc.
Project: Bridgeton Landfill / 182608005

Service Request No: P1302635

CASE NARRATIVE

The samples were received intact under chain of custody on June 20, 2013 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Aldehyde Analysis

The DNPH silica gel tube samples were analyzed for aldehydes according to EPA Method TO-11A using high performance liquid chromatography (HPLC). This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Ammonia Analysis

The Anasorb 747 tube samples were prepared in accordance with OSHA ID-188 and analyzed for ammonia in air by Ion Selective Electrode per OSHA ID-164. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Carboxylic Acids Analysis

The Silica gel tube samples were analyzed for carboxylic acids using combined gas chromatography/mass spectrometry (GC/MS) in accordance with laboratory operating procedures. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Sulfur Analysis

The Silonite Canister samples were also analyzed for twenty sulfur compounds per ASTM D 5504-08 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). All compounds with the exception of hydrogen sulfide and carbonyl sulfide are quantitated against the initial calibration curve for methyl mercaptan. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU-B**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-020

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00244

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU-B**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-020

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00244

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	ND	2.0	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU** ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** ALS Sample ID: P1302635-019

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: 6/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 6/20/13
Analyst: John Rice Date Analyzed: 6/25/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: **T**
Container ID: AS00394

Initial Pressure (psig): -0.72 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.31

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.06	Dimethyl Ether	**3.4**	
4.24	Isobutane	**3.1**	
6.10	Furan	**4.4**	
15.01	Hexamethylcyclotrisiloxane	**3.0**	
18.19	n-Octanal	**3.2**	
19.61	n-Nonanal	**17**	
20.77	n-Decanal	**8.0**	

T = Analyte is a tentatively identified compound, result is estimated.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-019

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00394

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.72 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.66	ND	0.14	
127-18-4	Tetrachloroethene	ND	0.66	ND	0.097	
108-90-7	Chlorobenzene	ND	0.66	ND	0.14	
100-41-4	Ethylbenzene	**0.66**	0.66	**0.15**	0.15	
179601-23-1	m,p-Xylenes	ND	1.3	ND	0.30	
75-25-2	Bromoform	ND	0.66	ND	0.063	
100-42-5	Styrene	ND	0.66	ND	0.15	
95-47-6	o-Xylene	ND	0.66	ND	0.15	
111-84-2	n-Nonane	ND	0.66	ND	0.12	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.66	ND	0.095	
98-82-8	Cumene	ND	0.66	ND	0.13	
80-56-8	alpha-Pinene	ND	0.66	ND	0.12	
103-65-1	n-Propylbenzene	ND	0.66	ND	0.13	
622-96-8	4-Ethyltoluene	ND	0.66	ND	0.13	
108-67-8	1,3,5-Trimethylbenzene	ND	0.66	ND	0.13	
95-63-6	1,2,4-Trimethylbenzene	ND	0.66	ND	0.13	
100-44-7	Benzyl Chloride	ND	0.66	ND	0.13	
541-73-1	1,3-Dichlorobenzene	ND	0.66	ND	0.11	
106-46-7	1,4-Dichlorobenzene	ND	0.66	ND	0.11	
95-50-1	1,2-Dichlorobenzene	ND	0.66	ND	0.11	
5989-27-5	d-Limonene	ND	0.66	ND	0.12	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.66	ND	0.068	
120-82-1	1,2,4-Trichlorobenzene	ND	0.66	ND	0.088	
91-20-3	Naphthalene	ND	0.66	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.66	ND	0.061	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU**
Client Project ID: **Bridgeton Landfill /.182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-019

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00394

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.72 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.66	ND	0.17	
141-78-6	Ethyl Acetate	**4.1**	1.3	**1.2**	0.36	
110-54-3	n-Hexane	ND	0.66	ND	0.19	
67-66-3	Chloroform	ND	0.66	ND	0.13	
109-99-9	Tetrahydrofuran (THF)	**3.8**	0.66	**1.3**	0.22	
107-06-2	1,2-Dichloroethane	ND	0.66	ND	0.16	
71-55-6	1,1,1-Trichloroethane	ND	0.66	ND	0.12	
71-43-2	Benzene	**8.9**	0.66	**2.8**	0.21	
56-23-5	Carbon Tetrachloride	ND	0.66	ND	0.10	
110-82-7	Cyclohexane	ND	1.3	ND	0.38	
78-87-5	1,2-Dichloropropane	ND	0.66	ND	0.14	
75-27-4	Bromodichloromethane	ND	0.66	ND	0.098	
79-01-6	Trichloroethene	ND	0.66	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.66	ND	0.18	
80-62-6	Methyl Methacrylate	ND	1.3	ND	0.32	
142-82-5	n-Heptane	ND	0.66	ND	0.16	
10061-01-5	cis-1,3-Dichloropropene	ND	0.66	ND	0.14	
108-10-1	4-Methyl-2-pentanone	ND	0.66	ND	0.16	
10061-02-6	trans-1,3-Dichloropropene	ND	0.66	ND	0.14	
79-00-5	1,1,2-Trichloroethane	ND	0.66	ND	0.12	
108-88-3	Toluene	**2.0**	0.66	**0.54**	0.17	
591-78-6	2-Hexanone	ND	0.66	ND	0.16	
124-48-1	Dibromochloromethane	ND	0.66	ND	0.077	
106-93-4	1,2-Dibromoethane	ND	0.66	ND	0.085	
123-86-4	n-Butyl Acetate	ND	0.66	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU** ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** ALS Sample ID: P1302635-019

Test Code: EPA TO-15 Date Collected: 6/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 6/20/13
Analyst: John Rice Date Analyzed: 6/25/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00394

Initial Pressure (psig): -0.72 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**3.0**	0.66	**1.7**	0.38	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.66	**0.40**	0.13	
74-87-3	Chloromethane	ND	0.66	ND	0.32	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.66	ND	0.094	
75-01-4	Vinyl Chloride	ND	0.66	ND	0.26	
106-99-0	1,3-Butadiene	ND	0.66	ND	0.30	
74-83-9	Bromomethane	ND	0.66	ND	0.17	
75-00-3	Chloroethane	ND	0.66	ND	0.25	
64-17-5	Ethanol	**24**	6.6	**12**	3.5	
75-05-8	Acetonitrile	**44**	0.66	**26**	0.39	
107-02-8	Acrolein	ND	2.6	ND	1.1	
67-64-1	Acetone	**28**	6.6	**12**	2.8	
75-69-4	Trichlorofluoromethane	**1.1**	0.66	**0.19**	0.12	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	6.6	ND	2.7	
107-13-1	Acrylonitrile	ND	0.66	ND	0.30	
75-35-4	1,1-Dichloroethene	ND	0.66	ND	0.17	
75-09-2	Methylene Chloride	**0.70**	0.66	**0.20**	0.19	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.66	ND	0.21	
76-13-1	Trichlorotrifluoroethane	ND	0.66	ND	0.086	
75-15-0	Carbon Disulfide	ND	6.6	ND	2.1	
156-60-5	trans-1,2-Dichloroethene	ND	0.66	ND	0.17	
75-34-3	1,1-Dichloroethane	ND	0.66	ND	0.16	
1634-04-4	Methyl tert-Butyl Ether	ND	0.66	ND	0.18	
108-05-4	Vinyl Acetate	ND	6.6	ND	1.9	
78-93-3	2-Butanone (MEK)	ND	6.6	ND	2.2	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-SU-B** ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** ALS Sample ID: P1302635-018

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: 6/18/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 6/20/13
Analyst: John Rice Date Analyzed: 6/25/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: **T**
Container ID: AS00271

Canister Dilution Factor: 1.00

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
15.02	Hexamethylcyclotrisiloxane	2.2	

T = Analyte is a tentatively identified compound, result is estimated.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-SU-B**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-018

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00271

Date Collected: 6/18/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
91-20-3	Naphthalene	ND	0.50	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-SU-B**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-018

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00271

Date Collected: 6/18/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-SU-B**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-018

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00271

Date Collected: 6/18/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	ND	2.0	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-SU** ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** ALS Sample ID: P1302635-017

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: 6/18/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 6/20/13
Analyst: John Rice Date Analyzed: 6/26/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.12 Liter(s)
Test Notes: **T**
Container ID: AS00337

Initial Pressure (psig): -0.62 Final Pressure (psig): 3.56

Canister Dilution Factor: 1.30

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
4.27	Acetaldehyde	**480**	
6.13	Furan	**620**	
6.57	Dimethylcyclopentane Isomer	**740**	
6.75	Methyl Acetate	**380**	
8.96	Methylfuran Isomer	**360**	
10.60	1-Butanol	**370**	
15.00	2-Methylcyclopentanone	**360**	
18.08	Butyl butyrate	**440**	
18.66	2-Ethyl-1-hexanol	**1,900**	
18.78	C10H14 Aromatic Compound	**1,300**	
19.45	Butyl valerate	**320**	
20.16	2-Ethylhexylacetate	**580**	
20.58	Butyl hexanoate	**630**	
21.10	Unidentified Compound	**380**	
21.91	2-Ethylhexyl butyrate	**700**	

T = Analyte is a tentatively identified compound, result is estimated.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-SU**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-017

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00337

Date Collected: 6/18/13
Date Received: 6/20/13
Date Analyzed: 6/26/13
Volume(s) Analyzed: 0.12 Liter(s)

Initial Pressure (psig): -0.62 Final Pressure (psig): 3.56

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	**6.3**	5.4	**1.4**	1.2	
127-18-4	Tetrachloroethene	ND	5.4	ND	0.80	
108-90-7	Chlorobenzene	ND	5.4	ND	1.2	
100-41-4	Ethylbenzene	**61**	5.4	**14**	1.2	
179601-23-1	m,p-Xylenes	**130**	11	**30**	2.5	
75-25-2	Bromoform	ND	5.4	ND	0.52	
100-42-5	Styrene	ND	5.4	ND	1.3	
95-47-6	o-Xylene	**54**	5.4	**12**	1.2	
111-84-2	n-Nonane	**15**	5.4	**2.9**	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.4	ND	0.79	
98-82-8	Cumene	**27**	5.4	**5.4**	1.1	
80-56-8	alpha-Pinene	**76**	5.4	**14**	0.97	
103-65-1	n-Propylbenzene	**25**	5.4	**5.2**	1.1	
622-96-8	4-Ethyltoluene	**43**	5.4	**8.7**	1.1	
108-67-8	1,3,5-Trimethylbenzene	**64**	5.4	**13**	1.1	
95-63-6	1,2,4-Trimethylbenzene	**250**	5.4	**50**	1.1	
100-44-7	Benzyl Chloride	ND	5.4	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	5.4	ND	0.90	
106-46-7	1,4-Dichlorobenzene	**200**	5.4	**34**	0.90	
95-50-1	1,2-Dichlorobenzene	ND	5.4	ND	0.90	
5989-27-5	d-Limonene	**630**	5.4	**110**	0.97	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.4	ND	0.56	
120-82-1	1,2,4-Trichlorobenzene	**6.5**	5.4	**0.88**	0.73	
91-20-3	Naphthalene	**240**	5.4	**46**	1.0	
87-68-3	Hexachlorobutadiene	ND	5.4	ND	0.51	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-SU**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-017

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00337

Date Collected: 6/18/13
Date Received: 6/20/13
Date Analyzed: 6/26/13
Volume(s) Analyzed: 0.12 Liter(s)

Initial Pressure (psig): -0.62 Final Pressure (psig): 3.56

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	5.4	ND	1.4	
141-78-6	Ethyl Acetate	**46**	11	**13**	3.0	
110-54-3	n-Hexane	ND	5.4	ND	1.5	
67-66-3	Chloroform	**7.3**	5.4	**1.5**	1.1	
109-99-9	Tetrahydrofuran (THF)	**670**	5.4	**230**	1.8	
107-06-2	1,2-Dichloroethane	ND	5.4	ND	1.3	
71-55-6	1,1,1-Trichloroethane	ND	5.4	ND	0.99	
71-43-2	Benzene	**630**	5.4	**200**	1.7	
56-23-5	Carbon Tetrachloride	ND	5.4	ND	0.86	
110-82-7	Cyclohexane	ND	11	ND	3.1	
78-87-5	1,2-Dichloropropane	ND	5.4	ND	1.2	
75-27-4	Bromodichloromethane	ND	5.4	ND	0.81	
79-01-6	Trichloroethene	ND	5.4	ND	1.0	
123-91-1	1,4-Dioxane	**44**	5.4	**12**	1.5	
80-62-6	Methyl Methacrylate	ND	11	ND	2.6	
142-82-5	n-Heptane	ND	5.4	ND	1.3	
10061-01-5	cis-1,3-Dichloropropene	ND	5.4	ND	1.2	
108-10-1	4-Methyl-2-pentanone	**48**	5.4	**12**	1.3	
10061-02-6	trans-1,3-Dichloropropene	ND	5.4	ND	1.2	
79-00-5	1,1,2-Trichloroethane	ND	5.4	ND	0.99	
108-88-3	Toluene	**100**	5.4	**27**	1.4	
591-78-6	2-Hexanone	**23**	5.4	**5.7**	1.3	
124-48-1	Dibromochloromethane	ND	5.4	ND	0.64	
106-93-4	1,2-Dibromoethane	ND	5.4	ND	0.71	
123-86-4	n-Butyl Acetate	**31**	5.4	**6.4**	1.1	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-SU** ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** ALS Sample ID: P1302635-017

Test Code: EPA TO-15 Date Collected: 6/18/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 6/20/13
Analyst: John Rice Date Analyzed: 6/26/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.12 Liter(s)
Test Notes:
Container ID: AS00337

Initial Pressure (psig): -0.62 Final Pressure (psig): 3.56

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**56**	5.4	**33**	3.1	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	5.4	ND	1.1	
74-87-3	Chloromethane	**8.7**	5.4	**4.2**	2.6	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	5.4	ND	0.78	
75-01-4	Vinyl Chloride	ND	5.4	ND	2.1	
106-99-0	1,3-Butadiene	ND	5.4	ND	2.4	
74-83-9	Bromomethane	ND	5.4	ND	1.4	
75-00-3	Chloroethane	ND	5.4	ND	2.1	
64-17-5	Ethanol	**1,400**	54	**720**	29	
75-05-8	Acetonitrile	**8.0**	5.4	**4.8**	3.2	
107-02-8	Acrolein	ND	22	ND	9.5	
67-64-1	Acetone	**2,000**	54	**860**	23	
75-69-4	Trichlorofluoromethane	ND	5.4	ND	0.96	
67-63-0	2-Propanol (Isopropyl Alcohol)	**410**	54	**170**	22	
107-13-1	Acrylonitrile	ND	5.4	ND	2.5	
75-35-4	1,1-Dichloroethene	ND	5.4	ND	1.4	
75-09-2	Methylene Chloride	ND	5.4	ND	1.6	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	5.4	ND	1.7	
76-13-1	Trichlorotrifluoroethane	ND	5.4	ND	0.71	
75-15-0	Carbon Disulfide	ND	54	ND	17	
156-60-5	trans-1,2-Dichloroethene	ND	5.4	ND	1.4	
75-34-3	1,1-Dichloroethane	ND	5.4	ND	1.3	
1634-04-4	Methyl tert-Butyl Ether	ND	5.4	ND	1.5	
108-05-4	Vinyl Acetate	ND	54	ND	15	
78-93-3	2-Butanone (MEK)	**900**	54	**300**	18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P130625-LCS

Test Code: ASTM D 5504-08
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 6/25/13
Volume(s) Analyzed: NA ml(s)

CAS #	Compound	Spike Amount ppbV	Result ppbV	% Recovery	ALS Acceptance Limits	Data Qualifier
7783-06-4	Hydrogen Sulfide	2,050	**2,060**	**100**	63-140	
463-58-1	Carbonyl Sulfide	2,020	**2,060**	**102**	63-138	
74-93-1	Methyl Mercaptan	1,890	**2,160**	**114**	63-144	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P130625-MB

Test Code: ASTM D 5504-08
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Time Collected: NA
Date Received: NA
Date Analyzed: 6/25/13
Time Analyzed: 08:10
Volume(s) Analyzed: 1.0 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	ND	5.0	
463-58-1	Carbonyl Sulfide	ND	12	ND	5.0	
74-93-1	Methyl Mercaptan	ND	9.8	ND	5.0	
75-08-1	Ethyl Mercaptan	ND	13	ND	5.0	
75-18-3	Dimethyl Sulfide	ND	13	ND	5.0	
75-15-0	Carbon Disulfide	ND	7.8	ND	2.5	
75-33-2	Isopropyl Mercaptan	ND	16	ND	5.0	
75-66-1	tert-Butyl Mercaptan	ND	18	ND	5.0	
107-03-9	n-Propyl Mercaptan	ND	16	ND	5.0	
624-89-5	Ethyl Methyl Sulfide	ND	16	ND	5.0	
110-02-1	Thiophene	ND	17	ND	5.0	
513-44-0	Isobutyl Mercaptan	ND	18	ND	5.0	
352-93-2	Diethyl Sulfide	ND	18	ND	5.0	
109-79-5	n-Butyl Mercaptan	ND	18	ND	5.0	
624-92-0	Dimethyl Disulfide	ND	9.6	ND	2.5	
616-44-4	3-Methylthiophene	ND	20	ND	5.0	
110-01-0	Tetrahydrothiophene	ND	18	ND	5.0	
638-02-8	2,5-Dimethylthiophene	ND	23	ND	5.0	
872-55-9	2-Ethylthiophene	ND	23	ND	5.0	
110-81-6	Diethyl Disulfide	ND	12	ND	2.5	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU-B**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-020

Test Code: ASTM D 5504-08
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00244

Date Collected: 6/19/13
Time Collected: 12:05
Date Received: 6/20/13
Date Analyzed: 6/25/13
Time Analyzed: 10:48
Volume(s) Analyzed: 1.0 ml(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	ND	5.0	
463-58-1	Carbonyl Sulfide	ND	12	ND	5.0	
74-93-1	Methyl Mercaptan	ND	9.8	ND	5.0	
75-08-1	Ethyl Mercaptan	ND	13	ND	5.0	
75-18-3	Dimethyl Sulfide	ND	13	ND	5.0	
75-15-0	Carbon Disulfide	ND	7.8	ND	2.5	
75-33-2	Isopropyl Mercaptan	ND	16	ND	5.0	
75-66-1	tert-Butyl Mercaptan	ND	18	ND	5.0	
107-03-9	n-Propyl Mercaptan	ND	16	ND	5.0	
624-89-5	Ethyl Methyl Sulfide	ND	16	ND	5.0	
110-02-1	Thiophene	ND	17	ND	5.0	
513-44-0	Isobutyl Mercaptan	ND	18	ND	5.0	
352-93-2	Diethyl Sulfide	ND	18	ND	5.0	
109-79-5	n-Butyl Mercaptan	ND	18	ND	5.0	
624-92-0	Dimethyl Disulfide	ND	9.6	ND	2.5	
616-44-4	3-Methylthiophene	ND	20	ND	5.0	
110-01-0	Tetrahydrothiophene	ND	18	ND	5.0	
638-02-8	2,5-Dimethylthiophene	ND	23	ND	5.0	
872-55-9	2-Ethylthiophene	ND	23	ND	5.0	
110-81-6	Diethyl Disulfide	ND	12	ND	2.5	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-019

Test Code: ASTM D 5504-08
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00394

Date Collected: 6/19/13
Time Collected: 14:45
Date Received: 6/20/13
Date Analyzed: 6/25/13
Time Analyzed: 10:28
Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -0.72 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	9.1	ND	6.6	
463-58-1	Carbonyl Sulfide	ND	16	ND	6.6	
74-93-1	Methyl Mercaptan	ND	13	ND	6.6	
75-08-1	Ethyl Mercaptan	ND	17	ND	6.6	
75-18-3	Dimethyl Sulfide	ND	17	ND	6.6	
75-15-0	Carbon Disulfide	ND	10	ND	3.3	
75-33-2	Isopropyl Mercaptan	ND	20	ND	6.6	
75-66-1	tert-Butyl Mercaptan	ND	24	ND	6.6	
107-03-9	n-Propyl Mercaptan	ND	20	ND	6.6	
624-89-5	Ethyl Methyl Sulfide	ND	20	ND	6.6	
110-02-1	Thiophene	ND	23	ND	6.6	
513-44-0	Isobutyl Mercaptan	ND	24	ND	6.6	
352-93-2	Diethyl Sulfide	ND	24	ND	6.6	
109-79-5	n-Butyl Mercaptan	ND	24	ND	6.6	
624-92-0	Dimethyl Disulfide	ND	13	ND	3.3	
616-44-4	3-Methylthiophene	ND	26	ND	6.6	
110-01-0	Tetrahydrothiophene	ND	24	ND	6.6	
638-02-8	2,5-Dimethylthiophene	ND	30	ND	6.6	
872-55-9	2-Ethylthiophene	ND	30	ND	6.6	
110-81-6	Diethyl Disulfide	ND	16	ND	3.3	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-SU-B**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-018

Test Code: ASTM D 5504-08
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00271

Date Collected: 6/18/13
Time Collected: 15:00
Date Received: 6/20/13
Date Analyzed: 6/25/13
Time Analyzed: 10:08
Volume(s) Analyzed: 1.0 ml(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	ND	5.0	
463-58-1	Carbonyl Sulfide	ND	12	ND	5.0	
74-93-1	Methyl Mercaptan	ND	9.8	ND	5.0	
75-08-1	Ethyl Mercaptan	ND	13	ND	5.0	
75-18-3	Dimethyl Sulfide	ND	13	ND	5.0	
75-15-0	Carbon Disulfide	ND	7.8	ND	2.5	
75-33-2	Isopropyl Mercaptan	ND	16	ND	5.0	
75-66-1	tert-Butyl Mercaptan	ND	18	ND	5.0	
107-03-9	n-Propyl Mercaptan	ND	16	ND	5.0	
624-89-5	Ethyl Methyl Sulfide	ND	16	ND	5.0	
110-02-1	Thiophene	ND	17	ND	5.0	
513-44-0	Isobutyl Mercaptan	ND	18	ND	5.0	
352-93-2	Diethyl Sulfide	ND	18	ND	5.0	
109-79-5	n-Butyl Mercaptan	ND	18	ND	5.0	
624-92-0	Dimethyl Disulfide	ND	9.6	ND	2.5	
616-44-4	3-Methylthiophene	ND	20	ND	5.0	
110-01-0	Tetrahydrothiophene	ND	18	ND	5.0	
638-02-8	2,5-Dimethylthiophene	ND	23	ND	5.0	
872-55-9	2-Ethylthiophene	ND	23	ND	5.0	
110-81-6	Diethyl Disulfide	ND	12	ND	2.5	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-SU**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-017

Test Code: ASTM D 5504-08
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00337

Date Collected: 6/18/13
Time Collected: 15:00
Date Received: 6/20/13
Date Analyzed: 6/25/13
Time Analyzed: 09:45
Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -0.62 Final Pressure (psig): 3.56

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	9.1	ND	6.5	
463-58-1	Carbonyl Sulfide	ND	16	ND	6.5	
74-93-1	Methyl Mercaptan	ND	13	ND	6.5	
75-08-1	Ethyl Mercaptan	ND	17	ND	6.5	
75-18-3	Dimethyl Sulfide	**970**	17	**380**	6.5	
75-15-0	Carbon Disulfide	ND	10	ND	3.3	
75-33-2	Isopropyl Mercaptan	ND	20	ND	6.5	
75-66-1	tert-Butyl Mercaptan	ND	24	ND	6.5	
107-03-9	n-Propyl Mercaptan	ND	20	ND	6.5	
624-89-5	Ethyl Methyl Sulfide	ND	20	ND	6.5	
110-02-1	Thiophene	ND	22	ND	6.5	
513-44-0	Isobutyl Mercaptan	ND	24	ND	6.5	
352-93-2	Diethyl Sulfide	ND	24	ND	6.5	
109-79-5	n-Butyl Mercaptan	ND	24	ND	6.5	
624-92-0	Dimethyl Disulfide	**110**	13	**28**	3.3	
616-44-4	3-Methylthiophene	ND	26	ND	6.5	
110-01-0	Tetrahydrothiophene	ND	23	ND	6.5	
638-02-8	2,5-Dimethylthiophene	ND	30	ND	6.5	
872-55-9	2-Ethylthiophene	ND	30	ND	6.5	
110-81-6	Diethyl Disulfide	ND	16	ND	3.3	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P130625-DLCS

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 6/25/13
Volume(s) Analyzed: NA Liter(s)

CAS #	Compound	Spike Amount LCS / DLCS µg/ml	Result LCS µg/ml	Result DLCS µg/ml	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
64-19-7	Acetic Acid	18.7	18.1	20.4	**97**	**109**	66-135	12	26	
79-09-4	Propionic Acid (Propanoic)	8.68	7.95	8.62	**92**	**99**	76-126	7	14	
79-31-2	2-Methylpropanoic Acid (Isobutyric)	9.67	9.48	9.82	**98**	**102**	84-118	4	13	
107-92-6	Butanoic Acid (Butyric)	9.84	9.41	9.65	**96**	**98**	85-117	2	11	
116-53-0	2-Methylbutanoic Acid	9.63	9.47	9.30	**98**	**97**	87-116	1	11	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	9.90	9.59	9.82	**97**	**99**	88-114	2	10	
109-52-4	Pentanoic Acid (Valeric)	10.1	9.93	10.1	**98**	**100**	89-113	2	11	
97-61-0	2-Methylpentanoic Acid	10.2	10.1	10.0	**99**	**98**	88-113	1	10	
105-43-1	3-Methylpentanoic Acid	9.99	9.94	9.77	**99**	**98**	88-113	1	10	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	9.75	9.93	9.66	**102**	**99**	89-113	3	11	
142-62-1	Hexanoic Acid (Caproic)	9.84	9.81	9.62	**100**	**98**	87-114	2	11	
111-14-8	Heptanoic Acid (Enanthoic)	8.67	8.82	8.59	**102**	**99**	84-116	3	10	
149-57-5	2-Ethylhexanoic Acid	8.97	8.40	7.97	**94**	**89**	82-111	5	12	
98-89-5	Cyclohexanecarboxylic Acid	8.02	8.13	7.96	**101**	**99**	85-115	2	10	
124-07-2	Octanoic Acid (Caprylic)	9.35	9.50	9.19	**102**	**98**	84-116	4	11	
65-85-0	Benzoic Acid	9.36	8.16	7.62	**87**	**81**	72-109	7	13	
112-05-0	Nonanoic Acid (Pelargonic)	9.58	9.92	9.48	**104**	**99**	84-116	5	10	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P130625-MB

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes: **BC, DE**

Date Collected: NA
Date Received: NA
Date Analyzed: 6/25/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
64-19-7	Acetic Acid	< 2.0	NA	NA	NA	NA	
79-09-4	Propionic Acid (Propanoic)	< 0.24	NA	NA	NA	NA	
79-31-2	2-Methylpropanoic Acid (Isobutyric)	< 0.25	NA	NA	NA	NA	
107-92-6	Butanoic Acid (Butyric)	< 0.24	NA	NA	NA	NA	
116-53-0	2-Methylbutanoic Acid	< 0.24	NA	NA	NA	NA	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	< 0.25	NA	NA	NA	NA	
109-52-4	Pentanoic Acid (Valeric)	< 0.25	NA	NA	NA	NA	
97-61-0	2-Methylpentanoic Acid	< 0.24	NA	NA	NA	NA	
105-43-1	3-Methylpentanoic Acid	< 0.25	NA	NA	NA	NA	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	< 0.24	NA	NA	NA	NA	
142-62-1	Hexanoic Acid (Caproic)	< 0.25	NA	NA	NA	NA	
111-14-8	Heptanoic Acid (Enanthoic)	< 0.24	NA	NA	NA	NA	
149-57-5	2-Ethylhexanoic Acid	< 0.25	NA	NA	NA	NA	
98-89-5	Cyclohexanecarboxylic Acid	< 0.24	NA	NA	NA	NA	
124-07-2	Octanoic Acid (Caprylic)	< 0.24	NA	NA	NA	NA	
65-85-0	Benzoic Acid	< 0.26	NA	NA	NA	NA	
112-05-0	Nonanoic Acid (Pelargonic)	< 0.25	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.
NA = Not applicable.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-15 CARBOX**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-014

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes: **BC, DE**

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
64-19-7	Acetic Acid	< 2.0	NA	NA	NA	NA	
79-09-4	Propionic Acid (Propanoic)	< 0.24	NA	NA	NA	NA	
79-31-2	2-Methylpropanoic Acid (Isobutyric)	< 0.25	NA	NA	NA	NA	
107-92-6	Butanoic Acid (Butyric)	< 0.24	NA	NA	NA	NA	
116-53-0	2-Methylbutanoic Acid	< 0.24	NA	NA	NA	NA	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	< 0.25	NA	NA	NA	NA	
109-52-4	Pentanoic Acid (Valeric)	< 0.25	NA	NA	NA	NA	
97-61-0	2-Methylpentanoic Acid	< 0.24	NA	NA	NA	NA	
105-43-1	3-Methylpentanoic Acid	< 0.25	NA	NA	NA	NA	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	< 0.24	NA	NA	NA	NA	
142-62-1	Hexanoic Acid (Caproic)	< 0.25	NA	NA	NA	NA	
111-14-8	Heptanoic Acid (Enanthoic)	< 0.24	NA	NA	NA	NA	
149-57-5	2-Ethylhexanoic Acid	< 0.25	NA	NA	NA	NA	
98-89-5	Cyclohexanecarboxylic Acid	< 0.24	NA	NA	NA	NA	
124-07-2	Octanoic Acid (Caprylic)	< 0.24	NA	NA	NA	NA	
65-85-0	Benzoic Acid	< 0.26	NA	NA	NA	NA	
112-05-0	Nonanoic Acid (Pelargonic)	< 0.25	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.
NA = Not applicable.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-15 CARBOX**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-013

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes: **BC, DE**

Date Collected: 6/18/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
64-19-7	Acetic Acid	< 2.0	NA	NA	NA	NA	
79-09-4	Propionic Acid (Propanoic)	< 0.24	NA	NA	NA	NA	
79-31-2	2-Methylpropanoic Acid (Isobutyric)	< 0.25	NA	NA	NA	NA	
107-92-6	Butanoic Acid (Butyric)	< 0.24	NA	NA	NA	NA	
116-53-0	2-Methylbutanoic Acid	< 0.24	NA	NA	NA	NA	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	< 0.25	NA	NA	NA	NA	
109-52-4	Pentanoic Acid (Valeric)	< 0.25	NA	NA	NA	NA	
97-61-0	2-Methylpentanoic Acid	< 0.24	NA	NA	NA	NA	
105-43-1	3-Methylpentanoic Acid	< 0.25	NA	NA	NA	NA	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	< 0.24	NA	NA	NA	NA	
142-62-1	Hexanoic Acid (Caproic)	< 0.25	NA	NA	NA	NA	
111-14-8	Heptanoic Acid (Enanthoic)	< 0.24	NA	NA	NA	NA	
149-57-5	2-Ethylhexanoic Acid	< 0.25	NA	NA	NA	NA	
98-89-5	Cyclohexanecarboxylic Acid	< 0.24	NA	NA	NA	NA	
124-07-2	Octanoic Acid (Caprylic)	< 0.24	NA	NA	NA	NA	
65-85-0	Benzoic Acid	< 0.26	NA	NA	NA	NA	
112-05-0	Nonanoic Acid (Pelargonic)	< 0.25	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.
NA = Not applicable.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-7 CARBOX**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-006

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes: **BC, DE**

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Desorption Volume: 1.0 ml
Volume Sampled: 92.040 Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
64-19-7	Acetic Acid	< 2.0	ND	22	ND	8.8	
79-09-4	Propionic Acid (Propanoic)	< 0.24	ND	2.6	ND	0.87	
79-31-2	2-Methylpropanoic Acid (Isobutyric)	< 0.25	ND	2.7	ND	0.74	
107-92-6	Butanoic Acid (Butyric)	< 0.24	ND	2.6	ND	0.73	
116-53-0	2-Methylbutanoic Acid	< 0.24	ND	2.6	ND	0.63	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	< 0.25	ND	2.7	ND	0.64	
109-52-4	Pentanoic Acid (Valeric)	< 0.25	ND	2.7	ND	0.64	
97-61-0	2-Methylpentanoic Acid	< 0.24	ND	2.6	ND	0.55	
105-43-1	3-Methylpentanoic Acid	< 0.25	ND	2.7	ND	0.57	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	< 0.24	ND	2.6	ND	0.56	
142-62-1	Hexanoic Acid (Caproic)	< 0.25	ND	2.7	ND	0.57	
111-14-8	Heptanoic Acid (Enanthoic)	< 0.24	ND	2.6	ND	0.50	
149-57-5	2-Ethylhexanoic Acid	< 0.25	ND	2.7	ND	0.45	
98-89-5	Cyclohexanecarboxylic Acid	< 0.24	ND	2.6	ND	0.50	
124-07-2	Octanoic Acid (Caprylic)	< 0.24	ND	2.6	ND	0.44	
65-85-0	Benzoic Acid	< 0.26	ND	2.8	ND	0.56	
112-05-0	Nonanoic Acid (Pelargonic)	< 0.25	ND	2.7	ND	0.42	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-7 CARBOX**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-005

Test Code: GC/MS
Instrument ID: Agilent 5973/Agilent 6890/MS14
Analyst: Evelyn Ibarra
Sampling Media: Silica Gel Tube
Test Notes: **BC, DE**

Date Collected: 6/18/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Desorption Volume: 1.0 ml
Volume Sampled: 93.388 Liter(s)

CAS #	Compound	Result µg/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
64-19-7	Acetic Acid	52	**560**	21	**230**	8.6	
79-09-4	Propionic Acid (Propanoic)	24	**260**	2.6	**84**	0.86	**BT**
79-31-2	2-Methylpropanoic Acid (Isobutyric)	9.1	**97**	2.6	**27**	0.73	**BT**
107-92-6	Butanoic Acid (Butyric)	71	**760**	2.6	**210**	0.72	
116-53-0	2-Methylbutanoic Acid	1.7	**18**	2.6	**4.4**	0.62	
503-74-2	3-Methylbutanoic Acid (Isovaleric)	4.2	**45**	2.6	**11**	0.63	**BT**
109-52-4	Pentanoic Acid (Valeric)	13	**140**	2.7	**33**	0.63	**BT**
97-61-0	2-Methylpentanoic Acid	0.25	**2.7**	2.6	**0.57**	0.54	
105-43-1	3-Methylpentanoic Acid	< 0.25	ND	2.7	ND	0.56	
646-07-1	4-Methylpentanoic Acid (Isocaproic)	0.63	**6.8**	2.6	**1.4**	0.55	
142-62-1	Hexanoic Acid (Caproic)	32	**340**	2.7	**73**	0.56	**BT**
111-14-8	Heptanoic Acid (Enanthoic)	3.5	**38**	2.6	**7.1**	0.49	**BT**
149-57-5	2-Ethylhexanoic Acid	6.4	**68**	2.6	**12**	0.45	
98-89-5	Cyclohexanecarboxylic Acid	< 0.24	ND	2.6	ND	0.50	
124-07-2	Octanoic Acid (Caprylic)	4.5	**48**	2.6	**8.1**	0.44	**BT**
65-85-0	Benzoic Acid	< 0.26	ND	2.7	ND	0.55	
112-05-0	Nonanoic Acid (Pelargonic)	1.1	**12**	2.7	**1.8**	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.
BT = Results indicated possible breakthrough; back section ≥10% front section.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P130628-MB

Test Code: EPA Method TO-11A
Instrument ID: Agilent Infinity LC 1220/LC3
Analyst: Zheng Wang/Lusine Hakobyan
Sample Type: Silica Gel DNPH Tube
Test Notes: **BC**

Date Collected: NA
Date Received: NA
Date Analyzed: 06/28/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	< 100	NA	NA	NA	NA	
75-07-0	Acetaldehyde	< 100	NA	NA	NA	NA	
123-38-6	Propionaldehyde	< 100	NA	NA	NA	NA	
4170-30-3	Crotonaldehyde, Total	< 100	NA	NA	NA	NA	
123-72-8	Butyraldehyde	< 100	NA	NA	NA	NA	
100-52-7	Benzaldehyde	< 100	NA	NA	NA	NA	
590-86-3	Isovaleraldehyde	< 100	NA	NA	NA	NA	
110-62-3	Valeraldehyde	< 100	NA	NA	NA	NA	
529-20-4	o-Tolualdehyde	< 100	NA	NA	NA	NA	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	NA	NA	NA	NA	
66-25-1	n-Hexaldehyde	< 100	NA	NA	NA	NA	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
NA = Not applicable.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-10 ALD**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-010

Test Code: EPA Method TO-11A
Instrument ID: Agilent Infinity LC 1220/LC3
Analyst: Zheng Wang/Lusine Hakobyan
Sample Type: Silica Gel DNPH Tube
Test Notes: **BC**

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/28/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	< 100	NA	NA	NA	NA	
75-07-0	Acetaldehyde	< 100	NA	NA	NA	NA	
123-38-6	Propionaldehyde	< 100	NA	NA	NA	NA	
4170-30-3	Crotonaldehyde, Total	< 100	NA	NA	NA	NA	
123-72-8	Butyraldehyde	< 100	NA	NA	NA	NA	
100-52-7	Benzaldehyde	< 100	NA	NA	NA	NA	
590-86-3	Isovaleraldehyde	< 100	NA	NA	NA	NA	
110-62-3	Valeraldehyde	< 100	NA	NA	NA	NA	
529-20-4	o-Tolualdehyde	< 100	NA	NA	NA	NA	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	NA	NA	NA	NA	
66-25-1	n-Hexaldehyde	< 100	NA	NA	NA	NA	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
NA = Not applicable.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-10 ALD**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-009

Test Code: EPA Method TO-11A
Instrument ID: Agilent Infinity LC 1220/LC3
Analyst: Zheng Wang/Lusine Hakobyan
Sample Type: Silica Gel DNPH Tube
Test Notes: **BC**

Date Collected: 6/18/13
Date Received: 6/20/13
Date Analyzed: 6/28/13
Desorption Volume: 1.0 ml
Volume Sampled: NA Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	< 100	NA	NA	NA	NA	
75-07-0	Acetaldehyde	< 100	NA	NA	NA	NA	
123-38-6	Propionaldehyde	< 100	NA	NA	NA	NA	
4170-30-3	Crotonaldehyde, Total	< 100	NA	NA	NA	NA	
123-72-8	Butyraldehyde	< 100	NA	NA	NA	NA	
100-52-7	Benzaldehyde	< 100	NA	NA	NA	NA	
590-86-3	Isovaleraldehyde	< 100	NA	NA	NA	NA	
110-62-3	Valeraldehyde	< 100	NA	NA	NA	NA	
529-20-4	o-Tolualdehyde	< 100	NA	NA	NA	NA	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	NA	NA	NA	NA	
66-25-1	n-Hexaldehyde	< 100	NA	NA	NA	NA	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
NA = Not applicable.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-2 ALD**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-002

Test Code: EPA Method TO-11A
Instrument ID: Agilent Infinity LC 1220/LC3
Analyst: Zheng Wang/Lusine Hakobyan
Sample Type: Silica Gel DNPH Tube
Test Notes: **BC**

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/28/13
Desorption Volume: 1.0 ml
Volume Sampled: 286.32 Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	1,600	**5.7**	0.35	**4.7**	0.28	
75-07-0	Acetaldehyde	1,000	**3.6**	0.35	**2.0**	0.19	**BT**
123-38-6	Propionaldehyde	< 100	ND	0.35	ND	0.15	
4170-30-3	Crotonaldehyde, Total	< 100	ND	0.35	ND	0.12	
123-72-8	Butyraldehyde	< 100	ND	0.35	ND	0.12	
100-52-7	Benzaldehyde	< 100	ND	0.35	ND	0.081	
590-86-3	Isovaleraldehyde	< 100	ND	0.35	ND	0.099	
110-62-3	Valeraldehyde	< 100	ND	0.35	ND	0.099	
529-20-4	o-Tolualdehyde	< 100	ND	0.35	ND	0.071	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	ND	0.70	ND	0.14	
66-25-1	n-Hexaldehyde	280	**0.99**	0.35	**0.24**	0.085	
5779-94-2	2,5-Dimethylbenzaldehyde	270	**0.96**	0.35	**0.17**	0.064	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
BT = Results indicated possible breakthrough; back section > 10% front section.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **618-2 ALD**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-001

Test Code: EPA Method TO-11A
Instrument ID: Agilent Infinity LC 1220/LC3
Analyst: Zheng Wang/Lusine Hakobyan
Sample Type: Silica Gel DNPH Tube
Test Notes: **BC**

Date Collected: 6/18/13
Date Received: 6/20/13
Date Analyzed: 6/28/13
Desorption Volume: 1.0 ml
Volume Sampled: 289.441 Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	2,700	**9.3**	0.35	**7.6**	0.28	**BT**
75-07-0	Acetaldehyde	28,000	**98**	0.35	**55**	0.19	**BT**
123-38-6	Propionaldehyde	4,200	**15**	0.35	**6.2**	0.15	**BT**
4170-30-3	Crotonaldehyde, Total	< 100	ND	0.35	ND	0.12	
123-72-8	Butyraldehyde	9,000	**31**	0.35	**10**	0.12	**BT**
100-52-7	Benzaldehyde	230	**0.81**	0.35	**0.19**	0.080	
590-86-3	Isovaleraldehyde	970	**3.4**	0.35	**0.95**	0.098	**BT, M**
110-62-3	Valeraldehyde	200	**0.68**	0.35	**0.19**	0.098	
529-20-4	o-Tolualdehyde	< 100	ND	0.35	ND	0.070	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	ND	0.69	ND	0.14	
66-25-1	n-Hexaldehyde	1,800	**6.1**	0.35	**1.5**	0.084	**BT**
5779-94-2	2,5-Dimethylbenzaldehyde	2,200	**7.5**	0.35	**1.4**	0.063	**BT**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
BC = Results reported are not blank corrected.
BT = Results indicated possible breakthrough; back section > 10% front section.
M = Matrix interference; results may be biased high.

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P130701-LCS, P130701-DLCS

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary

Test Code: OSHA ID-188/ID-164
Instrument ID: PH01/Thermo Orion 920A+/Ammonia ISE
Analyst: Sue Anderson
Sampling Media: Anasorb 747 Tube(s) (Sulfuric Treated)
Test Notes:

Date Sampled: N/A
Date Received: N/A
Date Analyzed: 7/01/13
Volume(s) Analyzed: N/A

Compound	Spike Amount LCS / DLCS mg/L	Result LCS mg/L	Result DLCS mg/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	Relative Percent Difference	RPD Limit	Data Qualifier
Ammonia	1.00	1.00	1.01	100	101	80-109	1	4	

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635

Ammonia

Test Code: OSHA ID-188/ID-164
Instrument ID: PH01/Thermo Orion 920A+/Ammonia ISE
Analyst: Sue Anderson
Sampling Media: Anasorb 747 Tube(s) (Sulfuric Treated)
Test Notes: **BC, DE**

Date(s) Collected: 6/18 - 6/19/13
Date Received: 6/20/13
Date Analyzed: 7/1 - 7/2/13
Desorption Volume: 0.10 Liter(s)

Client Sample ID	ALS Sample ID	Sample Volume Liter(s)	Dilution Factor	Result mg/Tube	Result mg/m³	MRL mg/m³	**Result ppmV**	MRL ppmV	Data Qualifier
618-6 NH4	P1302635-003	120.38	1.0	< 0.011	ND	0.089	ND	0.13	
619-6 NH4	P1302635-004	117.72	1.0	< 0.011	ND	0.091	ND	0.13	
618-14 NH4	P1302635-011	NA	1.0	< 0.011	NA	NA	NA	NA	
619-14 NH4	P1302635-012	NA	1.0	< 0.011	NA	NA	NA	NA	
Method Blank	P130701-MB	NA	1.0	< 0.011	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
NA = Not applicable.
BC = Results reported are not blank corrected.
DE = Results reported are corrected for desorption efficiency.

ALS Environmental
Sample Acceptance Check Form

Client: Stantec Consulting Services, Inc. Work order: P1302635

Project: Bridgeton Landfill / 182608005

Sample(s) received on: 6/20/2013 Date opened: 6/20/2013 by: MZAMORA

Lab Sample ID	Container Description	Required pH	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1302635-009.02	Silica Gel DNPH Tube					
P1302635-010.02	Silica Gel DNPH Tube					
P1302635-011.04	Anasorb 747 Tube					
P1302635-012.04	Anasorb 747 Tube					
P1302635-013.01	Silica Gel (C. Acids)					
P1302635-014.01	Silica Gel (C. Acids)					
P1302635-015.01	Silica Gel (260/520) Tube					
P1302635-016.01	Silica Gel (260/520) Tube					
P1302635-017.01	6.0 L Silonite Can					
P1302635-018.01	6.0 L Silonite Can					
P1302635-019.01	6.0 L Silonite Can					
P1302635-020.01	6.0 L Silonite Can					
P1302635-021.01	6.0 L Silonite Can					
P1302635-022.01	6.0 L Silonite Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS Environmental
Sample Acceptance Check Form

Client: Stantec Consulting Services, Inc. Work order: P1302635
Project: Bridgeton Landfill / 182608005
Sample(s) received on: 6/20/2013 Date opened: 6/20/2013 by: MZAMORA

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: 5° C Blank Temperature: ° C **Gel Packs**			
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☒	☐	☐
	Location of seal(s)? Top of box, covering opening. Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☒	☐	☐
	Do they contain moisture?	☐	☒	☐
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1302635-001.02	Silica Gel DNPH Tube					
P1302635-002.02	Silica Gel DNPH Tube					
P1302635-003.04	Anasorb 747 Tube					
P1302635-004.04	Anasorb 747 Tube					
P1302635-005.01	Silica Gel (C. Acids)					
P1302635-006.01	Silica Gel (C. Acids)					
P1302635-007.01	Silica Gel (260/520) Tube					
P1302635-008.01	Silica Gel (260/520) Tube					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

Columbia Analytical Services

Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P1302235

CAS Contact: SAMANTHA HENNINGSEN

Company Name & Address (Reporting Information): STANTEC CONSULTING, 1500 LAKESHORE DRIVE, COLUMBUS, OH 43204

Project Name: BRIDGETON LANDFILL

Project Number: 132608005

Project Manager: DEB GRAY

P.O. # / Billing Information: SAME

Phone: 614 486 4383 Fax: 614 486 4387

Email Address for Result Reporting: DEB.GRAY@STANTEC.COM

Sampler (Print & Sign): CHRIS LALONDE / [signature]

Analysis Method/Analytes

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Sample Type (Air/Tube/Solid)	Canister ID (Bar code # - [illegible])	Flow Controller (Bar code - FC #)	ML Sample Volume				Comments e.g. Actual Preservative or specific instructions
618-16 SOZ	(15)	6/18/13	11:00	AIR	NA	NA	0 FIELD	BLANK	OSHA	ID200	Cooler
619-16 SOZ	(16)	6/19/13	12:00	⊥	⊥	⊥	0	⊥	OSHA	ID200	⊥
618-SU	(17)-057	6/18/13	15:00	AIR	13743	SFC00040	-14.3 / -3.4		EPA TO15 + TICs /		ASTM D5504
618-SU-B	(18)-1440	6/18/13	15:00	⊥	13406	NA			⊥	⊥	⊥
619-SU	(19)-057	6/19/13	14:45	⊥	14056	SFC00059	-14.3		⊥	⊥	⊥
619-SU-B	(20)-1436	6/19/13	12:05	⊥	12964	NA			⊥	⊥	⊥
619-SU-Exh	(21)-062	6/19/13	12:00	⊥	13542	NA			EPA TO15 + TICs ONLY		
619-SU-VAULT	(22)-011	6/19/13	12:05	⊥	14160	NA			⊥	⊥	⊥

Report Tier Levels - please select
Tier I - (Results/Default if not specified) ____
Tier II (Results + QC) ____
Tier III (Data Validation Package) 10% Surcharge ____
Tier V (client specified) ____

EDD required Yes / No
Type: ____ EDD Units: ____

Project Requirements (MRLs, QAPP): [illegible]

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	6/19/13	19:30	[signature]	6/20/13	0935
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature 5 °C

Columbia Analytical Services™

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Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P130 2135

CAS Contact: SAMANTHA HENNINGSEN

Company Name & Address (Reporting Information): STANTEC CONSULTING, 1500 LAKE SHORE DRIVE, COLUMBUS, OH 43204

Project Name: BRIDGETON LANDFILL

Project Number: 187608005

Project Manager: DEB GRAY

P.O. # / Billing Information: SAME

Phone: 614 486 4383

Fax: 614 486 4387

Email Address for Result Reporting: DEB.GRAY@STANTEC.COM

Sampler (Print & Sign): CHRIS LALANDE

Analysis Method/Analytes

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Sample Type (Air/Tube/ Solid)	Canister ID (Bar code # - [illegible])	Flow Controller (Bar code - FC #)	mL Sample Volume				Comments e.g. Actual Preservative or specific instructions
618-2 ALD	11	6/18/13	11:00 / 15:01	AIR	2002	NA	287,440	mL	EPA TO-11a		Cooler
619-2 ALD	12	6/19/13	[illegible]		2015		286,320	mL	EPA TO 11a		
618-6 NH4	13	6/18/13	11:00 / 15:01		1002		120,380	mL	OSHA	ID 188	
619-6 NH4	14	6/19/13	10:14 / 14:14		1002		117,720	mL	OSHA	ID 188	
618-7 CARBON	15	6/18/13	11:00 / 15:01		2010		93,388	mL	ARL	102	
619-7 CARBON	16	6/19/13	10:14 / 14:14		2010		92,040	mL	ARL	102	
618-8 SO2	17	6/18/13	11:00 / 15:01		1016		39,163	mL	OSHA	ID 200	
619-8 SO2	18	6/19/13	10:14 / 14:14		1016		43,400	mL	OSHA	ID 200	
618-10 ALD	9	6/18/13	11:00		NA		FIELD	BLANK	EPA TO11a		
619-10 ALD	10	6/19/13	12:00				0		EPA TO11a		
618-14 NH4	11	6/18/13	11:00				0		OSHA	ID 188	
619-14 NH4	12	6/19/13	12:00				0		OSHA	ID 188	
618-15 CARBON	13	6/18/13	11:00				0		ARL	102	
619-15 CARBON	14	6/19/13	12:00				0		ARL	102	

Report Tier Levels - please select
Tier I - (Results/Default if not specified) ____
Tier II (Results + QC) ____
Tier III (Data Validation Package) 10% Surcharge ____
Tier V (client specified) ____

EDD required Yes / No
Type: ____ EDD Units: ____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date: 6/19/13	Time: 17:30	Received by: (Signature)	Date: 6/20/13	Time: 0835
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature 5 °C

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Stantec Consulting Services, Inc.
Project ID: Bridgeton Landfill / 182608005

Service Request: P1302635

Date Received: 6/20/2013
Time Received: 09:35

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pil (psig)	Pfl (psig)	TO-11A - Carbonyls	OSHA ID-164 Modified - Ammonia	Carbox Acids - Carboxy Acids	ASTM D5504-08 - Sulfur Can	TO-15 - VOC Cans	None - Misc Out 5
618-2 ALD	P1302635-001	Air	6/18/2013	15:01				X					
619-2 ALD	P1302635-002	Air	6/19/2013	18:24				X					
618-6 NH4	P1302635-003	Air	6/18/2013	15:01					X				
619-6 NH4	P1302635-004	Air	6/19/2013	14:14					X				
618-7 CARBOX	P1302635-005	Air	6/18/2013	15:01						X			
619-7 CARBOX	P1302635-006	Air	6/19/2013	14:14						X			
618-10 ALD	P1302635-009	Air	6/18/2013	11:00				X					
619-10 ALD	P1302635-010	Air	6/19/2013	12:00				X					
618-14 NH4	P1302635-011	Air	6/18/2013	12:00					X				
619-14 NH4	P1302635-012	Air	6/19/2013	12:00					X				
618-15 CARBOX	P1302635-013	Air	6/18/2013	12:00						X			
619-15 CARBOX	P1302635-014	Air	6/19/2013	12:00						X			
618-SU	P1302635-017	Air	6/18/2013	15:00	AS00337	-0.62	3.56				X	X	
618-SU-B	P1302635-018	Air	6/18/2013	15:00	AS00271	-14.38	3.62				X	X	
619-SU	P1302635-019	Air	6/19/2013	14:45	AS00394	-0.72	3.65				X	X	
619-SU-B	P1302635-020	Air	6/19/2013	12:05	AS00244	-14.18	3.51				X	X	
619-SU Exh	P1302635-021	Air	6/19/2013	12:00	AS00275	-0.78	3.55					X	
619-SU-Vault	P1302635-022	Air	6/19/2013	12:05	AS00418	-0.31	3.55					X	

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ALS Environmental - Simi Valley

Certifications, Accreditations, and Registrations

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L11-203
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2012039
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	494864
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	CA200007
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-12-3
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA015272012-2
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

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Client: Stantec Consulting Services, Inc.
Project: Bridgeton Landfill / 182608005

Service Request No: P1302192

CASE NARRATIVE

Volatile Organic Compound Analysis

The summa canister samples were analyzed for volatile organic compounds and tentatively identified compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is not included on the laboratory's AIHA-LAP scope of accreditation. Any analytes flagged with an X are not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

The Summa canisters were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

Sulfur Dioxide Analysis

The analysis for sulfur dioxide (OSHA ID 200) was run at the ALS Salt Lake City, UT facility. Results were reported under separate project number 1317624, issued on July 2, 2013.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU-B**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-020

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00244

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
91-20-3	Naphthalene	ND	0.50	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU-B** ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** ALS Sample ID: P1302635-020

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: 6/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 6/20/13
Analyst: John Rice Date Analyzed: 6/25/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00244

Canister Dilution Factor: 1.00

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
	No Compounds Detected		

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU Exh**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-021

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00275

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.78 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**8.6**	0.66	**5.0**	0.38	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**	0.66	**0.39**	0.13	
74-87-3	Chloromethane	**4.9**	0.66	**2.4**	0.32	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.66	ND	0.094	
75-01-4	Vinyl Chloride	ND	0.66	ND	0.26	
106-99-0	1,3-Butadiene	ND	0.66	ND	0.30	
74-83-9	Bromomethane	ND	0.66	ND	0.17	
75-00-3	Chloroethane	**12**	0.66	**4.7**	0.25	
64-17-5	Ethanol	**610**	6.6	**320**	3.5	
75-05-8	Acetonitrile	**4.1**	0.66	**2.5**	0.39	
107-02-8	Acrolein	ND	2.6	ND	1.1	
67-64-1	Acetone	**510**	6.6	**220**	2.8	
75-69-4	Trichlorofluoromethane	**1.6**	0.66	**0.29**	0.12	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	6.6	ND	2.7	
107-13-1	Acrylonitrile	ND	0.66	ND	0.30	
75-35-4	1,1-Dichloroethene	ND	0.66	ND	0.17	
75-09-2	Methylene Chloride	**6.7**	0.66	**1.9**	0.19	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.66	ND	0.21	
76-13-1	Trichlorotrifluoroethane	ND	0.66	ND	0.086	
75-15-0	Carbon Disulfide	ND	6.6	ND	2.1	
156-60-5	trans-1,2-Dichloroethene	ND	0.66	ND	0.17	
75-34-3	1,1-Dichloroethane	ND	0.66	ND	0.16	
1634-04-4	Methyl tert-Butyl Ether	ND	0.66	ND	0.18	
108-05-4	Vinyl Acetate	ND	6.6	ND	1.9	
78-93-3	2-Butanone (MEK)	ND	6.6	ND	2.2	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU Exh** — ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** — ALS Sample ID: P1302635-021

Test Code: EPA TO-15 — Date Collected: 6/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 — Date Received: 6/20/13
Analyst: John Rice — Date Analyzed: 6/25/13
Sample Type: 6.0 L Summa Canister — Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00275

Initial Pressure (psig): -0.78 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.66	ND	0.17	
141-78-6	Ethyl Acetate	ND	1.3	ND	0.36	
110-54-3	n-Hexane	ND	0.66	ND	0.19	
67-66-3	Chloroform	**5.0**	0.66	**1.0**	0.13	
109-99-9	Tetrahydrofuran (THF)	**37**	0.66	**13**	0.22	
107-06-2	1,2-Dichloroethane	ND	0.66	ND	0.16	
71-55-6	1,1,1-Trichloroethane	ND	0.66	ND	0.12	
71-43-2	Benzene	ND	0.66	ND	0.21	
56-23-5	Carbon Tetrachloride	**0.82**	0.66	**0.13**	0.10	
110-82-7	Cyclohexane	ND	1.3	ND	0.38	
78-87-5	1,2-Dichloropropane	ND	0.66	ND	0.14	
75-27-4	Bromodichloromethane	ND	0.66	ND	0.098	
79-01-6	Trichloroethene	ND	0.66	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.66	ND	0.18	
80-62-6	Methyl Methacrylate	ND	1.3	ND	0.32	
142-82-5	n-Heptane	ND	0.66	ND	0.16	
10061-01-5	cis-1,3-Dichloropropene	ND	0.66	ND	0.14	
108-10-1	4-Methyl-2-pentanone	ND	0.66	ND	0.16	
10061-02-6	trans-1,3-Dichloropropene	ND	0.66	ND	0.14	
79-00-5	1,1,2-Trichloroethane	ND	0.66	ND	0.12	
108-88-3	Toluene	ND	0.66	ND	0.17	
591-78-6	2-Hexanone	ND	0.66	ND	0.16	
124-48-1	Dibromochloromethane	ND	0.66	ND	0.077	
106-93-4	1,2-Dibromoethane	ND	0.66	ND	0.085	
123-86-4	n-Butyl Acetate	ND	0.66	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU Exh**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-021

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00275

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.78 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.66	ND	0.14	
127-18-4	Tetrachloroethene	ND	0.66	ND	0.097	
108-90-7	Chlorobenzene	ND	0.66	ND	0.14	
100-41-4	Ethylbenzene	ND	0.66	ND	0.15	
179601-23-1	m,p-Xylenes	ND	1.3	ND	0.30	
75-25-2	Bromoform	ND	0.66	ND	0.063	
100-42-5	Styrene	ND	0.66	ND	0.15	
95-47-6	o-Xylene	ND	0.66	ND	0.15	
111-84-2	n-Nonane	ND	0.66	ND	0.12	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.66	ND	0.095	
98-82-8	Cumene	ND	0.66	ND	0.13	
80-56-8	alpha-Pinene	ND	0.66	ND	0.12	
103-65-1	n-Propylbenzene	ND	0.66	ND	0.13	
622-96-8	4-Ethyltoluene	ND	0.66	ND	0.13	
108-67-8	1,3,5-Trimethylbenzene	ND	0.66	ND	0.13	
95-63-6	1,2,4-Trimethylbenzene	ND	0.66	ND	0.13	
100-44-7	Benzyl Chloride	ND	0.66	ND	0.13	
541-73-1	1,3-Dichlorobenzene	ND	0.66	ND	0.11	
106-46-7	1,4-Dichlorobenzene	ND	0.66	ND	0.11	
95-50-1	1,2-Dichlorobenzene	ND	0.66	ND	0.11	
5989-27-5	d-Limonene	ND	0.66	ND	0.12	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.66	ND	0.068	
120-82-1	1,2,4-Trichlorobenzene	ND	0.66	ND	0.088	
91-20-3	Naphthalene	ND	0.66	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.66	ND	0.061	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU Exh** ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** ALS Sample ID: P1302635-021

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: 6/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 6/20/13
Analyst: John Rice Date Analyzed: 6/25/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: **T**
Container ID: AS00275

Initial Pressure (psig): -0.78 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.31

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
4.06	Dimethyl Ether	**100**	
4.25	Isobutane	**13**	
4.49	Isobutene	**11**	
4.60	n-Butane	**23**	
4.90	Methoxyethane	**32**	
6.13	Furan	**120**	
6.76	Methyl Acetate	**35**	

T = Analyte is a tentatively identified compound, result is estimated.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU-Vault** ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** ALS Sample ID: P1302635-022

Test Code: EPA TO-15 Date Collected: 6/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 6/20/13
Analyst: John Rice Date Analyzed: 6/25/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.030 Liter(s)
Test Notes:
Container ID: AS00418

Initial Pressure (psig): -0.31 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.27

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**150**	21	**86**	12	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	21	ND	4.3	
74-87-3	Chloromethane	**44**	21	**21**	10	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	21	ND	3.0	
75-01-4	Vinyl Chloride	ND	21	ND	8.3	
106-99-0	1,3-Butadiene	ND	21	ND	9.6	
74-83-9	Bromomethane	ND	21	ND	5.5	
75-00-3	Chloroethane	**22**	21	**8.2**	8.0	
64-17-5	Ethanol	**3,800**	210	**2,000**	110	
75-05-8	Acetonitrile	ND	21	ND	13	
107-02-8	Acrolein	ND	85	ND	37	
67-64-1	Acetone	**7,400**	210	**3,100**	89	
75-69-4	Trichlorofluoromethane	ND	21	ND	3.8	
67-63-0	2-Propanol (Isopropyl Alcohol)	**1,500**	210	**610**	86	
107-13-1	Acrylonitrile	ND	21	ND	9.8	
75-35-4	1,1-Dichloroethene	ND	21	ND	5.3	
75-09-2	Methylene Chloride	ND	21	ND	6.1	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	21	ND	6.8	
76-13-1	Trichlorotrifluoroethane	ND	21	ND	2.8	
75-15-0	Carbon Disulfide	ND	210	ND	68	
156-60-5	trans-1,2-Dichloroethene	ND	21	ND	5.3	
75-34-3	1,1-Dichloroethane	ND	21	ND	5.2	
1634-04-4	Methyl tert-Butyl Ether	ND	21	ND	5.9	
108-05-4	Vinyl Acetate	ND	210	ND	60	
78-93-3	2-Butanone (MEK)	**3,300**	210	**1,100**	72	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU-Vault**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-022

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00418

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Volume(s) Analyzed: 0.030 Liter(s)

Initial Pressure (psig): -0.31 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.27

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	21	ND	5.3	
141-78-6	Ethyl Acetate	**100**	42	**29**	12	
110-54-3	n-Hexane	ND	21	ND	6.0	
67-66-3	Chloroform	**240**	21	**50**	4.3	
109-99-9	Tetrahydrofuran (THF)	**2,500**	21	**860**	7.2	
107-06-2	1,2-Dichloroethane	ND	21	ND	5.2	
71-55-6	1,1,1-Trichloroethane	ND	21	ND	3.9	
71-43-2	Benzene	**2,500**	21	**790**	6.6	
56-23-5	Carbon Tetrachloride	ND	21	ND	3.4	
110-82-7	Cyclohexane	ND	42	ND	12	
78-87-5	1,2-Dichloropropane	ND	21	ND	4.6	
75-27-4	Bromodichloromethane	ND	21	ND	3.2	
79-01-6	Trichloroethene	ND	21	ND	3.9	
123-91-1	1,4-Dioxane	**120**	21	**33**	5.9	
80-62-6	Methyl Methacrylate	ND	42	ND	10	
142-82-5	n-Heptane	ND	21	ND	5.2	
10061-01-5	cis-1,3-Dichloropropene	ND	21	ND	4.7	
108-10-1	4-Methyl-2-pentanone	**180**	21	**45**	5.2	
10061-02-6	trans-1,3-Dichloropropene	ND	21	ND	4.7	
79-00-5	1,1,2-Trichloroethane	ND	21	ND	3.9	
108-88-3	Toluene	**380**	21	**100**	5.6	
591-78-6	2-Hexanone	**79**	21	**19**	5.2	
124-48-1	Dibromochloromethane	ND	21	ND	2.5	
106-93-4	1,2-Dibromoethane	ND	21	ND	2.8	
123-86-4	n-Butyl Acetate	**98**	21	**21**	4.5	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU-Vault**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P1302635-022

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AS00418

Date Collected: 6/19/13
Date Received: 6/20/13
Date Analyzed: 6/25/13
Volume(s) Analyzed: 0.030 Liter(s)

Initial Pressure (psig): -0.31 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.27

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	**27**	21	**5.7**	4.5	
127-18-4	Tetrachloroethene	ND	21	ND	3.1	
108-90-7	Chlorobenzene	ND	21	ND	4.6	
100-41-4	Ethylbenzene	**230**	21	**52**	4.9	
179601-23-1	m,p-Xylenes	**460**	42	**110**	9.8	
75-25-2	Bromoform	ND	21	ND	2.0	
100-42-5	Styrene	ND	21	ND	5.0	
95-47-6	o-Xylene	**190**	21	**44**	4.9	
111-84-2	n-Nonane	**53**	21	**10**	4.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	21	ND	3.1	
98-82-8	Cumene	**100**	21	**20**	4.3	
80-56-8	alpha-Pinene	**310**	21	**55**	3.8	
103-65-1	n-Propylbenzene	**92**	21	**19**	4.3	
622-96-8	4-Ethyltoluene	**150**	21	**31**	4.3	
108-67-8	1,3,5-Trimethylbenzene	**230**	21	**47**	4.3	
95-63-6	1,2,4-Trimethylbenzene	**860**	21	**170**	4.3	
100-44-7	Benzyl Chloride	ND	21	ND	4.1	
541-73-1	1,3-Dichlorobenzene	ND	21	ND	3.5	
106-46-7	1,4-Dichlorobenzene	**680**	21	**110**	3.5	
95-50-1	1,2-Dichlorobenzene	ND	21	ND	3.5	
5989-27-5	d-Limonene	**2,300**	21	**410**	3.8	
96-12-8	1,2-Dibromo-3-chloropropane	ND	21	ND	2.2	
120-82-1	1,2,4-Trichlorobenzene	ND	21	ND	2.9	
91-20-3	Naphthalene	**750**	21	**140**	4.0	
87-68-3	Hexachlorobutadiene	ND	21	ND	2.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **619-SU-Vault** ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** ALS Sample ID: P1302635-022

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: 6/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 6/20/13
Analyst: John Rice Date Analyzed: 6/25/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.030 Liter(s)
Test Notes: **T**
Container ID: AS00418

Initial Pressure (psig): -0.31 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.27

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
4.26	Acetaldehyde	**1,300**	
6.13	Furan	**2,300**	
6.56	Dimethyl Sulfide	**2,700**	
6.75	Methyl Acetate	**1,100**	
8.96	Methylfuran Isomer	**1,200**	
10.60	1-Butanol	**1,300**	
15.00	2-Methylcyclopentanone	**1,300**	
17.13	2-Ethylcyclopentanone	**1,500**	
18.08	Butyl butyrate	**1,500**	
18.66	2-Ethyl-1-hexanol	**6,900**	
18.78	C10H14 Aromatic Compound	**4,700**	
20.15	2-Ethylhexylacetate	**2,000**	
20.58	Butyl hexanoate	**2,400**	
21.10	Unidentified Compound	**1,500**	
21.90	2-Ethylhexyl butyrate	**2,900**	

T = Analyte is a tentatively identified compound, result is estimated.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P130625-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	ND	2.0	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P130625-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635
ALS Sample ID: P130625-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 6/25/13
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
91-20-3	Naphthalene	ND	0.50	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** ALS Sample ID: P130625-MB

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: John Rice Date Analyzed: 6/25/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
	No Compounds Detected		

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Project ID: **Bridgeton Landfill / 182608005**

ALS Project ID: P1302635

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: John Rice
Sample Type: 6.0 L Summa Canister(s)
Test Notes:

Date(s) Collected: 6/18 - 6/19/13
Date(s) Received: 6/20/13
Date(s) Analyzed: 6/25 - 6/26/13

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P130625-MB	97	101	100	70-130	
Lab Control Sample	P130625-LCS	95	101	100	70-130	
618-SU	P1302635-017	96	99	101	70-130	
618-SU-B	P1302635-018	97	101	99	70-130	
619-SU	P1302635-019	96	101	99	70-130	
619-SU-B	P1302635-020	97	100	98	70-130	
619-SU Exh	P1302635-021	97	102	99	70-130	
619-SU-Vault	P1302635-022	93	94	105	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** ALS Sample ID: P130625-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: John Rice Date Analyzed: 6/25/13
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
115-07-1	Propene	204	175	86	58-139	
75-71-8	Dichlorodifluoromethane (CFC 12)	202	175	87	63-115	
74-87-3	Chloromethane	196	158	81	58-122	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	206	158	77	65-115	
75-01-4	Vinyl Chloride	200	153	77	64-122	
106-99-0	1,3-Butadiene	210	192	91	57-141	
74-83-9	Bromomethane	200	153	77	68-122	
75-00-3	Chloroethane	202	172	85	66-120	
64-17-5	Ethanol	958	820	86	58-126	
75-05-8	Acetonitrile	202	202	100	64-136	
107-02-8	Acrolein	204	189	93	58-129	
67-64-1	Acetone	1,040	883	85	60-114	
75-69-4	Trichlorofluoromethane	210	174	83	62-107	
67-63-0	2-Propanol (Isopropyl Alcohol)	396	372	94	54-118	
107-13-1	Acrylonitrile	206	203	99	72-143	
75-35-4	1,1-Dichloroethene	218	205	94	69-119	
75-09-2	Methylene Chloride	212	179	84	64-113	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	214	198	93	59-131	
76-13-1	Trichlorotrifluoroethane	212	189	89	69-117	
75-15-0	Carbon Disulfide	208	178	86	65-115	
156-60-5	trans-1,2-Dichloroethene	202	190	94	70-126	
75-34-3	1,1-Dichloroethane	206	192	93	68-116	
1634-04-4	Methyl tert-Butyl Ether	204	197	97	69-120	
108-05-4	Vinyl Acetate	988	927	94	58-160	
78-93-3	2-Butanone (MEK)	212	176	83	70-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** — ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** — ALS Sample ID: P130625-LCS

Test Code: EPA TO-15 — Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 — Date Received: NA
Analyst: John Rice — Date Analyzed: 6/25/13
Sample Type: 6.0 L Summa Canister — Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	214	**203**	**95**	70-119	
141-78-6	Ethyl Acetate	412	**395**	**96**	72-129	
110-54-3	n-Hexane	206	**190**	**92**	63-115	
67-66-3	Chloroform	222	**195**	**88**	68-110	
109-99-9	Tetrahydrofuran (THF)	208	**180**	**87**	60-126	
107-06-2	1,2-Dichloroethane	208	**186**	**89**	69-118	
71-55-6	1,1,1-Trichloroethane	204	**189**	**93**	68-120	
71-43-2	Benzene	208	**200**	**96**	69-117	
56-23-5	Carbon Tetrachloride	212	**205**	**97**	65-134	
110-82-7	Cyclohexane	402	**382**	**95**	69-114	
78-87-5	1,2-Dichloropropane	204	**189**	**93**	70-116	
75-27-4	Bromodichloromethane	204	**195**	**96**	71-126	
79-01-6	Trichloroethene	198	**187**	**94**	71-119	
123-91-1	1,4-Dioxane	206	**191**	**93**	72-126	
80-62-6	Methyl Methacrylate	414	**422**	**102**	75-136	
142-82-5	n-Heptane	202	**193**	**96**	70-117	
10061-01-5	cis-1,3-Dichloropropene	196	**189**	**96**	75-132	
108-10-1	4-Methyl-2-pentanone	210	**207**	**99**	70-133	
10061-02-6	trans-1,3-Dichloropropene	218	**215**	**99**	78-136	
79-00-5	1,1,2-Trichloroethane	202	**189**	**94**	72-119	
108-88-3	Toluene	208	**189**	**91**	65-116	
591-78-6	2-Hexanone	228	**212**	**93**	62-132	
124-48-1	Dibromochloromethane	216	**228**	**106**	66-140	
106-93-4	1,2-Dibromoethane	208	**201**	**97**	69-130	
123-86-4	n-Butyl Acetate	228	**223**	**98**	63-136	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** — ALS Project ID: P1302635
Client Project ID: **Bridgeton Landfill / 182608005** — ALS Sample ID: P130625-LCS

Test Code: EPA TO-15 — Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 — Date Received: NA
Analyst: John Rice — Date Analyzed: 6/25/13
Sample Type: 6.0 L Summa Canister — Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	206	**206**	**100**	66-118	
127-18-4	Tetrachloroethene	190	**186**	**98**	63-123	
108-90-7	Chlorobenzene	208	**199**	**96**	66-118	
100-41-4	Ethylbenzene	206	**196**	**95**	66-119	
179601-23-1	m,p-Xylenes	412	**381**	**92**	64-118	
75-25-2	Bromoform	216	**222**	**103**	64-140	
100-42-5	Styrene	208	**211**	**101**	68-132	
95-47-6	o-Xylene	200	**190**	**95**	65-120	
111-84-2	n-Nonane	202	**190**	**94**	64-117	
79-34-5	1,1,2,2-Tetrachloroethane	198	**184**	**93**	63-128	
98-82-8	Cumene	196	**188**	**96**	65-121	
80-56-8	alpha-Pinene	192	**204**	**106**	66-123	
103-65-1	n-Propylbenzene	198	**178**	**90**	65-121	
622-96-8	4-Ethyltoluene	204	**188**	**92**	64-122	
108-67-8	1,3,5-Trimethylbenzene	208	**197**	**95**	64-125	
95-63-6	1,2,4-Trimethylbenzene	200	**190**	**95**	64-131	
100-44-7	Benzyl Chloride	206	**198**	**96**	67-146	
541-73-1	1,3-Dichlorobenzene	206	**186**	**90**	64-130	
106-46-7	1,4-Dichlorobenzene	212	**189**	**89**	61-124	
95-50-1	1,2-Dichlorobenzene	204	**182**	**89**	63-126	
5989-27-5	d-Limonene	206	**220**	**107**	62-133	
96-12-8	1,2-Dibromo-3-chloropropane	202	**201**	**100**	62-155	
120-82-1	1,2,4-Trichlorobenzene	200	**165**	**83**	59-146	
91-20-3	Naphthalene	178	**147**	**83**	56-143	
87-68-3	Hexachlorobutadiene	208	**178**	**86**	58-133	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ANALYTICAL REPORT

Report Date: July 02, 2013

Deborah Grey
Stantec Consulting Services
1500 Lake Shore Dr. Suite 100
Columbus, OH 43204

Phone: (614) 486-4383

E-mail: deb.gray@stantec.com

Workorder: **34-1317624**
Client Project ID: P1302635 062513
Purchase Order: P1302635
Project Manager: Paul Pope

Analytical Results

Sample ID: 618-8 SO2 | Media: SKC 226-80, KOH-Treated Anasorb 747 | Collected: 06/18/2013
Lab ID: 1317624001 | Sampling Location: P1302635 | Received: 06/25/2013

Method: OSHA ID-200 | **Sampling Parameter: Air Volume 39163 mL** | **Analyzed:** 07/01/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Sulfur dioxide	**2.3**	**0.059**	**0.023**	0.34

Sample ID: 619-8 SO2 | Media: SKC 226-80, KOH-Treated Anasorb 747 | Collected: 06/19/2013
Lab ID: 1317624002 | Sampling Location: P1302635 | Received: 06/25/2013

Method: OSHA ID-200 | **Sampling Parameter: Air Volume 47400 mL** | **Analyzed:** 07/01/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Sulfur dioxide	<0.34	<0.0072	<0.0027	0.34

Sample ID: 618-16 SO2 | Media: SKC 226-80, KOH-Treated Anasorb 747 | Collected: 06/18/2013
Lab ID: 1317624003 | Sampling Location: P1302635 | Received: 06/25/2013

Method: OSHA ID-200 | **Sampling Parameter: Air Volume 0 mL** | **Analyzed:** 07/01/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Sulfur dioxide	<0.34	NA	NA	0.34

Sample ID: 619-16 SO2 | Media: SKC 226-80, KOH-Treated Anasorb 747 | Collected: 06/18/2013
Lab ID: 1317624004 | Sampling Location: P1302635 | Received: 06/25/2013

Method: OSHA ID-200 | **Sampling Parameter: Air Volume 0 mL** | **Analyzed:** 07/02/2013

Analyte	ug/sample	mg/m³	ppm	RL (ug/sample)
Sulfur dioxide	<0.34	NA	NA	0.34

ANALYTICAL REPORT

Workorder: **34-1317624**
Client Project ID: P1302635 062513
Purchase Order: P1302635
Project Manager: Paul Pope

Comments

Quality Control: OSHA ID-200 - (HBN: 109332)

The LCS, LCSD and all field sample results have been media blank corrected with the LMB.

Report Authorization

Method	Analyst	Peer Review
OSHA ID-200	Neil Brasfield	Thomas T. McKay

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	ACLASS (DoD ELAP)	ADE-1420	http://www.aclasscorp.com
	Utah (NELAC)	DATA1	http://health.utah.gov/lab/labimp/
	Nevada	UT00009	http://ndep.nv.gov/bsdw/labservice.htm
	Oklahoma	UT00009	http://www.deq.state.ok.us/CSDnew/
	Iowa	IA# 376	http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx
	Florida (TNI)	E871067	http://www.dep.state.fl.us/labs/bars/sas/qa/
	Texas (TNI)	T104704456-11-1	http://www.tceq.texas.gov/field/qa/lab_accred_certif.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	http://www.aihaaccreditedlabs.org
Lead Testing:			
CPSC	ACLASS (ISO 17025, CPSC)	ADE-1420	http://www.aclasscorp.com
Soil, Dust, Paint ,Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	http://www.aihaaccreditedlabs.org
Dietary Supplements	ACLASS (ISO 17025)	ADE-1420	http://www.aclasscorp.com

ANALYTICAL REPORT

Workorder: **34-1317624**
Client Project ID: P1302635 062513
Purchase Order: P1302635
Project Manager: Paul Pope

Definitions

LOD = Limit of Detection = MDL = Method Detection Limit, A statistical estimate of method/media/instrument sensitivity.
LOQ = Limit of Quantitation = RL = Reporting Limit, A verified value of method/media/instrument sensitivity.
ND = Not Detected, Testing result not detected above the LOD or LOQ.
** No result could be reported, see sample comments for details.
< This testing result is less than the numerical value.
( ) This testing result is between the LOD and LOQ and has higher analytical uncertainty than values at or above the LOQ.

Christopher J. Bulmahn BRIDGETON LANDFILL LLC

1003803000

From: Sehie, Bryan <BSehie@republicservices.com>
Sent: Wednesday, July 17, 2013 5:03 PM
To: Christopher J. Bulmahn
Subject: Monthly Leachate Outfall Report for Billing
Attachments: Bridgeton Landfill LLC 2013 Outfall report.pdf

Good Afternoon Chris,

Please find attached, for billing purposes, the monthly leachate outfall total for the month of June 2013. Please contact me if you have any questions.

Thanks,

Bryan

Bryan Sehie | Environmental Specialist | Republic Services, Inc.

13570 St. Charles Rock Rd. | Bridgeton, MO 63044

☎ 314.744.8190 314.443.0179

2013

Bridgeton Landfill LLC
Monthly Leachate Outfall Report

7/17/2013 Filed in 15.4

Month	Net Meter Reading	Precipitation Inches	Date of Reading	Gallons	Average Daily Discharge (Gal)	Equivalent Cubic Feet	Equivalent 100 Cubic Feet
January	6,297,239	3.12	2/1/2013	3,498,515	112,855	467,715.91	4,677.16
February	6,905,982	3.25	3/1/2013	608,743	21,740	81,382.75	813.83
March	6,906,109*	4.95	4/1/2013	0*	0*	0*	0*
April	6,915,104	5.67	5/1/2103	8,604**	8,604**	1,150.27	11.50
May	81,827	7.13	6/1/2013	373,684***	12,054	49,957.75	499.58
June	284,978	5.86	7/1/2013	203,151	6,771	27,159.22	271.59
July							
August							
September							
October							
November							
December							

Note:

*Flow represented is due to flow meter error. No discharge to MSD has occurred between 2/7/2013 and 4/30/2013.

** Discharge to MSD was resumed on 4/30/2013 (Net meter reading 6,906,500)

***New flow meter intalled and set to 0, meter was also reset twice during May, see daily logs.

RECEIVED

JUL 17 2013

DIVISION OF
ENVIRONMENTAL COMPLIANCE

Table 1
General Parameters and Metals
December 2012 - July 2013
Bridgeton Landfill

					Biochemical Oxygen Demand (5-day)	Chemical Oxygen Demand	Nitrogen, ammonia as N	Oil and Grease	Oil and Grease - Silica gel cleanup	pH	Solids, total suspended	Aluminum
					NA	NA	NA	NA	NA	NA	NA	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	mg/l
MSD Batch 266	7/3/2013	Pace	Validated	60148266	35600	66800	696	466	69.9	5.2	2190	14.7 *
316-007	7/2/2013	Pace	Validated	60148153	33700	50000	645	359	22.3	5.2	221	13.2
MSD Batch 264	7/2/2013	Pace	Validated	60148160	52300	91800	722	161	8.0	5.4	540	7.5
316-006	7/1/2013	Pace	Validated	60148136	28900	44100	581	287	8.3	5.4	171	9.68
MSD Batch 258	6/30/2013	Pace	Validated	60148043	26300	50000	572	325	9.6	5.4	82.0	5.72
316-004 MSD	6/27/2013	Pace	Validated	60147968	22200	46000	558	335	22.3	5.4	920	8.41

MSD

Table 1
General Parameters and Metals
December 2012 - July 2013
Bridgeton Landfill

					Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron
					Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 266	7/3/2013	Pace	Validated	60148266	0.0690	0.714	ND	ND	0.297	0.0713	ND	1110
316-007	7/2/2013	Pace	Validated	60148153	ND	0.63	ND	ND	0.26	0.0758	0.0440	978
MSD Batch 264	7/2/2013	Pace	Validated	60148160	0.0564	0.621	ND	ND	0.32	0.0390	ND	1210
316-006	7/1/2013	Pace	Validated	60148136	0.0687	0.616	ND	ND	0.243	0.0550	ND	787
MSD Batch 258	6/30/2013	Pace	Validated	60148043	0.0443	0.532	ND	ND	0.175	0.0551	0.0212	644
316-004 MSD	6/27/2013	Pace	Validated	60147968	0.0482	0.658	ND	ND	0.209	0.0479	0.0317	642

Table 1
General Parameters and Metals
December 2012 - July 2013
Bridgeton Landfill

					Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
					Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 266	7/3/2013	Pace	Validated	60148266	0.195	0.00086	0.186	0.112	ND	ND	16.8
316-007	7/2/2013	Pace	Validated	60148153	0.265	0.0015	0.173	ND	ND	ND	16.6
MSD Batch 264	7/2/2013	Pace	Validated	60148160	0.227	0.00034	0.105	ND	ND	ND	24.6
316-006	7/1/2013	Pace	Validated	60148136	0.18	0.00075	0.162	0.143	ND	ND	13.1
MSD Batch 258	6/30/2013	Pace	Validated	60148043	0.136	0.00055	0.14	ND	ND	ND	10.8
316-004 MSD	6/27/2013	Pace	Validated	60147968	0.109	0.0122	0.119	0.14	ND	ND	11.4

Table 3
VOCs and SVOCs
December 2012 - July 2013
Bridgeton Landfill

					Benzene
Location	Date	Lab Name	Data Status	Lab Report	ug/l
MSD Batch 266	7/3/2013	Pace	Validated	60148266	ND
316-007	7/2/2013	Pace	Validated	60148153	ND
MSD Batch 264	7/2/2013	Pace	Validated	60148160	ND
316-006	7/1/2013	Pace	Validated	60148136	ND
MSD Batch 258	6/30/2013	Pace	Validated	60148043	ND
316-004 MSD	6/27/2013	Pace	Validated	60147968	ND

MSD

MSD

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissell Point Tracking Table

Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Saturday, July 06, 2013	Batch 316-009	30,000	30,000
Sunday, July 07, 2013	None	None	None
Monday, July 08, 2013	Batch 316-010	96,200	97,000
Tuesday, July 09, 2013	Batch 272	15,000	15,000
	Batch 316-011	81,200	82,000
Wednesday, July 10, 2013	Batch 272	15,000	15,000
	Batch 316-012	81,000	82,000
Thursday, July 11, 2013	Batch 272	15,000	15,000
	Batch 316-013	81,000	82,000
Friday, July 12, 2013	Batch 272	15,000	15,000
	Batch 316-014	80,800	82,000

Starting Date	*7/6/2013 5:00*
Ending Date	*7/13/2013 5:00*

MSD - Missouri River Tracking Table

Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and Time	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)	Adjusted Flow (gph)
Saturday, July 06, 2013	None	-	7/6/2013 5:00	7/7/2013 5:00	24.0	840	0.0	N/A
Sunday, July 07, 2013	None	-	7/7/2013 5:00	7/8/2013 5:00	24.0	840	0.0	N/A
Monday, July 08, 2013	None	-	7/8/2013 5:00	7/9/2013 5:00	24.0	840	0.0	N/A
Tuesday, July 09, 2013	None	-	7/9/2013 5:00	7/10/2013 5:00	24.0	840	0.0	N/A
Wednesday, July 10, 2013	None	-	7/10/2013 5:00	7/11/2013 5:00	24.0	840	0.0	N/A
Thursday, July 11, 2013	None	-	7/11/2013 5:00	7/12/2013 5:00	24.0	840	0.0	N/A
Friday, July 12, 2013	None	-	7/12/2013 5:00	7/13/2013 5:00	24.0	840	0.0	N/A

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature] Title: Environmental Specialist Date: 7/16/13

Weekly Volume Summary - Week 12 (7-6-13 through 7-12-13).xlsx

7-17-13

Daily Flow Reading — *Bridgeton Landfill*

	Current	Previous	Difference
Date / Time:	7/7/2013 5:00:00 AM	7/6/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature] *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 7/7/13

Daily Flow Reading — Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/8/2013 5:00:00 AM	7/7/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 7/8/13

MSD Daily Flow Reading, ending 7-08-2013

Daily Flow Reading — *Bridgeton Landfill*

	Current	Previous	Difference
Date / Time:	7/9/2013 5:00:00 AM	7/8/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 7/9/13

MSD Daily Flow Reading, ending 7-09-2013

Daily Flow Reading — *Bridgeton Landfill*

	Current	Previous	Difference
Date / Time:	7/10/2013 5:00:00 AM	7/9/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 7/10/13

MSD Daily Flow Reading, ending 7-10-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/11/2013 5:00:00 AM	7/10/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 7/11/13

MSD Daily Flow Reading, ending 7-11-2013

Daily Flow Reading — Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/12/2013 5:00:00 AM	7/11/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 7/12/13

MSD Daily Flow Reading, ending 7-12-2013

Daily Flow Reading — *Bridgeton Landfill*

	Current	Previous	Difference
Date / Time:	7/13/2013 5:00:00 AM	7/12/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 7/13/13

MSD Daily Flow Reading, ending 7-13-2013

DW
7-17-13

OB-272 Bridgeton Landfill

MSD

Fill Data

Fill Start Date	7/6/2013
Fill Start Time	20:10
Fill Stop Date	7/6/2013
Fill Stop Time	21:15
Process Battery	Tank Battery 3

Processing Data

Process Start Date	7/6/2013
Process Start Time	21:15
Process Stop Date	7/7/2013
Process Stop Time	18:20

Approval Data

Approval Details	NAL13026-450
Test Results	Benzene 27 ppb
Reprocessed Batch	

Notes

Top-off of field production experiment.

Monday, July 15, 2013

OB-316-009 Bridgeton Landfill

Fill Data

Fill Start Date	7/5/2013
Fill Start Time	14:55
Fill Stop Date	7/5/2013
Fill Stop Time	22:08
Process Battery	316 AST

Processing Data

Process Start Date	7/5/2013
Process Start Time	22:11
Process Stop Date	7/6/2013
Process Stop Time	07:30

Approval Data

Approval Details	NAL13026-443
Test Results	Benzene 25 ppb
Reprocessed Batch	

Notes

Filled to 17.5 feet.

Monday, July 15, 2013

OB-316-010

Bridgeton Landfill

Fill Data

Fill Start Date	7/6/2013
Fill Start Time	22:40
Fill Stop Date	7/7/2013
Fill Stop Time	01:18
Process Battery	316 AST

Processing Data

Process Start Date	7/7/2013
Process Start Time	01:20
Process Stop Date	7/8/2013
Process Stop Time	08:30

Approval Data

Approval Details	NAL13026-451
Test Results	Benzene 16 ppb
Reprocessed Batch	

Notes

Monday, July 15, 2013

OB-316-011 Bridgeton Landfill

Fill Data

Fill Start Date	7/8/2013
Fill Start Time	17:20
Fill Stop Date	7/8/2013
Fill Stop Time	21:52
Process Battery	316 AST

Processing Data

Process Start Date	7/8/2013
Process Start Time	21:54
Process Stop Date	7/9/2013
Process Stop Time	06:20

Approval Data

Approval Details	NAL13026-457
Test Results	Benzene 39 ppb
Reprocessed Batch	

Notes

Monday, July 15, 2013

Fill Data

Fill Start Date	7/10/2013
Fill Start Time	17:42
Fill Stop Date	7/10/2013
Fill Stop Time	21:40
Process Battery	316 AST

Processing Data

Process Start Date	7/10/2013
Process Start Time	21:43
Process Stop Date	7/11/2013
Process Stop Time	06:00

Approval Data

Approval Details	NAL13026-463
Test Results	Benzene 26 ppb
Reprocessed Batch	

Notes

Monday, July 15, 2013

OB-316-013

Bridgeton Landfill

Fill Data

Fill Start Date	7/11/2013
Fill Start Time	16:30
Fill Stop Date	7/11/2013
Fill Stop Time	22:05
Process Battery	316 AST

Processing Data

Process Start Date	7/11/2013
Process Start Time	22:15
Process Stop Date	7/12/2013
Process Stop Time	04:55

Approval Data

Approval Details	NAL13026-469
Test Results	Benzene 40 ppb
Reprocessed Batch	

Notes

Monday, July 15, 2013

OB-316-014 Bridgeton Landfill

Fill Data

Fill Start Date	7/11/2013
Fill Start Time	16:45
Fill Stop Date	7/11/2013
Fill Stop Time	22:05
Process Battery	316 AST

Processing Data

Process Start Date	7/11/2013
Process Start Time	22:05
Process Stop Date	7/12/2013
Process Stop Time	06:30

Approval Data

Approval Details	NAL13026-472
Test Results	Benzene 34 ppb
Reprocessed Batch	

Notes

Monday, July 15, 2013

Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

MSD

July 17, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: WASTEWATER DISCHARGE PERMIT NO. 0511559802 - 2
For premise at: 13570 St. Charles Rock Road, Bridgeton, MO 63044

Dear Mr. Almanza:

We have received a letter dated July 15, 2013 from your consultant Weaver Boos Consultants. In that letter, it outlines the progress BRIDGETON LANDFILL LLC has made to show a return to compliance with its wastewater discharge. The air monitoring and moving equipment have been installed in accordance with Action Item #4. While working with Civil & Environmental Consultants, Inc., a pretreatment system has been implemented that is to address the off gases in the Westlake pump station and with wastewater discharge limitations. We recognize that on June 20, 2013, BRIDGETON LANDFILL LLC ceased discharge to the pump station due to elevated benzene levels.

MSD will no longer require monthly reports until the leachate discharge has resumed. The Administrative Order cannot be completed until compliance can be demonstrated with the pretreatment system.

Thank you for helping us to comply with state and federal regulations. If you have any questions, please contact me at 314.436.8721.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Chris Bulmahn

Chris Bulmahn
Associate Engineer

cc: Doug Mendoza, MSD
Tom Boehm, MSD
Rob Daly, MSD

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Tuesday, July 16, 2013 5:51 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Good evening,

This week's documents have been posted –including the corrected final copy of the Industrial Hygiene Report reviewing air sampling results.

Our team looks forward to tomorrow's meeting.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Wednesday, July 10, 2013 10:22 AM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally; Dan Feezor
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Good morning,

Thank you for the updated discharge and process data. MSD has no additional comments to add to the tracking table for this week. Therefore, we are not attaching it.

As you were informed by Mr. Lodderhose on Monday, we have received your request for an increase in the volume of leachate being hauled to MSD's Bissell Point WWTP. We will be discussing the various options , and should be able to give you an answer at meeting with Bridgeton Landfill scheduled for July 17, 2013.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Tuesday, July 09, 2013 5:04 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the weekly submission is available on Barr's FTP site for your download and review.

Thank you for your follow up from last week's report. I have not re-attached the approval items tracking table, since there were no updates for this week. The facility has not yet resumed discharge to the Missouri River Treatment Facility. The team continues to investigate the inconsistent benzene readings following pH stabilization. We will continue to keep you updated.

As always, please let us know if you have any questions or need any additional information. As previously discussed we will be providing the industrial hygiene review of the air results by the end of this week.

Thank you for your continued assistance,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Friday, July 05, 2013 10:32 AM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally; Dan Feezor
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Jessie,

Thank you for the submittal. We have reviewed the available data, and have updated the approval items tracking table accordingly.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

MSD

Christopher J. Bulmahn

From: Christopher J. Bulmahn
Sent: Tuesday, July 16, 2013 9:50 AM
To: Matt Stewart
Cc: 'Sehie, Bryan'; Christopher J. Bulmahn
Subject: RE: Permit No. 0511559802-2, BRIDGETON LANDFILL LLC [1003803000]

Matt,

At this time we are not going to consider this a TTO violation. The sum of the components that are above the detection limits are below the TTO limit for discharge. However, due to the elevated detection limits we cannot accurately calculate a reliable TTO result. Through EPA guidance materials and other reference sources, we have calculated the fume toxicity screening levels for a limited number of components that are used to calculate the total toxic organics in a wastewater sample. There is no comprehensive list of fume toxicity screening levels. We calculate additional ones as necessary and as available data allows. EPA manual "Guidance to Protect POTW Workers from Toxic and Reactive Gases and Vapors" contains some screening levels, but some are also outdated. (See Table 4-2)

Thank you,

Chris Bulmahn
Environmental Engineering
(P) 314-436-8721
cjbulmahn@stlmsd.com

From: Matt Stewart [mailto:mstewart@herstassociates.com]
Sent: Friday, July 12, 2013 4:31 PM
To: Christopher J. Bulmahn
Cc: 'Sehie, Bryan'
Subject: RE: Permit No. 0511559802-2, BRIDGETON LANDFILL LLC [1003803000]

Chris,

Attached is the laboratory analytical report for the June 2013 Bridgeton leachate sample.

You state that the fume toxicity level for p-Cresol has been exceeded. Is there an easy to find reference that lists the fume toxicity limits for the TTO parameters? I have tried to find a reference that lists the fume toxicity limits, but have been unable to do so. Your help would be much appreciated.

If you need any additional information, please let me know.

Thanks.

Herst & Associates, Inc.

Matt Stewart, PG
Project Geologist

(314) 477-6140 cell
(636) 939-9111 office

(636) 939-9757 fax
www.herstassociates.com

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From: Christopher J. Bulmahn [mailto:cjbulmahn@stlmsd.com]
Sent: Friday, July 12, 2013 2:50 PM
To: Matt Stewart
Cc: 'Sehie, Bryan'
Subject: RE: Permit No. 0511559802-2, BRIDGETON LANDFILL LLC [1003803000]

Matt,

As we discussed, I stated that Benzene will be a potential violation for exceeding the fume toxicity screening level. Upon further investigation p-Cresol has exceeded the fume toxicity screen level of 309 mg/L. While the TTO result appears to be below the limit, I will need to see what the detection levels were for all the compounds before I can determine if there is a TTO exceedance. Please submit the data for review.

Thank you,

Chris Bulmahn
Environmental Engineering
(P) 314-436-8721
cjbulmahn@stlmsd.com

From: Matt Stewart [mailto:mstewart@herstassociates.com]
Sent: Thursday, July 11, 2013 6:22 PM
To: Christopher J. Bulmahn
Cc: 'Sehie, Bryan'
Subject: RE: Permit No. 0511559802-2, BRIDGETON LANDFILL LLC [1003803000]

Chris,

Thank you for forwarding me the correspondence about the variances granted to Bridgeton Landfill.

Per our phone conversation earlier today, following are the laboratory analytical results for phenolic compounds and all other total toxic organics (TTOs) from the June 2013 quarterly leachate sample:

Phenol: 6200 ug/L
All other TTOs (excluding phenol): 3740 ug/L

The only other TTOs detected in the June 2013 sample were 4-Methylphenol (P-Cresol) at 3300 ug/L and Benzene at 440 ug/L.

My understanding of the variance is that phenol is excluded from the TTO limit, but all other phenolic compounds are included in the TTO limit. If I misinterpreted the variance, please let me know.

From our phone conversation, and comparing the laboratory analytical data to the granted variances, it is my understanding that the June 2013 sample is in compliance. Please confirm that the sample was in compliance, and I will pass that information on to Bryan Sehie.

If there is any other information you require about the June 2013 Bridgeton leachate sample, please let me know.

Thanks.

Herst & Associates, Inc.

Matt Stewart, PG
Project Geologist

(314) 477-6140 cell
(636) 939-9111 office
(636) 939-9757 fax
www.herstassociates.com

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From: Christopher J. Bulmahn [mailto:cjbulmahn@stlmsd.com]
Sent: Thursday, July 11, 2013 1:53 PM
To: 'Matt Stewart'
Cc: 'Sehie, Bryan'; Andrew Wyatt; Christopher J. Bulmahn
Subject: RE: Permit No. 0511559802-2, BRIDGETON LANDFILL LLC [1003803000]

Matt,

As we discussed on the phone today, the Arsenic, Mercury and Zinc are not exceedances. On May 29, 2013 Bridgeton Landfill was granted variances on these metals. We will need the concentrations of the individual toxic organics to determine if the Total Toxic Organic limit was exceeded. Bridgeton Landfill was given a variance for Total Toxic Organics on June 18, 2013, excluding "phenol" from the summation for total Toxic Organics.

As you requested I have attached copies of the variance letters for your file.

Thank you,

Chris Bulmahn
Environmental Engineering
(P) 314-436-8721
cjbulmahn@stlmsd.com

From: Andrew Wyatt [mailto:awyatt@herstassociates.com]
Sent: Friday, July 05, 2013 5:04 PM
To: Christopher J. Bulmahn
Cc: 'Sehie, Bryan'; 'Matt Stewart'
Subject: Permit No. 0511559802-2

Mr. Bulmahn:

This email is being sent to notify you that exceedances of discharge limitations were observed at Sampling Point Reference Number 008 associated with Permit No. 0511559802-2 (Bridgeton Landfill LLC).

Laboratory analytical results for the 008 sample collected on June 18, 2013 were received by Herst & Associates, Inc. on July 5, 2013. A preliminary review of the results identified the following discharge limit exceedances:

Arsenic: 0.43 mg/L (0.4 mg/L Limit)
Zinc: 11 mg/L (3 mg/L Limit)
Mercury: 0.011 mg/L (0.01 mg/L Limit)
Total Toxic Organics: 9.94 mg/L (5.844 mg/L Limit)

A voicemail notification was also left at the District's Division of Environmental Compliance number (314-436-8710), as specified in the permit.

Please contact me or Mr. Bryan Sehie if you have any questions.

Andrew Wyatt
Senior Environmental Scientist
(636) 939-9111 phone
(636) 939-9757 fax

Herst & Associates, Inc.
4631 North St. Peters Parkway
St. Charles, MO 63304

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HERITAGE ENVIRONMENTAL SERVICES

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	19-JUN-13	A987088
	Completed	**PO Number**
	05-JUL-13	3526681 BRIDGETON
	Printed	**Sampled**
	05-JUL-13	18-JUN-13 12:36

Report To	Bill To
MATT STEWART HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: OUTFALL 008
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: LEACHATE - BRIDGETON LANDFILL
DATA PACKAGE #: 64835
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: ANNUAL LEACHATE
PERMIT: 830871

BIOCHEMICAL OXYGEN DEMAND, 5-DAY SM 5210B-2001 NELAC:Y

Analyst: D. DICKERSON Analysis Date: 24-JUN-13 12:45 Test: G801.4.1

Parameter	Result	Det. Limit	Units
BIOCHEMICAL OXYGEN DEMAND	31000	200	mg/L

1:100 Dilution.

Reanalyzed outside of holding time due to insufficient oxygen depletion of BOD seed on first analysis.

BIOCHEMICAL OXYGEN DEMAND, 5-DAY SM 5210B-2001 NELAC:Y

Analyst: D. DICKERSON Analysis Date: 19-JUN-13 14:15 Test: G801.4.0

Parameter	Result	Det. Limit	Units
BIOCHEMICAL OXYGEN DEMAND	25000	200	mg/L

1:100 Dilution.

BOD seed exhibited insufficient oxygen depletion.

BOD seed value didn't meet the method & lab acceptance limits; reported result is estimated.

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4, REV. 2.0 (1993) NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-JUL-13 11:00 Test: G301.1.0

Parameter	Result	Det. Limit	Units

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MSD 026129

CHEMICAL OXYGEN DEMAND	44000	500	mg/L
1:50 Dilution.			

TOTAL SUSPENDED SOLIDS DRIED AT 103-105 DEGREES C SM 2540 D, 19TH ED. NELAC:Y

Analyst: M. KAGIMBI Analysis Date: 21-JUN-13 12:00 Test: G403.8.0

Parameter	Result	Det. Limit	Units
SUSPENDED SOLIDS	2800	1	mg/L
Filtered less sample due to sample matrix.			

AMMONIA DISTILLATION SM4500-NH3 B - 1997

Analyst: T. DRIGGERS Analysis Date: 03-JUL-13 11:00 Instrument: PREP Test: P203.7.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	250		mL
The prep analyst decreased the initial weight/volume due to the matrix of the sample and/or a strong odor.			

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G - 1997 NELAC:Y

Analyst: E. SKALA Analysis Date: 04-JUL-13 13:14 Instrument: AUTO-ANALYZER Test: G204.6.0

Prep: AMMONIA DISTILLATION SM4500-NH3 B - 1997 P203.7.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	410	25	mg/L
1:50 Dilution.			

HEXANE OIL AND GREASE - TOTAL (SOLID PHASE EXTRACTION) EPA 1664A NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 25-JUN-13 11:30 Test: G166.0.0

Parameter	Result	Det. Limit	Units
HEXANE EXTRACTABLE MATERIAL (OIL AND GREASE)	118	5.0	mg/L

FAA OR ICP ACID DIGESTION EPA 200.0

Analyst: K. KAMARA Analysis Date: 24-JUN-13 09:00 Instrument: PREP Test: P129.2.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	25		mL
FINAL VOLUME	50		mL

ARSENIC ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER Analysis Date: 25-JUN-13 09:08 Instrument: ICP Test: M403.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
ARSENIC	0.43	0.020	mg/L

Sample ID: A987088 OUTFALL 008

CADMIUM ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER | Analysis Date: 25-JUN-13 09:08 | Instrument: ICP | Test: M408.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
CADMIUM	0.012	0.010	mg/L

CHROMIUM ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER | Analysis Date: 25-JUN-13 09:08 | Instrument: ICP | Test: M410.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
CHROMIUM	0.16	0.020	mg/L

COPPER ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER | Analysis Date: 25-JUN-13 09:08 | Instrument: ICP | Test: M412.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
COPPER	0.052	0.020	mg/L

LEAD ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER | Analysis Date: 25-JUN-13 09:08 | Instrument: ICP | Test: M416.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
LEAD	0.22	0.020	mg/L

NICKEL ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER | Analysis Date: 25-JUN-13 09:08 | Instrument: ICP | Test: M422.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
NICKEL	0.12	0.010	mg/L

ZINC ICP EPA 200.7 REV. 4.4 NELAC:Y

Analyst: J. KRAMER | Analysis Date: 25-JUN-13 09:08 | Instrument: ICP | Test: M439.3.0

Prep: FAA OR ICP ACID DIGESTION EPA 200.0 P129.2.0

Parameter	Result	Det. Limit	Units
ZINC	11	0.040	mg/L

MERCURY CVAA ACID DIGESTION EPA 245.1 REV. 3.0 NELAC:Y

Analyst: S. O'NEAL | Analysis Date: 26-JUN-13 11:00 | Instrument: PREP | Test: P131.2.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

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Sample ID: A987088 OUTFALL 008

MERCURY CVAA EPA 245.1 REV. 3.0 NELAC:Y

Analyst: S. O'NEAL Analysis Date: 26-JUN-13 16:43 Instrument: CVAA Test: M420.2.0

Prep: MERCURY CVAA ACID DIGESTION EPA 245.1 REV. 3.0 P131.2.0

Parameter	Result	Det. Limit	Units
MERCURY	0.011	0.00060	mg/L

1:3 Dilution.

SEMI-VOLATILE EXTRACTION (NEUTRAL/BASE/ACID FRACTIONS) EPA 625

Analyst: J. MINNIEAR, II Analysis Date: 24-JUN-13 06:00 Instrument: PREP Test: P243.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	* 100		mL
FINAL VOLUME	1.0		mL

The prep analyst decreased the initial weight/volume due to the matrix of the sample and/or a strong odor.

625 SEMI-VOLATILE PRIORITY POLLUTANTS (BASE/NEUTRAL/ACID) EPA 625 NELAC:Y

Analyst: T. PINCKERT Analysis Date: 26-JUN-13 14:52 Instrument: GC/MS SVOA Test: O501.3.0

Prep: SEMI-VOLATILE EXTRACTION (NEUTRAL/BASE/ACID FRACTIONS) EPA 625 P243.1.0

Parameter	Result	Det. Limit	Units
2,4,6-TRICHLOROPHENOL	BDL	1000	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	1000	ug/L
2-CHLOROPHENOL	BDL	1000	ug/L
2,4-DICHLOROPHENOL	BDL	1000	ug/L
2,4-DIMETHYLPHENOL	BDL	1000	ug/L
2-NITROPHENOL	BDL	1000	ug/L
4-NITROPHENOL	BDL	1000	ug/L
2,4-DINITROPHENOL	BDL	2000	ug/L
4,6-DINITRO-O-CRESOL	BDL	1000	ug/L
PENTACHLOROPHENOL	BDL	2000	ug/L
PHENOL	6200	1000	ug/L
ACENAPHTHENE	BDL	1000	ug/L
BENZIDINE	BDL	2000	ug/L
1,2,4-TRICHLOROBENZENE	BDL	1000	ug/L
HEXACHLOROBENZENE	BDL	1000	ug/L
HEXACHLOROETHANE	BDL	1000	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	1000	ug/L
2-CHLORONAPHTHALENE	BDL	1000	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	1000	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	1000	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	1000	ug/L
3,3'-DICHLOROBENZIDINE	BDL	2500	ug/L

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Sample ID: A987088 OUTFALL 008

2,4-DINITROTOLUENE	BDL	1000	ug/L
2,6-DINITROTOLUENE	BDL	1000	ug/L
FLUORANTHENE	BDL	1000	ug/L
4-CHLOROPHENYL-PHENYLETHER	BDL	1000	ug/L
4-BROMODIPHENYL ETHER	BDL	1000	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	1000	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	1000	ug/L
HEXACHLOROBUTADIENE	BDL	1000	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	1000	ug/L
ISOPHORONE	BDL	1000	ug/L
K? NAPHTHALENE	BDL	1000	ug/L
NITROBENZENE	BDL	1000	ug/L
N-NITROSODIMETHYLAMINE	BDL	1000	ug/L
N-NITROSO-DIPROPYLAMINE	BDL	1000	ug/L
N-NITROSODIPHENYLAMINE	BDL	1000	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	1000	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	1000	ug/L
DI-N-BUTYLPHTHALATE	BDL	1000	ug/L
DI-N-OCTYLPHTHALATE	BDL	1000	ug/L
DIETHYLPHTHALATE	BDL	1000	ug/L
DIMETHYLPHTHALATE	BDL	1000	ug/L
BENZ(A)ANTHRACENE	BDL	1000	ug/L
BENZO(A)PYRENE	BDL	1000	ug/L
BENZO(B)FLUORANTHENE	BDL	1000	ug/L
BENZO(K)FLUORANTHENE	BDL	1000	ug/L
CHRYSENE	BDL	1000	ug/L
ACENAPHTHYLENE	BDL	1000	ug/L
ANTHRACENE	BDL	1000	ug/L
BENZO(G,H,I)PERYLENE	BDL	1000	ug/L
FLUORENE	BDL	1000	ug/L
PHENANTHRENE	BDL	1000	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	1000	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	1000	ug/L
PYRENE	BDL	1000	ug/L
1,2-DIPHENYLHYDRAZINE	BDL	1000	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	1000	ug/L
3-METHYLPHENOL (M-CRESOL)	*	1000	ug/L
4-METHYLPHENOL (P-CRESOL)	* 3300	1000	ug/L
...			
SURROGATE RECOVERY			

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Sample ID: A987088 OUTFALL 008

2-FLUOROPHENOL	22		% Rec
PHENOL-D5	33		% Rec
NITROBENZENE-D5	! 133		% Rec
2-FLUOROBIPHENYL	! 31		% Rec
2,4,6-TRIBROMOPHENOL	33		% Rec
TERPHENYL-D14	37		% Rec

DUE TO LABORATORY INSTRUMENT CONSTRAINTS, BENZIDINE AND 2,4-DINITROPHENOL ARE REPORTED AT DETECTION LIMITS OF 20 UG/L INSTEAD OF 10 UG/L

1:10 Dilution

Unable to analyze sample at lower dilution due to high concentration of non-target analytes.

NOTE: 3-Methylphenol and 4-Methylphenol co-elute.

! Low surrogate recovery due to sample matrix.

VOLATILE PRIORITY POLLUTANTS EPA 624 NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 23-JUN-13 22:21 Instrument: GC/MS VOA Test: O502.3.0

Parameter	Result	Det. Limit	Units
ACROLEIN	BDL	1000	ug/L
ACRYLONITRILE	BDL	1000	ug/L
BENZENE	440	100	ug/L
BROMOFORM	BDL	100	ug/L
CARBON TETRACHLORIDE	BDL	100	ug/L
KR CHLOROBENZENE	BDL	100	ug/L
CHLOROETHANE	BDL	100	ug/L
2-CHLOROETHYLVINYLETHER	BDL	100	ug/L
CHLOROFORM	BDL	100	ug/L
DIBROMOCHLOROMETHANE	BDL	100	ug/L
BROMODICHLOROMETHANE	BDL	100	ug/L
1,1-DICHLOROETHANE	BDL	100	ug/L
1,2-DICHLOROETHANE	BDL	100	ug/L
1,1-DICHLOROETHENE	BDL	100	ug/L
1,2-DICHLOROPROPANE	BDL	100	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	100	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	100	ug/L
KR ETHYL BENZENE	BDL	100	ug/L
BROMOMETHANE	BDL	100	ug/L
CHLOROMETHANE	BDL	100	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	100	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	100	ug/L
TETRACHLOROETHENE	BDL	100	ug/L

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Sample ID: A987088 OUTFALL 008

TOLUENE	BDL	100	ug/L
1,2-DICHLOROETHENE (CIS AND TRANS)	BDL	100	ug/L
1,1,1-TRICHLOROETHANE	BDL	100	ug/L
1,1,2-TRICHLOROETHANE	BDL	100	ug/L
TRICHLOROETHENE	BDL	100	ug/L
TRICHLOROFLUOROMETHANE	BDL	100	ug/L
VINYL CHLORIDE	BDL	100	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	96		% Rec
TOLUENE-D8	98		% Rec
4-BROMOFLUOROBENZENE	104		% Rec

PH6

Acrolein & Acrylonitrile reported only for screening purposes. Results should be considered estimated.

Unable to analyze sample at lower dilution due to high concentration of non-target analytes.

Unable to analyze at lower dilution due to sample matrix. Sample foamed.

1:100 Dilution.

ORGANOCHLORINE PESTICIDES AND PCBS EXTRACTION EPA 608

Analyst: B. WOOD | Analysis Date: 21-JUN-13 | Instrument: PREP | Test: P223.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	10		mL

ORGANOCHLORINE PESTICIDES AND PCBS IN WATER/WASTEWATER EPA 608 NELAC:Y

Analyst: C. HIPSKIND | Analysis Date: 25-JUN-13 01:11 | Instrument: GC/ECD | Test: O305.0.0

Prep: ORGANOCHLORINE PESTICIDES AND PCBS EXTRACTION EPA 608 P223.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	10	ug/L
BETA-BHC	BDL	10	ug/L
DELTA-BHC	BDL	10	ug/L
GAMMA-BHC (LINDANE)	BDL	10	ug/L
HEPTACHLOR	BDL	10	ug/L
ALDRIN	BDL	10	ug/L
HEPTACHLOR EPOXIDE	BDL	10	ug/L
ENDOSULFAN I	BDL	10	ug/L
DIELDRIN	BDL	10	ug/L

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Sample ID: A987088 OUTFALL 008

4,4'-DDE	BDL	10	ug/L
ENDRIN	BDL	10	ug/L
ENDOSULFAN II	BDL	10	ug/L
4,4'-DDD	BDL	10	ug/L
ENDOSULFAN SULFATE	BDL	10	ug/L
4,4'-DDT	BDL	10	ug/L
METHOXYCHLOR	BDL	10	ug/L
ENDRIN ALDEHYDE	BDL	10	ug/L
ALPHA-CHLORDANE	BDL	10	ug/L
GAMMA-CHLORDANE	BDL	10	ug/L
CHLORDANE	BDL	10	ug/L
TOXAPHENE	BDL	10	ug/L
PCB AROCLOR 1016	BDL	10	ug/L
PCB AROCLOR 1221	BDL	10	ug/L
PCB AROCLOR 1232	BDL	10	ug/L
PCB AROCLOR 1242	BDL	10	ug/L
PCB AROCLOR 1248	BDL	10	ug/L
PCB AROCLOR 1254	BDL	10	ug/L
PCB AROCLOR 1260	BDL	10	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	114.0		% Rec

Matrix interference may mask low level analytes.

Sample Comments

! Outside Lab Generated Control Limits
* See Note for Parameter
BDL Below Detection Limit

Sample was received on ice at temperature 1 C.
Sample chain of custody number 13749.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Heritage Environmental Services, LLC certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 05-JUL-13

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01093356

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HERITAGE ENVIRONMENTAL SERVICES, LLC.
COMMERCIAL LABORATORY OPERATIONS
7901 W Morris St Indianapolis, IN 46231
www.heritage-enviro.com (800)827-4374 Fax:(317)486-5095

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Submitter Name: MO-ALLIED-BRIDGETON LANDFILL (8945)
Project Name: LEACHATE - BRIDGETON LANDFILL (5586)
Z Quote No: Z140306
PO No: 4337-12001-9 (2012)
Heritage Contact CHRISTOPHER BOYLE (317)390-3128

Sample Turn Around Time
Standard: X Rush Date ___/___/___ Mo Day Yr
Accelerated TAT subject to Additional Charge.
Date must be Accepted and Approved by Lab.

Sampled By: Matt Stewart, Herst & Associates, Inc.

Analyses Requested (Note special detection limits or methods)

Comments:

Date Sampled	Time Sampled	Comp	Grab	Sample ID and/or Location where your sample was taken	Sample Type (Matrix): Water, Soil, Oil, Sludge, Swipe, Other	Number of Containers	PCB/PEST, SVL BNA WW	HEM(O&G)	COD, NH3	BOD, TSS	VOL	As, Cd, Cr, Cu, Hg, Ni, Pb, Zn	Remarks:	Lab use only Sample No.
6/17-18/13	1236, 1720 0806, 1236 AM PM	X		Outfall 008	LCH	10	X		X	X		X	LCH = leachate	A987088
6/18/13	1236 AM PM		X	" "	LCH	6		X			X		* SHORT HOLD BOD	1
	AM PM													
	AM PM													
	AM PM													
	AM PM													
	AM PM													
	AM PM													
	AM PM													
	AM PM													

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Matt Stewart	6/18/13 / 1800	FedEx # 542797683689
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Received for Lab by: (Signature) [signature]	Date 6/18/13	Temperature 1.0 (1.2) °C
	Time 0805	Received On Ice ~~Yes~~ No

Laboratory use only	Yes	No	NA
Custody seals intact on cooler?	✓		
C. seals intact on containers?			✓
Broken containers?		✓	
COC agree with sample labels?	✓		
Correct containers for testing?	✓		
Headspace issues acceptable?	✓		
Holding time(s) acceptable?	✓		
Preservative pH's acceptable?	✓		
Was pH left unadjusted?	✓		

Send Report To:
Co: HERST AND ASSOCIATES
Addr: 4630 SOUTH HIGHWAY 94
ST. CHARLES, MO 63304
Attn: MATT STEWART
Phone: (636)939-9111
Fax: (636)939-9757
email: mstewart@herstassociates.com

MSD

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CONSULTANTS

July 15, 2013

Mr. Chris Bulmahn
Environmental Engineer
Metropolitan St. Louis Sewer District
10 East Grand Avenue
St. Louis, MO 63147-2913

Re: Metropolitan St. Louis Sewer District – Administrative Compliance Order
Action Items #5 and #6
Bridgeton Landfill, LLC.
Discharge Permit No. 0511559802-2

Dear Mr. Bulmahn:

On behalf of the Bridgeton Landfill, in accordance with the Metropolitan St. Louis Sewer District (MSD) Administrative Compliance Order (AO), which was signed by legal representatives of MSD and the Bridgeton Landfill, LLC and entered effect on October 29, 2012, respectfully submits this progress report as outlined in the AO, Action Items' #5 and #6. Additional clarification from MSD was provided in correspondence dated June 19, 2013.

As required per Action Items #5 and #6, the Bridgeton Landfill shall submit a schedule, for MSD approval, of actions for the design, installation, and operation of the procedures and pretreatment options identified in AO Finding #8 which states that the Bridgeton Landfill is in the process of investigation for the implementation of the following pretreatment options in which to eliminate the occurrence of future prohibited discharges at Leachate Outfall 008:

a.) Installation and operation of a supplemental "enclosed" flare, as well as a supplemental "candlestick" utility flare within the landfill's gas collection and control system;

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b.) Design and operation of air monitoring/moving engineering controls at the landfill's outfall to the MSD sewer system within the Westlake Pump Station, and;

c.) Installation and operation of a foam suppressing agent. The following table outlines current progress and planned actions to be taken at the Bridgeton Landfill in regard to the aforementioned items.

Finding No.	Proposed Option	Complete (Yes/No)	Completion Date
8a(1)	Installation and Operation of Additional Enclosed Flare	Yes	2-Oct-12
8a(2)	Installation and Operation of Supplemental Candlestick Flare	Yes	18-Jul-12
8b	Design and Operation of Air Monitoring/Moving Engineering Controls within Westlake Pump Station	Yes	6-Jun-13
8c	Installation and Operation of a Foam Suppression Agent	No	Installation Suspended

The Bridgeton Landfill completed the construction and testing phases of the supplemental candlestick flare on July 18, 2012 (Finding 8a(2)). This flare was subsequently replaced with a larger 3,500 scfm candlestick flare that became operational in January 2013. The supplement candlestick flare has been brought back on-line in June 2013.

The second enclosed flare was officially brought online October 2, 2012. The new enclosed flare, similar to the facility's existing enclosed flare, adds additional 3,500 scfm of gas extraction capacity to the landfill's gas collection and control system. A fourth flare with a capacity of 2,500 scfm was brought on-line June 6, 2013 to allow additional capacity as needed. The combined flow of the four operational flares is 13,000 scfm which allows the ability to improve landfill gas collection and odors at the facility and the surrounding environment. Each of the flares are operated and maintained under a site-specific program which is designed to enable landfill personnel to minimize downtime and provide peak system performance efficiency.

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The design and development of the air quality engineering controls to be constructed and operated at the Westlake Pump Station (Finding 8b), were completed on December 20, 2012. Prior to finalization of the system design, meetings regarding the development of a plan of action for the preparation and construction of these air quality engineering controls were held at the MSD office on August 21, 2012, and September 24, 2012 between; MSD Environmental Compliance and Operations representatives and Bridgeton Landfill personnel. Additionally, series of on-site meetings were held at the Westlake Pump Station, involving the aforementioned parties, to determine the design of the system and to secure an incoming power supply.

On June 6, 2013 the air monitoring/moving engineering controls within the Westlake pump station became fully operational. Between the dates of June 6-16, 2013 a baseline evaluation of the 4-gas levels within the pump station wet well was conducted using the newly installed monitor. The purpose of this evaluation was to monitor the in-well conditions during discharge operations from the landfill. On June 17, 2013, following the baseline evaluation, the system's drum scrubber was activated. Bryan Sehie of Bridgeton Landfill coordinated this effort with Vince Stollhans of MSD, and both have reviewed MSD 4-gas monitoing data recorded by the system. Since operation of the drum scrubber the 4-gas meter levels within the pump station have decreased as confirmed by the MSD data maintained by Vince Stollhans. However, on June 20, 2013 leachate discharge to the pump station has ceased.

Per clarification provided in correspondence dated December 4, 2012 and restated in correspondence dated June 19, 2013, the air moving/monitoring system at the Westlake pump station is not suitable means to show compliance, but as a failsafe if the leachate discharge is out of compliance and causes unsafe atmospheric conditions. The landfill understands that it must be in compliance at the time it discharges into the pump station. The Bridgeton Landfill is working with Civil & Environmental Consultants, Inc. on the leachate pretreatment system including the expansion facility. This system does take into account the MSD permit limits as well as off gases of the leachate to comply with MSD ordinances. The Bridgeton Landfill will continue to monitor the leachate discharge and the air quality within the Westlake pump system and will coordinate efforts with MSD when needed to perform maintenance within the lift station.

In a letter from MSD dated December 4, 2012, it was declared that the Bridgeton Landfill was no longer required to construct and operate a foam suppression system at the facility unless future

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foaming incidents occur. The Bridgeton Landfill will continue to monitor the Westlake Pump Station as well as the Leachate Tank System for indicators of foaming.

We will continue to provide ongoing updates on leachate and the pretreatment system to comply with the AO agreement as well as MSD ordinances. If there are any questions please contact Bryan Sehie with Bridgeton Landfill at 314-744-8190 or myself at 573-289-3379.

Sincerely,
Weaver Boos Consultants

Michele A Boussad

Michele Boussad
Senior Project Director

Cc: Bryan Sehie, Bridgeton Landfill, LLC.

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MSD

Doug Mendoza

From: Sara Kammerer
Sent: Saturday, July 13, 2013 11:04 AM
To: Catherine Politte; Mike Townley
Cc: Doug Mendoza; Brian G. Gibson; Darin Lewis; Steve Grace
Subject: Bridgeton Landfill Leachate weekly volume summary (7/8/13 - 7/13/13)

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant for 7/8/2013 to 7/13/2013:

7/8 – 96,200 gallons
7/9 – 96,200 gallons
7/10 – 96,000 gallons
7/11 – 96,000 gallons
7/12 – 95,800 gallons
7/13 – 45,000 gallons

Total = 525,200 gallons

Thanks,

Sara Kammerer
Environmental Assistant Engineer
Metropolitan St. Louis Sewer District
10 E. Grand Avenue
St. Louis, MO 63147-2913
(314) 436-8763 - phone
(314) 436-8766 - fax

MSD

Christopher J. Bulmahn

From: Christopher J. Bulmahn
Sent: Friday, July 12, 2013 2:50 PM
To: 'Matt Stewart'
Cc: 'Sehie, Bryan'
Subject: RE: Permit No. 0511559802-2, BRIDGETON LANDFILL LLC [1003803000]

Matt,

As we discussed, I stated that Benzene will be a potential violation for exceeding the fume toxicity screening level. Upon further investigation p-Cresol has exceeded the fume toxicity screen level of 309 mg/L. While the TTO result appears to be below the limit, I will need to see what the detection levels were for all the compounds before I can determine if there is a TTO exceedance. Please submit the data for review.

Thank you,

Chris Bulmahn
Environmental Engineering
(P) 314-436-8721
cjbulmahn@stlmsd.com

From: Matt Stewart [mailto:mstewart@herstassociates.com]
Sent: Thursday, July 11, 2013 6:22 PM
To: Christopher J. Bulmahn
Cc: 'Sehie, Bryan'
Subject: RE: Permit No. 0511559802-2, BRIDGETON LANDFILL LLC [1003803000]

Chris,

Thank you for forwarding me the correspondence about the variances granted to Bridgeton Landfill.

Per our phone conversation earlier today, following are the laboratory analytical results for phenolic compounds and all other total toxic organics (TTOs) from the June 2013 quarterly leachate sample:

Phenol: 6200 ug/L
All other TTOs (excluding phenol): 3740 ug/L

The only other TTOs detected in the June 2013 sample were 4-Methylphenol (P-Cresol) at 3300 ug/L and Benzene at 440 ug/L.

My understanding of the variance is that phenol is excluded from the TTO limit, but all other phenolic compounds are included in the TTO limit. If I misinterpreted the variance, please let me know.

From our phone conversation, and comparing the laboratory analytical data to the granted variances, it is my understanding that the June 2013 sample is in compliance. Please confirm that the sample was in compliance, and I will pass that information on to Bryan Sehie.

If there is any other information you require about the June 2013 Bridgeton leachate sample, please let me know.

Thanks.

Herst & Associates, Inc.

Matt Stewart, PG
Project Geologist

(314) 477-6140 cell
(636) 939-9111 office
(636) 939-9757 fax
www.herstassociates.com

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From: Christopher J. Bulmahn [mailto:cjbulmahn@stlmsd.com]
Sent: Thursday, July 11, 2013 1:53 PM
To: 'Matt Stewart'
Cc: 'Sehie, Bryan'; Andrew Wyatt; Christopher J. Bulmahn
Subject: RE: Permit No. 0511559802-2, BRIDGETON LANDFILL LLC [1003803000]

Matt,

As we discussed on the phone today, the Arsenic, Mercury and Zinc are not exceedances. On May 29, 2013 Bridgeton Landfill was granted variances on these metals. We will need the concentrations of the individual toxic organics to determine if the Total Toxic Organic limit was exceeded. Bridgeton Landfill was given a variance for Total Toxic Organics on June 18, 2013, excluding "phenol" from the summation for total Toxic Organics.

As you requested I have attached copies of the variance letters for your file.

Thank you,

Chris Bulmahn
Environmental Engineering
(P) 314-436-8721
cjbulmahn@stlmsd.com

From: Andrew Wyatt [mailto:awyatt@herstassociates.com]
Sent: Friday, July 05, 2013 5:04 PM
To: Christopher J. Bulmahn
Cc: 'Sehie, Bryan'; 'Matt Stewart'
Subject: Permit No. 0511559802-2

Mr. Bulmahn:

This email is being sent to notify you that exceedances of discharge limitations were observed at Sampling Point Reference Number 008 associated with Permit No. 0511559802-2 (Bridgeton Landfill LLC).

Laboratory analytical results for the 008 sample collected on June 18, 2013 were received by Herst & Associates, Inc. on July 5, 2013. A preliminary review of the results identified the following discharge limit exceedances:

Arsenic: 0.43 mg/L (0.4 mg/L Limit)
Zinc: 11 mg/L (3 mg/L Limit)
Mercury: 0.011 mg/L (0.01 mg/L Limit)

Total Toxic Organics: 9.94 mg/L (5.844 mg/L Limit)

A voicemail notification was also left at the District's Division of Environmental Compliance number (314-436-8710), as specified in the permit.

Please contact me or Mr. Bryan Sehie if you have any questions.

Andrew Wyatt
Senior Environmental Scientist
(636) 939-9111 phone
(636) 939-9757 fax

Herst & Associates, Inc.
4631 North St. Peters Parkway
St. Charles, MO 63304

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MSD

Doug Mendoza

From: Dave Schepers
Sent: Thursday, July 11, 2013 1:52 PM
To: Doug Mendoza; Brian G. Gibson
Subject: Bridgeton landfill

The Bridgeton Landfill meter reading was at 284,978. 0 gal/hour. The reading was taken at 10:45 a.m. on Thursday, July 11 , 2013.

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Wednesday, July 10, 2013 10:22 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Good morning,

Thank you for the updated discharge and process data. MSD has no additional comments to add to the tracking table for this week. Therefore, we are not attaching it.

As you were informed by Mr. Lodderhose on Monday, we have received your request for an increase in the volume of leachate being hauled to MSD's Bissell Point WWTP. We will be discussing the various options , and should be able to give you an answer at meeting with Bridgeton Landfill scheduled for July 17, 2013.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Tuesday, July 09, 2013 5:04 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the weekly submission is available on Barr's FTP site for your download and review.

Thank you for your follow up from last week's report. I have not re-attached the approval items tracking table, since there were no updates for this week. The facility has not yet resumed discharge to the Missouri River Treatment Facility. The team continues to investigate the inconsistent benzene readings following pH stabilization. We will continue to keep you updated.

As always, please let us know if you have any questions or need any additional information. As previously discussed we will be providing the industrial hygiene review of the air results by the end of this week.

Table 3
VOCs and SVOCs
December 2012 - June 2013
Bridgeton Landfill

					Benzene
Location	Date	Lab Name	Data Status	Lab Report	ug/l
MSD Batch 251/252	6/26/2013	TA	Validated	160-2848-1	ND
MSD Batch 250/243	6/25/2013	TA	Validated	160-2833-1	ND
MSD Batch 245/246	6/24/2013	TA	Validated	160-2829-1	ND
MSD Batch 242	6/22/2013	TA	Validated	160-2821-1	ND
MSD Batch 237/238	6/21/2013	TA	Validated	160-2797-1	**55**
MSD Batch 235/236	6/20/2013	TA	Validated	160-2783-1	ND
MSD Batch 232/233	6/19/2013	TA	Validated	160-2766-1	ND

MSD

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Biochemical Oxygen Demand (5-day)	Chemical Oxygen Demand	Nitrogen, ammonia as N	Oil and Grease	Oil and Grease - Silica gel cleanup	pH	Solids, total suspended	Aluminum
					NA	NA	NA	NA	NA	NA	NA	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	mg/l
MSD Batch 251/252	6/26/2013	TA	Validated	160-2848-1	27000	52000	590	39	9.0 j	6.00	1800	20
MSD Batch 250/243	6/25/2013	TA	Validated	160-2833-1	38000	60000	920	8.0 j	ND	6.00	2300	13
MSD Batch 245/246	6/24/2013	TA	Validated	160-2829-1	37000	85000	680	9.0 j	7.0 jb	6.00	1800	20
MSD Batch 242	6/22/2013	TA	Validated	160-2821-1	34000 j*	71000	840	21	9.3 jb	6.00	3600	39
MSD Batch 237/238	6/21/2013	TA	Validated	160-2797-1	31000	56000	1000	56	8.3 jb	6.00	1200	11
MSD Batch 235/236	6/20/2013	TA	Validated	160-2783-1	34000	60000	730	30	9.7 j	6.00	2500	9.9 j
MSD Batch 232/233	6/19/2013	TA	Validated	160-2766-1	41000	59000	660	33	8.7 jb	6.00	1800	14

MSD

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead
					Total	Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 251/252	6/26/2013	TA	Validated	160-2848-1	0.23 j	0.44 j	ND	ND	0.31 j	0.32 j	ND	990	0.28 j
MSD Batch 250/243	6/25/2013	TA	Validated	160-2833-1	0.21 j	0.49 j	ND	ND	0.2 j	0.43 j	ND	1200	0.28 j
MSD Batch 245/246	6/24/2013	TA	Validated	160-2829-1	ND	0.52	ND	ND	0.28 j	0.41 j	ND	1400	0.33 j
MSD Batch 242	6/22/2013	TA	Validated	160-2821-1	0.21 j	0.55	ND	ND	0.31 j	ND	ND	1500	0.57
MSD Batch 237/238	6/21/2013	TA	Validated	160-2797-1	ND	0.43 j	ND	ND	ND	0.45 j	0.32 j	1100	0.32 j
MSD Batch 235/236	6/20/2013	TA	Validated	160-2783-1	ND	0.38 j	ND	ND	0.16 j	0.27 j	ND	1000	0.25 j
MSD Batch 232/233	6/19/2013	TA	Validated	160-2766-1	0.1 j	0.44	ND	ND	0.19 j	0.21 j	ND	1000	0.26

MSD

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Mercury	Nickel	Selenium	Silver	Thallium	Zinc
					Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 251/252	6/26/2013	TA	Validated	160-2848-1	0.011	ND	ND	ND	ND	14
MSD Batch 250/243	6/25/2013	TA	Validated	160-2833-1	ND	ND	ND	ND	ND	20
MSD Batch 245/246	6/24/2013	TA	Validated	160-2829-1	0.0059 j	ND	ND	ND	ND	23 b
MSD Batch 242	6/22/2013	TA	Validated	160-2821-1	0.039	ND	ND	ND	ND	22
MSD Batch 237/238	6/21/2013	TA	Validated	160-2797-1	0.0081	ND	ND	ND	ND	19
MSD Batch 235/236	6/20/2013	TA	Validated	160-2783-1	0.0051 j	ND	ND	ND	ND	20
MSD Batch 232/233	6/19/2013	TA	Validated	160-2766-1	0.013	ND	0.083 j	ND	0.048 j	20

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissell Point Tracking Table			
Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Saturday, June 29, 2013	Batch 258	45,600	45,600
Sunday, June 30, 2013	None	None	None
Monday, July 1, 2013	Batch 258	15,200	15,200
	Batch 316-006	82,100	83,000
Tuesday, July 2, 2013	Batch 263 / 264	36,600	37,400
	Batch 316-007	60,800	60,800
Wednesday, July 3, 2013	Batch 316-007	15,200	15,200
	Batch 263 / 264	22,700	22,700
	Batch 266	60,800	60,800
Thursday, July 4, 2013	Batch 316-008	96,700	98,200
Friday, July 5, 2013	Batch 316-008	97,400	98,200

Starting Date	*6/29/2013 5:00*
Ending Date	*7/6/2013 5:00*

MSD - Missouri River Tracking Table								
Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and Time	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)	Adjusted (gph)
Saturday, June 29, 2013	None	-	6/29/2013 5:00	6/30/2013 5:00	24.0	840	0.0	N/A
Sunday, June 30, 2013	None	-	6/30/2013 5:00	7/1/2013 5:00	24.0	840	0.0	N/A
Monday, July 1, 2013	None	-	7/1/2013 5:00	7/2/2013 5:00	24.0	840	0.0	N/A
Tuesday, July 2, 2013	None	-	7/2/2013 5:00	7/3/2013 5:00	24.0	840	0.0	N/A
Wednesday, July 3, 2013	None	-	7/3/2013 5:00	7/4/2013 5:00	24.0	840	0.0	N/A
Thursday, July 4, 2013	None	-	7/4/2013 5:00	7/5/2013 5:00	24.0	840	0.0	N/A
Friday, July 5, 2013	None	-	7/5/2013 5:00	7/6/2013 5:00	24.0	840	0.0	N/A

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: _____ Title: Environmental Specialist Date: 7/7/13

MSD 7-10-13

Weekly Volume Summary - Week 11 (6-29-13 through 7-5-13)

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/30/2013 5:00:00 AM	6/29/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/30/13

MSD Daily Flow Reading, ending 6-30-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/1/2013 5:00:00 AM	6/30/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Schie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature] *Name:* Bryan Schie

Title: Environmental Specialist *Date:* 7/1/13

MSD Daily Flow Reading, ending 7-01-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/2/2013 5:00:00 AM	7/1/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature] *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 7/2/13

MSD Daily Flow Reading, ending 7-02-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/3/2013 5:00:00 AM	7/2/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 7/3/13

MSD Daily Flow Reading, ending 7-03-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/4/2013 5:00:00 AM	7/3/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 7/4/13

MSD Daily Flow Reading, ending 7-04-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/5/2013 5:00:00 AM	7/4/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 7/5/13

MSD Daily Flow Reading, ending 7-05-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	7/6/2013 5:00:00 AM	7/5/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 7/6/13

MSD Daily Flow Reading, ending 7-06-2013

OB-258 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/27/2013
Fill Start Time	15:00
Fill Stop Date	6/27/2013
Fill Stop Time	20:41
Process Battery	Tank Battery 1

Processing Data

Process Start Date	6/27/2013
Process Start Time	20:50
Process Stop Date	6/28/2013
Process Stop Time	10:30

Approval Data

Approval Details	NAL13026-407
Test Results	Benzene 66 ppb
Reprocessed Batch	

Notes

Monday, July 08, 2013

OB-263/264 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/29/2013
Fill Start Time	12:30
Fill Stop Date	6/30/2013
Fill Stop Time	05:11
Process Battery	TB-1/2

Processing Data

Process Start Date	6/30/2013
Process Start Time	06:00
Process Stop Date	6/30/2013
Process Stop Time	18:00

Approval Data

Approval Details	NAL13026-418
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, July 08, 2013

OB-266 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	7/1/2013
Fill Start Time	17:50
Fill Stop Date	7/2/2013
Fill Stop Time	01:55
Process Battery	Tank Battery 1

Processing Data

Process Start Date	7/2/2013
Process Start Time	01:55
Process Stop Date	7/2/2013
Process Stop Time	18:00

Approval Data

Approval Details	NAL13026-428
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, July 08, 2013

OB-316-006 Bridgeton Landfill

Fill Data

Fill Start Date	6/29/2013
Fill Start Time	19:02
Fill Stop Date	6/30/2013
Fill Stop Time	07:00
Process Battery	316 AST

Processing Data

Process Start Date	6/30/2013
Process Start Time	12:00
Process Stop Date	7/1/2013
Process Stop Time	12:00

Approval Data

Approval Details	NAL13026-423
Test Results	Benzene ND <100 ppb
Reprocessed Batch	1st benzene = 18 ppb

Notes

Monday, July 08, 2013

OB-316-007 Bridgeton Landfill

Fill Data

Fill Start Date	7/1/2013
Fill Start Time	15:40
Fill Stop Date	7/1/2013
Fill Stop Time	23:15
Process Battery	316 AST

Processing Data

Process Start Date	7/1/2013
Process Start Time	23:30
Process Stop Date	7/2/2013
Process Stop Time	10:00

Approval Data

Approval Details	NAL13026-425
Test Results	Benzene 17 ppb
Reprocessed Batch	

Notes

Switched to 1 blower at 1:15 AM 7/2 due to foaming over.

Monday, July 08, 2013

OB-316-008 Bridgeton Landfill

Fill Data

Fill Start Date	7/3/2013
Fill Start Time	08:30
Fill Stop Date	7/3/2013
Fill Stop Time	14:00
Process Battery	316 AST

Processing Data

Process Start Date	7/3/2013
Process Start Time	14:00
Process Stop Date	7/4/2013
Process Stop Time	06:00

Approval Data

Approval Details	NAL13026-433
Test Results	Benzene 82 ppb
Reprocessed Batch	

Notes

Monday, July 08, 2013

MSD

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Tuesday, July 09, 2013 5:04 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the weekly submission is available on Barr's FTP site for your download and review.

Thank you for your follow up from last week's report. I have not re-attached the approval items tracking table, since there were no updates for this week. The facility has not yet resumed discharge to the Missouri River Treatment Facility. The team continues to investigate the inconsistent benzene readings following pH stabilization. We will continue to keep you updated.

As always, please let us know if you have any questions or need any additional information. As previously discussed we will be providing the industrial hygiene review of the air results by the end of this week.

Thank you for your continued assistance,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Friday, July 05, 2013 10:32 AM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally; Dan Feezor
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Jessie,

Thank you for the submittal. We have reviewed the available data, and have updated the approval items tracking table accordingly.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

Doug Mendoza MSD

From: John Lodderhose
Sent: Monday, July 08, 2013 3:16 PM
To: Merrigan, Jessie (LG); Doug Mendoza
Cc: Power, Brian (BPower@republicservices.com); Smith, Steve (ssmith10 @republicservices.com); Almanza, Craig; Ed Galbraith (EGalbraith@barr.com); dfeezor@feezorengineering.com
Subject: RE: Bridgeton Landfill - Request for Increase in Volume

I will forward this information to the appropriate people at MSD. We will discuss the various options for increasing the leachate being hauled to MSD's Bissell Point WWTP and should be able to give you an answer at meeting with Bridgeton Landfill scheduled for July 17, 2013.

John R. Lodderhose, P.E.
Metropolitan St. Louis Sewer District
Assistant Director of Engineering
Environmental Compliance
314-436-8714

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Monday, July 08, 2013 2:14 PM
To: Doug Mendoza; John Lodderhose
Cc: Power, Brian (BPower@republicservices.com); Smith, Steve (ssmith10@republicservices.com); Almanza, Craig; Ed Galbraith (EGalbraith@barr.com); dfeezor@feezorengineering.com
Subject: Bridgeton Landfill - Request for Increase in Volume

Good afternoon John and Doug,

I am transmitting this request on behalf of Bridgeton Landfill. I was not sure who all on your team this would be relevant to, so please let me know if you would like for me to forward to anyone else or if you will handle distribution as you see fit. We appreciate your continued assistance with leachate management and our team is happy to talk or meet with you about this request to address any questions you may have. Thank you for your consideration.

Sincerely,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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MSD

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Monday, July 08, 2013 2:14 PM
To: Doug Mendoza; John Lodderhose
Cc: Power, Brian (BPower@republicservices.com);,Smith, Steve (ssmith10 @republicservices.com); Almanza, Craig; Ed Galbraith (EGalbraith@barr.com); dfeezor@feezorengineering.com
Subject: Bridgeton Landfill - Request for Increase in Volume
Attachments: Bridgeton Landfill - MSD Request Letter.pdf

Good afternoon John and Doug,

I am transmitting this request on behalf of Bridgeton Landfill. I was not sure who all on your team this would be relevant to, so please let me know if you would like for me to forward to anyone else or if you will handle distribution as you see fit. We appreciate your continued assistance with leachate management and our team is happy to talk or meet with you about this request to address any questions you may have. Thank you for your consideration.

Sincerely,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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Bridgeton Landfill, LLC

July 8, 2013

John Lodderhose
Assistant Director of Engineering
Metropolitan St. Louis Sewer District
10 E. Grand Avenue, St. Louis, MO 63147-2913

Dear Mr. Lodderhose:

On May 30, 2013, Metropolitan St. Louis Sewer District (MSD) granted Bridgeton Landfill approval to increase hauled leachate to 100,000 gallons per day (gpd) to Bissell Point Wastewater Treatment Facility. This approval has greatly increased our ability to manage leachate and reduce the volume of onsite storage. This is critical to reducing odors and minimizing the impact to the surrounding public and we greatly appreciate MSD's efforts in this regard.

Unfortunately, changes to the landfill's operation continue to present challenges. Additional collection wells have recently come on line and this has greatly increased the daily volume of generation, up to about 300,000 (gpd).

For this reason, we would like to propose several options for your consideration in order to address this additional volume. These options can be considered together or independently. We are available at your convenience to discuss these and answer any questions you may have.

1. Extended Discharge on Saturday and Sunday. Under this proposal, Bridgeton Landfill would increase Saturday delivery by 50,000 gallons and begin delivery on Sunday, up to 100,000 gallons. These changes could increase volume by 150,000 gallons per week, which would be a significant reduction of storage at the landfill. Bridgeton Landfill understands that it would solely bear the cost of additional staff time required at the delivery station.

2. Graduated increases of 25,000 gpd until a total of 200,000 gpd is reached. At our last meeting, MSD expressed a need to conduct further study of impacts at the Bissell Point plant before approving an increase to 200,000 gpd. Under this proposal, Bridgeton Landfill would ramp up its discharge by an additional 25,000 gpd, each week for four weeks. During this ramp-up period, MSD would continue to monitor the impacts on the plant and, if negative impacts occur, would direct Bridgeton Landfill to cease increasing the volume, or scale back volume to a previous acceptable level. We understand increasing the volume will eventually require increased hours of operation, by an additional 4 hours once a 200,000 gallon limit is reached. Bridgeton Landfill understands that it would solely bear the cost of additional staff time required at the delivery station.

3. Shortened aeration times. Currently the approved SOP requires five hours of aeration, however recent testing indicates that benzene levels can be achieve in less time. Less aeration could reduce time between batches and increase the number trucks that can be delivered within day. While aeration versus benzene reduction is still being studied, we are showing promising results with the new aeration system. The new 316,000 gallon aeration tank has 2 blowers. We propose a minimum of 2 blower-hours, which could be accomplished with 1 blower for 2 hours, or 2 blowers for 1 hour. The ultimate decision on batch final aeration would still be dictated by an operational benzene test with our onsite laboratory, demonstrating that the leachate has reached MSD's approved discharge limit for benzene.

4. We would like to change the procedure of the onsite laboratory. A sampling technician will take an operational benzene sample and have it tested using the onsite laboratory. Once the GC/MS has been completed, we propose the onsite chemist e-mails the benzene result, the date, and the batch number to the leachate manager. The leachate manager will review and approve (or reject), and send the printed copy (on the laboratory's letterhead) with the first truck that morning (if a passing benzene result has been obtained). Later in the day, the full SW8260B report will be e-mailed to the hauled waste attendant. This would allow the first truck to be sent sooner in the day from the batch processed during the previous night. This would allow us to better distribute the trucks throughout the day, which will be beneficial for managing additional discharge.

We sincerely appreciate MSD's ongoing efforts to work with us as we continue to try to improve leachate management at the Bridgeton Landfill. We are grateful for your consideration of this request and would be happy to work with you on any questions or concerns. MSD's partnership is critical to our success and we remain committed to working with you to ensure we are addressing MSD's compliance and health and safety needs. If you have any questions about this request, feel free to contact me at (314) 744-8195, Steve Smith at (708) 906-8054, or Ed Galbraith with Barr Engineering at (573) 638-5024.

Sincerely,

Craig Almanza
Area Environmental Manager

MSD

Doug Mendoza

From: Darin Lewis
Sent: Monday, July 08, 2013 1:32 PM
To: Catherine Politte; Mike Townley; Doug Mendoza; Brian G. Gibson; Sara Kammerer; Steve Grace
Subject: Bridgeton Landfill Leachate weekly volume summary.

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant for 7/1/2013 to 7/6/2013.
7/1 – 97,300 gallons
7/2 – 97,400 gallons
7/3 – 98,700 gallons
7/4 – 96,700 gallons
7/5 – 97,400 gallons
7/6 – 30,000 gallons
Total = 517,500 gallons

MSD

Doug Mendoza

From: Michael Grace
Sent: Monday, July 08, 2013 10:47 AM
To: Brian Hoelscher; Susan Myers; Jonathon Sprague; John Lodderhose; Doug Mendoza; Lance LeComb; Ken Goins
Subject: Health Physicist Report Bridgeton Landfill
Attachments: MSD Peer Review Letter - JUL 13.pdf

For your review, please see the Peer Review of the Health Physicist findings of the Laboratory Analytical Leachate Sample.

Michael Grace
Risk & Insurance Manager
The Metropolitan St. Louis Sewer District
314-768-6219
Fax: 314-768-2740

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St. Louis, MO 63103
(314) 531-0060
Fax (314) 531-0068

5 July 2013

Mr. Michael Grace
Metropolitan St. Louis Sewer District
2350 Market St #400
St. Louis, Missouri 63103

RE: **Peer Review of Dr. John Frazier's Health Physics Evaluation Entitled "Review of Laboratory Analytical Results for Leachate Sample"**

Dear Mr. Grace:

This letter report presents the findings of a peer level review performed by the undersigned, Elizabeth Algutifan, certified health physicist of Professional Environmental Engineers, Inc. (PE). The review was performed of Dr. John Frazier's assessment of the laboratory analyses of the landfill leachate sample identified as "Treated Commingled MSD." The findings are below:

I judge Dr. Frazier's results and conclusions to be valid as documented in his June 24, 2013 letter addressed to Mr. Edward Galbraith of Barr Engineering Company. However, I believe some additional background information pertaining to the EPA's drinking water standard for radionuclides might be of some benefit to you, so I have provided this additional information below.

In the fourth bulleted remark of his health physics evaluation summary (see page 2 of the June 24 letter from Dr. Frazier to Mr. Galbraith), Dr. Frazier stated the following: "The annual radiation dose for man-made beta emitters in drinking water from a community water supply is 4 mrem. [Note: K-40 is a naturally-occurring radionuclide, not a man-made radionuclide.]" Then, in the fifth bulleted remark, Dr. Frazier noted that "a person would have to drink approximately 383 liters (100 gallons) of this leachate per year in order to receive a radiation dose of 4 mrem per year." Since the drinking water standard assumes a daily total water ingestion rate of 2 liters per day to arrive at a dose equivalent value from ingestion of contaminated water, it seemed appropriate to provide you with a brief analysis using this assumption.

Although there is no drinking water standard established for potassium-40 (in part because it is a naturally occurring radionuclide), the EPA has established a maximum contaminant level (MCL) for a combination of beta and photon emitters of 4 mrem/year as part of its National Primary Drinking Water Regulations for radionuclides, effective December 8, 2003 (see Federal Register entry 65 FR 76708). EPA defines this standard as follows: "The average annual concentration of beta particle and photon radioactivity from man-made

radionuclides in drinking water must not produce an annual dose equivalent to the total body or any internal organ greater than 4 mrem/year." The concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents is calculated on the basis of an assumed drinking water ingestion rate of 2 liters per day. Although purely an academic exercise because the sample was leachate and not drinking water, performing this calculation for potassium-40, given its dose conversion factor of 2.29E-05 mrem/pCi, results in a calculated concentration of 240 pCi/L in water to yield a dose equivalent of 4 mrem. At a potassium-40 concentration of 456 pCi/L as reported in the laboratory results, the leachate at the same ingestion rate would yield a dose equivalent of 7.6 mrem.

PE appreciates the opportunity to provide peer review support to the Metropolitan St. Louis Sewer District. Please contact the undersigned at 636.329.0481 or at ealgutifan@pe-engrs.com if you have any questions with this submittal.

Respectfully submitted,

PROFESSIONAL ENVIRONMENTAL ENGINEERS, INC.

Elizabeth K. Algutifan

Elizabeth K. Algutifan, MS, CHP
Senior Health Physicist

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

MSD

CORRECTED COPY

July 8, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Response to Bridgeton Landfill Request for Total Oil & Grease Variance from District Limitations

Dear Mr. Almanza:

The Metropolitan St. Louis Sewer District (MSD) has reviewed Bridgeton Landfill's June 26, 2013 letter requesting a variance from MSD limitations for total oil & grease. We have reviewed our data regarding current and allowable loadings for this parameter at MSD's Missouri River treatment plant, as well as operational concerns in our collection system, and will grant a temporary variance as described below.

The limit for total oil & grease is based primarily on factors designed to protect the collection system from operational problems. However, MSD's treatment plants also have discharge limitations for total oil & grease which must be considered as part of any variance request. In addition, we must insure that the following MSD Ordinance No. 12559 prohibition is not violated:

> Any petroleum based oil or grease, nonbiodegradable cutting oil or product of mineral oil origin except those which unavoidably enter the user's waste stream as a normal constituent of wastewater from processes or equipment which use or process such materials or through contact with areas contaminated with such materials. In no case may such materials be discharged in quantities or concentrations which will cause interference or pass through.

We have reviewed the analytical data you have submitted, conducting statistical analysis of the data. After completing our review, and considering the other factors cited above, we can allow a variance for total oil & grease as follows:

- Total oil & grease (hexane extractable material (HEM)) shall not exceed 800 mg/L at any time, with the total daily wastewater discharge volume limited to 20,000 gallons. For any day with a wastewater discharge volume of more than 20,000 gallons, the MSD ordinance 12559 limit of "200 mg/L at any time" must be met.

In addition, a limit for petroleum-based oil & grease shall also be placed on Bridgeton Landfill's discharge as follows:

- Petroleum-based oil & grease (silica gel treated HEM (SGT-HEM)) shall not exceed 100 mg/L at any time.

This variance shall be granted for a period not to exceed two years from the date of this approval, may be revoked by MSD should operational concerns or other conditions warrant, and shall terminate upon installation of a pretreatment system by Bridgeton Landfill.

Thank you for helping us comply with federal and state regulations. If you have any questions, please contact me at 314.436.8717.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Douglas M. Mendoza, P.E.
Manager of Industrial Pretreatment

By Certified Mail: 7004 2890 0000 9602 8111

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Monday, July 08, 2013 10:28 AM
To: Doug Mendoza
Subject: RE: Bridgeton Landfill variance request for total oil & grease - corrected, corrected copy

Thanks, Doug. We will distribute this to the team.

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Monday, July 08, 2013 10:27 AM
To: Bret A. Berthold; Brian G. Gibson; Brian Power; Bryan Sehie; Christopher J. Bulmahn; Craig Almanza; Darin Lewis; Doug Mendoza; Ed Galbraith; Merrigan, Jessie; John Lodderhose; Jonathon Sprague; Ken Gambaro; Ken Goins; Mark Bright; Michael Grace; Michele Boussad; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Sara Kammerer; Steve Grace; Steve Smith; Todd Heller; Tom Boehm; Beck, Bill
Subject: RE: Bridgeton Landfill variance request for total oil & grease - corrected, corrected copy

'20,000 mg/L' corrected to '20,000 gallons'

---Doug Mendoza

From: Doug Mendoza
Sent: Monday, July 08, 2013 10:23 AM
To: Bret A. Berthold; Brian G. Gibson; 'Brian Power'; 'Bryan Sehie'; Christopher J. Bulmahn; 'Craig Almanza'; Darin Lewis; Doug Mendoza; 'Ed Galbraith'; 'Jessica Merrigan'; John Lodderhose; Jonathon Sprague; Ken Gambaro; Ken Goins; Mark Bright; Michael Grace; Michele Boussad; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Sara Kammerer; Steve Grace; Steve Smith; Todd Heller; Tom Boehm; 'William Beck'
Subject: RE: Bridgeton Landfill variance request for total oil & grease - corrected copy

Jessie,

In the total oil & grease variance approval, I inadvertently omitted the volume restriction that accompanies the variance. Please see the corrected copy of the letter below, which also will be mailed to Craig Almanza.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

CORRECTED COPY

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Monday, July 08, 2013 10:23 AM
To: Bret A. Berthold; Brian G. Gibson; Brian Power; Bryan Sehie; Christopher J. Bulmahn; Craig Almanza; Darin Lewis; Doug Mendoza; Ed Galbraith; Jessica Merrigan; John Lodderhose; Jonathon Sprague; Ken Gambaro; Ken Goins; Mark Bright; Michael Grace; Michele Boussad; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Sara Kammerer; Steve Grace; Steve Smith; Todd Heller; Tom Boehm; William Beck
Subject: RE: Bridgeton Landfill variance request for total oil & grease - corrected copy

Jessie,

In the total oil & grease variance approval, I inadvertently omitted the volume restriction that accompanies the variance. Please see the corrected copy of the letter below, which also will be mailed to Craig Almanza.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

CORRECTED COPY

July 8, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Response to Bridgeton Landfill Request for Total Oil & Grease Variance from District Limitations

Dear Mr. Almanza:

The Metropolitan St. Louis Sewer District (MSD) has reviewed Bridgeton Landfill's June 26, 2013 letter requesting a variance from MSD limitations for total oil & grease. We have reviewed our data regarding current and allowable loadings for this parameter at MSD's Missouri River treatment plant, as well as operational concerns in our collection system, and will grant a temporary variance as described below.

The limit for total oil & grease is based primarily on factors designed to protect the collection system from operational problems. However, MSD's treatment plants also have discharge limitations for total oil & grease which must be considered as part of any variance request. In addition, we must insure that the following MSD Ordinance No. 12559 prohibition is not violated:

> Any petroleum based oil or grease, nonbiodegradable cutting oil or product of mineral oil origin except those which unavoidably enter the user's waste stream as a normal constituent of wastewater from processes or equipment which use or process such materials or through contact with areas contaminated with such materials. In no case may such materials be discharged in quantities or concentrations which will cause interference or pass through.

We have reviewed the analytical data you have submitted, conducting statistical analysis of the data. After completing our review, and considering the other factors cited above, we can allow a variance for total oil & grease as follows:

- Total oil & grease (hexane extractable material (HEM)) shall not exceed 800 mg/L at any time, with the total daily wastewater discharge volume limited to 20,000 mg/L. For any day with a wastewater discharge volume of more than 20,000 mg/L, the MSD ordinance 12559 limit of "200 mg/L at any time" must be met.

In addition, a limit for petroleum-based oil & grease shall also be placed on Bridgeton Landfill's discharge as follows:

- Petroleum-based oil & grease (silica gel treated HEM (SGT-HEM)) shall not exceed 100 mg/L at any time.

This variance shall be granted for a period not to exceed two years from the date of this approval, may be revoked by MSD should operational concerns or other conditions warrant, and shall terminate upon installation of a pretreatment system by Bridgeton Landfill.

Thank you for helping us comply with federal and state regulations. If you have any questions, please contact me at 314.436.8717.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Douglas M. Mendoza, P.E.
Manager of Industrial Pretreatment

By Certified Mail: 7004 2890 0000 9602 8104

Doug Mendoza **MSD**

From: Doug Mendoza
Sent: Monday, July 08, 2013 10:27 AM
To: Bret A. Berthold; Brian G. Gibson; Brian Power; Bryan Sehie; Christopher J. Bulmahn; Craig Almanza; Darin Lewis; Doug Mendoza; Ed Galbraith; Jessica Merrigan; John Lodderhose; Jonathon Sprague; Ken Gambaro; Ken Goins; Mark Bright; Michael Grace; Michele Boussad; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Sara Kammerer; Steve Grace; Steve Smith; Todd Heller; Tom Boehm; William Beck
Subject: RE: Bridgeton Landfill variance request for total oil & grease - corrected, corrected copy

'20,000 mg/L' corrected to '20,000 gallons'

---Doug Mendoza

From: Doug Mendoza
Sent: Monday, July 08, 2013 10:23 AM
To: Bret A. Berthold; Brian G. Gibson; 'Brian Power'; 'Bryan Sehie'; Christopher J. Bulmahn; 'Craig Almanza'; Darin Lewis; Doug Mendoza; 'Ed Galbraith'; 'Jessica Merrigan'; John Lodderhose; Jonathon Sprague; Ken Gambaro; Ken Goins; Mark Bright; Michael Grace; Michele Boussad; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Sara Kammerer; Steve Grace; Steve Smith; Todd Heller; Tom Boehm; 'William Beck'
Subject: RE: Bridgeton Landfill variance request for total oil & grease - corrected copy

Jessie,

In the total oil & grease variance approval, I inadvertently omitted the volume restriction that accompanies the variance. Please see the corrected copy of the letter below, which also will be mailed to Craig Almanza.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

CORRECTED COPY

July 8, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Response to Bridgeton Landfill Request for Total Oil & Grease Variance from District Limitations

Dear Mr. Almanza:

The Metropolitan St. Louis Sewer District (MSD) has reviewed Bridgeton Landfill's June 26, 2013 letter requesting a variance from MSD limitations for total oil & grease. We have reviewed our data regarding current and allowable loadings for this parameter at MSD's Missouri River treatment plant, as well as operational concerns in our collection system, and will grant a temporary variance as described below.

The limit for total oil & grease is based primarily on factors designed to protect the collection system from operational problems. However, MSD's treatment plants also have discharge limitations for total oil & grease which must be considered as part of any variance request. In addition, we must insure that the following MSD Ordinance No. 12559 prohibition is not violated:

> Any petroleum based oil or grease, nonbiodegradable cutting oil or product of mineral oil origin except those which unavoidably enter the user's waste stream as a normal constituent of wastewater from processes or equipment which use or process such materials or through contact with areas contaminated with such materials. In no case may such materials be discharged in quantities or concentrations which will cause interference or pass through.

We have reviewed the analytical data you have submitted, conducting statistical analysis of the data. After completing our review, and considering the other factors cited above, we can allow a variance for total oil & grease as follows:

- Total oil & grease (hexane extractable material (HEM)) shall not exceed 800 mg/L at any time, with the total daily wastewater discharge volume limited to 20,000 gallons. For any day with a wastewater discharge volume of more than 20,000 gallons, the MSD ordinance 12559 limit of "200 mg/L at any time" must be met.

In addition, a limit for petroleum-based oil & grease shall also be placed on Bridgeton Landfill's discharge as follows:

- Petroleum-based oil & grease (silica gel treated HEM (SGT-HEM)) shall not exceed 100 mg/L at any time.

This variance shall be granted for a period not to exceed two years from the date of this approval, may be revoked by MSD should operational concerns or other conditions warrant, and shall terminate upon installation of a pretreatment system by Bridgeton Landfill.

Thank you for helping us comply with federal and state regulations. If you have any questions, please contact me at 314.436.8717.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Douglas M. Mendoza, P.E.
Manager of Industrial Pretreatment

By Certified Mail: 7004 2890 0000 9602 8104

MSD

Christopher J. Bulmahn

BRIDGETON LANDFILL LLC

1003803000

From: Andrew Wyatt <awyatt@herstassociates.com>
Sent: Friday, July 05, 2013 5:04 PM
To: Christopher J. Bulmahn
Cc: 'Sehie, Bryan'; 'Matt Stewart'
Subject: Permit No. 0511559802-2

Mr. Bulmahn:

This email is being sent to notify you that exceedances of discharge limitations were observed at Sampling Point Reference Number 008 associated with Permit No. 0511559802-2 (Bridgeton Landfill LLC).

Laboratory analytical results for the 008 sample collected on June 18, 2013 were received by Herst & Associates, Inc. on July 5, 2013. A preliminary review of the results identified the following discharge limit exceedances:

Arsenic: 0.43 mg/L (0.4 mg/L Limit)
Zinc: 11 mg/L (3 mg/L Limit)
Mercury: 0.011 mg/L (0.01 mg/L Limit)
Total Toxic Organics: 9.94 mg/L (5.844 mg/L Limit)

A voicemail notification was also left at the District's Division of Environmental Compliance number (314-436-8710), as specified in the permit.

Please contact me or Mr. Bryan Sehie if you have any questions.

Andrew Wyatt
Senior Environmental Scientist
(636) 939-9111 phone
(636) 939-9757 fax

Herst & Associates, Inc.
4631 North St. Peters Parkway
St. Charles, MO 63304

Information contained in this communication is **CONFIDENTIAL** *and intended for the use of the addressee only. If you have received this communication in error, please notify the sender. If you are not the intended recipient of this communication, be advised that disclosure, copying, use or dissemination of the contents of this communication is prohibited.*

Facility ID: 1003803000 | Name: BRIDGETON LANDFILL LLC [1003803000] | SIU: ☑ | Class: Special Handling / Billing | All Facilities

Results

Start Date: 01/01/2013 End Date: Apply

Events | Inspections | Sampling | Limit Comp | Violations | SMDE | Gen Rpts | **Notifications** | Surcharge | Surcharge Export

Notification Type	Date
Self-Mon Discharge Viol - 1 Day Notice	01/25/2013
Self-Mon Discharge Viol - 1 Day Notice	01/03/2013
Self-Mon Discharge Viol - 1 Day Notice	07/05/2013

Text

Andrew Wyatt from Herst & Associates left an email July 5, 2013 stating they had an exceedance at Sample Point 008 for Arsenic (0.43 mg/L), Zinc (1.1 mg/L), Mercury (0.011 mg/L) and TTO (9.94 mg/L). He also stated that he left a voicemail message at the DEC number 436-8710 listed in the permit. CB

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Friday, July 05, 2013 10:32 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update
Attachments: Bridgeton Landfill conditional approval items tracking.xlsx

Jessie,

Thank you for the submittal. We have reviewed the available data, and have updated the approval items tracking table accordingly.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Tuesday, July 02, 2013 8:17 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Good evening,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the weekly submission is available on Barr's FTP site for your download and review. I apologize that this week's report is being distributed later than normal, I had to travel back from a conference today.

Thank you for your follow up from last week's report. I have attached the approval items tracking table, updated with this week's actions. We appreciate MSD's approval of the use of the 316,000 gallon tank.

We are hopeful that the facility will be able to resume discharge to the Missouri River Treatment Facility tomorrow and I have copied below the summary of the investigation and response on the elevated benzene detections identified by MSD:

Bridgeton Landfill ceased discharge to Missouri River Treatment Facility on June 20, 2013, to investigate the cause of the elevated benzene. The contents of the 96,000 gallon tank were transferred back to treatment batteries for re-treatment and is being placed back into the tank. The facility has established a recirculation and confirmation testing protocol that

Reporting Requirement	Bridgeton 7/2/13	MSD 7/5/13
MSD Terms for Emergen cy and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:		
3. The daily direct dis charge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**		
4. Analytical s ampling res ults that demons trate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance N o. 12559, Article V, Section One.A.8 regarding prohibited s ubstances and emission of toxic gas es, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	1. Batch 228/229 was combined batch of 2 s ets of tank batteries of 4 tanks (8 tanks each). During 6/18/13, 6 of thes e tanks were used for Bis sell, and 2 tanks of this set was transferred to the 97K AST. Since thes e two tanks came from the 228 set of the 228/229, we jus t labeled it 228. It s hould have been labeled 228/229, and the s trength data for this batch should be us ed. 2. As discussed with MSD, Bridgeton Landfill has changed laboratories and will us e Pace Analytical. We will continue to follow up on any data is sues and ens ure that we work with MSD to res pond to data ques tions. Additional: Bridgeton Landfill ceas ed discharge to Mis souri River Treatment Facility on June 20, 2013, to inves tigate the cause of the elevated benzene. The contents of the 96,000 gallon tank were trans ferred back to treatment batteries for re-treatment and is being placed back into the tank. The facility has established a recirculation and confirmation tes ting protocol that will ens ure that the leachate is re-confirmed as within the allowable limits while in the 96,000 tank, before discharge from that tank. If tomorrow's sampling verifies that the treated leachate in the tank is within the appropriate limits, Bridgeton Landfill will res ume dis charge to the Mis souri River Treatment Facility.	
6. Bridgeton Landfill s hall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character**.		
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**		

Reporting Requirement	Bridgeton 7/2/13	MSD 7/5/13
8. Bridgeton Landfill s hall record dis charge meter readings on a daily log s heet, certified as correct and in compliance with the volume and rate res trictions, under s ignature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis,** and Bridgeton Landfill will be billed on the total volume and s urcharge strength documented.		
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:		
3. Analytical s ampling res ults that demons trate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance N o. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**		
4. The daily dis charge **shall not exceed 100,000 gal lons per day, Monday through Friday, and 50,000 gallons on Saturday,** and shall be delivered within the hours of operations as outlined in MSD Ordinance N o. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bis sell Point TP. [Approved volume increas ed from 50,000 GPD to 100,000 GPD on 5/30/13.]		
5. Analytical s ampling res ults that demons trate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance N o. 12559, Article V, Section One.A.8 regarding prohibited s ubstances and emission of toxic gas es, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		
6. Each batch s hall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	Bridgeton Landfill will utilize Pace for future s ampling and continue to monitor the data to identify any data quality issues.	Because Test America's BOD result for batch 213/214 was not valid (reported as >11913), we will us e 50% of the COD value as this batch's BOD for billing purpos es. This level is consistent with historical BOD values . We understand that Bridgeton Landfill has since changed to Pace for BOD analys es.
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.		
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**		

Reporting Requirement	Bridgeton 7/2/13	MSD 7/5/13
9. MSD will temporarily reduce our hauled was te tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an ons ite discharge as outlined in the attached calculation. MSD res erves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our dis cretion and as allowed under MSD Ordinance N o. 12716. [Analytical data for discharges from 4/25/13 - 5/31/13 s how higher s trength than anticipated from pre-dis charge sampling. Tipping fee returned to $0.08/gallon.]		
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:		
• Air monitoring: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical res ults, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl s ulfide, and other reduced s ulfur compounds, including hydrogen s ulfide. 3: **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **If that report is provided by May 10, 2013.**		

Reporting Requirement	Bridgeton 7/2/13	MSD 7/5/13
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events**, based on the results of sampling or future concerns that may arise.	We are working with Stantec on air sampling results as well as hygienist evaluation. We were targeting July 10/11 for delivery of that material to MSD, however Stantec has requested until the end of the week, July 12, because of the holiday schedule. Please let us know if that causes any inconvenience for you, such as a planned worker meeting, and we will request an expedited delivery from Static.	
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013**.	We expect to submit the air testing results from the pump station during scrubber operation with the report and industrial hygienist review by July 12th.	
• Leachate/wastewater monitoring: **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** 1: If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes.** 2: If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. 3: Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.		
• Past analytical data: Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.		
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.		

Reporting Requirement	Bridgeton 7/2/13	MSD 7/5/13
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**		

Table 3
VOCs and SVOCs
December 2012 - June 2013
Bridgeton Landfill

					Benzene
Location	Date	Lab Name	Data Status	Lab Report	ug/l
MSD Batch 228/229	6/18/2013	TA	Validated	160-2748-1	ND
MSD Batch 223/224	6/16/2013	TA	Validated	160-2734-1	ND
MSD Batch 218/219	6/15/2013	TA	QC Pending	160-2710-1	ND

MSD

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Biochemical Oxygen Demand (5-day)	Chemical Oxygen Demand	Nitrogen, ammonia as N	Oil and Grease	Oil and Grease - Silica gel cleanup	pH	Solids, total suspended
					NA	NA	NA	NA	NA	NA	NA
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l
MSD Batch 228/229	6/18/2013	TA	Validated	160-2748-1	11000	29000	480	ND	--	6.00	1200
MSD Batch 223/224	6/16/2013	TA	Validated	160-2734-1	34000	73000	790	34	--	6.00	830
MSD Batch 218/219	6/15/2013	TA	QC Pending	160-2710-1	24000 jb*	38000	550	25	--	6.00	1400
MSD Batch 213/214	6/13/2013	TA	Validated	160-2702-1	> 11913 b	58000	660	12 j	--	6.00	1700

MSD

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Aluminum	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Copper
					Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 228/229	6/18/2013	TA	Validated	160-2748-1	7.3	0.11 j	0.22 j	ND	ND	ND	0.24 j	ND
MSD Batch 223/224	6/16/2013	TA	Validated	160-2734-1	16	0.12 j	0.47	ND	ND	ND	0.14 j	ND
MSD Batch 218/219	6/15/2013	TA	QC Pending	160-2710-1	16	0.23 j	0.48 j	ND	ND	ND	0.36 j	ND
MSD Batch 213/214	6/13/2013	TA	Validated	160-2702-1	26	ND	0.41 j	ND	ND	0.3 j	0.31 j	ND

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
					Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 228/229	6/18/2013	TA	Validated	160-2748-1	500	0.13 j	0.0048 j	ND	ND	ND	ND	9.4
MSD Batch 223/224	6/16/2013	TA	Validated	160-2734-1	1000	0.28	0.0053 j	ND	ND	ND	0.04 j	24
MSD Batch 218/219	6/15/2013	TA	QC Pending	160-2710-1	1100	0.44 j	ND	ND	ND	ND	0.07 j	24
MSD Batch 213/214	6/13/2013	TA	Validated	160-2702-1	1200	0.44 j	ND	ND	ND	ND	0.16 j*	21

Dw

7-5-13
MS

OB-237/238 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/19/2013
Fill Start Time	14:37
Fill Stop Date	6/20/2013
Fill Stop Time	04:45
Process Battery	TB-1/2

Processing Data

Process Start Date	6/19/2013
Process Start Time	17:40
Process Stop Date	6/20/2013
Process Stop Time	17:00

Approval Data

Approval Details	NAL13026-374
Test Results	Benzene 100 ppb
Reprocessed Batch	

Notes

Monday, July 01, 2013

OB-242 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/20/2013
Fill Start Time	13:30
Fill Stop Date	6/20/2013
Fill Stop Time	20:55
Process Battery	Tank Battery 3

Processing Data

Process Start Date	6/20/2013
Process Start Time	21:00
Process Stop Date	6/21/2013
Process Stop Time	21:40

Approval Data

Approval Details	NAL13026-381
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, July 01, 2013

OB-245/246 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/21/2013
Fill Start Time	14:45
Fill Stop Date	6/22/2013
Fill Stop Time	20:10
Process Battery	TB-1/2

Processing Data

Process Start Date	6/22/2013
Process Start Time	18:00
Process Stop Date	6/24/2013
Process Stop Time	06:00

Approval Data

Approval Details	NAL13026-387
Test Results	Benzene 21 ppb
Reprocessed Batch	

Notes

Monday, July 01, 2013

OB-250/243 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/22/2013
Fill Start Time	01:51
Fill Stop Date	6/24/2013
Fill Stop Time	09:45
Process Battery	TB-3/4

Processing Data

Process Start Date	6/22/2013
Process Start Time	12:12
Process Stop Date	6/24/2013
Process Stop Time	17:30

Approval Data

Approval Details	NAL13026-396
Test Results	Benzene 80 ppb
Reprocessed Batch	

Notes

Monday, July 01, 2013

OB-251/252 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/24/2013
Fill Start Time	13:43
Fill Stop Date	6/25/2013
Fill Stop Time	17:00
Process Battery	TB-1/2

Processing Data

Process Start Date	6/24/2013
Process Start Time	16:15
Process Stop Date	6/26/2013
Process Stop Time	18:00

Approval Data

Approval Details	NAL13026-400
Test Results	Benzene 19 ppb
Reprocessed Batch	1st benzene = 210 ppb

Notes

pH = 5.39 su

Monday, July 01, 2013

OB-316-004

Bridgeton Landfill

Fill Data

Fill Start Date	6/26/2013
Fill Start Time	17:30
Fill Stop Date	6/26/2013
Fill Stop Time	22:00
Process Battery	316 AST

Processing Data

Process Start Date	6/27/2013
Process Start Time	06:00
Process Stop Date	6/27/2013
Process Stop Time	13:30

Approval Data

Approval Details	NAL13026-406
Test Results	Benzene ND <100 ppb
Reprocessed Batch	1st benzene = 60 ppb

Notes

Monday, July 01, 2013

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissell Point Tracking Table			
Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Saturday, June 22, 2013	Batch 237 / 238	15,200	15,200
	Batch 242	30,400	30,400
Sunday, June 23, 2013	None	None	None
Monday, June 24, 2013	Batch 245 / 246	97,100	98,200
Tuesday, June 25, 2013	Batch 245 / 246	22,700	22,700
	Batch 250 / 243	76,000	76,000
Wednesday, June 26, 2013	Batch 250 / 243	83,500	83,500
Thursday, June 27, 2013	Batch 251 / 252	61,100	67,800
	Batch 316-004	13,200	15,200
Friday, June 28, 2013	Batch 316-004	95,100	98,200

Starting Date	*6/22/2013 5:00*
Ending Date	*6/29/2013 5:00*

MSD - Missouri River Tracking Table								
Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and Time	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)	Adjusted pH
Saturday, June 22, 2013		-	6/22/2013 5:00	6/23/2013 5:00	24.0	840	0.0	
Sunday, June 23, 2013		-	6/23/2013 5:00	6/24/2013 5:00	24.0	840	0.0	
Monday, June 24, 2013		-	6/24/2013 5:00	6/25/2013 5:00	24.0	840	0.0	
Tuesday, June 25, 2013		-	6/25/2013 5:00	6/26/2013 5:00	24.0	840	0.0	
Wednesday, June 26, 2013		-	6/26/2013 5:00	6/27/2013 5:00	24.0	840	0.0	
Thursday, June 27, 2013		-	6/27/2013 5:00	6/28/2013 5:00	24.0	840	0.0	
Friday, June 28, 2013		-	6/28/2013 5:00	6/29/2013 5:00	24.0	840	0.0	

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Josh Schie Title: Environmental Specialist Date: 6/29/13

Weekly Volume Summary - Week 10 (6-22-13 through 6-28-13).xlsx

BRIDGETON LANDFILL
7-5-13

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/23/2013 5:00:00 AM	6/22/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/23/13

MSD Daily Flow Reading, ending 6-23-2013

Daily Flow Reading — *Bridgeton Landfill*

	Current	Previous	Difference
Date / Time:	6/24/2013 5:00:00 AM	6/23/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/24/13

MSD Daily Flow Reading, ending 6-24-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/25/2013 5:00:00 AM	6/24/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/25/13

MSD Daily Flow Reading, ending 6-25-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/26/2013 5:00:00 AM	6/25/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature] *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/26/13

MSD Daily Flow Reading, ending 6-26-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/27/2013 5:00:00 AM	6/26/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Schie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Schie *Name:* Bryan Schie

Title: Environmental Specialist *Date:* 6/27/13

MSD Daily Flow Reading, ending 6-27-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/28/2013 5:00:00 AM	6/27/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/28/13

MSD Daily Flow Reading, ending 6-28-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/29/2013 5:00:00 AM	6/28/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/29/13

MSD Daily Flow Reading, ending 6-29-2013

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Friday, July 05, 2013 9:10 AM
To: Bret A. Berthold; Brian G. Gibson; 'Bryan Sehie'; Christopher J. Bulmahn; 'Craig Almanza'; Darin Lewis; Doug Mendoza; 'Ed Galbraith'; 'Jessica Merrigan'; John Lodderhose; Jonathon Sprague; Ken Gambaro; Ken Goins; Mark Bright; Michael Grace; Michele Boussad; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Sara Kammerer; 'Sean Torrey'; Steve Grace; Steve Smith; Todd Heller; Tom Boehm; 'William Beck'
Subject: Bridgeton Landfill variance request for total oil & grease

Jessie et al,

Please find below the text of MSD's approval of Bridgeton Landfill's request for total oil & grease variance. The approval letter will be mailed today.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

July 5, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Response to Bridgeton Landfill Request for Total Oil & Grease Variance from District Limitations

Dear Mr. Almanza:

The Metropolitan St. Louis Sewer District (MSD) has reviewed Bridgeton Landfill's June 26, 2013 letter requesting a variance from MSD limitations for total oil & grease. We have reviewed our data regarding current and allowable loadings for this parameter at MSD's Missouri River treatment plant, as well as operational concerns in our collection system, and will grant a temporary variance as described below.

The limit for total oil & grease is based primarily on factors designed to protect the collection system from operational problems. However, MSD's treatment plants also have discharge limitations for total oil & grease which must be considered as part of any variance request. In addition, we must insure that the following MSD Ordinance No. 12559 prohibition is not violated:

- Any petroleum based oil or grease, nonbiodegradable cutting oil or product of mineral oil origin except those which unavoidably enter the user's waste stream as a normal constituent of wastewater from processes or equipment which use or process such materials or through contact with areas contaminated with such materials. In no case may such materials be discharged in quantities or concentrations which will cause interference or pass through.

We have reviewed the analytical data you have submitted, conducting statistical analysis of the data. After completing our review, and considering the other factors cited above, we can allow a variance for total oil & grease as follows:

- Total oil & grease (hexane extractable material (HEM)) shall not exceed 800 mg/L at any time.

In addition, a limit for petroleum-based oil & grease shall also be placed on Bridgeton Landfill's discharge as follows:

- Petroleum-based oil & grease (silica gel treated HEM (SGT-HEM)) shall not exceed 100 mg/L at any time.

This variance shall be granted for a period not to exceed two years from the date of this approval, may be revoked by MSD should operational concerns or other conditions warrant, and shall terminate upon installation of a pretreatment system by Bridgeton Landfill.

Thank you for helping us comply with federal and state regulations. If you have any questions, please contact me at 314.436.8717.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Douglas M. Mendoza, P.E.
Manager of Industrial Pretreatment

By Certified Mail: 7004 2890 0000 9602 8098

Location	Date	Lab Name	Data Status	Report	O&G	O&G-SGT
MSD Batch 213/214	6/13/2013	TA (Buffalo)	Validated	160-2702-1	12 j	--
MSD Batch 210/211	6/12/2013	TA (Buffalo)	QC Pending	160-2673-1	11 j	--
MSD Batch 207/208	6/11/2013	TA (Buffalo)	QC Pending	160-2671-1	12 j	--
MSD Batch 203/204	6/10/2013	TA (Buffalo)	QC Pending	160-2660-1	60	--
MSD Batch 199/200	6/9/2013	TA (Buffalo)	Validated	160-2645-1	120	--
MSD Batch 194/195	6/9/2013	TA (Buffalo)	Validated	160-2640-1	120	--
Location	Date	Lab Name	Data Status	Report	O&G	O&G-SGT
MSD Batch 189/190	41432.46319	Pace	Validated	60146488	438	20.7
MSD Batch 187	41431.53194	Pace	Validated	60146383	305	20.7
MSD Batch 184	41430.36944	Pace	Validated	60146252	360	77.9
MSD Batch 180	41428.34306	Pace	Validated	60146018	328	55.1
MSD Batch 179/181	41428	Pace	Validated	60146110	297	37.4
MSD Batch 176	41425	Pace	Validated	60145950	130	27.2
MSD Batch 172	41424.54583	Pace	Validated	60145828	449	46.7
MSD Batch 168	41424.31667	Pace	Validated	60145828	628	70.6
MSD Batch 165	41423.42778	Pace	Validated	60145728	259	8.4
MSD Batch 159	41421.60069	Pace	Validated	60145609	291	47.8
MSD Batch 157	41421.58125	Pace	Validated	60145607	211	--
MSD Batch 153	41418	Pace	Validated	60145543	437	--
MSD Batch 148	41417	Pace	Validated	60145428	580	--
MSD Batch 145	41416.64931	Pace	Validated	60145336	410	--
MSD Batch 142	41416.48264	Pace	Validated	60145336	337	--
MSD Batch 138	41415.375	Pace	Validated	60145181	62.7	--
MSD Batch 136	41413.75764	Pace	Validated	60145032	504	--
MSD Batch 131	41412.61319	Pace	Validated	60145032	272	--
MSD Batch 128	41411.26111	Pace	Validated	60144974	30.6	--
MSD Batch 121	41410.31736	Pace	Validated	60144971	27.7	--
MSD Batch 119	41408.75278	Pace	Validated	60144732	497	--
MSD Batch 117	41408.28264	Pace	Validated	60144732	182	--
MSD Batch 114	41406.72986	Pace	Validated	60144495	436	--
MSD Batch 112	41406.53403	Pace	Validated	60144495	342	--
MSD Batch 107	41404.58403	Pace	Validated	60144432	393	--
MSD Batch 105	41404.29931	Pace	Validated	60144432	953	--
MSD Batch 100	41402.45208	Pace	Validated	60144207	366	--
MSD Batch 98	41402.32014	Pace	Validated	60144204	451	--
MSD Batch 94	41401.33333	Pace	Validated	60144068	240	--
MSD Batch 67	41390.54167	PDC	Validated	3043767	29	--
				max	953	77.9
				min	27.7	8.4
				average	341.533333	41.25
				std dev	198	21
				+2 sigma	738	83
				+3 sigma	936	104

O&G	O&G-SGT
12 j	--
11 j	--
12 j	--
60	--
120	--
120	--
O&G	O&G-SGT
438	20.7
305	20.7
360	77.9
328	55.1
297	37.4
130	27.2
449	46.7
628	70.6
259	8.4
291	47.8
211	--
437	--
580	--
410	--
337	--
62.7	--
504	--
272	--
30.6	--
27.7	--
497	--
182	--
436	--
342	--
393	--
[illegible]	--
366	--
451	--
240	--
29	--
628	77.9
27.7	8.4
320.4482759	41.25
162	21
644	83
806	104

For Landfill volume of	200,000	5.55	@ STP
For Landfill volume of	20,000	0.56	@ STP

Missouri River Treatment Plant

Design	2008	2009	2010	2011	2012	Avg MGD
28	28.8	29.8	30.4	29.7	26.5	29.04

MSD Oil & Grease sampling

	Influent	Pre-effluent	% removal
6/6/2012	48.1	9	19%
8/8/2012	26	7.6	29%
9/12/2012	25	5.5	22%
			23%

NPDES Limit

DM	15
MA	10

Landfill historically discharged 10 mg/L or less @ 200,000 GPD (0.07 mg/L @ STP)

Bridgeton Landfill oil & grease variance request
7/5/2013

Doug Mendoza

From:	Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent:	Tuesday, July 02, 2013 8:17 PM
To:	Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc:	Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Power, Brian (BPower@republicservices.com); Cunningham, Ally (LG); Dan Feezor
Subject:	RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update
Attachments:	Bridgeton Landfill conditional approval items tracking 2013.07.02.XLSX

Good evening,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the weekly submission is available on Barr's FTP site for your download and review. I apologize that this week's report is being distributed later than normal, I had to travel back from a conference today.

Thank you for your follow up from last week's report. I have attached the approval items tracking table, updated with this week's actions. We appreciate MSD's approval of the use of the 316,000 gallon tank.

We are hopeful that the facility will be able to resume discharge to the Missouri River Treatment Facility tomorrow and I have copied below the summary of the investigation and response on the elevated benzene detections identified by MSD:

Bridgeton Landfill ceased discharge to Missouri River Treatment Facility on June 20, 2013, to investigate the cause of the elevated benzene. The contents of the 96,000 gallon tank were transferred back to treatment batteries for re-treatment and is being placed back into the tank. The facility has established a recirculation and confirmation testing protocol that will ensure that the leachate is re-confirmed as within the allowable limits while in the 96,000 tank, before discharge from that tank. If tomorrow's sampling verifies that the treated leachate in the tank is within the appropriate limits, Bridgeton Landfill will resume discharge to the Missouri River Treatment Facility.

As always, please let us know if you have any questions or need any additional information. We sincerely appreciate MSD accommodating Bridgeton Landfill's hauled waste discharge on the 4th of July holiday.

Thank you for your continued assistance,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Thursday, June 27, 2013 10:26 AM
To: Cunningham, Ally; Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Ms. Cunningham

Thank you for the report submittal. MSD has added comments to the attached tracking spreadsheet regarding Test America's difficulties. We are requiring that testing for certain parameters be performed at an additional laboratory until Test America's difficulties can be satisfactorily resolved. We also have asked for some additional information regarding batch 228.

From conversations earlier this morning with Ed Galbraith, Dan Feezor, and Steve Smith, we understand the details of how 316,000 gallon storage tank will be used as a final batch treatment tank similar to the existing tank batteries. Each batch in the 316,000 gallon storage tank will be separately identified and tested for the required parameters. Therefore, use of this tank can begin today.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

Reporting Requirement	MSD 6/27/13	Bridgeton 7/2/13
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:		
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**		
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	1. We note that for 6/18/13, the batch was identified as 228. Our understanding is that batches are now treated as combinations of two, such as batch 228/229 that was hauled to Bissell on 6/18/13. Was batch 228 also treated and analyzed separately? If not, you must explain how the strength and analytical data will be provided for the 6/18/13 onsite discharge. 2. We also note that all batches analyzed by Test America have much or extremely lower values for Oil & Grease than those analyzed by Pace. Given Test America's inability to analyze BOD, the Oil & Grease values cannot be considered reliable. Until Test America's problems can be resolved, Bridgeton Landfill must immediately begin having at least BOD, COD (for comparison with BOD), Oil & Grease, and Oil & Grease-SGT (for comparison with O&G) analyzed by an additional lab. We realize that Oil & Grease samples cannot be split. Therefore, those samples will have to be collected concurrently if you have both Test America and another lab do the analyses. 3. Because there were no BOD results for batches 194/195 and 199/200, and 203/204's qualified BOD was obviously incorrect, we will use 50% of the COD value as these batch's BOD for billing purposes. This level is consistent with historical BOD values.	1. Batch 228/229 was combined batch of 2 sets of tank batteries of 4 tanks (8 tanks each). During 6/18/13, 6 of these tanks were used for Bissell, and 2 tanks of this set was transferred to the 97K AST. Since these two tanks came from the 228 set of the 228/229, we just labeled it 228. It should have been labeled 228/229, and the strength data for this batch should be used. 2. As discussed with MSD, Bridgeton Landfill has changed laboratories and will use Pace Analytical. We will continue to follow up on any data issues and ensure that we work with MSD to respond to data questions. Additional: Bridgeton Landfill ceased discharge to Missouri River Treatment Facility on June 20, 2013, to investigate the cause of the elevated benzene. The contents of the 96,000 gallon tank were transferred back to treatment batteries for re-treatment and is being placed back into the tank. The facility has established a recirculation and confirmation testing protocol that will ensure that the leachate is re-confirmed as within the allowable limits while in the 96,000 tank, before discharge from that tank. If tomorrow's sampling verifies that the treated leachate in the tank is within the appropriate limits, Bridgeton Landfill will resume discharge to the Missouri River Treatment Facility.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character** .		
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**		

Reporting Requirement	MSD 6/27/13	Bridgeton 7/2/13
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis** , and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.		
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:		
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material , shall be submitted to MSD on a weekly basis.**		
4. The daily discharge **shall not exceed 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday** , and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP. [Approved volume increased from 50,000 GPD to 100,000 GPD on 5/30/13.]		
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	See item 5 for direct discharge to the Missouri River plant, above.	Bridgeton Landfill will utilize Pace for future sampling and continue to monitor the data to identify any data quality issues.
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.		
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**		

Reporting Requirement	MSD 6/27/13	Bridgeton 7/2/13
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716. [Analytical data for discharges from 4/25/13 - 5/31/13 show higher strength than anticipated from pre-discharge sampling. Tipping fee returned to $0.08/gallon.]		
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:		
• Air monitoring : **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013** . If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**		

Reporting Requirement	MSD 6/27/13	Bridgeton 7/2/13
• Pending air monitoring : Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline** . Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events** , based on the results of sampling or future concerns that may arise.		We are working with Stantec on air sampling results as well as hygienist evaluation. We were targeting July 10/11 for delivery of that material to MSD, however Stantec has requested until the end of the week, July 12, because of the holiday schedule. Please let us know if that causes any inconvenience for you, such as a planned worker meeting, and we will request an expedited delivery from Static.
• Pump station ventilation : Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013**.		We expect to submit the air testing results from the pump station during scrubber operation with the report and industrial hygienist review by July 12th.
• Leachate/wastewater monitoring : **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** 1: If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes** . 2: If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. 3: Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.		
• Past analytical data : Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.		
• Pretreatment system : Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.		

Reporting Requirement	MSD 6/27/13	Bridgeton 7/2/13
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**		

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

July 5, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Response to Bridgeton Landfill Request for Total Oil & Grease Variance from District Limitations

Dear Mr. Almanza:

The Metropolitan St. Louis Sewer District (MSD) has reviewed Bridgeton Landfill's June 26, 2013 letter requesting a variance from MSD limitations for total oil & grease. We have reviewed our data regarding current and allowable loadings for this parameter at MSD's Missouri River treatment plant, as well as operational concerns in our collection system, and will grant a temporary variance as described below.

The limit for total oil & grease is based primarily on factors designed to protect the collection system from operational problems. However, MSD's treatment plants also have discharge limitations for total oil & grease which must be considered as part of any variance request. In addition, we must insure that the following MSD Ordinance No. 12559 prohibition is not violated:

> Any petroleum based oil or grease, nonbiodegradable cutting oil or product of mineral oil origin except those which unavoidably enter the user's waste stream as a normal constituent of wastewater from processes or equipment which use or process such materials or through contact with areas contaminated with such materials. In no case may such materials be discharged in quantities or concentrations which will cause interference or pass through.

We have reviewed the analytical data you have submitted, conducting statistical analysis of the data. After completing our review, and considering the other factors cited above, we can allow a variance for total oil & grease as follows:

- Total oil & grease (hexane extractable material (HEM)) shall not exceed 800 mg/L at any time.

In addition, a limit for petroleum-based oil & grease shall also be placed on Bridgeton Landfill's discharge as follows:

- Petroleum-based oil & grease (silica gel treated HEM (SGT-HEM)) shall not exceed 100 mg/L at any time.

This variance shall be granted for a period not to exceed two years from the date of this approval, may be revoked by MSD should operational concerns or other conditions warrant, and shall terminate upon installation of a pretreatment system by Bridgeton Landfill.

Thank you for helping us comply with federal and state regulations. If you have any questions, please contact me at 314.436.8717.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Douglas M. Mendoza, P.E.
Manager of Industrial Pretreatment

By Certified Mail: 7004 2890 0000 9602 8098

DL

Doug Mendoza

MSD

From: Brian G. Gibson
Sent: Wednesday, July 03, 2013 1:15 PM
To: Doug Mendoza
Cc: Joe Pavlich
Subject: Bridgeton Landfill reading

Bridgeton Landfill meter reading 284,978 gallons @ 10:39 on Wednesday July 3, 2013.

MSD

Doug Mendoza

From:	John Lodderhose
Sent:	Wednesday, July 03, 2013 9:27 AM
To:	Todd Heller; Ken Gambaro
Cc:	Doug Mendoza; Nora C. Estopare; Catherine Politte; Mike Townley; Jonathon Sprague; Rich Unverferth
Subject:	UV Transmittance
Attachments:	Copy of Bridgeton Landfill Leachate Transmittance.xlsx

Attached are the UV Transmittance results for Bridgeton Landfill. We set up a series of dilutions with DI water based on the possible range of discharge volumes of leachate to a 30 to 38 MGD expanded Missouri River WWTP. It looks like the leachate could have a detrimental impact on the proposed Missouri River WWTP UV disinfection system if we allow a discharge of more than 20,000 to 30,000 GPD of leachate (1000x to 2000x dilution).

There was very little difference between the filtered and unfiltered transmittance results so it does not appear to be a problem with the suspended solids in the leachate. The next step would be to do a leachate treatability study (at Bridgeton's expense) to determine if biological treatment improves the transmittance.

I would like to share this information with Bridgeton Landfill before our next meeting on July 17, 2013 so that they can begin thinking about how to address this new concern. The transmittance information should not impact the discharge to Bissell Point WWTP because Sodium Hypochlorite (not UV disinfection) will be used at that plant. Please let me know if you have any comments or suggestions.
Thanks

John R. Lodderhose, P.E.
Metropolitan St. Louis Sewer District
Assistant Director of Engineering
Environmental Compliance
314-436-8714

Bridgeton Landfill Leachate
Transmittance

read at 253.70 nm

Blank 100%

Dilution	Unfiltered	Filtered
no dilution	0.057	0.008
10X	0.055	0.012
100X	0.345	0.354
200X	5.928	6.076
1000X	56.98	55.812
2000X	75.236	74.207
10000X	93.095	91.958

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Monday, July 01, 2013 3:11 PM
To: Doug Mendoza; Bret A. Berthold; Brian G. Gibson; Bryan Sehie; Christopher J. Bulmahn; Craig Almanza; Darin Lewis; Ed Galbraith; John Lodderhose; Jonathon Sprague; Ken Gambaro; Ken Goins; Mark Bright; Michael Grace; Michele Boussad; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Sara Kammerer; Power, Brian (BPower@republicservices.com); Steve Grace; Steve Smith; Todd Heller; Tom Boehm
Subject: RE: Bridgeton Landfill loads to the Bissell Point Hauled Waste Station on Thursday, July 4, 2013

Doug,

Thank you so much for your consideration. We really appreciate your working with us to help us manage this. The terms you have outlined are acceptable.

Thank you again,
Jessie

Any U.S. federal tax advice contained in this communication (including any attachments or enclosures) was not intended or written by the author to be used, and cannot be used, for the purpose of (1) avoiding penalties that may be imposed on a taxpayer or (2) promoting, marketing, or recommending to another party any transaction or other matter addressed herein.

This e-mail (including any attachments) may contain material that (1) is confidential and for the sole use of the intended recipient, and (2) may be protected by the attorney-client privilege, attorney work product doctrine or other legal rules. Any review, reliance or distribution by others or forwarding without express permission is strictly prohibited. If you are not the intended recipient, please contact the sender and delete all copies.

From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Monday, July 01, 2013 2:54 PM
To: Bret A. Berthold; Brian G. Gibson; Bryan Sehie; Christopher J. Bulmahn; Craig Almanza; Darin Lewis; Doug Mendoza; Ed Galbraith; Merrigan, Jessie; John Lodderhose; Jonathon Sprague; Ken Gambaro; Ken Goins; Mark Bright; Michael Grace; Michele Boussad; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Sara Kammerer; Sean Torrey; Steve Grace; Steve Smith; Todd Heller; Tom Boehm; Beck, Bill
Subject: Bridgeton Landfill loads to the Bissell Point Hauled Waste Station on Thursday, July 4, 2013

Jessie Merrigan, Ed Galbraith, et al,

As some of you know, MSD's hauled waste station is closed on certain holidays, including July 4. Bridgeton Landfill representatives were recently reminded. However, Ed Galbraith has informed MSD that the landfill's leachate generation has jumped from 200,000 GPD to 375,000 GPD. There is limited storage capacity, due to the need to remove the landfill's tank batteries for odor abatement. In light of the difficult situation for the landfill, and the potential impact on the public and the environment, MSD has been able to secure personnel to operate its hauled waste station on July 4, 2013. The station will be open normal hours, 7 am to 5:30 pm, but will be accepting hauled waste from Bridgeton Landfill only.

Doug Mendoza

From: Sara Kammerer
Sent: Monday, July 01, 2013 3:06 PM
To: Doug Mendoza
Cc: Brian G. Gibson; Darin Lewis
Subject: Bridgeton Landfill Leachate weekly volume summary (6/24/13 - 6/29/13)

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant for 6/24/2013 to 6/29/2013:

6/24 – 97,100 gallons
6/25 – 98,700 gallons
6/26 – 83,500 gallons
6/27 – 74,300 gallons
6/28 – 95,100 gallons
6/29 – 45,600 gallons

Total = 494,300 gallons

Thanks,

Sara Kammerer
Environmental Assistant Engineer
Metropolitan St. Louis Sewer District
10 E. Grand Avenue
St. Louis, MO 63147-2913
(314) 436-8763 - phone
(314) 436-8766 - fax

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Monday, July 01, 2013 2:54 PM
To: Bret A. Berthold; Brian G. Gibson; 'Bryan Sehie'; Christopher J. Bulmahn; 'Craig Almanza'; Darin Lewis; Doug Mendoza; 'Ed Galbraith'; 'Jessica Merrigan'; John Lodderhose; Jonathon Sprague; Ken Gambaro; Ken Goins; Mark Bright; Michael Grace; Michele Boussad; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Sara Kammerer; 'Sean Torrey'; Steve Grace; Steve Smith; Todd Heller; Tom Boehm; 'William Beck'
Subject: Bridgeton Landfill loads to the Bissell Point Hauled Waste Station on Thursday, July 4, 2013

Jessie Merrigan, Ed Galbraith, et al,

As some of you know, MSD's hauled waste station is closed on certain holidays, including July 4. Bridgeton Landfill representatives were recently reminded. However, Ed Galbraith has informed MSD that the landfill's leachate generation has jumped from 200,000 GPD to 375,000 GPD. There is limited storage capacity, due to the need to remove the landfill's tank batteries for odor abatement. In light of the difficult situation for the landfill, and the potential impact on the public and the environment, MSD has been able to secure personnel to operate its hauled waste station on July 4, 2013. The station will be open normal hours, 7 am to 5:30 pm, but will be accepting hauled waste from Bridgeton Landfill only.

As was just discussed with Ed Galbraith, Bridgeton Landfill will be charged for MSD's personnel expenses associated with having the hauled waste station open on a normally closed day. The cost will be added to a future monthly billing to Bridgeton Landfill for its hauled waste loads. If this is not acceptable to Bridgeton Landfill, you must inform us prior to the end of the hauled waste station operating day (5:30 pm) on Tuesday, July 2, 2013.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

JUNE 2013

Doug Mendoza **MSD**

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Thursday, June 27, 2013 3:42 PM
To: Doug Mendoza
Cc: John Lodderhose; Smith, Steve (ssmith10@republicservices.com); Power, Brian <BPower@republicservices.com> (BPower@republicservices.com)
Subject: Variance Request for Oil and Grease
Attachments: Variance Request-Oil and Grease_signed.pdf

Attached is a variance request from Bridgeton Landfill for Oil and Grease. Please let me know if you have any questions.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

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June

Bridgeton Landfill, LLC

June 26, 2013

Doug Mendoza
Industrial Pretreatment Manager
Metropolitan St. Louis Sewer District
10 East Grand Ave
St. Louis, MO 63147

RE: REQUEST FOR VARIANCE FROM DISTRICT LIMITATIONS FOR BRIDGETON LANDFILL DISCHARGE (Discharge Permit No. 0511559802-2) FOR OIL & GREASE

Bridgeton Landfill, LLC requests a variance from Article V, Section 2.C of MSD Ordinance 12559, for Oil and Grease discharges to the Missouri River Wastewater Treatment Facility. Under the current interim approval, Bridgeton Landfill is authorized to discharge up to 20,000 gallons per day, about 9.3% of its permitted flow. During this period of reduced discharge, the maximum, minimum and average concentrations of Total Oil and Grease have been 953 mg/L, 11 mg/L and 286.9 mg/L, respectively. Recent data indicate that the maximum, minimum and average concentrations of nonpolar, silica gel treated (SGT) constituents were 77.9 mg/L, 8.4 mg/L and ~~286.9~~ mg/L, respectively. It is our understanding that these constituents have not created negative impacts to collection or treatment systems. ← 41.25 DWA

With these facts in mind, Bridgeton Landfill requests a variance of up to 1000 mg/L for Total Oil and Grease and 100 mg/L for non-polar, SGT Oil and Grease.

If you have any questions about this request, feel free to contact me at (314) 744-8195 or Ed Galbraith with Barr Engineering at (573) 638-5024.

Sincerely,

Craig Almanza
Area Environmental Manager

Attachment: Concentration and Mass Loadings Table

Table A - Bridgeton Landfill Treated Leachate Concentration and Mass Loading

6/26/2013

Analyte	MSD ORDINANCE 12559 District Limitation (mg/L)	Permitted Loading to Missouri River WWTP[a] (lbs/day)	Current Parameter Concentration (mg/L)*	Current Maximum Loading to Missouri River WWTP[b] (lbs/day)
Metals				
Antimony, Total	0.500	0.902	0.098	0.016
Arsenic, Total	0.400	0.722	1.210	0.202
Barium, Total	10.0	18.0	No Data	#VALUE!
Beryllium, Total	0.400	0.722	0.002	0.000
Cadmium, Total	0.700	1.263	0.096	0.016
Chromium, Total	5.000	9.024	0.390	0.065
Copper, Total	2.700	4.873	0.180	0.030
Cyanide	0.400	0.722	0.010	0.002
Iron, Total	150.0	270.7	1,200.0	200.3
Lead, Total	0.400	0.722	0.440	0.073
Mercury, Total	0.010	0.018	0.082	0.014
Nickel, Total	2.300	4.151	0.168	0.028
Phenol	7.000	12.633	22.700	3.789
Selenium, Total	0.200	0.361	0.114	0.019
Silver, Total	0.500	0.902	0.022	0.004
Total Oil and Grease	200.000	360.947	953.000	159.063
Zinc, Total	3.0	5.4	21.0	3.5
General Parameters				
Ammonia-N		-	1,760	293.8
BOD		-	51,800	8,645.8
COD		-	60,800	10,148.0
Solids - total suspended solids (TSS)		-	2,900	484.0
Total Petroleum Hydrocarbon		-	77.900	13.0
Total Oil and Grease	200	360.9	953.0	159.1
pH			7.5	
Total Toxic Organics				
Cyanide			0.010	
Naphthalene			0.69	
Nitrobenzene			0.56	
2-Methylphenol			0.861	
3- & 4-Methylphenol			2.25	
Bis(2-chloroisopropyl) ether			0.106	
Phenol			22.70	
1,4-Dichlorobenzene			0.23	
Sum of TTO	5.844	10.5	27.410	4.6
Total Phenolic Coumpounds				
2,4,6-trichlorophenol				
2,4-dichlorophenol				
2,4-dimethylphenol				
2,4-dinitrophenol				
2-chlorophenol				
2-nitrophenol				
4,6-dinitro-2-methylphenol				
4-chloro-3-methylphenol				
4-nitrophenol				
pentachlorophenol				
phenol			22.7	
Sum of Total Phenolic Compounds	17	12.6	22.700	3.8

NOTES:

Values in Red indicate exceedances of permitted concentration limits

*Maximum value from MSD Batch 67 - 213/214 and Treated Commingled (UPDATE)

[a] permitted flow = 0.216 MGD

[b] conditionally approved flow = .020 MGD

Doug Mendoza MSD

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Thursday, June 27, 2013 2:20 PM
To: John Lodderhose; Doug Mendoza; Rob G Daly; Nora C. Estopare; Smith, Steve (ssmith10@republicservices.com); Walker, Tony (TWalker@republicservices.com); Dan Feezor (dfeezor@feezorengineering.com) (dfeezor@feezorengineering.com); Power, Brian <BPower@republicservices.com> (BPower@republicservices.com); Steve Grace
Subject: DRAFT Agenda for BLD/MSD Coordination Mtg 06/28/2013
Attachments: AGENDA - 06282013 MSD AND BRIDGETON LANDFILL ISSUES MEETING.docx

All,

See revised agenda to include Doug's request that we discuss recent BOD results.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

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From: Ed Galbraith
Sent: Wednesday, June 26, 2013 5:27 PM
To: Doug Mendoza; John Lodderhose
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Walker, Tony; Dan Feezor (dfeezor@feezorengineering.com) (dfeezor@feezorengineering.com)
Subject: DRAFT Agenda for BLD/MSD Coordination Mtg 06/28/2013

John and Doug,

Attached is a draft agenda for our meeting on Friday. Suggestions are welcome as always. Please forward as needed to your team.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

resourceful. naturally. BARR

MSD AND BRIDGETON LANDFILL TECHNICAL ISSUES MEETING

June 28, 2013

AGENDA

1. Introductions
2. Updates
    a. Discharges to Bissell Point and MO River Plants (Steve and Dan)
    b. Benzene and pH Issues (Steve and Dan)
    c. Lift Station status
        i. Equipment (Steve)
        ii. Air monitoring (Ed)
        iii. Hygienist (Ed)
    d. 316K gallon tank coming on line
    e. Interim pretreatment plan (Tony)
3. Gross Beta Analysis (Ed)
4. BOD Issue (Ed)
5. Volume to Bissell Point and Mo River WWTF (Steve)
6. Evaluating frequency and amount of sampling (Ed)

MSD

Doug Mendoza

From: Joe Pavlich
Sent: Thursday, June 27, 2013 12:24 PM
To: Doug Mendoza
Subject: METER READING AT BRIDGETON LANDFILL

284978

Doug Mendoza **MSD**

From:	Doug Mendoza
Sent:	Thursday, June 27, 2013 10:26 AM
To:	'Cunningham, Ally (LG)'; Merrigan, Jessie (LG); John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc:	Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Walker, Tony
Subject:	RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update
Attachments:	Bridgeton Landfill conditional approval items tracking.xlsx

Ms. Cunningham

Thank you for the report submittal. MSD has added comments to the attached tracking spreadsheet regarding Test America's difficulties. We are requiring that testing for certain parameters be performed at an additional laboratory until Test America's difficulties can be satisfactorily resolved. We also have asked for some additional information regarding batch 228.

From conversations earlier this morning with Ed Galbraith, Dan Feezor, and Steve Smith, we understand the details of how 316,000 gallon storage tank will be used as a final batch treatment tank similar to the existing tank batteries. Each batch in the 316,000 gallon storage tank will be separately identified and tested for the required parameters. Therefore, use of this tank can begin today.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

From: Cunningham, Ally (LG) [mailto:ACunningham@LATHROPGAGE.COM]
Sent: Tuesday, June 25, 2013 5:02 PM
To: Doug Mendoza; Merrigan, Jessie (LG); John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the weekly submission is available on Barr's FTP site for your download and review. Thank you for your follow up from last week's report. I have attached the approval items tracking table, updated with this week's actions. Additionally, we want to advise you that the 316,000 gallon tank is now operational, and we will begin utilizing it rather than the tank batteries (aka sparging tanks). None of our sampling, trucking or other processes previously in place will change. The 316,000 gallon tank would represent a single batch for testing and batch records. Please let us know if you have any questions and we look forward to continuing to work with you on these action items.

Reporting Requirement	MSD response 6/20/13	Bridgeton Landfill Response 6/25/13	MSD 6/27/13
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:			
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**			
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**	Please see item 5 for Direct Discharge to the Missouri River Wastewater Treatment Plant.	Please see response to item 5.	
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	MSD collected samples for several days (from the line into the pump station) when Bridgeton Landfill restarted its direct discharge. The complex matrix of the samples delayed receipt of the results. However, once received, we found benzene levels of: 5/1 = 404 ug/L, 5/2 = 269 ug/L, 5/3 = 152 ug/L, 5/6 = 41.8 ug/L, and 5/7 = 80.6 ug/L. Note that the first three readings were above the fume toxicity screening level. With the downward trend, we thought that residual contamination from earlier, untreated wastewater in the collection tank may have been the source. Once MSD received the above results, we resumed sampling of Bridgeton Landfill's onsite discharge, this time from the side of the collection tank. Unfortunately, the two results so far again show elevated benzene levels: 6/6 = 409 ug/L, and 6/14 = 140 ug/L. Due to the continuing elevated benzene levels, MSD must require Bridgeton Landfill to investigate to determine the source of the benzene. When MSD collects future samples, we will collect additional sampling containers for volatile organics and provide Bridgeton Landfill with these containers. Please have these samples analyzed for volatile organics (EPA method 624) to check and compare results. We note that your treated batches, as well as MSD's analyses of loads hauled to the Bissell Point treatment plant, do not show elevated benzene levels. This may help you to focus your investigation.	(1) Following receipt of this notification on Thursday June 20, 2013, Bridgeton Landfill ceased discharge to the Missouri River Treatment Facility until it could investigate the cause of the inconsistent readings. Each of these batches had been confirmed to be below the allowable benzene limit prior to transfer into the 97,000 gallon tank. That investigation is ongoing and we will update MSD on the resolution of this issue before resuming discharge to the Missouri River Treatment Facility. (2) Bridgeton Landfill recently switched analytical labs to TestAmerica. Because of dilution challenges and other factors, they have been unable to get an valid, unqualified BOD sample result in their first attempts. None of the BOD data in the TestAmerica results since 6/7/2013, MSD Batch 189/190, is reliable. (3) Also in the transition, TestAmerica failed to include SGT-HEM (TPH). The lab has been reminded to add this to their list and try to recover enough existing sample to run.	1. We note that for 6/18/13, the batch was identified as 228. Our understanding is that batches are now treated as combinations of two, such as batch 228/229 that was hauled to Bissell on 6/18/13. Was batch 228 also treated and analyzed separately? If not, you must explain how the strength and analytical data will be provided for the 6/18/13 onsite discharge. 2. We also note that all batches analyzed by Test America have much or extremely lower values for Oil & Grease than those analyzed by Pace. Given Test America's inability to analyze BOD, the Oil & Grease values cannot be considered reliable. Until Test America's problems can be resolved, Bridgeton Landfill must immediately begin having at least BOD, COD (for comparison with BOD), Oil & Grease, and Oil & Grease-SGT (for comparison with O&G) analyzed by an additional lab. We realize that Oil & Grease samples cannot be split. Therefore, those samples will have to be collected concurrently if you have both Test America and another lab do the analyses. 3. Because there were no BOD results for batches 194/195 and 199/200, and 203/204's qualified BOD was obviously incorrect, we will use 50% of the COD value as these batch's BOD for billing purposes. This level is consistent with historical BOD values.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character** .			
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			

Reporting Requirement	MSD response 6/20/13	Bridgeton Landfill Response 6/25/13	MSD 6/27/13
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis** , and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	• Please see the second bullet item item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant. • We also have determined the volume and surcharge rate for the onsite discharges from 4/30/13 - 5/31/13. The rate is 8.1 ¢/gallon for 384,334 gallons, or a total of $31,210.12. The charge will be added to Bridgeton Landfill's MSD bill.	Bridgeton Landfill recently switched analytical labs to TestAmerica. Because of dilution challenges they have been unable to get an valid, unqualified BOD sample result in the first six attempts. None of the BOD data in the TestAmerica results since 6/7/2013, MSD Batch 189/190, is reliable.	
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:			
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material , shall be submitted to MSD on a weekly basis.**			
4. The daily discharge **shall not exceed 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday** , and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP. [Approved volume increased from 50,000 GPD to 100,000 GPD on 5/30/13.]			
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**			
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**		(1)Bridgeton Landfill recently switched analytical labs to TestAmerica. Because of dilution challenges and other factors, they have been unable to get an valid, unqualified BOD sample result in their first attempts. None of the BOD data in the TestAmerica results since 6/7/2013, MSD Batch 189/190, is reliable. (2) Also in the transition, TestAmerica failed to include SGT-HEM (TPH). The lab has been reminded to add this to their list and try to recover enough existing sample to run.	See item 5 for direct discharge to the Missouri River plant, above.
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.			
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			

Reporting Requirement	MSD response 6/20/13	Bridgeton Landfill Response 6/25/13	MSD 6/27/13
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716. [Analytical data for discharges from 4/25/13 - 5/31/13 show higher strength than anticipated from pre-discharge sampling. Tipping fee returned to $0.08/gallon.]	• The data results spreadsheet shows separate analytical results for batches 184 and 187. It appears that the procedure you describe in your 6/18/13 response was not used for these batches. In order to properly calculate applicable surcharge levels, we need to know the volume of <u>each</u> batch that was delivered, to Bissell Point, not just the total for both. • The same requirement will apply to all future "combined" batches, if they are analyzed separately. • For the deliveries on 6/14/13, there is a note on the Weekly Disposal Summary that states, "One load on 6/14/2013 was from Batch 218/219." Again, we need to know the volume (actually the truck capacity) for this load, so that we can properly calculate applicable surcharge levels. • We also have calculated what the volume and surcharge rate would have been for the discharges hauled to Bissell Point from 4/25/13 - 5/31/13. It is 8.2¢/gallon (for 1,445,500 gallons truck capacity), very close to the onsite discharges' strength. Because the actual strength was quite higher than indicated by Bridgeton Landfill data submitted prior to discharges commencing, we will be billing a the actual rate of 8¢/gallon prescribed in MSD's hauled waste ordinance, for a total of $115,632. The charge will be added to Bridgeton Landfill's MSD bill.	In response to the first item - Batch 184-MSD volume delivered to Bissell Point = 119,600 gallons (on 6/5/13 and 6/6/13). Batch 187-MSD volume delivered to Bissell Point = 60,800 gallons (on 6/6/13). In response to the second item, the truck capacity for the load from Batch 218/219-MSD, delivered on 6/14/13, was 7,500 gallons. Supporting documentation was provided by email on Friday June 21, 2013.	
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:			
• <u>Air monitoring</u>: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013**. If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **If that report is provided by May 10, 2013.**			

Reporting Requirement	MSD response 6/20/13	Bridgeton Landfill Response 6/25/13	MSD 6/27/13
• Pending air monitoring : Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline** . Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events** , based on the results of sampling or future concerns that may arise.			
• Pump station ventilation : Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013.**			
• Leachate/wastewater monitoring : **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** 1: If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes** . 2: If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. 3: Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.			
• Past analytical data : Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.			
• Pretreatment system : Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.			

Reporting Requirement	MSD response 6/20/13	Bridgeton Landfill Response 6/25/13	MSD 6/27/13
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**			

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissell Point Tracking Table			
Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Saturday, June 15, 2013	Batch 218 / 219	45,600	45,600
Sunday, June 16, 2013	None	None	None
Monday, June 17, 2013	Batch 223 / 224	96,900	97,200
Tuesday, June 18, 2013	Batch 228 / 229	96,700	98,200
Wednesday, June 19, 2013	Batch 232 / 233	97,200	98,200
Thursday, June 20, 2013	Batch 235 / 236	96,800	98,200
Friday, June 21, 2013	Batch 237 / 238	98,700	98,700

Starting Date	***6/15/2013 5:01***
Ending Date	***6/22/2013 5:00***

MSD - Missouri River Tracking Table								
Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and Time	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)	Adjusted pH
Saturday, June 15, 2013	Accumulated	19,007	6/15/2013 5:01	6/16/2013 5:03	24.0	840	790.9	6.41
Sunday, June 16, 2013	Accumulated	17,502	6/16/2013 5:03	6/17/2013 5:01	24.0	840	730.3	6.41
Monday, June 17, 2013	Accumulated	16,901	6/17/2013 5:01	6/18/2013 5:00	24.0	840	704.7	6.41
Tuesday, June 18, 2013	Batch 228	18,103	6/18/2013 5:00	6/19/2013 5:00	24.0	840	754.3	5.90
Wednesday, June 19, 2013	Accumulated	17,502	6/19/2013 5:00	6/20/2013 5:14	24.2	840	722.2	5.90
Thursday, June 20, 2013	Accumulated	800	6/20/2013 5:14	6/21/2013 5:00	23.8	840	33.7	5.90
Friday, June 21, 2013	Batch 235 / 236 and 237/238	-	6/21/2013 5:00	6/22/2013 5:00	24.0	840	0.0	6.86

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Ryan K Schue Title: Environmental Specialist Date: 6/22/2013

MSD 6-27-13

Weekly Volume Summary - Week 9 (6-15-13 through 6-21-13)

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/16/2013 5:03:00 AM	6/15/2013 5:01:00 AM	24.0 hours
Reading (Gallons):	214,170	195,163	19,007

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 19,007 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/16/2013

MSD Daily Flow Reading, ending 6-16-2013

Daily Flow Reading — *Bridgeton Landfill*

	Current	Previous	Difference
Date / Time:	6/17/2013 5:01:00 AM	6/16/2013 5:03:00 AM	24.0 hours
Reading (Gallons):	231,672	214,170	17,502

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 17,502 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/17/2013

MSD Daily Flow Reading, ending 6-17-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/18/2013 5:00:00 AM	6/17/2013 5:01:00 AM	24.0 hours
Reading (Gallons):	248,573	231,672	16,901

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 16,901 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/18/2013

MSD Daily Flow Reading, ending 6-18-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/19/2013 5:00:00 AM	6/18/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	266,676	248,573	18,103

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 18,103 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/19/2013

MSD Daily Flow Reading, ending 6-19-2013

Daily Flow Reading — Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/20/2013 5:14:00 AM	6/19/2013 5:00:00 AM	24.2 hours
Reading (Gallons):	284,178	266,676	17,502

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 17,502 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K. Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/20/2013

MSD Daily Flow Reading, ending 6-20-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/21/2013 5:00:00 AM	6/20/2013 5:14:00 AM	23.8 hours
Reading (Gallons):	284,978	284,178	800

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 800 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K. Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/21/2013

MSD Daily Flow Reading, ending 6-21-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/22/2013 5:00:00 AM	6/21/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	284,978	284,978	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: B K Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/22/2013

MSD Daily Flow Reading, ending 6-22-2013

MSD 6-27-13

OB-218/219 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/13/2013
Fill Start Time	09:00
Fill Stop Date	6/13/2013
Fill Stop Time	18:20
Process Battery	TB-3/4

Processing Data

Process Start Date	6/13/2013
Process Start Time	18:20
Process Stop Date	6/14/2013
Process Stop Time	15:15
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-340
Test Results	Benzene 26 ppb
Reprocessed Batch	NAL13026-345 Retest TB-4 Tank 1 - Benzene 24 ppb

Notes

Portion of Batch 219 transferred for Advanced Waste Services.

Monday, June 24, 2013

OB-223/224 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/14/2013
Fill Start Time	13:20
Fill Stop Date	6/14/2013
Fill Stop Time	21:00
Process Battery	TB-1/2

Processing Data

Process Start Date	6/14/2013
Process Start Time	20:05
Process Stop Date	6/15/2013
Process Stop Time	20:00
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-350
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, June 24, 2013

OB-228/229 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/16/2013
Fill Start Time	14:30
Fill Stop Date	6/17/2013
Fill Stop Time	00:05
Process Battery	TB-3/4

Processing Data

Process Start Date	6/16/2013
Process Start Time	22:10
Process Stop Date	6/17/2013
Process Stop Time	22:30
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-356
Test Results	Benzene 20 ppb
Reprocessed Batch	

Notes

Tanks 1, 2, and 3 of TB-3 transferred to 96k AST. Tank 4 loaded out. Tanks 1 thru 4 of TB-3 received transfers from stormwater storage tanks #39, #20, #160, and #159, respectively.

Monday, June 24, 2013

OB-232/233 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/17/2013
Fill Start Time	10:30
Fill Stop Date	6/18/2013
Fill Stop Time	13:00
Process Battery	TB-1/2

Processing Data

Process Start Date	6/17/2013
Process Start Time	13:20
Process Stop Date	6/18/2013
Process Stop Time	20:00
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-370
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, June 24, 2013

OB-235/236 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/18/2013
Fill Start Time	13:00
Fill Stop Date	6/18/2013
Fill Stop Time	19:15
Process Battery	TB-3/4

Processing Data

Process Start Date	6/18/2013
Process Start Time	16:18
Process Stop Date	6/19/2013
Process Stop Time	15:30
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-372
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, June 24, 2013

OB-237/238 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/19/2013
Fill Start Time	14:37
Fill Stop Date	6/20/2013
Fill Stop Time	04:45
Process Battery	TB-1/2

Processing Data

Process Start Date	6/19/2013
Process Start Time	17:40
Process Stop Date	6/20/2013
Process Stop Time	17:00
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-374
Test Results	Benzene 100 ppb
Reprocessed Batch	

Notes

Monday, June 24, 2013

MSD

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Biochemical Oxygen Demand (5-day)	Chemical Oxygen Demand	Nitrogen, ammonia as N	Oil and Grease	Oil and Grease - Silica gel cleanup	pH	Solids, total suspended	Aluminum	Antimony
					NA	NA	NA	NA	NA	NA	NA	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 210/211	6/12/2013	TA (St. Louis)	QC Pending	160-2673-1	22796.00 e	50000	710	11 j	--	6.00	810	19	ND
MSD Batch 207/208	6/11/2013	TA (St. Louis)	QC Pending	160-2671-1	22946.00 e	47000	710	12 j	--	6.00	920	20	ND
MSD Batch 203/204	6/10/2013	TA (St. Louis)	QC Pending	160-2660-1	2333.40 eh	51000	750	60	--	6.00	2300	20	ND
MSD Batch 199/200	6/9/2013	TA (St. Louis)	Validated	160-2645-1	NC BQS	56000	730	120	--	6.00	2800	42	ND
MSD Batch 194/195	6/9/2013	TA (St. Louis)	Validated	160-2640-1	NC BQS	57000	750	120	--	6.00	560	18	ND
Batch 189/190	6/7/2013	Pace	Validated	60146488	27500	53800	1760	438	20.7	5.5	1100	8.89	0.0471
MSD Batch 187	6/6/2013	Pace	Validated	60146383	24600	48200	952	305	20.7	5.5	870	7.16	0.0439

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
0.49 j	ND	ND	0.35 j	ND	ND	1000	0.33 j	ND	ND	ND	ND	0.13 j	17
0.53	ND	ND	0.31 j	ND	ND	990	0.24 j	0.0037 jb	ND	ND	ND	0.11 j	15
0.61	ND	ND	0.35 j	0.25 jb	ND	1100	0.25 j	0.0025 jb	ND	ND	ND	0.11 j	15
0.59	ND	ND	0.39 j	ND	ND	1100	0.27 j	0.0074	ND	ND	ND	0.12 j	16
0.64	ND	ND	0.38 j	0.27 jb	ND	990	0.23 j	0.0033	ND	ND	ND	0.12 j	16
0.639	ND	0.0124	0.258	0.0467	ND	806	0.138	0.0012	0.127	ND	ND	ND	13.9
0.597	ND	0.0112	0.244	0.0433	ND	761	0.119	0.0019	0.115	ND	ND	ND	12.9

Table 3
VOCs and SVOCs
December 2012 - June 2013
Bridgeton Landfill

					Benzene
Location	Date	Lab Name	Data Status	Lab Report	ug/l
MSD Batch 213/214	6/13/2013	TA (St. Louis)	Validated	160-2702-1	ND
MSD Batch 210/211	6/12/2013	TA (St. Louis)	QC Pending	160-2673-1	**49 j**
MSD Batch 207/208	6/11/2013	TA (St. Louis)	QC Pending	160-2671-1	**39 j**
MSD Batch 203/204	6/10/2013	TA (St. Louis)	QC Pending	160-2660-1	ND
MSD Batch 199/200	6/9/2013	TA (St. Louis)	Validated	160-2645-1	**8.0 j**
MSD Batch 194/195	6/9/2013	TA (St. Louis)	Validated	160-2640-1	ND
MSD Batch 189/190	6/7/2013	Pace	Validated	60146488	ND
MSD Batch 187	6/6/2013	Pace	Validated	60146383	ND

MSD

Doug Mendoza

MSD

From:	Cunningham, Ally (LG) <ACunningham@LATHROPGAGE.COM>
Sent:	Tuesday, June 25, 2013 5:02 PM
To:	Doug Mendoza; Merrigan, Jessie (LG); John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc:	Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Walker, Tony
Subject:	RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update
Attachments:	Bridgeton Landfill conditional approval items tracking 2013.06.25.XLSX

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the weekly submission is available on Barr's FTP site for your download and review. Thank you for your follow up from last week's report. I have attached the approval items tracking table, updated with this week's actions. Additionally, we want to advise you that the 316,000 gallon tank is now operational, and we will begin utilizing it rather than the tank batteries (aka sparging tanks). None of our sampling, trucking or other processes previously in place will change. The 316,000 gallon tank would represent a single batch for testing and batch records. Please let us know if you have any questions and we look forward to continuing to work with you on these action items.

As always, please let us know if you have any questions or need any additional information.

Thank you for your ongoing assistance,
Ally

LATHROP & GAGE LLP

Ally Cunningham
Associate
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Reporting Requirement	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13	Bridgeton Landfill Response 6/25/13
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:			
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**			
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**	Please see below.	Please see item 5 for Direct Discharge to the Missouri River Wastewater Treatment Plant.	Please see response to item 5.
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	Please see below.	MSD collected samples for several days (from the line into the pump station) when Bridgeton Landfill restarted its direct discharge. The complex matrix of the samples delayed receipt of the results. However, once received, we found benzene levels of: 5/1 = 404 ug/L, 5/2 = 269 ug/L, 5/3 = 152 ug/L, 5/6 = 41.8 ug/L, and 5/7 = 80.6 ug/L. Note that the first three readings were above the fume toxicity screening level. With the downward trend, we thought that residual contamination from earlier, untreated wastewater in the collection tank may have been the source. Once MSD received the above results, we resumed sampling of Bridgeton Landfill's onsite discharge, this time from the side of the collection tank. Unfortunately, the two results so far again show elevated benzene levels: 6/6 = 409 ug/L, and 6/14 = 140 ug/L. Due to the continuing elevated benzene levels, MSD must require Bridgeton Landfill to investigate to determine the source of the benzene. When MSD collects future samples, we will collect additional sampling containers for volatile organics and provide Bridgeton Landfill with these containers. Please have these samples analyzed for volatile organics (EPA method 624) to check and compare results. We note that your treated batches, as well as MSD's analyses of loads hauled to the Bissell Point treatment plant, do not show elevated benzene levels. This may help you to focus your investigation.	(1) Following receipt of this notification on Thursday June 20, 2013, Bridgeton Landfill ceased discharge to the Missouri River Treatment Facility until it could investigate the cause of the inconsistent readings. Each of these batches had been confirmed to be below the allowable benzene limit prior to transfer into the 97,000 gallon tank. That investigation is ongoing and we will update MSD on the resolution of this issue before resuming discharge to the Missouri River Treatment Facility. (2) Bridgeton Landfill recently switched analytical labs to TestAmerica. Because of dilution challenges and other factors, they have been unable to get an valid, unqualified BOD sample result in their first attempts. None of the BOD data in the TestAmerica results since 6/7/2013, MSD Batch 189/190, is reliable. (3) Also in the transition, TestAmerica failed to include SGT-HEM (TPH). The lab has been reminded to add this to their list and try to recover enough existing sample to run.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character**.	We appreciate MSD's response and will work with our team.		
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			

Reporting Requirement	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13	Bridgeton Landfill Response 6/25/13
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis** , and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.		• Please see the second bullet item item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant. • We also have determined the volume and surcharge rate for the onsite discharges from 4/30/13 - 5/31/13. The rate is 8.1 ¢/gallon for 384,334 gallons, or a total of $31,210.12. The charge will be added to Bridgeton Landfill's MSD bill.	Bridgeton Landfill recently switched analytical labs to TestAmerica. Because of dilution challenges they have been unable to get an valid, unqualified BOD sample result in the first six attempts. None of the BOD data in the TestAmerica results since 6/7/2013, MSD Batch 189/190, is reliable.
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:			
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material , shall be submitted to MSD on a weekly basis.**	Please see below.		
4. The daily discharge **shall not exceed 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday** , and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP. [Approved volume increased from 50,000 GPD to 100,000 GPD on 5/30/13.]			
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**			
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	Please see below.		(1)Bridgeton Landfill recently switched analytical labs to TestAmerica. Because of dilution challenges and other factors, they have been unable to get an valid, unqualified BOD sample result in their first attempts. None of the BOD data in the TestAmerica results since 6/7/2013, MSD Batch 189/190, is reliable. (2) Also in the transition, TestAmerica failed to include SGT-HEM (TPH). The lab has been reminded to add this to their list and try to recover enough existing sample to run.
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.			
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			

Reporting Requirement	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13	Bridgeton Landfill Response 6/25/13
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716. [Analytical data for discharges from 4/25/13 - 5/31/13 show higher strength than anticipated from pre-discharge sampling. Tipping fee returned to $0.08/gallon.]	The missing data for 184/187 has been added to the spreadsheet. The daily volume hauled to MSD Mon-Fri consists of 100,000 gallons of processed liquid taken from a super-batch of 140,000 gallons, contained in 8 frac tanks. We collect 1 operational sample per 8-tank super-batch, followed by 1 confirmation sample per 8-tank super-batch. We have been using the double numbering system to indicate that there are 2 batteries (of 4 tanks each) that comprise a super-batch. When we start using the 316k tank, there will be 1 batch number per 300,000-g batch, 1 operational sample and 1 confirmation sample to represent all 300,000 gallons. We hope that provides some clarification.	• The data results spreadsheet shows separate analytical results for batches 184 and 187. It appears that the procedure you describe in your 6/18/13 response was not used for these batches. In order to properly calculate applicable surcharge levels, we need to know the volume of <u>each</u> batch that was delivered, to Bissell Point, not just the total for both. • The same requirement will apply to all future "combined" batches, if they are analyzed separately. • For the deliveries on 6/14/13, there is a note on the Weekly Disposal Summary that states, "One load on 6/14/2013 was from Batch 218/219." Again, we need to know the volume (actually the truck capacity) for this load, so that we can properly calculate applicable surcharge levels. • We also have calculated what the volume and surcharge rate would have been for the discharges hauled to Bissell Point from 4/25/13 - 5/31/13. It is 8.2¢/gallon (for 1,445,500 gallons truck capacity), very close to the onsite discharges' strength. Because the actual strength was quite higher than indicated by Bridgeton Landfill data submitted prior to discharges commencing, we will be billing a the actual rate of 8¢/gallon prescribed in MSD's hauled waste ordinance, for a total of $115,632. The charge will be added to Bridgeton Landfill's MSD bill.	In response to the first item - Batch 184-MSD volume delivered to Bissell Point = 119,600 gallons (on 6/5/13 and 6/6/13). Batch 187-MSD volume delivered to Bissell Point = 60,800 gallons (on 6/6/13). In response to the second item, the truck capacity for the load from Batch 218/219-MSD, delivered on 6/14/13, was 7,500 gallons. Supporting documentation was provided by email on Friday June 21, 2013.
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:			
• <u>Air monitoring</u>: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013**. If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **If that report is provided by May 10, 2013.**			

Reporting Requirement	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13	Bridgeton Landfill Response 6/25/13
• Pending air monitoring : Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline** . Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events** , based on the results of sampling or future concerns that may arise.			
• Pump station ventilation : Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013**.			
• Leachate/wastewater monitoring : **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** 1: If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes** . 2: If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. 3: Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.			
• Past analytical data : Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.			
• Pretreatment system : Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.			

Reporting Requirement	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13	Bridgeton Landfill Response 6/25/13
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**			

Doug Mendoza

BRIDGETON LANDFILL

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Tuesday, June 25, 2013 3:20 PM
To: Doug Mendoza
Subject: RE: O&G Variance

*Estimated value, QA/QC criteria not met.

- The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
- Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Tuesday, June 25, 2013 3:10 PM
To: Ed Galbraith
Cc: Smith, Steve (ssmith10@republicservices.com); Power, Brian <BPower@republicservices.com> (BPower@republicservices.com)
Subject: RE: O&G Variance

Ed,

I think there is sufficient data. However, could you please explain the meaning of the asterisks that appear next to two TPH results?

Doug

From: Ed Galbraith [mailto:EGalbraith@barr.com]
Sent: Tuesday, June 25, 2013 3:04 PM
To: Doug Mendoza
Cc: Smith, Steve (ssmith10@republicservices.com); Power, Brian <BPower@republicservices.com> (BPower@republicservices.com)
Subject: O&G Variance

Doug, see attached Oil and Grease and TPH data. Unfortunately, although their verification worksheets indicate that SGT-HEM was included, TestAmerica did not run nonpolar analysis. I've asked them to go back and try to run those; but there will not be enough time if you want to get a variance request this week, as I think you indicated previously.

However we do have some TPH data from previous Pace analytical. Please look at the data and consider whether we have a sufficient basis to prepare a variance request.

MSD

Doug Mendoza

BRIDGETON LANDFILL

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Tuesday, June 25, 2013 3:04 PM
To: Doug Mendoza
Cc: Smith, Steve (ssmith10@republicservices.com); Power, Brian <BPower@republicservices.com> (BPower@republicservices.com)
Subject: O&G Variance
Attachments: Oil and Grease 06212013.xlsx

Doug, see attached Oil and Grease and TPH data. Unfortunately, although their verification worksheets indicate that SGT-HEM was included, TestAmerica did not run nonpolar analysis. I've asked them to go back and try to run those; but there will not be enough time if you want to get a variance request this week, as I think you indicated previously.

However we do have some TPH data from previous Pace analytical. Please look at the data and consider whether we have a sufficient basis to prepare a variance request.

Can I call you around 8:30 tomorrow to discuss?

Ed Galbraith

Senior Environmental Scientist
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egalbraith@barr.com
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Table 1
General Parameters and Metals - Detects Only
December 2012 - June 2013
Bridgeton Landfill

					Oil and Grease	Oil and Grease - Silica gel cleanup
					NA	NA
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l
MSD Batch 213/214	6/13/2013	TA (Buffalo)	Validated	160-2702-1	12 j	--
MSD Batch 213/214	6/13/2013	TA (St. Louis)	Validated	160-2702-1	--	--
MSD Batch 210/211	6/12/2013	TA (Buffalo)	QC Pending	160-2673-1	11 j	--
MSD Batch 210/211	6/12/2013	TA (Buffalo)	Validated	160-2673-2	--	--
MSD Batch 210/211	6/12/2013	TA (St. Louis)	QC Pending	160-2673-1	--	--
MSD Batch 207/208	6/11/2013	TA (Buffalo)	QC Pending	160-2671-1	12 j	--
MSD Batch 207/208	6/11/2013	TA (Buffalo)	Validated	160-2671-2	--	--
MSD Batch 207/208	6/11/2013	TA (St. Louis)	QC Pending	160-2671-1	--	--
MSD Batch 203/204	6/10/2013	TA (Buffalo)	QC Pending	160-2660-1	60	--
MSD Batch 203/204	6/10/2013	TA (Buffalo)	Validated	160-2660-2	--	--
MSD Batch 203/204	6/10/2013	TA (St. Louis)	QC Pending	160-2660-1	--	--
MSD Batch 199/200	6/9/2013	TA (Buffalo)	Validated	160-2645-1	120	--
MSD Batch 199/200	6/9/2013	TA (St. Louis)	Validated	160-2645-1	--	--
MSD Batch 199/200	6/9/2013	TA (St. Louis)	Validated	160-2645-2	--	--
MSD Batch 194/195	6/9/2013	TA (Buffalo)	Validated	160-2640-1	120	--
MSD Batch 194/195	6/9/2013	TA (St. Louis)	Validated	160-2640-1	--	--
MSD Batch 194/195	6/9/2013	TA (St. Louis)	Validated	160-2640-2	--	--
MSD Batch 189/190	6/7/2013	Pace	Validated	60146488	438	20.7
MSD Batch 189/190	6/7/2013	Pace	Validated	60146489	--	--
Untreated Commingled	6/6/2013	PDC	Validated	3061235	--	--
MSD Batch 187	6/6/2013	Pace	Validated	60146382	--	--
MSD Batch 187	6/6/2013	Pace	Validated	60146383	305	20.7
Untreated Commingled	6/6/2013	PDC	Validated	3061235	--	--
Untreated Commingled	6/6/2013	Pace	Validated	60146460	--	--
Untreated Commingled	6/6/2013	Pace	Validated	60146460	--	--
MSD Batch 184	6/5/2013	Pace	Validated	60146251	--	--
MSD Batch 184	6/5/2013	Pace	Validated	60146252	360	77.9
MSD Batch 180	6/3/2013	Pace	Validated	60146017	--	--
MSD Batch 180	6/3/2013	Pace	Validated	60146018	328	55.1
MSD Batch 179/181	6/3/2013	Pace	Validated	60146109	--	--
MSD Batch 179/181	6/3/2013	Pace	Validated	60146110	297	37.4 *
MSD Batch 176	5/31/2013	Pace	Validated	60145949	--	--
MSD Batch 176	5/31/2013	Pace	Validated	60145950	130	27.2
MSD Batch 172	5/30/2013	Pace	Validated	60145818	--	--
MSD Batch 172	5/30/2013	Pace	Validated	60145828	449	46.7
MSD Batch 168	5/30/2013	Pace	Validated	60145827	--	--
MSD Batch 168	5/30/2013	Pace	Validated	60145828	628	70.6
MSD Batch 165	5/29/2013	Pace	Validated	60145727	--	--
MSD Batch 165	5/29/2013	Pace	Validated	60145728	259	8.4
MSD Batch 159	5/27/2013	Pace	Validated	60145608	--	--
MSD Batch 159	5/27/2013	Pace	Validated	60145609	291	47.8 *
MSD Batch 157	5/27/2013	Pace	Validated	60145606	--	--
MSD Batch 157	5/27/2013	Pace	Validated	60145607	211	--
MSD Batch 153	5/24/2013	Pace	Validated	60145537	--	--
MSD Batch 153	5/24/2013	Pace	Validated	60145543	437	--
Untreated Commingled	5/23/2013	PDC	Validated	3053342	--	--
Untreated Commingled	5/23/2013	PDC	Validated	3053342	--	--

Table 1
General Parameters and Metals - Detects Only
December 2012 - June 2013
Bridgeton Landfill

Untreated Commingled	5/23/2013	Pace	Validated	60145559	--	--
Untreated Commingled	5/23/2013	Pace	Validated	60145559	--	--
MSD Batch 148	5/23/2013	Pace	Validated	60145395	--	--
MSD Batch 148	5/23/2013	Pace	Validated	60145428	**580**	--
MSD Batch 145	5/22/2013	Pace	Validated	60145253	--	--
MSD Batch 145	5/22/2013	Pace	Validated	60145336	**410**	--
MSD Batch 142	5/22/2013	Pace	Validated	60145253	--	--
MSD Batch 142	5/22/2013	Pace	Validated	60145336	**337**	--
MSD Batch 138	5/21/2013	Pace	Validated	60145137	--	--
MSD Batch 138	5/21/2013	Pace	Validated	60145181	**62.7**	--
MSD Batch 136	5/19/2013	Pace	Validated	60145030	--	--
MSD Batch 136	5/19/2013	Pace	Validated	60145032	**504**	--
MSD Batch 131	5/18/2013	Pace	Validated	60145030	--	--
MSD Batch 131	5/18/2013	Pace	Validated	60145032	**272**	--
MSD Batch 128	5/17/2013	Pace	Validated	60144974	**30.6**	--
MSD Batch 121	5/16/2013	Pace	Validated	60144971	**27.7**	--
MSD Batch 119	5/14/2013	Pace	Validated	60144701	--	--
MSD Batch 119	5/14/2013	Pace	Validated	60144732	**497**	--
MSD Batch 117	5/14/2013	Pace	Validated	60144701	--	--
MSD Batch 117	5/14/2013	Pace	Validated	60144732	**182**	--
MSD Batch 114	5/12/2013	Pace	Validated	60144495	**436**	--
MSD Batch 114	5/12/2013	Pace	Validated	60144497	--	--
MSD Batch 112	5/12/2013	Pace	Validated	60144495	**342**	--
MSD Batch 112	5/12/2013	Pace	Validated	60144497	--	--
MSD Batch 107	5/10/2013	Pace	Validated	60144432	**393**	--
MSD Batch 105	5/10/2013	Pace	Validated	60144432	**953**	--
MSD Batch 100	5/8/2013	Pace	Validated	60144206	--	--
MSD Batch 100	5/8/2013	Pace	Validated	60144207	**366**	--
MSD Batch 98	5/8/2013	Pace	Validated	60144202	--	--
MSD Batch 98	5/8/2013	Pace	Validated	60144204	**451**	--
MSD Batch 94	5/7/2013	Pace	Validated	60144068	**240**	--
MSD Batch 94	5/7/2013	Pace	Validated	60144069	--	--
Untreated Commingled	5/6/2013	PDC	Validated	3050958	--	--
Untreated Commingled	5/6/2013	PDC	Validated	3050958	--	--
MSD Batch 92	5/6/2013	PDC	Validated	3050621	--	--
MSD Batch 92	5/6/2013	PDC	Validated	3050622	--	--
MSD Batch 89	5/3/2013	PDC	Validated	3050532	--	--
MSD Batch 89	5/3/2013	PDC	Validated	3050533	--	--
MSD Batch 86	5/2/2013	PDC	Validated	3050469	--	--
MSD Batch 86	5/2/2013	PDC	Validated	3050470	--	--
MSD Batch 82	5/2/2013	PDC	Validated	3050385	--	--
MSD Batch 82	5/2/2013	PDC	Validated	3050388	--	--
Untreated Commingled	5/2/2013	PDC	Validated	3050403	--	--
Untreated Commingled	5/2/2013	PDC	Validated	3050403	--	--
Untreated Commingled	5/1/2013	Pace	Validated	60143880	--	--
Untreated Commingled	5/1/2013	Pace	Validated	60143880	--	--
MSD Batch 77	4/30/2013	PDC	Validated	3050115	--	--
MSD Batch 77	4/30/2013	PDC	Validated	3050111	--	--
MSD Lift (Pre-Dis)	4/29/2013	PDC	Validated	3044016	--	--
MSD Lift (Pre-Dis)	4/29/2013	PDC	Validated	3044018	**35**	--

Table 1
General Parameters and Metals - Detects Only
December 2012 - June 2013
Bridgeton Landfill

MSD Batch 74	4/28/2013	PDC	Validated	3043821	--	--
MSD Batch 74	4/28/2013	PDC	Validated	3043822	--	--
MSD Batch 71	4/28/2013	PDC	Validated	3043816	--	--
MSD Batch 71	4/28/2013	PDC	Validated	3043820	--	--
MSD Batch 67	4/26/2013	PDC	Validated	3043764	--	--
MSD Batch 67	4/26/2013	PDC	Validated	3043767	**29**	--
Dyersburg POTW	4/26/2013	PDC	Validated	3043719	--	--
Treat Commingled MSD	4/25/2013	PDC	Validated	3043568	--	--
Untreated Commingled	4/24/2013	PDC	Validated	3043462	--	--
Untreated Commingled	4/24/2013	PDC	Validated	3043462	--	--
Untreated Commingled	4/24/2013	Pace	Validated	60143500	--	--
AWS TB-4	4/16/2013	PDC	Validated	3042561	--	--
Treat Commingled MSD	4/5/2013	EMSL	Validated	161305058	--	--
Treat Commingled MSD	4/5/2013	PDC	Validated	3041134	--	--
Treat Commingled MSD	4/5/2013	TA	Validated	160-2039-1	--	--
Untreated Condensate	3/29/2013	PDC	Validated	3033360	--	--
Untreated Condensate	3/29/2013	PDC	Validated	3033360	--	--
Untreated Condensate	3/28/2013	PDC	Validated	3033360	--	--
Untreated Condensate	3/28/2013	PDC	Validated	3033360	--	--
Processing Tank	3/6/2013	TA (St. Louis)	QC Pending	160-1678-2	--	--
Commingled Grab	3/6/2013	TA (St. Louis)	QC Pending	160-1678-2	--	--
Stored Composite	3/6/2013	TA (St. Louis)	QC Pending	160-1678-2	--	--
LCS-1	2/8/2013	PDC	Validated	3021168	--	--
LCS-2	2/8/2013	PDC	Validated	3021168	--	--
LCS-5	2/8/2013	PDC	Validated	3021168	--	--
Outfall008	2/8/2013	PDC	Validated	3021097	--	--
Outfall008	2/8/2013	PDC	Validated	3021097	--	--
Outfall008	2/7/2013	PDC	Validated	3021097	--	--
Outfall008	2/7/2013	PDC	Validated	3021097	--	--
Outfall008	2/7/2013	PDC	Validated	3021097	--	--
Outfall008	2/7/2013	PDC	Validated	3021097	--	--
Outfall008	2/7/2013	PDC	Validated	3021097	--	--
W-001	2/2/2013	Teklab	QC Pending	13020049	**34**	--
GEW-18R	1/29/2013	PDC	Validated	3013458	--	--
GEW-17R	1/29/2013	PDC	Validated	3013458	--	--
HZ-4	1/29/2013	PDC	Validated	3013458	--	--
GEW-53	1/29/2013	PDC	Validated	3013458	--	--
HZ-1	1/29/2013	PDC	Validated	3013458	--	--
SC-1	1/29/2013	PDC	Validated	3013458	--	--
LS-19	1/29/2013	PDC	Validated	3013458	--	--
H25	1/29/2013	PDC	Validated	3013458	--	--
LS-11	1/29/2013	PDC	Validated	3013458	--	--
LS-16	1/29/2013	PDC	Validated	3013458	--	--
LS-15	1/29/2013	PDC	Validated	3013458	--	--
LS-14	1/29/2013	PDC	Validated	3013458	--	--
LS-8	1/29/2013	PDC	Validated	3013458	--	--
LS-7	1/29/2013	PDC	Validated	3013458	--	--
LS-4	1/29/2013	PDC	Validated	3013458	--	--
LS-2	1/29/2013	PDC	Validated	3013458	--	--
LS-1	1/29/2013	PDC	Validated	3013458	--	--

Table 1
General Parameters and Metals - Detects Only
December 2012 - June 2013
Bridgeton Landfill

GEW-19AA	1/28/2013	PDC	QC Pending	3013327	--	--
GEW-20A	1/28/2013	PDC	QC Pending	3013327	--	--
GEW-21A	1/28/2013	PDC	QC Pending	3013327	--	--
GEW-81	1/28/2013	PDC	QC Pending	3013327	--	--
SC-2	1/28/2013	PDC	QC Pending	3013327	--	--
SC-3	1/28/2013	PDC	QC Pending	3013327	--	--
GEW-45	1/28/2013	PDC	QC Pending	3013327	--	--
GEW-54	1/28/2013	PDC	QC Pending	3013327	--	--
GEW-53	1/28/2013	PDC	QC Pending	3013327	--	--
Leachate Tank	1/28/2013	PDC	QC Pending	3013258	--	--
Leachate Tank 9	1/25/2013	PDC	QC Pending	3013178	--	--
CT-14	1/22/2013	PDC	QC Pending	3012763	--	--
FT-4	1/22/2013	PDC	QC Pending	3012763	--	--
FT-3	1/22/2013	PDC	QC Pending	3012763	--	--
FT-1	1/22/2013	PDC	QC Pending	3012763	--	--
GEW-42R	1/22/2013	PDC	QC Pending	3012763	--	--
GEW-41R	1/22/2013	PDC	QC Pending	3012763	--	--
GEW-43R	1/22/2013	PDC	QC Pending	3012763	--	--
GEW-44	1/22/2013	PDC	QC Pending	3012763	--	--
GEW-2	1/22/2013	PDC	QC Pending	3012763	--	--
GEW-24A	1/21/2013	PDC	QC Pending	3012653	--	--
GEW-23A	1/21/2013	PDC	QC Pending	3012653	--	--
GEW-22A	1/21/2013	PDC	QC Pending	3012653	--	--
Trench Sump 3	1/21/2013	PDC	QC Pending	3012653	--	--
GEW-19A	1/21/2013	PDC	QC Pending	3012653	--	--
LS-3	1/18/2013	PDC	QC Pending	3012582	--	--
LS-5	1/18/2013	PDC	QC Pending	3012582	--	--
AIT-1	1/18/2013	PDC	QC Pending	3012582	--	--
LS-6	1/18/2013	PDC	QC Pending	3012582	--	--
LS-18	1/18/2013	PDC	QC Pending	3012582	--	--
Bridge Liftstat 4	1/18/2013	PDC	QC Pending	3012582	--	--
Bridge Liftstat 3	1/17/2013	PDC	QC Pending	3012370	--	--
Bridge Liftstat 9	1/17/2013	PDC	QC Pending	3012370	--	--
Bridge Liftstat 10	1/17/2013	PDC	QC Pending	3012370	--	--
Bridge Liftstat 12	1/17/2013	PDC	QC Pending	3012370	--	--
Bridge Liftstat 2	1/16/2013	PDC	QC Pending	3012186	--	--
Bridge Liftstation	1/14/2013	PDC	QC Pending	3011844	--	--
LCH_Outfall008	12/13/2012	TA	QC Pending	160-1108-1	--	--
				max	**953**	**77.9**
				min	**11**	**8.4**
				average	**280**	**41**

MSD

TO: **Chris Verplancke, Finance Department**
Becky Bartholomew, Finance Department
Mary Wimsatt, Finance Department

FROM: **Darin Lewis**

DATE: **June 25, 2013**

SUBJECT: **BRIDGETON LANDFILL LLC**
WASTEWATER USER CHARGE BILLING
ACCOUNT NUMBER 0039145-8

Pursuant to the MSD Industrial Wastewater Discharge Permit for the above referenced facility, please bill this facility for the following volume for the indicated billing period:

VOLUME
On-Site Discharge

384,334 gallons with surcharge applied = $31,210.12

VOLUME
Hauled Waste Discharge

1,445,400 gallons X $0.08/Gal = $115,632.00

Total Bill = $146,842.12

The volume was obtained from the customer's on-site discharge self-monitoring report and hauled waste total truck capacities.

SOURCE OF WASTE: SP 801 Commingled landfill leachate and landfill gas collection system condensate

BILLING PERIOD: April 25, 2013 through May 31, 2013

Other applicable wastewater user charges, as per Ordinance 13402, should be included in this bill.

Please call me at 436-8716 if you have any questions.

bv

ec: Brian Gibson
Doug Mendoza
Laura Joiner

FILE: IU, Bridgeton Landfill LLC, 1003803000

MSD

Doug Mendoza

BRIDGETON LANDFILL

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Tuesday, June 25, 2013 8:59 AM
To: John Lodderhose; Doug Mendoza; Nora C. Estopare
Subject: FW: Eberline Beta Results and Health Physicist Letter
Attachments: 130624 John Frazier Letter.pdf

All, I apologize – I sent the Eberline Analytical report to you last Friday, and tried to send it again this morning but John informed me that you did not receive it either time, likely due to its size. Here is the letter from our Health Physicist. The report from Eberline is on the ftp site on this week's update (June 25).

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

resourceful. naturally. BARR

From: Ed Galbraith
Sent: Tuesday, June 25, 2013 8:22 AM
To: John Lodderhose; Doug Mendoza (DMENDOZA@stlmsd.com); Nora C. Estopare (nestopare@stlmsd.com)
Cc: Ed Galbraith
Subject: Eberline Beta Results and Health Physicist Letter

All, the attached report from Eberline Analytical and letter from Health Physicist John Frazier constitutes our efforts to investigate the Gross Beta result from the April 5, 2013 Treated Commingled sample that was originally analyzed by TestAmerica. As you recall the TestAmerica result was 9640 pCi/L Gross Beta.

As noted in Dr. Frazier's letter, the concentration of K-40 in the leachate (derived from the concentration of elemental K) is 456 pCi/L. Because K-40 decays by beta decay 89.3% of its decays, the beta activity concentration of K-40 in the leachate sample is approximately 407 pCi/L. Eberline's conclusion is that the sample appears to contain beta activity almost entirely from K-40 and that higher activity results are most likely artifacts from analyzing the sample as Total Dissolved Solids and Total Dissolved Solids combined. In other words based on the analysis conducted by Eberline Laboratory, essentially all of the Gross Beta concentration in the leachate sample is from K-40.

In response to your specific questions, Dr. Frazier concludes that

1. K-40 is a naturally occurring, not a man-made radionuclide; nevertheless to exceed the MCL for man-made Gross Beta, a human would need to ingest 100 gallons per year of the leachate.
2. Potential exposure to individuals (e.g., workers in enclosed facilities where the leachate is present) to other exposure pathways (non-ingestion) would produce immeasurably small radiation doses that are indistinguishable from radiation doses from natural background sources.

Thank you for your patience as we worked to assemble this information. If you have any questions, let me know. If you would like to ask Dr. Frazier any questions directly, I would be happy to arrange a meeting with him.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

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John R. Frazier, Ph.D., CHP
Health Physics Consultant
325 Sugarwood Drive
Knoxville, TN 37934
Tel: (865) 414-9271
Fax: (865) 675-7214
E-mail: jnpfrazier@charter.net

June 25, 2013

Mr. Edward Galbraith
Barr Engineering Company
1001 Diamond Ridge, Suite 1100
Jefferson City, MO 65109

Subject: **Review of Laboratory Analytical Results for Leachate Sample**

Dear Mr. Galbraith:

I have reviewed the results of laboratory analyses of a liquid sample identified as "Treated Commingled MSD". The laboratory reports of analysis for this sample include a report of radiological analyses (Work Order No. 13-06015, dated June 20, 2013) by Eberline Services Laboratory in Oak Ridge, Tennessee, and a report of non-radiological analysis for elemental potassium (K) by Galbraith Laboratories, Inc. in Knoxville, Tennessee (Report No. 52429, dated June 17, 2013). You have advised me that this sample was collected from leachate from a landfill.

As noted in the case narrative for the Eberline report of analysis, the sample was found to have beta-emitting radionuclides (from the Gross Beta analysis) with no positive gross alpha activity (from the Gross Alpha analysis). Additional radiological analyses of the sample demonstrated positive results for potassium-40 (K-40) from gamma-ray spectroscopic analysis of the sample. Potassium-40 is a naturally-occurring, beta-gamma emitter with approximately 89.3% of the decays occurring by beta emission. It is also the most abundant radionuclide in most native soils.

Because gamma-ray spectroscopic analysis for K-40 in the sample (as with most liquid samples) had a relatively high uncertainty of the result and because K-40 is a naturally-occurring radioactive isotope in all potassium (K), Eberline laboratory sent an aliquot of the leachate sample to Galbraith Laboratory for analysis for elemental K. The uncertainty of the analysis used at the Galbraith Laboratory for measuring the concentration of K is reported as +/- 10%, which is much better than the uncertainty (approximately 65-70% at 2 sigma) for the gamma spectroscopic analysis for K-40 at the concentrations measured at Eberline Services Laboratory.

The concentration of elemental K in the sample was measured to be 0.557 milligrams per milliliter (mg/mL). [Note: the food product "NoSalt" distributed by RCN Products, Inc. of Greenwich, Connecticut, contains 0.500 mg of potassium per mg of material. This is approximately equal to the potassium concentration in the leachate sample.] The fractional abundance of K-40 in elemental K is 0.000117 (i.e., 0.0117%). The activity per unit mass of K-40 (referred to as its intrinsic specific activity) is approximately 7,000 picocuries per milligram

(pCi/mg). Based on these conversion factors, the concentration of K-40 in the leachate (derived from the concentration of elemental K) is 0.456 pCi/mL or 456 pCi/L. Because K-40 decays by beta decay 89.3% of its decays, the beta activity concentration of K-40 in the leachate sample is approximately 407 pCi/L.

Eberline's conclusion is that the sample appears to contain beta activity almost entirely from K-40 and that higher activity results are most likely artifacts from analyzing the sample as Total Dissolved Solids and Total Suspended Solids combined. In other words, based on the analysis conducted by Eberline Laboratory, essentially all of the Gross Beta concentration in the leachate sample is from K-40.

In response to the your request for a health evaluation of the Gross Beta concentration in the leachate sample, I have prepared the following evaluation:

- K-40 is the principal contributor to the Gross Beta concentration in the sample.
- The concentration of K-40 in the sample is approximately 456 pCi/L.
- The radiation dose coefficient for ingestion of K-40 is 0.0000229 millirem per picocurie (mrem/pCi).
- The annual radiation dose for man-made beta emitters in drinking water from a community water supply is 4 mrem. [Note: K-40 is a naturally-occurring radionuclide; not a man-made radionuclide.]
- For comparison purposes, it is informative to note that a person would have to drink approximately 383 liters (100 gallons) of this leachate per year in order to receive a radiation dose of 4 mrem per year.
- Potential radiation doses to individuals (e.g., workers in enclosed facilities where the leachate is present) from other hypothetical exposure pathways are vanishingly small and indistinguishable from radiation doses from natural background radiation sources.

It is unreasonable to assume that anyone would drink any of the leachate; therefore, assuming that anyone would drink 100 gallons of this leachate in a year is a purely hypothetical exercise. Likewise, potential exposure of persons (such as workers at facilities processing the leachate) via other exposure pathways would produce immeasurably small radiation doses, if at all. There is no reasonable scientific basis for concerns from human exposures to beta emitters in this leachate at the radionuclide concentrations found by the analyses at the offsite, commercial analytical laboratories.

Please call me if you have any questions regarding the laboratory data or my assessment of hypothetical human exposures to this leachate.

Sincerely,

John R. Frazier

John R. Frazier, Ph.D.
Certified Health Physicist

MEMO TO: Chris Verplancke
Rebecca Bartholomew
Mary Wimsatt
Finance Department

FROM: Darin Lewis

DATE: June 24, 2013

SUBJECT: Surcharge Changes

We recommend that the surcharge values below be removed from the following account effective June 2013.

Account No: **0039145-8**

Company: **Bridgeton Landfill LLC**

Premise: **13570 St. Charles Rock Road**
Bridgeton, MO 63044

	TSS	BOD	COD
Old Surcharge Values (mg/L):	65	312	953

This change was initiated by the District. The discharged from this facility is now calculated and billed monthly as a special billing.

If you have any questions, please call me at 436-8716.

bv

pc: Brian Gibson
Doug Mendoza
Scott Rehmer
Laura Joiner

FILE: IU, Bridgeton Landfill LLC, 1003803000

MSD

Doug Mendoza

From: Brian G. Gibson
Sent: Monday, June 24, 2013 2:30 PM
To: Doug Mendoza
Subject: Bridgeton Landfill

Bridgeton Landfill meter reading was 284,978 gallons @ 10:29 on 06/21/2013.

MSD

Doug Mendoza

From: Darin Lewis
Sent: Saturday, June 22, 2013 10:57 AM
To: Catherine Politte; Mike Townley; Doug Mendoza; Brian G. Gibson; Sara Kammerer; Steve Grace
Subject: Bridgeton Landfill Leachate weekly volume summary

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant for 6/17/2013 to 6/22/2013.
6/17 – 96,900 gallons
6/18 – 96,700 gallons
6/19 – 97,200 gallons
6/20 – 96,800 gallons
6/21 – 98,700 gallons
6/22 – 45,600 gallons
Total = 531,900 gallons

MSD

DEPARTMENT OF ENVIRONMENTAL COMPLIANCE
MEMORANDUM

MEMO TO: **BRIDGETON LANDFILL LLC**

ACCT #: **1003803000**

FROM: **Chris Bulmahn** CB

SUBJECT: **Monthly volume reports**

DATE: **June 21, 2013**

I returned Bryan Sehie's call to let him know that we were going to use the volumes from the weekly discharge reports and send them to finance for appropriate billing. I told him he no longer needed to send the monthly report to MSD Finance. Bryan asked if he should still send the monthly report to me instead. I told him I would take it to compare it to the weekly report volumes, but would not submit it to Finance to avoid double billing.

MSD

Doug Mendoza

From: Cunningham, Ally (LG) <ACunningham@LATHROPGAGE.COM>
Sent: Friday, June 21, 2013 4:44 PM
To: Doug Mendoza; Merrigan, Jessie (LG); John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: LOAD 0047 HWR.PDF

Good Afternoon –
The following information is presented on behalf of Bridgeton Landfill in response to requests dated yesterday (6/20/13) and excerpted below:

• The data results spreadsheet shows separate analytical results for batches 184 and 187. It appears that the procedure you describe in your 6/18/13 response was not used for these batches. In order to properly calculate applicable surcharge levels, we need to know the volume of each batch that was delivered, to Bissell Point, not just the total for both.
• For the deliveries on 6/14/13, there is a note on the Weekly Disposal Summary that states, "One load on 6/14/2013 was from Batch 218/219." Again, we need to know the volume (actually the truck capacity) for this load, so that we can properly calculate applicable surcharge levels.

In response to the first item - Batch 184-MSD volume delivered to Bissell Point = 119,600 gallons (on 6/5/13 and 6/6/13). Batch 187-MSD volume delivered to Bissell Point = 60,800 gallons (on 6/6/13). In response to the second item, the truck capacity for the load from Batch 218/219-MSD, delivered on 6/14/13, was 7,500 gallons. I've attached the MSD Hauled Waste Receipt provided to the driver of this load upon leaving Bridgeton Landfill.

We trust this is the information you require at this time. If you have any questions, please let me know.

Thanks,
Ally

LATHROP & GAGE LLP
Ally Cunningham
Associate
2345 Grand Blvd., Suite 2200 | Kansas City, MO 64108-2618
P: 816.460.5616 | F: 816.292.2001 | ACunningham@LATHROPGAGE.COM
www.lathropgage.com
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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Thursday, June 20, 2013 9:07 AM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Jessie et al,

We have completed our review of the latest submitted report, along with associated data. Comments are contained in the attached tracking spreadsheet. Please provide the additional requested data as soon as possible, rather than with the next weekly report. The requested items are excerpted below:

• The data results spreadsheet shows separate analytical results for batches 184 and 187. It appears that the procedure you describe in your 6/18/13 response was not used for these batches. In order to properly calculate applicable surcharge levels, we need to know the volume of each batch that was delivered, to Bissell Point, not just the total for both.
• For the deliveries on 6/14/13, there is a note on the Weekly Disposal Summary that states, "One load on 6/14/2013 was from Batch 218/219." Again, we need to know the volume (actually the truck capacity) for this load, so that we can properly calculate applicable surcharge levels.

Thank you,
Doug Mendoza
MSD Industrial Pretreatment Manager

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Tuesday, June 18, 2013 4:06 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the weekly submission (for this short week of just last Thursday-Friday) is available on Barr's FTP site for your download and review. This is the first submission under the adjusted Tuesday submission schedule. We appreciate your approval of this timing change. Next week's submission will cover a full week (covering Saturday June 15th- Friday June 21st).

Metropolitan St. Louis Sewer District

Hauled Waste Receipt

NO. S-086908

A. Waste Source

Domestic ☐ Industrial ☒ Description of Waste: Landfill Leachate and Gas Condensate

Approximate Volume of Waste Loaded: 7500 gallons

Name: Bridgeton Landfill LLC Tel No: (314)744-8165

Address: 13570 St. Charles Rock Road City: Bridgeton State: MO Zip: 63044

I certify the above described waste was released to the transporter named below on 6-14-13 (DATE Mo/Day/Yr) at 4:10 PM (TIME)

Name of Owner or Representative *(Print)* Emily Heikes Signature Emily Heikes

B. Waste Transporter

Company Name: Mr. Bult's, Inc. MSD HAULER AUTHORIZATION ID #: 0218

I certify I accepted the above described waste on 6-14-13 (DATE Mo/Day/Yr) at 4:10 PM (TIME) on the following transport vehicle:

MSD VEHICLE ID #: 0626 Total Vehicle Tank Capacity: 7500 gallons

This vehicle was empty ☒ when loaded from this source or contained ☐ _____ gallons of material from another source which is described on MSD Hauled Waste Receipt # N/A.

Driver's Name *(Print)* Roger Gettings 707 Signature [illegible] 707

C. MSD Hauled Waste Receiving Station

Daily Receipt Log Number: ____

TRANSPORTER:

I certify the waste described in Part A was tendered for discharge on _____ (DATE Mo/Day/Yr) at _____ (TIME).

Driver's Name *(Print)* _____ Signature _____

RECEIVING STATION ATTENDANT:

The transport vehicle described in Part B entered the receiving station on _____ (DATE Mo/Day/Yr) at _____ (TIME) and

the vehicle was **allowed** ☐ to discharge; or the vehicle was **not allowed** ☐ to discharge and exited the facility.

Reason for Rejection: _____

pH: _____ Observations: _____

Attendant's Name *(Print)* _____ Signature _____

Instructions:

In Part A completely describe the nature and source of the waste. Examples of types of wastes are: residential septic tank, commercial establishment septic tank, restaurant or institutional kitchen grease, landfill leachate, industrial process waste, etc. The owner or representative of the waste source prints their name and certifies the information in Part A by signing where indicated.

After completing and signing Part B, the waste transporter gives the *pink* copy to the waste source before leaving the premise.

Part C is completed by the transporter and the Receiving Station attendant at the time the waste is tendered for discharge. The attendant records the date and time the transport vehicle enters the receiving station and indicates whether the waste is accepted or rejected. If the waste is rejected, the attendant records the reason for rejection. The signed *yellow* copy is retained by the transporter and the *white* copy is retained by the attendant.

HWR-S 5/01

CB

MSD

Christopher J. Bulmahn

From: Sehie, Bryan <BSehie@republicservices.com>
Sent: Friday, June 21, 2013 1:38 PM
To: Christopher J. Bulmahn
Subject: RE: Bridgeton Landfill LLC May Leachate Outfall Report

1003 803000

Hi Chris,
Going forward should I send these discharge reports to you or should I continue to submit to rbartholomew@stlmsd.com?
Thanks,
Bryan

Bryan Sehie | Environmental Specialist | Republic Services, Inc.

13570 St. Charles Rock Rd. | Bridgeton, MO 63044

☎ 314.744.8190 314.443.0179

From: Christopher J. Bulmahn [mailto:cjbulmahn@stlmsd.com]
Sent: Friday, June 21, 2013 6:53 AM
To: Sehie, Bryan
Subject: RE: Bridgeton Landfill LLC May Leachate Outfall Report

Thank you,

Chris Bulmahn
Environmental Engineering
(P) 314-436-8721
cjbulmahn@stlmsd.com

From: Sehie, Bryan [mailto:BSehie@republicservices.com]
Sent: Thursday, June 20, 2013 3:04 PM
To: Rebecca Bartholomew
Cc: Christopher J. Bulmahn
Subject: Bridgeton Landfill LLC May Leachate Outfall Report

Good Afternoon,
Attached is the May 2013 Bridgeton Landfill, LLC Leachate Outfall Report for MSD Discharge Permit No. 0511559802-2.

Thanks,
Bryan

Bryan Sehie | Environmental Specialist | Republic Services, Inc.

13570 St. Charles Rock Rd. | Bridgeton, MO 63044

MSD

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Thursday, June 20, 2013 5:44 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan; Walker, Tony; Dan Feezor; Bill Abernathy (babernathy@feezorengineering.com)
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Good evening,

This response is sent on behalf of Bridgeton Landfill. First, in response to your first question regarding volumes per batch, the leachate management team is gathering together the information you requested and plans to follow up tomorrow.

Additionally, we wanted to follow up to confirm that we are currently investigating the cause of the benzene detections you have reported. While we are undertaking that investigation, we are implementing the following procedures to ensure compliance with the benzene limit: Discharge has been ceased. Tomorrow morning the facility team will take a sample and confirm that the benzene levels in the leachate in the tank are within the acceptable limits. Upon confirmation, discharge will resume. During this investigation period until we are able to determine the basis for the inconsistent readings, the facility team will shut the valve each morning at 5 am and run a benzene analysis. Discharge will not resume until the benzene level has been confirmed to be within the acceptable range.

Please let us know if you have any questions or need any additional information. We appreciate your bringing this to our attention and will continue to keep you informed as we investigate this issue.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Thursday, June 20, 2013 11:27 AM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

Jessie,

Sorry for the quick change, but we have received some recent sampling data results, and need to pass this information along to you right away. It is included in the attached spreadsheet, but also reproduced below.

> MSD collected samples for several days (from the line into the pump station) when Bridgeton Landfill restarted its direct discharge. The complex matrix of the samples delayed receipt of the results. However, once received, we found benzene levels of: 5/1 = 404 ug/L, 5/2 = 269 ug/L, 5/3 = 152 ug/L, 5/6 = 41.8 ug/L, and 5/7 = 80.6 ug/L. Note that the first three readings were above the fume toxicity screening level. With the downward trend, we thought that residual contamination from earlier, untreated wastewater in the collection tank may have been the source. Once MSD received the above results, we resumed sampling of Bridgeton Landfill's onsite discharge, this time from the side of the collection tank. Unfortunately, the two results so far again show elevated benzene levels: 6/6 = 409 ug/L, and 6/14 = 140 ug/L. Due to the continuing elevated benzene levels, MSD must require Bridgeton Landfill to investigate to determine the source of the benzene. When MSD collects future samples, we will collect additional sampling containers for volatile organics and provide Bridgeton Landfill with these containers. Please have these samples analyzed for volatile organics (EPA method 624) to check and compare results. We note that your treated batches, as well as MSD's analyses of loads hauled to the Bissell Point treatment plant, do not show elevated benzene levels. This may help you to focus your investigation.

Doug Mendoza
MSD Industrial Pretreatment Mgr.

From: Doug Mendoza
Sent: Thursday, June 20, 2013 9:07 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Jessie et al,

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Thursday, June 20, 2013 11:34 AM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

We will route this to the team and look into this. Thank you for bringing this to our attention.

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Thursday, June 20, 2013 11:27 AM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update

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MSD

Doug Mendoza

From: Doug Mendoza
Sent: Thursday, June 20, 2013 11:27 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; 'Bindbeutel, Joe'; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; 'Tippett Mosby, Leanne'; 'Blome, Jessica'; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: 'Smith, Steve (ssmith10@republicservices.com)'; 'Craig Almanza'; 'Ed Galbraith'; 'Cunningham, Ally (LG)'; 'Sehie, Bryan'; 'Walker, Tony'
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions - update
Attachments: Bridgeton Landfill conditional approval items tracking.xlsx

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> MSD collected samples for several days (from the line into the pump station) when Bridgeton Landfill restarted its direct discharge. The complex matrix of the samples delayed receipt of the results. However, once received, we found benzene levels of: 5/1 = 404 ug/L, 5/2 = 269 ug/L, 5/3 = 152 ug/L, 5/6 = 41.8 ug/L, and 5/7 = 80.6 ug/L. Note that the first three readings were above the fume toxicity screening level. With the downward trend, we thought that residual contamination from earlier, untreated wastewater in the collection tank may have been the source. Once MSD received the above results, we resumed sampling of Bridgeton Landfill's onsite discharge, this time from the side of the collection tank. Unfortunately, the two results so far again show elevated benzene levels: 6/6 = 409 ug/L, and 6/14 = 140 ug/L. Due to the continuing elevated benzene levels, MSD must require Bridgeton Landfill to investigate to determine the source of the benzene. When MSD collects future samples, we will collect additional sampling containers for volatile organics and provide Bridgeton Landfill with these containers. Please have these samples analyzed for volatile organics (EPA method 624) to check and compare results. We note that your treated batches, as well as MSD's analyses of loads hauled to the Bissell Point treatment plant, do not show elevated benzene levels. This may help you to focus your investigation.

Doug Mendoza
MSD Industrial Pretreatment Mgr.

From: Doug Mendoza
Sent: Thursday, June 20, 2013 9:07 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Jessie et al,

Reporting Requirement	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:			
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**			
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**	Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.	Please see below.	Please see item 5 for Direct Discharge to the Missouri River Wastewater Treatment Plant.
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.	Please see below.	MSD collected samples for several days (from the line into the pump station) when Bridgeton Landfill restarted its direct discharge. The complex matrix of the samples delayed receipt of the results. However, once received, we found benzene levels of: 5/1 = 404 ug/L, 5/2 = 269 ug/L, 5/3 = 152 ug/L, 5/6 = 41.8 ug/L, and 5/7 = 80.6 ug/L. Note that the first three readings were above the fume toxicity screening level. With the downward trend, we thought that residual contamination from earlier, untreated wastewater in the collection tank may have been the source. Once MSD received the above results, we resumed sampling of Bridgeton Landfill's onsite discharge, this time from the side of the collection tank. Unfortunately, the two results so far again show elevated benzene levels: 6/6 = 409 ug/L, and 6/14 = 140 ug/L. Due to the continuing elevated benzene levels, MSD must require Bridgeton Landfill to investigate to determine the source of the benzene. When MSD collects future samples, we will collect additional sampling containers for volatile organics and provide Bridgeton Landfill with these containers. Please have these samples analyzed for volatile organics (EPA method 624) to check and compare results. We note that your treated batches, as well as MSD's analyses of loads hauled to the Bissell Point treatment plant, do not show elevated benzene levels. This may help you to focus your investigation.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character**.	Variances for phenolic compounds and TTO have been approved, albeit in a different manner than requested. A copy of the approval letter is attached to the main email and will be mailed.	We appreciate MSD's response and will work with our team.	
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			

Reporting Requirement	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis** , and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	• April/May discharge fee is being calculated, now that BOD and TSS data is complete. The charge will be added to Bridgeton Landfill's wastewater bill, and should be identified as an 'adjustment.' • Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.		• Please see the second bullet item item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant. • We also have determined the volume and surcharge rate for the onsite discharges from 4/30/13 - 5/31/13. The rate is 8.1 ¢/gallon for 384,334 gallons, or a total of $31,210.12. The charge will be added to Bridgeton Landfill's MSD bill.
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:			
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material , shall be submitted to MSD on a weekly basis.**	Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.	Please see below.	
4. The daily discharge **shall not exceed 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday** , and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP. [Approved volume increased from 50,000 GPD to 100,000 GPD on 5/30/13.]			
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**			
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.	Please see below.	
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.			
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			

Reporting Requirement	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716. [Analytical data for discharges from 4/25/13 - 5/31/13 show higher strength than anticipated from pre-discharge sampling. Tipping fee returned to $0.08/gallon.]	• April/May discharge fee is being calculated, now that BOD and TSS data is complete. The charge will be added to Bridgeton Landfill's wastewater bill, and should be identified as an 'adjustment.' We will inform you if the amount per gallon needs to be revised from $0.07 per gallon. • We note that loads are now being delivered/discharged as combinations of two batches (e.g. Batch 184/187). For June 4's Batch 179/181, the lab analyses and results also were reported for the comibned Batch 179/181. However, for June 6's Batch 184/187, this does not appear to be the case. Your data spreadsheet lists the BOD for only Batch 184 (other data for Batch 184 or 184/187 is not yet complete; nor are there any listings for subsequent single or combined batches). We recognize that Batch 184 was brought separately on June 5. However, if you are only analyzing the batches separately, you must provide the gallons delivered for each individual batch on your Weekly Disposal Summary. If you are analyzing the batches together, you need to correct the data spreadsheet.	The missing data for 184/187 has been added to the spreadsheet. The daily volume hauled to MSD Mon-Fri consists of 100,000 gallons of processed liquid taken from a super-batch of 140,000 gallons, contained in 8 frac tanks. We collect 1 operational sample per 8-tank super-batch, followed by 1 confirmation sample per 8-tank super-batch. We have been using the double numbering system to indicate that there are 2 batteries (of 4 tanks each) that comprise a super-batch. When we start using the 316k tank, there will be 1 batch number per 300,000-g batch, 1 operational sample and 1 confirmation sample to represent all 300,000 gallons. We hope that provides some clarification.	• The data results spreadsheet shows separate analytical results for batches 184 and 187. It appears that the procedure you describe in your 6/18/13 response was not used for these batches. In order to properly calculate applicable surcharge levels, we need to know the volume of <u>each</u> batch that was delivered, to Bissell Point, not just the total for both. • The same requirement will apply to all future "combined" batches, if they are analyzed separately. • For the deliveries on 6/14/13, there is a note on the Weekly Disposal Summary that states, "One load on 6/14/2013 was from Batch 218/219." Again, we need to know the volume (actually the truck capacity) for this load, so that we can properly calculate applicable surcharge levels. • We also have calculated what the volume and surcharge rate would have been for the discharges hauled to Bissell Point from 4/25/13 - 5/31/13. It is 8.2¢/gallon (for 1,445,500 gallons truck capacity), very close to the onsite discharges' strength. Because the actual strength was quite higher than indicated by Bridgeton Landfill data submitted prior to discharges commencing, we will be billing a the actual rate of 8¢/gallon prescribed in MSD's hauled waste ordinance, for a total of $115,632. The charge will be added to Bridgeton Landfill's MSD bill.
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:			
• <u>Air monitoring</u> : **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013** . If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**			

Reporting Requirement	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13
• Pending air monitoring : Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline** . Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events** , based on the results of sampling or future concerns that may arise.			
• Pump station ventilation : Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013**.			
• Leachate/wastewater monitoring : **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** 1: If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes** . 2: If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. 3: Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.			
• Past analytical data : Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.			
• Pretreatment system : Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.			

Reporting Requirement	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**			

MSD
Bridgeton Landfill

Doug Mendoza

From: Doug Mendoza
Sent: Thursday, June 20, 2013 10:46 AM
To: 'Ed Galbraith'; John Lodderhose; Ken Gambaro
Cc: Smith, Steve (ssmith10@republicservices.com); Walker, Tony (TWalker@republicservices.com); Dan Feezor (dfeezor@feezorengineering.com) (dfeezor@feezorengineering.com)
Subject: RE: BOD Spike

Than you, Ed. Yes, I had noticed the level. I believe we discussed at one of our recent meetings how the BOD levels had trended upward in mid-May, culminating in MSD Batch 136's BOD of 56,500 mg/L on 5/20/13. Since that reading, returned to around 30,000 mg/L BOD, with the exception of the result you describe below.

Doug

From: Ed Galbraith [mailto:EGalbraith@barr.com]
Sent: Thursday, June 20, 2013 10:30 AM
To: John Lodderhose; Doug Mendoza; Ken Gambaro
Cc: Smith, Steve (ssmith10@republicservices.com); Walker, Tony (TWalker@republicservices.com); Dan Feezor (dfeezor@feezorengineering.com) (dfeezor@feezorengineering.com); Ed Galbraith
Subject: BOD Spike

I realize that you all are scrutinizing the data, but I wanted to make everyone aware of this BOD result from 5/29. It was on the most recent report, but you may not have seen it yet. I believe this is the highest BOD we've ever seen, ~20,000 higher than what we have been typically seeing here lately. I have scanned the more recent reports and haven't seen anything like this repeated. It appears to be more of a spike than a trend.

MSD Batch 165	5/29/2013	Pace	Validated	60145727	--	--	**51800 mg/L**

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

resourceful. naturally. BARR

MSD

Bridgeton Landfill

Doug Mendoza

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Thursday, June 20, 2013 10:30 AM
To: John Lodderhose; Doug Mendoza; Ken Gambaro
Cc: Smith, Steve (ssmith10@republicservices.com); Walker, Tony (TWalker@republicservices.com); Dan Feezor (dfeezor@feezorengineering.com) (dfeezor@feezorengineering.com); Ed Galbraith
Subject: BOD Spike

I realize that you all are scrutinizing the data, but I wanted to make everyone aware of this BOD result from 5/29. It was on the most recent report, but you may not have seen it yet. I believe this is the highest BOD we've ever seen, ~20,000 higher than what we have been typically seeing here lately. I have scanned the more recent reports and haven't seen anything like this repeated. It appears to be more of a spike than a trend.

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Ed Galbraith

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MSD

Doug Mendoza

From: Doug Mendoza
Sent: Thursday, June 20, 2013 9:07 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: Bridgeton Landfill conditional approval items tracking.xlsx

Jessie et al,

We have completed our review of the latest submitted report, along with associated data. Comments are contained in the attached tracking spreadsheet. Please provide the additional requested data as soon as possible, rather than with the next weekly report. The requested items are excerpted below:

• The data results spreadsheet shows separate analytical results for batches 184 and 187. It appears that the procedure you describe in your 6/18/13 response was not used for these batches. In order to properly calculate applicable surcharge levels, we need to know the volume of each batch that was delivered, to Bissell Point, not just the total for both.
• For the deliveries on 6/14/13, there is a note on the Weekly Disposal Summary that states, "One load on 6/14/2013 was from Batch 218/219." Again, we need to know the volume (actually the truck capacity) for this load, so that we can properly calculate applicable surcharge levels.

Thank you,
Doug Mendoza
MSD Industrial Pretreatment Manager

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Tuesday, June 18, 2013 4:06 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the weekly submission (for this short week of just last Thursday-Friday) is available on Barr's FTP site for your download and review. This is the first submission under the adjusted Tuesday submission schedule. We appreciate your approval of this timing change. Next week's submission will cover a full week (covering Saturday June 15th- Friday June 21st).

Reporting Requirement	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:			
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**			
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**	Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.	Please see below.	
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.	Please see below.	
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character.**	Variances for phenolic compounds and TTO have been approved, albeit in a different manner than requested. A copy of the approval letter is attached to the main email and will be mailed.	We appreciate MSD's response and will work with our team.	
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	• April/May discharge fee is being calculated, now that BOD and TSS data is complete. The charge will be added to Bridgeton Landfill's wastewater bill, and should be identified as an 'adjustment.' • Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.		• Please see the second bullet item item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant. • We also have determined the volume and surcharge rate for the onsite discharges from 4/30/13 - 5/31/13. The rate is 8.1¢/gallon for 384,334 gallons, or a total of $31,210.12. The charge will be added to Bridgeton Landfill's MSD bill.

Reporting Requirement	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:			
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**	Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.	Please see below.	
4. The daily discharge **shall not exceed 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday,** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP. [Approved volume increased from 50,000 GPD to 100,000 GPD on 5/30/13.]			
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**			
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.	Please see below.	
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.			
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			

Reporting Requirement	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716. [Analytical data for discharges from 4/25/13 - 5/31/13 show higher strength than anticipated from pre-discharge sampling. Tipping fee returned to $0.08/gallon.]	• April/May discharge fee is being calculated, now that BOD and TSS data is complete. The charge will be added to Bridgeton Landfill's wastewater bill, and should be identified as an 'adjustment.' We will inform you if the amount per gallon needs to be revised from $0.07 per gallon. • We note that loads are now being delivered/discharged as combinations of two batches (e.g. Batch 184/187). For June 4's Batch 179/181, the lab analyses and results also were reported for the comibned Batch 179/181. However, for June 6's Batch 184/187, this does not appear to be the case. Your data spreadsheet lists the BOD for only Batch 184 (other data for Batch 184 or 184/187 is not yet complete; nor are there any listings for subsequent single or combined batches). We recognize that Batch 184 was brought separately on June 5. However, if you are only analyzing the batches separately, you must provide the gallons delivered for each individual batch on your Weekly Disposal Summary. If you are analyzing the batches together, you need to correct the data spreadsheet.	The missing data for 184/187 has been added to the spreadsheet. The daily volume hauled to MSD Mon-Fri consists of 100,000 gallons of processed liquid taken from a super-batch of 140,000 gallons, contained in 8 frac tanks. We collect 1 operational sample per 8-tank super-batch, followed by 1 confirmation sample per 8-tank super-batch. We have been using the double numbering system to indicate that there are 2 batteries (of 4 tanks each) that comprise a super-batch. When we start using the 316k tank, there will be 1 batch number per 300,000-g batch, 1 operational sample and 1 confirmation sample to represent all 300,000 gallons. We hope that provides some clarification.	• The data results spreadsheet shows separate analytical results for batches 184 and 187. It appears that the procedure you describe in your 6/18/13 response was not used for these batches. In order to properly calculate applicable surcharge levels, we need to know the volume of <u>each</u> batch that was delivered, to Bissell Point, not just the total for both. • The same requirement will apply to all future "combined" batches, if they are analyzed separately. • For the deliveries on 6/14/13, there is a note on the Weekly Disposal Summary that states, "One load on 6/14/2013 was from Batch 218/219." Again, we need to know the volume (actually the truck capacity) for this load, so that we can properly calculate applicable surcharge levels. • We also ha calculated what the volume and surcharge rate would have been for the discharges hauled to Bissell Point from 4/25/13 - 5/31/13. It is 8.2¢/gallon (for 1,445,500 gallons truck capacity), very close to the onsite discharges' strength. Because the actual strength was quite higher than indicated by Bridgeton Landfill data submitted prior to discharges commencing, we will be billing a the actual rate of 8¢/gallon prescribed in MSD's hauled waste ordinance, for a total of $115,632. The charge will be added to Bridgeton Landfill's MSD bill.
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:			
• <u>Air monitoring</u>: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**			

Reporting Requirement	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events,** based on the results of sampling or future concerns that may arise.			
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013.**			
• Leachate/wastewater monitoring: **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** 1: If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes.** 2: If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. 3: Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.			
• Past analytical data: Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.			
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.			

Reporting Requirement	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13	MSD response 6/20/13
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**			

Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

MSD

June 19, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: WASTEWATER DISCHARGE PERMIT NO. 0511559802 - 2
For premise at: 13570 St. Charles Rock Road, Bridgeton, MO 63044

Dear Mr. Almanza:

We have received a letter dated June 14, 2013 from your consultant Weaver Boos Consultants. In that letter, it outlines the progress BRIDGETON LANDFILL LLC has made to show a return to compliance with its wastewater discharge. The air monitoring and moving equipment have been installed in accordance with Action Item #4. It has been stated that the monthly progress reports have been completed and are no longer required. However, we understand that the monitoring system's alarms are frequently triggered for either low oxygen, high H2S, high carbon monoxide, or high LEL. Any of these conditions is a violation of MSD ordinance prohibitions.

In a letter from MSD dated December 4, 2012, it was stated that under Action Item #5 of the AO, BRIDGETON LANDFILL LLC must demonstrate compliance with ordinance prohibition and discharge requirements. The air moving / monitoring system at the MSD pump station is not a suitable means to show compliance, but as a failsafe if the leachate discharge is out of compliance and causes unsafe atmospheric conditions. BRIDGETON LANDFILL's leachate discharge must be in compliance at the time it is discharged to demonstrate compliance.

At this time you must either give MSD written verification that the planned leachate pretreatment system will be designed to achieve compliance, or you must submit plans for other methods that will show a return to compliance. Submit this information as part of your next monthly report, due no later than **July 15, 2013**.

Thank you for helping us to comply with state and federal regulations. If you have any questions, please contact me at 314.436.8721.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Chris Bulmahn

Chris Bulmahn
Associate Engineer

cc: Doug Mendoza, MSD
Tom Boehm, MSD
Rob Daly, MSD

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissell Point Tracking Table					
Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity		
Thursday, June 13, 2013	Batch 210/211	96,800	97,200		
Friday, June 14, 2013	Batch 213/214*	98,700	98,700	*Starting Date*	*6/13/2013 4:42*
				Ending Date	*6/15/2013 5:01*

** One load on 6/14/2013 was from Batch 218/219*

MSD - Missouri River Tracking Table								
Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and Time	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)	Adjusted pH
Thursday, June 13, 2013	Batch 207/208	13,658	6/13/2013 4:42	6/14/2013 5:01	24.3	840	561.7	8.11
Friday, June 14, 2013	Batch 210/211	17,702	6/14/2013 5:01	6/15/2013 5:01	24.0	840	737.6	6.41

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: _____ Title: Environmental Specialist Date: 6/16/2013

Weekly Volume Summary - Week 8 (6-13-13 through 6-14-13).xlsx

MSD

4/9/13

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/14/2013 5:01:00 AM	6/13/2013 4:42:00 AM	24.3 hours
Reading (Gallons):	177,461	163,803	13,658

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 13,658 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/14/13

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/15/2013 5:01:00 AM	6/14/2013 5:01:00 AM	24.0 hours
Reading (Gallons):	195,163	177,461	17,702

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 17,702 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/15/13

MSD Daily Flow Reading, ending 6-15-2013

OB-207/208 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/10/2013
Fill Start Time	13:30
Fill Stop Date	6/11/2013
Fill Stop Time	09:07
Process Battery	TB-1/2

Processing Data

Process Start Date	6/10/2013
Process Start Time	16:50
Process Stop Date	6/11/2013
Process Stop Time	18:15
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-327
Test Results	Benzene 65 ppb
Reprocessed Batch	

Notes

Remainder of 2 tanks was pH adjusted and sent to AST.

Monday, June 17, 2013

OB-210/211 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/11/2013
Fill Start Time	14:40
Fill Stop Date	6/12/2013
Fill Stop Time	01:55
Process Battery	TB-3/4

Processing Data

Process Start Date	6/11/2013
Process Start Time	17:25
Process Stop Date	6/12/2013
Process Stop Time	14:20
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-329
Test Results	Benzene 94 ppb
Reprocessed Batch	

Notes

Tanks 3-1 and 3-2 transferred to AST.

Monday, June 17, 2013

OB-213/214 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/12/2013
Fill Start Time	12:50
Fill Stop Date	6/13/2013
Fill Stop Time	03:20
Process Battery	TB-1/2

Processing Data

Process Start Date	6/12/2013
Process Start Time	15:30
Process Stop Date	6/13/2013
Process Stop Time	13:00
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-336
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Monday, June 17, 2013

OB-218/219 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/13/2013
Fill Start Time	09:00
Fill Stop Date	6/13/2013
Fill Stop Time	18:20
Process Battery	TB-3/4

Processing Data

Process Start Date	6/13/2013
Process Start Time	18:20
Process Stop Date	6/14/2013
Process Stop Time	15:15
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-340
Test Results	Benzene 26 ppb
Reprocessed Batch	NAL13026-345 Retest TB-4 Tank 1 - Benzene 24 ppb

Notes

Portion of Batch 219 transferred for Advanced Waste Services.

Tuesday, June 18, 2013

MSD

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Biochemical Oxygen Demand (5-day)	Chemical Oxygen Demand	Nitrogen, ammonia as N	Oil and Grease	Oil and Grease - Silica gel cleanup	pH	Solids, total suspended	Aluminum	Antimony
					NA	NA	NA	NA	NA	NA	NA	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	mg/l	mg/l
MSD Batch 187	6/6/2013	Pace	Validated	60146383	24600	48200	952	305	20.7	5.5	870	7.16	0.0439
MSD Batch 184	6/5/2013	Pace	Validated	60146252	32100	45600	585	360	77.9	5.5	1400	12.9	ND

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium
					Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 187	6/6/2013	Pace	Validated	60146383	0.597	ND	0.0112	0.244	0.0433	ND	761	0.119	0.0019	0.115	ND
MSD Batch 184	6/5/2013	Pace	Validated	60146252	0.644	ND	ND	0.26	0.0487	ND	878	0.194	0.0038	0.125	ND

MSD

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Silver	Thallium	Zinc
					Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l
MSD Batch 187	6/6/2013	Pace	Validated	60146383	ND	ND	12.9
MSD Batch 184	6/5/2013	Pace	Validated	60146252	0.0210	ND	14.8

Table 3
VOCs and SVOCs
December 2012 - June 2013
Bridgeton Landfill

					Benzene
Location	Date	Lab Name	Data Status	Lab Report	ug/l
MSD Batch 187	6/6/2013	Pace	Validated	60146383	ND
MSD Batch 184	6/5/2013	Pace	Validated	60146252	ND

Doug Mendoza MSD

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Tuesday, June 18, 2013 4:06 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: Bridgeton Landfill conditional approval items tracking 2013.06.18.XLSX

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the weekly submission (for this short week of just last Thursday-Friday) is available on Barr's FTP site for your download and review. This is the first submission under the adjusted Tuesday submission schedule. We appreciate your approval of this timing change. Next week's submission will cover a full week (covering Saturday June 15th- Friday June 21st).

Thank you for your follow up from last week's report. I have attached the approval items tracking table, updated with this week's actions. Please let us know if you have any questions and we look forward to continuing to work with you on these action items.

As always, please let us know if you have any questions or need any additional information.

Thank you for your ongoing assistance,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Monday, June 17, 2013 1:55 PM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Jessie et al,

Please find attached MSD's response/follow up your 6/14/13 report. We have noted a possible issue with analyses for combined batches. In addition, variances for phenolic compounds and TTO have been approved, albeit in a different manner than requested. A copy of the approval letter is attached and will be mailed.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

Reporting Requirement	Bridgeton Response 6/14/13	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:			
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**			
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.	Please see below.
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	Adjusted pH values are now being tracked. A variance request for phenolic compounds and TTO was submitted on Thursday June 13th. We look forward to MSD's feedback and will continue to work with MSD on appropriate resolution for these constituents.	Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.	Please see below.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character.**	A variance request for phenolic compounds and TTO was submitted on Thursday June 13th. We look forward to MSD's feedback and will continue to work with MSD on appropriate resolution for these constituents.	Variances for phenolic compounds and TTO have been approved, albeit in a different manner than requested. A copy of the approval letter is attached to the main email and will be mailed.	We appreciate MSD's response and will work with our team
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.		• April/May discharge fee is being calculated, now that BOD and TSS data is complete. The charge will be added to Bridgeton Landfill's wastewater bill, and should be identified as an 'adjustment.' • Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.	

Reporting Requirement	Bridgeton Response 6/14/13	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:			
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**		Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.	Please see below.
4. The daily discharge **shall not exceed 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday,** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP.			
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**			
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7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.			
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			

Reporting Requirement	Bridgeton Response 6/14/13	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.		• April/May discharge fee is being calculated, now that BOD and TSS data is complete. The charge will be added to Bridgeton Landfill's wastewater bill, and should be identified as an 'adjustment.' We will inform you if the amount per gallon needs to be revised from $0.07 per gallon. • We note that loads are now being delivered/discharged as combinations of two batches (e.g. Batch 184/187). For June 4's Batch 179/181, the lab analyses and results also were reported for the comibned Batch 179/181. However, for June 6's Batch 184/187, this does not appear to be the case. Your data spreadsheet lists the BOD for only Batch 184 (other data for Batch 184 or 184/187 is not yet complete; nor are there any listings for subsequent single or combined batches). We recognize that Batch 184 was brought separately on June 5. However, if you are only analyzing the batches separately, you must provide the gallons delivered for each individual batch on your Weekly Disposal Summary. If you are analyzing the batches together, you need to correct the data spreadsheet.	The missing data for 184/187 has been added to the spreadsheet. The daily volume hauled to MSD Mon-Fri consists of 100,000 gallons of processed liquid taken from a super-batch of 140,000 gallons, contained in 8 frac tanks. We collect 1 operational sample per 8-tank super-batch, followed by 1 confirmation sample per 8-tank super-batch. We have been using the double numbering system to indicate that there are 2 batteries (of 4 tanks each) that comprise a super-batch. When we start using the 316k tank, there will be 1 batch number per 300,000-g batch, 1 operational sample an 1 confirmation sample to represent all 300,000 gallons. We hope that provides some clarification.
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:			
• Air monitoring: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**	An updated summary for the planned sampling is attached to this week's submission and sampling will occur on Tuesday June 18th.		

Reporting Requirement	Bridgeton Response 6/14/13	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events,** based on the results of sampling or future concerns that may arise.	An updated summary for the planned sampling is attached to this week's submission and sampling will occur on Tuesday June 18th.		
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013**.	An updated summary for the planned sampling is attached to this week's submission and sampling will occur on Tuesday June 18th.		
• Leachate/wastewater monitoring: **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** 1: If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes.** 2: If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. 3: Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.			
• Past analytical data: Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.			
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.	We appreciate MSD's feedback. We have shared that with our outside consultant and look forward to continuing to work with MSD on pretreatment planning.		

Reporting Requirement	Bridgeton Response 6/14/13	MSD response 6/17/13	Bridgeton Landfill Response 6/18/13
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**	We appreciate MSD's consideration of the information we submitted and MSD's ongoing efforts to work with us on a long term solution. We look forward to continuing to work with MSD on pretreatment planning.		

Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

MSD

June 18, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Response to Bridgeton Landfill Request for Total Toxic Organics and Phenolic Compounds Variances from District Limitations

Dear Mr. Almanza:

The Metropolitan St. Louis Sewer District (MSD) has reviewed Bridgeton Landfill's June 12, 2013 letter requesting variances from MSD limitations for total toxic organics and phenolic compounds. We have reviewed our data regarding current and allowable loadings for these parameters at MSD's Missouri River treatment plant, as well as toxicity and health & safety data, and will grant temporary variances as described below:

The limit for total toxic organics is not based on mass criteria for protection of the treatment plant, but is designed primarily to protect toxicity at the plant and the health & safety of MSD workers and the public. Therefore, we cannot grant a mass variance for total toxic organics. Rather, after considering health and safety concerns, we can allow a variance for total toxic organics as follows:

- The total toxic organics shall not exceed 5.844 mg/L at any time, excluding inclusion of the toxic organic compound 'phenol' in the summation of total toxic organics. Phenol discharge levels must continue to comply with discharge prohibitions against "Any water or waste which by itself or by interaction with other materials, emits toxic gases, vapors or fumes into the atmosphere of any area of the wastewater system at levels in excess of Permissible Exposure Limits (PEL) established for air-borne contaminants by the Occupational Safety and Health Administration (OSHA) or Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH)."

We can allow a variance for phenolic compounds as follows:

- The phenolic compounds limit, set on a mass basis, shall not exceed 12.6 pounds of phenolic compounds per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day. All individual phenolic compounds' discharge levels must continue to comply with discharge prohibitions against "Any water or waste which by itself or by interaction with other materials, emits toxic gases, vapors or fumes into the atmosphere of any area of the wastewater system at levels in excess of Permissible Exposure Limits (PEL) established for air-borne contaminants by the Occupational Safety and Health Administration (OSHA) or Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH)."

All variances listed above shall be granted for a period not to exceed two years from the date of this approval, may be revoked by MSD should conditions warrant, and shall terminate upon installation of a pretreatment system by Bridgeton Landfill.

Thank you for helping us comply with federal and state regulations. If you have any questions, please contact me at 314.436.8717.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Douglas M. Mendoza, P.E.
Manager of Industrial Pretreatment

By Certified Mail: 7004 2890 0000 9602 8081

MSD

Bridgeton Landfill

Doug Mendoza

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Monday, June 17, 2013 3:27 PM
To: John Lodderhose; Doug Mendoza; Nora C. Estopare
Subject: Update on Beta Issue
Attachments: 52429.pdf

John, Doug and Nora
We have an update from Mike McDougall at Eberline indicating that results of elemental Potassium confirm Eberline's initial Gross Beta determination, i.e., that significant matrix interference accounts for the initial anomalous reading from TestAmerica and that the true measure of Beta activity is in the 400-600 pCi/L range. The result also confirms that the Beta activity is primarily from K-40.

Furthermore, Eberline's results indicate that there are no significant contributions from Radium 228 or Strontium Yttrium-90, which is consistent with TestAmerica's result.

The lab report from Galbraith Laboratories Inc. (no relation) indicates a Potassium concentration of 557 mg/L. The report is attached. The final report from Eberline is expected next Tuesday. Eberline has stated that the data above will not change, however it will be appropriately noted within the data package case narrative. For that reason, this email should not be considered a final report. It is a preliminary update only, but is being provided to you in order to inform any immediate decisions that may be pending.

Thank you.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

resourceful. naturally. BARR

Laboratory Report

Report prepared for:
Mike McDougall
Eberline Services
601 Scarboro Rd
Oak Ridge, TN 37830
Phone: 865-481-0683
Email: mike.mcdougall@eberlineservices.com

Report prepared by:
Debbie S Robertson

Purchase Order:
MC,McDougall,6/14/13

For further assistance, contact:
Debbie S Robertson
Report Production Coordinator
PO Box 51610
Knoxville, TN 37950 -1610
(865) 546-1335
debbierobertson@galbraith.com

Sample: Treated Commingled
Lab ID: 2013-U-1347 **Received:** 2013-06-14

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
K : Potassium					
	GLI Procedure ME-70	0.557 mg/mL	As Received	95.57 mg	2013-06-14

Signatures:

Created By:	Debbie.S.Robertson	2013-06-17T18:41:45.95-04:00
Published By:	Debbie.S.Robertson	2013-06-17T18:42:06.463-04:00

- Physical signatures are on file.
- "Published By" signature indicates authorized release of data.

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Reported results are only applicable to the item tested.
This report shall not be reproduced, except in full, without the written approval of the laboratory.

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Monday, June 17, 2013 1:55 PM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; 'Bindbeutel, Joe'; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; 'Tippett Mosby, Leanne'; 'Blome, Jessica'; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: 'Smith, Steve (ssmith10@republicservices.com)'; 'Craig Almanza'; 'Ed Galbraith'; 'Cunningham, Ally (LG)'; 'Sehie, Bryan'; 'Walker, Tony'
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: Bridgeton Landfill conditional approval items tracking.xlsx; Bridgeton Landfill variance approval TTO, phenol.docx

Jessie et al,

Please find attached MSD's response/follow up your 6/14/13 report. We have noted a possible issue with analyses for combined batches. In addition, variances for phenolic compounds and TTO have been approved, albeit in a different manner than requested. A copy of the approval letter is attached and will be mailed.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Manager

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Friday, June 14, 2013 2:14 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the full weekly submission is available on Barr's FTP site for your download and review.

Thank you for your follow up from last week's report. I have attached the approval items tracking table, updated with this week's actions. Please let us know if you have any questions and we look forward to continuing to work with you on these action items.

We appreciate your approval of our requested change to report timing and will implement that change next week. We appreciate your approval of the modified air sampling plan. We have attached Stantec's updated summary of the testing to be conducted this Tuesday. Finally, we appreciate your initial feedback on the pretreatment plan, have shared that with our consultant, and look forward to continuing to work with you on the pretreatment plan for the facility.

Reporting Requirement	MSD response 6/11/13	Bridgeton Response 6/14/13	MSD response 6/17/13
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5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	• If the batches dischared onsite to the Missouri River Treatment Facility will have pH adjusted after the pH is recorded on the FTP Data Reports spreadsheet, then these adjusted pH values will need to be tracked. The best method may be to add a column on the Weekly Disposal Summary for measuring and recording the pH in the Missouri River Tracking table. Please begin doing so, or suggest a different workable method. • MSD also notes the continued high oil & grease, phenol, and TTO levels in the batches. We will determine the proper course of action regarding these pollutant levels upon review of the variance requests.	Adjusted pH values are now being tracked. A variance request for phenolic compounds and TTO was submitted on Thursday June 13th. We look forward to MSD's feedback and will continue to work with MSD on appropriate resolution for these constituents.	Please see item 8 for Hauled Waste Discharge to Bissell Point Wastewater Treatment Plant.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character.**		A variance request for phenolic compounds and TTO was submitted on Thursday June 13th. We look forward to MSD's feedback and will continue to work with MSD on appropriate resolution for these constituents.	Variances for phenolic compounds and TTO have been approved, albeit in a different manner than requested. A copy of the approval letter is attached to the main email and will be mailed.
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MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:			
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MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:			

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• Air monitoring: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**	MSD corresponded separately that eliminating the parameters that were not detected previously is acceptable for the proposed June 18 sampling date.	An updated summary for the planned sampling is attached to this week's submission and sampling will occur on Tuesday June 18th.	
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events,** based on the results of sampling or future concerns that may arise.	MSD corresponded separately that eliminating the parameters that were not detected previously is acceptable for the proposed June 18 sampling date.	An updated summary for the planned sampling is attached to this week's submission and sampling will occur on Tuesday June 18th.	
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013.**	MSD corresponded separately that eliminating the parameters that were not detected previously is acceptable for the proposed June 18 sampling date.	An updated summary for the planned sampling is attached to this week's submission and sampling will occur on Tuesday June 18th.	

Reporting Requirement	MSD response 6/11/13	Bridgeton Response 6/14/13	MSD response 6/17/13
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.	The submitted preliminary plans appear to be generally acceptable. However, there are a few items that will need to be addressed as the plans are finalized. These are addressed separately in the main body of the MSD response email.	We appreciate MSD's feedback. We have shared that with our outside consultant and look forward to continuing to work with MSD on pretreatment planning.	
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**	MSD has reviewed the MSD Leachate Separation Response submitted by Bridgeton Landfill. With the details provide in the response, MSD will not require that segregation of the gas condensate from the landfill leachate be pursued further at this time.	We appreciate MSD's consideration of the information we submitted and MSD's ongoing efforts to work with us on a long term solution. We look forward to continuing to work with MSD on pretreatment planning.	

CERTIFIED MAIL / RETURN RECEIPT REQUESTED

DATE

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Response to Bridgeton Landfill Request for Total Toxic Organics and Phenolic Compounds Variances from District Limitations

Dear Mr. Almanza:

The Metropolitan St. Louis Sewer District (MSD) has reviewed Bridgeton Landfill's June 12, 2013 letter requesting variances from MSD limitations for total toxic organics and phenolic compounds. We have reviewed our data regarding current and allowable loadings for these parameters at MSD's Missouri River treatment plant, as well as toxicity and health & safety data, and will grant temporary variances as described below:

The limit for total toxic organics is not based on mass criteria for protection of the treatment plant, but is designed primarily to protect toxicity at the plant and the health & safety of MSD workers and the public. Therefore, we cannot grant a mass variance for total toxic organics. Rather, after considering health and safety concerns, we can allow a variance for total toxic organics as follows:

- The total toxic organics shall not exceed 5.844 mg/L at any time, excluding inclusion of the toxic organic compound 'phenol' in the summation of total toxic organics. Phenol discharge levels must continue to comply with discharge prohibitions against "Any water or waste which by itself or by interaction with other materials, emits toxic gases, vapors or fumes into the atmosphere of any area of the wastewater system at levels in excess of Permissible Exposure Limits (PEL) established for air-borne contaminants by the Occupational Safety and Health Administration (OSHA) or Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH)."

We can allow a variance for phenolic compounds as follows:

- The phenolic compounds limit, set on a mass basis, shall not exceed 12.6 pounds of phenolic compounds per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day. All <u>individual</u> phenolic compounds' discharge levels must continue to comply with discharge prohibitions against "Any water or waste which by itself or by interaction with other materials, emits toxic gases, vapors or fumes into the atmosphere of any area of the wastewater system at levels in excess of Permissible Exposure Limits (PEL) established for air-borne contaminants by the Occupational Safety and Health Administration (OSHA) or Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH)."

All variances listed above shall be granted for a period not to exceed two years from the date of this approval, may be revoked by MSD should conditions warrant, and shall terminate upon installation of a pretreatment system by Bridgeton Landfill.

Thank you for helping us comply with federal and state regulations. If you have any questions, please contact me at 314.436.8717.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Douglas M. Mendoza, P.E.
Manager of Industrial Pretreatment

MSD

Doug Mendoza

From: Darin Lewis
Sent: Monday, June 17, 2013 8:39 AM
To: Catherine Politte; Mike Townley; Brian G. Gibson; Doug Mendoza; Sara Kammerer; Steve Grace
Subject: Bridgeton Landfill Leachate weekly volume summary

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant for 6/10/2013 to 6/15/2013.
6/10 – 96,500 gallons
6/11 – 96,700 gallons
6/12 – 96,800 gallons
6/13 – 96,800 gallons
6/14 – 98,700 gallons
6/15 – 45,600 gallons
Total = 531,100 gallons

MSD

Bridgeton Landfill: TOTAL PHENOLS (PHENOLIC COMPOUNDS) variance request

Total phenols (phenolic compounds) local limits calculations from 2007

To MO River STP: 13,716 lb/day allowable

Fume toxicity screening level for phenol is 1024 mg/L.

At Bridgeton Landfill's current 20,000 gal/day discharge limit, 1024 mg/L ~= 170 lb/day
(at 30,000 gal/day, ~= 256 lb/day)

Request for up to 12.6 lb/day phenolic compounds should not be a problem, so long as fume toxicity screening level also continues to be met.

6/17/13

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Biochemical Oxygen Demand (5-day)	Chemical Oxygen Demand	Nitrogen, ammonia as N	Oil and Grease	Oil and Grease - Silica gel cleanup	pH	Solids, total suspended	Aluminum
					NA	NA	NA	NA	NA	NA	NA	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	mg/l
MSD Batch 180	6/3/2013	Pace	Validated	60146018	30200	54400	633	328	55.1	5.3	1570	10
MSD Batch 179/181	6/3/2013	Pace	Validated	60146110	35100	ND	609	297	37.4 *	5.3	2370	7.47
MSD Batch 176-MSD	5/31/2013	Pace	Validated	60145950	28900	53100	656	130	27.2	5.4	2060	9.13
MSD Batch 172	5/30/2013	Pace	Validated	60145828	35100	59400	617	449	46.7	5.3	1190	13.2
MSD Batch 168	5/30/2013	Pace	Validated	60145828	36400	54700	599	628	70.6	5.4	800	8.06
MSD Batch 165	5/29/2013	Pace	Validated	60145728	51800	59500	630	259	8.4	5.2	1050	6.3

MSD

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Iron
					Total	Total	Total	Total	Total	Total	Total	Dissolved	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 180	6/3/2013	Pace	Validated	60146018	0.0572	0.773	ND	0.0179	0.281	0.0424	ND	734	915
MSD Batch 179/181	6/3/2013	Pace	Validated	60146110	ND	0.704	ND	ND	0.251	0.0252	0.0244	798	929
MSD Batch 176-MSD	5/31/2013	Pace	Validated	60145950	0.0427	0.668	ND	0.0170	0.264	0.0454	ND	698	894
MSD Batch 172	5/30/2013	Pace	Validated	60145828	0.0407	0.678	ND	ND	0.271	0.0309	0.0340	755	857
MSD Batch 168	5/30/2013	Pace	Validated	60145828	0.0252	0.637	ND	ND	0.244	0.0275	ND	643	770
MSD Batch 165	5/29/2013	Pace	Validated	60145728	0.0353	0.744	ND	ND	0.266	0.0295	ND	850	846

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Lead	Lead	Mercury	Mercury	Molybdenum	Nickel	Nickel	Selenium
					Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 180	6/3/2013	Pace	Validated	60146018	0.104	0.195	ND	ND	--	0.1	0.11	ND
MSD Batch 179/181	6/3/2013	Pace	Validated	60146110	0.124	0.186	0.0038	0.0029 *	--	0.103	0.116	ND
MSD Batch 176-MSD	5/31/2013	Pace	Validated	60145950	0.106	0.201	ND	0.0050	--	0.108	0.107	ND
MSD Batch 172	5/30/2013	Pace	Validated	60145828	0.0944	0.168	ND	0.00086	--	0.0931	0.101	ND
MSD Batch 168	5/30/2013	Pace	Validated	60145828	0.0797	0.134	ND	0.0071	--	0.0900	0.0992	ND
MSD Batch 165	5/29/2013	Pace	Validated	60145728	0.12	0.133	ND	0.0017	--	0.111	0.109	ND

Table 1
General Parameters and Metals
December 2012 - June 2013
Bridgeton Landfill

					Selenium	Silver	Silver	Thallium	Thallium	Uranium	Zinc	Zinc
					Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 180	6/3/2013	Pace	Validated	60146018	ND	ND	**0.0221**	ND	ND	--	**16.4**	**18.6**
MSD Batch 179/181	6/3/2013	Pace	Validated	60146110	ND	ND	ND	ND	ND	--	**17**	**17.6**
MSD Batch 176-MSD	5/31/2013	Pace	Validated	60145950	ND	ND	**0.0214**	ND	ND	--	**15.2**	**16.6**
MSD Batch 172	5/30/2013	Pace	Validated	60145828	**0.111**	ND	ND	ND	ND	--	**15.1**	**14.7**
MSD Batch 168	5/30/2013	Pace	Validated	60145828	ND	ND	ND	ND	ND	--	**14.1**	**14.8**
MSD Batch 165	5/29/2013	Pace	Validated	60145728	**0.114**	ND	ND	ND	ND	--	**19.2**	**18.8**

Table 3
VOCs and SVOCs
December 2012 - June 2013
Bridgeton Landfill

					Benzene
Location	Date	Lab Name	Data Status	Lab Report	ug/l
MSD Batch 180	6/3/2013	Pace	Validated	60146018	ND
OpBatch179/181-MSD	6/3/2013	Landmark	No QC	NAL_MAY31-JUN10	ND
MSD Batch 179/181	6/3/2013	Pace	Validated	60146110	ND
MSD Batch 176	5/31/2013	Pace	Validated	60145950	ND
MSD Batch 172	5/30/2013	Pace	Validated	60145828	ND
MSD Batch 168	5/30/2013	Pace	Validated	60145828	ND
MSD Batch 165	5/29/2013	Pace	Validated	60145728	ND

MSD

Doug Mendoza **MSD**

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, June 14, 2013 2:14 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan; Walker, Tony
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: Bridgeton Landfill conditional approval items tracking 2013.06.14.XLSX; Revised MSD lift station sampling plan for next week

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the full weekly submission is available on Barr's FTP site for your download and review.

Thank you for your follow up from last week's report. I have attached the approval items tracking table, updated with this week's actions. Please let us know if you have any questions and we look forward to continuing to work with you on these action items.

We appreciate your approval of our requested change to report timing and will implement that change next week. We appreciate your approval of the modified air sampling plan. We have attached Stantec's updated summary of the testing to be conducted this Tuesday. Finally, we appreciate your initial feedback on the pretreatment plan, have shared that with our consultant, and look forward to continuing to work with you on the pretreatment plan for the facility.

As always, please let us know if you have any questions or need any additional information. Thank you for your ongoing assistance.

Have a nice weekend,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Tuesday, June 11, 2013 3:55 PM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Jessie,

Thank you for the weekly report submitted on June 7, 2013. We have reviewed the report and the data uploaded to the FTP site. Our comments are attached, and below.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Mgr.

Weekly Report Timing
Your proposal to change report submittals to Tuesdays, covering the prior Saturday – Friday, should not be a problem. We understand this will begin on June 18, with the first report covering a shortened June 13-14 period.

Pretreatment System review
The submitted preliminary plans appear to be generally acceptable. However, there are a few items that will need to be addressed as the plans are finalized:

- The report says, "Additional long term historical flow and chemical parameters should be identified prior to design of a treatment system." However, several additional problem pollutant levels are already known – arsenic, mercury, pH (although control is implied in chemical feed for neutralization), total oil & grease, and toxic organics. The report should at least list the influent levels of these pollutants and mention that the design will address reducing these pollutant levels – in addition to the pollutants that are listed.
- The report also discusses removal of zinc and iron to prevent inhibition of biological pretreatment, but does not mention meeting local limits. It should include that the design will bring metals – and other pollutants such as pH, total oil & grease, and toxic organics – to levels below local limits. • The report does not indicate what the expected/designed final BOD and TSS concentrations will be. MSD need to know that, so that we know if they system will meet the minimum requirements set for the landfill (the landfill's currently certified surcharge of 312 mg/L BOD, 65 mg/L TSS). We recognize that this subject was discussed during the 6/5/13 meeting, and is not yet determined. As the system plans are finalized, it will need to be set.
- It appears that the digester volume/sizing of tanks uses equations based on only 150,000 GPD. However, flows range from 150,000 – 300,000 GPD. The report states that these flows "are anticipated to be reduced over time,

From: Gray, Deb <Deb.Gray@stantec.com>
Sent: Thursday, June 13, 2013 3:18 PM
To: Ed Galbraith (EGalbraith@barr.com) (EGalbraith@barr.com)
Cc: Merrigan, Jessie (LG)
Subject: Revised MSD lift station sampling plan for next week

Tuesday June 18: Samples of air inside the vault will be collected with the doors open (same as previous sampling events) to characterize potential exposures to workers who climb down into the vault to adjust valves, maintenance, etc.

Wednesday June 19: Sample air above ground in the lift station enclosure with the vault doors closed. This will characterize exhaust from the scrubber and potential exposures to people working around, but not inside the vault. We are also proposing to take a grab sample from inside the closed vault for VOC analysis to compare to the leachate sparge tank vapor samples that we collected in March.

Sample parameters are as previously agreed upon:

VOCs + TICs
Reduced sulfur compounds
Ammonia
Carboxylic acids
Sulfur dioxide

Deborah L. Gray, Ph.D., DABT
National Director, Risk Assessment & Toxicology Practice
Stantec Consulting Services, Inc.
1500 Lake Shore Drive Suite 100
Columbus OH 43204
Phone: (614) 486-4383, ext. 3273
Fax: (614) 486-4387
Mobile: (614) 738-0791
Deb.Gray@stantec.com
stantec.com

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Reporting Requirement	MSD response 6/11/13	Bridgeton Response 6/14/13
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:		
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**		
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	• If the batches dischared onsite to the Missouri River Treatment Facility will have pH adjusted after the pH is recorded on the FTP Data Reports spreadsheet, then these adjusted pH values will need to be tracked. The best method may be to add a column on the Weekly Disposal Summary for measuring and recording the pH in the Missouri River Tracking table. Please begin doing so, or suggest a different workable method. • MSD also notes the continued high oil & grease, phenol, and TTO levels in the batches. We will determine the proper course of action regarding these pollutant levels upon review of the variance requests.	Adjusted pH values are now being tracked. A variance request for phenolic compounds and TTO was submitted on Thursday June 13th. We look forward to MSD's feedback and will continue to work with MSD on appropriate resolution for these constituents.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character.**		A variance request for phenolic compounds and TTO was submitted on Thursday June 13th. We look forward to MSD's feedback and will continue to work with MSD on appropriate resolution for these constituents.
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**		

Reporting Requirement	MSD response 6/11/13	Bridgeton Response 6/14/13
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.		
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:		
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**		
4. The daily discharge **shall not exceed 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday,** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP.		
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**		
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.		

Reporting Requirement	MSD response 6/11/13	Bridgeton Response 6/14/13
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**		
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.		
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:		
• Air monitoring: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**	MSD corresponded separately that eliminating the parameters that were not detected previously is acceptable for the proposed June 18 sampling date.	An updated summary for the planned sampling is attached to this week's submission and sampling will occur on Tuesday June 18th.

Reporting Requirement	MSD response 6/11/13	Bridgeton Response 6/14/13
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events,** based on the results of sampling or future concerns that may arise.	MSD corresponded separately that eliminating the parameters that were not detected previously is acceptable for the proposed June 18 sampling date.	An updated summary for the planned sampling is attached to this week's submission and sampling will occur on Tuesday June 18th.
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013.**	MSD corresponded separately that eliminating the parameters that were not detected previously is acceptable for the proposed June 18 sampling date.	An updated summary for the planned sampling is attached to this week's submission and sampling will occur on Tuesday June 18th.
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.	The submitted preliminary plans appear to be generally acceptable. However, there are a few items that will need to be addressed as the plans are finalized. These are addressed separately in the main body of the MSD response email.	We appreciate MSD's feedback. We have shared that with our outside consultant and look forward to continuing to work with MSD on pretreatment planning.
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**	MSD has reviewed the MSD Leachate Separation Response submitted by Bridgeton Landfill. With the details provide in the response, MSD will not require that segregation of the gas condensate from the landfill leachate be pursued further at this time.	We appreciate MSD's consideration of the information we submitted and MSD's ongoing efforts to work with us on a long term solution. We look forward to continuing to work with MSD on pretreatment planning.

MSD

BRIDGETON LANDFILL

Doug Mendoza

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Thursday, June 13, 2013 4:53 PM
To: Doug Mendoza
Cc: Ed Galbraith
Subject: Variance request for Phenolic Compounds and TTO
Attachments: Signed Variance Request - Phenolics and TTO.pdf

Doug attached is the variance request from Bridgeton Landfill for Phenolic Compounds and Total Toxic Organics. Thank you for your assistance in this matter.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

resourceful. naturally. BARR

Bridgeton Landfill, LLC

June 12, 2013

Doug Mendoza
Industrial Pretreatment Manager
Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103

RE: REQUEST FOR VARIANCE FROM DISTRICT LIMITATIONS FOR BRIDGETON LANDFILL DISCHARGE (Discharge Permit No. 0511559802-2) FOR TOTAL TOXIC ORGANICS AND PHENOLIC COMPOUNDS.

Bridgeton Landfill, LLC requests a variance from Article V, Section 2.C of MSD Ordinance 12559, for Total Toxic Organics and Phenolic Compounds as follows:

- The Total Toxic Organics limit shall be set on a mass basis not to exceed 10.5 pounds of Total Toxic Organics per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,225 gallons per day.

- The Phenolic Compounds limit shall be set on a mass basis not to exceed 12.6 pounds of Phenolic Compounds per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,225 gallons per day.

Attached are a completed variance application form and a table showing the proposed discharge concentrations and loadings. If you have any questions about this request, feel free to contact me at (314) 744-8195 or Ed Galbraith with Barr Engineering at (573) 638-5024.

Sincerely,

Craig Almanza
Area Environmental Manager

METROPOLITAN ST. LOUIS SEWER DISTRICT
DIVISION OF ENVIRONMENTAL COMPLIANCE
10 EAST GRAND AVENUE
ST. LOUIS, MISSOURI 63147

VARIANCE APPLICATION FORM

MSD Ordinance No. 12559, Article VI, Section 2.B

1. Company Name: **Bridgeton Landfill, LLC**

2. Mailing Address: **12976 St. Charles Rock Road, Bridgeton, MO 63044**
(314) 744-8195

3. Premise Address: **Same**

4. Cite the specific section of Ordinance No. 12559 from which a variance is being sought:
Article V, Section 2.C

5. State the reason a variance is being sought. Be specific. Attach additional sheets if needed:
Bridgeton Landfill cannot meet its current district limitations for Total Toxic Organics and Phenolic Compounds, however because of the reduction in flow, Bridgeton Landfill can meet mass based limitations that are derived from current permit flow assumptions and existing approved flow.

6. If this variance request proposes a change of pollutant limitations, list the type and proposed alternative limitations using appropriate units: **See accompanying letter**

7. State the length of time for which the variance is requested: **Two years**

8. Will compliance with the Ordinance requirement result in unreasonable costs, without comparable public benefit: **Bridgeton Landfill is currently evaluating treatment technologies to determine the feasibility and cost of pretreating the liquid to meet permit limits.**

Yes _____ No _____

If Yes, please summarize the costs below. Attach additional sheets showing the detailed sample analyses, consultant reports, or vendor information used to support these costs.

Cost of meeting Ordinance requirements: $_____

Cost under proposed variance: $_____

Cost savings: $_____

9. CERTIFICATION:

"I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. To the best of my knowledge and belief, granting of this variance will not result in violation of any of the conditions of Article VI, Subsection 2.B(1) through (5) of Metropolitan St. Louis Sewer District Ordinance No. 12559."

Print name and title of signing official:

Craig Almanza

Area Environmental Manager

Signature: Craig Almanza

Date: 6-13-13

Table A - Bridgeton Landfill Treated Lea[illegible]e Mass Loading Calculations

Analyte	MSD ORDINANCE 12559 District Limitation (mg/L)	Permitted Loading to Missouri River WWTP[a] (lbs/day)	Current Parameter Concentration (mg/L)*	Current Maximum Loading to Missouri River WWTP (lbs/day)
Metals				
Antimony, Total	0.500	0.902	0.098	0.016
Arsenic, Total	0.400	0.722	1.210	0.202
Barium, Total	10.0	18.0	No Data	#VALUE!
Beryllium, Total	0.400	0.722	0.002	0.000
Cadmium, Total	0.700	1.263	0.096	0.016
Chromium, Total	5.000	9.024	0.277	0.046
Copper, Total	2.700	4.873	0.073	0.012
Cyanide	0.400	0.722	0.010	0.002
Iron, Total	150.0	270.7	990.0	165.2
Lead, Total	0.400	0.722	0.250	0.042
Mercury, Total	0.010	0.018	0.082	0.014
Nickel, Total	2.300	4.151	0.168	0.028
Phenol	7.000	12.633	22.700	3.789
Selenium, Total	0.200	0.361	0.099	0.016
Silver, Total	0.500	0.902	0.004	0.001
Zinc, Total	3.0	5.4	19.3	3.2
General Parameters				-
Ammonia-N		-	794	132.5
BOD		-	51,800	8,645.8
COD		-	60,800	10,148.0
Solids - total suspended solids (TSS)		-	2,900	484.0
Total Petroleum Hydrocarbon		-	48.000	8.0
Total Oil and Grease	200	360.9	953.0	159.1
pH				
Total Toxic Organics				
Cyanide			0.010	
Naphthalene			0.69	
Nitrobenzene			0.56	
2-Methylphenol			0.861	
3- & 4-Methylphenol			2.25	
Bis(2-chloroisopropyl) ether			0.106	
Phenol			22.70	
1,4-Dichlorobenzene			0.11	
Sum of TTO	5.844	10.5	27.290	4.6
Total Phenolic Coumpounds				
2,4,6-trichlorophenol				
2,4-dichlorophenol				
2,4-dimethylphenol				
2,4-dinitrophenol				
2-chlorophenol				
2-nitrophenol				
4,6-dinitro-2-methylphenol				
4-chloro-3-methylphenol				
4-nitrophenol				
Pentachlorophenol				
Phenol			22.7	
Sum of Total Phenolic Compounds	7	12.6	22.700	3.8

NOTES:

Values in Red indicate exceedances of permitted concentration limits

*Maximum value from MSD Batch 67 - 165 and Treated Commingled (UPDATE)

MSD

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissell Point Tracking Table

Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Thursday, June 06, 2013	Batch 184 / 187	96,900	98,200
Friday, June 07, 2013	Batch 189 / 190	96,700	98,200
Saturday, June 08, 2013	Batch 194 / 195	45,600	45,600
Sunday, June 09, 2013	None	None	None
Monday, June 10, 2013	Batch 199 / 200	96,500	97,200
Tuesday, June 11, 2013	Batch 203/204	96,700	97,200
Wednesday, June 12, 2013	Batch 207 / 208	96,800	97,200

Starting Date	*6/6/2013 5:59*
Ending Date	*6/13/2013 4:42*

MSD - Missouri River Tracking Table

Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and Time	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)	Adjusted pH
Thursday, June 06, 2013	Accumulated	15,169	6/6/2013 5:59	6/7/2013 6:17	24.3	840	624.2	8.05
Friday, June 07, 2013	Accumulated	15,325	6/7/2013 6:17	6/8/2013 5:01	22.7	840	674.1	8.05
Saturday, June 08, 2013	Batch 194/195	19,196	6/8/2013 5:01	6/9/2013 5:00	24.0	840	800.4	6.37
Sunday, June 09, 2013	Accumulated	17,502	6/9/2013 5:00	6/10/2013 5:01	24.0	840	728.7	6.37
Monday, June 10, 2013	Accumulated	14,784	6/10/2013 5:01	6/11/2013 4:50	23.8	840	620.7	6.37
Tuesday, June 11, 2013	Accumulated	-	6/11/2013 4:50	6/12/2013 5:00	24.2	840	0.0	
Wednesday, June 12, 2013	Accumulated	-	6/12/2013 5:00	6/13/2013 4:42	23.7	840	0.0	

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Brian Sehie Title: Environmental Specialist Date: 6/13/13

Weekly Volume Summary - Week 7 (6-6-13 through 6-12-13).xlsx

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/7/2013 6:17:00 AM	6/6/2013 5:59:00 AM	24.3 hours
Reading (Gallons):	96,996	81,827	15,169

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 15,169 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature] *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/7/13

MSD Daily Flow Reading, ending 6-07-2013

Daily Flow Reading — *Bridgeton Landfill*

	Current	Previous	Difference
Date / Time:	6/8/2013 5:01:00 AM	6/7/2013 6:17:00 AM	22.7 hours
Reading (Gallons):	112,321	96,996	15,325

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 15,325 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature] *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/8/13

MSD Daily Flow Reading, ending 6-08-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/9/2013 5:00:00 AM	6/8/2013 5:01:00 AM	24.0 hours
Reading (Gallons):	131,517	112,321	19,196

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 19,196 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/9/13

MSD Daily Flow Reading, ending 6-09-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/10/2013 5:01:00 AM	6/9/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	149,019	131,517	17,502

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 17,502 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature] *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/10/13

MSD Daily Flow Reading, ending 6-10-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/11/2013 4:50:00 AM	6/10/2013 5:01:00 AM	23.8 hours
Reading (Gallons):	163,803	149,019	14,784

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 14,784 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/11/13

MSD Daily Flow Reading, ending 6-11-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/12/2013 5:00:00 AM	6/11/2013 4:50:00 AM	24.2 hours
Reading (Gallons):	163,803	163,803	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/12/13

MSD Daily Flow Reading, ending 6-12-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/13/2013 4:42:00 AM	6/12/2013 5:00:00 AM	23.7 hours
Reading (Gallons):	163,803	163,803	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature] *Name:* Bryan Sehie

Title: Environmental Specialists *Date:* 6/13/13

MSD Daily Flow Reading, ending 6-13-2013

OB-184 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/3/2013
Fill Start Time	12:45
Fill Stop Date	6/4/2013
Fill Stop Time	09:45
Process Battery	TB-1/2

Processing Data

Process Start Date	6/3/2013
Process Start Time	15:55
Process Stop Date	6/4/2013
Process Stop Time	16:44
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-292
Test Results	Benzene 55 ppb
Reprocessed Batch	

Notes

Thursday, June 13, 2013

OB-187 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/4/2013
Fill Start Time	13:45
Fill Stop Date	6/4/2013
Fill Stop Time	23:45
Process Battery	TB-3/4

Processing Data

Process Start Date	6/4/2013
Process Start Time	17:20
Process Stop Date	6/5/2013
Process Stop Time	11:16
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-294
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Thursday, June 13, 2013

Fill Data

Fill Start Date	6/5/2013
Fill Start Time	14:40
Fill Stop Date	6/5/2013
Fill Stop Time	17:30
Process Battery	Tank Battery 1

Processing Data

Process Start Date	6/5/2013
Process Start Time	17:30
Process Stop Date	6/6/2013
Process Stop Time	17:07
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-297
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

OB-190 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/6/2013
Fill Start Time	09:40
Fill Stop Date	6/6/2013
Fill Stop Time	13:30
Process Battery	Tank Battery 2

Processing Data

Process Start Date	6/6/2013
Process Start Time	13:30
Process Stop Date	6/7/2013
Process Stop Time	12:00
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-303
Test Results	Benzene 38 ppb
Reprocessed Batch	

Notes

Thursday, June 13, 2013

Fill Data

Fill Start Date	6/6/2013
Fill Start Time	17:30
Fill Stop Date	6/7/2013
Fill Stop Time	00:05
Process Battery	TB-3/4

Processing Data

Process Start Date	6/6/2013
Process Start Time	23:55
Process Stop Date	6/7/2013
Process Stop Time	13:30
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-305
Test Results	Benzene 34 ppb
Reprocessed Batch	1st benzene = 160 ppb

Notes

OB-199/200 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/7/2013
Fill Start Time	13:45
Fill Stop Date	6/7/2013
Fill Stop Time	22:00
Process Battery	TB-1/2

Processing Data

Process Start Date	6/7/2013
Process Start Time	17:00
Process Stop Date	6/8/2013
Process Stop Time	13:50
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-312
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Thursday, June 13, 2013

OB-203/204 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/9/2013
Fill Start Time	14:00
Fill Stop Date	6/9/2013
Fill Stop Time	19:30
Process Battery	TB-3/4

Processing Data

Process Start Date	6/9/2013
Process Start Time	19:30
Process Stop Date	6/10/2013
Process Stop Time	17:40
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-319
Test Results	Benzene = 39 ppb
Reprocessed Batch	

Notes

Thursday, June 13, 2013

OB-207/208 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/10/2013
Fill Start Time	13:30
Fill Stop Date	6/11/2013
Fill Stop Time	09:07
Process Battery	TB-1/2

Processing Data

Process Start Date	6/10/2013
Process Start Time	16:50
Process Stop Date	6/11/2013
Process Stop Time	18:15
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-327
Test Results	Benzene 65 ppb
Reprocessed Batch	

Notes

Remainder of 2 tanks was pH adjusted and sent to AST.

Thursday, June 13, 2013

MSD

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June 14, 2013

Mr. Chris Bulmahn
Environmental Engineer
Metropolitan St. Louis Sewer District
10 East Grand Avenue
St. Louis, MO 63147-2913

Re: Metropolitan St. Louis Sewer District – Administrative Compliance Order
Action Item #4 (Continued) and Progress Report
Bridgeton Landfill, LLC.
Discharge Permit No. 0511559802-2

Dear Mr. Bulmahn:

On behalf of the Bridgeton Landfill, in accordance with the Metropolitan St. Louis Sewer District (MSD) Administrative Compliance Order (AO), which was signed by legal representatives of MSD and the Bridgeton Landfill, LLC and entered effect on October 29, 2012, respectfully submits this schedule of actions as outlined in the AO, Action Item #4.

As required per Action Item #4, the Bridgeton Landfill shall submit a schedule, for MSD approval, of actions for the design, installation, and operation of the procedures and pretreatment options identified in AO Finding #8 which states that the Bridgeton Landfill is in the process of investigation for the implementation of the following pretreatment options in which to eliminate the occurrence of future prohibited discharges at Leachate Outfall 008:

a.) Installation and operation of a supplemental "enclosed" flare, as well as a supplemental "candlestick" utility flare within the landfill's gas collection and control system;
b.) Design and operation of air monitoring/moving engineering controls at the landfill's outfall to the MSD sewer system within the Westlake Pump Station, and;
c.) Installation and operation of a foam suppressing agent. The following table outlines current progress and planned actions to be taken at the Bridgeton Landfill in regard to the aforementioned items.

Weaver Boos Consultants North Central, LLC
1813 N. Mill St. • Unit A • Naperville, IL 60563
Phone: (630) 717-4848• Fax: (630) 717-4850 • www.weaverboos.com

Finding No.	Proposed Option	Complete (Yes/No)	Completion Date
8a(1)	Installation and Operation of Additional Enclosed Flare	Yes	2-Oct-12
8a(2)	Installation and Operation of Supplemental Candlestick Flare	Yes	18-Jul-12
8b	Design and Operation of Air Monitoring/Moving Engineering Controls within Westlake Pump Station	No	6-Jun-13
8c	Installation and Operation of a Foam Suppression Agent	No	Installation Suspended

The Bridgeton Landfill completed the construction and testing phases of the supplemental candlestick flare on July 18, 2012 (Finding 8a(2)). This flare was subsequently replaced with a larger 3,500 scfm candlestick flare that became operational in January 2013. The replacement flare is currently fully operational, adding an additional gas extraction capacity of 1,000 scfm above the previous candlestick flare. The replacement candlestick flare is designed to work in tandem with the facility's two 3500 scfm enclosed flare to extract gases from within the landfill waste mass and route them to thermal destruction.

The second of the enclosed flare was officially brought online October 2, 2012. The new enclosed flare, similar to the facility's existing enclosed flare, adds additional 3500 scfm of gas extraction capacity to the landfill's gas collection and control system. A fourth flare with a capacity of 2,500 scfm was brought on-line June 6, 2013 to allow additional capacity as needed. The combined flow of the four operational flares is 13,000 scfm which allows the ability to improve landfill gas collection and odors at the facility and the surrounding environment. Each of the flares are operated and maintained under a site-specific program which is designed to enable landfill personnel to minimize downtime and provide peak system performance efficiency.

The design and development of the air quality engineering controls to be constructed and operated at the Westlake Pump Station (Finding 8b), were completed on December 20, 2012. Prior to finalization of the system design, meetings regarding the development of a plan of action for the preparation and construction of these air quality engineering controls were held at the MSD office on August 21, 2012, and September 24, 2012 between; MSD Environmental Compliance and Operations representatives; and Bridgeton Landfill personnel. Additionally, series of on-site meetings were held at the Westlake Pump Station, involving the aforementioned parties, to determine the design of the system and to secure an incoming power supply.

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On January 7, 2013 the Bridgeton Landfill purchased each of the necessary components to undertake the system's construction and operation. All components of the system have now been received and delivered to MSD preferred contractor, Municipal Electric / Electric Controls Company (ECC). Materials

were delivered to the contractor on April 5, 2013 immediately following their reception. The Bridgeton Landfill's engineering contractor, Landmarc Environmental Systems, has been working with ECC and MSD and completed the installation of the system on June 6, 2013. All components of the system are now in place. The system was inspected by the St. Louis County Department of Public Works and granted a temporary-on status. The results of this inspection were provided to Ameren on May 8, 2013, who completed the electrical power drop in May 2013. The Bridgeton Landfill will continue to monitor the leachate discharge and the air quality within the Westlake pump system and will coordinate efforts with MSD when needed to perform maintenance within the lift station. As of the date of this report, the following schedule of action has been completed:

Item	Estimated Completion Date
Underground Utility Location	4/19/13
K2Ameren Power Installation	5/1/13
Air Quality Monitor Delivery	Received
Drum Scrubber Delivery	Received
Telog Call Unit Delivery	Received
Construction of Air System	6/6/13

In a letter from MSD dated December 4, 2012, it was declared that the Bridgeton Landfill was no longer required to construct and operate a foam suppression system at the facility unless future foaming incidents occur. The Bridgeton Landfill will continue to monitor the Westlake Pump Station as well as the Leachate Tank System for indicators of foaming.

We respectively conclude the monthly progress reports with this submittal and completion of Action Items outlined in the AO dated October 29, 2012. If there are any questions please contact Bryan Sehie with Bridgeton Landfill at 314-744-8190 or myself at 573-289-3379.

Sincerely,
Weaver Boos Consultants

Michele Boussad
Senior Project Director

Cc: Bryan Sehie, Bridgeton Landfill, LLC.

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CONSULTANTS

Metropolitan
St. Louis Sewer
District

2350 Market Street
St. Louis, MO 63103-2555
(314) 768-6200

BRIDGETON LANDFILL

MSD

June 14, 2013

Heather Navarro
Executive Director
Missouri Coalition for the Environment
Ph: (314)727-0600; Fax (314)727-1665
hnavarro@moenviron.org

Re: Sunshine Request for information

Dear Mrs. Navarro:

We are in receipt of your sunshine request via email on June 11, 2013 to Doug Mendoza. We are in the process of gathering the information you requested and will provide you an estimated cost to fulfill such request. In the future, please forward your sunshine requests directly to sunshinerequests@stlmsd.com to ensure it can be processed properly.

It is my understanding that you previously discussed the cost of the gathering and disclosure of this kind of information with Ken Goins. We recognize your request for a waiver of any copying and research costs. However, no decision has been made on that request as yet. Therefore, there may be a charge consistent with State Law Chapter 610 of the Revised Statutes of Missouri and MSD Resolution 3056 which provide for a reasonable cost for each copy per page not to exceed 10 cents per page and additional costs for oversize pages, plus the hourly fee for duplicating time will be charged at the actual cost not to exceed the average hourly rate of pay for clerical staff and plus research time at the actual costs. To the extent the information is in electronic format, this would reduce the copy costs.

If you have any questions, please feel free to contact me using the above numbers.

Sincerely yours,

Brenda Schaefer
Secretary-Treasurer

MSD

Doug Mendoza

From: Brian G. Gibson
Sent: Friday, June 14, 2013 12:56 PM
To: Doug Mendoza
Subject: Bridgeton Landfill

Bridgeton Landfill meter reading was 180,905 gallons @ 12:09 on 06/14/2013.

MSD

BRIDGETON LANDFILL

Doug Mendoza

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Thursday, June 13, 2013 2:38 PM
To: John Lodderhose; Doug Mendoza; Nora C. Estopare
Subject: Update on Gross Beta Issue

TestAmerica analyzed a sample of leachate taken April 5, 2013 from Bridgeton Landfill, and reported a Gross Beta result of 9640 pCi/L. Bridgeton Landfill sent the remainder of the sample to Eberline Analytical in Oak Ridge TN, a lab that specializes solely in radionuclide testing. Eberline has concluded that the presence of high solids is causing considerable interference and variability in the sample. After eliminating that interference, Eberline concluded that the actual result for Gross Beta activity ranges from 407.97 to 1863.88 pCi/L. The likely source of Gross Beta emission in the sample is Potassium-40, and additional tests are being conducted to confirm the concentration of elemental potassium and to exclude the possibility of Radium 228 as a source of Gross Beta activity. While we have decided to move forward with this testing to reach absolute certainty, it should be noted that the TestAmerica results for this sample yielded non-detect for Radium 228. As you know, Potassium-40 is the largest source of natural radioactivity in animals and humans. Because its associated risks are low, Potassium-40 it is not regulated under EPA Safe Drinking Water Standards

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

Doug Mendoza

From:	Doug Mendoza
Sent:	Tuesday, June 11, 2013 3:55 PM
To:	'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc:	Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject:	RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments:	Bridgeton Landfill conditional approval items tracking.xlsx

Jessie,

Thank you for the weekly report submitted on June 7, 2013. We have reviewed the report and the data uploaded to the FTP site. Our comments are attached, and below.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Mgr.

Weekly Report Timing
Your proposal to change report submittals to Tuesdays, covering the prior Saturday – Friday, should not be a problem. We understand this will begin on June 18, with the first report covering a shortened June 13-14 period.

Pretreatment System review
The submitted preliminary plans appear to be generally acceptable. However, there are a few items that will need to be addressed as the plans are finalized:

- The report says, "Additional long term historical flow and chemical parameters should be identified prior to design of a treatment system." However, several additional problem pollutant levels are already known – arsenic, mercury, pH (although control is implied in chemical feed for neutralization), total oil & grease, and toxic organics. The report should at least list the influent levels of these pollutants and mention that the design will address reducing these pollutant levels – in addition to the pollutants that are listed.
- The report also discusses removal of zinc and iron to prevent inhibition of biological pretreatment, but does not mention meeting local limits. It should include that the design will bring metals – and other pollutants such as pH, total oil & grease, and toxic organics – to levels below local limits. • The report does not indicate what the expected/designed final BOD and TSS concentrations will be. MSD need to know that, so that we know if they system will meet the minimum requirements set for the landfill (the landfill's currently certified surcharge of 312 mg/L BOD, 65 mg/L TSS). We recognize that this subject was discussed during the 6/5/13 meeting, and is not yet determined. As the system plans are finalized, it will need to be set.
- It appears that the digester volume/sizing of tanks uses equations based on only 150,000 GPD. However, flows range from 150,000 – 300,000 GPD. The report states that these flows "are anticipated to be reduced over time, as exposed surfaces of the landfill will be covered with membrane or other systems." Capping will only reduce rainfall on top, and likely will not affect groundwater. Capped runoff also may infiltrate next to landfill and

migrate through groundwater. The landfill needs to provide more supporting data regarding future reduced volumes. In addition, how will the extra volume be handled until a future reduction in volume is achieved?

- In the Project Flow Schedule, Task 1 (Temporary Treatment System) does not end until 12/21/14. However, Task 27 (Final Treatment System) is scheduled to be complete by 2/28/14. The Gant chart shows ~260 days for Task 1. It appears the end date for Task 1 should have been 12/21/13. The landfill needs to either confirm and fix the date, or explain the extended time.
- A similar situation exists for Task 3 (Siemens Clarifier). Should 12/3/14 actually be 12/3/13?
- General observation: Even though the landfill has a required schedule to meet with MDNR, MSD ordinance requirements still continue to apply. The pretreatment system, including sizing, flow rates, etc., must be reviewed and approved by MSD prior to installation of the treatment system.

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Friday, June 07, 2013 1:47 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the full weekly submission is available on Barr's FTP site for your download and review.

Thank you for your follow up from last week's report. I have attached the Excel tracking table, updated with this week's actions. Please let us know if you have any questions and we look forward to continuing to work with you on these action items. We have just two items regarding which we would appreciate your follow up:

1. **Air Sampling**

I have attached an email from Stantec regarding the air sampling for the lift station now that the scrubber is operational. Please note that in order to allow the air sampling team to travel on Monday, rather than Sunday, we would like to do this sampling on Tuesday June 18th (rather than Monday the 17th). Please let us know if that is a problem. Also, Stantec has made recommendations on the scope of sampling. Particularly, Stantec would recommend eliminating PAH and dioxin/furans since they were not detected near levels of concern and these are the longer-running constituents. Eliminating these would allow for faster reporting. Please advise as soon as possible on your preferred scope for this sampling event and we will prepare for the June 18th sampling.

2. **Weekly Report Timing**

We would like to propose that we submit the weekly update reports to MSD on Tuesdays, rather than Fridays. Each week would cover the data for the prior Saturday – Friday. We will keep normal reporting this week and next week. With your approval, we would start the new reporting on Tuesday June 18th and cover the short fill-in of June 13-14. Then on June 25th we would have a full week under this new report period. This would help our team accommodate some overlapping end of week deadlines and may facilitate more efficient review of each week's report. Please advise if that presents any concern for MSD.

As always, we appreciate your continued assistance. Please follow up with any of our team with any questions you might have.

Reporting Requirement	MSD response 6/3/13	Bridgeton 6/7/13 Response	MSD response 6/11/13
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:			
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**			
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**			
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	• MSD notes that batches 119 and 136 had grease concentrations above the discharge limit of 200 mg/L. We recognize that data is being gathered in support of a variance request. MSD also notes that batches 117 and 136 had pH levels below the discharge limit of 5.5. • We recognize that these batches were discharged prior to Bridgeton Landfill obtaining an onsite pH meter.	Bridgeton Landfill ceased discharge of leachate to the Missouri River Treatment Facility until the pH could be corrected. The facility was able to treat leachate with caustic to raise the pH and resume discharge on Thursday June 6, 2013. The facility has an on-site pH meter that will be used to ensure each batch meets the pH requirement prior to discharge. Bridgeton Landfill will submit a variance request for phenol and TTO by Wednesday June 12th. A variance request for Oil and Grease will be submitted by June 19th.	• If the batches dischared onsite to the Missouri River Treatment Facility will have pH adjusted after the pH is recorded on the FTP Data Reports spreadsheet, then these adjusted pH values will need to be tracked. The best method may be to add a column on the Weekly Disposal Summary for measuring and recording the pH in the Missouri River Tracking table. Please begin doing so, or suggest a different workable method. • MSD also notes the continued high oil & grease, phenol, and TTO levels in the batches. We will determine the proper course of action regarding these pollutant levels upon review of the variance requests.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character.**		Bridgeton Landfill will submit a variance request for phenol and TTO by Wednesday June 12th. A variance request for Oil and Grease will be submitted by June 19th.	
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			

Reporting Requirement	MSD response 6/3/13	Bridgeton 6/7/13 Response	MSD response 6/11/13
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	Upon receipt of BOD and TSS data for batches discharged through 5/31/13, MSD will bill Bridgeton Landfill for the volume and strength discharged through 5/31/13. The amount is to be added to the regular wastewater bill for the Bridgeton Landfill facility. We anticipate that billing will occur in similar fashion at the conclusion of each subsequent month.		
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:			
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**			
4. The daily discharge **shall not exceed 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday,** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP.	MSD has revised the "Reporting Requirement" wording to reflect the updated approved amounts.		
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**			
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**			
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.			

Reporting Requirement	MSD response 6/3/13	Bridgeton 6/7/13 Response	MSD response 6/11/13
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.	Upon receipt of BOD and TSS data for batches discharged through 5/31/13, MSD will bill Bridgeton Landfill for the volume and strength discharged through 5/31/13. The amount is to be added to the regular wastewater bill for the Bridgeton Landfill facility. We anticipate that billing will occur in similar fashion at the conclusion of each subsequent month.		
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:			
• Air monitoring: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**	Thank you for the air monitoring results. MSD will be meeting with MSD Operations staff to convey findings from the results.	Bridgeton Landfill will move forward with the requested follow up testing of the lift station now that the scrubber is operational. This is addressed in more detail in the attachment to this week's update.	MSD corresponded separately that eliminating the parameters that were not detected previously is acceptable for the proposed June 18 sampling date.

Reporting Requirement	MSD response 6/3/13	Bridgeton 6/7/13 Response	MSD response 6/11/13
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events,** based on the results of sampling or future concerns that may arise.	Thank you for the air monitoring results. MSD will be meeting with MSD Operations staff to convey findings from the results.	Bridgeton Landfill will move forward with the requested follow up testing of the lift station now that the scrubber is operational. This is addressed in more detail in the attachment to this week's update.	MSD corresponded separately that eliminating the parameters that were not detected previously is acceptable for the proposed June 18 sampling date.
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013.**	As has been communicated previously, once the system is operational, then Bridgeton Landfill will need to conduct additional air monitoring to show the impact/effectiveness of the ventilation. Further air monitoring also will be necessary as discharge volumes may be increased in the future.	The scrubber system is now operational. Bridgeton Landfill will move forward with the requested follow up testing of the lift station now that the scrubber is operational. This is addressed in more detail in the attachment to this week's update.	MSD corresponded separately that eliminating the parameters that were not detected previously is acceptable for the proposed June 18 sampling date.
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.	It will take some time to review the submitted materials. MSD will be in contact as necessary.	We appreciate MSD's feedback during the June 5th meeting and look forward to continuing to work with MSD on this project.	The submitted preliminary plans appear to be generally acceptable. However, there are a few items that will need to be addressed as the plans are finalized. These are addressed separately in the main body of the MSD response email.
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**	It will take some time to review the submitted materials. MSD will be in contact as necessary.	As discussed at the June 5th meeting, we have prepared a written response regarding the complications with leachate and condensate segregation and that is attached to this week's report for MSD's review.	MSD has reviewed the MSD Leachate Separation Response submitted by Bridgeton Landfill. With the details provide in the response, MSD will not require that segregation of the gas condensate from the landfill leachate be pursued further at this time.

MSD

To: BRIDGETON LANDFILL LLC [1003803000]

From: Doug Mendoza

Date: June 11, 2013

Re: Periodic Technical Issues Meeting

On 6/5/13, representatives for MSD and Bridgeton Landfill met at Bridgeton Landfill regarding ongoing issues related to the landfill's leachate. This was a scheduled, periodic meeting to answer questions and present information.

The meeting started with a tour of the landfill. We were shown the current locations of all the treatment and storage tanks, along with an explanation of how the system is currently operating. Next, we were shown the ventilation system that has been installed at MSD's Westlake pump station, adjacent to the landfill and receiving the landfill's leachate discharge. We were told that the blowers would run continuously, rather than only in alarm conditions as originally planned.

Following the tour, we convened in a meeting room to discuss a number of items:

Leachate discharges at the Bissell Point plant is now into its third day of the 100,000 GPD increased amount.

Leachate discharges to the Missouri River plant are adjusted of pH using caustic. The low pH batch that was being held was adjusted up to 8.5, and acceptable. An email will be sent to MSD informing of this, with discharge hoped to start this afternoon.

Landfill representatives asked about using their Angelica Street property for discharge to the Bissell Point plant. John Lodderhose reminded them that discharge into MSD's collection system is off the table for now. He also informed them that MSD will have a new hauled waste ordinance 9/1/13, which will shorten hours to M-F 7-3. Hauling the leachate to their another of their properties also would violate the hauled waste ordinance. I informed them that if they treated the leachate at another property, then it would be subject to the Centralized Waste Treatment regulation. However, the treated leachate does not meet that regulation's discharge limits. Regarding hauling to the Lemay plant, MSD does not have a hauled waste station there, and there are odor concerns with the casino located next door to it. At the Bissell plant's hauled waste station, we suggested that if the landfill were to pay for staffing for extended hours, then that could be accommodated. The landfill's representatives were interested in that.

Regarding leachate sampling data, the landfill will be switching from Pace Analytical Labs to Test America. John Lodderhose informed the landfill representatives that the Missouri Coalition for the Environment is going to be requesting data from MSD, especially concerning radioactivity data for hauled leachate. Ed Galbraith, for the landfill, said that they were having a lab test for beta radiation vs. suspended solids interference. He said that MDNR also wants an update from the landfill. The landfill has experts, not at this meeting, that can discuss data with MSD. The landfill also will be performing its normal quarterly self-monitoring the week of 6/18, which will include the normal monitoring for radioactivity.

For air monitoring data, Rob Daly said that MSD's industrial hygienist did not find any red flags in the recent data. He reminded the landfill that they will need to do additional air sampling after the ventilation system starts up, with the blowers running. Rob proposed performing the sampling on Monday, 6/17, which allows a week from start up to work out any kinks in the system. Rob also asked for air sampling to continue as processes or discharge levels change, and is open to discussion on details of the particular parameters. Rob also stated that he wants the landfill to have its own industrial hygienist give an evaluation of the air sampling data. Ed Galbraith said this would be done subsequent to the 6/17 air monitoring.

Landfill representatives then ran through the preliminary plan and schedule for the pretreatment system at the landfill, essentially summarizing the document that was submitted with the previously weekly summary from the landfill. They did explain that several different treatment options are all being evaluated at the same time, and not all of them are planned to be implemented. For chemical precipitation to reduce metals, they were surprised to find that with pH of 11, batch tests also reduce the BOD and COD levels by up to 70%. they asked how much strength MSD can take, and MSD representatives replied that the will discuss that matter internally first. MSD let them know that the cost of a pretreatment system will be something that matters, for both strength of waste issues and variance requests. Phenol tends to be a good food source for treatment plant bugs, but not at a strength that overloads the plant.

Finally, an update on variance requests was given by landfill representatives. For oil & grease, testing is still being performed to gather total petroleum hydrocarbon data. For phenol and TTO, they would like to look at another week of phenol data before submitting a variance request.

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissell Point Tracking Table			
Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Thursday, May 30, 2013	Batch 168	45,000	45,000
Friday, May 31, 2013	Batch 172	52,500	52,500
Saturday, June 01, 2013	Batch 176	45,600	45,600
Sunday, June 02, 2013	None	None	None
Monday, June 03, 2013	Batch 180	90,900	91,200
Tuesday, June 04, 2013	Batch 179/181	97,000	98,200
Wednesday, June 05, 2013	Batch 184	83,500	83,500

Starting Date	*5/30/2013 5:41*
Ending Date	*6/6/2013 5:59*

MSD - Missouri River Tracking Table							
Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and Time	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)
Thursday, May 30, 2013	None	-	5/30/2013 5:41	5/31/2013 5:00	23.3	840	0.0
Friday, May 31, 2013	None	-	5/31/2013 5:00	6/1/2013 5:00	24.0	840	0.0
Saturday, June 01, 2013	None	-	6/1/2013 5:00	6/2/2013 6:00	25.0	840	0.0
Sunday, June 02, 2013	None	-	6/2/2013 6:00	6/3/2013 6:01	24.0	840	0.0
Monday, June 03, 2013	None	-	6/3/2013 6:01	6/4/2013 5:59	24.0	840	0.0
Tuesday, June 04, 2013	None	-	6/4/2013 5:59	6/5/2013 5:59	24.0	840	0.0
Wednesday, June 05, 2013	None	-	6/5/2013 5:59	6/6/2013 5:59	24.0	840	0.0

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: _____ Title: Environmental Specialist Date: 6/6/13

Weekly Volume Summary - Week 6 (5-30-13 through 6-5-13).xlsx

MSD

4/11/13

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	5/31/2013 5:00:00 AM	5/30/2013 5:41:00 AM	23.3 hours
Reading (Gallons):	81,827	81,827	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Schie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Schie *Name:* Bryan Schie

Title: Environmental Specialist *Date:* 5/31/13

Daily Flow Reading — *Bridgeton Landfill*

	Current	Previous	Difference
Date / Time:	6/1/2013 5:00:00 AM	5/31/2013 5:00:00 AM	24.0 hours
Reading (Gallons):	81,827	81,827	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: B. K. Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/1/13

MSD Daily Flow Reading, ending 6-01-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/2/2013 6:00:00 AM	6/1/2013 5:00:00 AM	25.0 hours
Reading (Gallons):	81,827	81,827	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K. Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/2/13

MSD Daily Flow Reading, ending 6-02-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/3/2013 6:01:00 AM	6/2/2013 6:00:00 AM	24.0 hours
Reading (Gallons):	81,827	81,827	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Schie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Schie *Name:* Bryan Schie

Title: Environmental Specialist *Date:* 6/3/13

MSD Daily Flow Reading, ending 6-03-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/4/2013 5:59:00 AM	6/3/2013 6:01:00 AM	24.0 hours
Reading (Gallons):	81,827	81,827	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K. Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/4/13

MSD Daily Flow Reading, ending 6-04-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/5/2013 5:59:00 AM	6/4/2013 5:59:00 AM	24.0 hours
Reading (Gallons):	81,827	81,827	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K. Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/5/13

MSD Daily Flow Reading, ending 6-05-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	6/6/2013 5:59:00 AM	6/5/2013 5:59:00 AM	24.0 hours
Reading (Gallons):	81,827	81,827	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 6/6/13

MSD Daily Flow Reading, ending 6-06-2013

Bissell Point Daily Totals for June 3, 2013

Bridgeton Landfill

Please note that on June 3, the reported Gallons Delivered total is closer than usual to actual calculations. Typically the value reported is significantly conservative, but on this day it is only slightly conservative due to an underestimate of one load.

The typical method to determine the Approximate Volume of Waste Loaded for a given truckload has been to use a differential weight measurement and an empirically-determined waste density. After loading, a vehicle is weighed and compared with a pre-established empty weight to calculate the net waste, from which the Approximate Volume is calculated. Typical practice has been to round this volume up to the next hundred-pound increment as a conservative measure. Throughout the course of a day, this results in over-reporting the cumulative volume.

On June 3, during the ramp-up to the new daily target of 100,000 gallons, an incorrect empty weight of Truck 0627 was initially used to calculate Approximate Volume Loaded, which was reported on the Hauled Waste Receipt as 7400 gallons. Later it was determined that the correct volume was 7675 gallons, which would typically be reported as 7700 gallons loaded. The reported daily total of 90,900 gallons is closer than usual to the calculated total, which in this case was 90,856 gallons.

Signed: Bryan K. Sahie

Name: Bryan Sahie

Title: Environmental Specialist

Date: 6/6/13

Table 1
General Parameters and Metals
December 2012 - May 2013
Bridgeton Landfill

					Biochemical Oxygen Demand (5-day)	Chemical Oxygen Demand	Nitrogen, ammonia as N	Oil and Grease	Oil and Grease - Silica Gel (TPH)	pH	Solids, total suspended	Aluminum	Antimony	Arsenic	Beryllium	Cadmium
					NA	NA	NA	NA	NA	NA	NA	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 159	5/27/2013	Pace	Validated	60145609	33800	51900	594	291	47.8 *	5.4	723	8.81 *	0.0343	0.654	ND	ND
MSD Batch 157	5/27/2013	Pace	Validated	60145607	29400	45500	572	211	ND	5.5	730	8.43	0.0408	0.637	ND	ND
MSD Batch 153	5/24/2013	Pace	Validated	60145543	25800	43600	528	437	--	5.5	1220	18.7	ND	0.739	ND	ND
MSD Batch 148	5/23/2013	Pace	Validated	60145428	25900	29100	599	580	--	5.4	1610	9.87	0.0239	0.701	ND	ND
MSD Batch 145	5/22/2013	Pace	Validated	60145336	28700	46900	651	410	--	5.5	543	9.33	ND	0.743	ND	ND
MSD Batch 142	5/22/2013	Pace	Validated	60145336	31600	53000	698	337	--	5.4	510	6.88	0.0361	0.771	ND	ND

MSD

6/11/13
Bridgeton Landfill

Table 1
General Parameters and Metals
December 2012 - May 2013
Bridgeton Landfill

					Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
					Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
MSD Batch 159	5/27/2013	Pace	Validated	60145609	0.244	0.0297	ND	788	0.117	0.0041	0.105	0.0760	ND	ND	14.2
MSD Batch 157	5/27/2013	Pace	Validated	60145607	0.239	0.0332	0.0253	708	0.112	0.0054	0.112	0.0986	ND	ND	15.3
MSD Batch 153	5/24/2013	Pace	Validated	60145543	0.276	0.0588	0.0734	912	0.201	0.0416	0.168	ND	ND	ND	15.1
MSD Batch 148	5/23/2013	Pace	Validated	60145428	0.274	0.0277	0.0285	890	0.182	0.0377	0.0976	ND	ND	ND	17.2
MSD Batch 145	5/22/2013	Pace	Validated	60145336	0.26	0.0360	0.0597	885	0.156	0.0014	0.114	ND	ND	ND	13.7
MSD Batch 142	5/22/2013	Pace	Validated	60145336	0.265	0.0253	ND	786	0.122	0.00038	0.0904	ND	ND	ND	17

Table 3
VOCs and SVOCs
December 2012 - May 2013
Bridgeton Landfill

					Benzene
Location	Date	Lab Name	Data Status	Lab Report	ug/l
MSD Batch 159	5/27/2013	Pace	Validated	60145609	ND
MSD Batch 157	5/27/2013	Pace	Validated	60145607	ND
OpBatch0153-MSD	5/24/2013	Pace	Validated	60145543	ND
MSD Batch 145-R	5/23/2013	Pace	Validated	60145434	ND
OpBatch0148-MSD	5/23/2013	Pace	Validated	60145428	ND
MSD Batch 145	5/22/2013	Pace	Validated	60145336	--
MSD Batch 142	5/22/2013	Pace	Validated	60145336	ND
MSD Batch 138	5/21/2013	Pace	Validated	60145181	ND
MSD Batch 136	5/19/2013	Pace	Validated	60145032	ND

MSD

6-11-13

6/17/13 DLW

OB-168 MSD

Bridgeton Landfill MSD

Fill Data

Fill Start Date	5/28/2013
Fill Start Time	16:55
Fill Stop Date	5/28/2013
Fill Stop Time	20:40
Process Battery	Tank Battery 1

Processing Data

Process Start Date	5/28/2013
Process Start Time	20:00
Process Stop Date	5/29/2013
Process Stop Time	15:20
Processing Person	Frank Totino

Approval Data

Approval Details	NAL13026-270
Test Results	Benzene 15 ppb
Reprocessed Batch	

Notes

Wednesday, June 05, 2013

OB-172 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/29/2013
Fill Start Time	17:07
Fill Stop Date	5/29/2013
Fill Stop Time	19:55
Process Battery	Tank Battery 2

Processing Data

Process Start Date	5/29/2013
Process Start Time	19:55
Process Stop Date	5/30/2013
Process Stop Time	13:00
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-276
Test Results	Benzene 17 ppb
Reprocessed Batch	

Notes

Wednesday, June 05, 2013

OB-176 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/30/2013
Fill Start Time	18:30
Fill Stop Date	5/30/2013
Fill Stop Time	20:50
Process Battery	Tank Battery 1

Processing Data

Process Start Date	5/30/2013
Process Start Time	20:50
Process Stop Date	5/31/2013
Process Stop Time	14:30
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-283
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Wednesday, June 05, 2013

OB-179/181 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/31/2013
Fill Start Time	21:00
Fill Stop Date	6/2/2013
Fill Stop Time	13:40
Process Battery	TB-3/4

Processing Data

Process Start Date	6/1/2013
Process Start Time	01:00
Process Stop Date	6/3/2013
Process Stop Time	12:30
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-289
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Wednesday, June 05, 2013

OB-180 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/31/2013
Fill Start Time	17:45
Fill Stop Date	6/1/2013
Fill Stop Time	19:45
Process Battery	TB-1/2

Processing Data

Process Start Date	6/1/2013
Process Start Time	00:30
Process Stop Date	6/2/2013
Process Stop Time	10:09
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-287
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Wednesday, June 05, 2013

OB-184 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	6/3/2013
Fill Start Time	12:45
Fill Stop Date	6/4/2013
Fill Stop Time	09:45
Process Battery	TB-1/2

Processing Data

Process Start Date	6/3/2013
Process Start Time	15:55
Process Stop Date	6/4/2013
Process Stop Time	16:44
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-292
Test Results	Benzene 55 ppb
Reprocessed Batch	

Notes

Thursday, June 06, 2013

Missouri Coalition for the Environment
Effective Citizen Action Since1969

MSD

Doug Mendoza
Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103-2555
By email: dmendoza@stlmsd.com

June 5, 2013

Re: Sunshine Request: Information Related to Radioactive Material in Leachate at Bridgeton Landfill in Bridgeton, Missouri

Dear Mr. Mendoza,

This request for information is submitted on behalf of the Missouri Coalition for the Environment (MCE) pursuant to the "Missouri Sunshine Law." R.S.Mo. §§ 610.010-310.028. For purposes of this request, "leachate" should be understood to mean leachate originating from the Bridgeton Sanitary Landfill at 13570 Charles Rock Road, Bridgeton, MO. We seek access to the information specified below and request that the Metropolitan St. Louis Sewer District (MSD) make the following documents available:

1. All records related to radioactive material present in leachate, including but not limited to: total beta, alpha, gamma, radium-226, radium-228 and uranium present in the leachate, from January 1, 2013 to present, whether stored in hard copy or electronic format, including reports, charts, spreadsheets, correspondence, notes from meetings, and audio or visual recordings,

This request is made pursuant to "Missouri Sunshine Law," R.S.Mo. §§ 610.010 – 610.028. The Sunshine Law requires that the MSD respond to this request within three business days. R.S.Mo §610.023. If this request requires the review of voluminous information, we would be happy to review responsive files at your offices and specify documents for copying.

In an effort to save paper, we prefer documents be provided electronically when possible.

MCE is a non-profit organization dedicated in part to educating the public on potential threats to the environment. MCE maintains a website, prepares a regular newsletter, sends e-alerts and holds community meetings regarding environmental issues of concern to its members and the general public. MCE has the capacity to and does

RECEIVED
JUN 11 2013
DIVISION OF
ENVIRONMENTAL QUALITY

6267 Delmar Boulevard · Suite2E · St.Louis, Missouri 63130-4722 · (314) 727-0600 · Fax: (314) 727-1665 · moenviron@moenviron.org · www.moenviron.org

make complex legal and factual information available to the public. This request will significantly contribute to the public's understanding of operation and oversight of Bridgeton Sanitary Landfill.

Section 610.026(1) of the Missouri Sunshine Act authorizes the waiver of copying and research fees in sunshine requests when the waiver is "in the public interest because it is likely to contribute significantly to public understanding of the operations or activities of the public governmental body." MCE has no commercial interest in the information sought, and therefore requests a waiver of copying costs of the above requested documents.

If this request for a fee waiver is denied, please contact Erin Moore in advance if charges are expected to exceed $100. We reserve the right to appeal a denial of this request. Again, if an excessive amount of documents are responsive to this request, MCE staff is willing to review responsive files at your offices and specify documents for copying. If you feel there are responsive records that are not informative on the matter we would be happy to discuss the possibility of narrowing our request to exclude such records. This will hopefully reduce the time and costs associated with copying documents responsive to this request.

If you find it proper to withhold all or part of a document or information under a claim of privilege or exemption from the Sunshine Law, or deny the requested fee waiver, please promptly notify us of your intended action and the reasons thereof, including the legal authority for your decision to withhold said document or information.

Should you have any questions regarding any of the forgoing or the scope of this request, please contact Erin Moore at the corresponding phone number or email address below. Thank you for your assistance in this matter.

RECEIVED
JUN 11 2013
DIVISION OF
ENVIRONMENTAL COMPLIANCE

Sincerely,

Heather Navarro
Executive Director
Missouri Coalition for the Environment
Ph: (314)727-0600; Fax (314)727-1665
hnavarro@moenviron.org

Erin Moore
Legal Intern
Missouri Coalition for the Environment
Ph: (925)395-3052
emooremce@gmail.com

MSD

Doug Mendoza

From: John Lodderhose
Sent: Monday, June 10, 2013 3:19 PM
To: Merrigan, Jessie (LG); Doug Mendoza; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Jessie, the proposed June 18th sampling date and eliminating the parameters that were not detected (eg: PAH and dioxin/furans) is acceptable to MSD.

John R. Lodderhose, P.E.
Metropolitan St. Louis Sewer District
Assistant Director of Engineering
Environmental Compliance
314-436-8714

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Monday, June 10, 2013 2:51 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Importance: High

Good afternoon,

Sorry to push for such a fast response, but to keep the June 18th sampling date, we need to know the constituents of interest by tomorrow to order equipment. Can you please let us know what parameters MSD would like to see in next week's lift station scrubber air test.

Thank you,
Jessie

Any U.S. federal tax advice contained in this communication (including any attachments or enclosures) was not intended or written by the author to be used, and cannot be used, for the purpose of (1) avoiding penalties that may be imposed on a taxpayer or (2) promoting, marketing, or recommending to another party any transaction or other matter addressed herein.

This e-mail (including any attachments) may contain material that (1) is confidential and for the sole use of the intended recipient, and (2) may be protected by the attorney-client privilege, attorney work product doctrine or

MSD

Doug Mendoza

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Sent: Monday, June 10, 2013 2:51 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: FW: Next round of MSD lift station sampling; proposed analytical parameters

Importance: High

Good afternoon,

Sorry to push for such a fast response, but to keep the June 18th sampling date, we need to know the constituents of interest by tomorrow to order equipment. Can you please let us know what parameters MSD would like to see in next week's lift station scrubber air test.

Thank you,
Jessie

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From: Merrigan, Jessie
Sent: Friday, June 07, 2013 1:47 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Good afternoon,

MSD

Doug Mendoza

From: Darin Lewis
Sent: Monday, June 10, 2013 7:34 AM
To: Catherine Politte; Mike Townley; Brian G. Gibson; Doug Mendoza; Steve Grace; Sara Kammerer
Subject: Bridgeton Landfill Leachate weekly volume summary

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant for 6/3/2013 to 6/8/2013.
6/3 – 90,900 gallons
6/4 – 97,000 gallons
6/5 – 83,500 gallons
6/6 – 96,900 gallons
6/7 – 96,700 gallons
6/8 – 45,600 gallons
Total = 510,600 gallons

Doug Mendoza MSD

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, June 07, 2013 5:44 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: MSD Leachate Separation Response.pdf

Sorry – I missed one of the attachments.

Any U.S. federal tax advice contained in this communication (including any attachments or enclosures) was not intended or written by the author to be used, and cannot be used, for the purpose of (1) avoiding penalties that may be imposed on a taxpayer or (2) promoting, marketing, or recommending to another party any transaction or other matter addressed herein.

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From: Merrigan, Jessie
Sent: Friday, June 07, 2013 1:47 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the full weekly submission is available on Barr's FTP site for your download and review.

Thank you for your follow up from last week's report. I have attached the Excel tracking table, updated with this week's actions. Please let us know if you have any questions and we look forward to continuing to work with you on these action items. We have just two items regarding which we would appreciate your follow up:

1. **Air Sampling**

I have attached an email from Stantec regarding the air sampling for the lift station now that the scrubber is operational. Please note that in order to allow the air sampling team to travel on Monday, rather than Sunday, we

LEACHATE SEGREGATION DISCUSSION

We understand MSD's need to receive a consistent and compliant effluent stream from the Bridgeton Landfill and intend to work with the District to achieve that. The current technological, engineering, and management evaluation supports the concept that a consistent, optimal operation of the entire liquids removal and treatment system is the best way of avoiding toxics and treating the high strength pollutants to an acceptable pretreatment discharge. This concept is based on the incorporation of the new 316,000 gallon tank into equalization and treatment scenario as previously presented in the "Preliminary Plan and Schedule for Pretreatment System at the Bridgeton Landfill" dated June 1, 2013 prepared by Civil & Environmental Consultants (CEC). The specific rationale for treating a combined leachate flow centers on several significant factors:

1. The leachate from the each of the source areas – the deeper elevation leachate sources, the comingled leachate and condensate from the gas wells varies between the sources, between locations of each source, as well as temporally in individual sources. The variation is significant with a majority of the collection points pumping commingled leachate and condensate. Based on the ability to treat a relatively consistent flow and concentration, it is critical to blend as many sources as possible to provide the most consistent pretreatment feed as possible. Variations in flow quantity, concentrations, and temperature have been experienced over an order of magnitude from each contribution point. Therefore, engineering judgment mandates not bifurcating the flow sources for separate treatment.
2. Preliminary bench scale tests were performed on the ability to remove constituents from a blended versus treating the higher strength leachate flow. By raising the pH to 11 with the blended flow, it was possible settle and precipitate solids from the flow, while the same treatment of only the more concentrated leachate did not perform well and no distinct solids separation occurred.
3. The planned biological treatment process is anticipated to perform more efficiently with a blended waste stream than by treating each of the separated flows independently. Further, the higher flows will be more efficiently treated than a smaller stronger flow if separate treatment system would be employed.
4. Segregating the liquids would require either entirely separate treatment systems, at significant cost; establishment of storage systems and the necessity of holding one type of material while the other was being treated, at additional cost and with the risk of additional odor; or the cessation of collection of either leachate or condensate, which is inconsistent with intended operational conditions and would have detrimental effects on the overall landfill management and ability to maintain compliance with applicable requirements.
5. The treatment technology for the various individual sources would pose an additional managerial and staffing load on the Bridgeton staff that would require two or possibly three treatment trains compared to a single treatment train for the combined flow.
6. The additional complexity would reduce the capability of providing a compliant pretreatment flow to MSD. This increased operation and maintenance complexity would prove more difficult

to reliably deliver a treated effluent to the MSD system and costs for leachate treatment would increase.

7. From an economic standpoint, separating the flows would require additional construction, delaying implementation of a pre-treatment system by requiring duplicate pretreatment bench and pilot scale studies, different unit operations in a space-constrained pretreatment area, additional collection piping planning and construction for a dual or triple collection system instead of using the single collection header. Installation of a parallel collection line would require an interruption of the collection flow with negative consequence on site hydrology as well as potential additional odor generation.

Doug Mendoza

From:	Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent:	Friday, June 07, 2013 1:47 PM
To:	Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc:	Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject:	RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments:	FW: Next round of MSD lift station sampling; proposed analytical parameters; Bridgeton Landfill conditional approval items tracking 2013.06.07.XLSX

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the full weekly submission is available on Barr's FTP site for your download and review.

Thank you for your follow up from last week's report. I have attached the Excel tracking table, updated with this week's actions. Please let us know if you have any questions and we look forward to continuing to work with you on these action items. We have just two items regarding which we would appreciate your follow up:

1. **Air Sampling**

I have attached an email from Stantec regarding the air sampling for the lift station now that the scrubber is operational. Please note that in order to allow the air sampling team to travel on Monday, rather than Sunday, we would like to do this sampling on Tuesday June 18th (rather than Monday the 17th). Please let us know if that is a problem. Also, Stantec has made recommendations on the scope of sampling. Particularly, Stantec would recommend eliminating PAH and dioxin/furans since they were not detected near levels of concern and these are the longer-running constituents. Eliminating these would allow for faster reporting. Please advise as soon as possible on your preferred scope for this sampling event and we will prepare for the June 18th sampling.

2. **Weekly Report Timing**

We would like to propose that we submit the weekly update reports to MSD on Tuesdays, rather than Fridays. Each week would cover the data for the prior Saturday – Friday. We will keep normal reporting this week and next week. With your approval, we would start the new reporting on Tuesday June 18th and cover the short fill-in of June 13-14. Then on June 25th we would have a full week under this new report period. This would help our team accommodate some overlapping end of week deadlines and may facilitate more efficient review of each week's report. Please advise if that presents any concern for MSD.

As always, we appreciate your continued assistance. Please follow up with any of our team with any questions you might have.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Monday, June 03, 2013 10:18 AM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Jessie,

We have reviewed the information attached to Bridgeton Landfill's 5/31/2013 weekly report, as well as the new data uploaded to the FTP site. Observations regarding individual items associated with the conditional approval are included in the attached spreadsheet.

Please let me know if you have any questions.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Mgr.

Doug Mendoza

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Friday, June 07, 2013 11:56 AM
To: Merrigan, Jessie (LG)
Subject: FW: Next round of MSD lift station sampling; proposed analytical parameters

I think that this makes a lot of sense in terms of getting results to MSD quicker for the parameters that matter.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

resourceful. naturally. BARR

From: Gray, Deb [mailto:Deb.Gray@stantec.com]
Sent: Friday, June 07, 2013 11:50 AM
To: Ed Galbraith
Cc: John Reiter (johnreiter@reiterih.com); Merrigan, Jessie (JMerrigan@LATHROPGAGE.COM)
Subject: Next round of MSD lift station sampling; proposed analytical parameters

Hi Ed,

It is our understanding that the MSD would like additional sampling in the lift station to determine the effectiveness of air filtration measures that have been recently put in place.

After discussing this request with John Reiter (our CIH) and reviewing the findings from the previous sampling events, we would recommend sampling the MSD lift station for the following parameters:

Parameters Included	**Rationale**
Sulfur dioxide	Concentrations detected previously were below occupational standards, but MDNR has expressed concern about SO2
Reduced Sulfur Compounds	Concentrations of dimethyl sulfide and dimethyl disulfide found during discharge approached or exceeded AIHA ERPG-1 guidelines and are clearly related to the landfill
VOCs + TICs	Concentrations of benzene were between the REL and the PEL; and furan may be a concern
Ammonia	Although the concentrations were well below occupational standards, ammonia may add to the odor
Carboxylic Acids	Carboxylic acids may add to the odor
Parameters Excluded	
Hg, HCN, HCL, Amines	These analytes were not detected previously
Aldehydes	The concentrations of aldehydes were well below occupational standards
Fixed Gases	Not detected during previous sampling events

PAHs by EPA TO-13	The concentrations detected were extremely low; naphthalene will be captured by EPA TO-15
Dioxins/Furans by EPA TO-9	There was little difference in pre- and during discharge concentrations of these compounds; and the TCDD TEQ was less than the conservative EPA RSL for long-term daily exposure in an industrial setting

It should be noted that the analyses that we are recommending can be expedited by the laboratory so that the MSD can receive results fairly quickly. The PAH and dioxin/furan analyses require longer preparation and analysis time.

Please let me know how the MSD responds as quickly as possible so we can order the appropriate supplies. There is about a week lead-time to receive prepared sample media for PAHs and dioxins, and to ship the high volume sampler units from Tisch in Cincinnati.

John and I can also be available for a discussion with the MSD hygienist if that would be helpful.

Thanks much!

Deborah L. Gray, Ph.D., DABT
National Director, Risk Assessment & Toxicology Practice
Stantec Consulting Services, Inc.
1500 Lake Shore Drive Suite 100
Columbus OH 43204
Phone: (614) 486-4383, ext. 3273
Fax: (614) 486-4387
Mobile: (614) 738-0791
Deb.Gray@stantec.com
stantec.com

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Reporting Requirement	MSD response 6/3/13	Bridgeton 6/7/13 Response
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:		
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**		
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	• MSD notes that batches 119 and 136 had grease concentrations above the discharge limit of 200 mg/L. We recognize that data is being gathered in support of a variance request. MSD also notes that batches 117 and 136 had pH levels below the discharge limit of 5.5. • We recognize that these batches were discharged prior to Bridgeton Landfill obtaining an onsite pH meter.	Bridgeton Landfill ceased discharge of leachate to the Missouri River Treatment Facility until the pH could be corrected. The facility was able to treat leachate with caustic to raise the pH and resume discharge on Thursday June 6, 2013. The facility has an on-site pH meter that will be used to ensure each batch meets the pH requirement prior to discharge. Bridgeton Landfill will submit a variance request for phenol and TTO by Wednesday June 12th. A variance request for Oil and Grease will be submitted by June 19th.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character.**		Bridgeton Landfill will submit a variance request for phenol and TTO by Wednesday June 12th. A variance request for Oil and Grease will be submitted by June 19th.
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**		
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	Upon receipt of BOD and TSS data for batches discharged through 5/31/13, MSD will bill Bridgeton Landfill for the volume and strength discharged through 5/31/13. The amount is to be added to the regular wastewater bill for the Bridgeton Landfill facility. We anticipate that billing will occur in similar fashion at the conclusion of each subsequent month.	

Reporting Requirement	MSD response 6/3/13	Bridgeton 6/7/13 Response
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:		
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**		
4. The daily discharge **shall not exceed 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday,** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP.	MSD has revised the "Reporting Requirement" wording to reflect the updated approved amounts.	
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**		
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.		
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**		
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.	Upon receipt of BOD and TSS data for batches discharged through 5/31/13, MSD will bill Bridgeton Landfill for the volume and strength discharged through 5/31/13. The amount is to be added to the regular wastewater bill for the Bridgeton Landfill facility. We anticipate that billing will occur in similar fashion at the conclusion of each subsequent month.	

Reporting Requirement	MSD response 6/3/13	Bridgeton 6/7/13 Response
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:		
• Air monitoring: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**	Thank you for the air monitoring results. MSD will be meeting with MSD Operations staff to convey findings from the results.	Bridgeton Landfill will move forward with the requested follow up testing of the lift station now that the scrubber is operational. This is addressed in more detail in the attachment to this week's update.
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events,** based on the results of sampling or future concerns that may arise.	Thank you for the air monitoring results. MSD will be meeting with MSD Operations staff to convey findings from the results.	Bridgeton Landfill will move forward with the requested follow up testing of the lift station now that the scrubber is operational. This is addressed in more detail in the attachment to this week's update.
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013.**	As has been communicated previously, once the system is operational, then Bridgeton Landfill will need to conduct additional air monitoring to show the impact/effectiveness of the ventilation. Further air monitoring also will be necessary as discharge volumes may be increased in the future.	The scrubber system is now operational. Bridgeton Landfill will move forward with the requested follow up testing of the lift station now that the scrubber is operational. This is addressed in more detail in the attachment to this week's update.

Reporting Requirement	MSD response 6/3/13	Bridgeton 6/7/13 Response
• Leachate/wastewater monitoring: **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** 1: If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes.** 2: If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. 3: Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.		
• Past analytical data: Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.		
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.	It will take some time to review the submitted materials. MSD will be in contact as necessary.	We appreciate MSD's feedback during the June 5th meeting and look forward to continuing to work with MSD on this project.
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**	It will take some time to review the submitted materials. MSD will be in contact as necessary.	As discussed at the June 5th meeting, we have prepared a written response regarding the complications with leachate and condensate segregation and that is attached to this week's report for MSD's review.

MSD

Doug Mendoza

BRIDGETON LANDFILL

From: Christina Large
Sent: Friday, June 07, 2013 12:48 PM
To: Doug Mendoza; Rich Unverferth; Mike Townley
Subject: FW: Sunshine Request
Attachments: MSD Leachate Sunshine Request.pdf

From: Christina Large **On Behalf Of** Sunshine Requests
Sent: Friday, June 07, 2013 12:46 PM
To: Ken Goins
Subject: FW: Sunshine Request

Ken,

How would you like to proceed with this request?

Thank you!

Christina Large
Treasury Associate
Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103
314-768-2745
314-768-2701

From: Erin Moore [mailto:emooremce@gmail.com]
Sent: Wednesday, June 05, 2013 4:43 PM
To: Sunshine Requests
Subject: Sunshine Request

Dear Ms. Schaefer,

Please see attached.

Sincerely,

Erin Moore
Legal Intern
Missouri Coalition for the Environment

Missouri Coalition for the Environment

Effective Citizen Action since 1969

June 5, 2013

Brenda A. Schaefer
Metropolitan St. Louis Sewer District
Official Records Keeper of District Public Information
2350 Market Street
St. Louis, MO 63103-2555
By email: SunshineRequests@stlmsd.com

Re: Sunshine Request: Information Related to Leachate at Bridgeton Landfill in Bridgeton, Missouri

Dear Ms. Schaefer,

This request for information is submitted on behalf of the Missouri Coalition for the Environment (MCE) pursuant to the "Missouri Sunshine Law." R.S.Mo. §§ 610.010-310.028. For purposes of this request, "leachate" should be understood to mean leachate originating from the Bridgeton Sanitary Landfill at 13570 Charles Rock Road, Bridgeton, MO. We seek access to the information specified below and request that the Metropolitan St. Louis Sewer District (MSD) make the following documents available:

1. Any and all records related to chemical composition and analysis of all leachate collected from the Bridgeton Sanitary Landfill located at 13570 Charles Rock Road, Bridgeton, MO from April 1, 2010 to present, whether stored in hard copy or electronic format, including reports, charts, spreadsheets, correspondence, notes from meetings, and audio or visual recordings.
2. Any and all correspondence between MSD and parties responsible for testing the leachate material at the Bridgeton Sanitary Landfill located at 13570 Charles Rock Road, Bridgeton, MO, including Republic Services, PDC Laboratories, Inc., and any other entity that owns and operates or has owned and operated the Bridgeton Sanitary Landfill property, from April 1, 2010 to present, including e-mail correspondence.
3. Any and all records relating to disposal, removal, transportation, transfer and treatment of all leachate at the Bridgeton Sanitary Landfill located at 13570 Charles Rock Road, Bridgeton, MO from April 1, 2010 to present, whether stored in hard copy or electronic format, including reports, charts, spreadsheets, correspondence, notes from meetings, and audio or visual recordings.
4. Any and all correspondence concerning data, records and management, including but not limited to chemical composition and analysis, disposal, removal, transportation, transfer and treatment, of leachate between MSD and Republic

Services and any other entity that owns and operates or has owned and operated the Bridgeton Sanitary Landfill property located at 13570 Charles Rock Road, Bridgeton, MO from April 1, 2010 to present.

5. Any and all correspondence between MSD and any other governmental agency from April 1, 2010 to present concerning data, records, and management, including but not limited to chemical composition and analysis, disposal, removal, transportation, transfer and treatment of leachate originating from the Bridgeton Sanitary Landfill located at 13570 Charles Rock Road, Bridgeton, MO.
6. All water pollution control, hazardous waste management and solid waste management permits required by federal or state law obtained by the Bridgeton Sanitary Landfill located at 13570 Charles Rock Road, Bridgeton, MO, as well as any and all related compliance reports, notices of violations and findings of noncompliance from April 1, 2010 to present

This request is made pursuant to "Missouri Sunshine Law," R.S.Mo. §§ 610.010 – 610.028. The Sunshine Law requires that the MSD respond to this request within three business days. R.S.Mo §610.023. If this request requires the review of voluminous information, we would be happy to review responsive files at your offices and specify documents for copying.

In an effort to save paper, we prefer documents to provided electronically when possible.

MCE is a non-profit organization dedicated in part to educating the public on potential threats to the environment. MCE maintains a website, prepares a regular newsletter, sends e-alerts and holds community meetings regarding environmental issues of concern to its members and the general public. MCE has the capacity to and does make complex legal and factual information available to the public. This request will significantly contribute to the public's understanding of operation and oversight of Bridgeton Sanitary Landfill.

Section 610.026(1) of the Missouri Sunshine Act authorizes the waiver of copying and research fees in sunshine requests when the waiver is "in the public interest because it is likely to contribute significantly to public understanding of the operations or activities of the public governmental body." MCE has no commercial interest in the information sought, and therefore requests a waiver of copying costs of the above requested documents.

If this request for a fee waiver is denied, please contact Erin Moore in advance if charges are expected to exceed $100. We reserve the right to appeal a denial of this request. Again, if an excessive amount of documents are responsive to this request, MCE staff is willing to review responsive files at your offices and specify documents for copying. If you feel there are responsive records that are not informative on the matter we would be happy to discuss the possibility of narrowing our request to exclude such records. This will hopefully reduce the time and costs associated with copying documents responsive to this request.

If you find it proper to withhold all or part of a document or information under a claim of privilege or exemption from the Sunshine Law, or deny the requested fee waiver, please promptly notify us of your intended action and the reasons thereof, including the legal authority for your decision to withhold said document or information.

Should you have any questions regarding any of the forgoing or the scope of this request, please contact Erin Moore by phone at the number below or by email at emooremce@gmail.com.

Thank you for your assistance in this matter.

Sincerely,

Heather B. Navarro

Heather Navarro
Executive Director

Missouri Coalition for the Environment
Ph: (314)727-0600; Fax (314)727-1665
hnavarro@moenviron.org

MSD

Doug Mendoza

From: Brian G. Gibson
Sent: Friday, June 07, 2013 6:53 AM
To: Doug Mendoza
Subject: Bridgeton Landfill

Bridgeton Landfill meter reading was 82,835 gallons @ 12:01 on 06/06/2013.

MSD

BRIDGETON LANDFILL

Doug Mendoza

From: Smith, Steve <ssmith10@republicservices.com>
Sent: Thursday, June 06, 2013 9:21 AM
To: Merrigan, Jessie (LG); Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Almanza, Craig; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: Missouri River Discharge

Jessie Merrigan has asked me to pass along the status of discharge from our 96,000 gallon storage tank to the Missouri River plant. We have raised the pH in the tank by using caustic. The reading this morning is 8.05 so we are going to resume discharge shortly. Going forward, we will continue to monitor the pH of leachate to be discharged to Missouri River and, if necessary, adjust the pH to be above 5.5.

Thank you,

Steve

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Friday, May 31, 2013 12:00 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve; Almanza, Craig; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the full weekly submission will be available on Barr's FTP site by 4:00 pm for your download and review. This will include the Conceptual Pretreatment Plan requested by June 1, 2013. Additionally, we would like for the MSD team to have access to the Operational Plan for the 316,000 gallon treatment and load-out tank. Because of document size, I have copied at the bottom of this email the information and link to allow you to download from the consultant's site if you would like a copy.

Thank you for your follow up from last week's report. As you are aware, Bridgeton Landfill posted additional air data this week in compliance with MSD's requested May 29th submission date. I have attached the Excel tracking table, updated with this week's actions. Please let us know if you have any questions and we look forward to continuing to work with you on these action items.

We appreciate MSD's confirmation of approval of an increase in hauled waste discharged to Bissell Point. As noted in our response earlier this week, the facility anticipates that it will be able to increase the volume hauled today by 10,000-20,000 gallons and be ready to utilize the full 100,000 gallons on Monday. Thank you again for your continued cooperation with us.

MSD
BRIDGETON LANDFILL

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Wednesday, June 05, 2013 11:57 AM
To: Doug Mendoza; Nora C. Estopare; Rob G Daly
Cc: Smith, Steve (ssmith10@republicservices.com)
Subject: Air Sampling Results

Good morning,

Steve asked me to confirm with you that we did not have any objection to your release of the air data. We are fine with you sharing that data with your employees. If you would like we can reissue those without the attorney client marking (it shouldn't have been there, sorry). The initial plan was for Stantec to create a full report that includes the data and a narrative discussion, and that is still in process. However, we wanted to meet your deadline, so we posted just the data as soon as it was available. I think they left that marker on because the final report had not yet been issued.

But the data is the most final data we have and we provided it to you for your use in safety evaluations, including communications with employees. So please just let us know if there is anything else you need from us. We do intend to provide you with the final report when available, and remain available to discuss any follow up based upon your review.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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MSD

Doug Mendoza

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Tuesday, June 04, 2013 4:06 PM
To: John Lodderhose; Doug Mendoza; Nora C. Estopare; Ken Gambaro; Todd Heller; Michael Grace; Rob G Daly; Smith, Steve (ssmith10@republicservices.com); Dan Feezor (dfeezor@feezorengineering.com) (dfeezor@feezorengineering.com); Almanza, Craig (CAlmanza@republicservices.com); Walker, Tony (TWalker@republicservices.com); bsehie@republicservices.com
Subject: Agenda for Bridgeton Landfill 6/5, 10:00
Attachments: MSD AND BRIDGETON LANDFILL TECHNICAL ISSUES MEETING 06-05-12.docx

All, attached is a draft agenda for our tour and meeting tomorrow at Bridgeton Landfill office. Let me know if you would like anything added.

The landfill office is off of St. Charles Rock Rd north of Taussig Rd. At the guard shack, tell him that you are with MSD. If he asks for a name, Bryan Sehie.

See you at 10:00.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

-----Original Appointment-----
From: John Lodderhose [mailto:JRLODD@stlmsd.com]
Sent: Thursday, May 16, 2013 1:27 PM
To: 'John Lodderhose'; Doug Mendoza; Nora C. Estopare; Ken Gambaro; Todd Heller; Michael Grace; Rob G Daly; Ed Galbraith; Smith, Steve (ssmith10@republicservices.com); Dan Feezor (dfeezor@feezorengineering.com) (dfeezor@feezorengineering.com); Almanza, Craig (CAlmanza@republicservices.com)
Subject: Bridgeton Landfill
When: Wednesday, June 05, 2013 10:00 AM-12:00 PM (UTC-06:00) Central Time (US & Canada).
Where: Bridgeton Landfill

MSD AND BRIDGETON LANDFILL TECHNICAL ISSUES MEETING

June 5, 2013

AGENDA

1. Introductions
2. Tour Bridgeton Landfill site
3. Updates
    a. Discharges to Bissell Point and MO River Plants
    b. Leachate sampling data
    c. Air monitoring data
    d. Modifications to the lift station
4. Pretreatment
    a. Preliminary Plant and Schedule for Pretreatment
    b. Clarifier and pilot test
5. Update on Variances
    a. Oil and Grease
    b. Phenol and TTO

MSD
BRIDGETON LANDFILL

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Tuesday, June 04, 2013 11:41 AM
To: Doug Mendoza
Cc: John Lodderhose; Mike Townley; Catherine Politte; Bruce Litzsinger; Brian G. Gibson; Darin Lewis; Sara Kammerer; Steve Grace
Subject: RE: Need for restriction on discharge hose size on MBI trucks delivering loads from Bridgeton Landfill to Bissell Point hauled waste station

Our team has communicated this to the trucking contractors and directed them to make this change. If there are any additional problems, or any problems in our team accommodating this request, please inform me and we will follow up immediately. We appreciate your working with us to implement a good solution to this.

Thank you,
Jessie

Any U.S. federal tax advice contained in this communication (including any attachments or enclosures) was not intended or written by the author to be used, and cannot be used, for the purpose of (1) avoiding penalties that may be imposed on a taxpayer or (2) promoting, marketing, or recommending to another party any transaction or other matter addressed herein.

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Tuesday, June 04, 2013 10:38 AM
To: Merrigan, Jessie
Cc: John Lodderhose; Mike Townley; Catherine Politte; Bruce Litzsinger; Brian G. Gibson; Darin Lewis; Sara Kammerer; Steve Grace
Subject: Need for restriction on discharge hose size on MBI trucks delivering loads from Bridgeton Landfill to Bissell Point hauled waste station

Jessie,

The hauler that Bridgeton Landfill uses to deliver leachate to MSD's Bissell Point hauled waste station, Mr. Bults Inc. (MBI), uses a 6" diameter hose for its discharge. This allows the trucks to discharge in only about 10 minutes. However, we have noticed that this high discharge rate also is surcharging the trenches and line from the hauled waste station to the treatment plant proper. At times it comes close to overflowing the station's capacity. If another truck happens to be discharging at the same time, the MBI driver must watch to try and throttle his flow rate so that an overflow does not occur. Should an overflow occur, we will not have sufficient time to fully capture the flow, and some would enter the storm sewer system. These storm sewers discharge directly to the Mississippi River. This would be in violation of our NPDES permit, and both MSD and Bridgeton Landfill could be liable for enforcement action.

DM

MSD
BRIDGETON LANDFILL

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Tuesday, June 04, 2013 10:39 AM
To: Doug Mendoza
Cc: John Lodderhose; Mike Townley; Catherine Politte; Bruce Litzsinger; Brian G. Gibson; Darin Lewis; Sara Kammerer; Steve Grace
Subject: RE: Need for restriction on discharge hose size on MBI trucks delivering loads from Bridgeton Landfill to Bissell Point hauled waste station

Thank you, I will pass this on to our team right away and we will follow up.

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Tuesday, June 04, 2013 10:38 AM
To: Merrigan, Jessie
Cc: John Lodderhose; Mike Townley; Catherine Politte; Bruce Litzsinger; Brian G. Gibson; Darin Lewis; Sara Kammerer; Steve Grace
Subject: Need for restriction on discharge hose size on MBI trucks delivering loads from Bridgeton Landfill to Bissell Point hauled waste station

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With the number of Bridgeton Landfill/MBI trucks coming to the hauled waste station, and especially with that number now about to double, our concern is that this becomes a matter of when an overflow will happen rather than if it will happen. Therefore, we are instructing MBI to use a smaller diameter hose (4" is the typical size used), to avoid a potential overflow system. I am informing you of the situation so that you are aware of potential liabilities. Please pass the information on to appropriate Bridgeton Landfill/Republic Services personnel.

Thank you,

Doug Mendoza

MSD
BRIDGETON LANDFILL

From:	Doug Mendoza
Sent:	Tuesday, June 04, 2013 10:38 AM
To:	Merrigan, Jessie (LG) (JMerrigan@LATHROPGAGE.COM)
Cc:	John Lodderhose; Mike Townley; Catherine Politte; Bruce Litzsinger; Brian G. Gibson; Darin Lewis; Sara Kammerer; Steve Grace
Subject:	Need for restriction on discharge hose size on MBI trucks delivering loads from Bridgeton Landfill to Bissell Point hauled waste station

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Thank you,
Doug Mendoza

Doug Mendoza

From: Doug Mendoza
Sent: Monday, June 03, 2013 10:18 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: Bridgeton Landfill conditional approval items tracking.xlsx

Jessie,

We have reviewed the information attached to Bridgeton Landfill's 5/31/2013 weekly report, as well as the new data uploaded to the FTP site. Observations regarding individual items associated with the conditional approval are included in the attached spreadsheet.

Please let me know if you have any questions.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Mgr.

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Friday, May 31, 2013 12:00 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the full weekly submission will be available on Barr's FTP site by 4:00 pm for your download and review. This will include the Conceptual Pretreatment Plan requested by June 1, 2013. Additionally, we would like for the MSD team to have access to the Operational Plan for the 316,000 gallon treatment and load-out tank. Because of document size, I have copied at the bottom of this email the information and link to allow you to download from the consultant's site if you would like a copy.

Thank you for your follow up from last week's report. As you are aware, Bridgeton Landfill posted additional air data this week in compliance with MSD's requested May 29th submission date. I have attached the Excel tracking table, updated with this week's actions. Please let us know if you have any questions and we look forward to continuing to work with you on these action items.

We appreciate MSD's confirmation of approval of an increase in hauled waste discharged to Bissell Point. As noted in our response earlier this week, the facility anticipates that it will be able to increase the volume hauled today

Reporting Requirement	MSD response 5/28/13	Bridgeton 5/31/13 Response	MSD response 6/3/13
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:			
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**			
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**			
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	• Violation notice for previous oil & grease values has been mailed to Bridgeton Landfill. Please inform MSD of Bridgeton Landfill's corrective actions. • Additional oil & grease violations have been identified for batches 105, 107, 112, and 114 - all the new batches for which there is data. As stated on 5/23/13, Bridgeton Landfill must begin immediate action to eliminate future oil & grease violations. • In addition, batch 105 was below the discharge limit for pH. Bridgeton landfill should not discharge batches when the measured pH of the batch is below 5.5. • Violation notices will be sent for the new pH and oil & grease violations.	Bridgeton landfill has obtained a pH meter. No liquids with a pH less than 5.5 will be discharged to the Missouri River Treatment Facility. Bridgeton Landfill will follow up with MSD regarding an interim pH treamtent plan. Bridgeton Landfill is adding Total Petroleum Hydrocarbons (EPA 1664) to its analyte list to gather data that will be used to form a recommendation on Oil and Grease. Gathering this data will take several weeks and we will work on a variance approach with MSD once we have the data. Bridgeton Landfill is updating data on phenolic compounds and total toxic organics and will submit a variance request next week.	• MSD notes that batches 119 and 136 had grease concentrations above the discharge limit of 200 mg/L. We recognize that data is being gathered in support of a variance request. MSD also notes that batches 117 and 136 had pH levels below the discharge limit of 5.5. • We recognize that these batches were discharged prior to Bridgeton Landfill obtaining an onsite pH meter.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character.**	Possibly high phenol values were discussed with Doug Mendoza by Ed Galbraith of Barr Engineering via telephone. However, the attached variance request was only for iron. Any requests regarding phenol still need to be submitted.	As noted above, Bridgeton Landfill is updating data on phenolic compounds and total toxic organics and will submit a variance request next week for these constituents.	
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			

Reporting Requirement	MSD response 5/28/13	Bridgeton 5/31/13 Response	MSD response 6/3/13
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	We understand the situation. The most recent log stated "Accumulated" as the Operational Batch, which will suffice. However, please note that for surcharge billing purposes, MSD will instead have to use the last Operational Batch's surcharge parameters for that day.	Bridgeton Landfill understands this approach, and welcomes MSD's continued feedback on the best way to track and report volumes and consitutent levels.	Upon receipt of BOD and TSS data for batches discharged through 5/31/13, MSD will bill Bridgeton Landfill for the volume and strength discharged through 5/31/13. The amount is to be added to the regular wastewater bill for the Bridgeton Landfill facility. We anticipate that billing will occur in similar fashion at the conclusion of each subsequent month.
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:			
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**			
4. The daily discharge **shall not exceed 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday,** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP.			MSD has revised the "Reporting Requirement" wording to reflect the updated approved amounts.
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**			
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**			
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.			

Reporting Requirement	MSD response 5/28/13	Bridgeton 5/31/13 Response	MSD response 6/3/13
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**			
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.			Upon receipt of BOD and TSS data for batches discharged through 5/31/13, MSD will bill Bridgeton Landfill for the volume and strength discharged through 5/31/13. The amount is to be added to the regular wastewater bill for the Bridgeton Landfill facility. We anticipate that billing will occu in similar fashion at the conclusion of each subsequent month.
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:			
• Air monitoring: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**	We are reviewing the data, and will contact you further if necessary.	The remaining pre-discharge air monitoring (dioxins and furans) data was posted earlier this week, along with laboratory reports. Following MSD's review of these results, we remain available to discuss further assessment, including industrial hygienist assessment.	Thank you for the air monitoring results. MSD will be meeting with MSD Operations staff to convey findings from the results.

Reporting Requirement	MSD response 5/28/13	Bridgeton 5/31/13 Response	MSD response 6/3/13
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events,** based on the results of sampling or future concerns that may arise.		During discharge air monitoring data was posted earlier this week, along with laboratory reports. Following MSD's review of these results, we remain available to discuss further assessment, including industrial hygienist assessment.	Thank you for the air monitoring results. MSD will be meeting with MSD Operations staff to convey findings from the results.
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013.**		Ameren completed power work and the meter was installed on May 24, 2013. The MSA technician is scheduled to perform the calibration on June 6, 2013. The explosion-proof motor suggested by St. Louis County is on order, but the current system has been granted temporary approval. Bridgeton Landfill is working with the MSD team on an operational manual and an email alert system has been established to communicate data from the pump station.	As has been communicated previously, once the system is operational, then Bridgeton Landfill will need to conduct additional air monitoring to show the impact/effectiveness of the ventilation. Further air monitoring also will be necessary as discharge volumes may be increased in the future.
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.		Bridgeton Landfill is submitting for MSD's review the conceptual pretreatment plan for review by MSD to facilitate discussion of pretreatment planning and discussion at next week's meeting.	It will take some time to review the submitted materials. MSD will be in contact as necessary.
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**		Bridgeton Landfill is submitting for MSD's review the conceptual pretreatment plan for review by MSD to facilitate discussion of pretreatment planning and discussion at next week's meeting.	It will take some time to review the submitted materials. MSD will be in contact as necessary.

Table 1
General Parameters and Metals
December 2012 - May 2013
Bridgeton Landfill

					Biochemical Oxygen Demand (5 day)	Chemical Oxygen Demand	Nitrogen, ammonia as N	Oil and Grease	pH	Solids, total suspended	Aluminum	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
					NA	NA	NA	NA	NA	NA	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Raport	mg/l	mg/l	mg/l	mg/l	pH units	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
MSD Batch 136	5/19/2013	Pace	QC Pending	60145032	38300	56500	633	504	6.3	2200	5870	36.3	626	ND	ND	222	50.7	ND	778000	121	0.86	129	ND	ND	ND	18700
MSD Batch 131	5/18/2013	Pace	QC Pending	60145032	27000	46700	651	272	6.6	1360	4120	ND	657	ND	ND	199	27.2	ND	619000	78.4	0.59	73.9	ND	ND	ND	12200
MSD Batch 128	5/17/2013	Pace	QC Pending	60144974	27800	45400	568	30.6	6.5	1150	5060	29.4	612	ND	ND	218	28.4	ND	689000	137	0.71	83	ND	ND	ND	14100
MSD Batch 121	5/16/2013	Pace	QC Pending	60144971	27600	35800	527	27.7	6.6	1510	5010	21.6	550	ND	ND	172	42.6	24.3	572000	113	0.62	107	ND	ND	ND	10000
MSD Batch 119	5/14/2013	Pace	QC Pending	60144732	36700	40100	675	497	5.5	1470	7490	ND	649	ND	ND	204	38.2	31.9	705000	165	7.3	103	ND	ND	ND	13000
MSD Batch 117	5/14/2013	Pace	QC Pending	60144732	29000 h	46200	678	182	5.4	1810	6640	27.2	610	ND	ND	212	36.3	ND	740000	172	3.6	96.9	ND	ND	ND	14000

VARIANCE REQUEST PENDING

NOW HAVE PH METER ON SITE

6/3/2013

MSD

Table 3
VOCs and SVOCs
December 2012 - May 2013
Bridgeton Landfill

					Benzene
Location	Date	Lab Name	Data Status	Lab Report	ug/l
MSD Batch 136	5/19/2013	Pace	QC Pending	60145032	ND
MSD Batch 131	5/18/2013	Pace	QC Pending	60145032	ND
MSD Batch 128	5/17/2013	Pace	QC Pending	60144974	ND
MSD Batch 121	5/16/2013	Pace	QC Pending	60144971	ND
MSD Batch 119	5/14/2013	Pace	QC Pending	60144732	ND
MSD Batch 117	5/14/2013	Pace	QC Pending	60144732	ND

6/3/13

MSD

MSD

Doug Mendoza

From: Sara Kammerer
Sent: Saturday, June 01, 2013 11:49 AM
To: Catherine Politte; Mike Townley
Cc: Doug Mendoza; Brian G. Gibson; Steve Grace; Darin Lewis
Subject: Bridgeton Landfill Leachate weekly volume summary (5/27/13 - 6/1/13)

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant for 5/27/2013 to 6/1/2013:

5/27 – Holiday
5/28 – 45,000 gallons
5/29 – 45,000 gallons
5/30 – 45,000 gallons
5/31 – 52,500 gallons
6/1 – 45,600 gallons
Total = 233,100 gallons

Thanks,

Sara Kammerer
Environmental Assistant Engineer
Metropolitan St. Louis Sewer District
10 E. Grand Avenue
St. Louis, MO 63147-2913
(314) 436-8763 - phone
(314) 436-8766 - fax

MAY 2013

MSD

Doug Mendoza

From: Brian G. Gibson
Sent: Friday, May 31, 2013 1:03 PM
To: Doug Mendoza
Subject: Bridgeton Landfill

Bridgeton Landfill meter reading was 81,827 gallons @ 10:44 on 05/31/2013.

Doug Mendoza MSD

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, May 31, 2013 12:00 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: BSLF 2013.05.31 MSD Update.XLSX

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the full weekly submission will be available on Barr's FTP site by 4:00 pm for your download and review. This will include the Conceptual Pretreatment Plan requested by June 1, 2013. Additionally, we would like for the MSD team to have access to the Operational Plan for the 316,000 gallon treatment and load-out tank. Because of document size, I have copied at the bottom of this email the information and link to allow you to download from the consultant's site if you would like a copy.

Thank you for your follow up from last week's report. As you are aware, Bridgeton Landfill posted additional air data this week in compliance with MSD's requested May 29th submission date. I have attached the Excel tracking table, updated with this week's actions. Please let us know if you have any questions and we look forward to continuing to work with you on these action items.

We appreciate MSD's confirmation of approval of an increase in hauled waste discharged to Bissell Point. As noted in our response earlier this week, the facility anticipates that it will be able to increase the volume hauled today by 10,000-20,000 gallons and be ready to utilize the full 100,000 gallons on Monday. Thank you again for your continued cooperation with us.

Our team looks forward to Tuesday's tour of the Missouri River Treatment Facility and to Wednesday's coordination meeting. As discussed at the last meeting, Bridgeton Landfill will include its Pretreatment team in this meeting to begin the planned coordination discussions with MSD on detailed pretreatment planning.

As always, we appreciate your continued assistance. Please follow up with any of our team with any questions you might have.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

This is a very large document, 773 pages, and over 100 MB. Therefore, we have provided a link from which you can download the document. This link should be active for two weeks, so we encourage you to download soon. If anybody would like a hard copy, please let me know.

http://www.cecinc.com/clients/download/130-484%20DNR/

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Tuesday, May 28, 2013 12:35 PM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Jessie,

We have reviewed the weekly submittal for May 24, 2013. Items for which MSD has a comment are copied below. The total Conditional Approval Items Tracking spreadsheet is attached.

Thank you,
Doug Mendoza
MSD Industrial Pretreatment Mgr.

Reporting Requirement	Bridgeton 5/24/13 Response	MSD r
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:		

Reporting Requirement	MSD response 5/28/13	Bridgeton 5/31/13 Response
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:		
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**		
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	• Violation notice for previous oil & grease values has been mailed to Bridgeton Landfill. Please inform MSD of Bridgeton Landfill's corrective actions. • Additional oil & grease violations have been identified for batches 105, 107, 112, and 114 - all the new batches for which there is data. As stated on 5/23/13, Bridgeton Landfill must begin immediate action to eliminate future oil & grease violations. • In addition, batch 105 was below the discharge limit for pH. Bridgeton landfill should not discharge batches when the measured pH of the batch is below 5.5. • Violation notices will be sent for the new pH and oil & grease violations.	Bridgeton landfill has obtained a pH meter. No liquids with a pH less than 5.5 will be discharged to the Missouri River Treatment Facility. Bridgeton Landfill will follow up with MSD regarding an interim pH treamtent plan. Bridgeton Landfill is adding Total Petroleum Hydrocarbons (EPA 1664) to its analyte list to gather data that will be used to form a recommendation on Oil and Grease. Gathering this data will take several weeks and we will work on a variance approach with MSD once we have the data. Bridgeton Landfill is updating data on phenolic compounds and total toxic organics and will submit a variance request next week.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character.**	Possibly high phenol values were discussed with Doug Mendoza by Ed Galbraith of Barr Engineering via telephone. However, the attached variance request was only for iron. Any requests regarding phenol still need to be submitted.	As noted above, Bridgeton Landfill is updating data on phenolic compounds and total toxic organics and will submit a variance request next week for these constituents.

Reporting Requirement	MSD response 5/28/13	Bridgeton 5/31/13 Response
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**		
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	We understand the situation. The most recent log stated "Accumulated" as the Operational Batch, which will suffice. However, please note that for surcharge billing purposes, MSD will instead have to use the last Operational Batch's surcharge parameters for that day.	Bridgeton Landfill understands this approach, and welcomes MSD's continued feedback on the best way to track and report volumes and consitutent levels.
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:		
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**		
4. The daily discharge **shall not exceed 50,000 gallons per day** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP.		
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		

Reporting Requirement	MSD response 5/28/13	Bridgeton 5/31/13 Response
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**		
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.		
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**		
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.		
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:		

Reporting Requirement	MSD response 5/28/13	Bridgeton 5/31/13 Response
• Air monitoring: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**	We are reviewing the data, and will contact you further if necessary.	The remaining pre-discharge air monitoring (dioxins and furans) data was posted earlier this week, along with laboratory reports. Following MSD's review of these results, we remain available to discuss further assessment, including industrial hygienist assessment.
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events**, based on the results of sampling or future concerns that may arise.		During discharge air monitoring data was posted earlier this week, along with laboratory reports. Following MSD's review of these results, we remain available to discuss further assessment, including industrial hygienist assessment.
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013.**		Ameren completed power work and the meter was installed on May 24, 2013. The MSA technician is scheduled to perform the calibration on June 6, 2013. The explosion-proof motor suggested by St. Louis County is on order, but the current system has been granted temporary approval. Bridgeton Landfill is working with the MSD team on an operational manual and an email alert system has been established to communicate data from the pump station.

Reporting Requirement	MSD response 5/28/13	Bridgeton 5/31/13 Response
• Leachate/wastewater monitoring: **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** 1: If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes.** 2: If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. 3: Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.		
• Past analytical data: Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.		
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.		Bridgeton Landfill is submitting for MSD's review the conceptual pretreatment plan for review by MSD to facilitate discussion of pretreatment planning and discussion at next week's meeting.
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**		Bridgeton Landfill is submitting for MSD's review the conceptual pretreatment plan for review by MSD to facilitate discussion of pretreatment planning and discussion at next week's meeting.

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissell Point Tracking Table			
Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Thursday, May 23, 2013	Batch 145	45,000	45,000
Friday, May 24, 2013	Batch 148	45,000	45,000
Saturday, May 25, 2013	Batch 153	45,600	45,600
Sunday, May 26, 2013	None	None	None
Monday, May 27, 2013	None	None	None
Tuesday, May 28, 2013	Batch 159	45,000	45,000
Wednesday, May 29, 2013	Batch 165	45,000	45,000

Starting Date	***5/23/2013 6:01***
Ending Date	***5/30/2013 5:41***

MSD - Missouri River Tracking Table							
Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and Time	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)
Thursday, May 23, 2013	Batch 145	15,571	5/23/2013 6:01	5/24/2013 5:33	23.5	840	661.7
Friday, May 24, 2013	Batch 148	19,244	5/24/2013 5:33	5/25/2013 5:00	23.5	840	820.6
Saturday, May 25, 2013	Batch 153	17,018	5/25/2013 5:00	5/26/2013 5:04	24.1	840	707.1
Sunday, May 26, 2013	Accumulated	719	5/26/2013 5:04	5/27/2013 5:06	24.0	840	29.9
Monday, May 27, 2013	Batch 157	-	5/27/2013 5:06	5/28/2013 5:07	24.0	840	0.0
Tuesday, May 28, 2013	Batch 157	15,229	5/28/2013 5:07	5/29/2013 4:35	23.5	840	649.0
Wednesday, May 29, 2013	Batch 157	3,337	5/29/2013 4:35	5/30/2013 5:41	25.1	840	132.9

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: _____ Title: Environmental Specialist Date: 5/30/13

Weekly Volume Summary - Week 5 (5-23-13 through 5-29-13).xlsx

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	5/24/2013 5:33:00 AM	5/23/2013 6:01:00 AM	23.5 hours
Reading (Gallons):	26,280	140,015	-113,735

Flow Meter Adjustment

Reading Adjustment:	-129,306
Flow During Adjustment:	0

Total Flow: 15,571 gallons

Comments

Flow Meter was reset during this period. Initially flow progressed from 140,015 to 142,831 (2,816 gallons). The meter was then reset from 142,831 to 13,525 per SCADA, with no flow in the interim. Subsequently there was flow from 13,525 to 26,280 (12,755 gallons), for a total of 15,571 gallons.

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 5/24/13

MSD Daily Flow Reading, ending 5-24-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	5/25/2013 5:00:00 AM	5/24/2013 5:33:00 AM	23.5 hours
Reading (Gallons):	45,524	26,280	19,244

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 19,244 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: B.K. Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 5/25/13

MSD Daily Flow Reading, ending 5-25-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	5/26/2013 5:04:00 AM	5/25/2013 5:00:00 AM	24.1 hours
Reading (Gallons):	62,542	45,524	17,018

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 17,018 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K. Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 5/26/13

MSD Daily Flow Reading, ending 5-26-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	5/27/2013 5:06:00 AM	5/26/2013 5:04:00 AM	24.0 hours
Reading (Gallons):	63,261	62,542	719

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 719 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K. Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 5/27/13

MSD Daily Flow Reading, ending 5-27-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	5/28/2013 5:07:00 AM	5/27/2013 5:06:00 AM	24.0 hours
Reading (Gallons):	63,261	63,261	0

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 0 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K. Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 5/28/13

MSD Daily Flow Reading, ending 5-28-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	5/29/2013 4:35:00 AM	5/28/2013 5:07:00 AM	23.5 hours
Reading (Gallons):	78,490	63,261	15,229

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 15,229 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K. Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 5/29/13

MSD Daily Flow Reading, ending 5-29-2013

Daily Flow Reading

Bridgeton Landfill

	Current	Previous	Difference
Date / Time:	5/30/2013 5:41:00 AM	5/29/2013 4:35:00 AM	25.1 hours
Reading (Gallons):	81,827	78,490	3,337

Flow Meter Adjustment		Comments
Reading Adjustment:	0	
Flow During Adjustment:	0	

Total Flow: 3,337 gallons

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K. Sehie *Name:* Bryan Sehie

Title: Environmental Specialist *Date:* 5/30/13

MSD Daily Flow Reading, ending 5-30-2013

OB-145 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/21/2013
Fill Start Time	17:00
Fill Stop Date	5/21/2013
Fill Stop Time	19:05
Process Battery	Tank Battery 1

Processing Data

Process Start Date	5/21/2013
Process Start Time	19:05
Process Stop Date	5/22/2013
Process Stop Time	08:30
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-229
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Friday, May 31, 2013

OB-148 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/22/2013
Fill Start Time	17:15
Fill Stop Date	5/22/2013
Fill Stop Time	22:30
Process Battery	Tank Battery 2

Processing Data

Process Start Date	5/22/2013
Process Start Time	22:30
Process Stop Date	5/23/2013
Process Stop Time	20:30
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-233
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Friday, May 31, 2013

OB-153 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/23/2013
Fill Start Time	16:30
Fill Stop Date	5/23/2013
Fill Stop Time	19:45
Process Battery	Tank Battery 1

Processing Data

Process Start Date	5/23/2013
Process Start Time	19:45
Process Stop Date	5/24/2013
Process Stop Time	09:45
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-240
Test Results	Benzene 19 ppb
Reprocessed Batch	

Notes

Friday, May 31, 2013

Fill Data

Fill Start Date	5/24/2013
Fill Start Time	18:45
Fill Stop Date	5/24/2013
Fill Stop Time	21:15
Process Battery	Tank Battery 2

Processing Data

Process Start Date	5/24/2013
Process Start Time	21:15
Process Stop Date	5/25/2013
Process Stop Time	14:00
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-253
Test Results	Benzene 22 ppb
Reprocessed Batch	

Notes

All 4 tanks transferred.

OB-159 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/25/2013
Fill Start Time	10:40
Fill Stop Date	5/25/2013
Fill Stop Time	14:00
Process Battery	Tank Battery 1

Processing Data

Process Start Date	5/25/2013
Process Start Time	14:00
Process Stop Date	5/25/2013
Process Stop Time	19:00
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-254
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Friday, May 31, 2013

OB-165 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/27/2013
Fill Start Time	21:00
Fill Stop Date	5/27/2013
Fill Stop Time	23:30
Process Battery	Tank Battery 2

Processing Data

Process Start Date	5/27/2013
Process Start Time	22:20
Process Stop Date	5/28/2013
Process Stop Time	07:37
Processing Person	Frank Totino

Approval Data

Approval Details	NAL13026-262
Test Results	Benzene 22 ppb
Reprocessed Batch	

Notes

Friday, May 31, 2013

MSD

PRELIMINARY PLAN AND SCHEDULE FOR PRETREATMENT SYSTEM AT THE BRIDGETON LANDFILL

Prepared For:

BRIDGETON LANDFILL, LLC

Prepared by:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

CEC Project 130-484

May 31, 2013

STATE OF MISSOURI
IVAN COOPER
NUMBER PE-2003009211
PROFESSIONAL ENGINEER
May 31, 2013

Civil & Environmental Consultants, Inc.

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APPENDIX A – Project Flow Schedule, Gantt chart, and Figures

1.0 GENERAL INFORMATION

Bridgeton Landfill LLC owns and manages the Bridgeton Sanitary Landfill site located at 13570 St. Charles Rock Road in Bridgeton, Missouri (see Figure 1). The Bridgeton Sanitary Landfill ("The Landfill") previously discharged leachate from the landfill to the Metropolitan St. Louis Sewer District ("MSD"). Due to the change in concentrations of various constituents in the leachate, discharge has been curtailed. MSD requires the landfill to submit, by June 1, 2013, a plan and schedule to achieve compliance with MSD Ordinance 12559, without variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/l BOD; 953 mg/l COD; and 65 mg/l TSS. This plan identifies the steps to be taken and the schedule to achieve those steps. This Plan is intended to provide a working document to allow Bridgeton Landfill to obtain the input of MSD for development of a final pretreatment plan. This Plan is being provided in advance of the scheduled June 4, 2013, tour of the Missouri River Treatment Facility and June 5, 2013, coordination meeting between Bridgeton Landfill and MSD. A full pretreatment system plan must obtain Missouri Department of Natural Resources (MDNR) approval and is scheduled for submission by September 1, 2013. The plan will develop approaches for compliance with metals and other pollutants limited in the sewer use ordinance.

It is the goal of The Landfill to work with MSD on development of the ultimate pretreatment system in order to confirm that the system is developed to meet MSD's needs and allow for long term discharge. A final pretreatment plan is complex and will depend on evaluation of treatment needs and the treatment impact of the soon to be operational 316,000 gallon tank. The plan shows the development concepts, including the newly constructed 316,000-gallon tank, as well as interim and permanent components to provide compliance with the plan.

1.1 REGULATORY BACKGROUND

The Landfill leachate discharge to MSD must comply with all applicable ordinances regulating the discharge to the facilities of The Metropolitan St. Louis Sewer District. Ordinance 12559 requires pretreatment limits in addition to the BOD, COD, and TSS limits detailed above, as follows:

"At the point of discharge from the user's property to the District's wastewater system, all users shall comply with the following limitations. Separate limitations apply for discharges to the District's plants with outfalls to the Mississippi and Missouri Rivers (Large Rivers) and for plants with outfalls to all other streams (Small Rivers).

Parameter*	Daily Average Limit**		Instantaneous Limit**	
	Large Riv.	Small Riv.	Large Riv.	Small Riv.
Antimony	0.5	0.5	1.5	1.5
Arsenic	0.4	0.3	1.2	0.9
Barium	10.0	30.0	30.0	30.0
Beryllium	0.4	0.1	1.2	0.3

MSD 026458

Parameter*	Daily Average Limit**		Instantaneous Limit**	
	Large Riv.	Small Riv.	Large Riv.	Small Riv.
Cadmium	0.7	0.07	1.2	0.21
Chromium	5.0	5.0	15.0	15.0
Copper	2.7	0.7	4.5	2.1
Cyanide, Amenable	0.4	0.1	1.2	0.3
Iron	150.0	25.0	450.0	75.0
Lead	0.4	0.2	0.6	0.6
Mercury	0.01	0.01	0.03	0.03
Nickel	2.3	1.0	4.1	3.0
Total Oil &Grease	200	200	200	200
Phenolic Compounds	7.0	7.0	21.0	21.0
Selenium	0.2	0.2	0.6	0.6
Silver	0.5	0.5	1.5	1.5
Zinc	3.0	3.0	9.0	9.0

Total Toxic Organics	Shall not exceed 5.844 mg/l at any time
Temperature	Shall not exceed 140°F (60°C) at any time***
pH	Shall be in the range of 5.5 to 11.5 s.u. at all times***

1.2 BASIS OF DESIGN

The basis of design includes components for a permanent pretreatment system. The design parameters and units of treatment are in consideration at this time, and may include several alternatives. The basis of design will rely on bench scale treatability tests currently being conducted at Civil & Environmental Consultants, Inc. (CEC) treatability laboratory in Charlotte, NC, as well as performance of a pilot scale treatability program currently being developed at The Landfill. These activities are described in following sections.

1.3 SOURCE, VOLUME AND NATURE OF LEACHATE

The leachate is generated from leachate collection wells and leachate and condensate from gas well pumping wells at various places around the facility (collectively termed "leachate" in this document). This leachate is collected at various points and discharged to a perimeter collection line that flows to a central collection point. Temporary storage vessels are currently collecting the leachate for hauling to various remote locations for disposal and for a limited volume discharge to MSD. The leachate generation volume ranges from 150,000 to 300,000 gallons per day (gpd) of combined leachate flows.

MSD 026459

This report includes the updated evaluation of the overall liquid constituents and the treatment plan. We understand MSD's need to receive a consistent and compliant effluent stream and intend to work with the District to achieve that. The current technological, engineering, and management evaluation supports the concept that a consistent, optimal operation of the entire liquids removal and treatment system is the best way of avoiding toxics and treating the high strength pollutants to an acceptable pretreatment discharge. This concept is based on the incorporation of the new 316,000 gallon tank into an equalization and treatment scenario described in subsequent sections. Although significant variation has been seen in the analytical results, the design basis used for a treatment evaluation includes the following:

Flow:	150,000 gpd average; 300,000 gpd max
BOD:	31,000 mg/l
COD:	71,000 mg/l
TSS:	1,000 mg/l
Ammonia N	1,000 mg/l
Zinc:	50 mg/l
Iron	800 mg/l

1.4 TREATABILITY TEST PROGRAM – BENCH SCALE

In order to develop a pretreatment system that is appropriately designed and constructed to achieve the treatment goals of MSD, it is imperative to utilize treatability tests during the design phase. Both bench scale tests and field pilot scale leachate treatability tests are in progress. CEC is currently performing a number of simulated bench scale treatability tests, employing pH adjustment chemicals of lime and sodium hydroxide, and fly ash from a coal burning power plant as an absorbent for volatile fatty acids, or other constituents. In addition, biological test units are being conditioned for treating the leachate in various configurations. Anaerobic treatability tests are planned with an outside vendor.

The pH adjustment tests will continue through June 2013. Concurrent with these tests, the bench scale aerobic biological treatment unit will be testing the leachate for design considerations.

1.5 TREATABILITY TEST PROGRAM – PILOT SCALE

At the same time as the bench scale tests will occur, a pilot scale treatability evaluation is being developed for the site. A sand enhanced clarification mobile unit from Siemens is anticipated on-site by mid June 2013. Other process components identified to be evaluated in addition to the clarification unit include pH adjusting to raise the pH for metals removal, and a pH adjustment to neutral following clarification for further biological treatment. The newly constructed 316,000 gallon treatment and loadout tank will be used in combination with the clarification unit to document performance in a field pilot scale treatability tests. The components will be assembled during the month of June, 2013.

MSD 026460

The following details the process, anticipated chemical usage, and equipment for implementing pilot scale chemical modification tests at the Siemens clarification unit.

The components may include the following:

- Caustic pH adjustment tank
- Caustic feed pumps
- Caustic storage tank
- Acid pH adjustment tank
- Acid storage tank (concentrated)
- Acid feed pumps (concentrated)
- Acid feed tank (dilute)
- Acid feed pumps (dilute)
- Chemical feed building – or trailer

As another component of the pilot test program, evaluation of either modifications to the existing jet aeration system or installation of a combined suspended and fixed film in a smaller portable tank is being evaluated. This phase of the pilot test program will evaluate a combined suspended mixed liquor/fixed film mixed liquor aerobic biological treatment concept incorporating the Bio-Web ® media. A conceptual plan to enhance the aeration capability includes installation of Bio-Web® component units in a test tank to provide fixed film biological growth areas, to combine a suspended growth and fixed media growth system in the same unit. Aeration blowers will be required to provide for the oxygen requirement for biological treatment. The system will be evaluated with an internal solids liquids separation device (to function as a sequencing batch reactor ("SBR") or with the installation of a separate membrane separation system unit to function as a Membrane Bioreactor ("MBR") Either approach will provide for a mixed liquor equivalent suspended solids concentration in the 7,000 to 9,000 mg/l range.

Additionally, a pilot scale test of the electrocoagulation treatment process will be performed starting in June 2013. Electrocoagulation (EC), the passing of electrical current through water, has proven effective in the removal of contaminants from water. Electrocoagulation systems have been in existence for many years (Dietrich, patented 1906), using a variety of anode and cathode geometries, including plates, balls, fluidized bed spheres, wire mesh, rods, and tubes. Limited evaluation has been performed on landfill leachate, and this test will be conducted to identify short and long term characteristics of the process and applicability to the Bridgeton Landfill leachate.

An innovative reverse osmosis technology also will be evaluated on-site through the summer of 2013. This pilot scale unit uses a newly developed Vertical Membrane Technology, incorporating full feed water reversal during full pressurized system operation, Positive Displacement Energy Recovery (PDER), as well as a permeate and a front flush Clean In Place ("CIP") membrane system. This unique automatic "CIP" process operates with or without system shutdown. The CWS Vertical Membrane Systems is claimed to operate virtually maintenance free, at high efficiency with ultra-low energy consumption, on a much smaller

footprint than conventional horizontal systems. An important feature of the CWS design eliminates the need for a common pressure vessel surrounding the membranes. This removes the inherent problem of horizontal pressure vessels of a "dead air" space between the vessel and the membrane in which bacteria will always grow or, to which particulate matter will adhere. This feature is claimed to be a critical cost savings perspective, and will be confirmed during the pilot scale tests. The considerations for this vertical configuration spiral wound membrane to be installed following the above mentioned clarifier and pilot biological treatment unit will include flux rate, reject and permeate flow and concentrations, fouling potential, cleaning requirements, power usage, maintenance issues, and other considerations

Each of these options will require sludge storage and dewatering system which will be a component of the pilot test program.

1.6 GENERAL FACILITY LAYOUT DIAGRAM

The project location identified on a U.S.G.S. topographic map reproduction is included as Figure 1. The evaluation of the bench scale and pilot scale process tests is anticipated to provide the necessary information for development of a general facility layout and process flow diagrams by the September 1st MDNR submission date. Should an anaerobic unit be required in the process flow, bench scale testing requires a minimum of three months for acclimatization. Design parameters will not be sufficiently developed by the September date, and several assumptions on reaction and degradation rates may be required for submission.

MSD 026462

2.0 FULL SCALE PRETREATMENT FACILITY DESIGN

The conventional design approach identified to provide a consistent pretreatment operation treating the leachate from The Landfill incorporates an equalization tank, physical/chemical precipitation to remove zinc and iron metals that may inhibit biological pretreatment, first stage anaerobic treatment, second stage aerobic treatment, membrane separation for solids removal, return and waste sludge pumping, solids storage and dewatering, solids disposal, and effluent monitoring and discharge. (See Figure 2)

Process flow calculations were performed to identify candidate sizing for process treatment tank(s) for the Bridgeton Landfill leachate. Note, this is a very preliminary approach based on many assumptions of strength, variability, process degradation rates of waste and many other assumptions associated with the wastewater being generated at the site. There is risk in using these calculations for process sizing without verification by bench or full scale pilot testing of the design parameters. In addition, other unit process may be recommended to reduce the leachate concentrations to a level acceptable by MSD, if the proposed processes do not adequately treat the leachate based on the bench and pilot tests described herein.

The anticipated flow and characteristics used in a preliminary design approach for tank sizing have been provided based on limited analyses or verbal discussions, and are listed as follows:

Flow:	150,000 gpd average; 300,000 gpd max
BOD:	31,000 mg/l
COD:	71,000 mg/l
TSS:	1,000 mg/l
Ammonia N:	1,000 mg/l
Zinc:	50 mg/l
Iron	800 mg/l

The flows indicated above are anticipated to be reduced over time, as exposed surfaces of the landfill will be covered with membrane or other systems, reducing precipitation related leachate production. Additional long term historical flow and chemical parameters should be identified prior to design of a treatment system. Therefore, this planning document will address suggested storage tank volumes that may be incorporated into future treatment processes. Due to the concentrations identified above, a design basis of anaerobic treatment followed by aerobic treatment is a reasonable approach for these flow and strength parameters. Numerous ancillary units are anticipated, but may be modified, including:

- Pumping units
- Equalization Storage (incorporating the possible use of the new 316,000 gallon tank)
- Chemical feed for pH modification for metals removal, and possibly fly ash addition for volatile fatty acid reduction to remove COD.
- Chemical feed for neutralization
- Clarification

MSD 026463

- Nutrient and chemical addition
- Aeration, including either SBR or MBR processes with suspended and/or fixed media
- Odor control
- Membrane separation solids wasting
- Sludge holding
- Solids dewatering
- Effluent loadout
- Electrical feed and motor control center
- Process controls units
- Water supply
- Laboratory and operations
- Maintenance area.
- Discharge to MSD or Loadout area using the 316,000 gallon tank.

Based on the anticipated strength of the leachate, CEC suggests that a two stage anaerobic/aerobic treatment process is a reasonable approach. The high strength leachate can be reduced by an energy efficient anaerobic process first, with a polishing step consisting of an aerobic process. The lower strength anaerobic process effluent can then be treated in a subsequent aerobic process that would significantly reduce aeration blower sizing and energy consumption compared to a single aerobic process. As there have been analyses of leachate suspended solids concentrations over 1,000 mg/l, a primary settling step is also recommended. Leachate metals concentrations can impede biological treatment. Based on initial characterization, concentration levels of zinc maybe of concern. Therefore, a preliminary sedimentation step for metals and some suspended solids removal will be also addressed. Iron concentration will also be addressed, either by preaeration before the physical/chemical clarification step (to oxidize dissolved iron to change the form to particulates that are more easily removed in a clarification settling step) or by other technologies. CEC anticipates a significant concentration of volatile fatty acids (VFA) will be present in the leachate that contributes to the high COD concentrations. Fly ash or other substances will be evaluated for use in the preliminary clarification step to reduce the leachate VFA concentration that requires treatment in the later steps.

The process unit sizing for anaerobic treatment is based on a COD concentration loading rate of 5 kg/m^3. If a higher loading rate can be documented, then a loading rate of 10 kg/m^3 will be used. This higher COD loading rate represents a midpoint of typical moderate to high rate anaerobic digester loadings from 5 – 20 kg/ m^3 for sizing purposes. Treatability testing is ultimately required to verify anaerobic treating rate. This treating rate relates to the mass of COD that will be applied to the anaerobic digester volume. Please note that it often requires 3 to 6 months treatability testing to acclimate the biology to the waste to obtain meaningful data. Full scale startup may require a similar time requirement.

The calculation to determine the appropriate digester volume that can be used to size the tanks follows. The solids loading for COD treatment, assuming reduction of 70% and using a conservative 5 kg/ m^3 is:

MSD 026464

71,000 mg/l X 0.15 mgd X 8.34 = 88,821 lbs/day

88,821 lbs /day = 40,374 kg/day

At 5 kg/m^3 gives: 40,374 kg/day / (5 kg/m^3) = 8,074 m^3

8,074 m^3 = 8,074 m^3 X 264 gal/ m^3

= 2,131,704 gallons.

If bench test results would show a higher loading would treat the leachate, then a hypothetical loading of 10 kg/m^3 would yield the following:

At 10 kg/m^3 gives: 40,374 kg/day / (10 kg/m^3) = 4,037 m^3

4,037 m^3 = 4,037 m^3 X 264 gal/ m^3

= 1,065,852 gallons

If the bench scale test results in a loading rate of 5 kg/m^3, then a volume of 2,131,704 gallons would be required.

Therefore, preliminary design is based on two (2) tanks at 1,000,000 gallons each tank processing in parallel.

After anaerobic treatment, a polishing step treating the leachate would include an aerobic process; assume BOD reduction is similar to COD reduction:

At a 70% reduction of 31,000 mg/l BOD = 9,300 mg/l

Assume 0.1 lbs BOD/lb MLSS: Therefore need 9,100 # BOD/ (0.1 # BOD/#MLSS) = 93,000 # MLSS in system.

If use same volume of tanks (2 @ 1,000,000 gals) = 2,000,000 gals.

Concentration of MLSS = 93,000 # MLSS/ (2.0 MGX 8.34) = 6,576 mg/l

This Mixed Liquor Suspended Solids (MLSS) concentration is at double the concentration usually seen at complete mixed aeration systems, and is consistent with the process used at the other landfills for an aeration system and membrane separation technology.

The Aerobic Basin Detention Time (D.T.) is calculated as:

MSD 026465

D.T. = 9,300 mg/l/ (6576 mg/l MLSS *0.1 F/M ratio) = 14.14 days
Volume = (Q)*(DT) = 0.15 mgd*(14.14 days) = 2.12 million gallons
For argument sake, call this volume 2 million gallons, or 2 aeration tanks of 1 million gallons each in parallel.

Air required in aeration system:

Oxygen requirements:
= carbonaceous demand plus endogenous respiration plus nitrification demand

Assume:
Alpha = 0.8
Beta = 0.08
C = 4.6 (for nitrification)

At 0.5 lb Oxygen/lb BOD gives; 9,300 * .5 = 4,650#O_2 /day carbonaceous

Endogenous: (0.08)*(6,576mg/l)*(2 MG)*(8.34) = 8,775 #/day

Nitrification: (4.6)*(0.15 mg)*(1,000 mg/l ammonia)*(8.34) = 5,754 # O_2/day

AOR = 19,179 / 24 = 799.125 #/hr oxygen

SOTR correction for temperature, altitude, alpha, Beta corrections = 1.92
At 0.0175 lb O_2/ CFM air

5.5 % efficiency at depth (assume 13 feet or 4 meter)

Air flow = (799.125 lbs/hr x 1.92) / (0.0175 X0.055x 4 meter) = 398,525 CF/hr for Total BOD demand.

= 398,525 CF/Hr/60 min/hr = 6,642 scfm, therefore size blowers at 3 @ 2,400+/- scfm before contingency.

Sludge generation and dewatering evaluation based on pilot scale production will provide design and capacity requirements for a full scale installation. The components of the sludge production will be evaluated on the basis of both the bench scale settleability results with various coagulants and verified by the pilot scale clarifier unit. The biological waste activated sludge production will be documented through the aerobic bench scale tests using raw leachate and with clarified leachate sources.

3.0 PROJECT SCHEDULE

A project schedule is included to identify tasks and key dates for development of a plan and implementation of a pretreatment system in compliance with both MSD and MDNR dates. The project flow schedule, Gantt chart, and figures are included in Appendix A.

MSD 026467

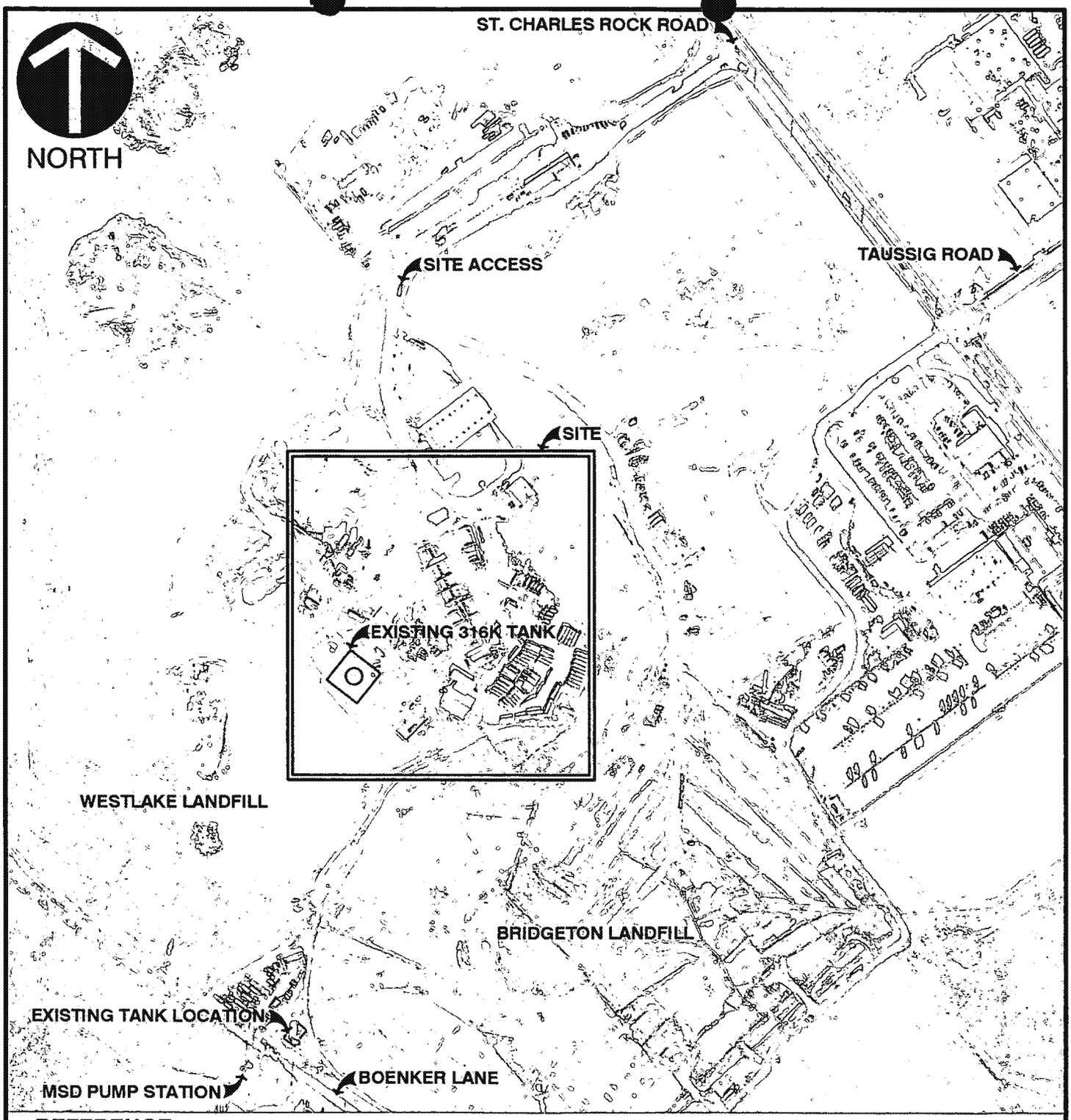
4.0 CLOSING

This working Pretreatment Plan has been developed to facilitate discussions with MSD on the development and construction of a pretreatment system at the Bridgeton Landfill. We look forward to discussing the concepts in this plan with MSD staff and sharing our progress as the site work continues.

APPENDIX A

Project Flow Schedule, Gantt chart, and Figures

Task Number	Task	Start	End	Start Date	Duration
1	Temporary Treatment System	4/4/13	12/21/14	1	627
2	Proposal And initial 316k Tank Eva	4/4/13	4/18/13	1	15
3	Siemens Clarifier	6/14/13	12/3/14	72	538
4	Clarifier Odor Control	6/15/13	6/30/13	73	16
5	Clarifier Electrical	6/16/13	7/1/13	74	16
6	Clarifier Piping	6/17/13	7/2/13	75	16
7	Clarifier Sludge Withdrawal	6/18/13	7/3/13	76	16
8	Clarifier pH Tank Acquisition	6/19/13	7/4/13	77	16
9	Clarifier Chemicals	6/20/13	7/5/13	78	16
10	Site Layout	5/28/13	6/7/13	55	11
11	Utilities Planning	5/28/13	6/10/13	55	14
12	Chemical Feed System Evaluation	5/28/13	6/10/13	55	14
13	Sludge Holding Tank Design	5/28/13	6/13/13	55	17
14	Sludge Loadout Plan	5/28/13	6/10/13	55	14
15	Sludge Equipment Procurement	6/14/13	7/3/13	72	20
16	Clarifier Pilot Test	7/4/13	11/3/13	92	123
17	Bio-Web Tank Bench/Pilot	7/1/13	12/21/13	89	174
18	Bioweb Evaluation	7/2/13	7/15/13	90	14
19	Bioweb Recommendation	7/3/13	7/20/13	91	18
20	Bioweb Purchase Decision	7/4/13	7/21/13	92	18
21	Aeration Modifications	6/6/13	8/19/13	64	75
22	Membrane Bioreactor System	6/6/13	6/19/13	64	14
23	316K Tank Online Pilot Test	6/20/13	9/30/13	78	103
24	Design Modifications to 316k Tanl	10/1/13	10/30/13	181	30
25	Construction of 316k Tank Process	10/31/13	12/21/13	211	52
26	Treatment Planning Initial Memo	6/3/13	7/2/13	61	30
27	Final Treatment System	4/22/13	2/28/14	19	313
28	Initial Site Visit	4/22/13	4/22/13	19	1
29	Leachate Sampling for Treatability	4/23/13	4/29/13	20	7
30	Future Tank Evaluation Sizing	4/30/13	5/5/13	27	6
31	Settling Studies	5/2/13	5/7/13	29	6
32	Aeration Bench Test	5/8/13	6/29/13	35	53
33	Anaerobic Bench Test	6/30/13	9/29/13	88	92
34	Reverse Osmosis System	6/1/13	10/13/13	59	135
35	Site Layout	6/1/13	6/7/13	59	7
36	Utilities Planning	6/1/13	6/14/13	59	14
37	Reverse Osmosis System Evaluatic	6/14/13	7/1/13	72	18
38	Reverse Osmosis Pilot Test	7/3/13	10/13/13	91	103
39	Sludge Dewatering System	6/1/13	10/13/13	59	135
40	Site Layout	6/1/13	6/7/13	59	7
41	Utilities Planning	6/1/13	6/14/13	59	14
42	Sludge Dewatering System Evalua	6/1/13	6/14/13	59	14
43	Sludge Dewatering Pilot Test	7/3/13	10/13/13	91	103
47	4 MG Tank System	5/8/13	11/20/13	35	197
48	4 MG Tank Decision	5/8/13	5/9/13	35	2
49	Tank Submittal for Board Approva	5/24/13	6/17/13	51	25
50	Board Meeting	6/18/13	6/18/13	76	1
51	Geotechnical Tank Investigation	6/3/13	6/5/13	61	3
52	Site Work	6/24/13	8/2/13	82	40
53	Foundation Work	8/3/13	8/27/13	122	25
54	Tank Construction	8/28/13	11/10/13	147	75
55	Complete Construction	11/11/13	11/20/13	222	10
56	Design Modifications to 316k Tanl	6/15/13	7/14/13	73	30
56	Construction of 316k Tank Process	7/25/13	9/14/13	113	52
56	Process Decision for State Dischar	9/1/13	9/5/13	151	5
56	Process Decision for MSD Discharg	9/15/13	9/19/13	165	5
56	Permitting for Full Scale Process	9/30/13	10/29/13	180	30
56	Construction of Full Scale System	11/1/13	2/28/14	212	120



REFERENCE

1. AERIAL IMAGERY PROVIDED BY EAST WEST GATEWAY COORDINATING COUNCIL OF MISSOURI AND ILLINOIS, COLLECTED IN LATE FEBRUARY AND EARLY MARCH OF 2012.

SCALE IN FEET

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Civil & Environmental Consultants, Inc.
4848 Park 370 Blvd., Suite F - Hazelwood, MO 63042
314-656-4566 · 866-250-3679
www.cecinc.com

BRIDGETON LANDFILL LLC
BRIDGETON, MISSOURI

SITE MAP

DRAWN BY:	CAC	CHECKED BY:	DRAFT	APPROVED BY:	DRAFT	FIGURE NO.:	1
DATE:	MAY 2013	DWG SCALE:	1"=100'	PROJECT NO:	130-484		

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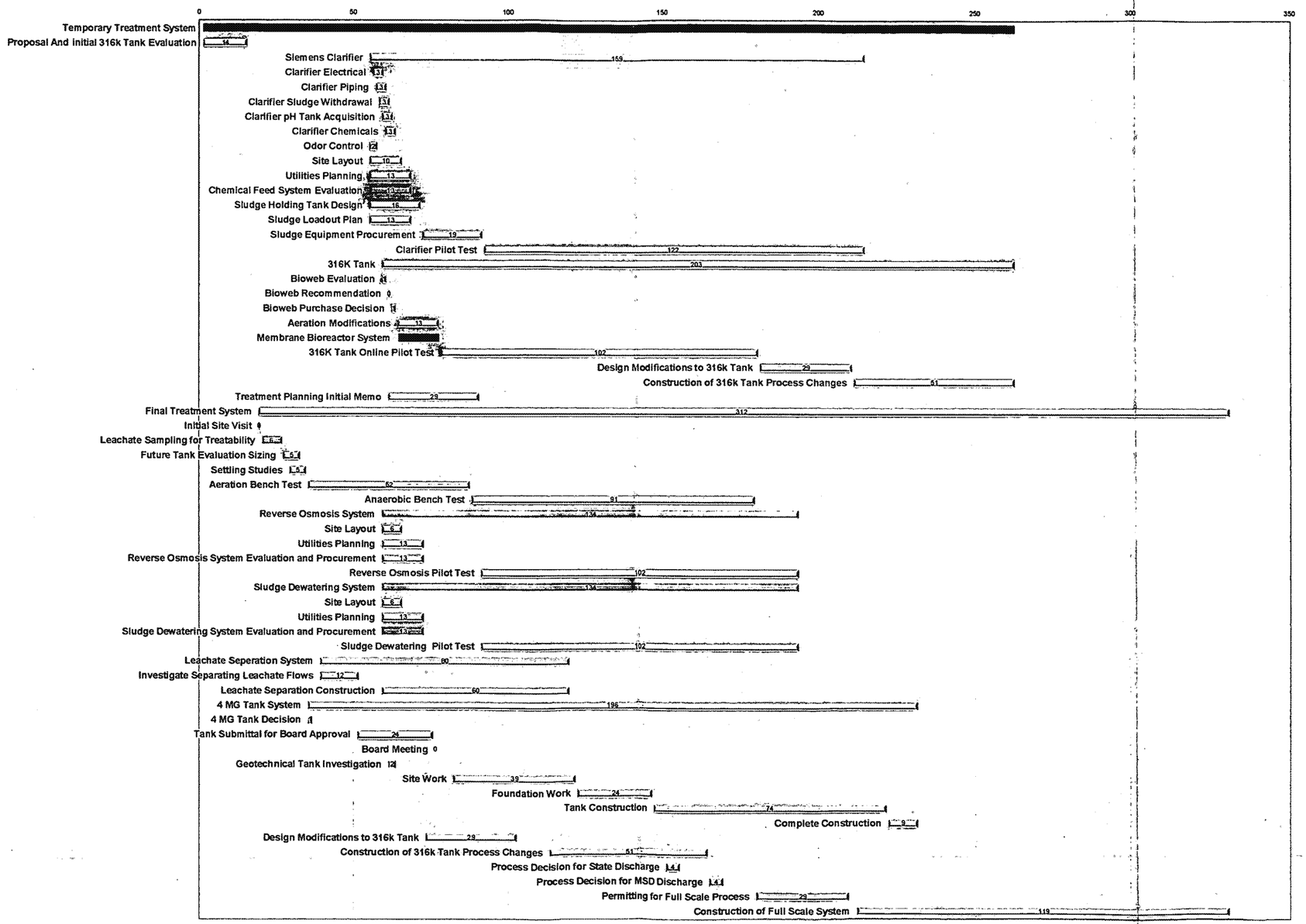
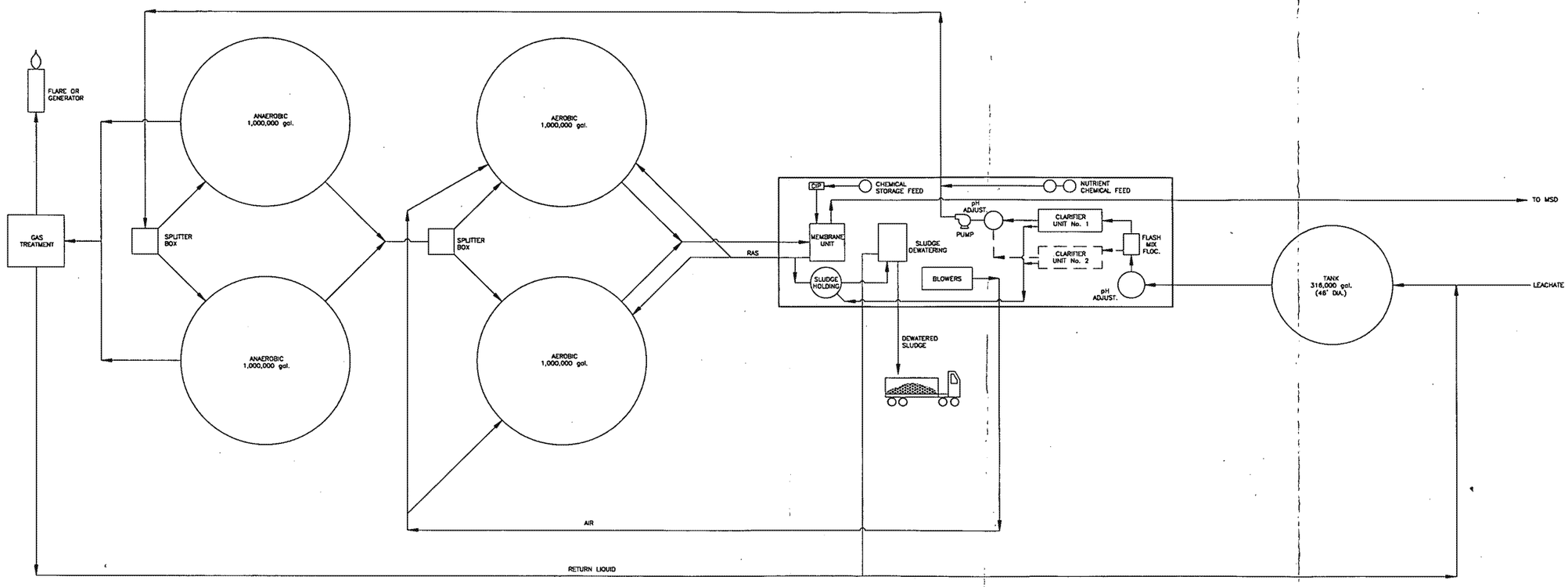
Bridgeton Assistance Program
Phase 2 Leachate Tank and Phase 3 Treatment



REVISION RECORD		
NO	DATE	DESCRIPTION
1		
2		
3		
4		

SUBMITTAL RECORD		
NO	DATE	DESCRIPTION



BENCH TEST
- VOL. AIR TO IDENTIFY AEROBIC TREATMENT.
- CHEMICAL TREATMENT TO REMOVE ZINC/METALS.
- CHEMICAL TREATMENT WITH FLY ASH FOR VFA REMOVAL (COD)
- SETTLING TEST FOR SOLIDS REMOVAL (COD/BOD REDUCTION)

Civil & Environmental Consultants, Inc.
2030 S. Tyron Street - Suite 3E - Charlotte, NC 28203
Ph: 980.224.6104 - Fax: 980.224.6172
www.cecinc.com

PRETREATMENT PLAN
BRIDGETON LANDFILL, LLC
BRIDGETON, MISSOURI

DRAWN BY:	JKS	CHECKED BY:	IAC	APPROVED BY:	-
DATE:	APRIL 2014	DWG SCALE:	NOT TO SCALE	PROJECT NO.	130-494

BRIDGETON LANDFILL LEACHATE PRETREATMENT FLOW SCHEMATIC

FIGURE NO.: 2

SHEET 1 OF 1

REFERENCE

1. AERIAL IMAGERY PROVIDED BY EAST WEST GATEWAY COORDINATING COUNCIL OF MISSOURI AND ILLINOIS, COLLECTED IN LATE FEBRUARY AND EARLY MARCH OF 2012.

SCALE IN FEET

0 80 160

LEGEND

- FUTURE
- PROPOSED
- EXISTING

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BRIDGETON LANDFILL LLC
BRIDGETON, MISSOURI

FUTURE SITE IMPROVEMENTS

DRAWN BY:	MSP	CHECKED BY:	DRAFT	APPROVED BY:	DRAFT	EXHIBIT:	1.0
DATE:	MAY 2013	DWG SCALE:	1"=80'	PROJECT NO:	130-484		

P:\2013\130-484\-CADD\Dwg\Phase1\130484-FutureLayout(MSD).dwg{EXHIBIT - FUTURE SITE LAYOUT} LS:(6/5/2013 - mpeake) - LP: 6/5/2013 9:32 AM

MSD

Doug Mendoza BRIDGETON LANDFILL

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Thursday, May 30, 2013 11:21 AM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan; Mike Townley; Catherine Politte
Subject: RE: Bridgeton Request to Increase Discharge to Bissell

Doug,

Thank you so much, we appreciate the approval and MSD's continued efforts to work with us.

Based on the MSD treatment and testing protocol, the facility expects to be able to increase hauling to Bissell Point by 10-20,000 gallons tomorrow, and be ready to reach the full 100,000 gallons beginning Monday.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Thursday, May 30, 2013 9:46 AM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan; Mike Townley; Catherine Politte
Subject: RE: Bridgeton Request to Increase Discharge to Bissell

Jessie,

We have approved the discharge request, with a formal approval letter to be mailed to Craig Almanza of Republic Services. The text of the approval letter is copied below, for your convenience.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Mgr.

MSD

Bridgeton Landfill

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, May 31, 2013 10:53 AM
To: John Lodderhose; Ken Goins; Doug Mendoza
Cc: Almanza, Craig; Ed Galbraith (EGalbraith@barr.com); Smith, Steve (ssmith10 @republicservices.com)
Subject: RE: Follow up on Beta Question from Yesterday's Meeting

Good morning,

I wanted to give you an update on this evaluation. We consulted with another laboratory that specializes in radiological assessment and they indicated that elevated TSS can lead to an elevated reported beta detection. As MSD knows, the TSS concentrations have increased in the leachate. For this reason we have asked Test America to send the remainder of the earlier sample to that lab for confirmation testing.

Additionally, the radiological constituents will also be included as a standard component of the upcoming quarterly testing. Those results will also provide some additional data to help us better understand the detection and potential sources of interference.

We will continue to keep you updated on this review. Please let us know if you have any questions.

Thank you,
Jessie

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P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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From: Merrigan, Jessie
Sent: Friday, May 17, 2013 12:01 PM
To: John Lodderhose; kgoins@stlmsd.com

MSD

BRIDGETON LANDFILL

Doug Mendoza

From: John Lodderhose
Sent: Thursday, May 30, 2013 11:12 AM
To: Smith, Steve; Doug Mendoza; Todd Heller
Cc: Walker, Tony; Ed Galbraith; Cooper, Ivan; Bodnar, Randy; Kamp, Kevin; Merrigan, Jessie (LG); Dan Feezor; Almanza, Craig
Subject: RE: Tour of Missouri River Plant

Steve, we would be happy to give you a tour of the MSD Missouri River Plant next Tuesday. Please contact Todd Heller at 636-861-6701 to make the arrangements.
Thanks

John R. Lodderhose, P.E.
Metropolitan St. Louis Sewer District
Assistant Director of Engineering
Environmental Compliance
314-436-8714

From: Smith, Steve [mailto:ssmith10@republicservices.com]
Sent: Wednesday, May 29, 2013 2:08 PM
To: Doug Mendoza; John Lodderhose
Cc: Walker, Tony; Ed Galbraith; Cooper, Ivan; Bodnar, Randy; Kamp, Kevin; Merrigan, Jessie (LG); Dan Feezor; Almanza, Craig
Subject: Tour of Missouri River Plant

Doug and John,

Civil and Environmental Consultants and Tony Walker from our corporate office are diligently working on putting together a conceptual pretreatment plan that we will be sending to you by June 1. They are also planning on attending our June 5th meeting for further discussion of the plan.

Since they will be in town on Tuesday, we wanted to see if it would be possible to tour the Missouri River plant prior to our Wednesday meeting. We feel it would be very helpful in advancing our pretreatment design if we had a better understanding of the MSD plant and the ongoing improvements.

Let us know if that would work. I have cc'ed quite a few people but I think our number of attendees would be around 4-5 people.

Thanks,

Steve

Steve Smith | Area Environmental Manager | Republic Services
13832 S. Kostner Ave | Crestwood, IL 60445 | ☎: 708-297-3941 | 📱: 708-906-8054 | ✉: ssmith10@republicservices.com

MSD

Doug Mendoza

BRIDGETON LANDFILL

From: Steve Grace
Sent: Friday, May 31, 2013 9:51 AM
To: Doug Mendoza
Cc: Brian G. Gibson
Subject: RE: Bridgeton Landfill loading at HWRS

I ran the HWRS Acceptance Calculator for both volumes using the averages below...and both are acceptable.

Steve

From: Doug Mendoza
Sent: Friday, May 31, 2013 8:28 AM
To: Steve Grace
Cc: Brian G. Gibson
Subject: Bridgeton Landfill loading at HWRS

Steve,

Would you please check the average values below against allowable loading at Bissell's HWRS for Bridgeton Landfill?

Do it for 50,000 GPD and 100,000 GPD, please.

Need this as soon as possible, please!

		Arsenic	Iron	Lead	Mercury	Nickel	Zinc
		Total	Total	Total	Total	Total	Total
Location	Date	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
MSD Batch 114	5/12/2013	567	751000	189		93.4	13500
MSD Batch 112	5/12/2013	613	710000	168		81.5	12000
MSD Batch 107	5/10/2013	656	669000	180		142	12600
MSD Batch 105	5/10/2013	1210	844000	156	82.2	98.8	19300
MSD Batch 100	5/8/2013	861	781000	179		97.8	13800
MSD Batch 98	5/8/2013	637	765000	176	17.4	92	14200
MSD Batch 94	5/7/2013	584	619000	151		82.7	10200
Average (ug/L)		732.57	734142.86	171.29	49.80	98.31	13657.14
Average (mg/L)		**0.73**	**734.14**	**0.17**	**0.05**	**0.10**	**13.66**

---Doug

MSD

BRIDGETON LANDFILL

Doug Mendoza

From:	Doug Mendoza
Sent:	Thursday, May 30, 2013 9:46 AM
To:	'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc:	Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan; Mike Townley; Catherine Politte
Subject:	RE: Bridgeton Request to Increase Discharge to Bissell

Jessie,

We have approved the discharge request, with a formal approval letter to be mailed to Craig Almanza of Republic Services. The text of the approval letter is copied below, for your convenience.

Sincerely,
Doug Mendoza
MSD Industrial Pretreatment Mgr.

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Response to Bridgeton Landfill Request to Increase Discharge to Bissell Point Wastewater Treatment Plant from 50,000 to 100,000 Gallons Per Day Memorandum dated May 21, 2013

Dear Mr. Almanza:

The Metropolitan St. Louis Sewer District (MSD) has reviewed your *Request to Increase Discharge to Bissell Point Wastewater Treatment Plant from 50,000 to 100,000 Gallons Per Day*. The request was delivered as an attachment to an email sent by Jessie Merrigan on Tuesday, May 21, 2013.

After completion of its review of relevant data, MSD has determined that it will allow an increase in the emergency and conditional approval for Bridgeton Landfill to discharge its leachate as a hauled waste to our Bissell Point Wastewater Treatment Plant. The approved increase is for the requested discharge rate of 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday.

All conditions of MSD's initial April 24, 2013 emergency and conditional approval continue to apply, as reproduced below. The only change is to item 6, regarding the volume of approved discharge and requirement to spread deliveries evenly throughout the hours of operation for the Hauled Waste Station.

MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:

1. Bridgeton Landfill shall complete the MSD Application for Special Discharge Approval and certify that the pretreated leachate is non-hazardous.
2. Only MSD approved haulers are authorized to discharge at our Bissell Point Hauled Waste Station. Bridgeton Landfill shall either utilize already approved hauler(s) or complete the MSD Waste Transporter Authorization Application.
3. Bridgeton Landfill shall add MSD to their pollution liability insurance policy as a co-insured and submit a copy of this policy to MSD.

4. All wastewater discharged to MSD's Missouri River TP shall be pretreated by Bridgeton Landfill in accordance with the *Bridgeton Landfill Standard Operating Procedure, Landfill Liquids Collection and Treatment for Discharge to MSD Missouri River Wastewater Treatment Facility* dated April 2013 (Bridgeton Landfill SOP), except that the specified level of reduction for benzene in the wastewater shall be less than 0.14 mg/L rather than 0.3 mg/L as your procedure states. This is based on EPA's guidance materials for protection of workers. Once the leachate has been treated sufficiently for benzene, you may elect to discharge to the Bissell Point Hauled Waste Station at that time, with the understanding that the discharge is still subject to all MSD limitations and prohibitions, including requirement that the wastewater be nonhazardous. Regarding the benzene level, you alternately may provide sampling results for headspace that demonstrate direct compliance with OSHA and ACGIH standards. You may also provide alternate data for MSD to consider regarding possibly allowing the 0.3 mg/L level.
5. Analytical sampling results that demonstrate treated liquid is verified to have achieved the appropriate reduction of toxic pollutants to prevent violation of MSD Ordinance No. 12716 and is not hazardous material, shall be submitted to MSD on a weekly basis.
6. **The daily discharge shall not exceed 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday. Loads shall be delivered within the hours of operation as outlined in MSD Ordinance No. 12716, and deliveries must be spread evenly throughout the hours of operation.**
7. Analytical sampling results that demonstrate treated liquid is verified to have achieved the appropriate reduction of toxic pollutants to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, shall be submitted to MSD on a weekly basis.
8. Each batch shall also be analyzed for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. Analytical sampling results shall be submitted to MSD on a weekly basis.
9. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.
10. The "Data Collection" items specified in the Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.
11. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.
12. Failure on the part of Bridgeton Landfill to meet any one of the above terms will result in immediate suspension of this emergency and conditional approval.

Thank you for helping us comply with federal and state regulations. If you have any questions, please contact John Lodderhose at 314-436-8714.

Sincerely,

METROPOLITAN ST. LOUIS SEWER DISTRICT

Brian Hoelscher, P.E.

Executive Director

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Tuesday, May 21, 2013 11:48 AM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: Bridgeton Request to Increase Discharge to Bissell

Good morning,

Please see attached the written request to increase the volume hauled to Bissell Point, consistent with discussions last week. Please let us know if you have any questions.

Thank you,
Jessie

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

MSD

May 30, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Response to Bridgeton Landfill Request to Increase Discharge to Bissell Point Wastewater Treatment Plant from 50,000 to 100,000 Gallons Per Day Memorandum dated May 21, 2013

Dear Mr. Almanza:

The Metropolitan St. Louis Sewer District (MSD) has reviewed your *Request to Increase Discharge to Bissell Point Wastewater Treatment Plant from 50,000 to 100,000 Gallons Per Day*. The request was delivered as an attachment to an email sent by Jessie Merrigan on Tuesday, May 21, 2013.

After completion of its review of relevant data, MSD has determined that it will allow an increase in the emergency and conditional approval for Bridgeton Landfill to discharge its leachate as a hauled waste to our Bissell Point Wastewater Treatment Plant. The approved increase is for the requested discharge rate of 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday.

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1. Bridgeton Landfill shall complete the MSD Application for Special Discharge Approval and certify that the pretreated leachate is non-hazardous.
2. Only MSD approved haulers are authorized to discharge at our Bissell Point Hauled Waste Station. Bridgeton Landfill shall either utilize already approved hauler(s) or complete the MSD Waste Transporter Authorization Application.
3. Bridgeton Landfill shall add MSD to their pollution liability insurance policy as a co-insured and submit a copy of this policy to MSD.
4. All wastewater discharged to MSD's Missouri River TP shall be pretreated by Bridgeton Landfill in accordance with the *Bridgeton Landfill Standard Operating Procedure, Landfill Liquids Collection and Treatment for Discharge to MSD Missouri River Wastewater Treatment Facility* dated April 2013 (Bridgeton Landfill SOP), except that the specified level of reduction for benzene in the wastewater shall be less than 0.14 mg/L rather than 0.3 mg/L as your procedure states. This is based on EPA's guidance materials for protection of workers. Once the leachate has been treated sufficiently for benzene, you may elect to discharge to the Bissell Point Hauled Waste Station at that time, with the understanding that the discharge is still subject to all MSD limitations and prohibitions, including requirement that the wastewater be nonhazardous. Regarding the benzene level, you alternately may provide sampling results for headspace that demonstrate direct compliance with OSHA and ACGIH standards. You may also provide alternate data for MSD to consider regarding possibly allowing the 0.3 mg/L level.
5. Analytical sampling results that demonstrate treated liquid is verified to have achieved the appropriate reduction of toxic pollutants to prevent violation of MSD Ordinance No. 12716 and is not hazardous material, shall be submitted to MSD on a weekly basis.
6. The daily discharge shall not exceed 100,000 gallons per day, Monday through Friday, and 50,000 gallons on Saturday. Loads shall be delivered within the hours of operation as outlined in

MSD Ordinance No. 12716, and deliveries must be spread evenly throughout the hours of operation.

7. Analytical sampling results that demonstrate treated liquid is verified to have achieved the appropriate reduction of toxic pollutants to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, shall be submitted to MSD on a weekly basis.
8. Each batch shall also be analyzed for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. Analytical sampling results shall be submitted to MSD on a weekly basis.
9. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.
10. The "Data Collection" items specified in the Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.
11. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.
12. Failure on the part of Bridgeton Landfill to meet any one of the above terms will result in immediate suspension of this emergency and conditional approval.

Thank you for helping us comply with federal and state regulations. If you have any questions, please contact John Lodderhose at 314.436-8714.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Brian Hoelscher, P.E.
Executive Director

By Certified Mail: 7004 2890 0000 9602 8067

Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

MSD

May 29, 2013

Craig Almanza, Area Environmental Manager
BRIDGETON LANDFILL LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: NOTICE OF VIOLATIONS – WASTEWATER DISCHARGE PERMIT NO. 0511559802 - 2
For premise at: 13570 St. Charles Rock Road, Bridgeton, MO 63044

Dear Mr. Almanza:

We have reviewed the self-monitoring data your company recently submitted to MSD. Unfortunately, we identified the following violations:

VIOLATIONS OF DISCHARGE LIMITATIONS:

DATE	TIME	BATCH #	SAMPLE TYPE	POLLUTANT	DISCHARGE LIMIT	LIMIT TYPE	VALUE FOUND
05/07/13	0800	94	Grab	Oil & Grease (T)	200 mg/L	IN	240 mg/L*
05/08/13	0741	98	Grab	Oil & Grease (T)	200 mg/L	IN	451 mg/L***
05/08/13	1051	100	Grab	Oil & Grease (T)	200 mg/L	IN	366 mg/L***
05/10/13	0711	105	Grab	Oil & Grease (T)	200 mg/L	IN	953 mg/L***
05/10/13	0711	105	Grab	pH	5.5 su < pH < 11.5 su	IN	5.4 su *
05/10/13	1401	107	Grab	Oil & Grease (T)	200 mg/L	IN	393 mg/L***
05/12/13	1249	112	Grab	Oil & Grease (T)	200 mg/L	IN	342mg/L***
05/12/13	1731	114	Grab	Oil & Grease (T)	200 mg/L	IN	436 mg/L***

mg/L = milligrams per liter **IN = Instantaneous**
See the enclosure for an explanation of the asterisks appearing in the Value Found column.

The pH result for Batch 98 was 5.4 su and below our acceptable pH range of 5.5 su < pH < 11.5 su, but we already issued a violation for the pH measurement of 5.35 su taken by our Field Sampling Technicians at Sample Point 007 on 05/08/13 at 12:10 pm.

REQUIRED ACTION/RESPONSE:

1. Submit a report of corrective actions, to ensure compliance with MSD limitations for **pH and Oil & Grease (T).** In the report:
   a. Include actions addressing all pollutants in violation
   b. Indicate which corrective actions are initiated and which are still to come
   c. Include plans for additional sampling to verify a return to compliance

2. Submit all additional sampling results to MSD. Sample collection must occur as follows:
   a. Collect grab samples for **pH and Oil & Grease (T)**
   b. pH and temperature readings must be taken immediately when the sample is collected, and not after transporting to a laboratory for analysis
   c. pH readings must be measured using a pH probe, rather than with pH paper strips

3. Refer to the enclosure for additional information on:

    a. Potential enforcement actions should noncompliance continue
    b. The meaning of the asterisks that appear in the Value Found column above
    c. Percentages applicable to Significant Noncompliance, when planning for additional sampling

4. **Please submit your response no later than June 24, 2013**.

Thank you for helping us to comply with state and federal regulations. If you have any questions, please contact me at 314.436.8719.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Tom Boehm
Environmental Engineering Associate

Enclosures: SNC enclosure, SP map

Doug Mendoza

MSD

BRIDGETON LANDFILL

From: John Lodderhose
Sent: Wednesday, May 29, 2013 12:00 PM
To: Lance LeComb; Doug Mendoza; Nora C. Estopare; Michael Grace; Rob G Daly; Ken Goins
Subject: FW: EPA News Release (Region 7): Aerial Survey Shows Radiological Wastes Contained in Secure Areas of West Lake Landfill; No Public Health Risks Posed

FYI

John R. Lodderhose, P.E.
Metropolitan St. Louis Sewer District
Assistant Director of Engineering
Environmental Compliance
314-436-8714

From: U.S. EPA [mailto:usaepa@govdelivery.com]
Sent: Wednesday, May 29, 2013 11:50 AM
To: John Lodderhose
Subject: EPA News Release (Region 7): Aerial Survey Shows Radiological Wastes Contained in Secure Areas of West Lake Landfill; No Public Health Risks Posed

U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard, Lenexa, KS 66219

Iowa, Kansas, Missouri, Nebraska, and Nine Tribal Nations

Aerial Survey Shows Radiological Wastes Contained in Secure Areas of West Lake Landfill; No Public Health Risks Posed

Contact Information: Chris Whitley, 913-551-7394, whitley.christopher@epa.gov

Environmental News

FOR IMMEDIATE RELEASE

(Lenexa, Kan., May 29, 2013) - A March 2013 aerial survey of the West Lake Landfill at Bridgeton, Mo., has determined that radiologically-contaminated wastes buried there in the 1970s remain contained within secure, fenced areas of the Superfund site, and do not pose public health risks, according to a report issued today by EPA Region 7.

Region 7 requested the survey, which was conducted March 8 by EPA's Airborne Spectral Photometric Environmental Collection Technology (ASPECT) Program, to gather data to help inform future decisions about the Superfund site. An ASPECT airplane with a pilot, co-pilot, technician and scientific equipment on board flew multiple low-altitude passes over the site and adjacent residential and industrial properties to identify surface areas that emit gamma radiation.

"The results of the ASPECT survey are consistent with previous studies that indicate the site's radiological wastes remain contained inside Operable Unit 1," EPA Regional Administrator Karl Brooks said. "The site is securely fenced and clearly marked with warning signs. Under these conditions, this material poses no health risks to the public. A person would have to illegally trespass onto the site to be exposed to elevated levels of radiation."

Previous radiation screening surveys of the site, performed in 1994 and 1995, used ground-based detection equipment. Due to the overgrowth of small trees and heavy vegetation on

significant portions of the site since those surveys, Region 7 chose instead to conduct an aerial survey using the ASPECT airplane.

The ASPECT survey is part of EPA's work to update information collected through prior investigations. The 200-acre site encompasses several inactive areas of closed sanitary and demolition fills, including two areas where leached barium sulfate waste from World War II-era nuclear weapons manufacturing was buried in the 1970s; and the separate Bridgeton Sanitary Landfill.

EPA added the West Lake Landfill Site to the Superfund National Priorities List (NPL) in 1990. In 2008, the Agency signed a Record of Decision (ROD) which selected a remedy of containing the radiologically-contaminated material in place, constructing an engineered protective earthen cap for the landfill, installing and operating a system of groundwater monitoring wells around the site's perimeter, institutional (or land use) controls, and long-term maintenance of the remedy.

After the ROD was signed, EPA continued to receive public comments about the selected remedy. In response to those comments, in 2010 EPA tasked the four Potentially Responsible Parties (PRPs) – the U.S. Department of Energy, Cotter Corporation, Bridgeton Landfill LLC and Rock Road Industries LLC – to conduct a Supplemental Feasibility Study (SFS). This study further evaluated EPA's selected remedy, and alternatives involving excavation of the radiologically-contaminated landfill material and disposal of it at a permitted off-site facility or in a new, secured on-site disposal cell.

Because the estimated costs for each alternative remedy outlined by the SFS exceeded a $25 million threshold, Region 7 was required to consult with EPA's National Remedy Review Board (NRRB). In 2012, the NRRB suggested additional groundwater sampling, a more detailed study of a partial excavation remedy, and a more detailed analysis of potential treatment technologies for use on the radiologically-contaminated landfill material. EPA Region 7 has tasked the PRPs to perform the additional sampling and analyses.

Region 7 requested the March 2013 ASPECT survey to gather additional data as it reconsiders the final remedy selected for the site. EPA also tasked the PRPs to conduct four seasonal rounds of groundwater sampling. The first round of groundwater sampling was made public in January. The second round was completed in April, and the results from that sampling analysis are currently being reviewed. The third and fourth rounds of groundwater sampling are expected to be completed by the end of 2013.

Region 7 will hold a public meeting next month to further discuss the results of the ASPECT survey, the second round of groundwater sampling, and plans for further investigation of West Lake Landfill. The meeting will be held from 6:30 p.m. to 8:30 p.m. on Tuesday, June 25, in the auditorium at Pattonville High School, 2497 Creve Coeur Road, Maryland Heights, Mo., 63043.

Full text of the ASPECT survey report and results of previous groundwater sampling at the site are available online at www.epa.gov/region7/cleanup/npl_files/index.htm#westlake.

###

Learn more about EPA Region 7's work at West Lake Landfill

Learn more about EPA's ASPECT Program

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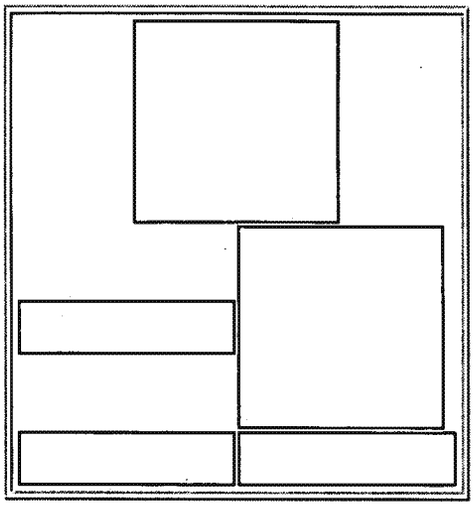

This email was sent to jrlodd@stlmsd.com using GovDelivery, on behalf of: U.S. Environmental Protection Agency · 1200 Pennsylvania Avenue NW · Washington DC 20460 · 202-564-4355

MSD
BRIDGETON LANDFILL

Doug Mendoza

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Wednesday, May 29, 2013 11:30 AM
To: Doug Mendoza
Cc: John Lodderhose
Subject: Follow up
Attachments: 60144974.EFWEDD.XLS; 3052776 FINAL EXCEL 28 May 13 1255.xls

Doug,
As a follow up to our conversation this morning -

1. The method detection limit for benzene for Pace samples is typically 16 ug/L (spreadsheet 60144974 line 194). PDC detection limit is typically in the single digits (spreadsheet 3052776, line 5)
2. O&G variance. We will start sampling for TPH, Method 1664 for at least the next seven sampling events and work with you to prepare a variance request based on the data.
3. Phenolic compounds and TTO – we will put together an analysis of phenolic compounds and TTO, similar to previous submittals and prepare a variance request. My plan is to get this to you by then end of this week or early next week. We will update you on Friday.

Thanks for all your assistance as we work through these issues.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

resourceful. naturally. BARR

#sys_sample_code	lab_anl_meth	analysis_	analysis_t	total_or_diss	column_nu	test_ty	cas_m	chemical_name	result_val	result_	result_type_	report	det	lab_q	org	meth	report	qua	resul	detect
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	71-55-6	1,1,1-			TRG	Yes	N		Y	18.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	79-34-5	1,1,2,2-			TRG	Yes	N		Y	30.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	79-00-5	1,1,2-			TRG	Yes	N		Y	38.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	75-34-3	1,1-Dichloroethane			TRG	Yes	N		Y	18.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	75-35-4	1,1-Dichloroethene			TRG	Yes	N		Y	32.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	95-50-1	1,2-			TRG	Yes	N		Y	28.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	107-06-	1,2-Dichloroethane			TRG	Yes	N		Y	18.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	17060-	1,2-Dichloroethane-	103		SUR	Yes	Y		Y				%	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	78-87-5	1,2-			TRG	Yes	N		Y	24.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	541-73-	1,3-			TRG	Yes	N		Y	16.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	106-46-	1,4-			TRG	Yes	N		Y	22.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	110-75-	2-Chloroethylvinyl			TRG	Yes	N		Y	18.0	2000	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	460-00-	4-	101		SUR	Yes	Y		Y				%	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	71-43-2	Benzene			TRG	Yes	N		Y	16.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	75-27-4	Bromodichlorometh			TRG	Yes	N		Y	50.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	75-25-2	Bromoform			TRG	Yes	N		Y	72.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	74-83-9	Bromomethane			TRG	Yes	N	L3	Y	44.0	1000	100	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	56-23-5	Carbon			TRG	Yes	N		Y	32.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	108-90-	Chlorobenzene			TRG	Yes	N		Y	14.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	75-00-3	Chloroethane			TRG	Yes	N		Y	34.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	67-66-3	Chloroform			TRG	Yes	N		Y	18.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	74-87-3	Chloromethane			TRG	Yes	N		Y	38.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	124-48-	Dibromochlorometh			TRG	Yes	N		Y	18.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	1868-53-	Dibromofluorometh	101		SUR	Yes	Y	D3	Y				%	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	100-41-	Ethylbenzene			TRG	Yes	N		Y	32.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	75-09-2	Methylene chloride			TRG	Yes	N		Y	46.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	127-18-	Tetrachloroethene			TRG	Yes	N		Y	40.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	108-88-	Toluene			TRG	Yes	N		Y	20.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	2037-26-	Toluene-d8 (S)	100		SUR	Yes	Y		Y				%	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	79-01-6	Trichloroethene			TRG	Yes	N		Y	32.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	75-69-4	Trichlorofluorometh			TRG	Yes	N		Y	16.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	75-01-4	Vinyl chloride			TRG	Yes	N		Y	16.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	1330-20-	Xylene (Total)			TRG	Yes	N		Y	50.0	600	600	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	156-59-	cis-1,2-			TRG	Yes	N		Y	24.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	10061-	cis-1,3-			TRG	Yes	N		Y	18.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	156-60-	trans-1,2-			TRG	Yes	N		Y	16.0	200	200	ug/L	ug/L
128-MSD	E624_VOC	05/20/201	14:23	N	1C	initial	10061-	trans-1,3-			TRG	Yes	N		Y	10.0	200	200	ug/L	ug/L

CLIENT	PROJECT	PROJECT	LabName	SAMPLEN	LABSAMP	MATRIX	RPTMATR	SAMPDAT	PREPDAT	ANADATE	METHODN	ANALYTE	CASNUME	Result	DL	RL	UNITS	DILUTION	ANALYST
Bridgeton I	Bridgeton I	Bridgeton I	PDC Labor	Tank 64 A	3052776-0	Water	Waste Wa	05/21/2013	05/22/2013	05/22/2013	EPA 200.7	Arsenic	7440-38-2	0.39	0.070	0.15	mg/L	1	WPS
Bridgeton I	Bridgeton I	Bridgeton I	PDC Labor	Tank 64 A	3052776-0	Water	Waste Wa	05/21/2013	05/22/2013	05/22/2013	EPA 200.7	Zinc	7440-66-6	3.2	0.050	0.10	mg/L	1	WPS
Bridgeton I	Bridgeton I	Bridgeton I	PDC Labor	Tank 64 A	3052776-0	Water	Waste Wa	05/21/2013	05/22/2013	05/22/2013	EPA 245.1	Mercury	7439-97-6	ND	0.0020	0.0020	mg/L	1	KAE
Bridgeton I	Bridgeton I	Bridgeton I	PDC Labor	Tank 64 A	3052776-0	Water	Waste Wa	05/21/2013	05/22/2013	05/22/2013	EPA 624	Benzene	71-43-2	630	4.8	100	ug/L	20	BP
Bridgeton I	Bridgeton I	Bridgeton I	PDC Labor	Tank 64 A	3052776-0	Water	Waste Wa	05/21/2013	05/22/2013	05/22/2013	SM 2540D	Solids - total suspende		36	0.10	2.0	mg/L	1	DAW
Bridgeton I	Bridgeton I	Bridgeton I	PDC Labor	Tank 64 A	3052776-0	Water	Waste Wa	05/21/2013	05/22/2013	05/22/2013	SM 4500-H	pH		5.8			pH Units	1	ACV
Bridgeton I	Bridgeton I	Bridgeton I	PDC Labor	Tank 64 A	3052776-0	Water	Waste Wa	05/21/2013	05/22/2013	05/22/2013	SM 5220D	COD		30000	400	500	mg/L	100	DAW

MSD

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Wednesday, May 29, 2013 10:08 AM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Good morning,

I wanted to provide an update that the facility has temporarily ceased discharge to the Missouri River Treatment Facility. The facility has obtained a pH meter that will be used to measure pH of treated leachate prior to discharge. The current treated batch was measured at 5.37. For that reason we have ceased discharge to Missouri River and leachate will not be discharged to the Missouri River treatment facility until the pH is confirmed to be at or above 5.5.

Per direction of MSD, we will advise the Bissell Point facility of any change in pH beyond what we have seen in recent testing.

The Bridgeton Landfill team is preparing a pH adjustment system for the 96,000 gallon tank and will present the proposed system to MSD as soon as it is available.

Thank you for your continued assistance.
Jessie

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Tuesday, May 28, 2013 12:35 PM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Metropolitan St. Louis Sewer District
Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

MSD

May 29, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: Response to Bridgeton Landfill Request for Variances from District Limitations

Dear Mr. Almanza:

The Metropolitan St. Louis Sewer District (MSD) has reviewed Bridgeton Landfill's May 16, 2013 and May 23, 2013 letters requesting variances from MSD limitations for certain metals and a modification in the current variance for zinc. We have reviewed our data regarding current and allowable loadings for these metals at MSD's Missouri River treatment plant, and will grant temporary variances as follows:

- The arsenic limit, set on a mass basis, shall not exceed 0.722 pounds of total arsenic per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.

- The iron limit, set on a mass basis, shall not exceed 270 pounds of total iron per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.

- The mercury limit, set on a mass basis, shall not exceed 0.018 pounds of total mercury per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.

- The zinc limit, set on a mass basis, shall not exceed 5.414 pounds of total zinc per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.

All variances listed above shall be granted for a period not to exceed two years from the date of this approval, may be revoked by MSD should conditions warrant, and shall terminate upon installation of a pretreatment system by Bridgeton Landfill.

Thank you for helping us comply with federal and state regulations. If you have any questions, please contact me at 314.436.8717.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Douglas M. Mendoza, P.E.
Manager of Industrial Pretreatment

By Certified Mail: 7004 2890 0000 9602 6223

MSD

BRIDGETON LANDFILL

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Tuesday, May 28, 2013 4:29 PM
To: Doug Mendoza; John Lodderhose; Ken Goins
Cc: Ed Galbraith (EGalbraith@barr.com); Smith, Steve (ssmith10@republicservices.com)
Subject: Lift Station Summary
Attachments: MSD Lift Sation Sampling Summary_5-28-2013.pdf

I believe that Ed is traveling today, so I wanted to go ahead and e-mail so you had it. Ed will post to the FTP site, I just wanted to make sure you had it for your review.

Thank you,
Jessie

LATHROP & GAGE LLP

Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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Bridgeton Landfill			
Municipal Sewer District – Lift Station Summary of Air Sample Results			
Pre-Discharge 4/25/2013; During Discharge of Treated leachate 4/30/2013			
	Occupational Standard [5), 6), 7)]	Pre-Discharge	During Discharge
Analyte [1]	Concentration	Concentration	Concentration
	ug/m^3	ug/m^3	ug/m^3
Ammonia – OSHA ID 188			
Ammonia	35,000 [5)] 18,000 [6)] 17,500 [7)]	140	130
Sulfur Dioxide – OSHA ID 200			
Sulfur dioxide (SO_2)	13,000 [5)] 5,000 [6)] 650-STEL [7)]	13	53
Aldehydes – EPA TO-11a			
Formaldehyde	921 [5)] 20 [6)] 368-C [7)]	1.3	3.0
Acetaldehyde	360,000 [5)] 45,000 [7)]	3.9	150
Propionaldehyde	47,500 [7), 10)]	11	44
Butyraldehyde	73,600 [10)]	0.37	49
Benzaldehyde	8,700 [10)] 17,400-STEL [10)]	0.39	5.9
Isovaleraldehyde	176,000 [7)]	ND	13
Valeraldehyde	176,000 [6), 7)]	ND	2.1
M,p-Tolualdehyde	--	ND	4.8
n-Hexaldehyde	--	1.4	7.8
Carboxylic Acids - AQL 102			
Acetic Acid	25,000 [5), 6)]	ND	140
Propionic Acid (Propanoic)	30,000 [5), 11), 6)]	7.1	120
2-Methylpropanoic Acid (Isobutyric)	--	4.9	44
Butanoic Acid (Butyric)	--	18	330
2-Methylbutanoic Acid	--	3.3	8.2
3-Methylbutanoic Acid (Isovaleric)	--	ND	19
Pentanoic Acid (Valeric)	--	3.1	60
4-Methylpentanoic Acid (Isocaproic)	--	ND	3.0
Hexanoic Acid (Caproic)	--	6.5	150
Heptanoic Acid (Enanthoic)	--	ND	11
2-Ethylhexanoic Acid	5,000-Inhalable partic. fraction and vapor [7)]	ND	4.7
Octanoic Acid (Caprylic)	--	ND	14
Nonanoic Acid (Pelargonic)	--	ND	3.2

Polyaromatic Hydrocarbons (PAHs) - EPA TO-13 a			
Naphthalene	52,400 [5), 6)] 75,000-STEL [6)]	1.7	10
Acenaphthene	--	0.46	2.0
Fluorene	--	0.16	0.75
Phenanthrene	200 [5), 7), 12)] 100 [6), 13)]	0.057	0.30
Anthracene	200 [5), 7), 12)] 100 [6), 13)]	0.007	0.034
Fluoranthene	200 [5), 7), 12)] 100 [6), 13)]	ND	0.0048
Reduced Sulfur Compounds – ASTM D 5504-8			
Dimethyl Sulfide	25,000 [7)] 1,270 [14)]	ND	1,100
Dimethyl Disulfide	1,900 [7)] 39 [14)] 192,000 [15)]	ND	130
Volatile Organic Compounds - EPA TO-15 + TICs			
Propene	860,000 [7)]	3.8	67
Dichlorodifluoromethane (CFC 12)	4,950,000 [5), 6), 7)]	2.0	ND
Ethanol	1,880,000 [5), 6), 7)]	7.5	4,200
Acetonitrile	67,200 [5)] 34,000 [6), 7)]	5.8	ND
Acetone	2,380,000 [5)] 590,000 [6)] 1,188,000 [7)] 1,780,000-STEL [7)]	38	5,700
Trichlorofluoromethane	5,620,000 [5)] 5,620,000-C [6), 7)]	1.1	ND
2-Propanol (isopropyl Alcohol)	980,000 [5)] 980,000 [6)] 1,230,000-STEL [6)] 490,000 [7)] 980,000-STEL [7)]	ND	830
2-Butanone (Methyl Ethyl Ketone)	590,000 [5), 6), 7)] 885,000-STEL [6), 7)]	ND	3,900
Ethyl Acetate	1,400,000 [5), 6), 7)]	ND	180
n-Hexane	1,800,000 [5)] 180,000 [6), 7)]	1.0	ND
Chloroform	240,000 [5)] 9,780-STEL [6)] 48,000 [7)]	1.1	ND
Tetrahydrofuran	590,000 [5), 6)] 735,000-STEL [6)] 147,500 [7)] 295,000-STEL [7)]	2.3	1,500
Benzene	3,200 [5)]	7.5	570

	16,000-STEL [5)] 320 [6)] 3200-STEL [6)] 1,600 [7)] 7990-STEL [7)]		
1,4-Dioxane	360,000 [5)] 3,600-C [6)] 72,000 [7)]	ND	66
4-Methyl-2-Pentanone	410,000 [5)] 205,000 [6), 7)] 300,000-STEL [6), 7)]	ND	70
Toluene	754,000 [5)] 1,130,000-C [5)] 375,000 [6)] 560,000-STEL [6)] 75,400 [7)]	3.5	99
2-Hexanone	410,000 [5)] 4,100 [6)] 20,500 [7)] 41,000-STEL [7)]	ND	53
n-Butyl Acetate	710,000 [5), 6), 7)] 950,000-STEL [6), 7)]	ND	130
n-Octane	2,350,000 [5)] 350,000 [6)] 1,800,000-STEL [6)] 1,400,000 [7)]	0.75	ND
Ethylbenzene	434,000 [5), 6)] 545,000-STEL [6)] 86,800 [7)]	1.8	61
m,p-Xylenes	435,000 [5), 6, 7] 653,000-STEL [6, 7)]	4.4	180
Bromoform	5,000 [5), 6), 7)]	1.3	ND
o-Xylene	435,000 [5), 6, 7] 653,000-STEL [6, 7)]	2.8	75
n-Nonane	1,050,000 [5), 6), 7)]	1.3	ND
Cumene	245,000 [5), 6), 7)]	3.4	ND
alpha-Pinene	Vacated circa 2010 [7)]	3.3	ND
n-Propylbenzene	--	13	ND
4-Ethyltoluene	--	30	ND
1,3,5-Trimethylbenzene	125,000 [6)] 123,000 [7)]	27	ND
1,2,4-Trimethylbenzene	125,000 [6)] 123,000 [7)]	43	50
1,4-Dichlorobenzene	450,000 [5)] 60,000 [7)]	11	59
d-Limonene	167,000 [10)]	130	160

Naphthalene	52,400 [5), 6)] 75,000-STEL [6)]	11	64
Volatile Organic Compounds – Tentatively Identified Compounds (TICs)			
3-Ethyltoluene	--	67	ND
2-Ethyltoluene	--	28	ND
n-Decane	--	9.6	ND
2-Ethyl-1-hexanol	--	14	ND
p-Isopropyltoluene	--	100	ND
m-Propyltoluene	--	23	ND
C10-H14 Aromatic	--	28	ND
C10-H14 Aromatic	--	17	ND
n-Undecane	--	50	ND
C10-H12 + 1,2,3,5-Tetramethylbenzene	--	12	ND
n-Dodecane	--	52	ND
C9-H10-N2 Compound	--	18	ND
n-Tridecane	--	25	ND
1,3,5-Triisopropylbenzene	--	12	ND
n-Tetradecane	--	12	ND
Acetaldehyde	360,000 [5)] 45,000 [7)]	ND	630
Furan	Lowest feasible [10)]	ND	910
Dimethyl Sulfide	25,000 [7)] 1,270 [14)]	ND	1,300
Methyl Acetate	610,000 [5), 6), 7)] 760,000-STEL [6), 7)]	ND	2,100
1-Propanol	500,000 [5), 6)] 625,000-STEL [6)] 250,000 [7)]	ND	600
2-Butanol	455,000 [5)] 455,000-STEL [6)] 303,000 [7)]	ND	600
Methylfuran Isomer	--	ND	480
Methyl Propionate	--	ND	950
1-Butanol	300,000 [5)] 150,000-C [6)] 60,600 [7)]	ND	1,800
2-Pentanone	700,000 [5)] 530,000 [6)] 530,000-STEL [7)]	ND	360
Methyl Butyrate	--	ND	1,500
2-Methylcyclopentanone	--	ND	600
2-Ethylcyclopentanone	--	ND	510
2-Ethyl-1-hexanol	--	ND	1,700
p-Cymene	--	ND	390

Dioxins/Dibenzofurans EPA Method TO-9			
2, 3, 7, 8-TCDD Equivalents [8]	3.2E-07 [9]	1.01E-07	1.95E-08
Fixed Gases EPA Method 3C M			
Hydrogen		<0.14%	<0.15%
Oxygen+Argon		22%	22%
Nitrogen		77.9%	77.9%
Carbon monoxide	55,000 [5] 40,000 [6] 27,500 [7]	<0.14%	<0.15%
Methane	656,000 [7]	<0.14%	<0.15%
Carbon dioxide	9,000,000 [5], [6], [7] 30,000,000-STEL [6], [7]	<0.14%	<0.15%

1. Hydrogen Chloride, Hydrogen Cyanide, and Mercury were not detected in any air sample taken from the lift station vault.
2. NA = Not Analyzed
3. "—" = Not Available
4. ND= Not Detected
5. OSHA PEL
6. NIOSH REL
7. ACGIH TLV: C-Ceiling not to be exceeded; STEL-Short-Term Exposure Limit
8. Concentrations of individual isomers were converted to TCDD equivalents
9. EPA Regional Screening Level (RSL) for industrial air, November 2012
10. AIHA WEEL-Workplace Environmental Exposure Level
11. Vacated 1989 OSHA TWA
12. As coal tar pitch volatiles, benzene soluble fraction
13. As coal tar pitch volatiles, cyclohexane soluble fraction
14. AIHA ERPG-1 (Emergency Response Planning Guideline): The maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to 1 hour without experiencing more than mild, transient adverse health effects or without perceiving a clearly defined objectionable odor.
15. AIHA ERPG-2: The maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms that could impair an individual's ability to take protective action.

MSD

Doug Mendoza

BRIDGETON LANDFILL

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Tuesday, May 28, 2013 1:34 PM
To: Doug Mendoza; John Lodderhose
Subject: Air station monitoring data

Doug and John,

The lift station air monitoring data has been posted to the ftp site. Stantec is completing the summary with occupational exposure limits and I will post that as soon as it becomes available. Let me know if you have any questions.

ftp://ftp.barr.com/bridgetonlandfill/Bridgeton%20Landfill%20Data/Raw%20Data%20Files/Air%20Sampling/May%2031,%202013/

Thanks

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

resourceful. naturally. BARR

Table 1
General Parameters and Metals
December 2012 - May 2013
Bridgeton Landfill

05-28-13

					Biochemical Oxygen Demand (5 day)	Chemical Oxygen Demand	Nitrogen, ammonia as N	Oil and Grease	pH	Solids, total suspended	Aluminum	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
					NA	NA	NA	NA	NA	NA	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Report	mg/l	mg/l	mg/l	mg/l	pH units	mg/l,%	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
MSD Batch 114	5/12/2013	Pace	Validated	60144495	34000	39300	688	436	5.6	1540	6150	25.8	567	ND	ND	228	32.7	21.2	751000	189	1.2	93.4	ND	ND	ND	13500
MSD Batch 112	5/12/2013	Pace	Validated	60144495	25500	1850	695	342	5.6	1670	6470	33.0	613	ND	ND	221	27.9	24.0	710000	168	1.9	81.5	ND	ND	ND	12000
MSD Batch 107	5/10/2013	Pace	Validated	60144432	20700 e	40700	576	393	5.6	835	6190	27.7	656	ND	ND	197	59.4	27.5	669000	180	3.3	142	ND	ND	ND	12600
MSD Batch 105	5/10/2013	Pace	Validated	60144432	20700 e	60800	794	953	5.4	1080	6810	57.7	1210	ND	ND	277	30.4	24.3	844000	156	82.2	98.8	ND	ND	ND	19300

MSD

05-28-13

Table 3
VOCs and SVOCs
December 2012 - May 2013
Bridgeton Landfill

					Benzene
					NA
Location	Date	Lab Name	Data Status	Lab Report	ug/l
MSD Batch 114	5/12/2013	Pace	Validated	60144495	ND
MSD Batch 112	5/12/2013	Pace	Validated	60144495	ND
MSD Batch 107	5/10/2013	Pace	Validated	60144432	ND
MSD Batch 105	5/10/2013	Pace	Validated	60144432	ND

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Tuesday, May 28, 2013 12:35 PM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: Bridgeton Landfill conditional approval items tracking.xlsx

Jessie,

We have reviewed the weekly submittal for May 24, 2013. Items for which MSD has a comment are copied below. The total Conditional Approval Items Tracking spreadsheet is attached.

Thank you,
Doug Mendoza
MSD Industrial Pretreatment Mgr.

Reporting Requirement	Bridgeton 5/24/13 Response	MSD r
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:		
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	The facility has ordered a Horiba meter to allow for on-site, precise pH measurements. Bridgeton Landfill looks forward to continuing to work with MSD on compliance with this matter and management of pH will be considered as par of the pretreatment planning.	• Viol been Bridge grease 107, 1 is data begin violati discha discha below pH an

6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character**.	As noted in the attached variance request, recently received data indicates that the leachate may not comply with the phonol limit and Bridgeton Landfill would request a variance based upon the limited volume discharged.	Possib Mend telepl only f be sul
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	The MSD - Missouri River Discharge is not as discrete as the Bissel Point discharge. Each MSD batch is processed using 75,000 to 80,000 gallon batches. Slightly less than 50,000 gallons is sent to Bissell point, and 20,000 gallons is pumped to the 97,000 gallon AST. Since we only discharge 17,500 gallons per day on average, the batches accumulate. We need the batches to build up head in the tank to be able to gravity discharge.	We ur stated will su billing Opera
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:		
• Air monitoring: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013**. If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**	The remaining pre-discharge sampling results (dioxins and furans) will be posted to the FTP site today. The during discharge sampling results will be posted by next Thursday, May 30th, the submission deadline discussed at last week's meeting. It is our current understanding that this scope of testing meets MSD's expectation for air testing parameter s (i.e. all necessary constituents were covered).	We ar if nece

Reporting Requirement	Bridgeton 5/24/13 Response	MSD response 5/28/13
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:		
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**	Ongoing submissions posted to FTP.	
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**	Ongoing submissions posted to FTP.	
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	The facility has ordered a Horiba meter to allow for on-site, precise pH measurements. Bridgeton Landfill looks forward to continuing to work with MSD on compliance with this matter and management of pH will be considered as par of the pretreatment planning.	• Violation notice for previous oil & grease values has been mailed to Bridgeton Landfill. Please inform MSD of Bridgeton Landfill's corrective actions. • Additional oil & grease violations have been identified for batches 105, 107, 112, and 114 - all the new batches for which there is data. As stated on 5/23/13, Bridgeton Landfill must begin immediate action to eliminate future oil & grease violations. • In addition, batch 105 was below the discharge limit for pH. Bridgeton landfill should not discharge batches when the measured pH of the batch is below 5.5. • Violation notices will be sent for the new pH and oil & grease violations.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character**.	As noted in the attached variance request, recently received data indicates that the leachate may not comply with the phonol limit and Bridgeton Landfill would request a variance based upon the limited volume discharged.	Possibly high phenol values were discussed with Doug Mendoza by Ed Galbraith of Barr Engineering via telephone. However, the attached variance request was only for iron. Any requests regarding phenol still need to be submitted.

Reporting Requirement	Bridgeton 5/24/13 Response	MSD response 5/28/13
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**	Ongoing submissions posted to FTP.	
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	The MSD - Missouri River Discharge is not as discrete as the Bissel Point discharge. Each MSD batch is processed using 75,000 to 80,000 gallon batches. Slightly less than 50,000 gallons is sent to Bissell point, and 20,000 gallons is pumped to the 97,000 gallon AST. Since we only discharge 17,500 gallons per day on average, the batches accumulate. We need the batches to build up head in the tank to be able to gravity discharge.	We understand the situation. The most recent log stated "Accumulated" as the Operational Batch, which will suffice. However, please note that for surcharge billing purposes, MSD will instead have to use the last Operational Batch's surcharge parameters for that day.
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:		
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**	Ongoing submissions posted to FTP.	
4. The daily discharge **shall not exceed 50,000 gallons per day** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP.	Please note that the 5/4/13 trucks and the and the 5/11/13 trucks were both on a Saturday. We have to use a different configuration of trucks on Saturday due to the compressed working hours. On 5/4/13 we used MSD Vehicle ID # 0626 (7500 gallon capacity) twice; 0627 (7700 gallon capacity) twice; 0624 (6,000 gallon capacity) twice; and 0628 (7,000 gallon capacity) once for a total of 49,400 truck capacity. On 5/11/13, we used MSD Vehicle ID # 0626 (7,500 gallon capacity) -three times; and 0627 (7,700 gallon capacity) - three times for a total capcity of 45,600 gallons. Therefore, the records are correct and do not need alteration.	
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**	Ongoing submissions posted to FTP.	

Reporting Requirement	Bridgeton 5/24/13 Response	MSD response 5/28/13
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	Ongoing submissions posted to FTP.	
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.		
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**	Ongoing submissions posted to FTP.	
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.		
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:		

Reporting Requirement	Bridgeton 5/24/13 Response	MSD response 5/28/13
• Air monitoring: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**	The remaining pre-discharge sampling results (dioxins and furans) will be posted to the FTP site today. The during discharge sampling results will be posted by next Thursday, May 30th, the submission deadline discussed at last week's meeting. It is our current understanding that this scope of testing meets MSD's expectation for air testing parameter s (i.e. all necessary constituents were covered).	We are reviewing the data, and will contact you further if necessary.
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events**, based on the results of sampling or future concerns that may arise.	The remaining pre-discharge sampling results (dioxins and furans) will be posted to the FTP site today. The during discharge sampling results will be posted by next Thursday, May 30th, the submission deadline discussed at last week's meeting. It is our current understanding that this scope of testing meets MSD's expectation for air testing parameter s (i.e. all necessary constituents were covered). Bridgeton Landfill has confirmed with Stantec that the compounds were run using ASTM D5504 with all non-detect results. The laboratory reports are being posted to the FTP site.	
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013.**	Sorry for confusion, last week's update was supposed to indicate that the 4-gas meter had been installed and the ventilation system was installed and awaiting final electrical approval. We do look forward to receiving the information collected by MSD's monitor system.	

Reporting Requirement	Bridgeton 5/24/13 Response	MSD response 5/28/13
• Leachate/wastewater monitoring: **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** 1: If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes.** 2: If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. 3: Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.	Bridgeton Landfill believes this submission is complete, please let us know if any items are outstanding.	
• Past analytical data: Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.	Bridgeton Landfill believes this submission is complete, please let us know if any items are outstanding.	
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.	As discussed at the prior meeting, Bridgeton Landfill is working on the conceptual plan for discussion with MSD. This plan will be submitted in advance of the June 1st deadline to allow discussion of planning to happen during the meeting and site visit scheduled for June 5th.	
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**	As discussed at the prior meeting, Bridgeton Landfill is working on the conceptual plan for discussion with MSD. This plan will be submitted in advance of the June 1st deadline to allow discussion of planning to happen during the meeting and site visit scheduled for June 5th.	

MSD

Doug Mendoza

From: Darin Lewis
Sent: Tuesday, May 28, 2013 9:54 AM
To: Catherine Politte; Mike Townley; Brian G. Gibson; Doug Mendoza; Steve Grace; Sara Kammerer
Subject: Bridgeton Landfill Leachate weekly volume summary.

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant for 5/20/2013 to 5/25/2013.
5/20 – 45,000 gallons
5/21 – 45,000 gallons
5/22 – 45,000 gallons
5/23 – 45,000 gallons
5/24 – 45,000 gallons
5/25 – 45,600 gallons
Total = 270,600 gallons

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Friday, May 24, 2013 2:28 PM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Jessie,

We have not yet had a chance to completely review the data you submitted. However, I want to give a prompt response to Bridgeton Landfill's pending variance requests, as well as make a request regarding the air monitoring results:

Variance requests:

The Metropolitan St. Louis Sewer District (MSD) has reviewed Bridgeton Landfill's May 16, 2013 and May 23, 2013 letters requesting variances from MSD limitations for certain metals and a modification in the current variance for zinc. We have reviewed our data regarding current and allowable loadings for these metals at MSD's Missouri River treatment plant, and will grant temporary variances as follows:

- The arsenic limit, set on a mass basis, shall not exceed 0.722 pounds of total arsenic per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.
- The iron limit, set on a mass basis, shall not exceed 270 pounds of total iron per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.
- The mercury limit, set on a mass basis, shall not exceed 0.018 pounds of total mercury per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.
- The zinc limit, set on a mass basis, shall not exceed 5.414 pounds of total zinc per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.

All variances listed above shall be granted for a period not to exceed two years from the date of this approval, may be revoked by MSD should conditions warrant, and shall terminate upon installation of a pretreatment system by Bridgeton Landfill.

Air monitoring results:

We recognize that you plan to post the 'during discharge' sampling results by next Thursday, May 30th. Unfortunately, MSD's industrial hygienist will not be available for some period starting on May 30th. MSD wishes and needs to be able to assure our employees that the leachate discharge does not endanger their health. We cannot do this without reviewing the data. Our concerns apply both to workers downstream of the pump station and at the Missouri River

treatment plant, and to workers at the hauled waste receiving station and elsewhere in the Bissell Point treatment plant. This means that we need to review the sampling results as part of our determination of whether we can approve an increase in the discharge volume at the Bissell Point hauled waste receiving station.

If the sampling results possibly can be posted prior to May 30th, it would allow us to more quickly assure our employees, and would help prevent additional delay in final consideration of an increase in the approved discharge volume at the Bissell Point hauled waste receiving station.

Sincerely,
Doug Mendoza

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Friday, May 24, 2013 12:49 PM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

<standard check – anyone who wants off this distribution list can let me know, thanks>

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the full weekly submission will be available on the FTP site by 3:00 pm for your download and review.

Thank you for your follow up. I apologize for table errors that occurred in our submission last week, I agree with your assessment that an Excel table may make it easier for us to track the updates. I have attached the updated table. Please let me know if you have any questions and we look forward to continuing to work with you on these action items.

We are disappointed to hear that we misunderstood the agreement on the increase in discharge to Bissell Point. The proposed increase in discharge volume actually represents a savings of $20,000 per day in leachate disposal costs for Bridgeton Landfill, so obviously we were very pleased with what we thought to be the District's approval at the last meeting, and eager to begin the increased disposal to the Bissell Point facility. However, we remain committed to working with MSD to continue to reestablish a long term working relationship. As such, we have already submitted the written request and will continue to submit air data, as available and in advance of next week's deadline. We look forward to your approval.

On Friday May 17th we submitted an initial response to MSD's questions regarding the recent beta concentrations. We continue to gather potentially relevant data on this matter and look forward to continuing discussions to ensure we can answer any remaining concerns.

Please note that we are attaching a variance request for discharge of Total Iron to the Missouri River Treatment Facility. We also note that recent increases in Oil and Grease and Phenol levels are above district limits. We are preparing variance requests for those parameters, however we would appreciate an opportunity to discuss and reach an understanding on the approach to those constituents. Ed Galbraith will be contacting you next week regarding this issue.

As always, we appreciate your continued assistance. Please follow up with any of our team with any questions you might have.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Thursday, May 23, 2013 10:00 AM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Jessie,

Thank you for Friday's submittal, including updates on all necessary items. I have reviewed the items and the data on the FTP site. There were a few items that require correction or a response by Bridgeton Landfill.

I have also placed the table, that had been used to track the reporting requirements, into a spreadsheet. It should allow for simpler updating, as well as making it easier to follow the changes. The spreadsheet is attached, and includes the items that I referenced above. Please note that all previous columns are included, but the columns for earlier submittals have been hidden.

Regarding the following "Additional update" that was included in your email:

-We appreciate MSD's preliminary approval of the increase in volume for hauled discharge to Bissell Point and will be following up next week with a formal request with the technical basis for support.

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, May 24, 2013 2:30 PM
To: Doug Mendoza
Cc: John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; chris.nagel@dnr.mo.gov; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson; Smith, Steve (ssmith10 @republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: Re: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Thanks, Doug. Ed and I will follow back up with Stantec and see how quickly final results can be compiled and posted. We will follow up.

On May 24, 2013, at 2:28 PM, "Doug Mendoza" <DMENDOZA@stlmsd.com> wrote:

Jessie,

We have not yet had a chance to completely review the data you submitted. However, I want to give a prompt response to Bridgeton Landfill's pending variance requests, as well as make a request regarding the air monitoring results:

Variance requests:

The Metropolitan St. Louis Sewer District (MSD) has reviewed Bridgeton Landfill's May 16, 2013 and May 23, 2013 letters requesting variances from MSD limitations for certain metals and a modification in the current variance for zinc. We have reviewed our data regarding current and allowable loadings for these metals at MSD's Missouri River treatment plant, and will grant temporary variances as follows:

? The arsenic limit, set on a mass basis, shall not exceed 0.722 pounds of total arsenic per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.
? The iron limit, set on a mass basis, shall not exceed 270 pounds of total iron per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.
? The mercury limit, set on a mass basis, shall not exceed 0.018 pounds of total mercury per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.
? The zinc limit, set on a mass basis, shall not exceed 5.414 pounds of total zinc per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.

All variances listed above shall be granted for a period not to exceed two years from the date of this approval, may be revoked by MSD should conditions warrant, and shall terminate upon installation of a pretreatment system by Bridgeton Landfill.

MSD

Doug Mendoza

From: Dave Schepers
Sent: Friday, May 24, 2013 2:15 PM
To: Doug Mendoza; Brian G. Gibson
Subject: Bridgeton Landfill

The Bridgeton Landfill meter reading was at 32,697. 830 gal/hour. The reading was taken at 12:33 p.m. on Friday, May 24 , 2013.

Doug Mendoza

Bridgeton Landfill MSD

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, May 24, 2013 1:57 PM
To: Doug Mendoza
Subject: FW: Follow up on Beta Question from Yesterday's Meeting

My apologies, Doug. I sent this as a preliminary with the thought that the final summary would go to the bigger group but I didn't get the final summary prepared this week. Sorry that I didn't get this to you and I would be interested in your thoughts on any additional follow up you would like to see for a summary.

Thanks,
jessie

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From: Merrigan, Jessie
Sent: Friday, May 17, 2013 12:01 PM
To: John Lodderhose; kgoins@stlmsd.com
Cc: Almanza, Craig; Ed Galbraith (EGalbraith@barr.com)
Subject: Follow up on Beta Question from Yesterday's Meeting

Good morning,

I wanted to follow up on the question that came up yesterday about the elevated beta detection in a recent leachate sample. I wanted to give you preliminary feedback on what we have found through our initial research and let you know that we will work on a summary response so that you have information for your team.

Beta radiation is not something that is a risk driver at the West Lake site. At that site the key monitoring points are alpha (which is monitored in leachate and was not elevated) and gamma (which cannot be monitored in liquid, from my understanding). Based on preliminary review it appears that Radium 228 (naturally occurring in limestone and not linked to the materials at the West Lake site) can be a source of beta, as can tritium. While tritium was not one of the radiological materials disposed of at the West Lake site, I understand from some of our experts that tritium is actually a very common leachate indicator/component in landfills generally. We will continue to look into possible beta sources, but wanted to at least confirm for you that it does not appear to indicate an impact to the leachate from the radiological materials.

We will also note in our summary the information we have received on the lower relative risk of beta and the expected rapid rate of decay. Additionally, there are methodological issues that make quantification of beta in liquids difficult and not entirely reliable. I am in the process of collecting past sampling data so that we have some points of comparison.

Please let me know if you have any questions at this point. We will continue to look into this and will follow up with more information so that you have information to share with your teams.

Thank you,
Jessie

LATHROP & GAGE LLP

Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

MSD

Doug Mendoza

From:	Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent:	Friday, May 24, 2013 12:49 PM
To:	Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc:	Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject:	Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments:	Table 2a.pdf; BSLF 2013.05.24 MSD Update.XLSX; 2013.05.24 BSLF Waiver Request.pdf

<standard check – anyone who wants off this distribution list can let me know, thanks>

Good afternoon,

This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the full weekly submission will be available on the FTP site by 3:00 pm for your download and review.

Thank you for your follow up. I apologize for table errors that occurred in our submission last week, I agree with your assessment that an Excel table may make it easier for us to track the updates. I have attached the updated table. Please let me know if you have any questions and we look forward to continuing to work with you on these action items.

We are disappointed to hear that we misunderstood the agreement on the increase in discharge to Bissell Point. The proposed increase in discharge volume actually represents a savings of $20,000 per day in leachate disposal costs for Bridgeton Landfill, so obviously we were very pleased with what we thought to be the District's approval at the last meeting, and eager to begin the increased disposal to the Bissell Point facility. However, we remain committed to working with MSD to continue to reestablish a long term working relationship. As such, we have already submitted the written request and will continue to submit air data, as available and in advance of next week's deadline. We look forward to your approval.

On Friday May 17th we submitted an initial response to MSD's questions regarding the recent beta concentrations. We continue to gather potentially relevant data on this matter and look forward to continuing discussions to ensure we can answer any remaining concerns.

Please note that we are attaching a variance request for discharge of Total Iron to the Missouri River Treatment Facility. We also note that recent increases in Oil and Grease and Phenol levels are above district limits. We are preparing variance requests for those parameters, however we would appreciate an opportunity to discuss and reach an understanding on the approach to those constituents. Ed Galbraith will be contacting you next week regarding this issue.

As always, we appreciate your continued assistance. Please follow up with any of our team with any questions you might have.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Thursday, May 23, 2013 10:00 AM
To: Merrigan, Jessie; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions

Jessie,

Thank you for Friday's submittal, including updates on all necessary items. I have reviewed the items and the data on the FTP site. There were a few items that require correction or a response by Bridgeton Landfill.

I have also placed the table, that had been used to track the reporting requirements, into a spreadsheet. It should allow for simpler updating, as well as making it easier to follow the changes. The spreadsheet is attached, and includes the items that I referenced above. Please note that all previous columns are included, but the columns for earlier submittals have been hidden.

Regarding the following "Additional update" that was included in your email:

-We appreciate MSD's preliminary approval of the increase in volume for hauled discharge to Bissell Point and will be following up next week with a formal request with the technical basis for support.

Reporting Requirement	Bridgeton Landfill 2013.05.17 Update	MSD response 5/23/13	Bridgeton 5/24/13 Response
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:			
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**		Ongoing submissions posted to FTP.
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		Bridgeton Landfill should note that this also has been submitted via "Ongoing submissions posted to FTP."	Ongoing submissions posted to FTP.
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**	• MSD notes that data was complete through MSD Batch 100. • MSD also notes that MSD Batch 98, discharged onsite on 5/8/13, had a pH of 5.4. This is consistent with the 5.35 measured by MSD, for which Bridgeton Landfill was issued a violation notice. Jessie Merrigan's 5/10/13 email said that it was not consistent with what was expected, and they were evaluating methods to ensure compliance for pH. <u>At a minimum, Bridgeton Landfill must measure the pH before discharge, and the pH of a noncompliant batch must be adjusted to between 5.5 & 11.5 prior to discharge.</u> **• Oil & Grease is above the discharge limit of 200 mg/L for the following batches:** MSD Batch 94, onsite discharge 5/7/13, O&G = 240 mg/L; MSD Batch 98, onsite discharge 5/8/13, O&G = 451 mg/L: MSD Batch 100, onsite discharge 5/8/13, O&G = 366 mg/L. MSD will be sending a Notice of Violation to Bridgeton Landfill for these discharges. <u>Bridgeton Landfill must begin immediate action to eliminate future oil & grease violations.</u>	The facility has ordered a Horiba meter to allow for on-site, precise pH measurements. Bridgeton Landfill looks forward to continuing to work with MSD on compliance with this matter and management of pH will be considered as par of the pretreatment planning.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character.**			As noted in the attached variance request, recently received data indicates that the leachate may not comply with the phonol limit and Bridgeton Landfill would request a variance based upon the limited volume discharged.
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**		Ongoing submissions posted to FTP.

Reporting Requirement	Bridgeton Landfill 2013.05.17 Update	MSD response 5/23/13	Bridgeton 5/24/13 Response
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	**Ongoing submissions posted to FTP.**	Weekly disposal summary sheet shows onsite (Missouri River) discharge on 5/5/13 as 17,502 gallons, but says "No Transfer" for the Operational Batch. **Which batch was discharged onsite for 5/5/13?**	The MSD - Missouri River Discharge is not as discrete as the Bissel Point discharge. Each MSD batch is processed using 75,000 to 80,000 gallon batches. Slightly less than 50,000 gallons is sent to Bissell point, and 20,000 gallons is pumped to the 97,000 gallon AST. Since we only discharge 17,500 gallons per day on average, the batches accumulate. We need the batches to build up head in the tank to be able to gravity discharge.
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:			
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**		Ongoing submissions posted to FTP.
4. The daily discharge **shall not exceed 50,000 gallons per day** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP.	**Saturday delivery schedule has been modified to address MSD's concerns; based on preliminary approval at yesterday's meeting, Bridgeton Landfill is preparing a request to increase discharge volume to 100,000 gallons per day.**	• Weekly disposal summary sheet for 5/3-8/13 shows Bissell deliveries on 5/4/13 with trucks totaling 49,400 gallons. All other days are 49,500 gallons. Should 5/4/13 be 49,500 gallons? • Also, weekly disposal summary sheet for 5/9-15/13 shows Bissell deliveries on 5/11/13 with trucks totaling 49,600 gallons. All other days are 49,500 gallons. Should 5/11/13 be 49,500 gallons?	Please note that the 5/4/13 trucks and the and the 5/11/13 trucks were both on a Saturday. We have to use a different configuration of trucks on Saturday due to the compressed working hours. On 5/4/13 we used MSD Vehicle ID # 0626 (7500 gallon capacity) twice; 0627 (7700 gallon capacity) twice; 0624 (6,000 gallon capacity) twice; and 0628 (7,000 gallon capacity) once for a total of 49,400 truck capacity. On 5/11/13, we used MSD Vehicle ID # 0626 (7,500 gallon capacity) -three times; and 0627 (7,700 gallon capacity) - three times for a total capcity of 45,600 gallons. Therefore, the records are correct and do not need alteration.
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**		Ongoing submissions posted to FTP.
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**	MSD notes that data was complete through MSD Batch 100.	Ongoing submissions posted to FTP.
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.			

Reporting Requirement	Bridgeton Landfill 2013.05.17 Update	MSD response 5/23/13	Bridgeton 5/24/13 Response
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**		Ongoing submissions posted to FTP.
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.			
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:			
• Air monitoring: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**	**We continue to work with Stantec to see what can be done to accelerate delivery of lab data. Based upon their feedback and follow up with the lab we hope to make most if not all data available next week, and will supplement any remaining data as soon as possible.**		The remaining pre-discharge sampling results (dioxins and furans) will be posted to the FTP site today. The during discharge sampling results will be posted by next Thursday, May 30th, the submission deadline discussed at last week's meeting. It is our current understanding that this scope of testing meets MSD's expectation for air testing parameter s (i.e. all necessary constituents were covered).

Reporting Requirement	Bridgeton Landfill 2013.05.17 Update	MSD response 5/23/13	Bridgeton 5/24/13 Response
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events,** based on the results of sampling or future concerns that may arise.	**Pre-discharge sampling results, including dimethyl sulfide and reduced sulfur compounds, have been posted to the FTP and are included in the attached email. The only remaining pre-discharge data are dioxins and diobenzofurans. The reason for the delay is discussed in the attached email, and MSD will be updated as soon as those results are posted to the FTP.**	• The correspondence provided to MSD indicates that the Dioxin/Dibenzofuran by EPA TO-9 are the only pending results, with the /consultant anticipating delivery of those results to Bridgeton Landfill by 5/24/13. • To double check that all components addressed in the Stantec August 2012 event were included: o Confirm that the reduced sulfur compounds were run using ASTM D5504 with all non-detect results. o List the actual reduce sulfur compounds, along with the detection levels. o Confirm that all final analytical results for the air sampling will be posted to the FTP site, not just a Word document summary of the results.	The remaining pre-discharge sampling results (dioxins and furans) will be posted to the FTP site today. The during discharge sampling results will be posted by next Thursday, May 30th, the submission deadline discussed at last week's meeting. It is our current understanding that this scope of testing meets MSD's expectation for air testing parameter s (i.e. all necessary constituents were covered). Bridgeton Landfill has confirmed with Stantec that the compounds were run using ASTM D5504 with all non-detect results. The laboratory reports are being posted to the FTP site.
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013.**		See Pretreatment system comment below.	Sorry for confusion, last week's update was supposed to indicate that the 4-gas meter had been installed and the ventilation system was installed and awaiting final electrical approval. We do look forward to receiving the information collected by MSD's monitor system.
• Leachate/wastewater monitoring: **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** 1: If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes.** 2: If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. 3: Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.			Bridgeton Landfill believes this submission is complete, please let us know if any items are outstanding.
• Past analytical data: Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.			Bridgeton Landfill believes this submission is complete, please let us know if any items are outstanding.

Reporting Requirement	Bridgeton Landfill 2013.05.17 Update	MSD response 5/23/13	Bridgeton 5/24/13 Response
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.	**We appreciate the additional information provided at MSD's meeting and look forward to discussing with you how we can receive the data logged by the data logger so that we can continue to assess air needs.**	Should this update item from Bridgeton Landfill have been placed under the Pump station ventilation item?	As discussed at the prior meeting, Bridgeton Landfill is working on the conceptual plan for discussion with MSD. This plan will be submitted in advance of the June 1st deadline to allow discussion of planning to happen during the meeting and site visit scheduled for June 5th.
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**			As discussed at the prior meeting, Bridgeton Landfill is working on the conceptual plan for discussion with MSD. This plan will be submitted in advance of the June 1st deadline to allow discussion of planning to happen during the meeting and site visit scheduled for June 5th.

Bridgeton Landfill, LLC

May 23, 2013

Doug Mendoza
Industrial Pretreatment Manager
Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103

RE: REQUEST FOR VARIANCE FROM DISTRICT LIMITATIONS FOR BRIDGETON LANDFILL DISCHARGE (Discharge Permit No. 0511559802-2) FOR TOTAL IRON

Bridgeton Landfill, LLC requests a variance from Article V, Section 2.C of MSD Ordinance 12559, for total lead with conditions as follows:

- The total iron limit shall be set on a mass basis not to exceed 270.7 pounds of total iron per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,225 gallons per day.

If you have any questions about this request, feel free to contact me at (314) 744-8195 or Ed Galbraith with Barr Engineering at (573) 638-5024.

Sincerely,

Bryan Sehie
Environmental Specialist

METROPOLITAN ST. LOUIS SEWER DISTRICT
DIVISION OF ENVIRONMENTAL COMPLIANCE
10 EAST GRAND AVENUE
ST. LOUIS, MISSOURI 63147

VARIANCE APPLICATION FORM

MSD Ordinance No. 12559, Article VI, Section 2.B

1. Company Name: **Bridgeton Landfill, LLC**

2. Mailing Address: **12976 St. Charles Rock Road, Bridgeton, MO 63044**
(314) 744-8195

3. Premise Address: **Same**

4. Cite the specific section of Ordinance No. 12559 from which a variance is being sought:
Article V, Section 2.C

5. State the reason a variance is being sought. Be specific. Attach additional sheets if needed:
Bridgeton Landfill cannot meet its current district limitation for iron, however because of the reduction in flow, Bridgeton Landfill can meet mass based limitations that are derived from current permit flow assumptions.

6. If this variance request proposes a change of pollutant limitations, list the type and proposed alternative limitations using appropriate units: **See accompanying letter**

7. State the length of time for which the variance is requested: **Two years**

8. Will compliance with the Ordinance requirement result in unreasonable costs, without comparable public benefit: **Bridgeton Landfill is currently evaluating treatment technologies to determine the feasibility and cost of pretreating the liquid to meet permit limits.**

Yes _____ No _____

If Yes, please summarize the costs below. Attach additional sheets showing the detailed sample analyses, consultant reports, or vendor information used to support these costs.

Cost of meeting Ordinance requirements: $_____

Cost under proposed variance: $_____

Cost savings: $_____

9. CERTIFICATION:

"I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. To the best of my knowledge and belief, granting of this variance will not result in violation of any of the conditions of Article VI, Subsection 2.B(1) through (5) of Metropolitan St. Louis Sewer District Ordinance No. 12559."

Print name and title of signing official:

Bryan Sehie

Environmental Specialist

Signature: Bryan H Sehie

Date: 5/24/2013

Table 1
General Parameters and Metals
March - May 2013
Bridgeton Landfill

					Aluminum	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Chromium, hexavalent	Chromium, trivalent	Cobalt	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Uranium	Zinc
					Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	NA	Total
Location	Date	Lab Name	Data Status	Lab Report	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Treat Commingled MSD	4/5/2013	PDC	QC Pending	3041134	--	68	520	2	28	240	--	--	--	21	690000	250	42	--	120	50	ND	58	--	19000
Treat Commingled MSD	4/25/2013	PDC	QC Pending	3043568	--	98	190	2.1	96	270	--	--	--	13	940000	200	7.4	--	87	22	2.8	ND	--	17000
MSD Batch 67	4/26/2013	PDC	QC Pending	3043767	--	76	560	1.8	67	240	--	--	--	3.2	850000	180	19	--	84	ND	2.5	25	--	14000
MSD Batch 71	4/28/2013	PDC	Validated	3043816	--	60	480	1.7	62	230	--	--	--	ND	780000	160	14	--	82	17	ND	ND	--	13000
MSD Batch 74	4/28/2013	PDC	Validated	3043821	--	66	550	1.9	64	230	--	--	--	2.3	850000	200	29	--	86	ND	ND	ND	--	13000
MSD Batch 77	4/30/2013	PDC	Validated	3050115	--	65	460	1.9	70	240	--	--	--	ND	990000	200	11	--	80	36	ND	22	--	15000
MSD Batch 82	5/2/2013	PDC	Validated	3050388	--	68	540	1.4	58	230	--	--	--	ND	730000	150	16	--	77	61	2.1	ND	--	14000
MSD Batch 86	5/2/2013	PDC	Validated	3050470	--	81	540	1.7	67	250	--	--	--	ND	880000	160	45	--	85	55	ND	ND	--	13000
MSD Batch 89	5/3/2013	PDC	Validated	3050533	--	31	560	1.8	61	250	--	--	--	3.6	690000	200	37	--	85	57	3.6	ND	--	13000
MSD Batch 92	5/6/2013	PDC	Validated	3050622	--	22	570	1.4	50	230	--	--	--	2	750000	170	42	--	86	47	ND	22	--	13000
MSD Batch 94	5/7/2013	Pace	Validated	60144068	6310	37.3	584	ND	ND	194	--	--	28.1	20.6	619000	151	5.3	--	82.7	ND	ND	ND	--	10200
MSD Batch 98	5/8/2013	Pace	Validated	60144204	6920	43.7	637	ND	ND	222	--	--	29.7	20.3	765000	176	17.4	--	92	ND	ND	ND	--	14200
MSD Batch 100	5/8/2013	Pace	Validated	60144207	8070	27.4	861	ND	ND	245	--	--	38.2	22.8	781000	179	2.4	--	97.8	ND	ND	ND	--	13800
				High (mg/L)	8.070	0.098	0.861	0.002	0.096	0.270	-	-	0.038	0.023	990.000	0.250	0.045	-	0.120	0.061	0.004	0.058	-	19.000
				Low (mg/L)	6.310	0.022	0.190	0.001	0.028	0.194	-	-	0.028	0.002	619.000	0.150	0.002	-	0.077	0.017	0.002	0.022	-	10.200
				Ave (mg/L)	7.100	0.057	0.542	0.002	0.062	0.236	#DIV/0!	#DIV/0!	0.032	0.012	822.692	0.183	0.022	#DIV/0!	0.088	0.043	0.003	0.032	#DIV/0!	14.015

Table A - Bridgeton Landfill Treated Leachate Metals Concentration and Mass Loading

Analyte	MSD ORDINANCE 12559 District Limitation (mg/L)	Permitted Loading to Missouri River WWTP[a] (lbs/day)	Current Parameter Concentration (mg/L)*	Current Maximum Loading to Missouri River WWTP[b] (lbs/day)
Antimony, Total	0.500	0.902	0.098	0.016
Arsenic, Total	0.400	0.722	0.861	0.144
Barium, Total	10.0	18.0	No Data	#VALUE!
Beryllium, Total	0.400	0.722	0.002	0.000
Cadmium, Total	0.700	1.263	0.096	0.016
Chromium, Total	5.000	9.024	0.270	0.045
Copper, Total	2.700	4.873	0.023	0.004
Iron, Total	150.0	270.7	990.0	165.2
Lead, Total	0.400	0.722	0.250	0.042
Mercury, Total	0.010	0.018	0.045	0.008
Nickel, Total	2.300	4.151	0.120	0.020
Selenium, Total	0.200	0.361	0.061	0.010
Silver, Total	0.500	0.902	0.004	0.001
Zinc, Total	3.0	5.4	19.0	3.2

NOTES:

a - Based on a permitted volume of 216,255 GPD and permit concentration limits

b - Based on volume of 20,000 GPD, approved by MSD on April 24, 2013

*Maximum value from MSD Batch 67 - 100 and Treated Commingled

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissell Point Tracking Table			
Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Thursday, May 16, 2013	Batch 121	43,100	44,500
Friday, May 17, 2013	Batch 128	45,000	45,000
Saturday, May 18, 2013	Batch 131	45,600	45,600
Sunday, May 19, 2013	None	None	None
Monday, May 20, 2013	Batch 136	45,000	45,000
Tuesday, May 21, 2013	Batch 138	45,000	45,000
Wednesday, May 22, 2013	Batch 142	45,000	45,000

Starting Date	***5/16/2013 5:31***
Ending Date	

MSD - Missouri River Tracking Table							
Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)
Thursday, May 16, 2013	Batch 121	17,502	5/16/2013 5:31	5/17/2013 4:09	22.6	840	772.7
Friday, May 17, 2013	Batch 128	17,502	5/17/2013 4:09	5/18/2013 4:09	24.0	840	729.7
Saturday, May 18, 2013	Batch 131	17,541	5/18/2013 4:09	5/19/2013 5:39	25.5	840	687.9
Sunday, May 19, 2013	Accumulated	17,502	5/19/2013 5:39	5/20/2013 5:30	23.8	840	733.8
Monday, May 20, 2013	Batch 136	17,502	5/20/2013 5:30	5/21/2013 4:00	22.5	840	777.9
Tuesday, May 21, 2013	Batch 138	17,462	5/21/2013 4:00	5/22/2013 6:42	26.7	840	654.0
Wednesday, May 22, 2013	Batch 142	17,502	5/22/2013 6:42	5/23/2013 6:01	23.3	840	750.6

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature] Title: Environmental Specialist Date: 5/23/13

Weekly Volume Summary - Week 4 (5-16-13 through 5-22-13)

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/17/2013 4:09

MSD Flow Meter reading: 35,004

Date / Time last reading: 5/16/2013 5:31 AM

Last Flow Meter reading: 17,502

Notes or comments (re meter errors, etc.):

Flow meter was reset -

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/17/13

MSD Daily Flow Reading 5-16-13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/18/2013 4:09

MSD Flow Meter reading: 52,506

Date / Time last reading: 5/17/2013 4:09

Last Flow Meter reading: 35,004

Notes or comments (re meter errors, etc.):

Flow meter was reset -

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/18/13

MSD Daily Flow Reading 5-17-13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/19/2013 5:39

MSD Flow Meter reading: 70,047

Date / Time last reading: 5/18/2013 4:09

Last Flow Meter reading: 52,506

Notes or comments (re meter errors, etc.):

Flow meter was reset -

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/19/13

MSD Daily Flow Reading 5-18-13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/20/2013 5:30

MSD Flow Meter reading: 87,549

Date / Time last reading: 5/19/2013 5:39

Last Flow Meter reading: 70,047

Notes or comments (re meter errors, etc.):

Flow meter was reset -

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/20/13

MSD Daily Flow Reading 5-19-13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/21/2013 4:00

MSD Flow Meter reading: 105,051

Date / Time last reading: 5/20/2013 5:30

Last Flow Meter reading: 87,549

Notes or comments (re meter errors, etc.): - Remote reading down – read from field

Flow meter was reset -

Bridgeton Landfill, LLC representative: Bryan Schie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Schie

Name: Bryan Schie

Title: Environmental Specialist

Date: 5/21/13

MSD Daily Flow Reading 5-20-13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/22/2013 6:42

MSD Flow Meter reading: 122,513

Date / Time last reading: 5/21/2013 4:00

Last Flow Meter reading: 105,051

Notes or comments (re meter errors, etc.): - Remote reading ok with field reading

Flow meter was reset -

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/22/13

MSD Daily Flow Reading 5-21-13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/23/2013 6:01

MSD Flow Meter reading: 140,015

Date / Time last reading: 5/22/2013 6:42

Last Flow Meter reading: 122,513

Notes or comments (re meter errors, etc.): - Remote reading ok with field reading

Flow meter was reset -

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/23/13

MSD Daily Flow Reading 5-22-13

OB-121 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/14/2013
Fill Start Time	14:00
Fill Stop Date	5/14/2013
Fill Stop Time	21:00
Process Battery	Tank Battery 2

Processing Data

Process Start Date	5/14/2013
Process Start Time	21:00
Process Stop Date	5/15/2013
Process Stop Time	04:00
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-193
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Thursday, May 23, 2013

OB-128 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/16/2013
Fill Start Time	05:50
Fill Stop Date	5/16/2013
Fill Stop Time	12:00
Process Battery	Tank Battery 1

Processing Data

Process Start Date	5/16/2013
Process Start Time	12:00
Process Stop Date	5/17/2013
Process Stop Time	06:00
Processing Person	Chris Martin

Approval Data

Approval Details	NAL13026-206
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Thursday, May 23, 2013

OB-131 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/16/2013
Fill Start Time	21:00
Fill Stop Date	5/17/2013
Fill Stop Time	05:30
Process Battery	Tank Battery 2

Processing Data

Process Start Date	5/17/2013
Process Start Time	03:30
Process Stop Date	5/17/2013
Process Stop Time	22:00
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-212
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Thursday, May 23, 2013

OB-136 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/18/2013
Fill Start Time	19:55
Fill Stop Date	5/19/2013
Fill Stop Time	05:45
Process Battery	Tank Battery 2

Processing Data

Process Start Date	5/19/2013
Process Start Time	04:45
Process Stop Date	5/19/2013
Process Stop Time	16:00
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-217
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Thursday, May 23, 2013

OB-138 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/19/2013
Fill Start Time	17:15
Fill Stop Date	5/19/2013
Fill Stop Time	22:00
Process Battery	Tank Battery 1

Processing Data

Process Start Date	5/19/2013
Process Start Time	18:30
Process Stop Date	5/20/2013
Process Stop Time	18:00
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-219
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Thursday, May 23, 2013

OB-142 MSD

Bridgeton Landfill

Fill Data

Fill Start Date	5/20/2013
Fill Start Time	19:30
Fill Stop Date	5/21/2013
Fill Stop Time	01:20
Process Battery	Tank Battery 2

Processing Data

Process Start Date	5/21/2013
Process Start Time	01:30
Process Stop Date	5/21/2013
Process Stop Time	20:15
Processing Person	James Pippin

Approval Data

Approval Details	NAL13026-223
Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Thursday, May 23, 2013

05-23-13
p 1 of 2

Table 1 May 2013

05-23-13
p. 2 of 2

BRIDGETON LANDFILL
5/23/13

DV

Table 1
General Parameters and Metals
March - May 2013
MSD Bridgeton Landfill

					Biochemical Oxygen Demand (5-day)	Chemical Oxygen Demand	Nitrogen, ammonia as N	Oil and Grease	pH	Solids, total suspended	Aluminum	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
					NA	NA	NA	NA	NA	NA	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
Location	Date	Lab Name	Data Status	Lab Report	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
MSD Batch 100	5/8/2013	Pace	Validated	60144207	29300	50500	673	366	5.5	935	8070	27.4	861	ND	ND	245	38.2	22.8	781000	179	2.4	97.8	ND	ND	ND	13800
MSD Batch 98	5/8/2013	Pace	Validated	60144204	38400 e	49200	614	451	5.4	775	6920	43.7	637	ND	ND	222	29.7	20.3	765000	176	17.4	92.0	ND	ND	ND	14200
MSD Batch 94	5/7/2013	Pace	Validated	60144068	22900	40100	580	240	5.7	ND	6310	37.3	584	ND	ND	194	28.1	20.6	619000	151	5.3	82.7	ND	ND	ND	10200
MSD Batch 92	5/6/2013	PDC	Validated	3050622	30000	43000	600	ND	5.6	1000	--	22	570	1.4	50	230	--	2.0	750000	170	42	86	47	ND	22	13000
MSD Batch 89	5/3/2013	PDC	Validated	3050533	29000	39000	610	ND	5.7	1500	--	31	560	1.8	61	250	--	3.6	890000	200	37	85	57	3.6	ND	13000
MSD Batch 86	5/2/2013	PDC	Validated	3050470	36000	51000	660	ND	5.7	1000	--	81	540	1.7	67	250	--	ND	860000	160	45	85	55	ND	ND	13000
MSD Batch 82	5/2/2013	PDC	Validated	3050388	28000	45000	700	ND	5.7	1300	--	68	540	1.4	58	230	--	ND	730000	150	16	77	61	2.1	ND	14000
MSD Batch 77	4/30/2013	PDC	Validated	3050115	27000	48000	690	ND	5.7	1300	--	65	460	1.9	70	240	--	ND	990000	200	11	80	36	ND	22	15000
MSD Batch 74	4/28/2013	PDC	Validated	3043821	25000	40000	650	ND	6.0	960	--	66	550	1.9	64	230	--	2.3	850000	200	29	86	ND	ND	ND	13000
MSD Batch 71	4/28/2013	PDC	Validated	3043816	21000	40000	660	ND	5.8	1200	--	60	480	1.7	62	230	--	ND	780000	160	14	82	17	ND	ND	13000
MSD Batch 67	4/26/2013	PDC	QC Pending	3043767	22000	48000	700	29	5.8	2900	--	76	560	1.8	67	240	--	3.2	850000	180	19	84	ND	2.5	25	14000
Treat Commingled MSD	4/25/2013	PDC	QC Pending	3043568	34000	53000	720	ND	5.7	1200	--	98	190	2.1	96	270	--	13	940000	200	7.4	87	22	2.8	ND	17000

→ MSD Batch 65, per 5/22/13 email from Ed Galbraith. - DMM

Table 3
VOCs and SVOCs
March - May 2013
Bridgeton Landfill

					Benzene
					NA
Location	Date	Lab Name	Data Status	Lab Report	ug/l
MSD Batch 100	5/8/2013	Pace	Validated	60144207	ND
MSD Batch 98	5/8/2013	Pace	Validated	60144204	ND
MSD Batch 94	5/7/2013	Pace	Validated	60144068	ND
MSD Batch 92	5/6/2013	PDC	Validated	3050622	ND
MSD Batch 89	5/3/2013	PDC	Validated	3050533	ND
MSD Batch 86	5/2/2013	PDC	Validated	3050470	ND
MSD Batch 82	5/2/2013	PDC	Validated	3050388	ND
MSD Batch 77	4/30/2013	PDC	Validated	3050115	ND
MSD Batch 74	4/28/2013	PDC	Validated	3043821	ND
MSD Batch 71	4/28/2013	PDC	Validated	3043816	ND
MSD Batch 67	4/26/2013	PDC	QC Pending	3043767	ND
Treat Commingled MSD	4/25/2013	PDC	QC Pending	3043568	ND

→ MSD Batch 65,
per 5/22/13 email from Ed Galbraith
JMM

BRIDGETON LANDFILL
5/23/13
MSD

Doug Mendoza MSD

From: Ken Goins
Sent: Thursday, May 23, 2013 11:07 AM
To: Doug Mendoza
Subject: RE: Bridgeton Landfill - Sunshine Request via email

Thank you Doug.

Ken

-----Original Message-----
From: Doug Mendoza
Sent: Thursday, May 23, 2013 11:07 AM
To: Ken Goins
Subject: RE: Bridgeton Landfill - Sunshine Request via email

Yes. We did not have additional correspondence regarding the actual approval.

Doug

-----Original Message-----
From: Ken Goins
Sent: Thursday, May 23, 2013 11:06 AM
To: Doug Mendoza; John Lodderhose
Cc: Susan Myers
Subject: RE: Bridgeton Landfill - Sunshine Request via email

Doug:

So your opinion would be that items 1 and 2 are the only responsive documents as indicated below? If so, I will send to Brenda and she can email it to the requestor after I get your response.

Ken Goins

-----Original Message-----
From: Doug Mendoza
Sent: Thursday, May 23, 2013 11:03 AM
To: Ken Goins; John Lodderhose
Subject: RE: Bridgeton Landfill - Sunshine Request via email

Ken,

There was no additional authorization beyond the April 24, 2013 letter. We accepted the special discharge application referenced in the letter. Since the letter already gave approval based on successful completion of the application, no additional letter was required.

Doug

-----Original Message-----

From: Ken Goins
Sent: Wednesday, May 22, 2013 4:42 PM
To: John Lodderhose; Doug Mendoza
Subject: FW: Bridgeton Landfill - Sunshine Request via email
Importance: High

John/Doug:

Please find below a request for information relating to leachate MSD is receiving via HAULING from the Bridgeton Landfill that was received via the MSD Internet Site on today. I have talked with Susan and Lance and agreed that this request should be treated as a sunshine request.

I reviewed the documents in my possession and my understanding of the leachate that is being hauled, and I would think (1) the 4-24-13 letter and (2)the preceding 4-23-13 email and (3) any formal written authorization for hauling issued by MSD after and in response to the hauling-application would be responsive to the request. I have copies of items 1 and 2, but do not remember receiving a copy of the last item.

I am also going to inquire about the requestor's full name and address; not a prerequisite for responding or replying but we would like the requestor's name and address if he is willing, just FYI.

Do you believe any other documents would be responsive to the request? Please let me know.

Ken Goins

-----Original Message-----
From: Pamela Bell
Sent: Wednesday, May 22, 2013 12:17 PM
To: Ken Goins
Subject: FW: Bridgeton Landfill
Importance: High

Hi Ken,

See below. Is this something you can help with?

Pam

Name: Mike M
Email: wastemike@gmail.com
Comment: Good Morning, I understand that leachate from the Bridgeton Landfill is being hauled to MSD for treatment. Can you provide me with the variance letter and/or discharge permit for that material? Thank You

Date: 22 May 2013

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Thursday, May 23, 2013 10:00 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: Bridgeton Landfill conditional approval items tracking.xlsx

Jessie,

Thank you for Friday's submittal, including updates on all necessary items. I have reviewed the items and the data on the FTP site. There were a few items that require correction or a response by Bridgeton Landfill.

I have also placed the table, that had been used to track the reporting requirements, into a spreadsheet. It should allow for simpler updating, as well as making it easier to follow the changes. The spreadsheet is attached, and includes the items that I referenced above. Please note that all previous columns are included, but the columns for earlier submittals have been hidden.

Regarding the following "Additional update" that was included in your email:

-We appreciate MSD's preliminary approval of the increase in volume for hauled discharge to Bissell Point and will be following up next week with a formal request with the technical basis for support.

I need to clarify that MSD did <u>not</u> provide preliminary approval for an increase in volume for hauled discharge to Bissell Point. MSD only indicated that a request should be submitted, along with final air monitoring lab results, and the request would be considered.

Thank you,
Doug Mendoza

Reporting Requirement	Bridgeton Landfill 2013.05.17 Update	MSD response 5/23/13
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:		
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**	
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		Bridgeton Landfill should note that this also has been submitted via "Ongoing submissions posted to FTP."
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**	• MSD notes that data was complete through MSD Batch 100. • MSD also notes that MSD Batch 98, discharged onsite on 5/8/13, had a pH of 5.4. This is consistent with the 5.35 measured by MSD, for which Bridgeton Landfill was issued a violation notice. Jessie Merrigan's 5/10/13 email said that it was not consistent with what was expected, and they were evaluating methods to ensure compliance for pH. At a minimum, Bridgeton Landfill must measure the pH before discharge, and the pH of a noncompliant batch must be adjusted to between 5.5 & 11.5 prior to discharge. • **Oil & Grease is above the discharge limit of 200 mg/L for the following batches:** MSD Batch 94, onsite discharge 5/7/13, O&G = 240 mg/L; MSD Batch 98, onsite discharge 5/8/13, O&G = 451 mg/L: MSD Batch 100, onsite discharge 5/8/13, O&G = 366 mg/L. MSD will be sending a Notice of Violation to Bridgeton Landfill for these discharges. Bridgeton Landfill must begin immediate action to eliminate future oil & grease violations.
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character.**		

Reporting Requirement	Bridgeton Landfill 2013.05.17 Update	MSD response 5/23/13
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**	
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	**Ongoing submissions posted to FTP.**	Weekly disposal summary sheet shows onsite (Missouri River) discharge on 5/5/13 as 17,502 gallons, but says "No Transfer" for the Operational Batch. **Which batch was discharged onsite for 5/5/13?**
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:		
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**	
4. The daily discharge **shall not exceed 50,000 gallons per day** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP.	**Saturday delivery schedule has been modified to address MSD's concerns; based on preliminary approval at yesterday's meeting, Bridgeton Landfill is preparing a request to increase discharge volume to 100,000 gallons per day.**	• Weekly disposal summary sheet for 5/3-8/13 shows Bissell deliveries on 5/4/13 with trucks totaling 49,400 gallons. All other days are 49,500 gallons. Should 5/4/13 be 49,500 gallons? • Also, weekly disposal summary sheet for 5/9-15/13 shows Bissell deliveries on 5/11/13 with trucks totaling 49,600 gallons. All other days are 49,500 gallons. Should 5/11/13 be 49,500 gallons?
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**	

Reporting Requirement	Bridgeton Landfill 2013.05.17 Update	MSD response 5/23/13
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**.	**Ongoing submissions posted to FTP.**	MSD notes that data was complete through MSD Batch 100.
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.		
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**	**Ongoing submissions posted to FTP.**	
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.		
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:		

Reporting Requirement	Bridgeton Landfill 2013.05.17 Update	MSD response 5/23/13
• Air monitoring: **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** 1: If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** 2: If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. 3: **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** 4: MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**	**We continue to work with Stantec to see what can be done to accelerate delivery of lab data. Based upon their feedback and follow up with the lab we hope to make most if not all data available next week, and will supplement any remaining data as soon as possible.**	
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this commitment. 1: However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** 2: Please note that **MSD may require additional air sampling events,** based on the results of sampling or future concerns that may arise.	**Pre-discharge sampling results, including dimethyl sulfide and reduced sulfur compounds, have been posted to the FTP and are included in the attached email. The only remaining pre-discharge data are dioxins and diobenzofurans. The reason for the delay is discussed in the attached email, and MSD will be updated as soon as those results are posted to the FTP.**	• The correspondence provided to MSD indicates that the Dioxin/Dibenzofuran by EPA TO-9 are the only pending results, with the /consultant anticipating delivery of those results to Bridgeton Landfill by 5/24/13. • To double check that all components addressed in the Stantec August 2012 event were included: o Confirm that the reduced sulfur compounds were run using ASTM D5504 with all non-detect results. o List the actual reduce sulfur compounds, along with the detection levels. o Confirm that all final analytical results for the air sampling will be posted to the FTP site, not just a Word document summary of the results.
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013.**		See Pretreatment system comment below.

Reporting Requirement	Bridgeton Landfill 2013.05.17 Update	MSD response 5/23/13
• Leachate/wastewater monitoring: **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** 1: If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes.** 2: If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. 3: Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.		
• Past analytical data: Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.		
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. 1: **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.	**We appreciate the additional information provided at MSD's meeting and look forward to discussing with you how we can receive the data logged by the data logger so that we can continue to assess air needs.**	Should this update item from Bridgeton Landfill have been placed under the Pump station ventilation item?
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. 1: **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**		

Doug Mendoza

ARIZEON LANDFILL

From: Doug Mendoza
Sent: Wednesday, May 22, 2013 5:11 PM
To: 'Ed Galbraith'; Merrigan, Jessie (LG)
Subject: RE: A few questions re. the data on the FTP site

Thanks, Ed. I'll go through this in more detail later today or tomorrow morning. However, I wanted to give a quick response re. Questions 3 and 4.

3 – I forgot about the Sampling Analyses tab. I had seen it before, I think in an earlier email attachment, but then lost it. But what you propose should be fine – if you would just add the test method lines and group accordingly in that tab.

4 – FYI (and you probably already realize this), the pollutants listed in the permit are only those for which self-monitoring was required by the permit. General Condition L of all permits states, "Unless the context specifically indicates otherwise, the permittee is subject to all provisions of District Sewer Use Ordinance 12559." MSD can, and often does, analyze its own samples for additional pollutants. In addition, circumstances may arise where MSD requires the permittee to sample and analyze for additional pollutants beyond those listed in the permit.

This is the list of pollutants limited in MSD Ordinance 12559 (plus pH of 5.5-11.5, temperature limit of 140 degrees F, TTO of 5.844 mg/L):

Parameter	Daily Average Limit Large River
Antimony	0.5
Arsenic	0.4
Barium	10.0
Beryllium	0.4
Cadmium	0.7
Chromium	5.0
Copper	2.7
Cyanide, Amenable	0.4
Iron	150.0
Lead	0.4
Mercury	0.01
Nickel	2.3
Total Oil & Grease	200
Phenolic Compounds	7.0
Selenium	0.2
Silver	0.5
Zinc	3.0

From: Ed Galbraith [mailto:EGalbraith@barr.com]
Sent: Wednesday, May 22, 2013 4:55 PM
To: Doug Mendoza; Merrigan, Jessie (LG)
Subject: RE: A few questions re. the data on the FTP site

Doug, I'm really pleased that you are using the site and reviewing the data and I appreciate your letting me know of questions as we go along. It's much easier that way.

Question 1. The first batch of MSD verification sampling (65) was conducted on 4/25/2013 and the data is in the spreadsheet under "Treat Commingled MSD." We didn't have our naming convention down at that time so it is confusing and I apologize. The report number is 3043568 and was sampled from the same batch as OpBatch 0065. See below. If you look at the actual lab report (attached) you'll see that it was sampled at 11:30 on 4/25, which correlates with the batch report showing that we stopped treating at 11:00 on 4/25. It was after that that we started using the "MSD Batch 66" naming convention.

Treat Commingled MSD	4/25/2013	PDC	QC Pending	3043568
OpBatch0065-MSD	4/25/2013	Landmark	QC Pending	LNDMRK_APRIL

Question 2. All NewAge/Landmark data is VOA only. This is the benzene verification data. We use this to get benzene results prior to shipping any material to MSD. The MSD Batch analysis from PDC/Pace have the full suite of verification sampling and methods required by the MSD approval (624, 625, 200.7, etc.) On the tabs labeled "ALL," scroll through the MSD Batch data from PDC/Pace (including #65, report 3043568), and you will see a numeric value or ND for everything that was analyzed. Also, the tab labeled "Sampling Analyses" will show what parameters are sampled for each type of sample.

Question 3. NewAge/Landmark data is 8260 VOA, and the verification sampling done by PDC/Pace use 624 and 625 for VOA/SVOA. You can see the methods in the individual pdf reports. If you would like that clarified in the spreadsheet, we can, but it might get pretty cumbersome. What I would propose is in the "Sampling Analyses" tab, we can make a separate line for each test method and group them by test method. That way you can see at a glance what was analyzed and what wasn't. <u>If that is satisfactory, we'll try to include that in future updates.</u>

Question 4. The permit does not have an iron limit listed and I was not aware of the ordinance limit. We will prepare a variance request ASAP.

I can imagine this is somewhat confusing and may not answer all your questions. If you or a group of folks want to get on a conference call, I could walk you through the spreadsheet and maybe help clarify a few things.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

resourceful. naturally. BARR

From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Wednesday, May 22, 2013 2:28 PM
To: Merrigan, Jessie (LG)
Cc: Ed Galbraith
Subject: A few questions re. the data on the FTP site

Ed,

I am reviewing the data on the FTP site, and had a few items I hope you can help with. I want to resolve these issues before I give a more formal response to the entire distribution group.

Your help is appreciated!
Doug

For MSD Batch 65 – The analytical data is missing from the "Feb-May_2013-Sampling - Updated_05172013.xlsx" spreadsheet. This is the spreadsheet located under the folder "Data Reports > May 17, 2013" Where is this data? Can you add it to the existing spreadsheet, and include in future updates?

Laboratory data for VOCs and SVOCs : This data is in the same spreadsheet as referenced above re. batch 65. Semi-volatile data appears to be missing for batch 65? Please inform as to where it is located.

It also is unclear for "VOCs and SVOCs – All" which methods are used for the results. The conditional approval required methods 624 and 625. Please clarify for me, and please add a column clarifying this.

Iron is always (for every batch discharged) above the ordinance discharge limit of 150 mg/L. This would be a violation for your onsite discharges. Do you wish to submit another variance request for iron? Do so ASAP.

Doug Mendoza

MSD
BRIDGETON LANDFILL

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Tuesday, May 21, 2013 11:48 AM
To: Doug Mendoza; John Lodderhose; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Brian G. Gibson
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: Bridgeton Request to Increase Discharge to Bissell
Attachments: 2013 Bridgeton Request to Increase Bissel Disposal Memo (5-21-13).pdf

Good morning,

Please see attached the written request to increase the volume hauled to Bissell Point, consistent with discussions last week. Please let us know if you have any questions.

Thank you,
Jessie

LATHROP & GAGE L.L.P.
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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BRIDGETON LANDFILL MEMORANDUM

To: John Lodderhose, St. Louis Metropolitan Sewer District
Doug Mendoza, St. Louis Metropolitan Sewer District

From: Craig Almanza, Bridgeton Landfill, LLC CAA
Steve Smith, Bridgeton Landfill, LLC SCS

Date: May 21, 2013

Subject: **Request to Increase Discharge to Bissell Point Wastewater Treatment Plant from 50,000 to 100,000 Gallons Per Day**

On April 19, 2013, Bridgeton Landfill submitted a request to resume discharge to the Metropolitan St. Louis Sewer District (MSD). Bridgeton Landfill requested to discharge up to 20,000 gallons per day (gpd) to the Missouri River Wastewater Treatment Plant (Missouri River) with an increase to 30,000 gpd; and transport up to 50,000 gallons per day to the Bissell Point Wastewater Treatment Plant (Bissell), with an increase to 100,000 gpd.

On April 24, 2013, MSD issued its conditional approval to Bridgeton Landfill to discharge up to 20,000 gallons per day of leachate to Missouri River and transport up to 50,000 gallons per day to Bissell.

Bridgeton Landfill sincerely appreciates MSD's approval; it has made a tremendous difference in our ability to manage liquids at the site and avert the crisis posed by limited storage. Since that time, Bridgeton Landfill has worked diligently to meet the conditions of MSD's approval. We have met all volume limitations, sampling and reporting requirements, and implemented the Standard Operating Procedure to comply with MSD's benzene limitation. In order to avoid any exceedence of volume limitations, we have consistently discharged and shipped less than approved amounts.

At our meeting last Thursday, May 16, 2013, MSD representatives at the meeting provided a verbal approval to increase discharge to Bissell, consistent with our original request and advised us to submit a written request. Bridgeton Landfill proposes the following daily and weekly discharge volume limitations:

Plant	Current Weekly Limit (gallons)	Requested Daily Limit (gpd) Monday - Friday	Requested Daily Limit (gpd) Saturday	Requested Daily Limit (gpd) Sunday	Requested Weekly Limit (gallons)
Bissell Point	300,000	100,000	50,000	0	550,000
Missouri River	140,000	20,000	20,000	20,000	140,000

No net increase of limitation to Missouri River is requested at this time.

Resuming discharge to MSD has been vital to addressing the emergency now facing the landfill. An increase at this time could allow us to significantly decrease storage and manage leachate in as safe a manner as possible. Thank you for considering this request. Thank you.

MSD Communication List (extensive, via email)
Chris Nagel, MDNR
Leanne Tippett Mosby, MDNR
Marty Miller, MDNR
Jessica Blome, Missouri Attorney General's Office
Kara Valentine, Missouri Attorney General's Office
Joe Bindbeutel, Missouri Attorney General's Office
Ed Galbraith, Barr Engineering
Dan Feezor, Feezor Engineering
Tracey Davis, New Age / Landmark, Inc.
Jessica Merrigan, Lathrop & Gage, LLP
William Beck, Lathrop & Gage, LLP

MSD

To: BRIDGETON LANDFILL LLC [1003803000]

From: Nora Estopare NE

Date: May 21, 2013

Re: May 16, 2013 meeting to discuss technical issues

On 5/16/13 at 10:30 am, MSD met with Bridgeton Landfill at MSD's DEC offices to review technical issues related to the landfill and its discharges. The following attended the meeting:

Bridgeton Landfill: Steve Smith, Republic Services (landfill owner company), Craig Almanza, Republic Services, Ed Galbraith, Barr Engineering, Dan Feezor, Feezor Engineering

MSD: Rob Daly, Nora Estopare, Ken Gambaro, Mike Grace, John Lodderhose

The following lists items discussed at the meeting, corresponding to the attached agenda brought by the Bridgeton Landfill representatives:

Bridgeton Landfill is currently approved to discharge 20,000 GPD to MO River. Bridgeton Landfill temporarily ceased discharge on 5/11/13 upon discovering the display of the new flow meter had malfunctioned. The necessary repairs were made at discharge resumed on 5/15/13. Ken Gambaro stated that MO River's influent is running between 47,000 to 50,000 lb/day BOD with Bridgeton Landfill's resumed discharge. The biological performance of the plant is holding steady, but this loading does exceed MO River's design capacity of 46,700 lb/day.BOD.

Bridgeton Landfill is currently approved to haul and discharge 50,000 GPD to Bissell, Monday through Saturday. Bridgeton has advised their hauler that Saturday deliveries must be spaced out and arrive between 7:00 am to 11:30 am.

The FTP site has been set up. MSD has been able to access the uploaded data. MSD noted that the batch numbers on the data records are not sequential. Bridgeton explained the pretreated leachate intended for discharge to MSD is segregated, and the "Data Collection" per Bridgeton's SOP for those batches is the data that is provided.

Startup date for the ventilation and monitoring equipment being installed in MSD's pump station facility is projected to be 5/24/13. Vince Stollhans-MSD is coordinating with Bridgeton Landfill representatives. Both Bridgeton Landfill and MSD agreed that air sampling should be performed after equipment is installed to demonstrate the equipment is effective.

As of 5/16/13, MSD had yet to receive analytical results for the pre-discharge and post discharge air samples collected from our pump station facility. Bridgeton committed to providing preliminary results for the pre-discharge air sample with the 5/17/13 weekly data upload.

Bridgeton Landfill briefly discussed reinforced concrete pipe abandonment as their next phase of work. The MDNR and Bridgeton Landfill websites are the best source of landfill status information.

Bridgeton Landfill will soon be bringing a 300,000 gallon tank online for aeration pretreatment. Their SOP will be updated accordingly and will be provided to MSD for review.

Bridgeton Landfill has hired a consultant to evaluate a long-term solution for pretreatment of the high strength leachate.

Bridgeton Landfill and MSD agreed that updating the table in the email string "Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions" is an acceptable format to track compliance with MSD conditional discharge approval.

Bridgeton Landfill indicated that MSD is their best disposal option for leachate. No increase in flow is being requested to MO River at this time. Bridgeton would like to increase Monday through Friday hauled disposal at Bissell to 100,000 GPD. John Lodderhose instructed Bridgeton to submit a formal request that MSD will consider after pending air sampling results have been provided.

MSD will be working with a consultant to evaluate the observed foam/scum layer for flash point, COD and BOD. Further, the consultant plans to conduct salt tests, respirometry tests, and UV transmissivity tests.

It was tentatively decided to meet again on June 5th at Bridgeton Landfill.

MSD

Doug Mendoza

From: Darin Lewis
Sent: Saturday, May 18, 2013 11:23 AM
To: Catherine Politte; Doug Mendoza; Brian G. Gibson; Steve Grace; Sara Kammerer; Mike Townley
Subject: Bridgeton Landfill Leachate weekly volume summary.

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant for 5/13/2013 to 5/18/2013.
5/13 – 48,300 gallons
5/14 – 49,300 gallons
5/15 – 48,700 gallons
5/16 – 43,100 gallons
5/17 – 45,000 gallons
5/18 – 45,600 gallons
Total = 280,000 gallons

MSD

CB

Christopher J. Bulmahn BRIDGETON LANDFILL LLC

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM> 10038030 00
Sent: Friday, May 17, 2013 2:26 PM
To: Doug Mendoza; John Lodderhose; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: MSD Variance Request 05-16-2013.pdf; MSD lift station sample results summary

Good afternoon,

We appreciate your review of the extensive amount of documentation that has been provided over the last several weeks, and your continued work with our team to identify any remaining data gaps and move forward. This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both an update to last week's response to pending questions, as well as a notice that the full weekly submission will be available on the FTP site by 4:30 pm for your download and review.

Based on conversations at yesterday's meeting, I understand that it is MSD's preference that we continue to work from this table, so I have added our newest updates in a different color below. Additional updates are provided below.

Reporting Requirement	Status	Necessary action by Bridgeton Landfill	Bridgeton Landfill 2013.05.10 Update (2013.05.17 Update)
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:			
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**	Submitted. Volume in compliance. Operational batches 65, 67, 71, 74, 77, 82.		**The FTP site has been updated with the daily logs and weekly summary for discharge for the last week. As discussed at the May 2nd meeting, to allow for document compilation, QA/QC and posting, the Friday report will address all discharge from the prior Thursday-Wednesday. Ongoing submissions posted to FTP.**
4. Analytical sampling results that demonstrate treated liquid is verified to have	Partially submitted. Operational batches 65, 67, 71, 74, 77 via FTP.	**Submit batch 82 results. All results for this item are to be completed prior to**	**Batch 82 data has been uploaded, we apologize for the oversight.**

achieved the appropriate reduction of toxic pollutants to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**	**Batch 82 not provided.**	**discharge to MSD, regardless of when submitted. Bridgeton landfill has indicated that one day results are achieved. Otherwise, there is no guarantee that the batches meet the reduction.** **This is an ongoing requirement.**	**Ongoing submissions posted to FTP.**
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	**Not submitted.**	**Provide estimated date of completion for all batches that are not yet complete and submitted.** **Note the requirement to use EPA-approved wastewater methods.** **This is an ongoing requirement.**	**As discussed during the May 2nd meeting, data will be uploaded to the FTP site. All data received by COB Wednesday will be added to the summary and uploaded for the Friday weekly report (available data has been posted). Please find attached an update from Barr on the available data and expected turnaround time.** **Ongoing submissions posted to FTP.**
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character**.	None required at this time.		
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**	**Not submitted.**	**Submit the items.** **This is an ongoing requirement.**	**Last week's SOP report is attached and has been added to the FTP site. We apologize for the oversight and this will be part of the weekly updates. This week's report is also attached, though it is available on the FTP site.** **Ongoing submissions posted to FTP.**
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD**	Submitted. MSD will bill Bridgeton Landfill monthly after corresponding analytical data is reviewed.		**The FTP site has been updated with the daily logs and weekly summary for discharge for the last week. As discussed at the May 2nd meeting, to allow for document compilation, QA/QC and posting, the Friday report will address all discharge from the prior**

on a weekly basis, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.			**Thursday-Wednesday. Ongoing submissions posted to FTP.**
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:			
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**	Partially Submitted. Operational batches 65, 67, 71, 74, 77 via FTP. **Batch 82 not provided.**	**Submit batch 82 results. All results for this item are to be completed <u>prior to</u> discharge to MSD, regardless of when submitted. Bridgeton landfill has indicated that one day results are achieved. Otherwise, there is no guarantee that the batches meet the reduction. This is an ongoing requirement.**	**Batch 82 data has been uploaded, we apologize for the oversight. Ongoing submissions posted to FTP.**
4. The daily discharge **shall not exceed 50,000 gallons per day** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP.	Volume in compliance. **Loads received for some days have not been evenly spread out.** For example, Saturday, May 4, 2013 was all delivered between 7:00 am and 10:30 am. **Any trucks that arrive for discharge too early will be required to wait before accessing the station and discharging. In the future, trucks must be evenly spread out.**	**Spread all future loads evenly throughout the operating day.**	**Based on follow up with Bissell Point representatives, Bridgeton Landfill had already informed MBI that Saturday loads would need to be better spread out. MBI drivers will accommodate this by either waiting to leave the facility, or waiting to discharge at Bissell Point, to ensure even spacing. Haul times were shorter than expected on Saturday as compared to other days, leading to faster deliveries, but we will work with MBI and the Bissell Point team to ensure this is managed moving forward. Saturday delivery schedule has been modified to address MSD's concerns; based on preliminary approval at yesterday's meeting, Bridgeton Landfill is preparing a request to increase discharge volume to 100,000 gallons per day.**

5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**	Partially Submitted. Operational batches 65, 67, 71, 74, 77 via FTP. **Batch 82 not provided.**	**Submit batch 82 results. All results for this item are to be completed <u>prior to</u> discharge to MSD, regardless of when submitted. Bridgeton landfill has indicated that one day results are achieved. Otherwise, there is no guarantee that the batches meet the reduction. This is an ongoing requirement.**	**Batch 82 data has been uploaded, we apologize for the oversight. Ongoing submissions posted to FTP.**
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	**Not submitted.**	**Provide estimated date of completion for all batches that are not yet complete and submitted. Note the requirement to use EPA-approved wastewater methods. This is an ongoing requirement.**	**As discussed during the May 2nd meeting, data will be uploaded to the FTP site. All data received by COB Wednesday will be added to the summary and uploaded for the Friday weekly report (available data has been posted). Please find attached an update from Barr on the available data and expected turnaround time. Ongoing submissions posted to FTP.**
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.	None required at this time.		
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**	**Not submitted.**	**Submit the items. This is an ongoing requirement.**	**Last week's SOP report is attached and has been added to the FTP site. We apologize for the oversight and this will be part of the weekly updates. In addition to the attached data, the SOP calls for keeping manifests. However, because MSD has already received all manifests for delivery at Bissell Point, we had not intended to duplicate those for each weekly submission. Please let us know if you do need duplicate copies included. This week's report**

			is also attached, though it is available on the FTP site. Ongoing submissions posted to FTP.
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.	MSD will bill Bridgeton Landfill monthly after corresponding analytical data is reviewed.		
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:			
• Air monitoring: o **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** oo If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** oo If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. oo **Submit data for the constituents by May 1, 2013**. If the constituents were not analyzed, **complete the necessary repeated**	**Not submitted.** If results not submitted by May 1, 2013, resampling must be performed by May 10, 2013. Sampling was performed under Pending air monitoring below.	**Reduced sulfur compound analytical results for the tank headspace sampling were not submitted by May 1, 2013.** **The headspace sampling must be repeated by May 10, 2013 to include reduced sulfur compounds if Bridgeton fails to provide the Pending air monitoring discussed in the next bullet by May 10, 2013.**	**Comprehensive lift station air monitoring during discharge was conducted on Tuesday April 30th. This sampling event included all components addressed in the Stantec August 2012 event, per MSD's direction, and did include reduced sulfur compounds. Sampling results will be provided as soon as available. We have followed up with Stantec and asked that they follow up with the lab to obtain both pre-discharge and during discharge data. We expect it next week, but will keep you updated. We feel that we have completed the testing requested by MSD, but are waiting on the lab results. We cannot control lab time, but intend to provide results as soon as they are available. We continue to work with**

sampling by May 10, 2013, with results to be submitted by June 10, 2013. oo MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**			**Stantec to see what can be done to accelerate delivery of lab data. Based upon their feedback and follow up with the lab we hope to make most if not all data available next week, and will supplement any remaining data as soon as possible.**
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline**. Bridgeton Landfill has not yet satisfied this commitment. o However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** o Please note that **MSD may require additional air sampling events**, based on the results of sampling or future concerns that may arise.	Results not submitted yet.	**MSD did not give a deadline for this bullet because we felt Bridgeton understood the urgency of the air sampling by their actions of collecting these samples immediately upon hearing MSD was going to allow a conditional resumption of discharge.** **Submit all available air monitoring analytical results as soon as possible, both preliminary and final as appropriate for each analyte.**	**Comprehensive lift station air monitoring was conducted on Thursday April 25th. This sampling event included all components addressed in the Stantec August 2012 event, per MSD's direction, and did include reduced sulfur compounds. Sampling results will be provided as soon as available. We have followed up with Stantec and asked that they follow up with the lab to obtain both pre-discharge and during discharge data. We expect it next week, but will keep you updated. We feel that we have completed the testing requested by MSD, but are waiting on the lab results. We cannot control lab time, but intend to provide results as soon as they are available.** **Pre-discharge sampling results, including dimethyl sulfide and reduced sulfur compounds, have been posted to the FTP and are included in the attached email. The only remaining pre-discharge data are dioxins and diobenzofurans. The reason for the delay is discussed in the attached email, and MSD will be updated as soon as those results are posted to the FTP.**
• Pump station ventilation: Bridgeton Landfill shall complete the installation	Verification of completion not submitted yet.		**Bridgeton Landfill continues to work with MSD's preferred electrician, site**

of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013**.			**contractors and County inspectors to complete installation and initiate operation of the system requested by MSD. We have ordered and received the equipment as directed by the District and are working with the District on installation, but completion has been delayed by factors outside of our control. We continue to work diligently with MSD on completing this work and have been regularly updating MSD on progress.**
• Leachate/wastewater monitoring: o **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** oo If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes**. oo If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. oo Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.	Submitted.		**Submitted via FTP site.**
• Past analytical data: Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.	Submitted via FTP.		
• Pretreatment system: Bridgeton Landfill has previously stated that it	Not yet required to be submitted. However, Bridgeton	Approval of a pretreatment system by MDNR does not preclude approval of the	**It is our goal to work with MSD on development of the ultimate pretreatment**

will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. o **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.	Landfill submitted the following: "We believe that current treatment achieves toxicity limitations; we can submit plan of planned pretreatment as developed by June 1, 2013. However, development of full pretreatment system plan must obtain MDNR approval and is scheduled for September 1, 2013, submission. We will include MSD."	system by MSD, but it instead an additional approval required of Bridgeton Landfill. Because MSD's June 1, 2013 deadline is before MDNR's September 1, 2013 deadline, **Bridgeton Landfill will need to schedule to meet MSD's June 1, 2013 deadline. This means submittal of a plan and schedule to install a pretreatment system. It does not mean submittal by June 1, 2013 of what Bridgeton Landfill has completed towards this plan.** Note that Bridgeton Landfill must also achieve compliance with all metals and other pollutants limited in the sewer use ordinance. Any plans should also address necessary pretreatment for this.	**system in order to ensure the system is developed to meet MSD's needs and allow for long term discharge. A final pretreatment plan is complex and will depend on evaluation of treatment needs and the treatment impact of the soon to be operational 316,000 gallon tank. Our intention for the June 1st submittal was to submit a plan that outlines the schedule and key analytical and evaluation issues to allow us to work with MSD towards development of the final plan due to MDNR by September 1st. We expect that approach is consistent with MSD's expectations for cooperation with MSD and look forward to discussing it with you in the next meeting. We appreciate the additional information provided at MSD's meeting and look forward to discussing with you how we can receive the data logged by the data logger so that we can continue to assess air needs.**
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. o **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**	Not yet required to be submitted. However, Bridgeton Landfill submitted the following: "this is not consistent with system operations. Further we believe that current treatment achieves toxicity limitations."	The purpose of separating the gas condensate is not only to potentially remove toxic pollutants, but is also to potentially remove high strength pollutants. If modifications to segregate gas condensate are "not consistent with system operations," then Bridgeton Landfill must submit the alternate option: **or a report showing the feasibility *[or infeasibility]* of making such modifications.**	**We look forward to continuing discussions on this. The June 1st report will include updated evaluation on the overall liquid constituents and the treatment plan. We understand MSD's need to receive a consistent and compliant effluent stream and intend to work with the District to achieve that. Based upon our current evaluation we think that consistent, optimal operations of the entire liquids removal system is the best way of avoiding toxics and high strength**

			pollutants. The June 1st report will evaluate the pretreatment approach and its operation with the liquids collection system.

Additional updates:

-Consistent with our discussions and in response to your email last week, the attached Variance Request was provided at yesterday's meeting. We are available to answer any questions and look forward to your response.
-We continue to assess pH and will follow up with MSD as we gather additional information.
-We appreciate MSD's preliminary approval of the increase in volume for hauled discharge to Bissell Point and will be following up next week with a formal request with the technical basis for support.
-We look forward to the planned on site meeting and continuing to work with the MSD team on pretreatment plans.

We appreciate MSD's ongoing cooperation and support and look forward to continuing to provide MSD with all necessary information as we continue to work together. Please let us know if you have any questions or need additional clarification.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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Bridgeton Landfill, LLC

May 16, 2013

Doug Mendoza
Industrial Pretreatment Manager
Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103

RE: REQUEST FOR VARIANCE FROM DISTRICT LIMITATIONS FOR BRIDGETON LANDFILL DISCHARGE (Discharge Permit No. 0511559802-2)

Bridgeton Landfill, LLC requests a variance from Article V, Section 2.C of MSD Ordinance 12559. In MSD's April 24, 2013 Response to Bridgeton Landfill's April 19, 2013 Proposal for Resumption of Direct Discharge from Bridgeton Landfill, MSD granted a temporary variance from the permit limitation for total zinc discharged to the collection system for the Missouri River Wastewater Treatment Plant. In this request we ask that MSD grant similar variances for arsenic and mercury with conditions as follows:

- The arsenic limit shall be set on a mass basis not to exceed 0.722 pounds of total arsenic per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.

- The mercury limit shall be set on a mass basis not exceed 0.018 pounds of total mercury per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day.

Regarding zinc discharge, Bridgeton requests a modification of the variance previously granted by MSD as follows:

- The zinc limit shall be set on a mass basis not exceed 5.414 pounds of total zinc per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 200,000 gallons per day.

The attached table shows the maximum allowable loadings under permit concentrations and flows, actual concentrations from the past four sampling events and the estimated actual loadings under conditionally approved flows of 20,000 gpd.

If you have any questions about this request, feel free to contact me at (314) 744-8195 or Ed Galbraith with Barr Engineering at (573) 638-5024.

Sincerely,

Craig Almanza
Area Environmental Manager

13570 St. Charles Rock Road • Bridgeton, Missouri • Tel: 314-744-8165

METROPOLITAN ST. LOUIS SEWER DISTRICT
DIVISION OF ENVIRONMENTAL COMPLIANCE
10 EAST GRAND AVENUE
ST. LOUIS, MISSOURI 63147

VARIANCE APPLICATION FORM

MSD Ordinance No. 12559, Article VI, Section 2.B

1. Company Name: **Bridgeton Landfill, LLC**

2. Mailing Address: **12976 St. Charles Rock Road, Bridgeton, MO 63044**
(314) 744-8195

3. Premise Address: **Same**

4. Cite the specific section of Ordinance No. 12559 from which a variance is being sought: **Article V, Section 2.C**

5. State the reason a variance is being sought. Be specific. Attach additional sheets if needed:
Bridgeton Landfill cannot meet its current permitted concentrations, however because of the reduction in flow, Bridgeton Landfill can meet mass based limitations that are derived from current permit flow assumptions.

6. If this variance request proposes a change of pollutant limitations, list the type and proposed alternative limitations using appropriate units: **See accompanying letter**

7. State the length of time for which the variance is requested: **Two years**

8. Will compliance with the Ordinance requirement result in unreasonable costs, without comparable public benefit: **Bridgeton Landfill is currently evaluating treatment technologies to determine the feasibility and cost of pretreating the liquid to meet permit limits.**

Yes _____ No _____

If Yes, please summarize the costs below. Attach additional sheets showing the detailed sample analyses, consultant reports, or vendor information used to support these costs.

Cost of meeting Ordinance requirements: $_____

Cost under proposed variance: $_____

Cost savings: $_____

9. CERTIFICATION:

"I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. To the best of my knowledge and belief, granting of this variance will not result in violation of any of the conditions of Article VI, Subsection 2.B(1) through (5) of Metropolitan St. Louis Sewer District Ordinance No. 12559."

Print name and title of signing official:

Craig Almanza

Area Environmental Manager

Signature: Craig Almanza

Date: 5-16-13

Table 2
General Parameters and Metals - Detects Only
February - May 2013
Bridgeton Landfill

Location	Date	Parameter / Total or Dissolved / Data Status	Antimony Dissolved	Antimony Total	Arsenic Dissolved	Arsenic Total	Beryllium Dissolved	Beryllium Total	Cadmium Dissolved	Cadmium Total	Chromium Dissolved	Chromium Total	Copper Dissolved	Copper Total	Iron Dissolved	Iron Total	Lead Dissolved	Lead Total	Mercury Dissolved	Mercury Total	Nickel Dissolved	Nickel Total	Selenium Dissolved	Selenium Total	Silver Dissolved	Thallium Dissolved	Thallium Total	Zinc Dissolved	Zinc Total
MSD Batch 71	4/28/2013	Validated	0.055	0.060	0.44	0.46	0.0012	0.0017	0.048	0.062	0.20	0.23			580	780	0.10	0.16		0.014	0.071	0.082	0.031	0.017		0.023		12	13
MSD Batch 74	4/28/2013	Validated	0.052	0.066	0.53	0.56	0.0013	0.0019	0.047	0.064	0.20	0.23		0.0023	580	850	0.11	0.20		0.029	0.070	0.086	0.023		0.0021	0.038		12	13
MSD Batch 77	4/30/2013	Validated	0.052	0.066	0.43	0.46	0.0014	0.0019	0.053	0.070	0.22	0.24			720	990	0.12	0.20		0.011	0.072	0.080	0.037	0.036		0.025	0.022	14	15
Treat Commingled MSD	4/5/2013	QC Pending	0.11	0.068	0.47	0.52		0.0020	0.020	0.028	0.21	0.24	0.017	0.021	560	880	0.16	0.25	0.042	0.042	0.11	0.12	0.090	0.050		0.068	0.058	18	19
		Low (mg/l)	0.052	0.060	0.43	0.46	0.0012	0.0017	0.020	0.028	0.20	0.23	0.017	0.002	580	780	0.10	0.16	0.042	0.011	0.070	0.080	0.023	0.017	0.0021	0.025	0.022	12	13
		High (mg/l)	0.11	0.068	0.53	0.55	0.0014	0.0020	0.053	0.070	0.22	0.24	0.017	0.021	720	990	0.16	0.25	0.042	0.042	0.11	0.12	0.090	0.050	0.0021	0.068	0.058	18	19
		Average (mg/l)	0.070	0.065	0.47	0.50	0.0013	0.0019	0.042	0.058	0.21	0.24	0.017	0.012	635	878	0.12	0.20	0.042	0.024	0.081	0.092	0.045	0.034	0.0021	0.042	0.040	14	15

900 Exceeds MSD Permit Concentration

MSD 026574

Table 1 - Bridgeton Landfill Treated Leachate Metals Concentration and Mass Loading

Analyte	Discharge Permit No. 0511559802-2 Limit (mg/L)	Permitted Loading to Missouri River WWTP[a] (lbs/day)	Current Parameter Concentration (mg/L)*	Current Loading to Missouri River WWTP[b] (lbs/day)
Arsenic, Total	0.4	0.722	0.55	0.092
Cadmium, Total	0.7	1.263	0.070	0.012
Chromium, Total	5	9.024	0.24	0.040
Copper, Total	2.7	4.873	0.021	0.004
Lead, Total	0.4	0.722	0.25	0.042
Mercury, Total	0.01	0.018	0.042	0.007
Nickel, Total	2.3	4.151	0.12	0.020
Zinc, Total	3	5.414	19	3.171

NOTES:

a - Based on a permitted volume of 216,255 GPD and permit concentration limits

b - Based on volume of 20,000 GPD, approved by MSD on April 24, 2013

*Maximum value from MSD Batch 71, 74, 77 and Treated Commingled

Doug Mendoza

From: Gray, Deb <Deb.Gray@stantec.com>
Sent: Friday, May 17, 2013 1:28 PM
To: Merrigan, Jessie (LG); Ed Galbraith (EGalbraith@barr.com) (EGalbraith@barr.com)
Subject: MSD lift station sample results summary
Attachments: MSD Lift Sation Sampling Summary_5-17-2013.docx

Jessie and Ed,

Here is a summary of the pre-discharge air and liquid sample results that we have received from the analytical laboratories. The air sample analyses were performed by ALS (formerly Columbia Analytical Laboratories); and the analyses of the liquid from the lift station vault were performed by PDC Laboratories, Inc. Please consider these results to be DRAFT at this point in time.

The summary table presents results for those analytes that were reported as "detected" by the laboratories. The laboratories analyzed the samples for a large number of compounds, but not all of them were detected. We have also provided occupational standards for comparison to the air sample results.

We have recently received the results of the dioxin/dibenzofuran samples from the analytical laboratory. However, we still need to evaluate the results and convert the reported mass for each of the individual dioxin and dibenzofuran isomers into 2, 3, 7, 8-TCDD equivalents (TCDD TEQ) and then calculate the concentrations in air. We anticipate being able to provide the results of the dioxin analyses by the end of next week.

Please let us know if you have questions or wish additional clarification.

Deborah L. Gray, Ph.D., DABT
National Director, Risk Assessment & Toxicology Practice
Stantec Consulting Services, Inc.
1500 Lake Shore Drive Suite 100
Columbus OH 43204
Phone: (614) 486-4383, ext. 3273
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Bridgeton Landfill – Project Number 182608005			
Municipal Sewer District – Lift Station Results – Pre Discharge of Leachate			
Air Sample Date 4/25/2013; Water Sample Date 4/29/2013			
Analyte [1]	Inhalation OSHA PEL	Air Concentration	Liquid Concentration
	ug/m^3	ug/m^3	ug/L
Ammonia – OSHA ID 188			
Ammonia	35,000	140	23 mg/L
Sulfur Dioxide – OSHA ID 200			
Sulfur dioxide (SO2)	13,000	13	NA [2]
Aldehydes – EPA TO-11a			
Formaldehyde	921	1.3	NA
Acetaldehyde	33,100	3.9	NA
Propionaldehyde	-- [3]	11	NA
Butyraldehyde	--	0.37	NA
Benzaldehyde	--	0.39	NA
n-Hexaldehyde	-	1.4	NA
Carboxylic Acids - AQL 102			
Propionic Acid (Propanoic)	--	7.1	NA
2-Methylpropanoic Acid (Isobutyric)	--	4.9	NA
Butanoic Acid (Butyric)	--	18	NA
2-Methylbutanoic Acid (Isovaleric)	--	3.3	NA
Pentanoic Acid (Valeric)	--	3.1	NA
Hexanoic Acid (Caproic)	--	6.5	NA
Polyaromatic Hydrocarbons (PAHs) - EPA TO-13 a			
Naphthalene	52,400	1.7	ND [4]
Acenaphthene	--	0.46	ND
Fluorene	--	0.16	ND
Phenanthrene	200	0.057	ND
Anthracene	--	0.007	ND
Volatile Organic Compounds - EPA TO-15 + TICs			
Propene	--	3.8	ND
Dichlorodifluoromethane (CFC 12)	4,210,000	2.0	ND
Ethanol	1,880,000	7.5	ND
Acetonitrile	67,200	5.8	ND
Acetone	2,380,000	38	150
Trichlorofluoromethane	5,620,000	1.1	ND
n-Hexane	1,800,000	1.0	ND
Chloroform	240,000	1.1	ND
Tetrahydrofuran	590,000	2.3	ND
Benzene	3,190	7.5	ND
Toluene	754,000	3.5	ND
n-Octane	2,340,000	0.75	ND
Ethylbenzene	434,000	1.8	ND
m,p-Xylenes	434,000	4.4	ND

Analyte	OSHA PEL	Air Concentration	Liquid Concentration
	ug/m^3	ug/m^3	ug/L
Bromoform	5,000	1.3	ND
o-Xylene	434,000	2.8	ND
n-Nonane	1,050,000	1.3	ND
Cumene	245,000	3.4	ND
alpha-Pinene	557,000	3.3	ND
n-Propylbenzene	--	13	ND
4-Ethyltoluene	--	30	ND
1,3,5-Trimethylbenzene	--	27	ND
1,2,4-Trimethylbenzene	--	43	ND
1,4-Dichlorobenzene	450,000	11	ND
d-Limonene	--	130	ND
Naphthalene	52,400	11	ND
Volatile Organic Compounds – Tentatively Identified Compounds (TICs)			
3-Ethyltoluene	--	67	NA
2-Ethyltoluene	--	28	NA
n-Decane	--	9.6	NA
2-Ethyl-1-hexanol	--	14	NA
p-Isopropyltoluene	--	100	NA
m-Propyltoluene	--	23	NA
C10H14 Aromatic	--	28	NA
C10H14 Aromatic	--	17	NA
n-Undecane	--	50	NA
C10H12 + 1,2,3,5-Tetramethylbenzene	--	12	NA
n-Dodecane	--	52	NA
C9H10N2 Compound	--	18	NA
n-Tridecane	--	25	NA
1,3,5-Triisopropylbenzene	--	12	NA
n-Tetradecane	--	12	NA
Fixed Gases EPA Method 3C M			
Hydrogen		<0.14	NA
Oxygen+			NA
Argon		22	NA
Nitrogen		77.9	NA
Carbon monoxide		<0.14	NA
Methane		<0.14	NA
Carbon dioxide		<0.14	NA

1. Hydrogen Chloride, Hydrogen Cyanide, Amines and Mercury were not detected in any analytical air sample.
2. NA = Not Analyzed
3. "—" = Not Available
4. ND= Not Detected

Batch Number OB-100 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/7/2013	2:30 PM
Fill Stop	5/7/2013	11:30 PM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	5/7/2013	6:35 PM
Process Stop	5/8/2013	3:00 PM

Approval Data

Approval Details	NAL13026-170
Lab Test Results	Benzene 16 ppb
Reprocessed Batch	

Notes

Batch Number OB-105 MSD

Fill Data

Process Battery	Tank Battery 1	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/8/2013	1:30 PM
Fill Stop	5/9/2013	1:30 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	5/8/2013	9:30 PM
Process Stop	5/9/2013	1:30 PM

Approval Data

Approval Details	NAL13026-173
Lab Test Results	Benzene ND <100 pb
Reprocessed Batch	

Notes

Batch Number OB-107 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/9/2013	4:45 PM
Fill Stop	5/10/2013	12:20 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	5/9/2013	11:20 PM
Process Stop	5/10/2013	2:15 PM

Approval Data

Approval Details	NAL13026-175
Lab Test Results	Benzene 55 ppb
Reprocessed Batch	

Notes

Batch Number OB-112 MSD

Fill Data

Process Battery	Tank Battery 1	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/11/2013	1:50 AM
Fill Stop	5/11/2013	10:50 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	Chris Martin	
	Date	Time
Process Start	5/11/2013	10:50 AM
Process Stop	5/12/2013	12:45 PM

Approval Data

Approval Details	NAL13026-183
Lab Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Batch Number OB-114 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/11/2013	8:00 PM
Fill Stop	5/12/2013	6:00 AM

Transfer Data

Battery	AST	
Transfer Person	James Pippin	
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	Chris Martin	
	Date	Time
Process Start	5/12/2013	6:00 AM
Process Stop	5/12/2013	4:22 PM

Approval Data

Approval Details	NAL13026-185
Lab Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Batch Number OB-117 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/13/2013	2:30 AM
Fill Stop	5/13/2013	11:30 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	5/13/2013	5:55 AM
Process Stop	5/14/2013	3:30 AM

Approval Data

Approval Details	NAL13026-188
Lab Test Results	Benzene 29 ppb
Reprocessed Batch	

Notes

Batch Number OB-119 MSD

Fill Data

Process Battery	Tank Battery 1	
Composition	Co-Mingled	
	Date	**Time**
Fill Start	5/13/2013	2:20 PM
Fill Stop	5/13/2013	9:35 PM

Processing Data

Processing Person	James Pippin	
	Date	**Time**
Process Start	5/13/2013	7:20 PM
Process Stop	5/14/2013	4:00 PM

Notes

Transfer Data

Battery		
Transfer Person		
	Date	**Time**
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Approval Data

Approval Details	NAL13026-191
Lab Test Results	Benzene 25 ppb
Reprocessed Batch	

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/10/2013 4:09 AM

MSD Flow Meter reading: 148,761

Date / Time last reading: 5/9/2013 4:03 AM

Last Flow Meter reading: 129,865

Notes or comments (re meter errors, etc.):

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/10/2013

2013-5-9

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/11/2013 4:09 AM

MSD Flow Meter reading: 166,263

Date / Time last reading: 5/10/2013 4:09 AM

Last Flow Meter reading: 148,761

Notes or comments (re meter errors, etc.):

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/11/2013

MSD Daily Flow Reading 5-10-13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/11/2013 3:01 PM

MSD Flow Meter reading: 172,873

Date / Time last reading: 5/11/2013 4:04 AM

Last Flow Meter reading: 166,263

Notes or comments (re meter errors, etc.):

Note: Due to Flow Meter reading not showing totals – the flow ceased at 3:00 PM on 5/11/13.

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/11/2013

MSD Daily Flow Reading 5-11-13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/13/2013 4:00 AM

MSD Flow Meter reading: 172,873

Date / Time last reading: 5/11/2013 3:01 PM

Last Flow Meter reading: 172,873

Notes or comments (re meter errors, etc.):

Note: Due to Flow Meter reading not showing totals – the flow ceased at 3:00 PM on 5/11/13.

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/13/2013

MSD Daily Flow Reading 5-12-13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/14/2013 4:00 AM

MSD Flow Meter reading: 173,201

Date / Time last reading: 5/13/2013 4:00 AM

Last Flow Meter reading: 172,873

Notes or comments (re meter errors, etc.):

Only flow this day was to test the flow meter (328 gallons were used)

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/14/2013

MSD Daily Flow Reading 5-13-13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/15/2013 8:21 AM

MSD Flow Meter reading: 173,201

Date / Time last reading: 5/14/2013 4:00 AM

Last Flow Meter reading: 173,201

Notes or comments (re meter errors, etc.):

Flow meter still down – no flow: Note the Flow meter was reset to read zero.

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/15/2013

MSD Daily Flow Reading 5-14-13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/16/2013 5:31 AM

MSD Flow Meter reading: 17,502

Date / Time last reading: 5/15/2013 8:21 AM

Last Flow Meter reading: 0 (Reset from 173,201)

Notes or comments (re meter errors, etc.):

Flow meter was reset -

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/16/2013

MSD Daily Flow Reading 5-15-13

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissell Point Tracking Table			
Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Thursday, May 09, 2013	Batch 100	48,600	49,500
Friday, May 10, 2013	Batch 105	48,600	49,500
Saturday, May 11, 2013	Batch 107	45,600	45,600
Sunday, May 12, 2013	None	None	None
Monday, May 13, 2013	Batch 112	48,300	49,500
Tuesday, May 14, 2013	Batch.117	48,300	49,500
Wednesday, May 15, 2013	Batch 119	48,700	49,500

Starting Date	*5/9/2013 4:03*
Ending Date	[redacted]

MSD - Missouri River Tracking Table							
Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)
Thursday, May 09, 2013	Batch 100	18,896	5/9/2013 4:03	5/10/2013 4:09	24.1	840	783.5
Friday, May 10, 2013	Batch 105	17,502	5/10/2013 4:09	5/11/2013 4:09	24.0	840	729.3
Saturday, May 11, 2013	Batch 107	6,610	5/11/2013 4:09	5/11/2013 15:01	10.9	840	609.2
Sunday, May 12, 2013	Batch 114	0	5/11/2013 15:01	5/13/2013 4:00	37.0	840	0.0
Monday, May 13, 2013	Batch 114	328	5/13/2013 4:00	5/14/2013 4:00	24.0	840	13.7
Tuesday, May 14, 2013	Batch 114	0	5/14/2013 4:00	5/15/2013 8:21	28.4	840	0.0
Wednesday, May 15, 2013	Batch 114	17,502	5/15/2013 8:21	5/16/2013 5:31	21.2	840	826.9

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature] Title: Environmental Specialist Date: 5/16/2013

Weekly Volume Summary 1 (5-9-13 through 5-15-13)

MSD

RECEIVED
5/16/2013

METROPOLITAN ST. LOUIS SEWER DISTRICT
OFFICE of ENVIRONMENTAL COMPLIANCE
10 EAST GRAND AVENUE
ST. LOUIS, MISSOURI 63147

Bridgeton Landfill, LLC

May 16, 2013

Doug Mendoza
Industrial Pretreatment Manager
Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103

RE: REQUEST FOR VARIANCE FROM DISTRICT LIMITATIONS FOR BRIDGETON LANDFILL DISCHARGE (Discharge Permit No. 0511559802-2)

Bridgeton Landfill, LLC requests a variance from Article V, Section 2.C of MSD Ordinance 12559. In MSD's April 24, 2013 Response to Bridgeton Landfill's April 19, 2013 Proposal for Resumption of Direct Discharge from Bridgeton Landfill, MSD granted a temporary variance from the permit limitation for total zinc discharged to the collection system for the Missouri River Wastewater Treatment Plant. In this request we ask that MSD grant similar variances for arsenic and mercury with conditions as follows:

- The arsenic limit shall be set on a mass basis not to exceed 0.722 pounds of total arsenic per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day. ✓
- The mercury limit shall be set on a mass basis not exceed 0.018 pounds of total mercury per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 216,000 gallons per day. ✓

Regarding zinc discharge, Bridgeton requests a modification of the variance previously granted by MSD as follows:

- The zinc limit shall be set on a mass basis not exceed 5.414 pounds of total zinc per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 200,000 gallons per day. ✓ ← 216,000 GPD

The attached table shows the maximum allowable loadings under permit concentrations and flows, actual concentrations from the past four sampling events and the estimated actual loadings under conditionally approved flows of 20,000 gpd.

If you have any questions about this request, feel free to contact me at (314) 744-8195 or Ed Galbraith with Barr Engineering at (573) 638-5024.

Sincerely,

Craig Almanza
Area Environmental Manager

13570 St. Charles Rock Road • Bridgeton, Missouri • Tel: 314-744-8165

METROPOLITAN ST. LOUIS SEWER DISTRICT
DIVISION OF ENVIRONMENTAL COMPLIANCE
10 EAST GRAND AVENUE
ST. LOUIS, MISSOURI 63147

VARIANCE APPLICATION FORM

MSD Ordinance No. 12559, Article VI, Section 2.B

1. Company Name: **Bridgeton Landfill, LLC**

2. Mailing Address: **12976 St. Charles Rock Road, Bridgeton, MO 63044**
(314) 744-8195

3. Premise Address: **Same**

4. Cite the specific section of Ordinance No. 12559 from which a variance is being sought:
Article V, Section 2.C

5. State the reason a variance is being sought. Be specific. Attach additional sheets if needed:
Bridgeton Landfill cannot meet its current permitted concentrations, however because of the reduction in flow, Bridgeton Landfill can meet mass based limitations that are derived from current permit flow assumptions.

6. If this variance request proposes a change of pollutant limitations, list the type and proposed alternative limitations using appropriate units:. **See accompanying letter**

7. State the length of time for which the variance is requested: **Two years**

8. Will compliance with the Ordinance requirement result in unreasonable costs, without comparable public benefit: **Bridgeton Landfill is currently evaluating treatment technologies to determine the feasibility and cost of pretreating the liquid to meet permit limits.**

Yes _____ No _____

If Yes, please summarize the costs below. Attach additional sheets showing the detailed sample analyses, consultant reports, or vendor information used to support these costs.

Cost of meeting Ordinance requirements: $_____

Cost under proposed variance: $_____

Cost savings: $_____

9. CERTIFICATION:

"I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. To the best of my knowledge and belief, granting of this variance will not result in violation of any of the conditions of Article VI, Subsection 2.B(1) through (5) of Metropolitan St. Louis Sewer District Ordinance No. 12559."

Print name and title of signing official:

Craig Almanza

Area Environmental Manager

Signature: Craig Almanza

Date: 5-16-13

Table 2
General Parameters and Metals - Detects Only
February - May 2013
Bridgeton Landfill

		Parameter	Antimony Dissolved	Antimony Total	Arsenic Dissolved	Arsenic Total	Beryllium Dissolved	Beryllium Total	Cadmium Dissolved	Cadmium Total	Chromium Dissolved	Chromium Total	Copper Dissolved	Copper Total	Iron Dissolved	Iron Total	Lead Dissolved	Lead Total	Mercury Dissolved	Mercury Total	Nickel Dissolved	Nickel Total	Selenium Dissolved	Selenium Total	Silver Dissolved	Thallium Dissolved	Thallium Total	Zinc Dissolved	Zinc Total
		Total or Dissolved																											
Location	Date	Data Status																											
MSD Batch 71	4/29/2013	Validated	0.055	0.060	0.44	0.48	0.0012	0.0017	0.048	0.062	0.20	0.23			580	780	0.10	0.16		0.014	0.071	0.082	0.031	0.017		0.025		12	13
MSD Batch 74	4/28/2013	Validated	0.062	0.068	0.53	0.55	0.0013	0.0019	0.047	0.064	0.20	0.23		0.0023	580	850	0.11	0.20		0.029	0.070	0.086	0.023		0.0021	0.030		12	13
MSD Batch 77	4/30/2013	Validated	0.052	0.065	0.43	0.46	0.0014	0.0019	0.053	0.070	0.22	0.24			720	990	0.12	0.20		0.011	0.072	0.080	0.037	0.036		0.025	0.022	14	15
Treat Commingled MSD	4/5/2013	QC Pending	0.11	0.068	0.47	0.52		0.0020	0.020	0.028	0.21	0.24	0.017	0.021	580	890	0.16	0.25	0.042	0.042	0.11	0.12	0.080	0.050		0.088	0.058	18	19
		Low (mg/l)	0.052	0.060	0.43	0.46	0.0012	0.0017	0.020	0.028	0.20	0.23	0.017	0.002	580	780	0.10	0.16	0.042	0.011	0.070	0.080	0.023	0.017	0.0021	0.025	0.022	12	13
		High (mg/l)	0.11	0.068	0.53	0.55	0.0014	0.0020	0.053	0.070	0.22	0.24	0.017	0.021	720	990	0.16	0.25	0.042	0.042	0.11	0.12	0.090	0.050	0.0021	0.088	0.058	18	19
		Average (mg/l)	0.070	0.063	0.47	0.50	0.0013	0.0019	0.042	0.056	0.21	0.24	0.017	0.012	635	878	0.12	0.20	0.042	0.024	0.081	0.092	0.045	0.034	0.0021	0.042	0.040	14	15

999 Exceeds MSD Permit Concentration

Table 1 - Bridgeton Landfill Treated Leachate Metals Concentration and Mass Loading

Analyte	Discharge Permit No. 0511559802-2 Limit (mg/L)	Permitted Loading to Missouri River WWTP[a] (lbs/day)	Current Parameter Concentration (mg/L)*	Current Loading to Missouri River WWTP[b] (lbs/day)
Arsenic, Total	0.4	0.722	0.55	0.092
Cadmium, Total	0.7	1.263	0.070	0.012
Chromium, Total	5	9.024	0.24	0.040
Copper, Total	2.7	4.873	0.021	0.004
Lead, Total	0.4	0.722	0.25	0.042
Mercury, Total	0.01	0.018	0.042	0.007
Nickel, Total	2.3	4.151	0.12	0.020
Zinc, Total	3	5.414	19	3.171

NOTES:

a - Based on a permitted volume of 216,255 GPD and permit concentration limits

b - Based on volume of 20,000 GPD, approved by MSD on April 24, 2013

*Maximum value from MSD Batch 71, 74, 77 and Treated Commingled

PLANT Q=	29.5 MGD	MSD LOCAL LIMITS		SLUDGE Q=	8.1 DRY TON/DAY
RESID. Q=	26.5 MGD	RUN DATE	05/24/13	SLUDGE TS =	2.5 %
INDUST Q=	3 MGD	MISSOURI RIVER		ACU STRM Q=	16520 CFS
		INPUT VALUES (MG/L)		CHR STRM Q=	18593 CFS

POLLUTANT (MG/L)	NPDES LIMITS	CHRONIC STAND.	TFIL.INH. LEVEL	AN.INH. LEVEL	SLUDGE STD. (MG/KG)	ACUTE STAND.	STREAM BACKGR.
SB		0.0060				###########	
AS		0.0200		1.6	2525	###########	
BE		0.0040				###########	
CD		0.0003		20.0	2402	0.0071	0.0000
CR		0.1030	35.55	130.0		0.7940	0.0000
CU		0.0100		40.0	92386	0.0200	0.0000
CN		0.0050	30.00	100.0		0.0220	
FE		0.3000				###########	0.0000
PB		0.0040		340.0	18477	0.1000	0.0000
MN		0.0500				###########	0.0000
HG		0.0005			1047	0.0024	
NI		0.0730		136.0	25868	0.6600	0.0000
PHE		0.1000				###########	
SE		0.0050			6159	###########	
AG		###########		65.0		0.0065	
ZN		0.1510		400.0	172454	0.1650	0.0000

ALLOWABLE HEADWORKS LOADING (LBS/D)

POLLUTANT (LBS/D)	NPDES CRITERIA	WATER CRITERIA	TFIL.INH. CRITERIA	AN.INH. CRITERIA	SLUDGE CRITERIA	PRIMARY REMOVE %	TOTAL REMOVE %
SB		15183				71	99
AS		3374		1	48	42	85
BE		169				20	40
CD		35		16	49	68	79
CR		4363	16739	153		48	55
CU		194		35	2003	60	75
CN		133	12302	110		40	59
FE		19465				37	61
PB		327		319	433	52	69
MN		2109				20	40
HG		16			27	74	62
NI		1909		606	2881	40	15
PHE		15816				22	84
SE		189			301	14	33
AG		58		58		59	73
ZN		1007		435	4681	41	60

OUTPUT VALUES - LOCAL LIMITATIONS (MG/L)

POLLUTANT (MG/L)	NPDES CRITERIA	WATER CRITERIA	TFIL.INH. CRITERIA	AN.INH. CRITERIA	SLUDGE CRITERIA	FINAL LIMITS	DOMESTIC BACKGR.
SB		546.099				546.099	0.0062
AS		121.367		0.044	1.726	0.044	0.0000
BE		6.068				6.068	0.0000
CD		1.268		0.590	1.775	0.590	0.0003
CR		156.900	602.108	5.466		5.466	0.0035
CU		6.610		0.883	71.681	0.883	0.0413
CN		4.757	442.485	3.927		3.927	0.0018
FE		688.474				688.474	1.3272
PB		11.679		11.394	15.492	11.394	0.0075
MN		74.463				74.463	0.1576
HG		0.560			0.980	0.560	0.0002
NI		68.644		21.802	103.635	21.802	0.0014
PHE		568.872				568.872	0.0043
SE		6.793			10.843	6.793	0.0000
AG		2.094		2.076		2.076	0.0010
ZN		34.899		14.299	167.054	14.299	0.1513

RUN DATE
05/24/13

MSD LOCAL LIMITS
FINAL LIMITS
FOR EACH PLANT

POLLUTANT (MG/L)	BISSELL POINT	LEMAY STP	COLDWATER CREEK	MISSOURI RIVER	GRAND GLAIZE		FINAL LARGE	FINAL SMALL
SB	267.53	710.72	587.71	546.10	24.16		267.53	24.16
AS	2.62	2.58	0.21	0.04	1.59		0.04	1.59
BE	0.07	0.44	0.49	6.07	0.27		0.07	0.27
CD	0.62	0.24	1.56	0.59	0.05		0.24	0.05
CR	83.83	196.83	10.80	5.47	18.35		5.47	18.35
CU	3.47	9.84	2.98	0.88	0.68		0.88	0.68
CN	2.54	1.85	7.21	3.93	2.00		1.85	2.00
FE	334.89	2309.88	1914.13	688.47	66.27		334.89	66.27
PB	5.71	48.49	24.42	11.39	0.80		5.71	0.80
MN	36.20	96.27	80.09	74.46	1.82		36.20	1.82
HG	0.07	0.13	0.38	0.56	0.05		0.07	0.05
NI	36.68	124.28	12.10	21.80	10.87		12.10	10.87
PHE	278.69	408.45	337.76	568.87	13.84		278.69	13.84
SE	3.33	8.74	7.23	6.79	0.30		3.33	0.30
AG	0.51	2.74	4.39	2.08	2.04		0.51	2.04
ZN	18.43	59.53	37.05	14.30	3.36		14.30	3.36

POLLUTANT (LB/DAY)	ALLOW LARGE	ACTUAL LARGE	INDUST. LARGE	RESID. LARGE	ALLOW SMALL	ACTUAL SMALL	INDUST. SMALL	RESID. SMALL
SB	44134.28	0.00	0.03	5.64	358.99	0.00	0.00	0.81
AS	1.22	1.04	0.07	0.00	23.53	0.05	0.00	0.00
BE	10.81	0.00	0.00	0.00	3.98	0.00	0.00	0.00
CD	15.12	0.35	0.02	0.24	0.77	0.07	0.03	0.04
CR	152.74	1.07	0.09	0.78	272.50	0.33	0.27	0.46
CU	33.70	12.25	1.56	9.14	15.48	4.49	0.32	5.38
CN	118.26	117.13	0.14	1.55	29.82	0.51	0.02	0.23
FE	56448.80	6195.01	393.98	1209.79	1155.19	214.98	0.98	172.67
PB	948.38	13.85	2.83	6.84	12.84	1.13	0.31	0.98
MN	6113.89		0.00	143.63	47.47		0.00	20.50
HG	11.36	0.22	0.00	0.16	0.70	0.03	0.00	0.02
NI	269.37	0.62	0.11	0.27	161.38	1.69	3.09	0.18
PHE	45973.43	0.37	1.10	3.96	205.79	0.00	0.04	0.56
SE	548.94	0.68	0.01	0.00	4.41	0.09	0.00	0.00
AG	84.70	1.41	0.63	0.90	30.35	0.32	0.08	0.13
ZN	430.95	29.56	6.03	33.43	69.54	16.32	3.02	19.68

FINAL LIMITS COMPARISONS AND SELECTION

POLLUTANT (MG/L)	FINAL LARGE	EXISTING LIMIT	NEW LARGE	REASON CODE	FINAL SMALL	EXISTING LIMIT	NEW SMALL	REASON CODE
SB	267.53	0.50	0.50	1	24.16	0.50	0.50	1
AS	0.04	0.40	0.40	2	1.59	0.30	0.30	1
BE	0.07	0.40	0.40	3	0.27	0.10	0.10	1
CD	0.24	0.70	0.70	3	0.05	0.40	0.07	4
CR	5.47	5.00	5.00	1	18.35	5.00	5.00	1
CU	0.88	2.70	2.70	2	0.68	1.50	0.70	4
CN	1.85	0.40	0.40	1	2.00	0.10	0.10	1
FE	334.89	150.00	150.00	1	66.27	25.00	25.00	1
PB	5.71	0.40	0.40	1	0.80	0.20	0.20	1
MN	36.20				1.82			
HG	0.07	0.01	0.01	1	0.05	0.01	0.01	1
NI	12.10	2.30	2.30	1	10.87	1.00	1.00	1
PHE	278.69	7.00	7.00	1	13.84	0.05	7.00	5
SE	3.33	0.20	0.20	1	0.30	0.20	0.20	1
AG	0.51	0.50	0.50	1	2.04	0.50	0.50	1
ZN	14.30	3.00	3.00	1	3.36	3.00	3.00	1

REASON CODES:

1. Used ordinance EXISTING LIMIT because it is more protective than calculated FINAL.
2. Used ordinance EXISTING LIMIT because while ACTUAL loading approaches ALLOWable loading, allowable is based on anaerobic inhibition literature value
3. Used ordinance EXISTING LIMIT because ACTUAL loading is less than calculated ALLOWable loading.
4. Used NEW SMALL limit because, while ACTUAL loading is much less than ALLOWable loading, NPDES limits were the limiting criteria.
5. Used NEW SMALL limit because ALLOWable and ACTUAL loadings are much less than EXISTING LIMIT.

PIMS
FIELD SAMPLING REQUIREMENTS BY SELECTED POLLUTANT
FOR T306000 Arsenic (Total)

Industry Name / Account No / SPN	Frequency	Due Date	Address / Stop Date	City	State	Zip	
1041854800		**BFI WASTE SYSTEMS OF NORTH AMERICA INC**	2520 Adie Road	Maryland Heights	MO	63043	→ 0.017, 0.031, 0.011 mg/L; 24K GPD → 0.006 lb/day
001	Once/3 mo	06/30/2013		CW			
7777704200		**BFI WASTE SYSTEMS OF NORTH AMERICA LLC**	1700 Cecos Ln.	Arnold	MO	63010	
002	Once/year	06/30/2013		CW			
X002517800		**BISSELL POINT WWTP**	10 E. Grand	St. Louis	MO	63147	
697	Once/6 mo	06/30/2013		CW			
701	Once/6 mo	06/30/2013		CW			
705	Once/6 mo	06/30/2013		CW			
799	Once/6 mo	06/30/2013		CW			
1036497600		**BOEING COMPANY**	Lambert Field	Hazelwood	MO	63042	
013	Once/year	06/30/2013		CW			
1003803000		**BRIDGETON LANDFILL LLC**	13570 St. Charles Rock Road	Bridgeton	MO	63044	
007	Once/3 mo	06/30/2013		CW			
1007464400		**CHEVRON CHEMICAL CO**	2497 Adie Road	Maryland Heights	MO	63043	→ 0.584, 0.334, 0.164 mg/L; storm infiltration → ?? lb/day; @ 1 GPM = 0.007 lb/day
001	Once/year	06/30/2013		CW			
X002516000		**COLDWATER CREEK WWTP**	13798 Old Halls Ferry Road	Florissant	MO	63034	
610	Once/6 mo	06/30/2013		CW			
701	Once/6 mo	06/30/2013		CW			
705	Once/6 mo	06/30/2013		CW			
799	Once/6 mo	06/30/2013		CW			
X008612600		**FENTON WWTP**	75 Opps Lane	Fenton	MO	63026	
799	Once/6 mo	06/30/2013		CW			
X010136200		**GRAND GLAIZE WWTP**	1000 Grand Glaize Pkwy	Valley Park	MO	63088	
640	Once/6 mo	06/30/2013		CW			
701	Once/6 mo	06/30/2013		CW			
799	Once/6 mo	06/30/2013		CW			
1015950000		**ICL PERFORMANCE PRODUCTS LP**	8201 Idaho Avenue	St. Louis	MO	63111	
003	Once/3 mo	03/31/2013		CW			
005	Once/3 mo	03/31/2013		CW			
1042821600		**IESI MO CHAMP LANDFILL**	2305 Creve Coeur Mill Road	Maryland Heights	MO	63043	→ 0.102, 0.062, 0.062 mg/L; 255K GPD → 0.22 lb/day
001	Once/3 mo	06/30/2013		CW			
1011727700		**KIESEL COMPANY**	1 Branch Street	St. Louis	MO	63147	
004	Once/year	06/30/2013		CW			
X002515100		**LEMAY WWTP**	201 Hoffmeister Ave.	St. Louis	MO	63125	
622	Once/6 mo	06/30/2013		CW			

→ 0.55 mg/L, 216K GPD } 0.99 lb/day
@ 20K GPD → 0.09 lb/day
@ 30K GPD → 0.14 lb/day

MO RIVER INFL READINGS = ND (<0.008 mg/L) ~2.7 lb
0.006 + 0.007 + 0.22 = 0.233 lb/day
x 2 [SAFETY] = 0.466 lb/day used
MO River – Aq. Life crit. = 1 lb/day
42% pt. rem. → 1.7 lb/day
?? ~1.25 lb/day avail?

MSD 026598

PIMS
FIELD SAMPLING REQUIREMENTS BY SELECTED POLLUTANT
FOR T306000 Arsenic (Total)

Industry Name / Account No / SPN	Frequency	Due Date / Stop Date	Address	City	State	Zip
623	Once/6 mo	06/30/2013		CW		
701	Once/6 mo	06/30/2013		CW		
705	Once/6 mo	06/30/2013		CW		
799	Once/6 mo	06/30/2013		CW		
X012794900	**LOWER MERAMEC TREATMENT PLANT**		8349 Fine Road	St. Louis	MO	63129
701	Once/6 mo	06/30/2013		CW		
705	Once/6 mo	06/30/2013		CW		
799	Once/6 mo	06/30/2013		CW		
1043376500	**MERRELL BROS INC ST LOUIS DISPOSAL**		6400 McKissock Ave.	St. Louis	MO	63147
001	Once/3 mo	03/31/2013		CW		
X000439100	**MISSOURI RIVER WWTP**		3455 Creve Coeur Mill Rd.	St. Louis	MO	63146
630	Once/6 mo	06/30/2013		CW		
701	Once/6 mo	06/30/2013		CW		
705	Once/6 mo	06/30/2013		CW		
799	Once/6 mo	06/30/2013		CW		
1046096500	**OBCORP LLC**		1900-1910 Crystal Industrial Court	St. Louis	MO	63114
001	Once/year	06/30/2013		CW		
1024298300	**POLYONE CORP**		834 Ohio	St. Louis	MO	63103
003	Once/year	06/30/2013		CW		
7777708400	**PROCTER & GAMBLE PAPER PRODUCTS CO**		8484 State Hwy 177	Jackson	MO	63755
004	Once/year	06/30/2013		CW		
006	Once/year	06/30/2013		CW		
1016347400	**ROCK HILL QUARRIES COMPANY**		1233 N. Rock Hill Road	St. Louis	MO	63124
001	Once/year	06/30/2013		CW		
1024440800	**STANDARD MACHINE & MFG CO**		10014 Big Bend Blvd	St. Louis	MO	63122
006	Once/year	06/30/2013		CW		
1011953300	**STERICYCLE INC**		6240 McKissock	St Louis	MO	63147
003	Once/3 mo	03/31/2013		CW		

Industries monitored for Arsenic in Mo River STP area:

BFI Waste Systems, 2520 Adie Road
3 highest recent As: 0.017 mg/L, 0.031 mg/L, 0.011 mg/L
for 0.031, 24K GPD, 0.006 lb/day

Chevron Chemical, 2497 Adie Road
3 highest recent As: 0.589 mg/L, 0.334 mg/L, 0.164 mg/L
for 0.589, storm infiltration only, use 1 GPM?, 0.007 lb/day

IESI MO Champ Landfill, 2305 Creve Coeur Mill Road
3 highest recent As: 0.102 mg/L, 0.062 mg/L, 0.062 mg/L
for 0.102, 255K GPD, 0.22 lb/day

0.006 + 0.007 + 0.22 = 0.233 lb/day
x2 [for safety] = 0.466 lb/day used

from last local limits, MO River anaerobic inhibition = 1 lb/day
40% primary removal, up to 1.7 lb/day

So ~1.25 lb/day available??

MO River STP influent readings all ND (<0.008 mg/L)
which for 40 MGD still could theoretically be up to 2.7 lb/day

Bridgeton Landfill

As of 0.55 mg/L, @ 216K GPD, 0.99 lb/day
@20K GPD, 0.091 lb/day
@30K GPD, 0.141 lb/day

MSD

BRIDGETON LANDFILL LLC
1003803000

Christopher J. Bulmahn

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Wednesday, May 15, 2013 4:32 PM
To: Doug Mendoza; John Lodderhose; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill - Update for Saturday May 11th - follow up

Good afternoon,

I wanted to confirm for you that Bridgeton Landfill was able to complete necessary meter repairs and resume discharge to Missouri River Treatment Facility today.

As a quick summary, which our team can provide more information on during your meeting tomorrow, it was determined that somehow the read-out settings for the meter had been adjusted to reflect an incorrect pipe size (larger pipe diameter). This resulted in the meter showing a greater flow rate even though the actual flow was properly controlled by the computer system. This read out error was fixed and the meter was locked to prevent any inadvertent changes in the future. It still allows users to page through to obtain information. Additionally, the facility team completed installation of the display on the exterior of the secondary containment to allow MSD personnel to confirm the read out without having to climb into secondary containment.

We look forward to your review of the new read-out next time you are on site. Please let us know if you have any questions.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Monday, May 13, 2013 8:29 AM
To: Merrigan, Jessie; John Lodderhose; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Lovie Lewis
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally; Sehie, Bryan
Subject: RE: Bridgeton Landfill - Update for Saturday May 11th

Yes, Jessie, our crews had noticed the display outage on Friday. Please let us know when it is fixed.

DW

Doug Mendoza **MSD**

From: Smith, Steve <ssmith10@republicservices.com>
Sent: Wednesday, May 15, 2013 9:43 AM
To: John Lodderhose; Ed Galbraith; Doug Mendoza
Cc: Dan Feezor (dfeezor@feezorengineering.com); Nora C. Estopare
Subject: RE: Agenda for Bridgeton Landfill/MSD Mtg

John,

Let me see if Craig Almanza is available to attend tomorrow's meeting as he has the most knowledge on the thermal event.

Steve

Steve Smith | Area Environmental Manager | Republic Services
13832 S. Kostner Ave | Crestwood, IL 60445 | ☎: 708-297-3941 | : 708-906-8054 | ✉: ssmith10@republicservices.com

---

From: John Lodderhose [mailto:JRLODD@stlmsd.com]
Sent: Wednesday, May 15, 2013 9:18 AM
To: Ed Galbraith; Doug Mendoza
Cc: Dan Feezor (dfeezor@feezorengineering.com); Smith, Steve; Nora C. Estopare
Subject: RE: Agenda for Bridgeton Landfill/MSD Mtg

Ed, please add a discussion item for the long-term treatment system. We would like to know what types of leachate treatment are being considered (e.g. MBR) and the timeframe for the design and installation.

I think we would also like to get some information about the status of the "thermal event". It would be helpful to know:

1. Where is the fire located
2. How close is the fire to the old Westlakes Landfill
3. What is being done to control/eliminate the fire
4. What is the timeframe for these actions

Thanks

John R. Lodderhose, P.E.
Metropolitan St. Louis Sewer District
Assistant Director of Engineering
Environmental Compliance
314-436-8714

From: Ed Galbraith [mailto:EGalbraith@barr.com]
Sent: Wednesday, May 15, 2013 8:30 AM
To: John Lodderhose; Doug Mendoza
Cc: Dan Feezor (dfeezor@feezorengineering.com); Steve Smith
Subject: Agenda for Bridgeton Landfill/MSD Mtg

John and Doug, please forward to the others. Thanks

Ed Galbraith
Barr Engineering

MSD

Doug Mendoza

From: John Lodderhose
Sent: Wednesday, May 15, 2013 9:18 AM
To: Ed Galbraith; Doug Mendoza
Cc: Dan Feezor (dfeezor@feezorengineering.com); Steve Smith; Nora C. Estopare
Subject: RE: Agenda for Bridgeton Landfill/MSD Mtg

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John R. Lodderhose, P.E.
Metropolitan St. Louis Sewer District
Assistant Director of Engineering
Environmental Compliance
314-436-8714

From: Ed Galbraith [mailto:EGalbraith@barr.com]
Sent: Wednesday, May 15, 2013 8:30 AM
To: John Lodderhose; Doug Mendoza
Cc: Dan Feezor (dfeezor@feezorengineering.com); Steve Smith
Subject: Agenda for Bridgeton Landfill/MSD Mtg

John and Doug, please forward to the others. Thanks

Ed Galbraith
Barr Engineering
Egalbraith@barr.com
573-418-5562

Sent from my iPhone

MSD

WEAVER
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CONSULTANTS

May 13, 2013

Mr. Chris Bulmahn
Environmental Engineer
Metropolitan St. Louis Sewer District
10 East Grand Avenue
St. Louis, MO 63147-2913

Re: Metropolitan St. Louis Sewer District – Administrative Compliance Order
Action Item #4 (Continued) and Progress Report
Bridgeton Landfill, LLC. 1003803000
Discharge Permit No. 0511559802-2

Dear Mr. Bulmahn:

On behalf of the Bridgeton Landfill, in accordance with the Metropolitan St. Louis Sewer District (MSD) Administrative Compliance Order (AO), which was signed by legal representatives of MSD and the Bridgeton Landfill, LLC and entered effect on October 29, 2012, respectfully submits this schedule of actions as outlined in the AO, Action Item #4.

As required per Action Item #4, the Bridgeton Landfill shall submit a schedule, for MSD approval, of actions for the design, installation, and operation of the procedures and pretreatment options identified in AO Finding #8 which states that the Bridgeton Landfill is in the process of investigation for the implementation of the following pretreatment options in which to eliminate the occurrence of future prohibited discharges at Leachate Outfall 008:

a.) Installation and operation of a supplemental "enclosed" flare, as well as a supplemental "candlestick" utility flare within the landfill's gas collection and control system;
b.) Design and operation of air monitoring/moving engineering controls at the landfill's outfall to the MSD sewer system within the Westlake Pump Station, and;
c.) Installation and operation of a foam suppressing agent. The following table outlines current progress and planned actions to be taken at the Bridgeton Landfill in regard to the aforementioned items.

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Weaver Boos Consultants North Central, LLC
1813 N. Mill St. • Unit A • Naperville, IL 60563
Phone: (630) 717-4848• Fax: (630) 717-4850 • www.weaverboos.com

Finding No.	Proposed Option	Complete (Yes/No)	Completion Date
8a(1)	Installation and Operation of Additional Enclosed Flare	Yes	2-Oct-12
8a(2)	Installation and Operation of Supplemental Candlestick Flare	Yes	18-Jul-12
8b	Design and Operation of Air Monitoring/Moving Engineering Controls within Westlake Pump Station	No	Est. 20-May-13
8c	Installation and Operation of a Foam Suppression Agent	No	Installation Suspended

The Bridgeton Landfill completed the construction and testing phases of the supplemental candlestick flare on July 18, 2012 (Finding 8a(2)). This flare was subsequently replaced with a larger 3,500 scfm candlestick flare that became operational in January 2013. The replacement flare is currently fully operational, adding an additional gas extraction capacity of 1,000 scfm above the previous candlestick flare. The replacement candlestick flare is designed to work in tandem with the facility's two 3500 scfm enclosed flare to extract gases from within the landfill waste mass and route them to thermal destruction.

The second of the enclosed flare was officially brought online October 2, 2012. The new enclosed flare, similar to the facility's existing enclosed flare, adds additional 3500 scfm of gas extraction capacity to the landfill's gas collection and control system. The combined flow of the three operational flares is 10,500 scfm which allows the ability to improve landfill gas collection and odors at the facility and the surrounding environment. Each of the flares are operated and maintained under a site-specific program which is designed to enable landfill personnel to minimize downtime and provide peak system performance efficiency.

The design and development of the air quality engineering controls to be constructed and operated at the Westlake Pump Station (Finding 8b), were completed on December 20, 2012. Prior to finalization of the system design, meetings regarding the development of a plan of action for the preparation and construction of these air quality engineering controls were held at the MSD office on August 21, 2012, and September 24, 2012 between; MSD Environmental Compliance and Operations representatives; and Bridgeton Landfill personnel. Additionally, series of on-site meetings were held at the Westlake Pump Station, involving the aforementioned parties, to determine the design of the system and to secure an incoming power supply.

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On January 7, 2013 the Bridgeton Landfill purchased each of the necessary components to undertake the system's construction and operation. All components of the system have now been received and delivered to MSD preferred contractor, Municipal Electric / Electric Controls Company (ECC). Materials were delivered to the contractor on April 5, 2013 immediately following their reception. The Bridgeton Landfill's engineering contractor, Landmarc Environmental Systems, has been working with ECC and MSD on the installation of the system since April 15, 2013. All components of the system are now in place. The system was inspected by the St. Louis County Department of Public Works and granted a temporary-on status. The results of this inspection were passed along to Ameren on May 8, 2013, who is scheduled to perform the electrical power drop during the week of May 13, 2013. On May 20, 2013 a technician from MSA will be onsite at the pump station to meet with both Bridgeton Landfill and MSD personnel to calibrate the system and provide operation and maintenance training. As of the date of this report, the following schedule of action is anticipated:

Item	Estimated Completion Date
Underground Utility Location	4/19/13
Ameren Power Installation	5/1/13
Air Quality Monitor Delivery	Received
Drum Scrubber Delivery	Received
Telog Call Unit Delivery	Received
Construction of Air System	Est. 5/20/13

In a letter from MSD dated December 4, 2012, it was declared that the Bridgeton Landfill was no longer required to construct and operate a foam suppression system at the facility unless future foaming incidents occur. The Bridgeton Landfill will continue to monitor the Westlake Pump Station as well as the Leachate Tank System for indicators of foaming.

Please contact Bryan Sehie with Bridgeton Landfill at 314-744-8190 or myself at 573-289-3379 if you have any questions or comments.

Sincerely,
Weaver Boos Consultants

Michele A Boussad
Michele Boussad
Senior Project Director

Cc: Bryan Sehie, Bridgeton Landfill, LLC.

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Doug Mendoza

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Wednesday, May 15, 2013 8:30 AM
To: John Lodderhose; Doug Mendoza
Cc: Dan Feezor (dfeezor@feezorengineering.com); Steve Smith
Subject: Agenda for Bridgeton Landfill/MSD Mtg
Attachments: MSD AND BRIDGETON LANDFILL ISSUES MEETING 05162013.docx; ATT00001.htm

John and Doug, please forward to the others. Thanks

Ed Galbraith
Barr Engineering
Egalbraith@barr.com
573-418-5562

Sent from my iPhone

MSD AND BRIDGETON LANDFILL TECHNICAL ISSUES MEETING

MAY 16, 2013

AGENDA

1. Introductions
2. Updates
    a. Discharges to Bissell Point and MO River (Steve and Dan)
    b. Sampling data – FTP Site (Ed)
    c. Lift station update (Steve)
    d. Air sampling data (Steve)
3. Conditional Approval Status Report (All)
4. Future Discharges
    a. No increase requested for Mo River at this time
    b. Bissell Point
5. Approved SOP changes (Steve)

Doug Mendoza MSD

From: Doug Mendoza
Sent: Monday, May 13, 2013 8:29 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Lovie Lewis
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: RE: Bridgeton Landfill - Update for Saturday May 11th

Yes, Jessie, our crews had noticed the display outage on Friday. Please let us know when it is fixed.

Regarding Saturday's deliveries, this is what/when they occurred:

- First load-arrival-6:54 discharge started 7:00
- Second load-arrival 7:08 discharge started 7:30
- Third load –arrival 8:26 discharge started 8:35
- Forth load-arrival 9:06 discharge started 9:15
- Fifth load-arrival 10:03 discharge started 10:10
- Sixth load-arrival 10:50 discharge started 11:00

- Each load takes approximately 20 minutes to discharge.

Keeping at this type of schedule should be acceptable for the current discharge volume. Thank you for inquiring.

Doug Mendoza

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Saturday, May 11, 2013 5:19 PM
To: Doug Mendoza; John Lodderhose; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Lovie Lewis
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: Bridgeton Landfill - Update for Saturday May 11th

Good afternoon,

We just wanted to provide a quick update that Bridgeton Landfill has temporarily ceased discharge to the Missouri River Treatment Facility. Earlier today the display on the new flow meter malfunctioned. While information sent to the SCADA system still showed the acceptable set flow rate was being maintained, the facility team determined that the most conservative approach would be to cease discharge and close the valve until the meter error could be corrected. Without that fix it would not be possible for flow to be confirmed at the tank, as is the typical practice for MSD site visits. Landmark will be on site Monday to repair that and install the meter display on the outside of the

MSD

Doug Mendoza

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Also we would appreciate any feedback on today's deliveries to the Bissell Point plant as we want to ensure that the Saturday flow is appropriately spaced.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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✓ DM

Doug Mendoza MSD

From: Darin Lewis
Sent: Saturday, May 11, 2013 11:29 AM
To: Catherine Politte; Mike Townley; Doug Mendoza; Brian G. Gibson; Steve Grace; Sara Kammerer
Subject: Bridgeton Landfill Leachate weekly volume summary

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant for 5/6/2013 to 5/11/2013.
5/6 – 48,500 gallons
5/7 – 48,400 gallons
5/8 – 48,200 gallons
5/9 – 48,600 gallons
5/10 – 48,600 gallons
5/11 – 45,600 gallons
Total = 287,900 gallons

MSD

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, May 10, 2013 3:27 PM
To: Doug Mendoza; John Lodderhose; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Lovie Lewis
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG); Sehie, Bryan
Subject: Bridgeton Landfill Notice of Weekly Submission and Response to MSD Questions
Attachments: MSD Batches.pdf; MSD Batches 86 -100.pdf; RE: Weekly Data Update

Good afternoon,

We appreciate your review of the extensive amount of documentation that was uploaded last week, and appreciate your follow up on pending items. This e-mail is submitted on behalf of Bridgeton Landfill, LLC and serves as both a response to the questions outlined in your email today as well as a notice that the weekly submission is available on the FTP site for your download and review.

To keep things all together, responses have been added to your table below. If it would be easier, we could export this to an Excel table to track these items, we can do whatever works based on the pending items. We hope this update is helpful and shows the continued progress.

Reporting Requirement	Status	Necessary action by Bridgeton Landfill	Bridgeton Landfill 2013.05.10 Update
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:			
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**	Submitted. Volume in compliance. Operational batches 65, 67, 71, 74, 77, 82.		**The FTP site has been updated with the daily logs and weekly summary for discharge for the last week. As discussed at the May 2nd meeting, to allow for document compilation, QA/QC and posting, the Friday report will address all discharge from the prior Thursday-Wednesday.**
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants**	Partially submitted. Operational batches 65, 67, 71, 74, 77 via FTP. **Batch 82 not provided.**	**Submit batch 82 results. All results for this item are to be completed <u>prior to</u> discharge to MSD, regardless of when**	**Batch 82 data has been uploaded, we apologize for the oversight.**

to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		**submitted. Bridgeton landfill has indicated that one day results are achieved. Otherwise, there is no guarantee that the batches meet the reduction. This is an ongoing requirement.**	
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	**Not submitted.**	**Provide estimated date of completion for all batches that are not yet complete and submitted. Note the requirement to use EPA-approved wastewater methods. This is an ongoing requirement.**	**As discussed during the May 2nd meeting, data will be uploaded to the FTP site. All data received by COB Wednesday will be added to the summary and uploaded for the Friday weekly report (available data has been posted). Please find attached an update from Barr on the available data and expected turnaround time.**
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character**.	None required at this time.		
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**	**Not submitted.**	**Submit the items. This is an ongoing requirement.**	**Last week's SOP report is attached and has been added to the FTP site. We apologize for the oversight and this will be part of the weekly updates. This week's report is also attached, though it is available on the FTP site.**
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	Submitted. MSD will bill Bridgeton Landfill monthly after corresponding analytical data is reviewed.		**The FTP site has been updated with the daily logs and weekly summary for discharge for the last week. As discussed at the May 2nd meeting, to allow for document compilation, QA/QC and posting, the Friday report will address all discharge from the prior Thursday-Wednesday.**
MSD Terms for Special			

Discharge. Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:			
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**	Partially Submitted. Operational batches 65, 67, 71, 74, 77 via FTP. **Batch 82 not provided.**	**Submit batch 82 results. All results for this item are to be completed prior to discharge to MSD, regardless of when submitted. Bridgeton landfill has indicated that one day results are achieved. Otherwise, there is no guarantee that the batches meet the reduction. This is an ongoing requirement.**	**Batch 82 data has been uploaded, we apologize for the oversight.**
4. The daily discharge **shall not exceed 50,000 gallons per day** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP.	Volume in compliance. **Loads received for some days have not been evenly spread out.** For example, Saturday, May 4, 2013 was all delivered between 7:00 am and 10:30 am. **Any trucks that arrive for discharge too early will be required to wait before accessing the station and discharging. In the future, trucks must be evenly spread out.**	**Spread all future loads evenly throughout the operating day.**	**Based on follow up with Bissell Point representatives, Bridgeton Landfill had already informed MBI that Saturday loads would need to be better spread out. MBI drivers will accommodate this by either waiting to leave the facility, or waiting to discharge at Bissell Point, to ensure even spacing. Haul times were shorter than expected on Saturday as compared to other days, leading to faster deliveries, but we will work with MBI and the Bissell Point team to ensure this is managed moving forward.**
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**	Partially Submitted. Operational batches 65, 67, 71, 74, 77 via FTP. **Batch 82 not provided.**	**Submit batch 82 results. All results for this item are to be completed prior to discharge to MSD, regardless of when submitted. Bridgeton landfill has indicated that one day results are achieved. Otherwise, there is no guarantee that the batches meet the reduction. This is an ongoing requirement.**	**Batch 82 data has been uploaded, we apologize for the oversight.**
6. Each batch shall also be analyzed for **BOD, COD, Total**	**Not submitted.**	**Provide estimated date of completion for all batches**	**As discussed during the May 2nd meeting, data will be**

Suspended Solids, pH, Oil & Grease, VOCs by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**		**that are not yet complete and submitted. Note the requirement to use EPA-approved wastewater methods. This is an ongoing requirement.**	**uploaded to the FTP site. All data received by COB Wednesday will be added to the summary and uploaded for the Friday weekly report (available data has been posted). Please find attached an update from Barr on the available data and expected turnaround time.**
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.	None required at this time.		
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**	**Not submitted.**	**Submit the items. This is an ongoing requirement.**	**Last week's SOP report is attached and has been added to the FTP site. We apologize for the oversight and this will be part of the weekly updates. In addition to the attached data, the SOP calls for keeping manifests. However, because MSD has already received all manifests for delivery at Bissell Point, we had not intended to duplicate those for each weekly submission. Please let us know if you do need duplicate copies included. This week's report is also attached, though it is available on the FTP site.**
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion	MSD will bill Bridgeton Landfill monthly after corresponding analytical data is reviewed.		

and as allowed under MSD Ordinance No. 12716.			
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:			
• Air monitoring: o **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** oo If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** oo If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide. oo **Submit data for the constituents by May 1, 2013**. If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** oo MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**	**Not submitted.** If results not submitted by May 1, 2013, resampling must be performed by May 10, 2013. Sampling was performed under Pending air monitoring below.	**Reduced sulfur compound analytical results for the tank headspace sampling were not submitted by May 1, 2013.** **The headspace sampling must be repeated by May 10, 2013 to include reduced sulfur compounds if Bridgeton fails to provide the Pending air monitoring discussed in the next bullet by May 10, 2013.**	**Comprehensive lift station air monitoring during discharge was conducted on Tuesday April 30th. This sampling event included all components addressed in the Stantec August 2012 event, per MSD's direction, and did include reduced sulfur compounds. Sampling results will be provided as soon as available. We have followed up with Stantec and asked that they follow up with the lab to obtain both pre-discharge and during discharge data. We expect it next week, but will keep you updated. We feel that we have completed the testing requested by MSD, but are waiting on the lab results. We cannot control lab time, but intend to provide results as soon as they are available.**
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline.** Bridgeton Landfill has not yet satisfied this	Results not submitted yet.	**MSD did not give a deadline for this bullet because we felt Bridgeton understood the urgency of the air sampling by their actions of collecting these samples immediately upon hearing MSD was going to allow a conditional resumption of**	**Comprehensive lift station air monitoring was conducted on Thursday April 25th. This sampling event included all components addressed in the Stantec August 2012 event, per MSD's direction, and did include reduced sulfur**

commitment. o However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** o Please note that **MSD may require additional air sampling events**, based on the results of sampling or future concerns that may arise.		**discharge.** **Submit all available air monitoring analytical results as soon as possible, both preliminary and final as appropriate for each analyte.**	**compounds. Sampling results will be provided as soon as available. We have followed up with Stantec and asked that they follow up with the lab to obtain both pre-discharge and during discharge data. We expect it next week, but will keep you updated. We feel that we have completed the testing requested by MSD, but are waiting on the lab results. We cannot control lab time, but intend to provide results as soon as they are available.**
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013**.	Verification of completion not submitted yet.		**Bridgeton Landfill continues to work with MSD's preferred electrician, site contractors and County inspectors to complete installation and initiate operation of the system requested by MSD. We have ordered and received the equipment as directed by the District and are working with the District on installation, but completion has been delayed by factors outside of our control. We continue to work diligently with MSD on completing this work and have been regularly updating MSD on progress.**
• Leachate/wastewater monitoring: o **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** oo If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes.**	Submitted.		**Longer analytical run time data is still not available from the lab, but we will keep MSD updated and load to the FTP site when available.**

oo. If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes. oo Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.			
• Past analytical data: Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.	Submitted via FTP.		
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. o **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.	Not yet required to be submitted. However, Bridgeton Landfill submitted the following: "We believe that current treatment achieves toxicity limitations; we can submit plan of planned pretreatment as developed by June 1, 2013. However, development of full pretreatment system plan must obtain MDNR approval and is scheduled for September 1, 2013, submission. We will include MSD."	Approval of a pretreatment system by MDNR does not preclude approval of the system by MSD, but it instead an additional approval required of Bridgeton Landfill. Because MSD's June 1, 2013 deadline is before MDNR's September 1, 2013 deadline, **Bridgeton Landfill will need to schedule to meet MSD's June 1, 2013 deadline. This means submittal of a plan and schedule to install a pretreatment system. It does not mean submittal by June 1, 2013 of what Bridgeton Landfill has completed towards this plan.** Note that Bridgeton Landfill must also achieve compliance with all metals and other pollutants limited in the sewer use ordinance. Any plans should also address necessary pretreatment for this.	**It is our goal to work with MSD on development of the ultimate pretreatment system in order to ensure the system is developed to meet MSD's needs and allow for long term discharge. A final pretreatment plan is complex and will depend on evaluation of treatment needs and the treatment impact of the soon to be operational 316,000 gallon tank. Our intention for the June 1st submittal was to submit a plan that outlines the schedule and key analytical and evaluation issues to allow us to work with MSD towards development of the final plan due to MDNR by September 1st. We expect that approach is consistent with MSD's expectations for cooperation with MSD and look forward to discussing it with you in the next meeting.**
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its	Not yet required to be submitted. However, Bridgeton	The purpose of separating the gas condensate is not only to potentially remove	**We look forward to continuing discussions on this. The June 1st report will**

collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. o **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**	Landfill submitted the following: "this is not consistent with system operations. Further we believe that current treatment achieves toxicity limitations."	toxic pollutants, but is also to potentially remove high strength pollutants. If modifications to segregate gas condensate are "not consistent with system operations," then Bridgeton Landfill must submit the alternate option: **or a report showing the feasibility *[or infeasibility]* of making such modifications.**	**include updated evaluation on the overall liquid constituents and the treatment plan. We understand MSD's need to receive a consistent and compliant effluent stream and intend to work with the District to achieve that. Based upon our current evaluation we think that consistent, optimal operations of the entire liquids removal system is the best way of avoiding toxics and high strength pollutants. The June 1st report will evaluate the pretreatment approach and its operation with the liquids collection system.**

Other items:

- In your May 3, 2013 email, you stated, "We now understand that MSD has directed that both volume and truck capacity be maintained below the volume restriction. That condition will be met moving forward." There may have been some miscommunication. You may discharge up to 50,000 gallons per day of actual volume. However, billing will be based on truck capacity, since that is the mechanism required in the hauled waste ordinance No. 12716.

We understand the billing approach. The ability to comply with the volume restriction based solely on volume would allow more flexibility on truck selection, but we do not want to take any steps inconsistent with MSD's direction, so the Bridgeton Landfill team will discuss this as part of this week's meeting to ensure we fully understand the direction.

- On May 8, 2013 at 12:10 pm, MSD measured the pH of Bridgeton Landfill's discharge to the Westlake Pump Station. The pH was measured at 5.35 SU, in violation of ordinance 12559 limits. A field notice of violation was provided to Bryan Sehie, with a written notice of violation to be sent in the mail. Bridgeton Landfill must implement corrective actions to keep the pH of the discharged leachate within required limitations.

This reading is not consistent with what we would expect. We are undertaking an investigation of this as well as evaluating methods to ensure compliance with the pH restriction moving forward. We look forward to working with MSD to ensure that discharge remains within the acceptable pH range.

- Besides analyses required in MSD's April 24, 2013 conditional approval, Bridgeton Landfill must continue to analyze its discharge for any other pollutants required under its Industrial Wastewater Discharge Permit. These analyses must be performed at least once per quarter.

Bridgeton Landfill will comply with quarterly monitoring requirements.

- From your earlier data submitted with the proposal for discharge, it appears that Bridgeton Landfill may have difficulty meeting metals limits for metals other than zinc. You should either show how those other metals'

- limits will be met, or may need to submit a variance request for them. The request should include a desired variance level, along with documentation to support that level.

As discussed in the attached email, Barr Engineering is currently evaluating available data on metals and will work with Bridgeton Landfill and MSD to evaluate and request any necessary variances and establish appropriate monitoring to ensure compliance.

Other items:
-This email confirms that per the discussions at the May 2nd meeting the old flow meter has been disconnected and the new flow meter installed by the facility will be utilized moving forward.
-While we understand scheduling restrictions prevent the planned subgroup meeting for this week from occurring at the Bridgeton Landfill, we appreciate the lift station team's work with Bryan Sehie to move forward on improvements and view the existing treatment system. We are hopeful that other MSD team members will be able to visit the site as we think it will help your understanding of the current and planned systems.

The Bridgeton Landfill team looks forward to meeting with MSD this week and appreciates your efforts as we work together to establish a successful long term system.

Thank you,
Jessie

LATHROP & GAGE LLP
Jessica E. Merrigan
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P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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Batch Number OB-65 MSD

Fill Data

Process Battery	Tank Battery 1	
Composition	Co-Mingled	
	Date	Time
Fill Start	4/24/2013	11:30 AM
Fill Stop	4/24/2013	9:55 PM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	4/24/2013	8:15 PM
Process Stop	4/25/2013	11:00 AM

Approval Data

Approval Details	NAL 13026-130
Lab Test Results	Benzene 7 ppb
Reprocessed Batch	

Notes

Batch Number OB-67 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	4/25/2013	9:40 AM
Fill Stop	4/25/2013	8:00 PM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	Chris Martin	
	Date	Time
Process Start	4/25/2013	3:37 PM
Process Stop	4/26/2013	7:50 AM

Approval Data

Approval Details	NAL L3026-132
Lab Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Batch Number OB-71 MSD

Fill Data

Process Battery	Tank Battery L	
Composition	Co-Mingled	
	Date	Time
Fill Start	4/26/2013	3:30 PM
Fill Stop	4/27/2013	1:10 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	4/26/2013	7:45 PM
Process Stop	4/27/2013	1:10 PM

Approval Data

Approval Details	NAL13026-137
Lab Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Batch Number OB-74 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	4/27/2013	1:00 PM
Fill Stop	4/27/2013	9:00 PM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	4/27/2013	6:30 PM
Process Stop	4/28/2013	7:00 PM

Approval Data

Approval Details	NAL 13026-139
Lab Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Transferred TB-2 Tank 1 to AST 4/29/2013 7:35 PM - 4/30/2013 12:55 AM.

Batch Number OB-77 MSD

B-65 MSD

Fill Data

Process Battery	Tank Battery 1	
Composition	Co-Mingled	
	Date	Time
Fill Start	4/29/2013	2:10 PM
Fill Stop	4/29/2013	11:40 PM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	4/29/2013	9:10 PM
Process Stop	4/30/2013	3:00 PM

Approval Data

Approval Details	NAL13026-144
Lab Test Results	Benzene 13 ppb
Reprocessed Batch	

Notes

Batch Number OB-82 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	4/30/2013	3:00 PM
Fill Stop	4/30/2013	11:50 PM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	4/30/2013	9:50 PM
Process Stop	5/1/2013	9:40 AM

Approval Data

Approval Details	NAL 13026-148
Lab Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Batch Number OB-86 MSD

Fill Data

Process Battery	Tank Battery 1	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/1/2013	5:30 PM
Fill Stop	5/2/2013	2:45 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	Frank Totino	
	Date	Time
Process Start	5/2/2013	1:45 AM
Process Stop	5/2/2013	1:00 PM

Approval Data

Approval Details	NAL13026-151
Lab Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Batch Number OB-89 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/2/2013	7:45 PM
Fill Stop	5/3/2013	5:15 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	Chris Martin	
	Date	Time
Process Start	5/3/2013	5:15 AM
Process Stop	5/3/2013	10:20 PM

Approval Data

Approval Details	NAL13026-154
Lab Test Results	Benzene 14 ppb J Value
Reprocessed Batch	

Notes

Batch Number OB-92 MSD

Fill Data

Process Battery	Tank Battery 1	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/4/2013	1:40 AM
Fill Stop	5/4/2013	10:50 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	Chris Martin	
	Date	Time
Process Start	5/4/2013	9:10 AM
Process Stop	5/5/2013	11:00 AM

Approval Data

Approval Details	NAL13026-157
Lab Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Batch Number OB-94 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/4/2013	8:31 PM
Fill Stop	5/5/2013	6:35 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	Chris Martin	
	Date	Time
Process Start	5/5/2013	6:00 AM
Process Stop	5/6/2013	3:30 PM

Approval Data

Approval Details	NAL13026-159
Lab Test Results	Benzene 12 ppb
Reprocessed Batch	

Notes

Batch Number OB-98 MSD

Fill Data

Process Battery	Tank Battery 1	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/7/2013	12:00 AM
Fill Stop	5/7/2013	9:30 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	5/7/2013	3:00 AM
Process Stop	5/7/2013	11:00 PM

Approval Data

Approval Details	NAL13026-163
Lab Test Results	Benzene 17 ppb
Reprocessed Batch	

Notes

Batch Number OB-100 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/7/2013	2:30 PM
Fill Stop	5/7/2013	11:30 PM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	5/7/2013	6:35 PM
Process Stop	5/8/2013	3:00 PM

Approval Data

Approval Details	NAL13026-170
Lab Test Results	Benzene 16 ppb
Reprocessed Batch	

Notes

Doug Mendoza

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Friday, May 10, 2013 3:14 PM
To: Merrigan, Jessie (LG)
Subject: RE: Weekly Data Update
Attachments: Metals Stats_05102013.xlsx; Combined List of Analytes.xlsx

Updated sample results Weekly Volume Summaries have been posted to the ftp site.

Every Friday, we will update all analytical data received by the COB of the previous Wednesday. With laboratory turnaround times, this will normally include all samples taken up to and including 9 days prior. For example today's update includes results from all sampling on May 1 and before. This update will include SOP sampling for volatiles using Method SW 8260, and verification sampling parameters required by MSD's conditional approval, except for BOD. BOD samples will be reported on a minimum 16 day lag time, e.g. BOD samples taken May 1 will be reported May 17.

The attached Excel file summarizes data from recent batches that have been processed for discharge to MSD. Please note that there are concentration exceedences for arsenic, mercury and zinc. MSD has already granted a variance from the concentration based permit limit for zinc. By next Tuesday, we will prepare and submit a variance request for arsenic and mercury.

Attached is a spreadsheet illustrating the different parameter lists for Methods 624 and 8260. While there is much overlap, there are also significant differences. Our current practice is to run Method 8260 for SOP sampling and 624 for verification sampling. We recommend this approach because it captures a broader suite of analytes, in particular acetone, which has been raised as a parameter of concern.

On the FTP, site there is an Excel spreadsheet containing most of the data on liquid that we currently have including all recent data currently available. This is our first effort to summarize the data in table form. We look forward to comments and suggestions on how we can organize to be of most use.

Instructions for the ftp site:
Copy this link and paste it into Windows Explorer (NOT Internet Explorer). ftp://ftp.barr.com/bridgetonlandfill/
Enter the User ID and Password into the dialogue box.
User: blfdata
Password: tran$fer!

Ed Galbraith

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resourceful. naturally. BARR

Table 1
General Parameters and Metals - Detects Only
February - May 2013
Bridgeton Landfill

		Parameter	Antimony	Antimony	Arsenic	Arsenic	Beryllium	Beryllium	Cadmium	Cadmium	Chromium	Chromium	Copper	Copper	Iron
		Total or Dissolved	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Location	Date	Data Status													
MSD Batch 71	4/28/2013	Validated	0.055	0.060	0.44	0.48	0.0012	0.0017	0.048	0.062	0.20	0.23			580
MSD Batch 74	4/28/2013	Validated	0.062	0.066	0.53	0.55	0.0013	0.0019	0.047	0.064	0.20	0.23		0.0023	580
MSD Batch 77	4/30/2013	Validated	0.052	0.065	0.43	0.46	0.0014	0.0019	0.053	0.070	0.22	0.24			720
Treat Commingled MSD	4/5/2013	QC Pending	0.11	0.068	0.47	0.52		0.0020	0.020	0.028	0.21	0.24	0.017	0.021	660
		Low (mg/l)	0.052	0.060	0.43	0.46	0.0012	0.0017	0.020	0.028	0.20	0.23	0.017	0.002	580
		High (mg/l)	0.11	0.068	0.53	0.55	0.0014	0.0020	0.053	0.070	0.22	0.24	0.017	0.021	720
		Average (mg/l)	0.070	0.065	0.47	0.50	0.0013	0.0019	0.042	0.056	0.21	0.24	0.017	0.012	635

999 Exceeds MSD Permit Concentration

Table 1
General Parameters and Metals - Detects Only
February - May 2013
Bridgeton Landfill

		Parameter Total or Dissolved	Iron Total	Lead Dissolved	Lead Total	Mercury Dissolved	Mercury Total	Nickel Dissolved	Nickel Total	Selenium Dissolved	Selenium Total	Silver Dissolved	Thallium Dissolved	Thallium Total	Zinc Dissolved	Zinc Total
Location	Date	Data Status														
MSD Batch 71	4/28/2013	Validated	780	0.10	0.16		0.014	0.071	0.082	0.031	0.017		0.025		12	13
MSD Batch 74	4/28/2013	Validated	850	0.11	0.20		0.029	0.070	0.086	0.023		0.0021	0.030		12	13
MSD Batch 77	4/30/2013	Validated	990	0.12	0.20		0.011	0.072	0.080	0.037	0.036		0.025	0.022	14	15
Treat Commingled MSD	4/5/2013	QC Pending	890	0.16	0.25	0.042	0.042	0.11	0.12	0.090	0.050		0.088	0.058	18	19
		Low (mg/l)	780	0.10	0.16	0.042	0.011	0.070	0.080	0.023	0.017	0.0021	0.025	0.022	12	13
		High (mg/l)	990	0.16	0.25	0.042	0.042	0.11	0.12	0.090	0.050	0.0021	0.088	0.058	18	19
		Average (mg/l)	878	0.12	0.20	0.042	0.024	0.081	0.092	0.045	0.034	0.0021	0.042	0.040	14	15

999 Exceeds MSD

Analyte	Method	Priority Pollutants 423 Appendix A	TTO List 401.15
1,1,1-Trichloroethene	624, 8260b	x	x
1,1,1,2-Tetrachloroethane	8260b		
1,1,2,2-Tetrachloroethane	624, 8260b	x	
1,1,2,2-Tetrachlorophenol	8270		
1,1,2-Trichloroethene	624, 8260b	x	
1,1-Dichloroethane	624, 8260b	x	
1,1-Dichloroethene	624, 8260b	x	x
1,2-Dichlorobenzene	624, 625, 8260b	x	x
1,2-dichloropropylene	601	x	
1,2-diphenylhydrazine	625	x	x
1,2,3,4-Diepoxybutane	8260b		
1,2,3-Trichloropropane	8260b		
1,2,4-Trichlorobenzene	625, 8260b	x	x
1,2-Dibromo-3-chloropropane	8260b		
1,2-Dibromoethane	8260b		
1,2-Dichloroethane	624, 8260b	x	x
1,2-Dichloropropane	624, 8260b	x	x
1,3-Dichloro-2-propanol	8260b		
1,3-Dichlorobenzene	624, 625, 8260b	x	x
1,4-Dichlorobenzene	624, 625, 8260b	x	x
1,4-Dichlorobenzene-d	8260b		
1,4-Difluorobenzene	8260b		
1,4-Dioxane	8260b		
1-Propanol	8260b		
2-Butanone (MEK)	8260b		
2-Chloroethanol	8260b		
2-Chloroethylvinyl ether	624, 8260b	x	x
2-Chloronaphthalele	625	x	x
2-Chlorophenol	625	x	x
2-Hexanone	8260b		
2-Hydroxypropionitrile	8260b		
2-Methyl-4,6-dinitrophenol	625		
2-Nitrophenol	625	x	
2-Nitropropane	8260b		
2-Pentanone	8260b		
2-Picoline	8260b		
2-Propanol	8260b		
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1613	x	x
2,4-Dichlorophenol	625	x	x
2,4-Dimethylphenol	625	x	x
2,4-Dinitrophenol	625	x	x
2,4-Dinitrotoluene	625	x	x
2,6-Dinitrotoluene	625	x	x
2,4,6-Trichlorophenol	625	x	x
3-Chloropropionitrile	8260b		
3,3'-Dichlorobenzidine	625	x	x
4-Bromofluorobenzene	8260b		
4-Methyl-2-pentanone (MIBK)	8260b		
4-Bromophenyl phenyl ethera	625	x	x
4-Chloro-3-methylphenol	625	x	x
4-Chlorophenyl phenyl ether	625	x	x
4-Nitrophenol	625	x	

4,4'-DDD	625	x	x
4,4'-DDE	625	x	x
4,4'-DDT	625	x	x
4,6-Dinitro-o-cresol	625	x	x
Acenaphthene	625	x	x
Acenaphthylene	625	x	
Acetone	8260b		
Acetonitrile	8260b		
Acrolein (Propenal)	8260b	x	x
Acrylonitrile	8260b	x	x
Aldrin	625	x	x
Allyl alcohol	8260b		
Allyl chloride	8260b		
Anthracene	625	x	
Benzene	624, 8260b	x	x
Benzidine	625	x	x
Benzo(a)anthracene	625	x	x
1,2,5,6-Dibenzanthracene (dibenzo(a,h)anthracene)	625	x	x
Benzo(a)pyrene	625	x	x
Benzo(b)fluoranthene	625	x	x
Benzo(ghi)perylene	625	x	x
Benzo(k)fluoranthene	625	x	x
Benzyl butyl phthalate	625	x	x
Benzyl chloride	8260b		
Bis(2-chloroethoxy)methane	625	x	x
Bis(2-chloroethyl)ether	625	x	x
Bis(2-chloroisopropyl)ethera	625	x	x
Bis(2-ethylhexyl)phthalate	625	x	x
Bis(2-chloroethyl)sulfide	8260b		x
Bromoacetone	8260b		
Bromochloromethane	8260b		
Bromodichloromethane	624, 8260b	x	x
Bromoform	624, 8260b	x	x
Bromomethane	624, 8260b	x	x
Carbon disulfide	8260b		
Carbon tetrachloride	624, 8260b	x	x
Chloral hydrate	8260b		
Chlordane	625	x	x
Chlorobenzene	624, 8260b	x	x
Dibromochloromethane	624, 8260b	x	
Chloroethane	624, 8260b	x	
Chloroform	624, 8260b	x	x
Chloromethane	624, 8260b	x	x
Chloroprene	8260b		
Chrysene	625	x	x
cis-1,3-Dichloropropene	624, 8260b		x
cis-1,4-Dichloro-2-butene	8260b		
Crotonaldehyde	8260b		
Dibenzo(a,h)anthracene	625	x	x
Dibromomethane	8260b		
Dichlorodifluoromethane	8260b		
Dieldrin	625	x	x
Diethyl ether	8260b		
Diethyl phthalate	625	x	x
Dimethyl phthalate	625	x	x

Di-n-butylphthalate	625	x	x
Di-n-octylphthalate	625	x	x
Endosulfan I	625	x	x
Endosulfan II	625	x	x
Endosulfan sulfate	625	x	x
Endrin	625	x	x
Endrin aldehyde	625	x	x
Epichlorohydrin	8260b		
Ethanol	8260b		
Ethyl acetate	8260b		
Ethyl methacrylate	8260b		
Ethyl benzene	624, 8260b	x	x
Ethylene oxide	8260b		
Fluoranthene	625	x	x
Fluorobenzene	8260b		
Fluorene	625	x	
Heptachlor	625	x	x
Heptchlor epoxide	625	x	x
Hexachlorobenzene	625	x	
Hexachlorobutadiene	625, 8260b	x	x
Hexachlorocylopentadiene	625	x	x
Hexachloroethane	625, 8260b	x	x
Indeno(1,2,3-cd)pyrene	625	x	x
Iodomethane	8260b		
Isobutyl alcohol	8260b		
Isophorone	625	x	x
Isopropylbenzene	8260b		
Malononitrile	8260b		
Methacrylonitrile	8260b		
Methanol	8260b		
Methyl methacrylate	8260b		
Methylene chloride	624, 8260b	x	x
m-Xylene	8260b		
Naphthalene	625, 8260b	x	x
n-Butanol	8260b		
Nitrobenzene	625, 8260b	x	x
N-Nitrosodimethylamine	625	x	x
N-Nitroso-di-n-butylamine	8260b		x
N-Nitrosodi-n-propylamine	625	x	x
N-Nitrosodiphenylamine	625	x	x
n-Propylamine	8260b		
o-Toluidine	8260b		
o-Xylene	8260b		
PCB-1016	625	x	x
PCB-1221	625	x	x
PCB-1232	625	x	x
PCB-1242	625	x	x
PCB-1248	625	x	x
PCB-1254	625	x	x
PCB-1260	625	x	x
Paraldehyde	8260b		
Pentachloroethane	8260b		
Pentachlorophenol	625	x	x
Phenanthrene	625	x	
Phenol	625	x	x

Propargyl alcohol	8260b		
Propionitrile (ethyl cyanide)	8260b		
p-Xylene	8260b		
Pyrene	625	x	
Pyridine	8260b		
Styrene	8260b		
t-Butyl alcohol	8260b		
Tetrachloroethene	624, 8260b	x	x
Toluene	624, 8260b	x	x
Toxaphene	625	x	x
trans-1,2-Dichloroethene	624, 8260b	x	
trans-1,3-Dichloropropene	624, 8260b		x
Trichloroethene	8260b		
Trichloroethane	624, 8260b	x	x
Trichlorofluoromethane	624, 8260b		
Vinyl acetate	8260b		
Vinyl chloride	624, 8260b	x	x
Alpha-BHC	625	x	
β-BHC	625	x	
β-Propiolactone	8260b		
Delta-BHC	625	x	
δ-BHC	625	x	
Antimony, Total and Dissolved	200.7	x	x
Arsenic	200.7	x	x
Asbestos	100.1	x	x
Beryllium, Total and Dissolved	200.7	x	x
Cadmium, Total and Dissolved	200.7	x	x
Chromium, Total and Dissolved	200.7	x	x
Copper, Total and Dissolved	200.7	x	x
Cyanide, Total and Dissolved	335.4	x	x
Iron, Total and Dissolved	200.7		
Lead, Total and Dissolved	200.7	x	x
Mercury, Total and Dissolved	245.2	x	x
Nickel, Total and Dissolved	200.7	x	x
Selenium, Total and Dissolved	200.7	x	x
Silver, Total and Dissolved	200.7	x	x
Thallium, Total and Dissolved	200.7	x	x
Zinc, Total & Dissolved	200.7	x	x
BOD	5210 B		
COD	410.4/5220 C		
Total Suspended Solids	2540 D		
Ammonia (as N)	350.1 Rev 2		
Oil and Grease	1664 Rev A		
pH	150.1		
Uranium	900		
Gross Alpha	900		
Gross Beta	900		
Gross Gamma as Cesium 137	900		
Radium 226	900.3		
Radium 228	900.3		
1,2,3-Trichlorobenzene	8260b		
1,2,4-Trimethylbenzene	8260b		
1,3,5-Trimethylbenzene	8260b		
tert-Butylbenzene	8260b		
MTBE	8260b		

Dibromofluoromethane	8260b		
cis-1,2-Dichloroethene	8260b		
n-Butylbenzene	8260b		
n-Propylbenzene	8260b		
p-Isopropltoluene	8260b		
sec-Butylbenzene	8260b		
o-Xylene	8260b		

Analyte	Method	Priority Pollutants 423 Appendix A	TTO List 401.15
Asbestos	100.1	x	x
pH	150.1		
Antimony, Total and Dissolved	200.7	x	x
Arsenic	200.7	x	x
Beryllium, Total and Dissolved	200.7	x	x
Cadmium, Total and Dissolved	200.7	x	x
Chromium, Total and Dissolved	200.7	x	x
Copper, Total and Dissolved	200.7	x	x
Iron, Total and Dissolved	200.7		
Lead, Total and Dissolved	200.7	x	x
Nickel, Total and Dissolved	200.7	x	x
Selenium, Total and Dissolved	200.7	x	x
Silver, Total and Dissolved	200.7	x	x
Thallium, Total and Dissolved	200.7	x	x
Zinc, Total & Dissolved	200.7	x	x
Mercury, Total and Dissolved	245.2	x	x
Cyanide, Total and Dissolved	335.4	x	x
1,2-dichloropropylene	601	x	
1,2-diphenylhydrazine	625	x	x
2-Chloronaphthalele	625	x	x
2-Chlorophenol	625	x	x
2-Methyl-4,6-dinitrophenol	625		
2-Nitrophenol	625	x	
2,4-Dichlorophenol	625	x	x
2,4-Dimethylphenol	625	x	x
2,4-Dinitrophenol	625	x	x
2,4-Dinitrotoluene	625	x	x
2,6-Dinitrotoluene	625	x	x
2,4,6-Trichlorophenol	625	x	x
3,3'-Dichlorobenzidine	625	x	x
4-Bromophenyl phenyl ethera	625	x	x
4-Chloro-3-methylphenol	625	x	x
4-Chlorophenyl phenyl ether	625	x	x
4-Nitrophenol	625	x	
4,4'-DDD	625	x	x
4,4'-DDE	625	x	x
4,4'-DDT	625	x	x
4,6-Dinitro-o-cresol	625	x	x
Acenaphthene	625	x	x
Acenaphthylene	625	x	
Aldrin	625	x	x
Anthracene	625	x	
Benzidine	625	x	x
Benzo(a)anthracene	625	x	x
1,2,5,6-Dibenzanthracene (dibenzo(a,h)anthracene)	625	x	x
Benzo(a)pyrene	625	x	x
Benzo(b)fluoranthene	625	x	x
Benzo(ghi)perylene	625	x	x
Benzo(k)fluoranthene	625	x	x
Benzyl butyl phthalate	625	x	x
Bis(2-chloroethoxy)methane	625	x	x

Bis(2-chloroethyl)ether	625	x	x
Bis(2-chloroisopropyl)ethera	625	x	x
Bis(2-ethylhexyl)phthalate	625	x	x
Chlordane	625	x	x
Chrysene	625	x	x
Dibenzo(a,h)anthracene	625	x	x
Dieldrin	625	x	x
Diethyl phthalate	625	x	x
Dimethyl phthalate	625	x	x
Di-n-butylphthalate	625	x	x
Di-n-octylphthalate	625	x	x
Endosulfan I	625	x	x
Endosulfan II	625	x	x
Endosulfan sulfate	625	x	x
Endrin	625	x	x
Endrin aldehyde	625	x	x
Fluoranthene	625	x	x
Fluorene	625	x	
Heptachlor	625	x	x
Heptchlor epoxide	625	x	x
Hexachlorobenzene	625	x	
Hexachlorocylopentadiene	625	x	x
Indeno(1,2,3-cd)pyrene	625	x	x
Isophorone	625	x	x
N-Nitrosodimethylamine	625	x	x
N-Nitrosodi-n-propylamine	625	x	x
N-Nitrosodiphenylamine	625	x	x
PCB-1016	625	x	x
PCB-1221	625	x	x
PCB-1232	625	x	x
PCB-1242	625	x	x
PCB-1248	625	x	x
PCB-1254	625	x	x
PCB-1260	625	x	x
Pentachlorophenol	625	x	x
Phenanthrene	625	x	
Phenol	625	x	x
Pyrene	625	x	
Toxaphene	625	x	x
Alpha-BHC	625	x	
β-BHC	625	x	
Delta-BHC	625	x	
δ-BHC	625	x	
Uranium	900		
Gross Alpha	900		
Gross Beta	900		
Gross Gamma as Cesium 137	900		
Radium 226	900.3		
Radium 228	900.3		
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1613	x	x
1,1,2,2-Tetrachlorophenol	8270		
Oil and Grease	1664 Rev A		
Total Suspended Solids	2540 D		
Ammonia (as N)	350.1 Rev 2		
COD	410.4/5220 C		

BOD	5210 B		
1,2-Dichlorobenzene	624, 625, 8260b	x	x
1,3-Dichlorobenzene	624, 625, 8260b	x	x
1,4-Dichlorobenzene	624, 625, 8260b	x	x
1,1,1-Trichloroethene	624, 8260b	x	x
1,1,2,2-Tetrachloroethane	624, 8260b	x	
1,1,2-Trichloroethene	624, 8260b	x	
1,1-Dichloroethane	624, 8260b	x	
1,1-Dichloroethene	624, 8260b	x	x
1,2-Dichloroethane	624, 8260b	x	x
1,2-Dichloropropane	624, 8260b	x	x
2-Chloroethylvinyl ether	624, 8260b	x	x
Benzene	624, 8260b	x	x
Bromodichloromethane	624, 8260b	x	x
Bromoform	624, 8260b	x	x
Bromomethane	624, 8260b	x	x
Carbon tetrachloride	624, 8260b	x	x
Chlorobenzene	624, 8260b	x	x
Dibromochloromethane	624, 8260b	x	
Chloroethane	624, 8260b	x	
Chloroform	624, 8260b	x	x
Chloromethane	624, 8260b	x	x
cis-1,3-Dichloropropene	624, 8260b		x
Ethyl benzene	624, 8260b	x	x
Methylene chloride	624, 8260b	x	x
Tetrachloroethene	624, 8260b	x	x
Toluene	624, 8260b	x	x
trans-1,2-Dichloroethene	624, 8260b	x	
trans-1,3-Dichloropropene	624, 8260b		x
Trichloroethane	624, 8260b	x	x
Trichlorofluoromethane	624, 8260b		
Vinyl chloride	624, 8260b	x	x
1,2,4-Trichlorobenzene	625, 8260b	x	x
Hexachlorobutadiene	625, 8260b	x	x
Hexachloroethane	625, 8260b	x	x
Naphthalene	625, 8260b	x	x
Nitrobenzene	625, 8260b	x	x
1,1,1,2-Tetrachloroethane	8260b		
1,2,3,4-Diepoxybutane	8260b		
1,2,3-Trichloropropane	8260b		
1,2-Dibromo-3-chloropropane	8260b		
1,2-Dibromoethane	8260b		
1,3-Dichloro-2-propanol	8260b		
1,4-Dichlorobenzene-d	8260b		
1,4-Difluorobenzene	8260b		
1,4-Dioxane	8260b		
1-Propanol	8260b		
2-Butanone (MEK)	8260b		
2-Chloroethanol	8260b		
2-Hexanone	8260b		
2-Hydroxypropionitrile	8260b		
2-Nitropropane	8260b		
2-Pentanone	8260b		
2-Picoline	8260b		
2-Propanol	8260b		

3-Chloropropionitrile	8260b		
4-Bromofluorobenzene	8260b		
4-Methyl-2-pentanone (MIBK)	8260b		
Acetone	8260b		
Acetonitrile	8260b		
Acrolein (Propenal)	8260b	x	x
Acrylonitrile	8260b	x	x
Allyl alcohol	8260b		
Allyl chloride	8260b		
Benzyl chloride	8260b		
Bis(2-chloroethyl)sulfide	8260b		x
Bromoacetone	8260b		
Bromochloromethane	8260b		
Carbon disulfide	8260b		
Chloral hydrate	8260b		
Chloroprene	8260b		
cis-1,4-Dichloro-2-butene	8260b		
Crotonaldehyde	8260b		
Dibromomethane	8260b		
Dichlorodifluoromethane	8260b		
Diethyl ether	8260b		
Epichlorohydrin	8260b		
Ethanol	8260b		
Ethyl acetate	8260b		
Ethyl methacrylate	8260b		
Ethylene oxide	8260b		
Fluorobenzene	8260b		
Iodomethane	8260b		
Isobutyl alcohol	8260b		
Isopropylbenzene	8260b		
Malononitrile	8260b		
Methacrylonitrile	8260b		
Methanol	8260b		
Methyl methacrylate	8260b		
m-Xylene	8260b		
n-Butanol	8260b		
N-Nitroso-di-n-butylamine	8260b		x
n-Propylamine	8260b		
o-Toluidine	8260b		
o-Xylene	8260b		
Paraldehyde	8260b		
Pentachloroethane	8260b		
Propargyl alcohol	8260b		
Propionitrile (ethyl cyanide)	8260b		
p-Xylene	8260b		
Pyridine	8260b		
Styrene	8260b		
t-Butyl alcohol	8260b		
Trichloroethene	8260b		
Vinyl acetate	8260b		
β-Propiolactone	8260b		
1,2,3-Trichlorobenzene	8260b		
1,2,4-Trimethylbenzene	8260b		
1,3,5-Trimethylbenzene	8260b		
tert-Butylbenzene	8260b		

MTBE	8260b		
Dibromofluoromethane	8260b		
cis-1,2-Dichloroethene	8260b		
n-Butylbenzene	8260b		
n-Propylbenzene	8260b		
p-Isopropltoluene	8260b		
sec-Butylbenzene	8260b		
o-Xylene	8260b		

Analyte	Method	Priority Pollutants 423 Appendix A	TTO List 401.15
Asbestos	100.1	x	x
Antimony, Total and Dissolved	200.7	x	x
Arsenic	200.7	x	x
Beryllium, Total and Dissolved	200.7	x	x
Cadmium, Total and Dissolved	200.7	x	x
Chromium, Total and Dissolved	200.7	x	x
Copper, Total and Dissolved	200.7	x	x
Lead, Total and Dissolved	200.7	x	x
Nickel, Total and Dissolved	200.7	x	x
Selenium, Total and Dissolved	200.7	x	x
Silver, Total and Dissolved	200.7	x	x
Thallium, Total and Dissolved	200.7	x	x
Zinc, Total & Dissolved	200.7	x	x
Mercury, Total and Dissolved	245.2	x	x
Cyanide, Total and Dissolved	335.4	x	x
1,2,5,6-Dibenzanthracene (dibenzo(a,h)anthracene)	625	x	x
1,2-diphenylhydrazine	625	x	x
2,4,6-Trichlorophenol	625	x	x
2,4-Dichlorophenol	625	x	x
2,4-Dimethylphenol	625	x	x
2,4-Dinitrophenol	625	x	x
2,4-Dinitrotoluene	625	x	x
2,6-Dinitrotoluene	625	x	x
2-Chloronaphthalele	625	x	x
2-Chlorophenol	625	x	x
3,3'-Dichlorobenzidine	625	x	x
4,4'-DDD	625	x	x
4,4'-DDE	625	x	x
4,4'-DDT	625	x	x
4,6-Dinitro-o-cresol	625	x	x
4-Bromophenyl phenyl ethera	625	x	x
4-Chloro-3-methylphenol	625	x	x
4-Chlorophenyl phenyl ether	625	x	x
Acenaphthene	625	x	x
Aldrin	625	x	x
Benzidine	625	x	x
Benzo(a)anthracene	625	x	x
Benzo(a)pyrene	625	x	x
Benzo(b)fluoranthene	625	x	x
Benzo(ghi)perylene	625	x	x
Benzo(k)fluoranthene	625	x	x
Benzyl butyl phthalate	625	x	x
Bis(2-chloroethoxy)methane	625	x	x
Bis(2-chloroethyl)ether	625	x	x
Bis(2-chloroisopropyl)ethera	625	x	x
Bis(2-ethylhexyl)phthalate	625	x	x
Chlordane	625	x	x
Chrysene	625	x	x
Dibenzo(a,h)anthracene	625	x	x
Dieldrin	625	x	x
Diethyl phthalate	625	x	x
Dimethyl phthalate	625	x	x

Di-n-butylphthalate	625	x	x
Di-n-octylphthalate	625	x	x
Endosulfan I	625	x	x
Endosulfan II	625	x	x
Endosulfan sulfate	625	x	x
Endrin	625	x	x
Endrin aldehyde	625	x	x
Fluoranthene	625	x	x
Heptachlor	625	x	x
Heptchlor epoxide	625	x	x
Hexachlorocylopentadiene	625	x	x
Indeno(1,2,3-cd)pyrene	625	x	x
Isophorone	625	x	x
N-Nitrosodimethylamine	625	x	x
N-Nitrosodi-n-propylamine	625	x	x
N-Nitrosodiphenylamine	625	x	x
PCB-1016	625	x	x
PCB-1221	625	x	x
PCB-1232	625	x	x
PCB-1242	625	x	x
PCB-1248	625	x	x
PCB-1254	625	x	x
PCB-1260	625	x	x
Pentachlorophenol	625	x	x
Phenol	625	x	x
Toxaphene	625	x	x
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1613	x	x
1,2-Dichlorobenzene	624, 625, 8260b	x	x
1,3-Dichlorobenzene	624, 625, 8260b	x	x
1,4-Dichlorobenzene	624, 625, 8260b	x	x
1,1,1-Trichloroethene	624, 8260b	x	x
1,1-Dichloroethene	624, 8260b	x	x
1,2-Dichloroethane	624, 8260b	x	x
1,2-Dichloropropane	624, 8260b	x	x
2-Chloroethylvinyl ether	624, 8260b	x	x
Benzene	624, 8260b	x	x
Bromodichloromethane	624, 8260b	x	x
Bromoform	624, 8260b	x	x
Bromomethane	624, 8260b	x	x
Carbon tetrachloride	624, 8260b	x	x
Chlorobenzene	624, 8260b	x	x
Chloroform	624, 8260b	x	x
Chloromethane	624, 8260b	x	x
cis-1,3-Dichloropropene	624, 8260b		x
Ethyl benzene	624, 8260b	x	x
Methylene chloride	624, 8260b	x	x
Tetrachloroethene	624, 8260b	x	x
Toluene	624, 8260b	x	x
trans-1,3-Dichloropropene	624, 8260b		x
Trichloroethane	624, 8260b	x	x
Vinyl chloride	624, 8260b	x	x
1,2,4-Trichlorobenzene	625, 8260b	x	x
Hexachlorobutadiene	625, 8260b	x	x
Hexachloroethane	625, 8260b	x	x
Naphthalene	625, 8260b	x	x

Nitrobenzene	625, 8260b	x	x
Acrolein (Propenal)	8260b	x	x
Acrylonitrile	8260b	x	x
Bis(2-chloroethyl)sulfide	8260b		x
N-Nitroso-di-n-butylamine	8260b		x

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissel Point Tracking Table			
Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Friday, May 03, 2013	Batch 86	48,100	49,500
Saturday, May 04, 2013	Batch 89	46,500	49,400
Sunday, May 05, 2013	None	None	None
Monday, May 06, 2013	Batch 92	48,500	49,500
Tuesday, May 07, 2013	Batch 94	48,400	49,500
Wednesday, May 08, 2013	Batch 98	48,200	49,500

Starting Date	***5/3/2013 4:00***
Ending Date	***5/9/2013 4:03***

MSD - Missouri River Tracking Table							
Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)
Friday, May 03, 2013	Batch 86	17,502	5/3/2013 4:00	5/4/2013 4:15	24.3	840	721.7
Saturday, May 04, 2013	Batch 89	17,502	5/4/2013 4:15	5/5/2013 4:15	24.0	840	729.3
Sunday, May 05, 2013	No Transfer	17,502	5/5/2013 4:15	5/6/2013 4:30	24.2	840	721.7
Monday, May 06, 2013	Batch 92	10,426	5/6/2013 4:30	5/7/2013 4:00	23.5	840	443.7
Tuesday, May 07, 2013	Batch 94	8,653	5/7/2013 4:00	5/8/2013 3:55	23.9	840	361.8
Wednesday, May 08, 2013	Batch 98	16,110	5/8/2013 3:55	5/9/2013 4:03	24.1	840	667.5

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature] Title: Environmental Specialist Date: 5/10/13

Weekly Volume Summary 1 (5-3-13 through 5-8-13)

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/4/2013 4:15 AM

MSD Flow Meter reading: 59,672

Date / Time last reading: 5/3/2013 4:00 AM

Last Flow Meter reading: 42,170

Notes or comments (re meter errors, etc.):

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/4/2013

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/5/2013 4:15 AM

MSD Flow Meter reading: 77,174

Date / Time last reading: 5/4/2013 4:15 AM

Last Flow Meter reading: 59,672

Notes or comments (re meter errors, etc.):

Bridgeton Landfill, LLC representative: Bryan Sahie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sahie

Name: Bryan Sahie

Title: Environmental Specialist

Date: 5/5/2013

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/6/2013 4:30 AM

MSD Flow Meter reading: 94,676

Date / Time last reading: 5/5/2013 4:15 AM

Last Flow Meter reading: 77,174

Notes or comments (re meter errors, etc.):

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K. Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/6/2013

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/7/2013 4:00 AM

MSD Flow Meter reading: 105,102

Date / Time last reading: 5/6/2013 4:30 AM

Last Flow Meter reading: 94,676

Notes or comments (re meter errors, etc.):

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/7/13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/8/2013 3:55 AM

MSD Flow Meter reading: 113,755

Date / Time last reading: 5/7/2013 4:00 AM

Last Flow Meter reading: 105,102

Notes or comments (re meter errors, etc.):

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: [signature]

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/8/13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/9/2013 4:03 AM

MSD Flow Meter reading: 129,865

Date / Time last reading: 5/8/2013 3:55 AM

Last Flow Meter reading: 113,755

Notes or comments (re meter errors, etc.):

Bridgeton Landfill, LLC representative: Bryan Schie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Schie

Name: Bryan Schie

Title: Environmental Specialist

Date: 5/9/13

New Age/Landmark
Mobile Laboratory Services
160 Veterans Blvd. • South Haven, Michigan 49090
Tel: 888-685-1628 • mobilelab@newagelandmark.com

FINAL ANALYTICAL REPORT

Republic Services
12976 St. Charles Rock Rd.
Bridgeton, MO 63044
ATTN: Craig Almanza

Project #: NAL13-026
Project Site: Bridgeton Landfill

Analytical results meet the requirements of NELAC Standards. The results reported apply solely to the sample analyzed and all results are reported on a dry weight basis unless stated otherwise. Any questions concerning this report should be directed to Scott D. Wall, President.
B = Analyte is found in the associated blank as well as in the sample.
D = Compound identified in an analysis at a secondary dilution factor.
E = Compound's concentration exceeds the calibration range of the instrument at this dilution.
X = Estimated value, some aspect of the test relative to this compound did not meet QC criteria. See batch narrative for explanation.
J = Estimated value, compound meets the identification criteria but the result is less than the limit of quantitation but greater than the MDL.
M = Matrix assesment, QC analyses parameter exceeded control limits.
U = Non-detect
* NAL is not certified for these compound by NELAC.

Lab ID:	Sample ID:		CAS #	ANALYTES	Results	QC	Units	RDL	MDL	Sample Date	Prep. Date	Analysis Date	Matrix	Dil.	Weight(g)	Vol.(ml)	% Solid	Method	Data file	Spike	% Rec	% RPD	Parent
NAL13026-148	Ops Batch 82-MSD	ORG	75-71-8	Dichlorodifluoromethane		U	ug/L	500	29.28	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	74-87-3	Chloromethane		U	ug/L	500	43.07	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	75-01-4	Vinyl chloride		U	ug/L	200	31.86	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	74-83-9	Bromomethane		U	ug/L	500	50.04	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	75-00-3	Chloroethane		U	ug/L	500	55.61	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	75-69-4	Trichlorofluoromethane		U	ug/L	500	19.65	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	75-35-4	1,1-Dichloroethene		U	ug/L	100	47.11	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	75-09-2	Methylene chloride		U	ug/L	500	26.46	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	67-64-1	Acetone	30000	D	ug/L	10000	1556	5/1/2013	5/1/2013	5/1/2013	WG	1000	NA	5.0	NA	SW8260B	NALJ7918				
NAL13026-148	Ops Batch 82-MSD	ORG	156-60-5	trans-1,2-Dichloroethene		UX+	ug/L	100	55.61	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	1634-04-4	MTBE		U	ug/L	500	61.18	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	75-34-3	1,1-Dichloroethane		UX+	ug/L	100	52.66	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	156-59-2	cis-1,2-Dichloroethene		U	ug/L	100	32.11	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	74-97-5	Bromochloromethane		U	ug/L	200	81.18	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	67-66-3	Chloroform		U	ug/L	100	41.37	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	71-55-6	1,1,1-Trichloroethane		U	ug/L	100	15.73	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	78-93-3	2-Butanone	17000	D	ug/L	10000	166.52	5/1/2013	5/1/2013	5/1/2013	WG	1000	NA	5.0	NA	SW8260B	NALJ7918				
NAL13026-148	Ops Batch 82-MSD	ORG	56-23-5	Carbon tetrachloride		U	ug/L	100	27.64	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	71-43-2	Benzene		U	ug/L	100	13.53	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	107-06-2	1,2-Dichloroethane		U	ug/L	100	20.01	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	79-01-6	Trichloroethene		U	ug/L	100	36.33	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	74-95-3	Dibromomethane		U	ug/L	200	32.20	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	78-87-5	1,2-Dichloropropane		U	ug/L	100	18.17	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	75-27-4	Bromodichloromethane		U	ug/L	200	11.58	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	10061-01-5	cis-1,3-Dichloropropene		U	ug/L	100	25.01	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	108-88-3	Toluene		U	ug/L	100	74.00	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	108-10-1	4-Methyl-2-pentanone	330	J	ug/L	500	20.96	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	10061-02-6	trans-1,3-Dichloropropene		U	ug/L	100	31.15	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	127-18-4	Tetrachloroethene		UX-	ug/L	100	48.56	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	79-00-5	1,1,2-Trichloroethane		U	ug/L	100	34.28	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	124-48-1	Dibromochloromethane		U	ug/L	200	68.90	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	106-93-4	1,2-Dibromoethane		U	ug/L	200	29.90	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	591-78-6	2-Hexanone	280	J	ug/L	500	26.49	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	100-41-4	Ethylbenzene	130		ug/L	100	25.38	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	108-90-7	Chlorobenzene		U	ug/L	100	27.52	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	630-20-6	1,1,1,2-Tetrachloroethane		U	ug/L	200	19.28	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	XYLMP	p&m-Xylene		U	ug/L	200	26.14	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	95-47-6	o-Xylene		U	ug/L	100	12.90	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	100-42-5	Styrene		U	ug/L	100	20.23	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	75-25-2	Bromoform		U	ug/L	200	46.83	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				

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Lab ID:	Sample ID:		CAS #	ANALYTES	Results	QC	Units	RDL	MDL	Sample Date	Prep. Date	Analysis Date	Matrix	Dil.	Weight(g)	Vol.(ml)	% Solid	Method	Data file	Spike	% Rec	% RPD	Parent
NAL13026-148	Ops Batch 82-MSD	ORG	98-82-8	Isopropylbenzene		U	ug/L	200	20.48	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	103-65-1	n-Propylbenzene		U	ug/L	200	27.00	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	79-34-5	1,1,2,2-Tetrachloroethane	130	J	ug/L	200	29.16	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	96-18-4	1,2,3-Trichloropropane		U	ug/L	200	29.47	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	108-67-8	1,3,5-Trimethylbenzene		U	ug/L	200	20.03	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	98-06-6	tert-Butylbenzene		U	ug/L	200	32.61	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	95-63-6	1,2,4-Trimethylbenzene		U	ug/L	200	20.03	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	135-98-8	sec-Butylbenzene		U	ug/L	200	32.34	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	541-73-1	1,3-Dichlorobenzene		U	ug/L	200	22.21	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	99-87-6	p-Isopropltoluene		U	ug/L	200	25.48	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	106-46-7	1,4-Dichlorobenzene		U	ug/L	200	33.03	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	95-50-1	1,2-Dichlorobenzene		U	ug/L	200	26.38	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	104-51-8	n-Butylbenzene		U	ug/L	500	27.81	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	96-12-8	1,2-Dibromo-3-chloropropane		U	ug/L	500	159.11	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	87-68-3	Hexachlorobutadiene		U	ug/L	500	65.42	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	120-82-1	1,2,4-Trichlorobenzene	88	J	ug/L	500	27.63	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	91-20-3	Naphthalene	360	J	ug/L	500	56.04	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	ORG	87-61-6	1,2,3-Trichlorobenzene		U	ug/L	500	23.28	5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914				
NAL13026-148	Ops Batch 82-MSD	STD	1868-53-7	Dibromofluoromethane	49		ng			5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914	50	98%		
NAL13026-148	Ops Batch 82-MSD	STD	17060-07-0	1,2-Dichloroethane d4	49		ng			5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914	50	98%		
NAL13026-148	Ops Batch 82-MSD	STD	2037-26-5	Toluene d8	48		ng			5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914	50	96%		
NAL13026-148	Ops Batch 82-MSD	STD	460-00-4	Bromofluorobenzene	47		ng			5/1/2013	5/1/2013	5/1/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7914	50	94%		

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NAL13026-151	Ops Batch 86-MSD	ORG	75-71-8	Dichlorodifluoromethane		UX-	ug/L	500	29.28	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	74-87-3	Chloromethane		UX-	ug/L	500	43.07	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	75-01-4	Vinyl chloride		U	ug/L	200	31.86	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	74-83-9	Bromomethane		U	ug/L	500	50.04	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	75-00-3	Chloroethane		UX+	ug/L	500	55.61	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	75-69-4	Trichlorofluoromethane		U	ug/L	500	19.65	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	75-35-4	1,1-Dichloroethene		U	ug/L	100	47.11	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	75-09-2	Methylene chloride		U	ug/L	500	26.46	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	67-64-1	Acetone	39000	D	ug/L	10000	1556	5/2/2013	5/2/2013	5/2/2013	WG	1000	NA	5.0	NA	SW8260B	NALJ7934				
NAL13026-151	Ops Batch 86-MSD	ORG	156-60-5	trans-1,2-Dichloroethene		U	ug/L	100	55.61	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	1634-04-4	MTBE		U	ug/L	500	61.18	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	75-34-3	1,1-Dichloroethane		U	ug/L	100	52.66	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	156-59-2	cis-1,2-Dichloroethene		U	ug/L	100	32.11	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	74-97-5	Bromochloromethane		U	ug/L	200	81.18	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	67-66-3	Chloroform		U	ug/L	100	41.37	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	71-55-6	1,1,1-Trichloroethane		U	ug/L	100	15.73	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	78-93-3	2-Butanone	18000	X+	ug/L	10000	166.52	5/2/2013	5/2/2013	5/2/2013	WG	1000	NA	5.0	NA	SW8260B	NALJ7934				
NAL13026-151	Ops Batch 86-MSD	ORG	56-23-5	Carbon tetrachloride		U	ug/L	100	27.64	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	71-43-2	Benzene		U	ug/L	100	13.53	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	107-06-2	1,2-Dichloroethane		U	ug/L	100	20.01	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	79-01-6	Trichloroethene		U	ug/L	100	36.33	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	74-95-3	Dibromomethane		U	ug/L	200	32.20	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	78-87-5	1,2-Dichloropropane		U	ug/L	100	18.17	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	75-27-4	Bromodichloromethane		U	ug/L	200	11.58	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	10061-01-5	cis-1,3-Dichloropropene		U	ug/L	100	25.01	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	108-88-3	Toluene		U	ug/L	100	74.00	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	108-10-1	4-Methyl-2-pentanone	460	JX+	ug/L	500	20.96	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	10061-02-6	trans-1,3-Dichloropropene		U	ug/L	100	31.15	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	127-18-4	Tetrachloroethene		UX-	ug/L	100	48.56	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	79-00-5	1,1,2-Trichloroethane		U	ug/L	100	34.28	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	124-48-1	Dibromochloromethane		U	ug/L	200	68.90	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	106-93-4	1,2-Dibromoethane		U	ug/L	200	29.90	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	591-78-6	2-Hexanone		UX+	ug/L	500	26.49	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	100-41-4	Ethylbenzene		U	ug/L	100	25.38	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	108-90-7	Chlorobenzene		U	ug/L	100	27.52	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	630-20-6	1,1,1,2-Tetrachloroethane		U	ug/L	200	19.28	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	XYLMP	p&m-Xylene		U	ug/L	200	26.14	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	95-47-6	o-Xylene		U	ug/L	100	12.90	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	100-42-5	Styrene		U	ug/L	100	20.23	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	75-25-2	Bromoform		U	ug/L	200	46.83	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				

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NAL13026-151	Ops Batch 86-MSD	ORG	98-82-8	Isopropylbenzene		U	ug/L	200	20.48	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	103-65-1	n-Propylbenzene		U	ug/L	200	27.00	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	79-34-5	1,1,2,2-Tetrachloroethane		U	ug/L	200	29.16	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	96-18-4	1,2,3-Trichloropropane		U	ug/L	200	29.47	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	108-67-8	1,3,5-Trimethylbenzene		U	ug/L	200	20.03	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	98-06-6	tert-Butylbenzene		U	ug/L	200	32.61	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	95-63-6	1,2,4-Trimethylbenzene	60	J	ug/L	200	20.03	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	135-98-8	sec-Butylbenzene	48	J	ug/L	200	32.34	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	541-73-1	1,3-Dichlorobenzene		U	ug/L	200	22.21	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	99-87-6	p-Isopropltoluene	71	J	ug/L	200	25.48	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	106-46-7	1,4-Dichlorobenzene		U	ug/L	200	33.03	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	95-50-1	1,2-Dichlorobenzene		U	ug/L	200	26.38	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	104-51-8	n-Butylbenzene		U	ug/L	500	27.81	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	96-12-8	1,2-Dibromo-3-chloropropane		U	ug/L	500	159.11	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	87-68-3	Hexachlorobutadiene		U	ug/L	500	65.42	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	120-82-1	1,2,4-Trichlorobenzene		U	ug/L	500	27.63	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	91-20-3	Naphthalene	170	J	ug/L	500	56.04	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	ORG	87-61-6	1,2,3-Trichlorobenzene		U	ug/L	500	23.28	5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933				
NAL13026-151	Ops Batch 86-MSD	STD	1868-53-7	Dibromofluoromethane	52		ng			5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933	50	104%		
NAL13026-151	Ops Batch 86-MSD	STD	17060-07-0	1,2-Dichloroethane d4	52		ng			5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933	50	104%		
NAL13026-151	Ops Batch 86-MSD	STD	2037-26-5	Toluene d8	47		ng			5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933	50	94%		
NAL13026-151	Ops Batch 86-MSD	STD	460-00-4	Bromofluorobenzene	47		ng			5/2/2013	5/2/2013	5/2/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7933	50	94%		

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Project #: NAL13-026
Project Site: Bridgeton Landfill

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J = Estimated value, compound meets the identification criteria but the result is less than the limit of quantitation but greater than the MDL.
M = Matrix assesment, QC analyses parameter exceeded control limits.
U = Non-detect
* NAL is not certified for these compound by NELAC.

Lab ID:	Sample ID:		CAS #	ANALYTES	Results	QC	Units	RDL	MDL	Sample Date	Prep. Date	Analysis Date	Matrix	Dil.	Weight(g)	Vol.(ml)	% Solid	Method	Data file	Spike	% Rec	% RPD	Parent
NAL13026-154	Ops Batch 89-MSD	ORG	75-71-8	Dichlorodifluoromethane		UX-	ug/L	500	29.28	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	74-87-3	Chloromethane		UX-	ug/L	500	43.07	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	75-01-4	Vinyl chloride		UX-	ug/L	200	31.86	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	74-83-9	Bromomethane		U	ug/L	500	50.04	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	75-00-3	Chloroethane		UX+	ug/L	500	55.61	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	75-69-4	Trichlorofluoromethane		U	ug/L	500	19.65	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	75-35-4	1,1-Dichloroethene		U	ug/L	100	47.11	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	75-09-2	Methylene chloride		U	ug/L	500	26.46	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	67-64-1	Acetone	58000	D	ug/L	10000	1556.07	5/3/2013	5/3/2013	5/3/2013	WG	1000	NA	5.0	NA	SW8260B	NALJ7950				
NAL13026-154	Ops Batch 89-MSD	ORG	156-60-5	trans-1,2-Dichloroethene		U	ug/L	100	55.61	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	1634-04-4	MTBE		U	ug/L	500	61.18	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	75-34-3	1,1-Dichloroethane		U	ug/L	100	52.66	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	156-59-2	cis-1,2-Dichloroethene		U	ug/L	100	32.11	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	74-97-5	Bromochloromethane		U	ug/L	200	81.18	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	67-66-3	Chloroform		U	ug/L	100	41.37	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	71-55-6	1,1,1-Trichloroethane		U	ug/L	100	15.73	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	78-93-3	2-Butanone	33000	D	ug/L	10000	166.52	5/3/2013	5/3/2013	5/3/2013	WG	1000	NA	5.0	NA	SW8260B	NALJ7950				
NAL13026-154	Ops Batch 89-MSD	ORG	56-23-5	Carbon tetrachloride		U	ug/L	100	27.64	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	71-43-2	Benzene	14	J	ug/L	100	13.53	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	107-06-2	1,2-Dichloroethane		U	ug/L	100	20.01	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	79-01-6	Trichloroethene		U	ug/L	100	36.33	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	74-95-3	Dibromomethane		U	ug/L	200	32.20	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	78-87-5	1,2-Dichloropropane		U	ug/L	100	18.17	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	75-27-4	Bromodichloromethane		U	ug/L	200	11.58	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	10061-01-5	cis-1,3-Dichloropropene		U	ug/L	100	25.01	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	108-88-3	Toluene		U	ug/L	100	74.00	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	108-10-1	4-Methyl-2-pentanone	840		ug/L	500	20.96	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	10061-02-6	trans-1,3-Dichloropropene		U	ug/L	100	31.15	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	127-18-4	Tetrachloroethene		UX-	ug/L	100	48.56	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	79-00-5	1,1,2-Trichloroethane		U	ug/L	100	34.28	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	124-48-1	Dibromochloromethane		U	ug/L	200	68.90	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	106-93-4	1,2-Dibromoethane		U	ug/L	200	29.90	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	591-78-6	2-Hexanone	480	J	ug/L	500	26.49	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	100-41-4	Ethylbenzene		U	ug/L	100	25.38	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	108-90-7	Chlorobenzene		U	ug/L	100	27.52	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	630-20-6	1,1,1,2-Tetrachloroethane		U	ug/L	200	19.28	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	XYLMP	p&m-Xylene		U	ug/L	200	26.14	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	95-47-6	o-Xylene		U	ug/L	100	12.90	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	100-42-5	Styrene		U	ug/L	100	20.23	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	75-25-2	Bromoform		U	ug/L	200	46.83	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	98-82-8	Isopropylbenzene		U	ug/L	200	20.48	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	103-65-1	n-Propylbenzene		U	ug/L	200	27.00	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				

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Lab ID:	Sample ID:		CAS #	ANALYTES	Results	QC	Units	RDL	MDL	Sample Date	Prep. Date	Analysis Date	Matrix	Dil.	Weight(g)	Vol.(ml)	% Solid	Method	Data file	Spike	% Rec	% RPD	Parent
NAL13026-154	Ops Batch 89-MSD	ORG	79-34-5	1,1,2,2-Tetrachloroethane	620		ug/L	200	29.16	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	96-18-4	1,2,3-Trichloropropane		U	ug/L	200	29.47	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	108-67-8	1,3,5-Trimethylbenzene	83	J	ug/L	200	20.03	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	98-06-6	tert-Butylbenzene		U	ug/L	200	32.61	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	95-63-6	1,2,4-Trimethylbenzene	160	J	ug/L	200	20.03	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	135-98-8	sec-Butylbenzene	130	J	ug/L	200	32.34	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	541-73-1	1,3-Dichlorobenzene		U	ug/L	200	22.21	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	99-87-6	p-Isopropltoluene	680		ug/L	200	25.48	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	106-46-7	1,4-Dichlorobenzene	180	U	ug/L	200	33.03	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	95-50-1	1,2-Dichlorobenzene		U	ug/L	200	26.38	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	104-51-8	n-Butylbenzene		U	ug/L	500	27.81	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	96-12-8	1,2-Dibromo-3-chloropropane		UX-	ug/L	500	159.11	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	87-68-3	Hexachlorobutadiene		U	ug/L	500	65.42	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	120-82-1	1,2,4-Trichlorobenzene		U	ug/L	500	27.63	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	91-20-3	Naphthalene	390	J	ug/L	500	56.04	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	ORG	87-61-6	1,2,3-Trichlorobenzene		U	ug/L	500	23.28	5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951				
NAL13026-154	Ops Batch 89-MSD	STD	1868-53-7	Dibromofluoromethane	52		ng			5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951	50	104%		
NAL13026-154	Ops Batch 89-MSD	STD	17060-07-0	1,2-Dichloroethane d4	53		ng			5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951	50	106%		
NAL13026-154	Ops Batch 89-MSD	STD	2037-26-5	Toluene d8	45		ng			5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951	50	90%		
NAL13026-154	Ops Batch 89-MSD	STD	460-00-4	Bromofluorobenzene	47		ng			5/3/2013	5/3/2013	5/3/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7951	50	94%		

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Lab ID:	Sample ID:		CAS #	ANALYTES	Results	QC	Units	RDL	MDL	Sample Date	Prep. Date	Analysis Date	Matrix	Dil.	Weight(g)	Vol.(ml)	% Solid	Method	Data file	Spike	% Rec	% RPD	Parent
NAL13026-157	Ops Batch 92-MSD	ORG	75-71-8	Dichlorodifluoromethane		U	ug/L	500	29.28	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	74-87-3	Chloromethane		U	ug/L	500	43.07	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	75-01-4	Vinyl chloride		U	ug/L	200	31.86	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	74-83-9	Bromomethane		U	ug/L	500	50.04	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	75-00-3	Chloroethane		U	ug/L	500	55.61	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	75-69-4	Trichlorofluoromethane		U	ug/L	500	19.65	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	75-35-4	1,1-Dichloroethene		U	ug/L	100	47.11	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	75-09-2	Methylene chloride		U	ug/L	500	26.46	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	67-64-1	Acetone	69000	D	ug/L	10000	1556	5/5/2013	5/5/2013	5/5/2013	WG	1000	NA	5.0	NA	SW8260B	NALJ7981				
NAL13026-157	Ops Batch 92-MSD	ORG	156-60-5	trans-1,2-Dichloroethene		U	ug/L	100	55.61	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	1634-04-4	MTBE		U	ug/L	500	61.18	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	75-34-3	1,1-Dichloroethane		U	ug/L	100	52.66	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	156-59-2	cis-1,2-Dichloroethene		U	ug/L	100	32.11	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	74-97-5	Bromochloromethane		U	ug/L	200	41.37	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	67-66-3	Chloroform		U	ug/L	100	15.73	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	71-55-6	1,1,1-Trichloroethane		U	ug/L	100	16.65	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	78-93-3	2-Butanone	38000	D	ug/L	10000	811.80	5/5/2013	5/5/2013	5/5/2013	WG	1000	NA	5.0	NA	SW8260B	NALJ7981				
NAL13026-157	Ops Batch 92-MSD	ORG	56-23-5	Carbon tetrachloride		U	ug/L	100	27.64	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	71-43-2	Benzene		U	ug/L	100	13.53	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	107-06-2	1,2-Dichloroethane		U	ug/L	100	20.01	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	79-01-6	Trichloroethene		U	ug/L	100	36.33	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	74-95-3	Dibromomethane		U	ug/L	200	32.20	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	78-87-5	1,2-Dichloropropane		U	ug/L	100	18.17	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	75-27-4	Bromodichloromethane		U	ug/L	200	11.58	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	10061-01-5	cis-1,3-Dichloropropene		U	ug/L	100	25.01	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	108-88-3	Toluene	26	J	ug/L	100	20.96	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	108-10-1	4-Methyl-2-pentanone	330	JX+	ug/L	500	74.00	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	10061-02-6	trans-1,3-Dichloropropene		U	ug/L	100	31.15	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	127-18-4	Tetrachloroethene		U	ug/L	100	48.56	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	79-00-5	1,1,2-Trichloroethane		U	ug/L	100	34.28	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	124-48-1	Dibromochloromethane		U	ug/L	200	29.90	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	106-93-4	1,2-Dibromoethane		U	ug/L	200	26.49	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	591-78-6	2-Hexanone	170	JX+	ug/L	500	68.90	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	100-41-4	Ethylbenzene	36	J	ug/L	100	25.38	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	108-90-7	Chlorobenzene		U	ug/L	100	27.52	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	630-20-6	1,1,1,2-Tetrachloroethane		U	ug/L	200	19.28	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	XYLMP	p&m-Xylene	91	J	ug/L	200	26.14	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	95-47-6	o-Xylene	37	J	ug/L	100	12.90	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	100-42-5	Styrene	58	J	ug/L	100	20.23	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	75-25-2	Bromoform		U	ug/L	200	46.83	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	98-82-8	Isopropylbenzene	45	J	ug/L	200	20.48	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	103-65-1	n-Propylbenzene	56	J	ug/L	200	27.00	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				

MSD 026659

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FINAL ANALYTICAL REPORT

Republic Services
12976 St. Charles Rock Rd.
Bridgeton, MO 63044
ATTN: Craig Almanza

Project #: NAL13-026
Project Site: Bridgeton Landfill

Analytical results meet the requirements of NELAC Standards. The results reported apply solely to the sample analyzed and all results are reported on a dry weight basis unless stated otherwise. Any questions concerning this report should be directed to Scott D. Wall, President.
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NAL13026-157	Ops Batch 92-MSD	ORG	79-34-5	1,1,2,2-Tetrachloroethane		U	ug/L	200	29.16	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	96-18-4	1,2,3-Trichloropropane		U	ug/L	200	29.47	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	108-67-8	1,3,5-Trimethylbenzene	69	J	ug/L	200	20.03	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	98-06-6	tert-Butylbenzene		U	ug/L	200	32.61	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	95-63-6	1,2,4-Trimethylbenzene	120	J	ug/L	200	20.03	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	135-98-8	sec-Butylbenzene	59	J	ug/L	200	32.34	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	541-73-1	1,3-Dichlorobenzene		U	ug/L	200	22.21	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	99-87-6	p-Isopropltoluene	240		ug/L	200	25.48	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	106-46-7	1,4-Dichlorobenzene	110	J	ug/L	200	33.03	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	95-50-1	1,2-Dichlorobenzene		U	ug/L	200	26.38	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	104-51-8	n-Butylbenzene	86	J	ug/L	500	27.81	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	96-12-8	1,2-Dibromo-3-chloropropane		U	ug/L	500	159.11	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	87-68-3	Hexachlorobutadiene		U	ug/L	500	65.42	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	120-82-1	1,2,4-Trichlorobenzene		U	ug/L	500	27.63	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	91-20-3	Naphthalene	330	J	ug/L	500	56.04	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	ORG	87-61-6	1,2,3-Trichlorobenzene		U	ug/L	500	23.28	5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980				
NAL13026-157	Ops Batch 92-MSD	STD	1868-53-7	Dibromofluoromethane	51		ng			5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980	50	102%		
NAL13026-157	Ops Batch 92-MSD	STD	17060-07-0	1,2-Dichloroethane d4	50		ng			5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980	50	100%		
NAL13026-157	Ops Batch 92-MSD	STD	2037-26-5	Toluene d8	46		ng			5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980	50	92%		
NAL13026-157	Ops Batch 92-MSD	STD	460-00-4	Bromofluorobenzene	47		ng			5/5/2013	5/5/2013	5/5/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7980	50	94%		

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Project #: NAL13-026
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NAL13026-159	Ops Batch 94-MSD	ORG	75-71-8	Dichlorodifluoromethane		UX+	ug/L	500	29.28	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	74-87-3	Chloromethane		UX+	ug/L	500	43.07	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	75-01-4	Vinyl chloride		UX+	ug/L	200	31.86	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	74-83-9	Bromomethane		U	ug/L	500	50.04	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	75-00-3	Chloroethane		UX+	ug/L	500	55.61	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	75-69-4	Trichlorofluoromethane		UX+	ug/L	500	19.65	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	75-35-4	1,1-Dichloroethene		UX+	ug/L	100	47.11	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	75-09-2	Methylene chloride		U	ug/L	500	26.46	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	67-64-1	Acetone	100000	DX+	ug/L	10000	1556	5/6/2013	5/6/2013	5/6/2013	WG	1000	NA	5.0	NA	SW8260B	NALJ7994				
NAL13026-159	Ops Batch 94-MSD	ORG	156-60-5	trans-1,2-Dichloroethene		U	ug/L	100	55.61	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	1634-04-4	MTBE		U	ug/L	500	61.18	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	75-34-3	1,1-Dichloroethane		UX+	ug/L	100	52.66	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	156-59-2	cis-1,2-Dichloroethene		U	ug/L	100	32.11	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	74-97-5	Bromochloromethane		U	ug/L	200	41.37	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	67-66-3	Chloroform		U	ug/L	100	15.73	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	71-55-6	1,1,1-Trichloroethane		U	ug/L	100	16.65	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	78-93-3	2-Butanone	39000	DX+	ug/L	10000	811.80	5/6/2013	5/6/2013	5/6/2013	WG	1000	NA	5.0	NA	SW8260B	NALJ7994				
NAL13026-159	Ops Batch 94-MSD	ORG	56-23-5	Carbon tetrachloride		U	ug/L	100	27.64	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	71-43-2	Benzene	16	J	ug/L	100	13.53	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	107-06-2	1,2-Dichloroethane		U	ug/L	100	20.01	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	79-01-6	Trichloroethene		U	ug/L	100	36.33	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	74-95-3	Dibromomethane		U	ug/L	200	32.20	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	78-87-5	1,2-Dichloropropane		UX+	ug/L	100	18.17	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	75-27-4	Bromodichloromethane		U	ug/L	200	11.58	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	10061-01-5	cis-1,3-Dichloropropene		U	ug/L	100	25.01	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	108-88-3	Toluene	20	J	ug/L	100	20.96	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	108-10-1	4-Methyl-2-pentanone		UX+	ug/L	500	74.00	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	10061-02-6	trans-1,3-Dichloropropene		U	ug/L	100	31.15	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	127-18-4	Tetrachloroethene		U	ug/L	100	48.56	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	79-00-5	1,1,2-Trichloroethane		U	ug/L	100	34.28	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	124-48-1	Dibromochloromethane		U	ug/L	200	29.90	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	106-93-4	1,2-Dibromoethane		U	ug/L	200	26.49	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	591-78-6	2-Hexanone	250	JX+	ug/L	500	68.90	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	100-41-4	Ethylbenzene		U	ug/L	100	25.38	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	108-90-7	Chlorobenzene		U	ug/L	100	27.52	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	630-20-6	1,1,1,2-Tetrachloroethane		U	ug/L	200	19.28	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	XYLMP	p&m-Xylene	65	J	ug/L	200	26.14	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	95-47-6	o-Xylene	26	J	ug/L	100	12.90	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	100-42-5	Styrene		U	ug/L	100	20.23	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	75-25-2	Bromoform		U	ug/L	200	46.83	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	98-82-8	Isopropylbenzene		U	ug/L	200	20.48	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	103-65-1	n-Propylbenzene	28	J	ug/L	200	27.00	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				

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FINAL ANALYTICAL REPORT

Republic Services
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Bridgeton, MO 63044
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Project #: NAL13-026
Project Site: Bridgeton Landfill

Analytical results meet the requirements of NELAC Standards. The results reported apply solely to the sample analyzed and all results are reported on a dry weight basis unless stated otherwise. Any questions concerning this report should be directed to Scott D. Wall, President.
B = Analyte is found in the associated blank as well as in the sample.
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M = Matrix assesment, QC analyses parameter exceeded control limits.
U = Non-detect
* NAL is not certified for these compound by NELAC.

Lab ID:	Sample ID:		CAS #	ANALYTES	Results	QC	Units	RDL	MDL	Sample Date	Prep. Date	Analysis Date	Matrix	Dil.	Weight(g)	Vol.(ml)	% Solid	Method	Data file	Spike	% Rec	% RPD	Parent
NAL13026-159	Ops Batch 94-MSD	ORG	79-34-5	1,1,2,2-Tetrachloroethane		U	ug/L	200	29.16	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	96-18-4	1,2,3-Trichloropropane		U	ug/L	200	29.47	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	108-67-8	1,3,5-Trimethylbenzene		U	ug/L	200	20.03	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	98-06-6	tert-Butylbenzene		U	ug/L	200	32.61	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	95-63-6	1,2,4-Trimethylbenzene		U	ug/L	200	20.03	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	135-98-8	sec-Butylbenzene		U	ug/L	200	32.34	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	541-73-1	1,3-Dichlorobenzene		U	ug/L	200	22.21	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	99-87-6	p-Isopropltoluene	41	J	ug/L	200	25.48	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	106-46-7	1,4-Dichlorobenzene		U	ug/L	200	33.03	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	95-50-1	1,2-Dichlorobenzene		U	ug/L	200	26.38	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	104-51-8	n-Butylbenzene	44	J	ug/L	500	27.81	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	96-12-8	1,2-Dibromo-3-chloropropane		U	ug/L	500	159.11	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	87-68-3	Hexachlorobutadiene		U	ug/L	500	65.42	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	120-82-1	1,2,4-Trichlorobenzene		U	ug/L	500	27.63	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	91-20-3	Naphthalene	190	J	ug/L	500	56.04	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	ORG	87-61-6	1,2,3-Trichlorobenzene		U	ug/L	500	23.28	5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993				
NAL13026-159	Ops Batch 94-MSD	STD	1868-53-7	Dibromofluoromethane	55		ng			5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993	50	110%		
NAL13026-159	Ops Batch 94-MSD	STD	17060-07-0	1,2-Dichloroethane d4	51		ng			5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993	50	102%		
NAL13026-159	Ops Batch 94-MSD	STD	2037-26-5	Toluene d8	44		ng			5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993	50	88%		
NAL13026-159	Ops Batch 94-MSD	STD	460-00-4	Bromofluorobenzene	49		ng			5/6/2013	5/6/2013	5/6/2013	WG	100	NA	5.0	NA	SW8260B	NALJ7993	50	98%		

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Project #: NAL13-026
Project Site: Bridgeton Landfill

Analytical results meet the requirements of NELAC Standards. The results reported apply solely to the sample analyzed and all results are reported on a dry weight basis unless stated otherwise. Any questions concerning this report should be directed to Scott D. Wall, President.
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U = Non-detect
* NAL is not certified for these compound by NELAC.

Lab ID:	Sample ID:		CAS #	ANALYTES	Results	QC	Units	RDL	MDL	Sample Date	Prep. Date	Analysis Date	Matrix	Dil.	Weight(g)	Vol.(ml)	% Solid	Method	Data file	Spike	% Rec	% RPD	Parent
NAL13026-163	Ops Batch 98-MSD	ORG	75-71-8	Dichlorodifluoromethane		UX-	ug/L	500	29.28	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	74-87-3	Chloromethane		U	ug/L	500	43.07	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	75-01-4	Vinyl chloride		UX-	ug/L	200	31.86	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	74-83-9	Bromomethane		U	ug/L	500	50.04	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	75-00-3	Chloroethane		UX+	ug/L	500	55.61	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	75-69-4	Trichlorofluoromethane		U	ug/L	500	19.65	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	75-35-4	1,1-Dichloroethene		U	ug/L	100	47.11	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	75-09-2	Methylene chloride		U	ug/L	500	26.46	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	67-64-1	Acetone	66000	D	ug/L	10000	1556	5/7/2013	5/7/2013	5/7/2013	WG	1000	NA	5.0	NA	SW8260B	NALJ8035				
NAL13026-163	Ops Batch 98-MSD	ORG	156-60-5	trans-1,2-Dichloroethene		U	ug/L	100	55.61	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	1634-04-4	MTBE		U	ug/L	500	61.18	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	75-34-3	1,1-Dichloroethane		U	ug/L	100	52.66	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	156-59-2	cis-1,2-Dichloroethene		U	ug/L	100	32.11	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	74-97-5	Bromochloromethane		U	ug/L	200	81.18	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	67-66-3	Chloroform		U	ug/L	100	41.37	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	71-55-6	1,1,1-Trichloroethane		U	ug/L	100	15.73	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	78-93-3	2-Butanone	29000	D	ug/L	10000	166.52	5/7/2013	5/7/2013	5/7/2013	WG	1000	NA	5.0	NA	SW8260B	NALJ8035				
NAL13026-163	Ops Batch 98-MSD	ORG	56-23-5	Carbon tetrachloride		U	ug/L	100	27.64	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	71-43-2	Benzene	17	J	ug/L	100	13.53	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	107-06-2	1,2-Dichloroethane		U	ug/L	100	20.01	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	79-01-6	Trichloroethene		U	ug/L	100	36.33	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	74-95-3	Dibromomethane		U	ug/L	200	32.20	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	78-87-5	1,2-Dichloropropane		U	ug/L	100	18.17	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	75-27-4	Bromodichloromethane		U	ug/L	200	11.58	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	10061-01-5	cis-1,3-Dichloropropene		U	ug/L	100	25.01	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	108-88-3	Toluene	31	J	ug/L	100	74.00	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	108-10-1	4-Methyl-2-pentanone		UX+	ug/L	500	20.96	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	10061-02-6	trans-1,3-Dichloropropene		U	ug/L	100	31.15	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	127-18-4	Tetrachloroethene		U	ug/L	100	48.56	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	79-00-5	1,1,2-Trichloroethane		U	ug/L	100	34.28	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	124-48-1	Dibromochloromethane		U	ug/L	200	68.90	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	106-93-4	1,2-Dibromoethane		U	ug/L	200	29.90	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	591-78-6	2-Hexanone	260	J	ug/L	500	26.49	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	100-41-4	Ethylbenzene	35	J	ug/L	100	25.38	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	108-90-7	Chlorobenzene	32	J	ug/L	100	27.52	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	630-20-6	1,1,1,2-Tetrachloroethane		U	ug/L	200	19.28	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	XYLMP	p&m-Xylene	77	J	ug/L	200	26.14	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	95-47-6	o-Xylene	30	J	ug/L	100	12.90	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	100-42-5	Styrene	59	J	ug/L	100	20.23	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	75-25-2	Bromoform		U	ug/L	200	46.83	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				

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12976 St. Charles Rock Rd.
Bridgeton, MO 63044
ATTN: Craig Almanza

Project #: NAL13-026
Project Site: Bridgeton Landfill

Analytical results meet the requirements of NELAC Standards. The results reported apply solely to the sample analyzed and all results are reported on a dry weight basis unless stated otherwise. Any questions concerning this report should be directed to Scott D. Wall, President.
B = Analyte is found in the associated blank as well as in the sample.
D = Compound identified in an analysis at a secondary dilution factor.
E = Compound's concentration exceeds the calibration range of the instrument at this dilution.
X = Estimated value, some aspect of the test relative to this compound did not meet QC criteria. See batch narrative for explanation.
J = Estimated value, compound meets the identification criteria but the result is less than the limit of quantitation but greater than the MDL.
M = Matrix assesment, QC analyses parameter exceeded control limits.
U = Non-detect
* NAL is not certified for these compound by NELAC.

Lab ID:	Sample ID:		CAS #	ANALYTES	Results	QC	Units	RDL	MDL	Sample Date	Prep. Date	Analysis Date	Matrix	Dil.	Weight(g)	Vol.(ml)	% Solid	Method	Data file	Spike	% Rec	% RPD	Parent
NAL13026-163	Ops Batch 98-MSD	ORG	98-82-8	Isopropylbenzene	36	J	ug/L	200	20.48	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	103-65-1	n-Propylbenzene	46	J	ug/L	200	27.00	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	79-34-5	1,1,2,2-Tetrachloroethane		U	ug/L	200	29.16	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	96-18-4	1,2,3-Trichloropropane		U	ug/L	200	29.47	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	108-67-8	1,3,5-Trimethylbenzene	58	J	ug/L	200	20.03	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	98-06-6	tert-Butylbenzene		U	ug/L	200	32.61	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	95-63-6	1,2,4-Trimethylbenzene	140	J	ug/L	200	20.03	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	135-98-8	sec-Butylbenzene		U	ug/L	200	32.34	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	541-73-1	1,3-Dichlorobenzene		U	ug/L	200	22.21	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	99-87-6	p-Isopropltoluene	500		ug/L	200	25.48	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	106-46-7	1,4-Dichlorobenzene	150	J	ug/L	200	33.03	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	95-50-1	1,2-Dichlorobenzene		U	ug/L	200	26.38	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	104-51-8	n-Butylbenzene		U	ug/L	500	27.81	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	96-12-8	1,2-Dibromo-3-chloropropane		U	ug/L	500	159.11	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	87-68-3	Hexachlorobutadiene		U	ug/L	500	65.42	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	120-82-1	1,2,4-Trichlorobenzene		U	ug/L	500	27.63	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	91-20-3	Naphthalene	530		ug/L	500	56.04	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	ORG	87-61-6	1,2,3-Trichlorobenzene		U	ug/L	500	23.28	5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033				
NAL13026-163	Ops Batch 98-MSD	STD	1868-53-7	Dibromofluoromethane	51		ng			5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033	50	102%		
NAL13026-163	Ops Batch 98-MSD	STD	17060-07-0	1,2-Dichloroethane d4	50		ng			5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033	50	100%		
NAL13026-163	Ops Batch 98-MSD	STD	2037-26-5	Toluene d8	49		ng			5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033	50	98%		
NAL13026-163	Ops Batch 98-MSD	STD	460-00-4	Bromofluorobenzene	49		ng			5/7/2013	5/7/2013	5/7/2013	WG	100	NA	5.0	NA	SW8260B	NALJ8033	50	98%		

Bridgeton Landfill
5/10/13

MSD

Batch Number OB-86 MSD

Fill Data

Process Battery	Tank Battery 1	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/1/2013	5:30 PM
Fill Stop	5/2/2013	2:45 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	Frank Totino	
	Date	Time
Process Start	5/2/2013	1:45 AM
Process Stop	5/2/2013	1:00 PM

Approval Data

Approval Details	NAL13026-151
Lab Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Batch Number OB-89 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/2/2013	7:45 PM
Fill Stop	5/3/2013	5:15 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	Chris Martin	
	Date	Time
Process Start	5/3/2013	5:15 AM
Process Stop	5/3/2013	10:20 PM

Approval Data

Approval Details	NAL13026-154
Lab Test Results	Benzene 14 ppb J Value
Reprocessed Batch	

Notes

Batch Number OB-92 MSD

Fill Data

Process Battery	Tank Battery 1	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/4/2013	1:40 AM
Fill Stop	5/4/2013	10:50 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	Chris Martin	
	Date	Time
Process Start	5/4/2013	9:10 AM
Process Stop	5/5/2013	11:00 AM

Approval Data

Approval Details	NAL13026-157
Lab Test Results	Benzene ND <100 ppb
Reprocessed Batch	

Notes

Batch Number OB-94 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/4/2013	8:31 PM
Fill Stop	5/5/2013	6:35 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	Chris Martin	
	Date	Time
Process Start	5/5/2013	6:00 AM
Process Stop	5/6/2013	3:30 PM

Approval Data

Approval Details	NAL13026-159
Lab Test Results	Benzene 12 ppb
Reprocessed Batch	

Notes

Batch Number OB-98 MSD

Fill Data

Process Battery	Tank Battery 1	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/7/2013	12:00 AM
Fill Stop	5/7/2013	9:30 AM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	5/7/2013	3:00 AM
Process Stop	5/7/2013	11:00 PM

Approval Data

Approval Details	NAL13026-163
Lab Test Results	Benzene 17 ppb
Reprocessed Batch	

Notes

Batch Number OB-100 MSD

Fill Data

Process Battery	Tank Battery 2	
Composition	Co-Mingled	
	Date	Time
Fill Start	5/7/2013	2:30 PM
Fill Stop	5/7/2013	11:30 PM

Transfer Data

Battery		
Transfer Person		
	Date	Time
Transfer Start		
Transfer Stop		
Lock Out		
LockOut Person		

Processing Data

Processing Person	James Pippin	
	Date	Time
Process Start	5/7/2013	6:35 PM
Process Stop	5/8/2013	3:00 PM

Approval Data

Approval Details	NAL13026-170
Lab Test Results	Benzene 16 ppb
Reprocessed Batch	

Notes

Doug Mendoza

From: Doug Mendoza
Sent: Friday, May 10, 2013 8:28 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Lovie Lewis
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG)
Subject: RE: Bridgeton Landfill Submission for May 3, 2013 - response

Jessie,

We have completed our review of your initial email providing reports required by MSD's April 24, 2013 conditional approval to discharge leachate to MSD. The following table and

Reporting Requirement	Status	Necessary action by Bridgeton Landfill
MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:		
3. The daily direct discharge rate **shall not exceed 20,000 gallons per day** in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. **Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**	Submitted. Volume in compliance. Operational batches 65, 67, 71, 74, 77, 82.	
4. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**	Partially submitted. Operational batches 65, 67, 71, 74, 77 via FTP. **Batch 82 not provided.**	**Submit batch 82 results.** **All results for this item are to be completed <u>prior to</u> discharge to MSD, regardless of when submitted. Bridgeton landfill has indicated that one day results are achieved. Otherwise, there is no guarantee that the batches meet the reduction.** **This is an ongoing requirement.**
5. Each batch shall also be analyzed **for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly**	**Not submitted.**	**Provide estimated date of completion for all batches that are not yet complete and submitted.** **Note the requirement to use EPA-approved wastewater methods.** **This is an ongoing requirement.**

basis.		
6. Bridgeton Landfill shall **immediately notify MSD** of any circumstances that may result in a **change of pretreated landfill leachate character.**	None required at this time.	
7. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**	**Not submitted.**	**Submit the items.** **This is an ongoing requirement.**
8. Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. **The daily log sheets shall be submitted to MSD on a weekly basis,** and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.	Submitted. MSD will bill Bridgeton Landfill monthly after corresponding analytical data is reviewed.	
MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:		
3. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12716 **and is not hazardous material, shall be submitted to MSD on a weekly basis.**	Partially Submitted. Operational batches 65, 67, 71, 74, 77 via FTP. **Batch 82 not provided.**	**Submit batch 82 results.** **All results for this item are to be completed <u>prior to</u> discharge to MSD, regardless of when submitted. Bridgeton landfill has indicated that one day results are achieved. Otherwise, there is no guarantee that the batches meet the reduction.** **This is an ongoing requirement.**
4. The daily discharge **shall not exceed 50,000 gallons per day** and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716. The delivery of hauled waste **shall be evenly spread out throughout the hours of operation of the hauled waste station** to avoid any slugging of the Bissell Point TP.	Volume in compliance. **Loads received for some days have not been evenly spread out.** For example, Saturday, May 4, 2013 was all delivered between 7:00 am and 10:30 am. **Any trucks that arrive for discharge too early will be required to wait before accessing the station and discharging. In the future, trucks must be evenly spread out.**	**Spread all future loads evenly throughout the operating day.**
5. Analytical sampling results that demonstrate treated liquid is verified to have **achieved the appropriate reduction of toxic pollutants** to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and	Partially Submitted. Operational batches 65, 67, 71, 74, 77 via FTP. **Batch 82 not provided.**	**Submit batch 82 results.** **All results for this item are to be completed <u>prior to</u> discharge to MSD, regardless of when submitted. Bridgeton landfill has indicated that one day results are achieved. Otherwise, there is no guarantee that the batches meet the**

emission of toxic gases, vapors or fumes, **shall be submitted to MSD on a weekly basis.**		**reduction.** **This is an ongoing requirement.**
6. Each batch shall also be analyzed for **BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs** by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. **Analytical sampling results shall be submitted to MSD on a weekly basis.**	**Not submitted.**	**Provide estimated date of completion for all batches that are not yet complete and submitted.** **Note the requirement to use EPA-approved wastewater methods.** **This is an ongoing requirement.**
7. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.	None required at this time.	
8. The "Data Collection" items specified in the **Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**	**Not submitted.**	**Submit the items.** **This is an ongoing requirement.**
9. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.	MSD will bill Bridgeton Landfill monthly after corresponding analytical data is reviewed.	
MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:		
• <u>Air monitoring</u>: o **The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.** oo If these constituents were included in the analytical results, but inadvertently not included in the memorandum, **provide the results.** oo If these constituents were not included in the analytical results, **the sampling event shall be repeated** with the inclusion of dimethyl sulfide, and other reduced sulfur compounds,	**Not submitted.** If results not submitted by May 1, 2013, resampling must be performed by May 10, 2013. Sampling was performed under Pending air monitoring below.	**Reduced sulfur compound analytical results for the tank headspace sampling were not submitted by May 1, 2013.** **The headspace sampling must be repeated by May 10, 2013 to include reduced sulfur compounds if Bridgeton fails to provide the Pending air monitoring discussed in the next bullet by May 10, 2013.**

including hydrogen sulfide. oo **Submit data for the constituents by May 1, 2013.** If the constituents were not analyzed, **complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.** oo MSD may reevaluate this requirement upon **receipt of the final report for the next bullet item** pertaining to sampling the Westlake Pump Station, **if that report is provided by May 10, 2013.**		
• Pending air monitoring: Bridgeton Landfill committed to **air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline**. Bridgeton Landfill has not yet satisfied this commitment. o However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope for pre-discharge and during discharge and timeframe outlined in the email. **All compounds from the August 2012 sampling event must be included.** o Please note that **MSD may require additional air sampling events**, based on the results of sampling or future concerns that may arise.	Results not submitted yet.	**MSD did not give a deadline for this bullet because we felt Bridgeton understood the urgency of the air sampling by their actions of collecting these samples immediately upon hearing MSD was going to allow a conditional resumption of discharge.** **Submit all available air monitoring analytical results as soon as possible, both preliminary and final as appropriate for each analyte.**
• Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, **by May 10, 2013**.	Verification of completion not submitted yet.	
• Leachate/wastewater monitoring: o **Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."** oo If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, **provide the results for these analytes.** oo If any of the analytes are not included, the sampling event shall be	Submitted.	

repeated with the inclusion of all missing analytes. oo Submit data for the constituents by May 1, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 10, 2013, with results to be submitted by June 10, 2013.		
• Past analytical data: Submit, by May 1, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.	Submitted via FTP.	
• Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD. o **Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate** discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.	Not yet required to be submitted. However, Bridgeton Landfill submitted the following: "We believe that current treatment achieves toxicity limitations; we can submit plan of planned pretreatment as developed by June 1, 2013. However, development of full pretreatment system plan must obtain MDNR approval and is scheduled for September 1, 2013, submission. We will include MSD."	Approval of a pretreatment system by MDNR does not preclude approval of the system by MSD, but it instead an additional approval required of Bridgeton Landfill. Because MSD's June 1, 2013 deadline is before MDNR's September 1, 2013 deadline, **Bridgeton Landfill will need to schedule to meet MSD's June 1, 2013 deadline. This means submittal of a plan and schedule to install a pretreatment system. It does not mean submittal by June 1, 2013 of what Bridgeton Landfill has completed towards this plan.** Note that Bridgeton Landfill must also achieve compliance with all metals and other pollutants limited in the sewer use ordinance. Any plans should also address necessary pretreatment for this.
• Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers. o **Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.**	Not yet required to be submitted. However, Bridgeton Landfill submitted the following: "this is not consistent with system operations. Further we believe that current treatment achieves toxicity limitations."	The purpose of separating the gas condensate is not only to potentially remove toxic pollutants, but is also to potentially remove high strength pollutants. If modifications to segregate gas condensate are "not consistent with system operations," then Bridgeton Landfill must submit the alternate option: **or a report showing the feasibility *[or infeasibility]* of making such modifications.**

Other items:

- In your May 3, 2013 email, you stated, "We now understand that MSD has directed that both volume and truck capacity be maintained below the volume restriction. That condition will be met moving forward." There may have been some miscommunication. You may discharge up to 50,000 gallons per day of actual

volume. However, billing will be based on truck capacity, since that is the mechanism required in the hauled waste ordinance No. 12716.

- On May 8, 2013 at 12:10 pm, MSD measured the pH of Bridgeton Landfill's discharge to the Westlake Pump Station. The pH was measured at 5.35 SU, in violation of ordinance 12559 limits. A field notice of violation was provided to Bryan Sehie, with a written notice of violation to be sent in the mail. Bridgeton Landfill must implement corrective actions to keep the pH of the discharged leachate within required limitations.

- Besides analyses required in MSD's April 24, 2013 conditional approval, Bridgeton Landfill must continue to analyze its discharge for any other pollutants required under its Industrial Wastewater Discharge Permit. These analyses must be performed at least once per quarter.

- From your earlier data submitted with the proposal for discharge, it appears that Bridgeton Landfill may have difficulty meeting metals limits for metals other than zinc. You should either show how those other metals' limits will be met, or may need to submit a variance request for them. The request should include a desired variance level, along with documentation to support that level.

We look forward to your submittal, in the next weekly report, of the missing or incomplete items noted above. If we have missed the submittal of an item, please clarify for us. If you have any other questions, please contact us.

Doug Mendoza
Industrial Pretreatment Manager
MSD

To: BRIDGETON LANDFILL LLC [1003803000]

From: Doug Mendoza

Date: May 9, 2013

Re: May 2, 2013 meeting to discuss technical issues

On 5/2/13 at 10:00 am, MSD met with Bridgeton Landfill at MSD's DEC offices to review technical issues related to the landfill and its discharges. The following attended the meeting:

Bridgeton Landfill: Steve Smith, Republic Services (landfill owner company), Ed Galbraith, Barr Engineering, Dan Feezor, Feezor Engineering

MSD: Rob Daly, Nora Estopare, Ken Gambaro, Mike Grace, John Lodderhose, Doug Mendoza

The following lists items discussed at the meeting, corresponding to the attached agenda brought by the Bridgeton Landfill representatives:

Steve Smith, IEPA, and American Bottoms treatment plant in Sauget, IL have a 1:00 pm telephone call scheduled. The landfill hopes to resume deliveries to American Bottoms.

Landfill reps requested an increase in the allowed discharge at Bissell to 52,500 GPD from 50,000 GPD. This would allow them to more completely fill the trucks and ease logistics. MSD said that we do not want the approval requirements to start creeping or to have disputes in the future over what is or isn't approved or available. It will stay at 50,000 GPD.

MSD also asked what volume had been getting delivered to American Bottoms. The answer was 75,000 GPD. They hope to restart it, but at a lower initial volume and ramp up. There was a discussion that American Bottoms had been having problems meeting their limits, and there were also issues with mainfests – zip codes, etc. It was clarified that the high benzene reading measured in a load brought to American Bottoms was from a water analysis, not a TCLP analysis. The landfill now has a much more aggressive aeration system and SOP.

MSD asked about the foam or scum layer that the landfill said formed (in the above discussion). They said it was foam, not scum, and dissipates over time. It was from aeration of the leachate, and visual checks showed that it was not a scum that remained on top.

Landfill reps said they were setting up an FTP site to load MSD-requested documents to. They will provide summary information, in addition to raw data. MSD asked that they provide data for their loads to American Bottoms, third part data, and associated violation notices & responses. They said they will start will all the landfill has generated so far, and can add additional items later.

Landfill reps also said that modifications to the Westlake lift station are almost complete. They are waiting on AmerenUE to install a new power line. Estimated date to be fully functional is May 10. Landfill reps said that they have taken air monitoring samples in the lift station, without leachate discharging, for a baseline level. MSD stressed the MSD field staff concerns, and that we will need air sampling performed after equipment is installed to make sure it is installed properly. They will also need to include the reduced sulfur compounds like dimethyl sulfide on

the air samples. Air sampling will also be needed as leachate discharges increase to different levels, with sampling continued until a trend of compliance is identified.

The landfill reps said that discharge to the lift station/Missouri River plant started Tuesday, April 30 at 2:10 pm at 760 – 827 gal/hr rate, lasting until 11 pm. This was to allow 8 hour air sampling during the discharge. On May 1, discharge started at 7 am, at 833 gal/hr for 24 hours, to 7 am May 2.

Toxicity concerns from Black & Veatch's review of landfill data were discussed by MSD. MSD is going to have a modified SOUR (standard oxygen uptake rate) test run, and is also pursuing having a respirometry test run.

The landfill reps said they would skip item 4 on the agenda, other discharge locations, for now. They said it is too early in the process.

We all discussed what is needed for items 2c & 3c, compliance with toxic atmosphere prohibitions. The landfill will sample head space, the air in the lift station, and liquid batches.

MSD stated that item 5, planned industrial hygiene evaluation, is a discrete item that MSD wants from an industrial hygienist. This can be done after the air sample results are received.

For item 6, MSD stated that there are no other facilities discharging to Missouri River plant that have loading near the landfill's. We will send a list of regulated, discharging industries to the landfill reps, along with the BOD mass loadings from them.

Regarding item 7 toxicity issues, MSD said that as discharge is ramped up, toxicity testing will be needed to check impact.

For item 8, other metals variances, the landfill reps said they will submit requests as needed.

For item 9 long term discharge and treatment system parameters, MSD explained that the plant expansion was designed only for BOD loading, and for new development. It was not designed to allow existing industries to discharge more, since there was not a need. The treatment system would also need to reduce metals loadings. MSD asked, and landfill reps verified that they are looking at an MBR pretreatment system, and it will probably take 18 months to 2 years to be in place.

MSD also asked the landfill about our request that they look into segregating the gas condensate. They replied that they would prefer just a consistent liquid mix instead.

It was tentatively decided to meet again in two weeks.

MSD AND BRIDGETON LANDFILL TECHNICAL ISSUES MEETING

MAY 2, 2013

AGENDA

1. Introductions
2. Updates
    a. Discharges to Bissell Point and MO River (Steve and Dan)
    b. Treated leachate sampling data (Ed)
    c. Air monitoring (Steve)
    d. Modifications to the lift station (Steve)
3. Compliance Issues on the Conditional Approval
    a. 52,500 vs. 50,000 issue (Dan)
    b. Content, format and timing of weekly reports (Dan)
    c. Compliance with condition #5 for Bissell Point discharge (Ed)
4. Other interim discharge options (Steve)
    a. 71 Angelica Street, 7151 N. Market Street, 4076 Bayless Ave
        i. measures to insure neighborhood
        ii. worker protection
        iii. billing and monitoring
    b. Direct discharge at Lemay or other facility
5. Planned industrial hygiene evaluation
6. Other facilities discharging to MO River WWTP (Ed)
7. Toxicity issues (Ed)
8. Other metals variances (Ed)
9. Long term discharge. Derivation of limits/design parameters for treatment system. (Ed)

Metropolitan St. Louis Sewer District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
Phone: 314.768.6200 www.stlmsd.com

May 8, 2013

Craig Almanza
Area Environmental Manager
BRIDGETON LANDFILL LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

RE: NOTICE OF VIOLATIONS – WASTEWATER DISCHARGE PERMIT NO. 0511559802 - 2
For premise at: 13570 St. Charles Rock Road, Bridgeton, MO 63044

Dear Mr. Almanza:

As our field personnel notified Bryan Sehie on May 8, 2013, MSD personnel recently collected and analyzed samples of wastewater discharged to the MSD system from the premise above. Unfortunately, we identified the following violation:

VIOLATION OF DISCHARGE LIMITATIONS:

DATE	TIME	SAMPLE POINT	SAMPLE TYPE	POLLUTANT	DISCHARGE LIMIT	LIMIT TYPE	VALUE FOUND
05/08/13	1210	007	Grab	pH	5.5 su < pH < 11.5 su	IN	5.35 su

007 = 14" pipe into Westlink Pump Station Wetwell, on S side
mg/L = milligrams per liter **IN = Instantaneous**

Our field personnel also provided him with a Field Notice of Discharge Violation, copy enclosed, for the above pH violations. Please be aware that laboratory analyses of the samples collected may potentially result in other discharge violations. Should there be any, we will notify you of them upon completion of the analyses.

REQUIRED ACTION/RESPONSE:

1. Submit a report of corrective actions, to ensure compliance with MSD limitations for **pH.** In the report:

    a. Indicate which corrective actions are initiated and which are still to come
    b. Include plans for additional sampling to verify a return to compliance

2. Submit all additional sampling results to MSD. Sample collection must occur as follows:

    a. Sample at the identified sampling point
    b. Collect grab samples for **pH**
    c. Take samples at times representative of normal operations
    d. pH and temperature readings must be taken immediately when the sample is collected, and not after transporting to a laboratory for analysis
    e. pH readings must be measured using a pH probe, rather than with pH paper strips

3. Refer to the enclosure for additional information on:

    a. Potential enforcement actions should noncompliance continue
    b. Percentages applicable to Significant Noncompliance, when planning for additional sampling

4. **Please submit your response no later than May 28, 2013**.

Thank you for helping us to comply with state and federal regulations. If you have any questions, please contact me at 314.436.8719.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Tom Boehm
Environmental Engineering Associate

Enclosures: SNC enclosure, SP map, Field Notice of Violation

MSD

Doug Mendoza

From: Dave Schepers
Sent: Wednesday, May 08, 2013 1:50 PM
To: Doug Mendoza; Brian G. Gibson
Subject: Bridgeton Landfill - New Meter

The Bridgeton Landfill meter reading was at 116,337. The reading was taken at 12:00 p.m. on Wednesday, May 8 , 2013.

MSD

FIELD NOTICE OF DISCHARGE VIOLATION

METROPOLITAN ST. LOUIS SEWER DISTRICT
DIVISION OF ENVIRONMENTAL COMPLIANCE
10 EAST GRAND AVENUE
ST. LOUIS, MO 63147

COMPANY NAME Bridgeton Landfill LLC PRETREATMENT ACCOUNT NO. 1003803000

MSD Industrial Waste Technicians conducted sampling of the wastewater discharge from your facility today. This sampling involved up to four separate visits to each sampling point (SP). The samples collected will be analyzed by the Division of Environmental Compliance laboratory and the results will become a part of the District's records for your facility.

Conditions, which we wish to bring to your attention at the earliest possible time, were noted during the sampling visits. These conditions may include pH and/or temperature readings which fell outside the limits allowed under MSD Sewer Use Ordinance 12559 or other conditions which may indicate a potential problem with the discharge from your facility.

SP NO.	TIME	pH	TEMP	OTHER CONDITIONS
007	11:40	5.35	26.5	

SP NO.	TIME	pH	TEMP	OTHER CONDITIONS

pH must be within the range of 5.5 to 11.5 at all times and the temperature may not exceed 60 degrees Celsius (140 degrees Fahrenheit) at any time.

Your company will receive a formal notice of the above violations as well as notice of any violations of other parameter limits which are detected during analysis by the MSD laboratory.

This field notice is provided to assist you in making an early determination of the cause of the above violations and to take immediate corrective actions. Please direct any questions you may have to Doug Mendoza at 314-436-8717.

Presented to company representative (Printed Name) Bryan Schie

(Signature) B. K Schie

by MSD Ind. Waste Technician Dave Sumpers Date 5/8/13 Time 12:10

NOV-Field 1/08 Distribution: White Copy → Industry; Yellow Copy → Pretreatment Unit; Pink Copy → Field Unit

MSD

Doug Mendoza

From: Dave Schepers
Sent: Tuesday, May 07, 2013 12:52 PM
To: Doug Mendoza; Brian G. Gibson
Subject: Bridgeton Landfill

The Bridgeton Landfill meter reading was at 7,008,539. The reading was taken at 11:05 a.m. on Tuesday, May 7 , 2013.

Doug Mendoza BRIDGETON LANDFILL

From: Michael Grace
Sent: Monday, May 06, 2013 9:27 AM
To: Doug Mendoza
Subject: FW: Certificate of Insurance

Doug:

Currently waiting on the certificate of insurance, will advise when rec'd, thanks.

Michael Grace
Risk & Insurance Manager
The Metropolitan St. Louis Sewer District
314-768-6219
Fax: 314-768-2740

From: Michael Grace
Sent: Monday, May 06, 2013 7:56 AM
To: Loch Christine (cloch@republicservices.com)
Cc: John Lodderhose; Ken Goins
Subject: Certificate of Insurance

Christine:

Please send certificate of insurance, (Pollution Liability) Attn:

Michael Grace Risk Management
Metropolitan St. Louis Sewer District
2350 Market
St. Louis MO 63103-2555
mgrace@stlmsd.com

Thanks.

Michael Grace
Risk & Insurance Manager
The Metropolitan St. Louis Sewer District
314-768-6219
Fax: 314-768-2740

MSD

Doug Mendoza

From: Brian G. Gibson
Sent: Monday, May 06, 2013 8:27 AM
To: Doug Mendoza
Cc: Keith Holderle; Dave Schepers
Subject: Bridgeton Landfill reading

Bridgeton Landfill meter reading 6,951,769 gallons @ 09:35 on Friday May 03, 2013.

MSD

Doug Mendoza

From: Darin Lewis
Sent: Saturday, May 04, 2013 11:41 AM
To: Doug Mendoza; Brian G. Gibson; Catherine Politte; Mike Townley; Sara Kammerer; Steve Grace
Subject: Bridgeton Landfill leachate weekley volume summary.

Total Bridgeton Landfill leachate volume hauled to Bissell Point Treatment Plant for 4/29/2013 to 5/4/2013.
4/29 – 46,500 gallons
4/30 – 48,900 gallons
5/1 – 48,400 gallons
5/2 – 47,900 gallons
5/3 – 48,100 gallons
5/4 – 46,500 gallons
Total = 286,300 gallons

MSD

Doug Mendoza

From:	Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent:	Friday, May 03, 2013 4:47 PM
To:	Doug Mendoza; John Lodderhose; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Lovie Lewis
Cc:	Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Ed Galbraith; Cunningham, Ally (LG)
Subject:	Bridgeton Landfill Submission for May 3, 2013
Attachments:	ftp site ready; MSD Discharge deliverable requirements.XLSX; 2013-5-3.pdf

Good afternoon,

I am providing this as the Initial Submission and First Weekly Submission as requested by MSD's April 24, 2013, Conditional Approval.

As a preliminary matter, if there is anyone receiving this who does not wish to receive future submissions and reports, please respond to me so that I can update the distribution list.

This submission consists of the following key items:

1. Information on and instructions to access an FTP site established by Barr Engineering. As set forth in more detail in the attached email, this site contains the requested analytical submittals. This is a substantial body of documentation and is being provided to ensure that MSD has as much data as is currently available as soon as possible. As discussed in yesterday's meeting, the parties will continue to work on developing and refining an approach to electronic data and report submission in order to make the information more useful and accessible for MSD.
2. I have attached an Excel Spreadsheet that we have prepared as an updated and working document summarizing requested submittals. This is provided to update the current status of all requests. It is also intended to ensure that all parties are on the same page with regard to requested submittals. We intend to continue to update this and would a your feedback.
3. I have attached the first weekly summary of the disposal logs (which will also be posted to the FTP site). Please note that prior to yesterday's meeting, the facility ensured compliance with volume restrictions through volume measurement of each shipment. Even on the day where truck capacity exceeded 50,000, the facility ensured that the 50,000 volume limit was not exceeded. We now understand that MSD has directed that both volume and truck capacity be maintained below the volume restriction. That condition will be met moving forward.

If you have questions on any of these submissions, please do not hesitate to contact us. We look forward to continuing to work with you on improving and refining information collection and submission to meet MSD's information needs.

Thank you,
Jessie

Jessica E. Merrigan
2345 Grand Boulevard; Suite 2200 | Kansas City, MO 64108

LATHROP & GAGE LLP
P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

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Doug Mendoza

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Friday, May 03, 2013 3:36 PM
To: Merrigan, Jessie (LG)
Subject: ftp site ready

Instructions:

Copy this link and paste it into Windows Explorer (NOT Internet Explorer). ftp://ftp.barr.com/bridgetonlandfill/
Enter the User ID and Password into the dialogue box.
User: blfdata
Password:[redacted]

If this does not work, try using FileZilla (https://filezilla-project.org/download.php), enter the site name, username and password and click Quickconnect.

Disclaimer

1. This data is provided to fulfill the terms of MSD's April 24, 2013 Conditional Approval, which requires that Bridgeton landfill provide past analytical data on previously treated leachate that has been disposed off-site as well as ongoing analytical results as required by the Approval.

2. This data represents Bridgeton Landfill's best effort to collect and compile all past data from various entities and project managers who have been involved in the project since January of 2013. As of today, the data set is not 100% complete, however Bridgeton is continuing to seek out and collect any additional data, and will post it to this site as it becomes available. Bridgeton Landfill commits to having any additional data gathered a complete set of data posted by Friday, May 8.

3. Some of the samples in this set may be from untreated liquid but are included because the nature of the material is uncertain at this time. As part of the QC process, we will continue verifying and further separate out untreated samples and update the site.

4. The majority of the data has not been through a post- laboratory QC process. Bridgeton Landfill has begun a process to collect all data into a centralized system and perform routine QC review. Any updates or qualifiers to the data based on this review will be noted in reports that will be posted to this site.

5. Bridgeton Landfill is committed to providing the data to MSD in the most transparent manner possible. By next week, summary data reports will be posted. Bridgeton Landfill will work with MSD to create customized reports to assist in review of the data.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

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From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Friday, May 03, 2013 8:34 AM
To: Ed Galbraith
Subject: RE: ftp site

Thanks, Ed. Access worked fine. I see that you have already added American Bottoms-related correspondence.

Doug

From: Ed Galbraith [mailto:EGalbraith@barr.com]
Sent: Friday, May 03, 2013 8:28 AM
To: Doug Mendoza
Cc: Merrigan, Jessie (LG)
Subject: ftp site

Doug, the ftp site has been set up and we'll be transferring data to it today. Jessie will send a notice when the transfer is complete. If you would, please test drive the site today to make sure that it will work with MSD's system. Here are the instructions:

Copy this link and paste it into Windows Explorer (NOT Internet Explorer). ftp://ftp.barr.com/bridgetonlandfill/
Enter the User ID and Password into the dialogue box.
User: blfdata
Password: tran$fer!

If this does not work, you can try using FileZilla (https://filezilla-project.org/download.php), enter the site name, username and password and click Quickconnect.

Please let me know one way or the other whether you have success.

Thanks.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

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Summary of MSD Deliverables and Status

Deliverable	Source	Status	Deadline	Questions
Analyze leachate post-aeration for parameters covered in facility's annual monitoring event along with VOCs and SVOCs be EPA methods 624, 625, and 8260.	March 20, 2013, Meeting	Sampling Completed April 5, 2013. All available sampling results submitted to MSD; remaining constituents will be provided upon receipt of final data (only radiologicals are outstanding due to laboratory testing timelines).	Prior to Discharge	None
Submit data to MSD for the purpose of confirming appropriate treatment levels to achieve reduction of organics and toxics, and establishing a suitable volume and rate of discharge to the Missouri River Treatment Plant to meet any appropriate mass loading restrictions.	March 20, 2013, Meeting	Completed with April 19, 2013, Submission	Prior to Discharge	None
Submit proposal to conduct air sampling to respond to MSD's worker safety concerns.	March 20, 2013, Meeting	Headspace vapor sampling for VOCs conducted on April 5, 2013, at time of full characterization of treated leachate. Bridgeton Landfill agreed to MSD's scope of requested air testing (copy scope of August 2012 sampling event) and conducted comprehensive monitoring of air in lift station during discharge on April 30, 2013.	None	None
Provide update on current leachate management system and planned improvements.	March 20, 2013, Meeting	Update and overview of plan provided on March 20, 2013. Detailed summary of current pre-treatment provided with Standard Operating Procedure on April 19, 2013. Additional pre-treatment submissions addressed in April 24, 2013, conditional approval.	Prior to Discharge	Is request moot in light of plans requested by April 24, 2013, submission.
Bridgeton Landfill and MSD to work together to develop a protocol for resumption of discharge.	March 20, 2013, Meeting	Proposal submitted April 19, 2013; conditional approval submitted April 23, 2013; meeting scheduled for May 2, 2013.	Prior to Discharge	Ongoing discussion of discharge volumes and process.
Bridgeton Landfill will engage an industrial hygienist to perform an evaluation of worker protection at the lift station following resumption of discharge.	March 20, 2013, Meeting	See also discussion below from April 24, 2013, conditional approval; air samples have been collected and IH review can begin following receipt.	None	
Notify regarding changes in pretreated leachate character	April 24, 2013, Conditional Approval	Ongoing	Notify immediately	None
Records of volumes discharged, including certification that daily and hourly limits were not exceeded	April 24, 2013, Conditional Approval	Ongoing; first batch submitted on May 3, 2013.	Weekly	Weekly report format being finalized.

Summary of MSD Deliverables and Status

Deliverable	Source	Status	Deadline	Questions
Analytical sampling results to demonstrate treated liquid is verified to have achieved appropriate reduction of toxic pollutants as required by Ordinance No. 12559 (Mo River and Bissell Point) and 12716 (Bissell Point)	April 24, 2013, Conditional Approval	April 19, 2013, sampling included those constituents addressed in March meeting, annual sampling report, VOC and SVOC; continued testing is ongoing.	Weekly	Is data beyond the April 19th submission needed? Confirm submission date, form and method for delivery; discuss concerns with parameter list especially for weekends.
Sampling results under Method 624, Method 625, and approved metals methods	April 24, 2013, Conditional Approval	April 19, 2013, sampling included those constituents addressed in March meeting, annual sampling report, VOC and SVOC; continued testing is ongoing.	Weekly	Is data beyond the April 19th submission needed? Confirm submission date, form and method for delivery; discuss concerns with parameter list especially for weekends.
Data collection items specified in the Bridgeton Landfill SOP	April 24, 2013, Conditional Approval	Ongoing; first batch submitted on May 3, 2013.	Weekly	Still working to develop form and method for weekly delivery
Discharge meter readings shall be recorded on a daily log sheet, submit log sheets on weekly basis	April 24, 2013, Conditional Approval	Ongoing; first batch submitted on May 3, 2013.	Weekly submission; daily collection	Still working to develop form and method for weekly delivery
Complete MSD Waste Transporter Authorization Application	April 24, 2013, Conditional Approval	Complete	Prior to hauling to Bissell Point	None
Submit all laboratory data for pre-treated leachate which has been disposed off site	April 24, 2013, Conditional Approval	In process; available data loaded to FTP site on May 3, 2013.	May 1, 2013, extended to May 3, 2013	All available data gathered by Bridgeton Landfill will be submitted on Friday; several longer time frame testing items are not yet available and will be submitted when available.
Complete installation of 4 gas meter and ventilation system in Westlake Pump Station	April 24, 2013, Conditional Approval	In process	May 10, 2013	Only remaining task is waiting on MSD preferred electrician, any help from MSD would be appreciated.
Submit plan and schedule to install a pretreatment system to reduce strength and toxicity of landfill leachate and to comply with Ordinance No. 12559 without variances	April 24, 2013, Conditional Approval	In process; written response to request to follow May 2, 2013, meeting.	June 1, 2013	We believe that current treatment achieves toxicity limitations; we can submit plan of planned pretreatment as developed by June 1, 2013. However, development of full pretreatment system plan must obtain MDNR approval and is scheduled for September 1, 2013, submission. We will include MSD.

Summary of MSD Deliverables and Status

Deliverable	Source	Status	Deadline	Questions
Submit report to demonstrate separation of gas condensate and landfill leachate and feasibility of such a plan	April 24, 2013, Conditional Approval	To be addressed in response to MSD Letter following May 2, 2013, meeting.	June 1, 2013	As will be discussed in the written response to MSD's letter, this is not consistent with system operations. Further, we believe that current treatment achieves toxicity limitations. We will submit plan of planned pretreatment as developed by June 1, 2013. However, development of full pretreatment system plan must obtain MDNR approval and is scheduled for September 1, 2013, submission. We will include MSD.
Complete air testing or gather completed air testing data for dimethyl sulfide and other reduced sulfur compounds, including hydrogen sulfide	April 24, 2013, Conditional Approval	Testing completed within lift station during discharge on Tuesday April 30, 2013; results pending	Submit completed data by May 1, 2013 or complete repeated sampling by May 10, 2013 with data submitted by June 10, 2013	The during discharge air sampling event included, per MSD's request, all compounds covered by the August sampling event. Some of those compounds have longer laboratory times. The results will be provided when available and final, but it is not clear that the June 10, 2013 deadline is consistent with the necessary lab time.
Complete sampling or gather completed sampling data of Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (Cesium-137), Radium 226, and Radium 228 from landfill leachate	April 24, 2013, Conditional Approval	Testing Completed during April 5, 2013, leachate characterization testing; results pending.	Submit completed data by May 1, 2013 or complete repeated sampling by May 10, 2013 with data submitted by June 10, 2013	These substances require longer laboratory delivery times. The final, QA/QC'd data will be provided as soon as it is available from the lab, but it is not clear that the June 10, 2013, date is consistent with necessary lab time.
Complete air sampling of Westlake Pump Station as outlined in email from Jessie Merrigan to MSD on April 24, 2013 at 12:30PM, with all constituents from the August 2012 sampling event included. Have industrial hygienist evaluate air and certify it is safe for MSD workers	April 24, 2013, Conditional Approval	Testing Completed on April 25, 2013; results pending.	None stated	Report will be provided as soon as results of pre discharge and during discharge air monitoring are available and Bridgeton Landfill will work with MSD on scope of industrial hygiene review.
Encourage toxicity testing	April 24, 2013, Conditional Approval	Bridgeton Landfill remains ready and willing to support and fund additional toxicity testing at the MSD facilities receiving leachate.	None stated	We remain concerned that toxicity testing of a single waste stream will not produce comparable or useful data for treatment system analysis.

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissel Point Tracking Table			
Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Thursday, April 25, 2013	Operational Batch 65 - MSD	10,200	12,000
Friday, April 26, 2013	Operational Batch 65 - MSD	45,800	48,000
Saturday, April 27, 2013	Operational Batch 67 - MSD	47,100	49,600
Monday, April 29, 2013	Operational Batch 71 - MSD	46,500	51,000
Tuesday, April 30, 2013	Operational Batch 74 - MSD	48,700	49,500
Wednesday, May 01, 2013	Operational Batch 77 - MSD	48,400	49,500
Thursday, May 02, 2013	Operational Batch 82 - MSD	47,900	49,500

Report Starting Date:	*4/25/2013 12:00*
Report Ending Date:	*5/3/2013 7:00*

MSD - Missouri River Tracking Table							
Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)
Tuesday, April 30, 2013	Operational Batch 74 - MSD	7,143	4/30/2013 13:15	4/30/2013 23:00	9.8	840	732.6
Wednesday, May 01, 2013	Operational Batch 77 - MSD	17,524	5/1/2013 7:00	5/2/2013 4:00	21.0	840	834.5
Thursday, May 02, 2013	Operational Batch 82 - MSD	17,503	5/2/2013 7:00	5/3/2013 4:14	21.2	840	824.3

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: _____ Title: Environmental Specialist Date: 5/3/2013

Weekly Volume Summary 1 (4-26-13 through 5-2-13)

From Bridgeton Landfill FTP site:

American Bottoms Correspondence folder

AMERICAN BOTTOMS
REGIONAL WASTEWATER TREATMENT FACILITY
1 AMERICAN BOTTOMS ROAD
SAUGET, ILLINOIS 62201-1075

(618) 337-1710
FAX (618) 337-8919

April 1, 2013

Mr. Craig Almanza
Area Environmental Manager
Republic Services, Inc.
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

Subject: Leachate Discharge Monitoring Discrepancy

Dear Mr. Almanza:

Due to inconsistencies that have arisen between the results of Bridgeton's pre-acceptance wastewater testing and American Bottoms testing during the wastewater's discharge to our sewer system, we are suspending acceptance of Bridgeton leachate until such time as we are able to satisfactorily resolve these issues.

American Bottoms has been relying on the Bridgeton test results of treated batches of leachate to determine whether to accept hauled shipments of the batch wastewater. As you know, American Bottoms also randomly obtains samples for testing from the hauled wastewater discharges at our facility to confirm the results of the pre-acceptance batch testing. For most of the shipments, the American Bottoms test results were consistent with the Bridgeton batch testing results. However, as you are aware, there was a discrepancy between the Bridgeton batch testing results for Batch 0007 and the results obtained from the discharge at our facility which took place on March 5, 2013. Our attempts to identify a reason for this discrepancy have not been conclusive. Bridgeton's pre-acceptance analysis of Batch 0007 reported a benzene concentration of 270 ug/l, which was accompanied by extensive laboratory quality control data, including blanks, calibration data, and matrix spikes duplicates. The laboratory data which Bridgeton submitted for Batch 0007 showed the test results to be reliable. On the basis of the Bridgeton analytical data, American Bottoms accepted 10 truckloads from Batch 0007, with each truckload respectively designated "0007a" through "0007j." Consistent with the laboratory data for Batch 0007, manifests and tracking forms provided by Bridgeton and its transporter MBI indicated that each of these ten truckloads was not hazardous waste.

As we have previously discussed, American Bottoms tested two of the ten truckloads from Batch 0007 — numbered "0007c" and "0007f." The benzene result for truckload 0007c was 544 ug/l, which was significantly higher than the 270 ug/l benzene results from the Bridgeton pre-acceptance Batch 0007 testing and greater than the 500 ug/l TCLP limit for benzene. The benzene result for truckload 0007f was 485 ug/l, which also was significantly higher than the Bridgeton pre-acceptance test result but below the 500 ug/l TCLP benzene limit. The American Bottoms benzene test results for the two Batch 0007 truckloads are the average of three grabs, the benzene results from individual grab samples taken from each truckload. The grab samples analyzed, and from which the average benzene results was determined, were obtained during the beginning, middle and end of the truck discharge period for each of these truckloads. The benzene results from these individual grab samples of each truckload showed good agreement. Reanalysis was conducted which also showed good agreement, with results averaging 573 ug/l for load 007c and 473 ug/l for load 007f.

After a telephone conversation with you about the American Bottoms benzene test results for the two Batch 0007 truckloads, American Bottoms arranged for a third party analysis of the remaining sample vial sample of truckload 0007f. Because there were no remaining sample vials of load 0007c, only the 0007f sample could be sent for third party analysis. The results of the third party analysis of the truckload 0007f sample vial showed a benzene concentration of 474 ug/l, which was reasonably consistent with the American Bottoms 0007f benzene analysis result of 485 ug/l.

American Bottoms also discussed the Batch 0007 truckload benzene analytical results with Bridgeton's laboratory contractor, Tracey Davis at New Age Landmark, in an effort to identify the cause of the differing benzene test results. Ms. Davis stated that in some cases she has observed that the use of an acid preservative in the sample results in higher benzene test results; she suggested that the reason for the discrepancy might be that American Bottoms uses the acid preservative, whereas Bridgeton does not. American Bottoms subsequently performed its own internal comparison between acid preserved samples and samples preserved without acid from Bridgeton Batch 0011. Both samples were non-detect for benzene.

From our discussions with you about Bridgeton's onsite treatment of the leachate, we have understood that the treated leachate in the tanks from which the pre-acceptance batch samples are taken must be well-mixed. Perhaps there are factors associated with the handling or

storage subsequent to batch testing that may be contributing to the variability identified in the Batch 0007 benzene test results? If you have any information or data that would be relevant to this issue, as well as any other helpful information to explain the inconsistent benzene results for Batch 0007, we would be interested in receiving it.

Based on the above-described, recent developments, American Bottoms needs to satisfactorily resolve the issues relating to the benzene levels of truckloads of batch leachate from Bridgeton before it can continue accepting any further discharges from Bridgeton. The agreement between American Bottoms and Bridgeton prohibits the acceptance of any hazardous wastewater. We previously have relied upon the pre-acceptance batch testing results supplied by Bridgeton in accepting the individual truckload shipment from the tested batch and signing the non-hazardous waste manifests that accompanied those shipments. Along with our random testing of the actual truckload discharges, we reasonably believed that these procedures were adequate and sufficient to ensure that no hazardous wastewater was accepted and they had proven to be so until the recent acceptance and testing of the two truckloads from Batch 0007. However, with this new information, we need to re-evaluate the situation before we can proceed further. Bridgeton may submit any additional information, data or suggestions it wishes to provide for our consideration as we conduct this re-evaluation.

For these reasons, we must suspend acceptance of Bridgeton leachate until and unless we are able to identify a means of proceeding that will ensure that no hazardous wastewater is hauled to American Bottoms for acceptance for treatment at our facility. Upon the completion of our review of this situation, we will advise you further.

Sincerely,

Heather Faragher

Heather Faragher
Executive Director

Bridgeton Landfill, LLC

April 5, 2013

Ms. Heather Faragher
Executive Director
American Bottoms Regional
Treatment Facility
1 American Bottoms Road
Sauget, Illinois 62201-1075

Re: Response to Leachate Discharge Monitoring Discrepancy
Request to Resume Discharge of Treated Leachate

Dear Ms. Faragher:

This letter responds to your April 1, 2013, letter regarding Leachate Discharge Monitoring Discrepancy and also follows up on recent conversations with Kay Anderson. Bridgeton Landfill is keenly aware of the need of American Bottoms to maintain ongoing compliance and to ensure that only acceptable materials are received at the treatment facility. It is of the utmost importance to Bridgeton Landfill that liquids from the landfill be properly treated, characterized and handled – and be consistent with the conditions your facility has established for discharge.

We have carefully investigated our records regarding Batch 0007 and have not identified any explanation for the monitoring discrepancy. The treated leachate was treated and analyzed in accordance with the protocol established in cooperation with American Bottoms. And, as noted in your letter, the sampling was accompanied by extensive laboratory quality control data, including blanks, calibration data, and matrix spike duplicates. The treatment process did not vary from that utilized for the five prior and four subsequent batches treated by recirculation, the process at the time of Batch 0007. In sum, the observed spikes in the American Bottom samples are wholly inconsistent with the significant documentation supporting the effectiveness of the treatment protocol.

However, we agree that it is essential to ensure that hazardous waste is never delivered to the American Bottoms Treatment Facility. Continued utilization of American Bottoms is tremendously important to Bridgeton Landfill's liquids management. We understand the need to ensure ongoing compliance by both parties and are confident that Bridgeton Landfill has systems in place to deliver that. We are providing this response and the enclosed materials to outline an approach to make certain that ongoing compliance is achieved.

First, as you are aware, Bridgeton Landfill has enhanced its pretreatment operations and is currently utilizing aeration, rather than recirculation. This has resulted in a significant reduction of benzene, well below what was seen with recirculation, as seen in the attached chart.

We are confident that this treatment process will continue to be successful at achieving benzene levels well below the limits established by American Bottoms, and therefore significantly below the characteristic hazardous level.

Additionally, the facility has developed a Standard Operating Procedure (SOP) which is enclosed for your review. This SOP is intended to formalize the treatment, analysis and QA/QC process that has been developed by Bridgeton Landfill to meet the needs and requirements of the American Bottoms Regional Treatment Facility. The methods utilized on site are thorough and exceed standard practice for analysis and QA/QC. The goal of formalizing and documenting this process was to ensure consistency moving forward and allow for updates to the process and American Bottoms as the treatment processes continue to be enhanced on site. We hope that this document can adequately answer any concerns you might have about the ability of Bridgeton Landfill to supply consistent, properly characterized, and compliant wastewater.

Finally, I want to reiterate our commitment to work with you on any regulatory response related to your facility's acceptance of Bridgeton Landfill's treated leachate. As you are aware, we are currently working with both the Missouri Department of Natural Resources and the Missouri Attorney General's Office as part of ongoing remedial and compliance efforts on site. We have updated them regarding concerns raised by American Bottoms and have involved them in this process so that they can review and be aware of the treatment and analytical process. As I mentioned, we see American Bottoms as playing a crucial role in our continued efforts on site, and we understand how critical it is that Bridgeton Landfill fulfills its obligations – to consistently comply with regulatory requirements and those established by your facility.

If you have any questions or need any additional information in order to resume acceptance of treated leachate, we would welcome the opportunity to speak or meet with you and your team.

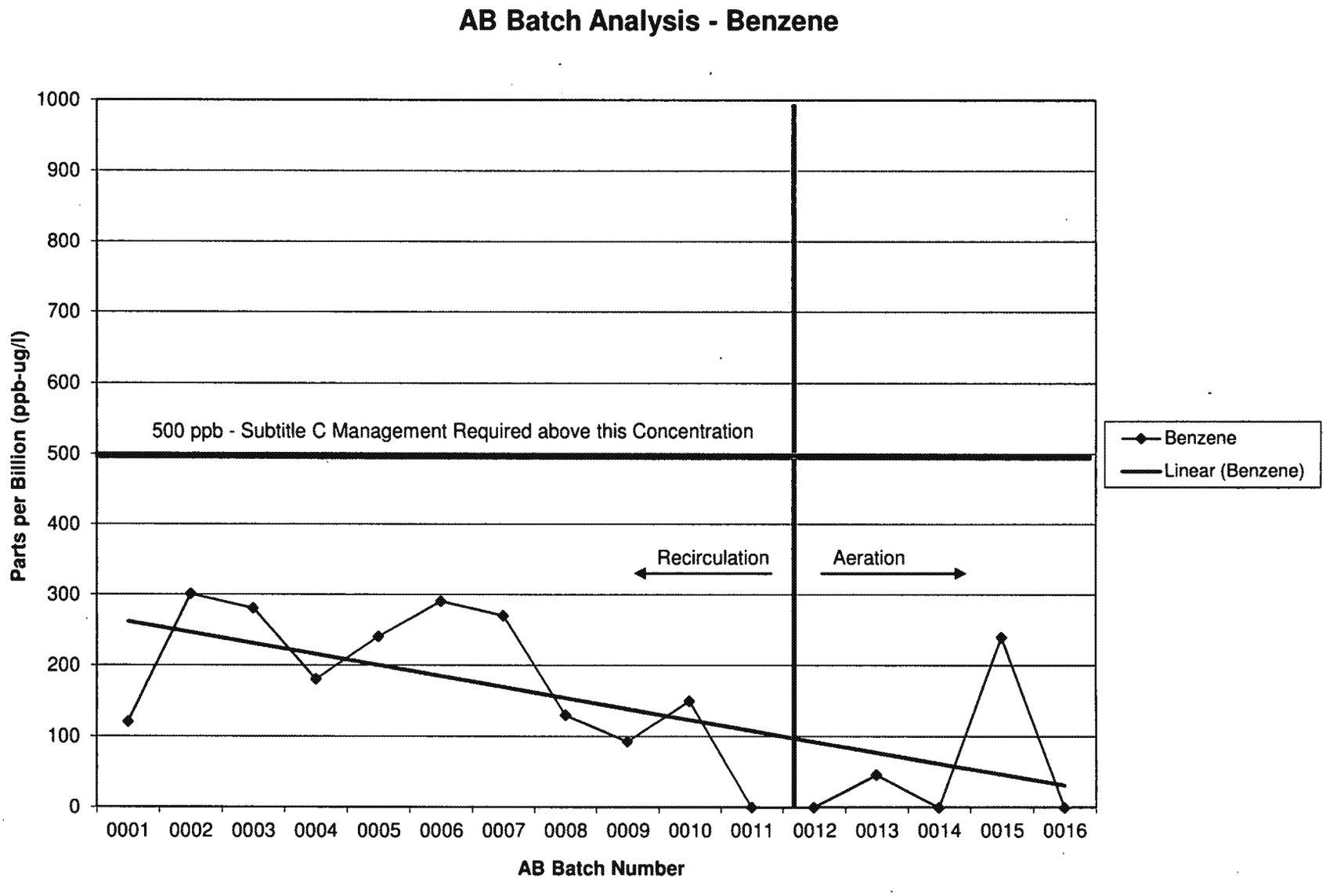
Sincerely,

By: _____
Craig Almanza

Enclosures

AEC/vac

cc Kay Anderson, American Bottoms Regional Treatment Facility
Chris Nagle, Missouri Department of Natural Resources
Jessica Blome, Missouri Attorney General's Office
Jessica Merrigan, Lathrop & Gage, LLP


AB Batch Analysis - Benzene
Parts per Billion (ppb-ug/l)
1000
900
800
700
600
500
400
300
200
100
0
500 ppb - Subtitle C Management Required above this Concentration
Recirculation
Aeration
0001
0002
0003
0004
0005
0006
0007
0008
0009
0010
0011
0012
0013
0014
0015
0016
AB Batch Number
Benzene
Linear (Benzene)

BRIDGETON LANDFILL

STANDARD OPERATING PROCEDURE

Landfill Liquids Collection, Treatment for Discharge to American Bottoms Wastewater Treatment Facility

Prepared by:
Bridgeton Landfill, LLC
Feezor Engineering
New Age / Landmark, Inc.

April 2013

1.0 Treatment and Transportation Protocol

1.1 Introduction

This Standard Operating Procedure (SOP) has been prepared to document the protocol for the preparation of liquids for transport and disposal at the American Bottoms Wastewater Treatment Facility in Sauget, Illinois ("ABWWTF"). This protocol has been developed over the past two months incorporating guidelines and requirements provided by ABWWTF.

Based upon measurements and observations Bridgeton Landfill is capable of producing approximately 200,000 gallons of liquids per day (leachate and landfill gas condensate). Chemical composition of the produced liquid typically includes a BOD concentration of approximately 20,000 mg/L (PPM) and 1,000-1,500 ug/L (PPB) benzene. Due to previous BOD loadings to its system, the Metropolitan St. Louis Sewer District (MSD) has suspended disposal of the liquids from the site via a direct discharge sewer connection. The MSD suspension has resulted in the need for the Bridgeton Landfill to establish alternative disposal methods.

Bridgeton Landfill has developed and implemented a short-term program to prepare, transport, and dispose of liquids at several off-site facilities in order to manage liquids during planning and construction of a long term solution. In order to ensure consistency in achieving the treatment and documentation requirements directed by ABWWTF, Bridgeton Landfill has engaged a third party contractor, Feezor Engineering, Inc., to manage all collection, treatment, transportation and disposal of the landfill liquids. Feezor Engineering has worked with Bridgeton Landfill to establish protocols for the landfill liquids, including this SOP for preparation of liquids for discharge at ABWWTF.

Currently Bridgeton Landfill is conducting a liquids handling process for preparation of materials for disposal at ABWWTF which involves 1) treatment processes to improve the chemical quality of the liquids via aeration; and 2) analytical processes to confirm suitability of treated liquids for disposal at ABWWTF. The current process replaces the prior treatment process of recirculation. The recirculation process was utilized to treat AB Batches 0001-0011. The aeration treatment process has been in place since AB Batch 0012 and the facility just completed treatment of AB Batch 0016. The treatment of the leachate and landfill gas condensate using the current batch-processed aeration has resulted in the creation of a consistent leachate stream which meets the discharge limitations of ABWWTF. Bridgeton Landfill has completed treatment of four 75,000 gallon batches using this treatment process.

This SOP is being provided to support continued acceptance of treated leachate at ABWWTF and in conjunction with the Indirect Discharge Permit Application for discharge to ABWWTF.

MSD 026701

1.2 Treatment Protocol

The treatment processes involve pumping leachate from vertical extraction wells (and sumps) and landfill gas condensate from the gas collection system into mobile frac tanks, via fusion-welded High Density Polyethylene (HDPE) pipes. Several of the frac tanks have been retrofitted with aeration piping to allow the collected liquids to be aerated ("sparged") during and following the filling process. Gases are collected from the air sparge tanks and directed through carbon vessels for VOC capture.

At initiation of the aeration treatment process, the facility conducted operational measurements of benzene level within the treated leachate in order to assess treatment time to achieve the acceptable level for benzene. Based upon the observed benzene level of treated leachate, it was established that reduction of benzene to near non-detect could be achieved through aeration during the filling process. Based upon that, the facility currently fills the tanks and initiates aeration once the tanks are approximately 33% full. The aeration continues through filling of the battery of four (4) frac tanks, which is filled to a volume of approximately 75,000 gallons. An operational sample is taken at the completion of filling, and aeration is then continued until the operational sample documents that the benzene has been reduced below 300 ug/L.

This aeration process has been in place for the last five (5) batches and achieved consistent reduction of benzene. This aeration process replaced the prior recirculation process and has resulted in a significant net decrease in benzene levels of the treated leachate.

1.3 Analytical Protocol

Once the combined series of 4 frac tanks is filled and aerated, a sampling technician collects a sample. This sample is collected using a dedicated bailer in the upper two feet of the liquids. The sample is collected promptly at the completion of filling while aeration is ongoing, ensuring that the liquid is adequately mixed and the sample representative. The sample is submitted for volatile organic analysis using EPA Method 8260.

In order to ensure prompt and reliable analysis, Bridgeton Landfill has engaged a mobile laboratory, New Age / Landmark Inc., to provide the analysis. New Age / Landmark, Inc. operates from the site, which allows timely completion of the several levels of analytical confirmation directed by ABWWTF. New Age / Landmark, Inc. follows the extensive laboratory QA/QC process directed by ABWWTF, which is described in more detail in Section 2. This process surpasses the standard QA/QC protocol utilized by most labs and has been developed specifically to meet or exceed the analytical and QA/QC requirements directed by ABWWTF to confirm the acceptability of the treated leachate for discharge at that facility. The Chain of Custody Form and Sample Acceptance Protocol is included in Appendix A.

MSD 026702

1.4 Transport Protocol

After the treated liquid is verified to have achieved the appropriate reduction of benzene <300 ug/L benzene), it is deemed ready to transport to a non-hazardous facility. A specific confirmation and lock out program has been developed to ensure that liquids deemed acceptable for ABWWTF are separate from other liquids and only liquids that have met the analytical requirements are able to be provided for transport to ABWWTF.

Upon completion of treatment, the 75,000 gallon "batch" can either be transported to a tank battery (4 separate 20,000 gallon frac tanks) or remain in the treatment battery. Once the treated liquid has been verified to meet the discharge standards, the valves to individual tanks in the battery are then locked out with four separate locks. The sampling technician then resamples the tank battery. The sample is collected promptly at the completion of treatment or at the completion of transfer, ensuring that the liquid is adequately mixed and the sample representative. This confirmation sample is submitted for volatile organics analysis using EPA Method 8260B. The results for each confirmatory sampling for each and every batch are separately reviewed by the Area Environmental Manager and are provided to ABWWTF. ABWWTF reviews the analytical data to confirm the acceptability of each batch for discharge at the facility. The non-hazardous treated liquid is loaded into tanker trucks, manifested, and transported to ABWWTF only after approval is received from ABWWTF..

1.5 Data Collection

Data throughout the process are collected and stored in a data management system. Data entered into the system includes:

- Date of liquids log;
- Volume of liquids processed that day;
- Number of batches processed that day;
- Start time / stop time of batch processing;
- Which tank battery received the processed batch;
- Start time / stop time of batch transfer;
- Analytical testing results of batch;
- Company transferring the batch;
- Which disposal facility is to receive each batch; and
- Manifests for each batch.

Feezor Engineering, as the third party liquids management contractor, coordinates and schedules liquid transportation efforts to deliver the wastewater to the disposal facilities. This includes, but is not limited to, the following:

- Communicating with the hauling companies dispatcher each day to schedule the following day's number of loads and designated disposal facilities.
- Complete, and sign on behalf of Bridgeton Landfill, LLC, all manifests related to hauling liquids to offsite disposal facilities.
- Review the manifests prepared for each load prior to shipment off site.
- Prepare and coordinate laboratory testing efforts for the following day.

Feezor Engineering oversees the liquids collection and storage and ensures that all ABWWTF loads are properly locked out as noted above, and that the only materials sent to ABWWTF for disposal are those that:

- Consist of comingled leachate and condensate which has been treated to ABWWTF's specification, as verified by sampling compliant with the ABWWTF analytical and QA/QC protocol;
- Have been properly locked out in separate frac tanks following collection of the final confirmation sample; and
- Have received Area Environmental Manager and ABWWTF approval of the final confirmation sample.

2.0 Quality Assurance Protocol

2.1 Quality Assurance Protocol (QAP) Mission Statement

The goal of New Age/Landmark Mobile Laboratories (NAL) and its quality system is to ensure that the on-site analytical operations at the Bridgeton Landfill are conducted with the highest standards of professionalism in the industry. To achieve this goal, while simultaneously upholding the legal responsibility of the lab, it is necessary that NAL provide scientifically sound, well documented and regulatory compliant data while also providing the highest quality service experience available in the industry. In addition to meeting all of the criteria required by ABWWTF for wastewater disposal purposes, NAL's staff is committed to full compliance with the National Environmental Laboratories Accreditation Conference standards.

2.2 QA/QC Objectives

The purpose of this QA/QC protocol is to ensure accuracy, reliability and uniformity of each analytical batch produced by the NAL chemist and laboratory located at the Bridgeton Landfill. It is NAL's objective to establish an internal and external monitoring process, ensuring all test results generated by the field analytical personnel are within the limits of precision and accuracy established for this project. This protocol provides a mechanism of documentation that allows all test results to be traceable to:

1. The date of analysis
2. The chemist performing the work
3. The raw data generated
4. Procedures, methods and instruments used for the analysis
5. Instrument calibrations
6. Reagent purity
7. The project-specific QC test samples utilized

2.3 Levels of QA/QC

In collaboration with ABWWTF and Bridgeton Landfill, LLC, NAL has established project-specific QA/QC objectives necessary to achieve the qualitative/quantitative levels of confidence desired without compromising the imposed work schedule. The following provides a comprehensive list of project specific analytical objectives:

1. Samples from the same process batch shall be recorded and submitted on a separate Chain-of-Custody.
2. "E" and "B" qualifiers are approved for Acetone only.
3. MS/MSD analyses shall be required for each process batch.
4. MS/MSD analyses shall be run at the same dilution as the benzene level.
5. The project chemist shall report merged results.

6. The project chemist shall report "J" values for compounds below the established reporting limit.
7. Process batch sample results and associated QA/QC analysis results shall be submitted immediately upon availability via email to NAL Corporate for immediate QA/QC validation and issuance of final report to the designee at Bridgeton Landfill, LLC.

2.4 QA/QC Protocol

NAL's QA/QC protocol establishes the daily requirements of the Bridgeton Landfill site as well as those measures required to ensure the quality of the final analytical report.

Each chemist is provided with a project-specific QA/QC flow chart that outlines the protocols that must be followed to ensure that the data generated conforms to the project's data quality objectives (DQOs). Upon completion of each process batch and associated QA/QC, a preliminary analytical report will be prepared by the chemist and subsequently submitted (along with the project DQOs and chromatographs) to NAL's QA/QC officer. It is the responsibility of the QA/QC officer to confirm the accuracy of all analytical results and that all project documentation has been properly archived.

APPENDIX A

Sample Chain of Custody and Sample Acceptance Policy

New Age/Landmark, Inc.
Mobile Laboratory Services

Tel. No.: 888-685-1628
www.newagelandmark.com

Chain-of Custody Record

Project Name:	Project No.:
Project Contact:	Phone Number:
Project Location:	

Types of Analysis

Item No.	Sample ID	Date	Time	Sample Type: Comp	Sample Type: Grab	No. of Containers	Types of Analysis						Preserved (Y/N)	4°C (Y/N)	Condition (A or NA)	Comments/Remarks Sample Description	Lab ID
1																	NAL
2																	NAL
3																	NAL
4																	NAL
5																	NAL
6																	NAL
7																	NAL
8																	NAL
9																	NAL
10																	NAL

Transfer Number	Item Numbers	Transfers Relinquished By	Transfers Accepted By	Date	Time
1					
2					
3					
4					

Remarks (for lab use only)

Sampler's Signature

Print Name

COCs rev 5 Date 2/27/08 Copyright © 2008 All Rights Reserved

White: New Age/Landmark, Inc. File Copy • Yellow: Laboratory Copy • Pink: Client Copy

SAMPLE ACCEPTANCE POLICY

This policy outlines the circumstances under which samples may be accepted or rejected for onsite analysis. Data from any samples which do not meet the following criteria will be flagged to clearly define the nature and substance of the variation.

This policy will be made available to sample collection personnel and will address the following areas of concern:

A) Chain-of-Custody (COC): shall include proper, full, and complete documentation, which shall include sample identification, the location, date and time of collection, collector's name, preservation type, sample type and any special remarks concerning the sample.

B) Sample Labeling: proper sample labeling to include unique identification and a labeling system for the samples with durable (water resistant) labels and the use of indelible ink.

C) Sample Containers: for appropriate sample containers refer to "Container Type" on the following table.

D) Holding Times: adherence to specified holding times is critical. Specific holding times are reference in "Max Hold Time" on the following table.

E) Adequate Sample Volume: sufficient sample volume must be available to perform the necessary tests and are referenced on the following table.

F) Damage, Contamination or Inadequate Preservation: The NAL chemist or technician will assess damage to any sample and verify proper preservation upon sample receipt and immediately notify the client if the sample is rejected or if the damage and/or preservation may affect the analytical process.

Parameter	Volume	Container Type[1]	Preservation	Max Hold Time
Water/Wastewater Samples[1]				
VOC	(3) 40mL	Clear Glass, Teflon-lined septum	Cool 4°C, HCl to pH < 2	7 days unpreserved, 14 days preserved
SVOC	(1) 1 liter	Amber Glass, Teflon-lined cap	Cool 4°C,	7 days until extraction, 40 days after extraction
Metals	(1) 250mL	High Density Plastic	PH < 2 Cool 4°C	6 months except Hg @ 28 days
Residuals, Soil and Sediment Samples[2]				
VOC	(1) 4oz Jar	Clear Glass, Teflon lined cap	Note 4 10 mL MeOH	14 days 28 days MeOH preserved.
SVOC	(1) 4oz Jar	Clear Glass, Teflon lined cap	Note 4	14 days until extraction, 40 days after extraction
Metals	(1) 4oz Jar	Clear Glass, Teflon lined cap	Note 4	6 months except Hg @ 28 days

1. Adapted from 40 CFR Chapter I, Revised as of July 1, 1988. According to Federal Register of Thursday, September 3, 1987, preservation for Oil and Grease may also be performed with HCl.
2. Adapted from Tables 3-1 and 4-1 in *Test Methods for Evaluating Solid Waste*, SW-846, EPA, Third Edition, 1986, and First Update in 1987. The term residuals includes: (i) concentrated waste samples and (ii) sludges of domestic or industrial origin.
3. Soils, sediments and sludges shall be kept cool at 4°C from collection time until analysis. No preservation is required for concentrated waste samples.

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Bridgeton Landfill, LLC

April 11, 2013

Ms. Heather Faragher
Executive Director
American Bottoms Regional Treatment Facility
1 American Bottoms Road
Sauget, Illinois 62201-1075

Re: Follow Up Regarding Leachate Discharge Monitoring Discrepancy
Request to Resume Discharge of Treated Leachate

Dear Ms. Faragher:

This letter provides additional follow up to your April 1, 2013, letter regarding Leachate Discharge Monitoring Discrepancy and follows up on our conference call yesterday. First, I would like to thank you and Kay Anderson again for taking the time to speak with us. We appreciate your review of the information we submitted and understand your need to have comfort in compliance moving forward. I wanted to get back to you just to confirm a few of the additional items we discussed yesterday.

While Bridgeton Landfill, LLC does not operate in Illinois, our related companies in Illinois, such as Allied Waste Transportation, Inc., have a strong compliance record in Illinois – operating 21 hauling companies; 18 transfer stations; 4 recycling centers, 14 active landfills and 15 closed / inactive landfills. Through this network we have built positive relationships with Illinois EPA and I want to reiterate my commitment to you that we will work with American Bottoms on responding to requests by the agency and making appropriate demonstrations to satisfy the agency regarding the ability of Bridgeton Landfill to discharge compliant wastewater to your facility.

I also wanted to specifically confirm some of the process improvements implemented since Batch 0007 that will allow us to achieve ongoing compliance moving forward, and continue improving upon the treatment system. First, liquids management, treatment and testing is now overseen by a third party vendor, Feezor Engineering, Inc. an Illinois engineering company. Daniel Feezor, P.E., the President of Feezor Engineering, Inc., is a Professional Engineer licensed in Illinois and Missouri, and also an Illinois Certified Industrial Treatment Works Operator, with Class K certification. Dan is also an Illinois Certified Landfill Operator for the Greater Rockford Airport Foundry Sand Landfill, with 23 years of experience in managing landfill leachate. His oversight and management put in place a consistent and reliable system to ensure effective treatment and accurate

analysis. He also conducted a comprehensive review of the treatment process and has put in place numerous improvements that have resulted in more effective benzene treatment.

First, we are now aerating during the filling process. Before, the batches were filled then the aeration was turned on. Now, we let the tanks fill until the aeration pipes are completely submerged, and then start the aeration process which continues during the remaining of the filling process. This is at least 8 hours during the filling process.

Second, we have changed the aeration equipment to include 2 compressors per sparge. We had 1 operational sample (Operational Batch 10) that failed the operational lab testing. We reviewed the equipment with our contractor Tri-con and found that only 12 psi was being used for the aeration. We were using 1 compressor per aeration battery (4 tanks) and it was not enough to consistently deliver 18 psi to all 4 ports. Therefore, we doubled the air capacity and routinely check that all pressures delivered to the aeration tanks are at or slightly above 18 psi.

Third, once the filling is completed, and the operational sample is taken, the aeration continues during the 1-3 hour (sometimes overnight) laboratory testing cycle. If the operational sample passes, the processed liquid is transferred to a storage battery. This transfer takes about 5 hours during the transfer process, aeration continues during most of the transfer. Combined, this is at least 5 hours of additional aeration that is not reflected in the operational sample, but would now be reflected in any testing taken by American Bottoms upon receipt. Under AB Batch 0007, this additional aeration during transfer was not an option. This is yet another tool to ensure treatment and mixing.

We also have much more active management of the entire planning and loading system. We have instituted a color ticket system which the driver, once loaded, must take to the manifest clerk. There is also a manifest checklist for each type of wastewater: treated non-hazardous wastewater designated for American Bottoms; treated Non Hazardous wastewater designated for facilities other than American Bottoms; and hazardous wastewater. This helps guard against a confused truck driver, since they get the ticket from the actual loading station. (Ticket forms attached)

Finally, I wanted to confirm that we remain interested in pursuing construction of equalization tanks within your system to allow for continuous discharge of treated leachate, given the benefits to your operational system of a more consistent flow. We look forward to your feedback on potential Village properties and will then work with you on appropriate proposals to Illinois EPA. Because we expect that will take some time to work through the approval, we are hopeful that we will be able to resume some trucked discharge while that process is pending.

Thank you again for your time and consideration. Reestablishment of disposal approval is of critical importance to us and we sincerely appreciate your efforts to work with us. I want to reiterate our commitment to work with you on any regulatory response related to your facility's acceptance of Bridgeton Landfill's treated leachate. As we noted on our

call, we are currently working with both the Missouri Department of Natural Resources and the Missouri Attorney General's Office as part of ongoing remedial and compliance efforts on site. We will continue to involve them in this process to ensure that the proposed protocols satisfy their requirements, which we hope, will be of consideration to Illinois EPA.

If you have any questions or need any additional information in order to resume acceptance of treated leachate, we would welcome the opportunity to speak or meet with you and your team.

Sincerely,

Bridgeton Landfill, LLC

_____

Craig Almanza
Area Environmental Manager

Enclosure

cc Kay Anderson, American Bottoms Regional Treatment Facility
Susan Franzetti, Nijman Franzetti
Chris Nagel, Missouri Department of Natural Resources
Jessica Blome, Missouri Attorney General's Office
Jessica Merrigan, Lathrop & Gage, LLP
Russ Eggert, Lathrop & Gage, LLP

HAZARDOUS	NON HAZARDOUS NON AB	NON HAZARDOUS AMERICAN BOTTOMS
Loading Station	Loading Station	Loading Station
Hauling Company	Hauling Company	Hauling Company
Number of Gallons	Number of Gallons	Number of Gallons

NON-HAZARDOUS AMERICAN BOTTOMS CHECKLIST

- ☐ Fill Out Manifest for Each Driver
  - Generator's Information
  - Transporter Name & EPA #
  - Designated Facility & EPA #
  - Number & Type of Container
  - Number of Gallons
  - Print/Sign/Date
  - Driver's Print/Sign/Date
- ☐ Retain Generator's Sheet of Manifest
- ☐ Fill Out Village of Sauget Wastewater Tracking Form

NON HAZARDOUS CHECKLIST

- ☐ Fill Out Manifest for Each Driver
  - Generator's Information
  - Transporter Name & EPA #
  - Designated Facility & EPA #
  - Number & Type of Container
  - Number of Gallons
  - Print/Sign/Date
  - Driver's Print/Sign/Date
- ☐ Retain Generator's Sheet of Manifest
- ☐ Fill Out Hauling Log

HAZARDOUS CHECKLIST

- ☐ Vehicle Has Placards to Haul Hazardous Waste
- ☐ Fill Out Manifest for Each Driver
  - Generator's Information
  - Transporter Name & EPA #
  - Designated Facility & EPA #
  - Number & Type of Container
  - Number of Gallons
  - Print/Sign/Date
  - Driver's Print/Sign/Date
- ☐ Retain Generator's Sheet of Manifest
- ☐ Fill Out Hauling Log
- ☐ Fill Out Land Disposal Restriction Form

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829
PAT QUINN, GOVERNOR LISA BONNETT, DIRECTOR

618/345-5120
FAX: 618/346-5155

CERTIFIED MAIL 7010 1670 0001 5584 1653
RETURN RECEIPT REQUESTED

April 11, 2013

Bridgeton Landfill LLC
Attn: Sean Torrey, Env. Manager
13570 St Charles Rock Rd
Bridgeton, MO. 63044-2430

Re: **Violation Notice, L-2013-01059**
9291899246 – St Louis County
Bridgeton Landfill LLC
Compliance File

Dear Mr. Torrey:

This constitutes a Violation Notice pursuant to Section 31(a)(1) of the Illinois Environmental Protection Act, 415 ILCS 5/31(a)(1), and is based on a record review completed on March 19, 2013 by representatives of the Illinois Environmental Protection Agency ("Illinois EPA").

The Illinois EPA hereby provides notice of alleged violations of environmental laws, regulations, or permits as set forth in the attachment to this notice. The attachment includes an explanation of the activities that the Illinois EPA believes may resolve the specified alleged violations, including an estimate of a reasonable time period to complete the necessary activities. Due to the nature and seriousness of the alleged violations, please be advised that resolution of the violations may also require the involvement of a prosecutorial authority for purposes that may include, among others, the imposition of statutory penalties.

A written response, which may include a request for a meeting with representatives of the Illinois EPA, must be submitted via certified mail to the Illinois EPA within 45 days of receipt of this notice. If a meeting is requested, it shall be held within 60 days of receipt of this notice. The response must include information in rebuttal, explanation, or justification of each alleged violation and a statement indicating whether or not you wish to enter into a Compliance Commitment Agreement ("CCA") pursuant to Section 31(a) of the Act. If you wish to enter into a CCA, the written response must also include proposed terms for the CCA that includes dates for achieving each commitment and may include a statement that compliance has been achieved for some or all of the alleged violations. The proposed terms of the CCA should contain sufficient detail and must include steps to be taken to achieve compliance and the necessary dates by which compliance will be achieved.

The Illinois EPA will review the proposed terms for a CCA provided by you and, within 30 days of receipt, will respond with either a proposed CCA or a notice that no CCA will be issued by the Illinois EPA. If the Illinois EPA sends a proposed CCA, you must respond in writing either by agreeing to and signing the proposed CCA or by notifying the Illinois EPA that you reject the terms of the proposed CCA.

If a timely written response to this Violation Notice is not provided, it shall be considered a waiver of the opportunity to respond and meet, and the Illinois EPA may proceed with referral to a prosecutorial authority.

Written communications should be directed to:

Illinois EPA – Bureau of Land
Attn: Chris N. Cahnovsky
2009 Mall Street
Collinsville, Illinois 62234

Please include the Violation Notice Number L-2013-01059 and the Site Identification Number 9291899246 on all written communications.

The complete requirements of the Illinois Environmental Protection Act and any Illinois Pollution Control Board regulations cited herein or in the inspection report can be viewed at:

http://www.ipcb.state.il.us/SLR/TheEnvironmentalProtectionAct.asp
and
http://www.ipcb.state.il.us/SLR/IPCBandIEPAEnvironmentalRegulations-Title35.asp

If you have questions regarding this matter, please contact Mike Grant at 618/346-5142.

Sincerely,

Chris N. Cahnovsky, Regional Manager
Field Operations Section
Bureau of Land

CNC:MDG:jlb/bridgetonlfvn3112013
Attachment

9291899246 – St Louis County
Bridgeton Landfill LLC
MOD980741805
Compliance file

ATTACHMENT A

1. Pursuant to 35 Ill. Adm. Code Section 722.120(a), a generator that transports hazardous waste or offers a hazardous waste for transportation for off-site treatment, storage, or disposal or, a treatment, storage, or disposal facility that offers for transport a rejected load of hazardous waste must prepare a manifest on USEPA Form 8700-22 (and, if necessary on USEPA Form 8700-22A) according to the instructions included in the appendix to 40 CFR 262 (Uniform Hazardous Waste Manifest and Instructions (EPA Forms 8700–22 and 8700–22A and Their Instructions)), incorporated by reference in 35 Ill. Adm. Code 720.111(b).

   A violation of 35 Ill. Adm. Code 722.120(a) is alleged for the following reason: **On at least one occasion (January 22, 2013), hazardous waste was shipped to American Bottoms Regional WWTF without properly indentifying the waste as hazardous with the corresponding waste code.**

2. Pursuant to Section 21(e) of the [Illinois] Environmental Protection Act (415 ILCS 5/21(e)), no person shall dispose, treat, store or abandon any waste, or transport any waste into this State for disposal, treatment, storage or abandonment, except at a site or facility which meets the requirements of this Act and of regulations and standards thereunder.

   A violation of Section 21(e) is alleged for the following reason: **On at least one occasion (January 22, 2013), hazardous waste was shipped to American Bottoms Regional WWTF without properly indentifying the waste as hazardous with the corresponding waste code.**

SUGGESTED RESOLUTIONS

1. **Immediately cease shipping hazardous without an accompanying properly completed Uniform Hazardous Waste Manifest.**

   The written response to this Violation Notice must include information in rebuttal, explanation, or justification of each alleged violation and a statement indicating whether or not you wish to enter into a Compliance Commitment Agreement ("CCA") pursuant to Section 31(a) of the Act. If you wish to enter into a CCA, the written response must also include proposed terms for the CCA that includes; dates for achieving each commitment and may include a statement that compliance has been achieved for some or all of the alleged violations. The written response must be submitted to the Illinois EPA by certified mail within 45 days of receipt of this Violation Notice.

COMPLETED DATE: 04/10/13

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

BUREAU OF LAND / FIELD OPERATIONS SECTION

RCRA INSPECTION REPORT

GENERAL FACILITY INFORMATION

USEPA ID #:	MOD980741805			**BOL ID #:**	9291899246
Facility Name:	Bridgeton Landfill LLC			**Phone #:**	314/744-8165
Location	13570 St Charles Rock Rd			**County:**	St Louis
City:	Bridgeton	**State:**	Illinois	**Zip Code:**	63044-2430
Region:	Collinsville	**Inspection Date:**	03/19/13	**Time:**	N/A
Weather:	N/A				

FACILITY TYPE

Notified As:	G-1	**Regulated As:**	G-1

INSPECTION TYPE

CEI:	☐	**GME:**	☐	**OAM:**	☐	**NRR:**	☐	**CSE:**	☐	**CAO:**	☐ **FUI to:**
FCI (Other):										**CCI:**	☐ **CSI:** ☐

NOTIFICATION DATES (EPA 8700-12)

Initial:		**Subsequent:**	01/20/13

PART A PERMIT DATES (EPA 3510-3 OR EPA 8700-23)

Initial:	**Amended:**	**Withdrawn:**

PART B PERMIT

(Check one if applicable) Application Submitted?	☐	**Permit Issued?**	☐	**Date:**

ACTIVE ENFORCEMENT

Date facility referred to:	**USEPA:**	**IAGO:**	**County State's Attorney:**

ACTIVE ENFORCEMENT ORDERS

CACO:	**CAFO:**	**Federal Court Order:**
Consent Decree:	**IPCB Order:**	**State Court Order:**

TSD Facility Activity Summary

Activity by Process Code	On Part A?	On Part B?	Activity ever done?	Closed?	Being done during inspection?	Exempt per 35 IAC Sec:
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	

Owner				Operator			
Name:	Bridgeton Landfill LLC			**Name:**	Bridgeton Landfill LLC		
Address:	13570 St Charles Rock Rd			**Address:**	13570 St Charles Rock Rd		
City:	Bridgeton			**City:**	Bridgeton		
State:	Missouri	**Zip Code:**	6304-2430	**State:**	Missouri	**Zip Code:**	6304-2430
Phone #:	314/744-8165			**Phone #:**	314/744-8165		

Person(s) Interviewed	Title	Phone #

Inspection Participants	Agency/Bureau	Phone #
*Mike Grant	IEPA/BOL/FOS	618/346-5142

***Report prepared by this person.**

Summary of Apparent Violations

Section	X	Section	X	Section	X
722.120a)	☐		☐		☐
21e)	☐		☐		☐
	☐		☐		☐
	☐		☐		☐
	☐		☐		☐
	☐		☐		☐
	☐		☐		☐
	☐		☐		☐

X = Continuing Violations

9292899246 – St Louis County
Bridgeton/Bridgeton LLC
MOD980741805
Prepared by: Mike Grant

NARRATIVE

On February 14, 2013, Kay Anderson, Environmental Compliance Manager with the American Bottoms Regional Wastewater Treatment Facility (AB) telephoned me to report that they had accepted a load of leachate from the Bridgeton Landfill located in Bridgeton, Missouri that was hazardous for benzene – D018. I informed Ms. Anderson to follow-up our conversation with a complete history of the situation and put it in writing to the Agency. On March 19, 2013, I received the written report and conducted a Non-Financial Record Review.

AB is a regional wastewater treatment plant receiving domestic sewage and storm water from several municipalities such as East St. Louis and Cahokia. The facility also receives industrial wastewaters that have been initially treated at the Sauget P-Chem plant. Those industrial discharges are subject to Sauget pretreatment program. American Bottoms treats on the average 16 mgd and has a design average of 27 mgd. The plant has a NPDES permit which regulates the effluent discharged to the Mississippi River.

AB began taking loads of wastewater (leachate) from the Bridgeton Landfill located in Bridgeton, Missouri on January 17, 2013. Between January 16, 2013 and January 24, 2013, a total of 61 loads were received. Prior to accepting this waste stream for discharge into their sanitary sewer system, AB followed their standard procedures for accepting this wastewater. Analytical results were provided by the Bridgeton Landfill that indicated the wastewater was non-hazardous. A signed agreement was obtained that specifically prohibited the discharging of any hazardous waste.

On January 24, 2013, AB sampled an incoming load of the wastewater and determined that that load failed the TCLP limit of 0.5ppm for benzene. AB's analytical results that load to be 1.65ppm for benzene. Thus they had received a load of hazardous waste. That load was hauled by Mr. Bults Inc. (MBI). Since the wastewater was being discharged to the sanitary sewer system outside the plant, the domestic sewage exclusion applied thus the waste is not subject to RCRA but the Clean Water Act. However, the subject load was not shipped as a hazardous waste. Although it was shipped on a manifest as a special waste, the corresponding waste code for benzene – D018 was not included.

As a result the following violations will be alleged against the Bridgeton Landfill for shipping hazardous waste to AB.

Section 722.140a) – Failure to ship hazardous waste on a properly completed Uniform Hazardous Waste Manifest.

Section 21e) of the Act – Shipping hazardous waste to a facility in violation of any regulations or standards adopted by the Board under this Act.

MDG:BridgetonLF 03-19-13

Bridgeton Landfill, LLC

April 18, 2013

Illinois EPA – Bureau of Land
Attn.: Mr. Chris N. Cahnovsky
2009 Mall Street
Collinsville, Illinois 62234

Re: Violation Notice No. L-2013-01059
9291899246 – St. Louis County

Dear Mr. Cahnovsky:

Bridgeton Landfill, LLC received your Violation Notice dated April 11, 2013, concerning one shipment of allegedly hazardous waste to the American Bottoms Regional WWTF without an identification of the waste as hazardous with the corresponding waste code. As set forth below, Bridgeton Landfill (a) wishes to enter into a Compliance Commitment Agreement with the Agency pursuant to Section 31(a) of the Illinois Environmental Protection Act, (b) is including within this letter the proposed substantive terms of a CCA, and (c) is requesting a meeting with the Agency pursuant to Section 31(a)(2)(c) at the earliest possible date.

The VN alleges that one shipment of leachate to the American Bottoms Facility from the Bridgeton Landfill on January 24, 2013 contained 1.65 ppm of benzene. The Bridgeton Landfill had begun to transport leachate to American Bottoms on January 16, after the Metropolitan Sanitary District in St. Louis had suspended Bridgeton Landfill's permission to discharge into the municipal sewer system because of concerns surrounding the ability of MSD's facility to handle elevated BOD concentrations. Removal and proper disposal of leachate is imperative for the continued safe and responsible operation of the Bridgeton Landfill (as it is for most landfills), and the American Bottoms facility was able to handle the BOD content.

In advance of initiating shipment to American Bottoms, Bridgeton Landfill performed characterization testing, to the satisfaction of both parties and in compliance with applicable requirements, which demonstrated that the material was non-hazardous. For present purposes the significance of the pre-shipment sampling is that Bridgeton Landfill had good reason to believe that the January 24 shipment was non-hazardous, and indeed still has good reason to question the validity of the contrary data. Stated differently, it is not at all clear that there actually was any violation, but if there was, it was inadvertent, not willful.

But regardless of whether there was actually a shipment of hazardous waste to American Bottoms, Bridgeton Landfill has implemented significant additional process, testing and recordkeeping improvements to ensure that future shipments are non-hazardous. These improvements, which Bridgeton Landfill proposes be incorporated into a CCA, include the following:

Proposed Compliance Commitment

First, liquids management, treatment and testing is now overseen by a third party vendor, Feezor Engineering, Inc. an Illinois engineering company. Daniel Feezor, P.E., the President of Feezor Engineering, Inc., is a Professional Engineer licensed in Illinois and Missouri, and is an Illinois Certified Industrial Treatment Works Operator, with Class K certification. Mr. Feezor is also an Illinois Certified Landfill Operator for the Greater Rockford Airport Foundry Sand Landfill, with 23 years of experience in managing landfill leachate. His oversight and management put in place a consistent and reliable system to ensure effective treatment and accurate analysis. He also conducted a comprehensive review of the treatment process and has put in place the improvements, described in the following paragraphs, that have resulted in more effective benzene treatment.

Second, Bridgeton Landfill is now treating leachate through aeration prior to transport and disposal. At the time of the January testing, the leachate was not being treated in any way prior to shipment due to the initial non-hazardous characterization. Now, the leachate is collected and treated until total benzene levels are verified to be below the acceptance limit established by American Bottoms. As described in more detail in the Standard Operating Procedure prepared for discharge to Amercian Bottoms, the tanks fill until the aeration pipes are completely submerged, and then the aeration process is started, which continues during the remaining of the filling process. This adds at least eight hours of additional aeration to the overall process.

Third, Bridgeton Landfill continues to monitor and upgrade its treatment process. The facility has changed the aeration equipment to include two compressors per sparge battery. During the startup phase, one operational sample (Operational Batch 10) failed the operational, start-up lab testing (note that this batch was never sent off site for disposal). Bridgeton Landfill reviewed the equipment with the contractor, Tri-con, and found that only 12 psi was being used for the aeration. Bridgeton Landfill was using one compressor per aeration battery (four tanks) and it was not enough to consistently deliver 18 psi to all four ports. Therefore, Bridgeton Landfill doubled the air capacity and routinely checks that all pressures delivered to the aeration tanks are at or slightly above 18 psi.

Fourth, Bridgeton Landfill has implemented additional processes to ensure consistent satisfaction of American Bottoms' discharge standards. Once the filling is completed, and the operational sample is taken, the aeration continues during the one-to-three hour (sometimes overnight) laboratory testing cycle. If the operational sample passes, the processed liquid is transferred to a storage battery. This transfer takes about five hours, and aeration continues during most of the transfer. Combined, this is at least six hours of additional aeration that is not reflected in the operational sample, but would now be reflected in any testing performed upon receipt of a load of leachate. This step represents yet another improvement that we have implemented since the January 24 shipment that is the subject of the VN.

Fifth, Bridgeton Landfill has much more active management of the entire planning and loading system. Bridgeton Landfill has instituted a color ticket system which the driver, once leachate is loaded, must take to the manifest clerk. There is also a manifest checklist for each type of wastewater: treated non-hazardous wastewater designated for American Bottoms; treated non-hazardous wastewater designated for facilities other than American Bottoms; and hazardous wastewater. This helps guard against a confused truck driver, since the drivers get the tickets from the actual loading station.

Sixth, in advance of the long range investment discussed below, we are interested in working with American Bottoms to modify the current truck unloading approach to allow for metered discharge at a rate more beneficial for the system operations.

* * * * * *

Finally, and as a longer-range project that is unrelated to the current VN (and hence not part of the proposed CCA), Bridgeton Landfill proposes to pursue an opportunity to discharge within American Bottoms' systems to allow continuous discharge of treated leachate. This would provide the benefits of a more consistent flow of leachate to the treatment system at the plant, and will help to prevent operational issues. This additional measure alone will not, of course, ensure that future shipments of leachate received at the American Bottoms plant do not contain benzene concentrations greater than 0.5ppm. But they are additional evidence of Bridgeton Landfill's commitment to compliance with all applicable regulations in all of its operations.

Proposed Meeting

Bridgeton Landfill requests a meeting pursuant to Section 31(a)(2)(C) to discuss this response letter and future actions. The items Bridgeton Landfill proposes for discussion include:

- Treatment, sampling and analysis protocols for future leachate shipments. Bridgeton Landfill believes it is imperative for all concerned to use a consistent methodology.
- Any option to expedite initiation of direct discharge to the American Bottoms system.

Given the urgent need to resume shipments of leachate to American Bottoms, Bridgeton Landfill requests that the meeting be scheduled as quickly as possible.

Sincerely,

BRIDGETON LANDFILL, LLC

Craig Almanza

cc Russ Eggert, Lathrop & Gage LLP
Heather Faragher, American Bottoms Regional Treatment Facility
Kay Anderson, American Bottoms Regional Treatment Facility

From: (314) 744-8195 Origin ID: ALNA
CRAIG ALMANZA
12976 SAINT CHARLES ROCK ROAD
BRIDGETON, MO 63044

FedEx Express

J13111302120326

Ship Date: 18APR13
ActWgt: 1.0 LB
CAD: 101552403/INET3370

Delivery Address Bar Code

Ref #
Invoice #
PO #
Dept #

SHIP TO: (217) 782-3362 BILL SENDER
CHRIS N. CAHNOVSKY
ILLINOIS EPA -- BUREAU OF LAND
2009 MALL STREET

COLLINSVILLE, IL 62234

FRI - 19 APR 10:30A
PRIORITY OVERNIGHT

TRK# 7995 5841 5269
0201

59 BLVA

62234
IL-US
STL

518G1/64BE/93AB

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217)782-2829
PAT QUINN, GOVERNOR LISA BONNETT, DIRECTOR

April 18, 2013

CERTIFIED MAIL # 7011 1150 0001 0859 3639
RETURN RECEIPT REQUESTED

Bridgeton Landfill
Attn. Mr. Sean Torrey, Env. Manager
13570 St. Charles Rock Rd.
Bridgeton, MO. 63044-2430

Re: Violation Notice: Bridgeton Landfill, Bridgeton
Violation Notice No.: W-2013-50129

Dear Mr. Torrey:

This constitutes a Violation Notice pursuant to Section 31(a)(1) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(1), and is based upon a review of available information and an investigation by representatives of the Illinois Environmental Protection Agency ("Illinois EPA").

The Illinois EPA hereby provides notice of alleged violations of environmental laws, regulations, or permits as set forth in Attachment A to this notice. Attachment A includes an explanation of the activities that the Illinois EPA believes may resolve the specified alleged violations, including an estimate of a reasonable time period to complete the necessary activities. Due to the nature and seriousness of the alleged violations, please be advised that resolution of the violations may also require the involvement of a prosecutorial authority for purposes that may include, among others, the imposition of statutory penalties.

A written response, which may include a request for a meeting with representatives of the Illinois EPA, must be submitted via certified mail to the Illinois EPA within 45 days of receipt of this letter. If a meeting is requested, it shall be held within 60 days of receipt of this notice. The response must include information in rebuttal, explanation, or justification of each alleged violation and a statement indicating whether or not the facility wishes to enter into a Compliance Commitment Agreement ("CCA") pursuant to Section 31(a) of the Act. If the facility wishes to enter into a CCA, the written response must also include proposed terms for the CCA that includes dates for achieving each commitment and may include a statement that compliance has been achieved for some or all of the alleged violations. The proposed terms of the CCA should contain sufficient detail and must include steps to be taken to achieve compliance and the necessary dates by which compliance will be achieved.

The Illinois EPA will review the proposed terms for a CCA provided by the facility and, within 30 days of receipt, will respond with either a proposed CCA or a notice that no CCA will be issued by the Illinois EPA. If the Illinois EPA sends a proposed CCA, the facility must respond in writing by either agreeing to and signing the proposed CCA or by notifying the Illinois EPA that the facility rejects the terms of the proposed CCA. When compliance is achieved, the owner of the facility must submit a completed statement of compliance form certifying that all Compliance Commitment Agreement measures/events have been successfully completed.

If a timely written response to this Violation Notice is not provided, it shall be considered a waiver of the opportunity to respond and meet, and the Illinois EPA may proceed with referral to a prosecutorial authority.

Written communications should be directed to:

Illinois EPA – Division of Water Pollution Control
Attn: Mr. Greg Spencer / CAS#19
P.O. Box 19276
Springfield, IL 62794-9276

All communications must include reference to this Violation Notice number, **W-2013-50129**.

Questions regarding this Violation Notice should be directed to Mr. Greg Spencer at 217/782-9871.

Sincerely,

Roger Callaway by

Roger Callaway
Compliance Assurance Section
Division of Water Pollution Control
Bureau of Water

Attachments

ATTACHMENT A

BRIDGETON LANDFILL **VIOLATION NOTICE W-2013-50129**

Questions regarding the violations identified in this attachment should be directed to Greg Spencer at (217) 782-9871.

On February 14, 2013, the Illinois Environmental Protection Agency obtained information indicating the American Bottoms Regional Wastewater Treatment Facility had accepted a load of leachate from the Bridgeton Landfill that contained hazardous constituents.

This violation notice indicates regulations and statutes with which you are out of compliance. If you have corrected these violations and are currently in compliance, upon submission of the response to this violation notice, you must state that you are in compliance. If compliance will be achieved after completion of interim measures (a compliance schedule); and the Illinois EPA accepts those measures as a CCA, you must state that the measure(s) are completed and that you have returned to compliance at the conclusion of the schedule established in the CCA.

A review of information available to the Illinois EPA indicates the following violations of statutes, regulations, or permits resulting from the acceptance of leachate from the Bridgeton Landfill to the American Bottoms Regional Treatment Plant. Included with each type of violation is an explanation of the activities that the Illinois EPA believes may resolve the violation including an estimated time period for resolution.

INTERFERENCE

Cease and desist from accepting contaminants that cause or threaten interference to the American Bottoms Regional Treatment Plant. Compliance is expected immediately.

Violation Date	Violation Description
3/19/2013	Unlawful disposal of leachate that interfered with the waste water treatment plant.
Rule/Reg.:	Section 12(a), (b), and (f) of the Act, NPDES Permit 415 ILCS 5/12(a) (2010); 35 Adm. Code 307.1101, 310.201(a) and 310.635(a).

Bridgeton Landfill, LLC

April 23, 2013

Illinois EPA – Division of Water Pollution Control
Attn.: Mr. Greg Spencer / CAS #19
P.O. Box 19276
Springfield, Illinois 62794-9276

Re: Violation Notice No. W-2013-50129
Bridgeton Landfill

Dear Mr. Spencer:

Bridgeton Landfill, LLC received your Violation Notice dated April 18, 2013, concerning either (1) a shipment of leachate before February 14, 2013 from the Bridgeton landfill to the American Bottoms Regional Wastewater Treatment Facility that allegedly contained hazardous constituents, or (2) a shipment of such leachate on March 19, 2013. If the VN concerns (2), Bridgeton Landfill denies the allegation in its entirety, because it did not send anything at all to American Bottoms on March 19, 2013. If, as seems more likely, the VN concerns (1), then Bridgeton Landfill (a) wishes to enter into a Compliance Commitment Agreement with the Agency pursuant to Section 31(a) of the Environmental Protection Act, ideally in coordination with a CCA that will resolve the Agency's previous VN No. L-2013-01059, regarding the same shipment; (b) is including within this letter the proposed substantive terms of a CCA to resolve both VNs; and (c) is requesting a meeting with the Agency pursuant to Section 31(a)(2)(c) at the earliest possible date.

The VN alleges that a load of leachate from the Bridgeton Landfill to the American Bottoms facility before February 14, 2013 contained hazardous constituents. The Bridgeton Landfill had begun to transport leachate to American Bottoms on January 16, after the Metropolitan Sanitary District in St. Louis had suspended Bridgeton Landfill's permission to discharge into the municipal sewer system because of concerns surrounding the ability of MSD's facility to handle elevated BOD concentrations. Removal and proper disposal of leachate is imperative for the continued safe and responsible operation of the Bridgeton Landfill (as it is for most landfills), and the American Bottoms facility was able to handle the BOD content.

In advance of initiating shipment to American Bottoms, Bridgeton Landfill performed characterization testing, to the satisfaction of both parties and in compliance with applicable requirements, which demonstrated that the material was non-hazardous. On January 24, 2013 one shipment of leachate was analyzed upon receipt at American Bottoms and allegedly was found to contain 1.65 ppm of benzene; Bridgeton Landfill assumes, for purposes of this letter,

that the water VN concerns this shipment. (If that assumption is incorrect, Bridgeton Landfill reserves the right to supplement this response.) For present purposes, the significance of the pre-shipment sampling is that Bridgeton Landfill had good reason to believe that the January 24 shipment was non-hazardous, and indeed still has good reason to question the validity of the contrary data. Stated differently, it is not at all clear that there actually was any violation, but if there was, it was inadvertent, not willful.

But regardless of whether there was actually a shipment of hazardous waste to American Bottoms, Bridgeton Landfill has implemented significant additional process, testing and recordkeeping improvements to ensure that future shipments are non-hazardous. These improvements, which Bridgeton Landfill proposes be incorporated into a CCA, include the following:

Proposed Compliance Commitment

First, liquids management, treatment and testing is now overseen by a third party vendor, Feezor Engineering, Inc., an Illinois engineering company. Daniel Feezor, P.E., the President of Feezor Engineering, Inc., is a Professional Engineer licensed in Illinois and Missouri, and is an Illinois Certified Industrial Treatment Works Operator, with Class K certification. Mr. Feezor is also an Illinois Certified Landfill Operator for the Greater Rockford Airport Foundry Sand Landfill, with 23 years of exprience in managing landfill leachate. His oversight and management put in place a consistent and reliable system to ensure effective treatment and accurate analysis. He also conducted a comprehensive review of the treatment process and has put in place the improvements, described in the following paragraphs, that have resulted in more effective benzene treatment.

Second, Bridgeton Landfill is now treating leachate through aeration prior to transport and disposal. At the time of the January testing, the leachate was not being treated in any way prior to shipment due to the initial non-hazardous characterization. Now, the leachate is collected and treated until total benzene levels are verified to be below the acceptance limit established by American Bottoms. As described in more detail in the Standard Operating Procedure prepared for discharge to American Bottoms, the tanks fill until the aeration pipes are completely submerged, and then the aeration process is started, which continues during the remaining of the filling process. This adds at least eight hours of additional aeration to the overall process.

Third, Bridgeton Landfill continues to monitor and upgrade its treatment process. The facility has changed the aeration equipment to include two compressors per sparge battery. During the startup phase, one operational sample (Operational Batch 10) failed the operational, start-up lab testing (note that this batch was never sent off site for disposal). Bridgeton Landfill reviewed the equipment with the contractor, Tri-con, and found that only 12 psi was being used for aeration. Bridgeton Landfill was using one compressor per aeration batter (four tanks) and it was not enough to consistently deliver 18 psi to all four ports. Therefore, Bridgeton Landfill doubled the

air capacity and routinely checks that all pressures delivered to the aeration tanks are at or slightly above 18 psi.

Fourth, Bridgeton Landfill has implemented additional processes to ensure consistent satisfaction of American Bottoms' discharge standards. Once the filling is completed, and the operational sample is taken, the aeration continues during the one-to-three hour (sometimes overnight) laboratory testing cycle. If the operational sample passes, the processed liquid is transferred to a storage battery. This transfer takes about five hours, and aeration continues during most of the transfer. Combined, this is at least six hours of additional aeration that is not reflected in the operational sample, but would now be reflected in any testing performed upon receipt of a load of leachate. This step represents yet another improvement that we have implemented since the January 24 shipment that we understand is the subject of the VN.

Fifth, Bridgeton Landfill has much more active management of the entire planning and loading system. Bridgeton Landfill has instituted a color ticket system which the driver, once leachate is loaded, must take to the manifest clerk. There is also a manifest checklist for each type of wastewater: treated non-hazardous wastewater designed for American Bottoms, treated non-hazardly wastewater designated for facilities other than American Bottoms; and hazardous wastewater. This helps guard against a confused truck drive, since the drivers get the tickets from the actual loading station.

Sixth, in advance of the long-range investment discussed below, we are interested in working with American Bottoms to modify the current truck unloading approach to allow for metered discharge at a rate more beneficial for the system operations.

* * * * * *

Finally, and as a longer-range project that is unrelated to the current VN (and hence not part of the proposed CCA), Bridgeton Landfill proposes to pursue an opportunity to discharge within American Bottoms' systems to allow continuous discharge of treated leachate. This would provide the benefits of a more consistent flow of leachate to the treatment system at the plant, and will help to prevent operational issues. This additional measure alone will not, of course, ensure that future shipments of leachate received at the American Bottoms plant do not contain benzene concentrations greater than 0.5 ppm. But they are additional evidence of Bridgeton Landfill's commitment to compliance with all applicable regulations in all of its operations.

Proposed Meeting

Bridgeton Landfill requests a meeting pursuant to Section 31(a)(2)(c) to discuss this response letter and future actions. The items Bridgeton Landfill proposes for discussion include:

- Treatment, sampling and analysis protocols for future leachate shipments. Bridgeton Landfill believes it is imperative for all concerned to use a consistent methodology.

- Any option to expedite initiation of direct discharge to the American Bottoms system.

Given the urgent need to resume shipments of leachate to American Bottoms, Bridgeton Landfill requests that the meeting be scheduled as quickly as possible.

Sincerely,

BRIDGETON LANDFILL, LLC

Craig Almanza

cc: Heather Faragher, American Bottoms Regional Treatment Facility
Kay Anderson, American Bottoms Regional Treatment Facility
Russ Eggert, Lathrop & Gage LLP

American Bottoms Regional
Wastewater Treatment Plant
1 American Bottoms Road
Sauget, Illinois 62201
(618) 337-1710

Laboratory Results

IL IEPA No.100443

Bridgeton Landfill LLC
13570 St. Charles Rock Road
Bridgeton MO, 63044
Attn: Kay Anderson, Compliance Manager

Report Date: 2/4/13 6:52

Site Name: Bridgeton Landfill LLC — **Sample Date: 01/22/13 09:01** — **Lab ID: 3012217-02**

Parameter	Method	Test Date	By	Results	Units	MDL	LOQ	Dilution	Notes
1,1,1-Trichloroethane	624	1/24/13 13:46	CPL	< 18.8	ug/L	18.8	50	10	
1,1,2,2-Tetrachloroethane	624	1/24/13 13:46	CPL	< 11.2	ug/L	11.2	50	10	
1,1,2-Trichloroethane	624	1/24/13 13:46	CPL	< 9.29	ug/L	9.29	50	10	
1,1-Dichloroethane	624	1/24/13 13:46	CPL	< 18.7	ug/L	18.7	50	10	
1,1-Dichloroethene	624	1/24/13 13:46	CPL	< 16.2	ug/L	16.2	50	10	
1,2-Dichlorobenzene	624	1/24/13 13:46	CPL	< 15.1	ug/L	15.1	100	10	
1,2-Dichloroethane	624	1/24/13 13:46	CPL	< 20.1	ug/L	20.1	50	10	
1,2-Dichloroethene (cis)	624	1/24/13 13:46	CPL	< 19.0	ug/L	19.0	50	10	
1,2-Dichloroethene (trans)	624	1/24/13 13:46	CPL	< 16.1	ug/L	16.1	50	10	
1,2-Dichloropropane	624	1/24/13 13:46	CPL	< 10.1	ug/L	10.1	50	10	
1,2,4-Trimethylbenzene	624	1/24/13 13:46	CPL	761	ug/L	12.2	100	10	
1,3-Dichlorobenzene	624	1/24/13 13:46	CPL	< 17.7	ug/L	17.7	50	10	
1,3-Dichloropropene (cis)	624	1/24/13 13:46	CPL	< 10.6	ug/L	10.6	50	10	
1,3-Dichloropropene (trans)	624	1/24/13 13:46	CPL	< 10.8	ug/L	10.8	50	10	
1,4-Dichlorobenzene	624	1/24/13 13:46	CPL	593	ug/L	18.4	50	10	
2-Butanone	624	1/24/13 15:50	CPL	34000	ug/L	910	5000	1000	
4-Methyl-2-pentanone	624	1/24/13 13:46	CPL	3580	ug/L	81.4	500	100	
5-Methyl-2-hexanone	624	1/24/13 16:19	CPL	1020	ug/L	7.01	50	10	
Acetonitrile	624	1/24/13 13:46	CPL	< 10.3	ug/L	10.3	50	10	
Benzene	624	1/24/13 13:46	CPL	1650	ug/L	19.3	50	10	
Bromodichloromethane	624	1/24/13 13:46	CPL	< 9.98	ug/L	9.98	50	10	
Bromoform	624	1/24/13 13:46	CPL	< 9.26	ug/L	9.26	50	10	
Bromomethane	624	1/24/13 13:46	CPL	< 17.0	ug/L	17.0	50	10	
Carbon disulfide	624	1/24/13 13:46	CPL	< 17.8	ug/L	17.8	50	10	
Carbon tetrachloride	624	1/24/13 13:46	CPL	< 13.8	ug/L	13.8	50	10	
Chlorobenzene	624	1/24/13 13:46	CPL	100	ug/L	12.1	100	10	
Chloroethane	624	1/24/13 13:46	CPL	< 13.2	ug/L	13.2	50	10	
Chloroform	624	1/24/13 13:46	CPL	< 19.1	ug/L	19.1	50	10	
Chloromethane	624	1/24/13 13:46	CPL	< 15.4	ug/L	15.4	50	10	
Dibromochloromethane	624	1/24/13 13:46	CPL	< 11.1	ug/L	11.1	50	10	
Ethyl benzene	624	1/24/13 13:46	CPL	297	ug/L	13.4	100	10	
m and p-Xylene	624	1/24/13 13:46	CPL	692	ug/L	26.7	200	10	
Methylene chloride	624	1/24/13 13:46	CPL	< 11.5	ug/L	11.5	50	10	
o-Xylene	624	1/24/13 13:46	CPL	326	ug/L	12.3	50	10	
Tetrachloroethene	624	1/24/13 13:46	CPL	< 16.3	ug/L	16.3	50	10	

Parameter	Method	Test Date	By	Results	Units	MDL	LOQ	Dilution	Notes
Site Name: Bridgeton Landfill LLC		**Sample Date: 01/22/13 09:01**						**Lab ID: 3012217-02**	
Toluene	624	1/24/13 13:46	CPL	449	ug/L	12.7	50	10	
Trichloroethene	624	1/24/13 13:46	CPL	< 14.2	ug/L	14.2	50	10	
Vinyl chloride	624	1/24/13 13:46	CPL	< 16.4	ug/L	16.4	50	10	
Xylenes (total)	624	1/24/13 13:46	CPL	1020	ug/L	12.3	50	10	
1,3-Dichloropropene (total)	624	1/24/13 13:46	CPL	< 10.6	ug/L	10.6	50	10	
Surrogate: 4-Bromofluorobenzene		*107 %*	*90-110*						
Surrogate: Fluorobenzene		*85 %*	*77-119*						
Surrogate: Pentafluorobenzene		*105 %*	*90-117*						

Volatile Organic Compounds - Quality Control

Analyte	Result	Notes	MDL	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B301229 - EPA 624											
Blank (B301229-BLK1)					Prepared: 01/24/13 07:15 Analyzed: 01/24/13 09:29						
1,1,1-Trichloroethane	ND		1.88	5	ug/L						
1,1,2,2-Tetrachloroethane	ND		1.12	5	ug/L						
1,1,2-Trichloroethane	ND		0.929	5	ug/L						
1,1-Dichloroethane	ND		1.87	5	ug/L						
1,1-Dichloroethene	ND		1.62	5	ug/L						
1,2-Dichlorobenzene	ND		1.51	10	ug/L						
1,2-Dichloroethane	ND		2.01	5	ug/L						
1,2-Dichloroethene (cis)	ND		1.90	5	ug/L						
1,2-Dichloroethene (trans)	ND		1.61	5	ug/L						
1,2-Dichloropropane	ND		1.01	5	ug/L						
1,2,4-Trimethylbenzene	ND		1.22	10	ug/L						
1,3-Dichlorobenzene	ND		1.77	5	ug/L						
1,3-Dichloropropene (cis)	ND		1.06	5	ug/L						
1,3-Dichloropropene (trans)	ND		1.08	5	ug/L						
1,4-Dichlorobenzene	ND		1.84	5	ug/L						
2-Butanone	ND		0.910	5	ug/L						
4-Methyl-2-pentanone	ND		0.814	5	ug/L						
5-Methyl-2-hexanone	ND		0.701	5	ug/L						
Acetonitrile	ND		1.03	5	ug/L						
Benzene	ND		1.93	5	ug/L						
Bromodichloromethane	ND		0.998	5	ug/L						
Bromoform	ND		0.926	5	ug/L						
Bromomethane	ND		1.70	5	ug/L						
Carbon disulfide	ND		1.78	5	ug/L						
Carbon tetrachloride	ND		1.38	5	ug/L						
Chlorobenzene	ND		1.21	10	ug/L						
Chloroethane	ND		1.32	5	ug/L						
Chloroform	ND		1.91	5	ug/L						
Chloromethane	ND		1.54	5	ug/L						
Dibromochloromethane	ND		1.11	5	ug/L						
Ethyl benzene	ND		1.34	10	ug/L						
m and p-Xylene	ND		2.67	20	ug/L						
Methylene chloride	ND		1.15	5	ug/L						
o-Xylene	ND		1.23	5	ug/L						
Tetrachloroethene	ND		1.63	5	ug/L						
Toluene	ND		1.27	5	ug/L						
Trichloroethene	ND		1.42	5	ug/L						
Vinyl chloride	ND		1.64	5	ug/L						
Xylenes (total)	ND		1.23	5	ug/L						
1,3-Dichloropropene (total)	ND		1.06	5	ug/L						
Surrogate: 4-Bromofluorobenzene	*29.6*				*ug/L*	*30.00*		*99*	*90-110*		
Surrogate: Fluorobenzene	*26.6*				*ug/L*	*30.00*		*89*	*77-119*		
Surrogate: Pentafluorobenzene	*34.1*				*ug/L*	*30.00*		*114*	*90-117*		
LCS (B301229-BS1)					Prepared: 01/24/13 07:15 Analyzed: 01/24/13 09:00						
1,1,1-Trichloroethane	22.0		1.88	5	ug/L	20.00		110	79-156		
1,1,2,2-Tetrachloroethane	22.3		1.12	5	ug/L	20.00		112	77-150		
1,1,2-Trichloroethane	20.3		0.929	5	ug/L	20.00		102	82-145		
1,1-Dichloroethane	21.3		1.87	5	ug/L	20.00		107	77-159		
1,1-Dichloroethene	21.1		1.62	5	ug/L	20.00		105	71-166		
1,2-Dichlorobenzene	23.5		1.51	10	ug/L	20.00		117	76-139		
1,2-Dichloroethane	22.2		2.01	5	ug/L	20.00		111	77-164		

Volatile Organic Compounds - Quality Control

Analyte	Result	Notes	MDL	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
LCS (B301229-BS1)					Prepared: 01/24/13 07:15 Analyzed: 01/24/13 09:00						
1,2-Dichloroethene (cis)	23.6		1.90	5	ug/L	20.00		118	80-153		
1,2-Dichloroethene (trans)	21.2		1.61	5	ug/L	20.00		106	74-167		
1,2-Dichloropropane	18.6		1.01	5	ug/L	20.00		93	81-141		
1,2,4-Trimethylbenzene	22.2		1.22	10	ug/L	20.00		111	59-116		
1,3-Dichlorobenzene	24.8		1.77	5	ug/L	20.00		124	77-138		
1,3-Dichloropropene (cis)	20.2		1.06	5	ug/L	20.00		101	81-142		
1,3-Dichloropropene (trans)	20.6		1.08	5	ug/L	20.00		103	85-157		
1,4-Dichlorobenzene	24.1		1.84	5	ug/L	20.00		120	77-139		
2-Butanone	28.8		0.910	5	ug/L	20.00		144	31-236		
4-Methyl-2-pentanone	18.9		0.814	5	ug/L	20.00		95	69-155		
5-Methyl-2-hexanone	21.2		0.701	5	ug/L	20.00		106	62-177		
Acetonitrile	20.2		1.03	5	ug/L	20.00		101	55-189		
Benzene	28.5		1.93	5	ug/L	20.00		142	80-155		
Bromodichloromethane	20.1		0.998	5	ug/L	20.00		101	90-139		
Bromoform	24.0		0.926	5	ug/L	20.00		120	72-150		
Bromomethane	28.5		1.70	5	ug/L	20.00		142	51-149		
Carbon disulfide	20.5		1.78	5	ug/L	20.00		103	74-149		
Carbon tetrachloride	25.3		1.38	5	ug/L	20.00		127	68-166		
Chlorobenzene	23.3		1.21	10	ug/L	20.00		117	80-141		
Chloroethane	22.3		1.32	5	ug/L	20.00		112	55-127		
Chloroform	25.2		1.91	5	ug/L	20.00		126	78-158		
Chloromethane	21.1		1.54	5	ug/L	20.00		105	50-150		
Dibromochloromethane	21.4		1.11	5	ug/L	20.00		107	82-149		
Ethyl benzene	19.4		1.34	10	ug/L	20.00		97	76-140		
m and p-Xylene	43.3		2.67	20	ug/L	40.00		108	78-136		
Methylene chloride	24.4		1.15	5	ug/L	20.00		122	61-173		
o-Xylene	21.4		1.23	5	ug/L	20.00		107	81-132		
Tetrachloroethene	21.0		1.63	5	ug/L	20.00		105	78-139		
Toluene	21.4		1.27	5	ug/L	20.00		107	79-143		
Trichloroethene	18.4		1.42	5	ug/L	20.00		92	81-142		
Vinyl chloride	20.0		1.64	5	ug/L	20.00		100	47-132		
Surrogate: 4-Bromofluorobenzene	*29.1*				*ug/L*	*30.00*		*97*	*90-110*		
Surrogate: Fluorobenzene	*26.6*				*ug/L*	*30.00*		*89*	*77-119*		
Surrogate: Pentafluorobenzene	*34.4*				*ug/L*	*30.00*		*115*	*90-117*		

Sample and Data Notes Key Reference:

MDL Method Detection Limit
LOQ Limit of Quantitation

The results in this report relate only to the samples submitted for analysis. The test results meet all requirements of NELAC except for those instances indicated in the Sample and Data Notes above.

Case Narrative:

US-EPA Method 624

1. Sample and Analysis Information
   1.1. Preservation: pH<2 with hydrochloric acid and held at <6 degrees Celsius upon collection to analysis
   1.2. Hold Time: The samples were analyzed on 01/24/2013, within the required fourteen-day hold time.
   1.3. The samples were analyzed by capillary column gas chromatography with full scan, electron impact ionization, and mass spectrometry for the volatile target compounds.

2. Reportability of Target Compounds
   2.1. All target compounds are method compliant.

Josh Kathn 2/4/13

Laboratory Manager Date

VILLAGE OF SAUGET
CHAIN OF CUSTODY

Use only U.S.EPA approved testing methods as specified in the C.F.R. Unless written instruction to contrary

17.8

Sample	Grab Date/Time	Composite Start Date/Time	Composite End Date/Time	Container G/P/S	Preservation 6 °C Yes	Preservation 6 °C No	Number Volume of Containers	Analyses Requested
Bridgeton Landfill	1/22/13 8:58A			G	X		3-40 ML	Alcohols
↓	1/22/13 9:01			G	X HCl		3-40 (acid) ML	624
↓	1/22/13 9:05A			P	X NaOH		1-1L	Cn(T)

Sampled By:	Date/Time 1/22/13 9:25 A
Relinquished By:	Date/Time
Relinquished By:	Date/Time

Received By: NRC	Date/Time 1/22/13 925
Received By:	Date/Time
Received By:	Date/Time

Comments:

Container: G = Glass, P = Plastic, FB = Field Blank, TB = Trip Blank

From Bridgeton Landfill FTP site:

Raw Data > Air Sampling folder

Bridgeton Landfill Air and Landfill Gas Sampling August 2012: Summary of Findings

Bridgeton Landfill, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

October 19, 2012

Stantec

P.1 of 782

Memo

Stantec

To:	Craig Almanza Bridgeton Landfill, LLC	From:	Deborah L. Gray Columbus, OH
File:	Bridgeton Landfill, LLC	Date:	April 9, 2013

Reference: 182608005

At the request of Bridgeton Landfill, LLC Stantec Consulting Services, Inc. (Stantec) mobilized to Bridgeton Landfill in Bridgeton, Missouri, to collect samples of the vapor in the headspace of the leachate treatment tanks to determine the concentrations of volatile organic compounds (VOCs) present following mixing and aeration of the waste. It is Stantec's understanding that the purpose of sampling the vapor is to assess potential exposures to employees of the Metropolitan Sewer District (MSD) during transfer of the treated liquids from the landfill to the MSD lift-station on Old St. Charles Rock Road. The MSD has expressed concern that employees working around the liquid wastes from the landfill may be exposed to airborne contaminants, including VOCs (particularly benzene) at levels of concern in the air of the lift-station structure, and potentially as the wastes enter the mixing tanks at the municipal wastewater treatment plant (approximately 1.5 to 2.0 miles from the landfill).

In order to render the liquid waste (combined leachate and landfill gas condensate) acceptable for discharge through the MSD, Bridgeton will treat the waste by mixing and aerating to reduce the concentrations of VOCs. On Thursday April 4, leachate and landfill gas condensate were transferred into frac tanks for treatment. There are currently two treatment units on-site, each consisting of four frac tanks and an air-sparging system. However, only one unit was operating on April 4/5. Once the tanks were filled above the level of the aeration equipment, approximately 1/3rd, the waste was stirred to release volatiles which were then captured and sparged through charcoal filter units before release to ambient air. After treatment, samples of the liquid waste were collected to confirm that it met the requirements set forth in the leachate treatment Standard Operating Procedure and to provide a baseline analysis for resumption of discharge to the MSD. It was the intent of the facility to sample the vapors in the headspace of the treatment tanks at the same time that the liquid samples were collected in order to have correlating liquid and vapor data for purpose of MSD's review.

It is anticipated that the concentrations of VOCs present in the vapors confined above the liquid in the frac tanks would represent the "worst case" with regard to what MSD employees could be exposed to either in the air inside the lift station or subsequently when the waste enters the municipal treatment plant. This was consistent with the purpose of providing a conservative estimate from which to evaluate risk and appropriate risk abatement options.

The vapor sampling will be restricted to VOCs because this analytical group includes compounds that are of greatest potential health concern to those employees of the MSD who may inhale vapors while transferring the waste. The individual compounds that were detected in the highest concentrations in landfill gas during the August 2012 sampling event were VOCs. Although other types of constituents such as reduced sulfur compounds and carboxylic acids were found in the landfill gas in August 2102, these constituents are primarily related to odor as opposed to being a health concern for the conditions under which MSD employees may be exposed to vapors associated with disposal of the liquid waste.

Stantec utilized the following sampling protocol.

Analytical Method: EPA TO-15 plus Tentatively Identified Compounds (TICs)

Collection Method: Vapor or ambient air will be drawn into prepared 6-liter Summa© Canisters fitted with 15-minute regulators.

Vapor Samples from the Headspace of the Treatment Tanks: In order to minimize dilution with ambient air, the canister was placed on the top of the treatment tank and a piece of Tygon© tubing attached to the sample inlet inserted under the metal cover on the access port of the tank so that it extended into the headspace, but did not contact the liquid. To avoid crushing the tubing, the lid was propped open with a small piece of wood and clean toweling was tucked into the opening to prevent influx of outside air or escape of the vapors. The vapor samples were collected over a 15-minute period.

On April 5, 2013 a total of ***eight (8) vapor samples*** were collected from the headspace of the four frac tanks that were connected to the operating sparge system after treatment. One vapor sample was collected from each of the four tanks with the air filtration unit operating. The air filtration unit was then turned off allowing vapors to accumulate inside the headspace of the tanks for approximately one hour. A second vapor sample was then collected from each of the four frac tanks to represent "worst case" conditions with regard to vapor concentrations.

Outside Air Samples: In addition to the treatment tank vapor samples, ***two (2) 15-minute samples of outside air*** were collected in the vicinity of the treatment tanks during the same time period for comparison.

Chains of Custody and Shipping: Chain of custody documentation was completed by Stantec personnel and packaged with the filled Summa© Canisters; and shipped via FedEx to ALS Laboratories for arrival on Monday morning (April 8). The laboratory was requested to analyze the samples within 4-days of receipt with results available by Friday April 12.

ALS has indicated that there is a 25% surcharge for 5-day turn-around. This translates to $237.50 per sample.

Reference: 182608005

Communication of Results: The laboratory analytical results will be communicated to Bridgeton Landfill, LLC as soon as the reports are received and reviewed by Stantec's toxicologist.

Stantec Consulting Services, Inc.

Deborah L. Gray, Ph.D., DABT
National Director, Risk Assessment & Toxicology Practice
Deb.gray@stantec.com

Table 1: Sample Locations and Parameters – Summa Canisters – Bridgeton Landfill Leachate Processing (Sparge) Tanks

SUMMA Canister ID	Location/Description [1, 2, 3, 4]	Analog Gauge ID	COA ID [5]	Start Time [6]	Stop Time	Sample Duration (min)	Pre-Sample Pressure (PSI) [7]	Post-Sample Pressure (PSI) [7]	Amount of time tank lid was closed prior to sampling (hr:min) [8, 9]	Amount of time carbon filtration unit was off prior to sampling (hr:min) [9, 10]
02705	SPG1-1, carbon filtration system ON	AVG01893	OA00940	0908	0923	15	28.6	0.0	0:13	NA
01545	SPG1-2, carbon filtration system ON	AVG02327	OA01035	0928	0945	17	27.8	2.5	0:26	NA
03275	SPG1-3, carbon filtration system ON	AVG02181	OA00994	1013	1029	16	24.8	1.8	1:09	NA
02229	SPG1-4, carbon filtration system ON	AVG02354	OA00959	1032	1047	15	27.4	0.0	1:26	NA
02836	SPG1-1, carbon filtration system OFF	AVG01821	OA01015	1101	1117	16	28.6	6.2	0:41	0:09
02733	SPG1-2, carbon filtration system OFF	AVG02682	OA00989	1120	1135	15	29.6	6.0	2:18	0:28
01270	SPG1-3, carbon filtration system OFF	AVG02124	OA01048	1138	1153	15	28.8	1.7	2:34	0:46
00404	SPG1-4, carbon filtration system OFF	AVG02550	OA00969	1155	1211	16	27.4	3.0	2:49	1:03
01373	Ambient – upwind	AVG01905	OA00957	0950	1006	16	27.5	5.8	NA	NA
01233	Ambient - downwind	AVG02438	OA00936	1035	1052	17	26.0	0.0	NA	NA

Notes:

1 SPG#-# refers to leachate sparge systems; the first # refers to the system on site (at the time of sampling there were 3 separate systems); the second number refers to the tank identification (each sparge system has four separate tanks)

2 All samples obtained from SPG1; this was the only system on line that had leachate present that was previously sparged, thereby simulating that which would be discharged to MSD

3 For SPG1, the four tanks were filled with leachate on 04/04/2013 starting at 1330 and ending at 2250

4 For SPG1, the sparge system was turned on 04/04/2013 at 1830, and turned off on 04/05/2013 at approximately 0900; thus it operated for approximately 14.5 hours (Source: Feezor Engineering)

5 COA = Critical Orifice Assembly

6 All samples obtained on April 5, 2013; weather was clear and sunny with light breeze from northeast, approximate temperature 65°F

7 PSI = pounds per square inch

8 To minimize air movement and approximate worst-case conditions, the lids to SPG1 tanks were closed for sampling at the following times: SPG1-1 at 0855 (and again at 1020); SPG1-2 at 0902; SPG1-3 at 0904; SPG1-4 at 0906

9 NA = not applicable

10 To minimize air movement and approximate worst-case conditions for the second round of samples from the four SPG1 tanks, the carbon air filtration unit was shut down at 1052

Table 2: Sample Results - Summa Canisters – Bridgeton Landfill Leachate Processing (Sparge) Tanks

Analyte	CAS #	Concentrations in µg/m³										
		Occupational Standard*	SPG-1 On (Summa 02705)	SPG-2 On (Summa 01545)	SPG-3 On (Summa 03275)	SPG-4 On (Summa 02229)	SPG-1 Off (Summa 02836)	SPG-2 Off (Summa 02733)	SPG-3 Off (Summa 01270)	SPG-4 Off (Summa 00404)	Ambient Upwind (Summa 01373)	Ambient Downwind (Summa 01233)
Propene	115-07-1	861,000	490	300	720	330	3,100	760	2,400	2,400	<0.65	3.0
DCDFM	75-71-8	42,100	<43	<48	<83	<53	<190	<390	<230	<470	2.2	2.1
Chloromethane	74-87-3	207,000	<43	<48	<83	<53	<190	<390	<230	<470	0.71	<0.67
Ethanol	64-17-5	1,880,000	31,000	25,000	40,000	26,000	91,000	92,000	110,000	110,000	<6.5	36
Acetone	67-64-1	590,000	23,000	19,000	32,000	19,000	110,000	90,000	120,000	130,000	11	37
TCFM	75-69-4	5,620,000	<43	<48	<83	<53	<190	<390	<230	<470	1.3	1.5
2-Propanol	67-63-0	980,000	4,700	4,200	6,500	4,200	14,000	18,000	19,000	22,000	<6.5	<6.7
Methylene chloride	75-09-2	174,000	<43	<48	<83	<53	<190	<390	<230	<470	0.82	<0.67
2-Butanone (MEK)	78-93-3	590,000	8,800	8,200	14,000	8,100	49,000	42,000	61,000	68,000	<6.5	9.5
Ethyl acetate	141-78-6	1,440,000	330	320	640	330	2,400	1,900	3,000	3,800	<1.3	<1.3
Tetrahydrofuran	109-99-9	147,000	4,300	3,900	7,000	3,900	25,000	20,000	28,000	35,000	<0.65	4.1
Benzene	71-43-2	1,600	<43	<48	<83	<53	<190	<390	<230	<470	<0.65	6.8
1,4-Dioxane	123-91-1	3,600	350	280	470	300	1,000	1,100	1,300	1,400	<0.65	<0.67
4M2P	108-10-1	205,000	150	130	270	140	850	730	1,200	1,500	<0.65	<0.67
Toluene	108-88-3	75,400	<43	<48	<83	<53	<190	<390	<230	<470	0.73	<0.67
2-Hexanone	591-78-6	4,000	130	130	230	130	730	640	970	1,200	<0.65	<0.67
n-Butyl acetate	123-86-4	710,000	180	180	390	200	1,000	920	1,900	2,400	<0.65	<0.67
124TMB	95-63-6	125,000	<43	<48	<83	<53	<190	<390	280	<470	<0.65	<0.67
14DCB	106-46-7	450,000	<43	<48	<83	<53	<190	<390	370	570	<0.65	<0.67
d-Limonene	5989-27-5	167,000	83	86	110	72	640	<390	660	990	<0.65	<0.67
Naphthalene	91-20-3	52,400	350	350	260	180	410	<390	780	1,100	<0.65	<0.67
Tentatively Identified Compounds												
Sulfur dioxide	7446-09-5		ND	ND	ND	ND	ND	ND	ND	ND	>440	ND
n-Butanal	123-72-8		ND	ND	ND	ND	4,400	4,000	ND	8,100	3.8	ND
n-Heptanal	85-86-9		ND	ND	1,300	ND	ND	ND	ND	ND	2.6	ND
Propane	74-98-6	1,800,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3
Isobutane	13183-68-1		ND	ND	ND	ND	ND	ND	ND	ND	ND	3.1
Acetaldehyde	75-07-0	45,000	1,800	1,700	3,000	1,700	10,000	9,000	12,000	15,000	ND	2.8
Methyl acetate	79-09-4	610,000	4,400	4,100	7,800	4,200	28,000	23,000	33,000	41,000	ND	ND

Analyte	CAS #	Concentrations in µg/m³										
		Occupational Standard*	SPG-1 On (Summa 02705)	SPG-2 On (Summa 01545)	SPG-3 On (Summa 03275)	SPG-4 On (Summa 02229)	SPG-1 Off (Summa 02836)	SPG-2 Off (Summa 02733)	SPG-3 Off (Summa 01270)	SPG-4 Off (Summa 00404)	Ambient Upwind (Summa 01373)	Ambient Downwind (Summa 01233)
n-Butane	106-97-8	1,900,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.6
1-Propanol	71-23-8	500,000	3,700	3,100	5,300	3,300	13,000	14,000	15,000	17,000	ND	ND
n-Pentane	109-66-0	350,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.7
Methyl acetate	79-20-9		ND	ND	ND	ND	ND	ND	ND	ND	ND	6.4
2-Pentanone	107-87-9	530,000	850	ND	1,400	770	4,900	4,100	5,800	7,300	ND	ND
2-Methylfuran	534-22-5		ND	ND	ND	ND	ND	ND	ND	ND	ND	5.3
1-Butanol	71-36-3	150,000	13,000	11,000	18,000	12,000	44,000	42,000	56,000	62,000	ND	4.3
2-Butanol	78-92-2	305,000	3,200	3,000	5,100	3,100	13,000	14,000	16,000	19,000	ND	ND
Cyclohexanone	108-93-0	100,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.1
Methyl propionate	554-12-1		1,000	1,000	2,200	1,100	8,000	6,800	ND	13,000	ND	ND
Methyl butyrate	623-42-7		1,600	1,600	3,500	1,800	11,000	9,500	17,000	22,000	ND	ND
Cyclopentanone	120-92-3		ND	ND	ND	ND	ND	2,600	ND	ND	ND	ND
Isobutanol	78-83-1		ND	ND	1,300	ND	3,800	ND	4,600	ND	ND	ND
2MCP	1120-72-5		2,200	2,000	3,100	1,900	9,200	8,000	11,000	13,000	ND	ND
1-Hexanol	111-27-3		930	840	1,500	890	3,200	3,100	4,700	ND	ND	ND
2ECP	4971-18-0		2,700	2,400	3,700	2,300	9,400	7,600	13,000	15,000	ND	ND
23D2C1-one	1121-05-7		1,000	850	ND	910	ND	ND	ND	ND	ND	ND
2M2CP-1-one			ND	ND	ND	760	ND	ND	ND	ND	ND	ND
2E1H	104-76-7		11,000	10,000	18,000	12,000	32,000	29,000	51,000	56,000	ND	ND
Butyl hexanoate	626-82-4		1,100	1,100	ND	ND	ND	ND	ND	ND	ND	ND
Methyl hexanoate	106-70-7		ND	ND	ND	ND	ND	ND	4,400	5,700	ND	ND
Butyl butyrate	109-21-7		ND	ND	ND	ND	ND	ND	5,100	6,300	ND	ND
2EHB			1,200	1,500	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	99-87-6		ND	ND	ND	ND	ND	ND	ND	6,700	ND	ND

***If both OSHA PEL and NIOSH REL were available, value is the lower of the two.**

Abbreviations:

DCDFM	Dichlorodifluoromethane (CFC 12)
TCFM	Trichlorofluoromethane
4M2P	4-Methyl-2-pentanone
124TMB	1,2,4-Trimethylbenzene
14DCB	1,4-Dichlorobenzene
2MCP	2-Methylcyclopentanone
2ECP	2-Ethylcyclopentanone
23D2C1-one	2,3-Dimethyl-2-cyclopenten-1-one
2M2CP-1-one	2-Methyl-2-cyclopentanone-1-one
2E1H	2-Ethyl-1-hexanol
2EHB	2-Ethylhexylbutyrate

From Bridgeton Landfill FTP site:

Raw Data > MSD Proposal Sampling folder

CLIENT	SAMPLENAME	LABSAMPID	SAMPDATE	METHODNAME	ANALYTE	CASNUMBER	Result	DL	RL	UNITS
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 1664A	Oil & Grease - total		ND	160	590	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Silver	7440-22-4	ND	0.0020	0.0040	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Silver	7440-22-4	ND	0.0020	0.0040	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Arsenic	7440-38-2	0.47	0.014	0.030	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Arsenic	7440-38-2	0.52	0.014	0.030	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Beryllium	7440-41-7	ND	0.0020	0.0020	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Beryllium	7440-41-7	0.0020	0.0020	0.0020	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Cadmium	7440-43-9	0.020	0.0020	0.0040	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Cadmium	7440-43-9	0.028	0.0020	0.0040	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Chromium	7440-47-3	0.21	0.0020	0.0040	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Chromium	7440-47-3	0.24	0.0020	0.0040	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Copper	7440-50-8	0.017	0.0020	0.0040	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Copper	7440-50-8	0.021	0.0020	0.0040	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Iron	7439-89-6	660	0.40	2.0	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Iron	7439-89-6	890	0.40	2.0	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Nickel	7440-02-0	0.11	0.0020	0.0040	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Nickel	7440-02-0	0.12	0.0020	0.0040	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Lead	74389-92-1	0.16	0.0060	0.020	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Lead	74389-92-1	0.25	0.0060	0.020	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Antimony	7440-36-0	0.11	0.0080	0.020	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Antimony	7440-36-0	0.068	0.0080	0.020	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Selenium	7782-49-2	0.090	0.0080	0.020	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Selenium	7782-49-2	0.050	0.0080	0.020	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Thallium	7440-28-0	0.088	0.012	0.040	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Thallium	7440-28-0	0.058	0.012	0.040	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Zinc	7440-66-6	18	0.010	0.020	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 200.7 R4.4	Zinc	7440-66-6	19	0.010	0.020	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 245.1 R3.0 / SW 7470A	Mercury	7439-97-6	0.042	0.0020	0.0020	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 245.1 R3.0 / SW 7470A	Mercury	7439-97-6	0.042	0.0020	0.0020	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	4,4'-DDE	72-55-9	ND	1.0	1.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Endosulfan sulfate	1031-07-8	ND	1.0	1.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Endrin	72-20-8	ND	1.0	1.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Endrin aldehyde	7421-93-4	ND	1.0	1.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	gamma-BHC (Lindane)	58-89-9	ND	0.50	0.50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Heptachlor	76-44-8	ND	0.50	0.50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Heptachlor epoxide	1024-57-3	ND	0.50	0.50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Methoxychlor	72-43-5	ND	5.0	5.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Toxaphene	8001-35-2	ND	5.0	5.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	4,4'-DDT	50-29-3	ND	1.0	1.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Aldrin	309-00-2	ND	0.50	0.50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Alpha-BHC	319-84-6	ND	0.50	0.50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Aroclor 1016	12674-11-2	ND	5.0	5.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Aroclor 1221	11104-28-2	ND	5.0	10	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Aroclor 1232	11141-16-5	ND	5.0	5.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Aroclor 1242	53469-21-9	ND	5.0	5.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	4,4'-DDD	72-54-8	ND	1.0	1.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Aroclor 1248	12672-29-6	ND	5.0	5.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Aroclor 1254	11097-69-1	ND	5.0	10	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Aroclor 1260	11096-82-5	ND	5.0	10	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Aroclors - Total		ND	5.0	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Beta-BHC	319-85-7	ND	0.50	0.50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Chlordane (technical)	12789-03-6	ND	5.0	5.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Delta-BHC	319-86-8	ND	0.50	0.50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Dieldrin	60-57-1	ND	1.0	1.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Endosulfan I	959-98-8	ND	0.50	0.50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 608	Endosulfan II	33213-65-9	ND	1.0	1.0	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	1,1,1-Trichloroethane	71-55-6	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Xylenes- Total	1330-20-7	ND	50	150	ug/L

Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Acrolein	107-02-8	ND	100	500	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Acrylonitrile	107-13-1	ND	100	500	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Benzene	71-43-2	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Bromodichloromethane	75-27-4	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Bromoform	75-25-2	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Bromomethane	74-83-9	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	1,1,2,2-Tetrachloroethane	79-34-5	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Carbon tetrachloride	56-23-5	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	cis-1,3-Dichloropropene	10061-01-5	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Chlorobenzene	108-90-7	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Chloroethane	75-00-3	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Chloroform	67-66-3	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Chloromethane	74-87-3	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Dibromochloromethane	124-48-1	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	trans-1,2-Dichloroethene	156-60-5	ND	10	200	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	trans-1,3-Dichloropropene	10061-02-6	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Ethylbenzene	100-41-4	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Methylene chloride	75-09-2	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	1,1,2-Trichloroethane	79-00-5	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Tetrachloroethene	127-18-4	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Toluene	108-88-3	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Trichloroethene	79-01-6	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Trichlorofluoromethane	75-69-4	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Vinyl chloride	75-01-4	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	1,1-Dichloroethane	75-34-3	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	1,1-Dichloroethene	75-35-4	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	1,2-Dichlorobenzene	95-50-1	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	1,2-Dichloroethane	107-06-2	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	1,2-Dichloroethane-d4	17060-07-0	26.5			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Toluene-d8		28.5			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Bromofluorobenzene	460-00-4	32.4			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	1,2-Dichloropropane	78-87-5	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Fluorobenzene	462-06-6	300			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	Chlorobenzene-d5		300			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	1,4-Dichlorobenzene-d4	3855-82-1	300			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	1,3-Dichlorobenzene	541-73-1	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	1,4-Dichlorobenzene	106-46-7	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 624	2-Chloroethylvinyl ether	110-75-8	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Isophorone	78-59-1	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2-Nitrophenol	88-75-5	ND	670	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2,4-Dimethylphenol	105-67-9	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Bis(2-chloroethoxy) methane	111-91-1	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2,4-Dichlorophenol	120-83-2	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	1,2,4-Trichlorobenzene	120-82-1	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Naphthalene	91-20-3	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Hexachlorobutadiene	87-68-3	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	4-Chloro-3-methylphenol	59-50-7	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Hexachlorocyclopentadiene	77-47-4	ND	400	5000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2,4,6-Trichlorophenol	88-06-2	ND	500	5000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2-Chloronaphthalene	91-58-7	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Dimethyl phthalate	131-11-3	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2,6-Dinitrotoluene	606-20-2	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Acenaphthylene	208-96-8	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Acenaphthene	83-32-9	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2,4-Dinitrophenol	51-28-5	ND	500	5000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	4-Nitrophenol	100-02-7	ND	610	5000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2,4-Dinitrotoluene	121-14-2	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Phenol	108-95-2	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Diethyl phthalate	84-66-2	ND	500	1000	ug/L

Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Fluorene	86-73-7	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	4-Chlorophenylphenyl ether	7005-72-3	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	4,6-Dinitro-2-methylphenol	534-52-1	ND	1000	5000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	N-Nitrosodiphenylamine	86-30-6	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	1,2-Diphenylhydrazine	122-66-7	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	4-Bromophenylphenyl ether	101-55-3	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Hexachlorobenzene	118-74-1	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Pentachlorophenol	87-86-5	ND	1000	5000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Phenanthrene	85-01-8	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Anthracene	120-12-7	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Di-n-butyl phthalate	84-74-2	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Fluoranthene	206-44-0	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Benzidine	92-87-5	ND	2600	8000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Pyrene	129-00-0	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Bis(2-chloroethyl) ether	111-44-4	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Butyl benzyl phthalate	85-68-7	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Benzo(a)anthracene	56-55-3	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	3,3'-Dichlorobenzidine	91-94-1	ND	1200	2000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Chrysene	218-01-9	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Bis(2-ethylhexyl) phthalate	117-81-7	ND	300	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Di-n-octyl phthalate	117-84-0	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Benzo(b)fluoranthene	205-99-2	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Benzo(k)fluoranthene	207-08-9	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Dioxin Screen		ND	5000	5000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Benzo(a)pyrene	50-32-8	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2-Chlorophenol	95-57-8	ND	600	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Indeno(1,2,3-cd)pyrene	193-39-5	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Dibenzo(a,h)anthracene	53-70-3	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Benzo(g,h,i)perylene	191-24-2	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	1,3-Dichlorobenzene	541-73-1	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	N-Nitrosodimethylamine	62-75-9	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	1,4-Dichlorobenzene	106-46-7	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	1,2-Dichlorobenzene	95-50-1	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Bis(2-chloroisopropyl) ether	39638-32-9	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	N-Nitrosodi-n-propylamine	621-64-7	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Hexachloroethane	67-72-1	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Nitrobenzene	98-95-3	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	Pyridine	110-86-1	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	4-Chloroaniline	106-47-8	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2-Methylnaphthalene	91-57-6	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2,4,5-Trichlorophenol	95-95-4	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2-Fluorobiphenyl	321-60-8	330			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2-Nitroaniline	88-74-4	ND	1000	5000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	4-Nitroaniline	100-01-6	ND	1000	5000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	2-Methylphenol	95-48-7	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	EPA 625	3- & 4-Methylphenol	T-34MP	ND	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SM 2540D 18Ed	Solids - total suspended solids (TSS)		1500	5.0	100	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SM 4500-CN C E 18Ed	Cyanide	57-12-5	0.011	0.0030	0.0050	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SM 4500-CN C E 18Ed	Cyanide	57-12-5	0.010	0.0030	0.0050	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SM 4500-H B 18Ed - EPA 150.1 - SW 9040B	pH		5.7		2.0	pH Units
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SM 5210B 18Ed	BOD		26000	6.0	6.0	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SM 5220D 18Ed	COD		50000	400	500	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SM(18) 4500 NH3 F	Ammonia-N	7664-41-7	710	0.10	1.0	mg/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	1,2,3-Trichloropropane	96-18-4	430	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Bis(chloromethyl) ether		ND	100000	100000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	1,3-Dichloropropane	142-28-9	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	1,4-Dioxane	123-91-1	6400	750	1500	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	2,2-Dichloropropane	594-20-7	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	2-Chlorotoluene	95-49-8	ND	10	50	ug/L

Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	2-Nitropropane	79-46-9	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	3-Chloroprene	107-05-1	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	4-Chlorotoluene	106-43-4	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Methacrylonitrile	126-98-7	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Bromobenzene	108-86-1	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon)	76-13-1	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Bromochloromethane	74-97-5	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Chloroprene	126-99-8	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Cyclohexane		ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Cyclohexanone	108-94-1	540	50	100	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Dibromomethane	74-95-3	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Ethyl ether	60-29-7	ND	50	100	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Ethyl acetate	141-78-6	1400	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	1,2-Dichloroethane-d4	17060-07-0	26.5			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Toluene-d8		28.5			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Bromofluorobenzene	460-00-4	32.4			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Ethyl methacrylate	97-63-2	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Hexachlorobutadiene	87-68-3	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Hexane		ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Iodomethane	74-88-4	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Isobutanol	78-83-1	ND	5000	10000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Isopropanol	67-63-0	58000	5000	10000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Isopropylbenzene	98-82-8	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Methyl methacrylate	80-62-6	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Fluorobenzene	462-06-6	300			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Chlorobenzene-d5		300			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	1,4-Dichlorobenzene-d4	3855-82-1	300			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	n-Butylbenzene	104-51-8	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	n-Propylbenzene	103-65-1	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Naphthalene	91-20-3	130	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	p-Isopropyl toluene	99-87-6	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Propionitrile	107-12-0	ND	100	100	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	Propyl ether		ND	250	500	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	1,1-Dichloropropene	563-58-6	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	sec-Butanol		32000	5000	10000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	sec-Butylbenzene	135-98-8	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	tert-Butylbenzene	98-06-6	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	trans-1,4-Dichloro-2-butene	110-57-6	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01	04/05/2013 13:30:00	SW 8260B	1,2,3-Trichlorobenzene	87-61-6	ND	10	50	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01RE1	04/05/2013 13:30:00	SW 8260B	Tetrahydrofuran	109-99-9	15000	500	1000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01RE1	04/05/2013 13:30:00	SW 8260B	1-Propanol	71-23-8	150000	50000	100000	ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01RE1	04/05/2013 13:30:00	SW 8260B	1,2-Dichloroethane-d4	17060-07-0	61.3			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01RE1	04/05/2013 13:30:00	SW 8260B	Toluene-d8		66.0			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01RE1	04/05/2013 13:30:00	SW 8260B	Bromofluorobenzene	460-00-4	64.0			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01RE1	04/05/2013 13:30:00	SW 8260B	Fluorobenzene	462-06-6	3000			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01RE1	04/05/2013 13:30:00	SW 8260B	Chlorobenzene-d5		3000			ug/L
Bridgeton Landfill	Treated Commingled MSD	3041134-01RE1	04/05/2013 13:30:00	SW 8260B	1,4-Dichlorobenzene-d4	3855-82-1	3000			ug/L

EMSL Analytical, Inc.
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EMSL Order ID:	161305058
Customer ID:	EMET51
Customer PO:	04L04-33768
Project ID:	

Attn:	Roxanne Shull PDC Laboratories, Inc. 3278 N. Highway 67 St. Louis, MO 63033	Phone: Fax: Collected: Received: Analyzed:	(314) 432-0550 (314) 432-4977 04/05/2013 04/09/2013 04/16/2013
Proj:	3041138		

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm²)	Area Analyzed (mm²)		ASBESTOS Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
								MFL (million fibers per liter)		
3041138-1 161305058-0001	4/12/2013 12:00 AM	0.50	1288	0.1300	≥ 0.5 µm	None Detected	ND	20.00	<20.00	0.00 - 73.00
					> 10 µm only	None Detected	ND	20.00	<20.00	0.00 - 73.00

Analyst(s)
Susan Harding (1)

Richard Harding, Laboratory Manager
or Other Approved Signatory

Any questions please contact Richard Harding.

Initial report from: 04/16/2013 10:01:03

Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. Fiber counting data will be reported as follows: No Fibers detected: The value will be reported as less than 389% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson), 5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted. This report may not be reproduced, except in full, without written permission by EMSL Analytical, Inc. This report relates only to those items tested. Samples received in good condition unless otherwise noted.

MSD 026751

PDC Laboratories, Inc. – St. Louis
3278 N. Highway 67 (Lindbergh)
Florissant, MO 63033
www.pdclab.com

CHAIN OF CUSTODY RECORD

Phone (314) 432-0550 or (314) 921-4488
Fax (314) 432-4977

State where samples collected _____

(Instructions/Sample Acceptance Policy on Reverse)

1613050 58

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1			
CLIENT: PDC STL	PROJECT NUMBER	P.O. NUMBER: 404-33768	MEANS SHIPPED: UPS
ADDRESS:	PHONE NUMBER	FAX NUMBER	EMAIL ADDRESS
CITY STATE ZIP:	SAMPLER:	MATRIX TYPES: WW-WASTEWATER, DW-DRINKING WATER, GW-GROUND WATER, WWSL-SLUDGE, NAS-SOLID, L'CHT-LEACHATE, NAL-NONAQUEOUS, SOIL-SOILS	
CONTACT PERSON: Roxann Shull	SAMPLER'S SIGNATURE:		

(FOR LAB USE ONLY)
LOGIN # _____
LOGGED BY: _____
LAB PROJ. #
TEMPLATE:
PROJ. MGR.:

2 SAMPLE DESCRIPTION AS YOU WANT ON REPORT	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB	SAMPLE TYPE COMP	MATRIX TYPE	Bottle Count	3 ANALYSIS REQUESTED: Asbestos							REMARKS
									7.5°C					
3041138-1	4/5/13	13:30			WW	2	X							100.2 ≥ 0.5 microns per R.S. MO 4-9

5 TURNAROUND TIME (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)	6
NORMAL (8-10 Bus. Days) RUSH (5 Bus. Days) *Fastrak*™ (3 Bus. Days) 1-2 Bus. Days Same Day DATE DUE _____ RESULTS BY: E-MAIL FAX PHONE CALL PHONE/FAX# IF DIFFERENT FROM ABOVE	The sample temperature will be measured upon receipt at the lab. By initialing this area, you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area, you allow the lab to proceed with analytical testing regardless of the sample temperature. _____

7 RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME
Heather Cardiff	4/8/13	12:30	Melissa Nix	4/9/13	9:50 AM
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME

8 COMMENTS:(FOR LAB USE ONLY)

SAMPLE TEMPERATURE UPON RECEIPT	_____°C
CHILL PROCESS STARTED PRIOR TO RECEIPT	Y OR N
SAMPLES(S) RECEIVED ON ICE	Y OR N
PROPER BOTTLES RECEIVED IN GOOD CONDITION	Y OR N
BOTTLES FILLED WITH ADEQUATE VOLUME	Y OR N
SAMPLES RECEIVED WITHIN HOLD TIME(S) (EXCLUDES TYPICAL FIELD PARAMETERS)	Y OR N
DATE AND TME TAKEN FROM SAMPLE BOTTLE	_____

Thank you for using PDC Laboratories, Inc. Locations in Peoria, IL; St. Louis, MO; and Springfield, MO

PAGE _____ OF _____

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-2039-1
Client Project/Site: Rad analysis

For:
PDC Laboratories, Inc.
3278 N. HWY 67
Florissant, Missouri 63033

Attn: Mr. Roxann Shull

Rhonda Ridenhower

Authorized for release by:
5/3/2013 4:04:33 PM

Rhonda Ridenhower
Customer Service Manager
rhonda.ridenhower@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-2039-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: PDC Laboratories

Project: Rad Analysis

Report Number: 160-2039-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Receipt
The sample was received on 4/8/2013 1:50 PM; the sample arrived in good condition, properly preserved. The temperature of the cooler at receipt was 17.0° C.
Gross alpha/beta and gamma were added at the client's request and is not listed on the COC.

RAD
Method(s) 900.0: Gross Alpha/Beta : prep batch 47972 : The Gross Alpha and/or Beta detection goal was not met for the following sample(s) due to a reduction of the sample size attributed to high residual mass: 3041138-1 (160-2039-1). Analytical results are reported with the detection limit achieved.

Method(s) 903.0: Radium 226 Prep Batch 45566: The detection goal for Raduim 226 was not met for the following sample(s) due to the reduction in sample size due to possible matrix interferences. The sample, 3041138-1 (160-2039-1), was run at a reduced volume of 50mls because it was black and had a strong foul odor. Analytical results are reported with the detection limit achieved.

Method(s) 904.0: Radium 228 Prep Batch 45570: The detection goal was not met for the following sample(s) due to a reduction in sample size due to the presence of possible matrix interferences. The sample, 3041138-1 (160-2039-1), was run at a reduced volume of 50mls because it was black and had a strong foul odor. Analytical results are reported with the detection limit achieved.

Job ID: 160-2039-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

No other analytical or quality issues were noted.

Metals

The following samples were diluted due to the nature of the sample matrix. The samples were high in salts, which causes internal standard and QC failures when the samples are run at a lesser dilution: (160-2039-1 MS), (160-2039-1 MSD), (160-2039-1 SD), 3041138-1 (160-2039-1). Elevated reporting limits (RLs) are provided.

Sample, 3041138-1 (160-2039-1), was prepped at a 10x dilution due to a dark matrix color, heavy sediment and a strong solvent smell.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for uranium were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

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Florissant, MO 63033
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CHAIN OF CUSTODY RECORD

Phone (314) 432-0550 or (314) 921-4488
Fax (314) 432-4977

State where samples collected _____

(Instructions/Sample Acceptance Policy on Reverse)

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

(1) CLIENT: PDC STL	PROJECT NUMBER	P.O. NUMBER: 4043369	MEANS SHIPPED: UPS
ADDRESS	PHONE NUMBER	FAX NUMBER	EMAIL ADDRESS
CITY STATE ZIP	SAMPLER	MATRIX TYPES: WW-WASTEWATER, DW-DRINKING WATER, GW-GROUND WATER, WWSL-SLUDGE, NAS-SOLID, L'CHT-LEACHATE, NAL-NONAQUEOUS, SOIL-SOILS	
CONTACT PERSON: Roxann Shull	SAMPLER'S SIGNATURE		

(3) ANALYSIS REQUESTED — (4) (FOR LAB USE ONLY): LOGIN # ____ LOGGED BY: ____ LAB PROJ. # ____ TEMPLATE: ____ PROJ. MGR.: ____

(2) SAMPLE DESCRIPTION AS YOU WANT ON REPORT	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB	SAMPLE TYPE COMP	MATRIX TYPE	Bottle Count	Gross Alpha Beta	Radium 226/228	Uranium					REMARKS
304113 8-1	4/5/13	13:30			WW	5	X	X	X					

(5) TURNAROUND TIME (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)
NORMAL (8-10 Bus. Days) RUSH (5 Bus. Days) *Fastrek™* (3 Bus. Days) 1-2 Bus. Days Same Day
DATE DUE _____

RESULTS BY: E-MAIL FAX PHONE CALL PHONE/FAX# IF DIFFERENT FROM ABOVE

(6) The sample temperature will be measured upon receipt at the lab. By initialing this area, you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area, you allow the lab to proceed with analytical testing regardless of the sample temperature. _____

(7) RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Heather Gallant	4/8/13	12:30	Richard Henry	4-8-13	1:30
RELINQUISHED BY: (SIGNATURE) Richard Henry	4-8-13	1:30	RECEIVED BY: B. C	4/8/13	1350
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME

(8) COMMENTS: (FOR LAB USE ONLY)

SAMPLE TEMPERATURE UPON RECEIPT	____°C
CHILL PROCESS STARTED PRIOR TO RECEIPT	Y OR N
SAMPLES(S) RECEIVED ON ICE	Y OR N
PROPER BOTTLES RECEIVED IN GOOD CONDITION	Y OR N
BOTTLES FILLED WITH ADEQUATE VOLUME	Y OR N
SAMPLES RECEIVED WITHIN HOLD TIME(S) (EXCLUDES TYPICAL FIELD PARAMETERS)	Y OR N
DATE AND TIME TAKEN FROM SAMPLE BOTTLE	____

Thank you for using PDC Laboratories, Inc. Locations in Peoria, IL; St. Louis, MO; and Springfield, MO

PAGE ____ OF ____

12 10 9 8 7 6 5 4 3 2 1

5/3/2013

MSD 026757

Login Sample Receipt Checklist

Client: PDC Laboratories, Inc.

Job Number: 160-2039-1

Login Number: 2039
List Number: 1
Creator: Daniels, Brian

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	Labels are 3041138-01, COC is 3041138-1. Used label ID for login
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	
Sample Preservation Verified.	True	Sample received with pH of 7. Added nitric, lot 88301. pH remains at 7
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: PDC Laboratories, Inc.
Project/Site: Rad analysis

TestAmerica Job ID: 160-2039-1

Qualifiers

Metals

Qualifier	Qualifier Description
F	MS or MSD exceeds the control limits

Rad

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
G	The Sample MDC is greater than the requested RL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: PDC Laboratories, Inc.
Project/Site: Rad analysis

TestAmerica Job ID: 160-2039-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SL
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	TAL SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	TAL SL
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: PDC Laboratories, Inc.
Project/Site: Rad analysis

TestAmerica Job ID: 160-2039-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-2039-1	3041138-1	Water	04/05/13 13:30	04/08/13 13:50

Client Sample Results

Client: PDC Laboratories, Inc.
Project/Site: Rad analysis

TestAmerica Job ID: 160-2039-1

Client Sample ID: 3041138-1
Date Collected: 04/05/13 13:30
Date Received: 04/08/13 13:50

Lab Sample ID: 160-2039-1
Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	ND		100	23	ug/L		04/22/13 14:23	04/26/13 21:22	10

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	3.71	U G	57.3	57.3	3.00	117	pCi/L	04/26/13 10:13	04/29/13 20:55	1
Gross Beta	9640	G	271	1000	4.00	64.8	pCi/L	04/26/13 10:13	04/29/13 20:55	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.425	U	8.28	8.28	20.0	15.5	pCi/L	04/10/13 14:18	04/18/13 11:55	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
K-40	*371*		*169*	*173*		*205*	*pCi/L*	*04/10/13 14:18*	*04/18/13 11:55*	*1*

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	11.4	G	2.00	2.24	1.00	1.10	pCi/L	04/11/13 13:16	05/03/13 07:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*04/11/13 13:16*	*05/03/13 07:13*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	5.36	U G	3.95	3.98	1.00	6.13	pCi/L	04/11/13 13:31	04/24/13 10:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*04/11/13 13:31*	*04/24/13 10:49*	*1*
Y Carrier	*88.2*		*40 - 110*	*04/11/13 13:31*	*04/24/13 10:49*	*1*

- should meet MCLs for drinking water when diluted ~1000:1 through STP, per JL.

- no NRC conc limits for gross alpha, beta, or gamma
- only for individual isotopes.

TestAmerica St. Louis

5/3/2013

MSD 026762

QC Sample Results

Client: PDC Laboratories, Inc.
Project/Site: Rad analysis

TestAmerica Job ID: 160-2039-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-47125/1-A
Matrix: Water
Analysis Batch: 48076

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47125

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	ND		1.0	0.23	ug/L		04/22/13 14:23	04/26/13 21:08	1

Lab Sample ID: LCS 160-47125/2-A
Matrix: Water
Analysis Batch: 48076

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47125

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Uranium	1000	1030		ug/L		103	80 - 120

Lab Sample ID: 160-2039-1 MS
Matrix: Water
Analysis Batch: 48076

Client Sample ID: 3041138-1
Prep Type: Total/NA
Prep Batch: 47125

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Uranium	ND		10000	15300	F	ug/L		153	80 - 120

Lab Sample ID: 160-2039-1 MSD
Matrix: Water
Analysis Batch: 48076

Client Sample ID: 3041138-1
Prep Type: Total/NA
Prep Batch: 47125

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Uranium	ND		10000	14700	F	ug/L		147	80 - 120	4	20

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-47972/1-A
Matrix: Water
Analysis Batch: 48169

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47972

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.07458	U	0.350	0.350	3.00	0.668	pCi/L	04/26/13 10:13	04/29/13 12:23	1
Gross Beta	-0.3302	U	0.427	0.429	4.00	0.827	pCi/L	04/26/13 10:13	04/29/13 12:23	1

Lab Sample ID: LCS 160-47972/2-A
Matrix: Water
Analysis Batch: 48169

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47972

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Gross Alpha	53.8	44.36		6.47	3.00	1.33	pCi/L	82	75 - 125

Lab Sample ID: LCSB 160-47972/3-A
Matrix: Water
Analysis Batch: 48169

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47972

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Gross Beta	93.2	89.08		9.44	4.00	1.02	pCi/L	96	75 - 125

QC Sample Results

Client: PDC Laboratories, Inc.
Project/Site: Rad analysis

TestAmerica Job ID: 160-2039-1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-45366/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 47046 — **Prep Batch: 45366**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.5771	U	4.74	4.74	20.0	8.84	pCi/L	04/10/13 14:18	04/19/13 08:23	1

Other Detected Radionuclides	*MB Result*	*MB Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Other Detected Radionuclide	*None*						*pCi/L*	*04/10/13 14:18*	*04/19/13 08:23*	*1*

Lab Sample ID: LCS 160-45366/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 47048 — **Prep Batch: 45366**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	139000	136200		15700		428	pCi/L	98	90 - 111
Cesium-137	44700	43760		4390	20.0	124	pCi/L	98	90 - 111
Cobalt-60	32600	31370		3110		77.5	pCi/L	96	89 - 110

Lab Sample ID: 160-2039-1 DU — **Client Sample ID: 3041138-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 47051 — **Prep Batch: 45366**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-0.425	U	-0.7626	U	6.66	20.0	12.1	pCi/L	0.02	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-45566/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 49072 — **Prep Batch: 45566**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.06771		0.0415	0.0419	1.00	0.0528	pCi/L	04/11/13 13:16	05/03/13 07:11	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.2*		*40 - 110*	*04/11/13 13:16*	*05/03/13 07:11*	*1*

Lab Sample ID: LCS 160-45566/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 49072 — **Prep Batch: 45566**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.2	11.46		1.11	1.00	0.0611	pCi/L	103	68 - 137

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-45566/2-A
Matrix: Water
Analysis Batch: 49072

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45566

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	97.1		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-45570/1-A
Matrix: Water
Analysis Batch: 47605

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 45570

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3019	U	0.213	0.214	1.00	0.330	pCi/L	04/11/13 13:31	04/24/13 10:48	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110	04/11/13 13:31	04/24/13 10:48	1
Y Carrier	90.8		40 - 110	04/11/13 13:31	04/24/13 10:48	1

Lab Sample ID: LCS 160-45570/2-A
Matrix: Water
Analysis Batch: 47605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45570

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			4.38	3.448		0.507	1.00	0.298	pCi/L	79	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	97.1		40 - 110
Y Carrier	88.2		40 - 110

QC Association Summary

Client: PDC Laboratories, Inc.
Project/Site: Rad analysis

TestAmerica Job ID: 160-2039-1

Metals

Prep Batch: 47125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-2039-1	3041138-1	Total/NA	Water	3010A	
160-2039-1 MS	3041138-1	Total/NA	Water	3010A	
160-2039-1 MSD	3041138-1	Total/NA	Water	3010A	
LCS 160-47125/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-47125/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 48076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-2039-1	3041138-1	Total/NA	Water	6020A	47125
160-2039-1 MS	3041138-1	Total/NA	Water	6020A	47125
160-2039-1 MSD	3041138-1	Total/NA	Water	6020A	47125
LCS 160-47125/2-A	Lab Control Sample	Total/NA	Water	6020A	47125
MB 160-47125/1-A	Method Blank	Total/NA	Water	6020A	47125

Rad

Prep Batch: 45366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-2039-1	3041138-1	Total/NA	Water	Fill_Geo-0	
160-2039-1 DU	3041138-1	Total/NA	Water	Fill_Geo-0	
LCS 160-45366/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
MB 160-45366/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	

Prep Batch: 45566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-2039-1	3041138-1	Total/NA	Water	PrecSep-21	
LCS 160-45566/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-45566/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 45570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-2039-1	3041138-1	Total/NA	Water	PrecSep_0	
LCS 160-45570/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-45570/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Prep Batch: 47972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-2039-1	3041138-1	Total/NA	Water	Evaporation	
LCS 160-47972/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-47972/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
MB 160-47972/1-A	Method Blank	Total/NA	Water	Evaporation	

Tracer/Carrier Summary

Client: PDC Laboratories, Inc.
Project/Site: Rad analysis

TestAmerica Job ID: 160-2039-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
160-2039-1	3041138-1	103
LCS 160-45566/2-A	Lab Control Sample	97.1
MB 160-45566/1-A	Method Blank	98.2

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
160-2039-1	3041138-1	103	88.2
LCS 160-45570/2-A	Lab Control Sample	97.1	88.2
MB 160-45570/1-A	Method Blank	98.2	90.8

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

April 30, 2013 Service Request No: E1300459

Roxann Shull
PDC Laboratories, Inc.
3278 North Hwy. 67 (Lindbergh Blvd.)
Florissant, MO 63033

Laboratory Results for: 3041138-1

Dear Roxann:

Enclosed are the results of the sample(s) submitted to our laboratory on April 9, 2013. For your reference, these analyses have been assigned our service request number **E1300459**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2970. You may also contact me via email at Nicole.Brown@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental

Digitally signed by Arthi Kodur
Date: 2013.04.30 19:41:07 -05'00'

for NB

Nicole Brown
Project Manager

Page 1 of 22

For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com.

ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
19408 Park Row, Suite 320, Houston, TX 77084
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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ALS ENVIRONMENTAL

Client:	PDC Laboratories, Inc	**Service Request No.:**	E1300459
Project:	3041138-1	**Date Received:**	4/ 9/13
Sample Matrix:	Wastewater		

ALS ENVIRONMENTAL NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One wastewater sample was received for analysis at ALS Environmental on 04/09/13.

The following discrepancies were noted upon initial sample inspection: no custody seals on cooler. The exceptions are also noted on the cooler receipt and preservation form included in this data package.

The sample was received at 9°C in good condition and is consistent with the accompanying chain of custody form. At the client's request, the laboratory was instructed to proceed with the analysis. (Dioxin/furan compounds are stable at room temperature.) The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

MS/MSD

EQ1300226: Laboratory Control Spike (LCS) sample was analyzed and reported in addition to an MS/MSD for this extraction batch. The batch quality control criteria were met. The batch precision (MS/DMS) measurements were determined on another order in the extraction batch. The MS/DMS results are not included in this report.

Y flags – Labeled Standards

Samples that had recoveries of labeled standards outside the acceptance limits are flagged with 'Y' flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1, making these data acceptable.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the

noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: PDC Laboratories, Inc.
Project: 3041138-1

Service Request: E1300459

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1300459-001	3041138-1	4/5/13	13:30

MSD 026772

Laboratory Certifications
2012-2013

STATE/PROGRAM	AGENCY	CERT#	EXP DATE	CERTIFIED?
ARIZONA	AZ-DHS	AZ0725	05/27/13	Yes
ARKANSAS	ADEQ	12-035-0	06/16/13	Yes
CALIFORNIA	CA-ELAP	2452	02/28/15	Yes
DOD ELAP	A2LA	2897.01	11/30/13	Yes
FLORIDA/NELAP	FL-DOHS	E87611	06/30/13	Yes
HAWAII	HI-DOH	N/A	06/30/13	Yes
ILLINOIS/NELAP	IL-EPA	003004	10/06/13	Yes
ISO 17025	A2LA	2897.01	11/30/13	Yes
KANSAS	KS-DHE	E-10406	01/31/14	Yes
LOUISIANA/NELAP	LELAP	03048	06/30/13	Yes
LOUISIANA/NELAP	LDHH	LA120014	12/31/13	Yes
MAINE	ME-DOHS	2012017	06/05/13	Yes
MARYLAND	MDE	343	06/30/13	Yes
MICHIGAN	MIDEQ	9971	06/30/13	Yes
MINNESOTA	MDH	048-999-427	12/31/13	Yes
NEVADA	NDEP	TX014112013A	07/31/13	Yes
NEW JERSEY	NJDEP	TX008	06/30/13	Yes
NEW MEXICO	NMED-DWB	N/A	06/30/13	Yes
NEW YORK/NELAP	NY-DOH	11707	04/01/13	Yes
OKLAHOMA	OKDEQ	2012-133	08/31/13	Yes
OREGON/NELAP	ORELAP	TX200002-009	03/24/14	Yes
PENNSYLVANIA/NELAP	PLAP	004	06/30/13	Yes
SOIL IMPORT PERMIT	USDA	P330-12-00002	01/13/15	Yes
TENNESSEE	TNDEC	TN04016	06/30/13	Yes
TEXAS/NELAP	TCEQ	T104704216-12-3	06/30/13	Yes
UTAH/NELAP	UTELCP	TX014112013-2	06/30/13	Yes
WASHINGTON/NELAP	WA-Ecology	C819-12	11/14/13	Yes
WEST VIRGINIA	WVDEP	347	06/30/13	Yes

Abbreviations, Acronyms & Definitions

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

Data Qualifier Flags – Dioxin/Furans

- **B** Indicates the associated analyte is found in the method blank, as well as in the sample.

- **C** Confirmation of the TCDF compound: When 2378-TCDF is detected on the DB-5 column, confirmation analyses are performed on a second column (DB-225). The results from both the DB-5 column and the DB-225 column are included in this data package. The results from the DB-225 analyses should be used to evaluate the 2378-TCDF in the samples. The confirmed result should be used in determining the TEQ value for TCDF.

- **E** Indicates an estimated value – used when the analyte concentration exceeds the upper end of the linear calibration range.

- **J** Indicates an estimated value – used when the analyte concentration is below the method reporting limit (MRL) and above the estimated detection limit (EDL).

- **K** EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

- **U** Indicates the compound was analyzed and not detected

- **Y** Samples that had recoveries of labeled standards outside the acceptance limits are flagged with 'Y'. In all cases, the signal-to-noise ratios are greater than 10:1, making these data acceptable.

- **ND** Indicates concentration is reported as 'Not Detected.'

- **S** Peak is saturated; data not reportable.

- **Q** Lock-mass interference by ether compounds.

ALS ENVIRONMENTAL – Houston

Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E1300459 DB-5 DB-225 SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
04/30/13	JC	-001

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
04/30/13	UM	001

ALS Environmental

Analytical Results

ALS Environmental - Houston HRMS
19408 Park Row, Suite 320, Houston, TX 77084
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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ALS ENVIRONMENTAL

Analytical Report

Client:	PDC Laboratories, Inc	**Service Request:**	E1300459
Project:	3041138-1	**Date Collected:**	4/ 5/13 1330
Sample Matrix:	Wastewater	**Date Received:**	4/ 9/13
Sample Name:	3041138-1	**Units:**	pg/L
Lab Code:	E1300459-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	8290	**Date Analyzed:**	4/29/13 1048
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	4/18/13
Sample Amount:	1061mL	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163563	**Blank File Name:**	P163495
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163561

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**8.91**	K	3.22	4.71	0.50	1.001	1

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	365.913	18	Y	40-135	0.77	1.007
37Cl-2,3,7,8-TCDD	800	555.663	69		40-135	NA	1.007

Should meet WQS
limit for drinking
water when diluted ~1000:1
thru STP, per J.L.

ALS ENVIRONMENTAL

Analytical Report

Client:	PDC Laboratories, Inc	**Service Request:**	E1300459
Project:	3041138-1	**Date Collected:**	NA
Sample Matrix:	Wastewater	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ1300226-01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	8290	**Date Analyzed:**	4/25/13 0933
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	4/18/13
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163495	**Blank File Name:**	P163495
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163492

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.05	5.00			1

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1103.930	55		40-135	0.78	1.007
37Cl-2,3,7,8-TCDD	800	503.558	63		40-135	NA	1.008

ALS Environmental

Accuracy and Precision

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www.alsglobal.com

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ALS ENVIRONMENTAL

QA/QC Report

Client: PDC Laboratories, Inc
Project: 3041138-1
Sample Matrix: Wastewater

Service Request: E1300459
Date Analyzed: 4/25/13

Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method: 8290
Prep Method: Method Sep Funnel/Jar

Units: pg/L
Basis: NA

Extraction Lot: 181067

Analyte Name	Lab Control Sample EQ1300226-02 Result	Spike Amount	% Rec	% Rec Limits
2,3,7,8-TCDD	220	200	110	67 - 158

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS ENVIRONMENTAL

Analytical Report

Client:	PDC Laboratories, Inc	**Service Request:**	E1300459
Project:	3041138-1	**Date Collected:**	NA
Sample Matrix:	Wastewater	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1300226-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	8290	**Date Analyzed:**	4/25/13 1330
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	4/18/13
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-03
		GC Column:	DB-5
Data File Name:	P163500	**Blank File Name:**	P163495
ICAL Date:	10/29/12	**Cal Ver. File Name:**	P163492

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**220**		0.735	5.00	0.77	1.001	1

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1223.168	61		40-135	0.79	1.007
37Cl-2,3,7,8-TCDD	800	592.143	74		40-135	NA	1.008

ALS Environmental

Chain of Custody

ALS Environmental - Houston HRMS
19408 Park Row, Suite 320, Houston, TX 77084
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

RIGHT SOLUTIONS | RIGHT PARTNER

PDC Laboratories, Inc. – St. Louis
3278 N. Highway 67 (Lindbergh)
Florissant, MO 63033
www.pdclab.com

CHAIN OF CUSTODY RECORD

Phone (314) 432-0550 or (314) 921-4488
Fax (314) 432-4977

State where samples collected _____

(Instructions/Sample Acceptance Policy on Reverse)

E1300459

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1 CLIENT: PDC STL	PROJECT NUMBER	P.O. NUMBER: L04-33767	MEANS SHIPPED: UPS
ADDRESS	PHONE NUMBER	FAX NUMBER	EMAIL ADDRESS
CITY STATE ZIP	SAMPLER		MATRIX TYPES: WW-WASTEWATER, DW-DRINKING WATER, GW-GROUND WATER, WWSL-SLUDGE, NAS-SOLID, L'CHT-LEACHATE, NAL-NONAQUEOUS, SOIL-SOILS
CONTACT PERSON: Roxann Shull	SAMPLER'S SIGNATURE		

ANALYSIS REQUESTED: 2,3,7,8 TCDD/Dioxin

4 (FOR LAB USE ONLY)
LOGIN # _____
LOGGED BY: _____
LAB PROJ. #
TEMPLATE:
PROJ. MGR.:

2 SAMPLE DESCRIPTION AS YOU WANT ON REPORT	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB	SAMPLE TYPE COMP	MATRIX TYPE	Bottle Count	2,3,7,8 TCDD/Dioxin	REMARKS
3041138-1	4/5/13	13:30			WW	2	X	
								1013
								9/9
								S/N: 122463441
								1219WR230195171719

E1300459 5
PDC Laboratories, Inc
TCLP Dioxins and Furans

5 TURNAROUND TIME (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)
NORMAL (8-10 Bus. Days) RUSH (5 Bus. Days) *Fastrak*™ (3 Bus. Days) 1-2 Bus. Days Same Day
DATE DUE _____
RESULTS BY: E-MAIL FAX PHONE CALL PHONE/FAX# IF DIFFERENT FROM ABOVE

6 The sample temperature will be measured upon receipt at the lab. By initialing this area, you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area, you allow the lab to proceed with analytical testing regardless of the sample temperature. _____

7 RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME
Heather Earhart	4/8/13	12:30			
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: [signature]	DATE 4/9/13	TIME 953

8 COMMENTS:(FOR LAB USE ONLY)

SAMPLE TEMPERATURE UPON RECEIPT	____°C
CHILL PROCESS STARTED PRIOR TO RECEIPT	Y OR N
SAMPLES(S) RECEIVED ON ICE	Y OR N
PROPER BOTTLES RECEIVED IN GOOD CONDITION	Y OR N
BOTTLES FILLED WITH ADEQUATE VOLUME	Y OR N
SAMPLES RECEIVED WITHIN HOLD TIME(S) (EXCLUDES TYPICAL FIELD PARAMETERS)	Y OR N
DATE AND TME TAKEN FROM SAMPLE BOTTLE	____

Thank you for using PDC Laboratories, Inc. Locations in Peoria, IL; St. Louis, MO; and Springfield, MO

PAGE ____ OF ____

Cooler Receipt Form

Project Chemist: NB

Client/Project: PDC Laboratories; 3041138-1

Service Request: E1300459

Date/Time Received: 04/09/13 09:53:00

Date/Time Logged in: 04/09/13 14:42:00

Technician: AL

Technician: AL

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ○ Courier ○ Client
2. Samples received in: ○ Cooler ○ Box ○ Envelope ○ Other
3. Were custody seals on coolers? ○ Yes ○ No ○ N/A
   Were they intact? ○ Yes ○ No ○ N/A
   Were they signed and dated? ○ Yes ○ No ○ N/A
   If yes, how many and where? No Seals were found on this cooler
4. Method of delivery: ○ Inserts ○ Baggies ☑ Bubble Wrap ☑ Gel Packs ○ Wet Ice ○ Sleeves ○ Other
5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?	Filed
1Z19WR230195171719		Apr 9, 2013	1013	AL	9/9	☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ○ Yes ○ No ○ N/A
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ○ Yes ○ No ○ N/A
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ○ Yes ○ No ○ N/A
9. Were appropriate bottles/containers and volumes received for the requested tests? ○ Yes ○ No ○ N/A
10. Did sample labels and tags agree with custody documents? ○ Yes ○ No ○ N/A

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Broken	Date	Technician
E1300459-001	2	1000 mL	☒	☐	Apr 9, 2013	AL
			☐	☐		
			☐	☐		
			☐	☐		

Notes, Discrepancies, & Resolutions:

Print Form

Reset Form

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental - Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample
- ✓ The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report.

Service Request Summary

Folder #: **E1300459**
Client Name: PDC Laboratories, Inc
Project Name: 3041138-1
Project Number:

Report To: Roxann Shull
PDC Laboratories, Inc.
3278 North Hwy. 67 (Lindbergh Blvd.)
Florissant, MO 63033
Phone Number: 314-432-0550
Cell Number:
Fax Number:
E-mail: rshull@pdclab.com

Project Chemist: Nicole Brown
Originating Lab: HOUSTON
Logged By: ALOPEZ
Date Received: 4/ 9/13
Internal Due Date: 4/30/13
QAP: LAB QAP
Qualifier Set: CAS Standard
Formset: CAS Standard
Merged?: N
Report to MDL?: Y
P.O. Number: L04-33767
EDD: No EDD Specified

2 - 1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserv

Location: E-Disposed, E-WIC01-D3

CAS Samp No.	Client Samp No.	Matrix	Collected		SVM 8290/ PCDD PCDF
E1300459-001	3041138-1	Wastewater	4/5/13	1330	II

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	PCDD PCDF/8290	1	TCDD only

Preparation Information Benchsheet

Prep Run#: 181067
Team: Semivoa GCMS/WMCDONOUGH

Prep WorkFlow: OrgExtDioxAq-30
Prep Method: Method Sep Funnel/Jar

Status: Prepped
Prep Date/Time: 4/18/13 02:45 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Sample Description
1	E1300441-001	1304-06762-001	.02	8290/PCDD PCDF	7	Wastewater	796mL	Brown Liquid (strong odor)
2	E1300459-001	3041138-1	.01	8290/PCDD PCDF	6	Wastewater	1061mL	Black Liquid (strong odor)
3	E1300464-001	SRTTP-OOOPS COMP	.01	8290/PCDD PCDF	7	Water	1127mL	Clear Liquid
4	EQ1300226-01	MB		8290/PCDD PCDF	5	Liquid	1000mL	
5	EQ1300226-02	LCS		8290/PCDD PCDF	5	Liquid	1000mL	
6	EQ1300226-03	SRTTP-OOOPS COMP MS	.01	8290/PCDD PCDF	7	Liquid	1048mL	
7	EQ1300226-04	SRTTP-OOOPS COMP DMS	.01	8290/PCDD PCDF	7	Liquid	1039mL	
8	EQ1300226-05	SRTTP-OOOPS COMP DUP	.01	8290/PCDD PCDF	7	Liquid	1050mL	

Spiking Solutions

Name: 1613B Matrix Working Standard | Inventory ID 55484 | Logbook Ref: 55484 HLEUNG 3/12/13 WT WM | Expires On: 03/12/2014

EQ1300226-02 100.00µL EQ1300226-03 100.00µL EQ1300226-04 100.00µL

Name: 1613B Labeled Working Standard | Inventory ID 56605 | Logbook Ref: 56605 WM 4/11/13 | Expires On: 10/08/2013

E1300441-001 1,000.00µL E1300459-001 1,000.00µL E1300464-001 1,000.00µL EQ1300226-01 1,000.00µL EQ1300226-02 1,000.00µL EQ1300226-03 1,000.00µL
EQ1300226-04 1,000.00µL EQ1300226-05 1,000.00µL

Name: 8290/1613B Cleanup Working Standard 8 ng/mL -: | Inventory ID 56914 | Logbook Ref: 56914 HLEUNG 4/19/13 WT AK | Expires On: 02/05/2014

E1300441-001 100.00µL E1300459-001 100.00µL E1300464-001 100.00µL EQ1300226-01 100.00µL EQ1300226-02 100.00µL EQ1300226-03 100.00µL
EQ1300226-04 100.00µL EQ1300226-05 100.00µL

Preparation Materials

Sensafe Free Chlorine WTR CHK	MR 3/13/13 (55555)	Carbon, High Purity	AL 04/19/13 (56922)	Ethyl Acetate 99.9% Minimum EtOAc	C2-79-2 (52060) (48043)
Glass Wool	C2-87-4 rp (51333)	Hexanes 95%	AL 03/26/13 (55974)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	MR 4/12/13 (56637)
Sodium Chloride Reagent Grade NaCl	C2-65-5 (38670)	Sodium Hydroxide Reagent Grade NaOH	C2-73-7 (53023)	Sodium Sulfate Anhydrous Reagent Grade Na2SO4	C2-90-2 (52714)
Tridecane (n-Tridecane)	55438 (55438)	ColorpHast pH-Indicator Strips	C2-81-6 (50232)	Silica Gel Reagent Grade	C2-85-6 (51331)
sulfuric acid	MR 4/10/13 (56549)	Toluene 99.9% Minimum	AL 3/26/13 (55973)		

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	4/18/13 14:45	Started:	4/22/13 15:00	Started:	4/23/13 08:30	Started:	4/24/13 04:30
Finished:	4/18/13 16:00	Finished:	4/22/13 15:30	Finished:	4/23/13 10:45	Finished:	4/24/13 04:50
By:	WMCDONOUGH	By:	CDIAZ	By:	CDIAZ	By:	CDIAZ
Comments		Comments		Comments		Comments	

Preparation Information Benchsheet

Prep Run#: 181067
Team: Semivoa GCMS/WMCDONOUGH

Prep WorkFlow: OrgExtDioxAq-30
Prep Method: Method Sep Funnel/Jar

Status: Prepped
Prep Date/Time: 4/18/13 02:45 PM

Comments: _____

Reviewed By: JWP 042413 Date: _____

Chain of Custody

Relinquished By:		Date:		Extracts Examined
Received By:		Date:		Yes No

From Bridgeton Landfill FTP site:

Raw Data > MSD Verification Sampling folder

SAMPDATA

CLIENT	LABSAMPID	SAMPDATE	METHODNAME	ANALYTE	CASNUMBER	Result	DL	RL	UNITS
Bridgeton Landfill	3043764-01	04/26/2013 13:00:00	SM 5210B 18Ed	BOD		22000	6.0	6.0	mg/L

CLIENT	LABSAMPID	SAMPDATE	METHODNAME	ANALYTE	CASNUMBER	Result	DL	RL	UNITS
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 1664A	Oil & Grease - total		29	0.14	5.0	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Silver	7440-22-4	0.0031	0.0010	0.0020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Silver	7440-22-4	0.0025	0.0010	0.0020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Arsenic	7440-38-2	0.53	0.0070	0.015	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Arsenic	7440-38-2	0.56	0.0070	0.015	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Beryllium	7440-41-7	0.0014	0.0010	0.0010	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Beryllium	7440-41-7	0.0018	0.0010	0.0010	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Cadmium	7440-43-9	0.047	0.0010	0.0020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Cadmium	7440-43-9	0.067	0.0010	0.0020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Chromium	7440-47-3	0.21	0.0010	0.0020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Chromium	7440-47-3	0.24	0.0010	0.0020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Copper	7440-50-8	ND	0.0010	0.0020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Copper	7440-50-8	0.0032	0.0010	0.0020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Iron	7439-89-6	590	0.20	1.0	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Iron	7439-89-6	850	0.20	1.0	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Nickel	7440-02-0	0.072	0.0010	0.0020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Nickel	7440-02-0	0.084	0.0010	0.0020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Lead	74389-92-1	0.10	0.0030	0.010	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Lead	74389-92-1	0.18	0.0030	0.010	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Antimony	7440-36-0	0.049	0.0040	0.010	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Antimony	7440-36-0	0.076	0.0040	0.010	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Selenium	7782-49-2	0.020	0.0040	0.010	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Selenium	7782-49-2	ND	0.0040	0.010	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Thallium	7440-28-0	0.023	0.0060	0.020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Thallium	7440-28-0	0.025	0.0060	0.020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Zinc	7440-66-6	13	0.0050	0.010	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 200.7 R4.4	Zinc	7440-66-6	14	0.0050	0.010	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 245.1 R3.0 / SW 7470A	Mercury avg=.0105	7439-97-6	0.019	0.0020	0.0020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 245.1 R3.0 / SW 7470A	Mercury	7439-97-6	ND	0.0020	0.0020	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	1,2-Dichlorobenzene	95-50-1	ND	12	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	1,2-Dichloroethane	107-06-2	ND	3.1	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	1,2-Dichloropropane	78-87-5	ND	2.5	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	1,3-Dichlorobenzene	541-73-1	ND	11	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	1,1,1-Trichloroethane	71-55-6	ND	2.8	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	1,4-Dichlorobenzene	106-46-7	ND	8.7	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	2-Chloroethylvinyl ether	110-75-8	ND	3.3	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	1,1,2,2-Tetrachloroethane	79-34-5	ND	10	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Acrolein	107-02-8	ND	28	500	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Acrylonitrile	107-13-1	ND	5.9	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Benzene	71-43-2	ND	4.8	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Bromodichloromethane	75-27-4	ND	8.1	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Bromoform	75-25-2	ND	13	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Bromomethane	74-83-9	ND	12	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Carbon tetrachloride	56-23-5	ND	2.8	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Chlorobenzene	108-90-7	ND	7.4	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Chloroethane	75-00-3	ND	3.9	200	ug/L

Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Chloroform	67-66-3	ND	6.0	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Chloromethane	74-87-3	ND	2.9	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	cis-1,3-Dichloropropene	10061-01-5	ND	6.9	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	1,1,2-Trichloroethane	79-00-5	ND	10	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Dibromochloromethane	124-48-1	ND	4.9	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Ethylbenzene	100-41-4	ND	8.4	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	m,p-Xylene	179601-23-1	ND	16	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	1,1-Dichloroethane	75-34-3	ND	1.4	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Methylene chloride	75-09-2	ND	2.2	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	o-Xylene	95-47-6	ND	9.3	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	1,1-Dichloroethene	75-35-4	ND	5.1	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Tetrachloroethene	127-18-4	ND	18	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Toluene	108-88-3	ND	6.5	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	trans-1,2-Dichloroethene	156-60-5	ND	3.4	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	trans-1,3-Dichloropropene	10061-02-6	ND	5.7	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Trichloroethene	79-01-6	ND	5.9	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Trichlorofluoromethane	75-69-4	ND	2.4	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Vinyl chloride	75-01-4	ND	3.3	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	1,2-Dichloroethane-d4	17060-07-0	32.6			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Toluene-d8		29.9			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 624	Bromofluorobenzene	460-00-4	32.2			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	1,2,4-Trichlorobenzene	120-82-1	ND	23.4	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2,4-Dinitrotoluene	121-14-2	ND	25.9	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2,6-Dimethylaniline		ND	10.2	100	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2,6-Dinitrotoluene	606-20-2	ND	22.7	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2-Chloronaphthalene	91-58-7	ND	18.1	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2-Chlorophenol	95-57-8	ND	25.1	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2-Nitrophenol	88-75-5	ND	35.0	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	1,2-Dichlorobenzene	95-50-1	ND	31.7	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	3,3'-Dichlorobenzidine	91-94-1	ND	18.4	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	4,6-Dinitro-2-methylphenol	534-52-1	ND	133	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	4-Bromophenylphenyl ether	101-55-3	ND	24.9	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	4-Chloro-3-methylphenol	59-50-7	ND	25.5	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	4-Chlorophenylphenyl ether	7005-72-3	ND	29.8	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	4-Nitrophenol	100-02-7	ND	129	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Acenaphthene	83-32-9	ND	18.6	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	1,3-Dichlorobenzene	541-73-1	ND	23.5	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Acenaphthylene	208-96-8	ND	24.1	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Anthracene	120-12-7	ND	16.7	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Azobenzene	103-33-3	ND	171	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Benzidine	92-87-5	ND	53.0	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Benzo(a)anthracene	56-55-3	ND	169	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Benzo(a)pyrene	50-32-8	ND	23.9	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Benzo(b&k)fluoranthene		ND	30.9	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Benzo(b)fluoranthene	205-99-2	ND	30.6	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Benzo(g,h,i)perylene	191-24-2	ND	168	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	1,4-Dichlorobenzene	106-46-7	ND	23.9	200	ug/L

Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Benzo(k)fluoranthene	207-08-9	ND	30.9	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Bis(2-chloroethoxy) methane	111-91-1	ND	19.2	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Bis(2-chloroethyl) ether	111-44-4	ND	34.6	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Bis(2-chloroisopropyl) ether	39638-32-9	ND	25.8	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Bis(2-ethylhexyl) phthalate	117-81-7	ND	169	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Butyl benzyl phthalate	85-68-7	ND	166	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Chrysene	218-01-9	ND	18.2	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2,4,5-Trichlorophenol	95-95-4	ND	28.3	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Dibenzo(a,h)anthracene	53-70-3	ND	149	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Diethyl phthalate	84-66-2	ND	29.7	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Dimethyl phthalate	131-11-3	ND	24.3	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Di-n-butyl phthalate	84-74-2	ND	52.2	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Di-n-octyl phthalate	117-84-0	ND	32.4	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Diphenylamine	122-39-4	ND	17.6	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Fluoranthene	206-44-0	ND	45.0	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Fluorene	86-73-7	ND	35.1	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Hexachlorobenzene	118-74-1	ND	26.0	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2,4,6-Trichlorophenol	88-06-2	ND	26.1	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Hexachlorobutadiene	87-68-3	ND	37.2	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Hexachlorocyclopentadiene	77-47-4	ND	19.4	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Hexachloroethane	67-72-1	ND	38.5	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Indeno(1,2,3-cd)pyrene	193-39-5	ND	16.1	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Isophorone	78-59-1	ND	18.4	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Naphthalene	91-20-3	ND	18.4	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Nitrobenzene	98-95-3	355	17.3	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	N-Nitrosodimethylamine	62-75-9	ND	53.1	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	N-Nitrosodi-n-propylamine	621-64-7	ND	29.3	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Pentachlorophenol	87-86-5	ND	18.9	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2,4-Dichlorophenol	120-83-2	ND	33.4	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Phenanthrene	85-01-8	ND	16.1	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Phenol	108-95-2	4120	785	1000	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Pyrene	129-00-0	ND	17.2	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2-Fluorophenol	367-12-4	15			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Phenol- d5		36			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Nitrobenzene-d5		48			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2-Fluorobiphenyl	321-60-8	21			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2,4,6-Tribromophenol	118-79-6	11			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	p-Terphenyl-d14		24			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2,4-Dimethylphenol	105-67-9	ND	27.2	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	1,4-Dichlorobenzene-d4	3855-82-1	800			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Naphthalene-d8		800			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Acenaphthene-d10	208-96-8	800			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Phenanthrene-d10		800			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Chrysene-d12		800			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	Perylene-d12		800			ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	EPA 625	2,4-Dinitrophenol	51-28-5	ND	158	200	ug/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	SM 2540D 18Ed	Solids - total suspended solids (TSS)		2900	5.0	100	mg/L

Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	SM 4500-H B 18Ed - EPA 150.1 - SW 9040B	pH		5.8			pH Units
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	SM 5220D 18Ed	COD		48000	400	500	mg/L
Bridgeton Landfill	3043767-01	04/26/2013 13:00:00	SM(18) 4500 NH3 F	Ammonia-N	7664-41-7	700	0.10	1.0	mg/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	1,2-Dichlorobenzene	95-50-1	ND	0.58	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	1,2-Dichloroethane	107-06-2	ND	0.15	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	1,2-Dichloropropane	78-87-5	ND	0.13	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	1,3-Dichlorobenzene	541-73-1	ND	0.53	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	1,1,1-Trichloroethane	71-55-6	ND	0.14	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	1,4-Dichlorobenzene	106-46-7	ND	0.43	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	2-Chloroethylvinyl ether	110-75-8	ND	0.17	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	1,1,2,2-Tetrachloroethane	79-34-5	ND	0.51	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Acrolein	107-02-8	ND	1.4	25	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Acrylonitrile	107-13-1	ND	0.29	10	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Benzene	71-43-2	ND	0.24	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Bromodichloromethane	75-27-4	ND	0.40	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Bromoform	75-25-2	ND	0.64	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Bromomethane	74-83-9	ND	0.60	10	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Carbon tetrachloride	56-23-5	ND	0.14	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Chlorobenzene	108-90-7	ND	0.37	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Chloroethane	75-00-3	ND	0.20	10	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Chloroform	67-66-3	ND	0.30	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Chloromethane	74-87-3	ND	0.15	10	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	cis-1,3-Dichloropropene	10061-01-5	ND	0.34	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	1,1,2-Trichloroethane	79-00-5	ND	0.51	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Dibromochloromethane	124-48-1	ND	0.24	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Ethylbenzene	100-41-4	ND	0.42	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	m,p-Xylene	179601-23-1	ND	0.78	10	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	1,1-Dichloroethane	75-34-3	ND	0.072	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Methylene chloride	75-09-2	ND	0.11	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	o-Xylene	95-47-6	ND	0.47	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	1,1-Dichloroethene	75-35-4	ND	0.26	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Tetrachloroethene	127-18-4	ND	0.89	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Toluene	108-88-3	ND	0.32	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	trans-1,2-Dichloroethene	156-60-5	ND	0.17	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	trans-1,3-Dichloropropene	10061-02-6	ND	0.29	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Trichloroethene	79-01-6	ND	0.29	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Trichlorofluoromethane	75-69-4	ND	0.12	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Vinyl chloride	75-01-4	ND	0.16	5.0	ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	1,2-Dichloroethane-d4	17060-07-0	34.1			ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Toluene-d8		30.0			ug/L
Bridgeton Landfill	3043767-02	04/26/2013 00:00:00	EPA 624	Bromofluorobenzene	460-00-4	30.3			ug/L

From Bridgeton Landfill FTP site:

Weekly Disposal Summary folder

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 4/30/13 10:55 PM

MSD Flow Meter reading: 7,143

Date / Time last reading: 4/30/13 1:00 PM

Last Flow Meter reading: 0

Notes or comments (re meter errors, etc.):

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 4/30/13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/2/13 4:00 AM

MSD Flow Meter reading: 24,667

Date / Time last reading: 4/30/13 10:55 PM

Last Flow Meter reading: 7,143

Notes or comments (re meter errors, etc.):

Bridgeton Landfill, LLC representative: Bryan Sahie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan Sahie

Name: Bryan Sahie

Title: Environmental Specialist

Date: 5/2/13

Bridgeton Landfill, LLC Daily Flow Reading

Current Date / Time: 5/3/2013 4:00 AM

MSD Flow Meter reading: 42,170

Date / Time last reading: 5/2/13 4:00 AM

Last Flow Meter reading: 24,667

Notes or comments (re meter errors, etc.):

Bridgeton Landfill, LLC representative: Bryan Sehie

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: Bryan K Sehie

Name: Bryan Sehie

Title: Environmental Specialist

Date: 5/3/13

Bridgeton Landfill, LLC
Metropolitan St. Louis Sewer District
Weekly Disposal Summary

MSD - Bissel Point Tracking Table			
Date	Operational Batch	Gallons Delivered	Truck Gallons Capacity
Thursday, April 25, 2013	Operational Batch 65 - MSD	10,200	12,000
Friday, April 26, 2013	Operational Batch 65 - MSD	45,800	48,000
Saturday, April 27, 2013	Operational Batch 67 - MSD	47,100	49,600
Monday, April 29, 2013	Operational Batch 71 - MSD	46,500	51,000
Tuesday, April 30, 2013	Operational Batch 74 - MSD	48,700	49,500
Wednesday, May 01, 2013	Operational Batch 77 - MSD	48,400	49,500
Thursday, May 02, 2013	Operational Batch 82 - MSD	47,900	49,500

Report Starting Date:	***4/25/2013 12:00***
Report Ending Date:	***5/3/2013 7:00***

MSD - Missouri River Tracking Table							
Date	Operational Batch	Gallons Delivered	Batch Start Date and Time	Batch End Date and Time	Interval Hours	Maximum Hourly Flow (gph)	Average Hourly Flow (gph)
Tuesday, April 30, 2013	Operational Batch 74 - MSD	7,143	4/30/2013 13:15	4/30/2013 23:00	9.8	840	732.6
Wednesday, May 01, 2013	Operational Batch 77 - MSD	17,524	5/1/2013 7:00	5/2/2013 4:00	21.0	840	834.5
Thursday, May 02, 2013	Operational Batch 82 - MSD	17,503	5/2/2013 7:00	5/3/2013 4:14	21.2	840	824.3

I certify that the readings are correct and in compliance with the volume and rate restrictions established by MSD.

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

Signed: _____ Title: Environmental Specialist Date: 5/3/2013

Weekly Volume Summary 1 (4-26-13 through 5-2-13)

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, May 03, 2013 3:34 PM
To: John Lodderhose; Doug Mendoza
Cc: Loch, Christine (CLoch@republicservices.com)
Subject: FW: Bridgeton Landfill Propose to Resume Discharge to MSD

Importance: High

John and Doug – can you please reply all with the information below so that the endorsement can be issued for MSD.

Thank you,
Jessie

Any U.S. federal tax advice contained in this communication (including any attachments or enclosures) was not intended or written by the author to be used, and cannot be used, for the purpose of (1) avoiding penalties that may be imposed on a taxpayer or (2) promoting, marketing, or recommending to another party any transaction or other matter addressed herein.

This e-mail (including any attachments) may contain material that (1) is confidential and for the sole use of the intended recipient, and (2) may be protected by the attorney-client privilege, attorney work product doctrine or other legal rules. Any review, reliance or distribution by others or forwarding without express permission is strictly prohibited. If you are not the intended recipient, please contact the sender and delete all copies.

From: Loch, Christine [mailto:CLoch@republicservices.com]
Sent: Friday, May 03, 2013 3:32 PM
To: Merrigan, Jessie
Cc: Nickerson, John; Benco, Joe; Beck, Bill; Walker, Tony; Martz, Brian; Spruance, Dave
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

Jessie,

I can request an additional insured endorsement be drafted on the pollution policy today.

What I need is Metropolitan Sewer District's mailing address along with contact name which will be shown on the certificate and endorsement. Do you have this information?

Christine Loch - ARM, AIC
Sr. Risk Manager
office # 480-627-7095
cell # 602-525-5072
cloch@republicservices.com

Remember there is NO RISK in being insured...so get covered!!!

Doug Mendoza

From: John Lodderhose
Sent: Friday, May 03, 2013 1:47 PM
To: Merrigan, Jessie (LG); Doug Mendoza
Cc: Dan Feezor; Smith, Steve (ssmith10@republicservices.com); Ed Galbraith (EGalbraith@barr.com)
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

We would like all of the information specified in Section 1.5 Data Collection of the "Bridgeton Landfill Standard Operating Procedure" as well as individual certified daily log sheets. The proposed weekly report is a good summary but does not contain all of the required information. So we will need separate sheets for each day with all of the requested information.

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Friday, May 03, 2013 1:23 PM
To: Doug Mendoza; John Lodderhose
Cc: Dan Feezor; Smith, Steve (ssmith10@republicservices.com); Ed Galbraith (EGalbraith@barr.com)
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

A couple clarifying questions –

7. **The "Data Collection" items specified in the Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**
8. **Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. The daily log sheets shall be submitted to MSD on a weekly basis**

The meter records the log electronically and daily readings are added to the log. Does MSD accept the report of those daily readings within our proposed weekly report as acceptable or do separate sheets need to be provided for each day?

Thank you for the clarification.
Jessie

From: Merrigan, Jessie
Sent: Friday, May 03, 2013 11:41 AM
To: Doug Mendoza; John Lodderhose
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

Hi Guys – looks like you actually sent your response to the Jessica at the AG's office rather than me. no biggie, just thought I'd let you know so you could correct the Jessica's.

I will have capacities added. This form was in no way meant to be all inclusive – there is a large group of data being collected, I just wanted your feedback on the form for that one element, which I appreciate your providing.

I will respond more fully to your red/purple/bold items when I get back from lunch.

Thanks,
jessie

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, May 03, 2013 1:23 PM
To: Doug Mendoza; John Lodderhose
Cc: Dan Feezor; Smith, Steve (ssmith10@republicservices.com); Ed Galbraith (EGalbraith@barr.com)
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

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Sent: Friday, May 03, 2013 11:41 AM
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Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

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I will respond more fully to your red/purple/bold items when I get back from lunch.

Thanks,
jessie

From: Blome, Jessica [mailto:jessica.blome@ago.mo.gov]
Sent: Friday, May 03, 2013 11:36 AM
To: Merrigan, Jessie
Subject: FW: Bridgeton Landfill Propose to Resume Discharge to MSD

I think this came to me by accident. It was bound to happen eventually. I did not read it.

Jessica L. Blome
Assistant Attorney General
Agriculture & Environment Division
P.O. Box 899 | Jefferson City, MO 65102
P: 573.751.3640 | F: 573.751.8796

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, May 03, 2013 11:41 AM
To: Doug Mendoza; John Lodderhose
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

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I will respond more fully to your red/purple/bold items when I get back from lunch.

Thanks,
jessie

From: Blome, Jessica [mailto:jessica.blome@ago.mo.gov]
Sent: Friday, May 03, 2013 11:36 AM
To: Merrigan, Jessie
Subject: FW: Bridgeton Landfill Propose to Resume Discharge to MSD

I think this came to me by accident. It was bound to happen eventually. I did not read it.

Jessica L. Blome
Assistant Attorney General
Agriculture & Environment Division
P.O. Box 899 | Jefferson City, MO 65102
P: 573.751.3640 | F: 573.751.8796
jessica.blome@ago.mo.gov

Please consider the environment before printing this email.

From: Doug Mendoza [mailto:DMENDOZA@stlmsd.com]
Sent: Friday, May 03, 2013 11:20 AM
To: John Lodderhose; Blome, Jessica
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

Jessie,

Thank you for the summary of discharges that you attached. The attachment provided good information to let us know what volumes were discharged. However, we also need to know the capacity of the individual trucks that delivered leachate to our Bissell Point hauled waste receiving station. Please have the capacities, for each truckload and each day, added to the report.

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Friday, May 03, 2013 11:20 AM
To: John Lodderhose; Blome, Jessica (jessica.blome@ago.mo.gov)
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

Jessie,

Thank you for the summary of discharges that you attached. The attachment provided good information to let us know what volumes were discharged. However, we also need to know the capacity of the individual trucks that delivered leachate to our Bissell Point hauled waste receiving station. Please have the capacities, for each truckload and each day, added to the report.

Please also remember that the form is only one small subset of items that must be submitted. Our April 24, 2013 approval contained a number of additional reporting items that are due, either one time or on a recurring basis. They requirements are listed below, with the volume reporting requirement (which you drafted as the attachment) in **purple**, and all other currently due reporting requirements in **red**. Please insure that all required data reports are submitted.

Thank you,
Doug

MSD Terms for Emergency and Conditional Approval of Direct Discharge to our Missouri River Wastewater Treatment Plant:

1. All wastewater discharged to MSD's Missouri River TP shall be pretreated by Bridgeton Landfill in accordance with the *Bridgeton Landfill Standard Operating Procedure, Landfill Liquids Collection and Treatment for Discharge to MSD Missouri River Wastewater Treatment Facility* dated April 2013 (Bridgeton Landfill SOP), except that the specified level of reduction for benzene in the wastewater shall be less than 0.14 mg/L rather than 0.3 mg/L as your procedure states. This is based on EPA's guidance materials for protection of workers. Once the leachate has been treated sufficiently for benzene, you may elect to discharge to MSD at that time, with the understanding that the discharge is still subject to all applicable MSD limitations and prohibitions. Regarding the benzene level, you alternately may provide sampling results for headspace that demonstrate direct compliance with OSHA and ACGIH standards. You may also provide alternate data for MSD to consider regarding possibly allowing the 0.3 mg/L level.
2. In Bridgeton Landfill's April 19, 2013 Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer District, you requested a temporary variance from the permit limitation for total zinc discharged to the collection system. MSD will grant a temporary zinc variance, as requested, with the zinc limit set on a mass basis that shall not exceed 30 pounds of total zinc per day, approximately equal to the amount that formerly could have been discharged for Bridgeton Landfill's historical volume of 200,000 gallons per day. The variance may be revoked by MSD should conditions warrant, or upon installation of a pretreatment system by Bridgeton Landfill.
3. **The daily direct discharge rate shall not exceed 20,000 gallons per day in any given 24 hour period. The hourly direct discharge rate shall not exceed 1500 gallons per hour. Records of volumes discharged, including certification that the daily and hourly limits were not exceeded, shall be submitted to MSD on a weekly basis.**
4. **Analytical sampling results that demonstrate treated liquid is verified to have achieved the appropriate reduction of toxic pollutants to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, shall be submitted to MSD on a weekly basis.** ***[This includes analysis to demonstrate that benzene is less than 0.14 mg/L.] [You will need to inform us of the expected date that analytical results will be submitted, if they are not yet available.]***
5. **Each batch shall also be analyzed for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR**

136. Analytical sampling results shall be submitted to MSD on a weekly basis. ***[You will need to inform us of the expected date that analytical results will be submitted, if they are not yet available.]***

6. Bridgeton Landfill shall immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.
7. **The "Data Collection" items specified in the Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**
8. **Bridgeton Landfill shall record discharge meter readings on a daily log sheet, certified as correct and in compliance with the volume and rate restrictions, under signature of a Bridgeton Landfill authorized agent. The daily log sheets shall be submitted to MSD on a weekly basis**, and Bridgeton Landfill will be billed on the total volume and surcharge strength documented.
9. Bridgeton Landfill shall pay an estimated $0.07 per gallon for the total volume documented on daily log sheets and for surcharge levels calculated by MSD from the analytical data submitted by Bridgeton Landfill. To calculate this estimated billing rate, MSD used the sample results for Sample ID# 3041134-01 & 3041168-07 to 10 from Table A provided as Page 7 of your proposal, and the rate formulas contained in MSD Ordinance No. 13402. A copy of the billing rate calculation has been attached to this letter. Actual billing rates will be calculated using MSD Ordinance No. 13402. The billed amounts will be added to Bridgeton Landfill's normal wastewater bill, similar to how Bridgeton Landfill currently is billed for its discharged volume.
10. Failure on the part of Bridgeton Landfill to meet any one of the above terms will result in immediate suspension of this emergency and conditional approval.

MSD Terms for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant:

1. Bridgeton Landfill shall complete the MSD Application for Special Discharge Approval and certify that the pretreated leachate is non-hazardous.
2. Only MSD approved haulers are authorized to discharge at our Bissell Point Hauled Waste Station. Bridgeton Landfill shall either utilize already approved hauler(s) or complete the MSD Waste Transporter Authorization Application.
3. **Bridgeton Landfill shall add MSD to their pollution liability insurance policy as a co-insured and submit a copy of this policy to MSD.**
4. All wastewater discharged to MSD's Missouri River TP shall be pretreated by Bridgeton Landfill in accordance with the *Bridgeton Landfill Standard Operating Procedure, Landfill Liquids Collection and Treatment for Discharge to MSD Missouri River Wastewater Treatment Facility* dated April 2013 (Bridgeton Landfill SOP), except that the specified level of reduction for benzene in the wastewater shall be less than 0.14 mg/L rather than 0.3 mg/L as your procedure states. This is based on EPA's guidance materials for protection of workers. Once the leachate has been treated sufficiently for benzene, you may elect to discharge to the Bissell Point Hauled Waste Station at that time, with the understanding that the discharge is still subject to all MSD limitations and prohibitions, including requirement that the wastewater be nonhazardous. Regarding the benzene level, you alternately may provide sampling results for headspace that demonstrate direct compliance with OSHA and ACGIH standards. You may also provide alternate data for MSD to consider regarding possibly allowing the 0.3 mg/L level.
5. **Analytical sampling results that demonstrate treated liquid is verified to have achieved the appropriate reduction of toxic pollutants to prevent violation of MSD Ordinance No. 12716 and is not hazardous material, shall be submitted to MSD on a weekly basis.** ***[You will need to inform us of the expected date that analytical results will be submitted, if they are not yet available.]***
6. The daily discharge shall not exceed 50,000 gallons per day and shall be delivered within the hours of operations as outlined in MSD Ordinance No. 12716.
7. **Analytical sampling results that demonstrate treated liquid is verified to have achieved the appropriate reduction of toxic pollutants to prevent violation of MSD Ordinance No. 12559, Article V, Section One.A.8 regarding prohibited substances and emission of toxic gases, vapors or fumes, shall be submitted to MSD on a weekly basis.** ***[This includes analysis to demonstrate that benzene is less than 0.14 mg/L.] [You will need to inform us of the expected date that analytical results will be submitted, if they are not yet available.]***
8. **Each batch shall also be analyzed for BOD, COD, Total Suspended Solids, pH, Oil & Grease, VOCs by EPA Method 624, SVOCs by EPA Method 625, Metals by EPA Methods approved under 40 CFR 136. Analytical sampling results shall be submitted to MSD on a weekly basis.** ***[You will need to inform us of the expected date that analytical results will be submitted, if they are not yet available.]***
9. Bridgeton Landfill will immediately notify MSD of any circumstances that may result in a change of pretreated landfill leachate character.
10. **The "Data Collection" items specified in the Bridgeton Landfill SOP shall be submitted to MSD on a weekly basis.**

11. MSD will temporarily reduce our hauled waste tipping fee from $0.08 per gallon at the truck capacity to $0.07 per gallon at the truck capacity. The $0.07 per gallon is equal to the billing rate MSD would charge for an onsite discharge as outlined in the attached calculation. MSD reserves the right to return the tipping fee to $0.08 per gallon, or higher, at the truck capacity at any time per our discretion and as allowed under MSD Ordinance No. 12716.
12. Failure on the part of Bridgeton Landfill to meet any one of the above terms will result in immediate suspension of this emergency and conditional approval.

MSD Comments on Bridgeton Landfill Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer:
MSD has reviewed the proposal submitted on April 19, 2013 and has identified numerous data gaps and incomplete tasks. MSD has also identified several items that must be addressed as part of its conditional approval to discharge. Bridgeton Landfill will need to complete the following before MSD is able to consider any discharge rate or location beyond the above stated terms. *In addition, failure to complete the following may result in MSD's revocation of the conditional approvals of Direct Discharge to our Missouri River Wastewater Treatment Plant or for Special Discharge Approval of Hauled Waste Discharge to our Bissell Point Wastewater Treatment Plant.*

- Air monitoring: MSD has reviewed the memorandum *Reference: 182608005* prepared by Stantec dated April 9, 2013 and compared the results to the *Bridgeton Landfill Air and Landfill Gas Sampling, August 2012: Summary of Findings* report prepared by Stantec dated October 19, 2012. MSD has identified data gaps in "Table 2: Sample Results - Summa Canisters – Bridgeton Landfill Leachate Processing (Sparge) Tanks."
    - The constituents in the analyte list did not include results for dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.
        - **If these constituents were included in the analytical results, but inadvertently not included in the memorandum, provide the results.**
        - If these constituents were not included in the analytical results, the sampling event shall be repeated with the inclusion of dimethyl sulfide, and other reduced sulfur compounds, including hydrogen sulfide.
        - Submit data for the constituents by May 15, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 15, 2013, with results to be submitted by June 15, 2013.
        - MSD may reevaluate this requirement upon receipt of the final report for the next bullet item pertaining to sampling the Westlake Pump Station, if that report is provided by May 10, 2013.
- Pending air monitoring: Bridgeton Landfill committed to air sampling the MSD Westlake Pump Station before the discharge was to resume in order to establish a baseline. Bridgeton Landfill has not yet satisfied this commitment.
    - However, MSD received an email sent by Jessie Merrigan today, April 24, 2013 at 12:30 PM. MSD is in agreement with the air sampling scope and timeframe outlined in the email. All compounds from the August 2012 sampling event must be included.
    - Please note that MSD may require additional air sampling events, based on the results of sampling or future concerns that may arise.
- Pump station ventilation: Bridgeton Landfill shall complete the installation of the 4-gas meter and ventilation system at the MSD Westlake Pump Station as agreed upon, by June 1, 2013.
- Leachate/wastewater monitoring: As stated above, MSD has reviewed the April 19, 2013 *Proposal for Resumption of Direct Discharge from Bridgeton Landfill to Metropolitan St. Louis Sewer District.*
    - Analytical results are identified as still pending for "several analytes with longer analytical times (radium and dioxin, for example)."
        - **If these analytes include Gross Alpha Radiation, Gross Beta Radiation, Gross Gamma Radiation (as Cesium-137), Radium-226, and Radium-228, provide the results for these analytes.**
        - If any of the analytes are not included, the sampling event shall be repeated with the inclusion of all missing analytes.
        - Submit data for the constituents by May 15, 2013. If the constituents were not analyzed, complete the necessary repeated sampling by May 15, 2013, with results to be submitted by June 15, 2013.
- Toxicity concerns: MSD continues to be concerned over the toxicity of Bridgeton Landfill's leachate and its detrimental effects to our sewer system and treatment plants. Should toxic effects compromise the operation of our system or plants, Bridgeton Landfill's discharge may need to be reduced or terminated. We encourage Bridgeton Landfill to conduct toxicity testing on its leachate and to take appropriate preventative action, including additional treatment or reduction in discharge volume, to prevent toxic effects from the leachate discharge.

- Past analytical data: Submit, by May 15, 2013, all laboratory data collected on previously treated leachate that has been disposed off-site.
- Pretreatment system: Bridgeton Landfill has previously stated that it will be installing a pretreatment system for its landfill leachate. However, no additional information, plans, nor specifications have been submitted to MSD.
    - Submit, by June 1, 2013, a plan and schedule to install a pretreatment system to reduce the strength and toxicity of Bridgeton Landfill's leachate discharge to achieve compliance with MSD Ordinance No. 12559, without the use of variances, and to return the strength of Bridgeton Landfill's leachate to previously certified levels of 312 mg/L BOD, 953 mg/L COD, and 65 mg/L TSS.
- Gas condensate: Bridgeton Landfill has previously stated that it was modifying its collection system to segregate the gas condensate from the landfill leachate. MSD believes that segregation of the gas condensate, and treatment or disposal of it separately from the leachate, would be best to protect the MSD system and workers.
    - Submit, by June 1, 2013, a report showing the status of such modifications, or a report showing the feasibility of making such modifications.

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Friday, May 03, 2013 9:51 AM
To: John Lodderhose; Doug Mendoza
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

Good morning John and Doug,

As you know we will be loading materials onto an FTP site later today to fulfill today's reporting requirements. Since this is also the first weekly reporting event, I wanted to check with you on the form that Feezor Engineering has created. Can you please review the attached and let me know if this form (signed and certified by an authorized party and submitted weekly) would satisfy the daily and weekly discharge tracking requirement of the conditional approval. I am happy to send this to the broader group for review if you would like, but thought it might make sense to run this draft by you to make sure our form meets your expectations or if you have any tweaks adjustments.

Consistent with the discussion yesterday at the meeting, the email this afternoon with FTP access and advising on the availability of materials will go to the larger group.

Thanks,
Jessie

From: John Lodderhose [mailto:JRLODD@stlmsd.com]
Sent: Wednesday, April 24, 2013 6:27 PM
To: Merrigan, Jessie; Doug Mendoza; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Lovie Lewis
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Beck, Bill; Ed Galbraith
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

Attached is the conditional approval letter for Bridgeton Landfill to resume discharge to MSD. A hard copy will be mailed tomorrow. Please let me know if you wish to have a meeting to discuss the approval letter.
Thanks

From: John Lodderhose
Sent: Tuesday, April 23, 2013 5:31 PM
To: 'Merrigan, Jessie (LG)'; Doug Mendoza; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Whatley

MSD

Doug Mendoza

From: Rebecca Vitelli
Sent: Friday, May 03, 2013 9:57 AM
Cc: Steve Grace; Chris VerPlancke; Rebecca Bartholomew; Laura Joiner; Darin Lewis; Sara Kammerer; Doug Mendoza; Brian G. Gibson
Subject: Mr. Bult's Inc. Hauler Approval 4-30-13.doc

May 2, 2013

Richard Borgetti
MR. BULT'S INC.
2627 E. 139th Street
Burnham, IL 60633

RE: April 24, 2013 MSD Correspondence to the Bridgeton Landfill LLC

Dear Mr. Borgetti:

As outlined in the April 24, 2013 written correspondence between MSD and the Bridgeton Landfill LLC, the leachate generated at the facility in question was conditionally approved for discharge at MSD's Hauled Waste Receiving Station (HWRS). Therefore, pursuant to the provisions of MSD Ordinance 12716, your company has been assigned MSD Waste Transporter Identification Number 0218, and has been conditionally approved to discharge the landfill leachate at the HWRS. A copy of MSD Ordinance 12716 is enclosed. **Please note this letter approves your company to discharge leachate from the Bridgeton Landfill only. Should you wish to discharge wastewater from any other sources, you must provide the appropriate information for enrollment in the MSD's SmartPay Direct Payment program.**

The waste transport vehicles listed in your application will be assigned MSD Vehicle Identification Numbers when they arrive at our Hauled Waste Receiving Station for the first time.

If you replace these vehicles or obtain additional vehicles, you must provide us with the same vehicle information as was required with your original application. MSD vehicle numbers will then be assigned to the new vehicles.

All transported wastes may be discharged only at our HWRS, located at our Bissell Point treatment plant at 10 East Grand Avenue, St. Louis, MO 63147. This facility accepts wastes from 7:00 AM to 5:00 PM Monday through Friday and from 7:00 AM to 11:30 AM on Saturdays. This facility is closed on legal holidays observed by the District.

Each load of transported waste must be accompanied by a completed Hauled Waste Receipt form. For the wastewater identified above, the MSD single source Hauled Waste Receipt form (or S Form) must be presented to the receiving station attendant. Your Waste Transporter Identification Number and the applicable Vehicle Identification Number must be shown on the receipt form.

In addition, if your vehicles are subject to St. Louis County Health Department regulations, each transport vehicle must display a current St. Louis County Health Department permit.

The MSD Hauled Waste Ordinance 12716 explains that approved haulers may be considered responsible for damages if hauled waste causes any operational or maintenance problem within MSD's treatment system. Based on our experience, a typical problem concerns hauled waste (from both domestic and non-domestic) discharges containing solids larger than 1-inch size, which can cause interference with our operations. Our current hauled waste operations are designed to remove wastewater with sand and grit only. A simple preventative action to avoid the discharge of large solids is to place a screen over your tanker's discharge hose.

Upon arrival at our hauled waste receiving station with a load of waste, the driver must contact the facility attendant and must follow the attendant's instructions. A sample of the load will be collected in an MSD sample container. This sample is screened to determine acceptability for discharge and is subject to further verification analyses by the Division of Environmental Compliance laboratory. Once the load is approved, you may proceed to discharge into the sewer at the station. You will need to provide a hose to discharge from your vehicle into the manhole.

If you have any questions about the materials enclosed, the procedures to be followed, or if you have any comments or concerns regarding the services provided, please call us at 314-436-8755.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Steven M. Grace

Steve Grace
Environmental Assistant Engineer

bv

Enclosures

ec: Chris Verplancke - Finance Department
Becky Bartholomew – Finance Department
Laura Joiner – Finance Department
Darin Lewis
Sara Kammerer
Doug Mendoza
Brian Gibson

File: Hauler, New – MR BULTS INC (Hauler ID#0218)

MSD

Doug Mendoza

From: Merrigan, Jessie (LG) <JMerrigan@LATHROPGAGE.COM>
Sent: Friday, May 03, 2013 9:51 AM
To: John Lodderhose; Doug Mendoza
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD
Attachments: Weekly Volume Summary 1 (4-26-13 through 5-2-13).pdf

Good morning John and Doug,

As you know we will be loading materials onto an FTP site later today to fulfill today's reporting requirements. Since this is also the first weekly reporting event, I wanted to check with you on the form that Feezor Engineering has created. Can you please review the attached and let me know if this form (signed and certified by an authorized party and submitted weekly) would satisfy the daily and weekly discharge tracking requirement of the conditional approval. I am happy to send this to the broader group for review if you would like, but thought it might make sense to run this draft by you to make sure our form meets your expectations or if you have any tweaks adjustments.

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Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Beck, Bill; Ed Galbraith
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

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Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Beck, Bill (LG); Ed Galbraith
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

MSD had a meeting this morning and we are prepared to authorize on an emergency and conditional basis the discharge of 20,000 gallons per day of leachate from Bridgeton Landfill to the MSD Missouri River Wastewater Treatment Plant (WWTP) via the MSD Westlakes pump station starting tomorrow April 24, 2013. We will need, as soon as possible, the additional sampling and commitments promised at the March 20, 2013 meeting. Air sampling was supposed to be conducted at the MSD pump station before the discharge was to resume in order to establish a baseline. This air

MSD
BRIDGETON LANDFILL

Doug Mendoza

From: Ken Gambaro
Sent: Friday, May 03, 2013 9:13 AM
To: EGalbraith@barr.com
Cc: John Lodderhose; Doug Mendoza; Nora C. Estopare; Rob G Daly; Michael Grace
Subject: Plant Performance Data
Attachments: Plant Performance Transmittal 050313a.pdf

Attached are spreadsheets with plant influent and effluent data for January through April 2013, and a graph of plant removal efficiency, as requested in the meeting on May 2, 2013.

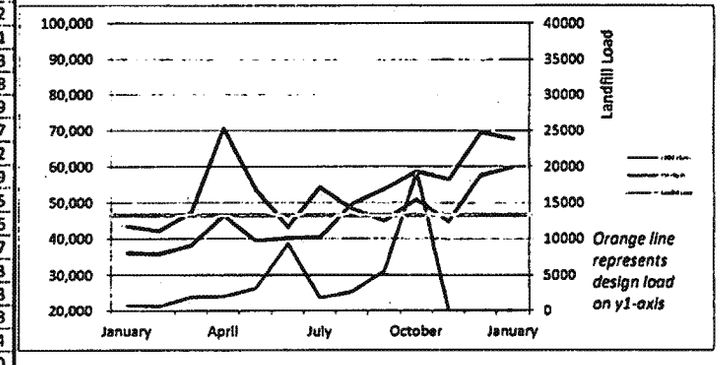
Kenneth M. Gambaro, P.E.
Treatment Plant Manager
Metropolitan St. Louis Sewer District
Coldwater Creek WWTP
314-646-2431
Missouri River WWTP
314-646-2421

Missouri River - January 2013

	Final Effluent							Primary Effluent		Influent				
	CBOD (mg/L)	Weekly Average (mg/L)	TSS (mg/L)	Weekly Average (mg/L)	COD (mg/L)	CBOD/ COD Ratio	Plant Flow (MGD)	CBOD (mg/L)	Trickling Filter Loading (lb/d/kcf)	CBOD (mg/L)	Influent CBOD Loading (lb/d)	COD (mg/L)	TSS (mg/L)	Influent TSS Loading (lb/d)
1-Jan	51		31		194	0.263	22.6			357	67,289	732	230	43,351
2-Jan	59		39			#DIV/0!	24.6			336	68,935		240	49,239
3-Jan	65		33		224	0.290	21.1	338	117	243	42,762	974	238	41,882
4-Jan	82		44		246	0.333	23.4			344	67,134	742	242	47,228
5-Jan		66		36			23.9							
6-Jan							21.8							
7-Jan	47		37		205	0.229	23.6	559	216	309	60,819	725	230	45,270
8-Jan	46		39		216	0.213	24.8	265	108	289	59,774	1,038	352	72,805
9-Jan	58		35		212	0.274	21.3	260	91	794	141,048	2,430	1510	268,239
10-Jan	51		39		209	0.244	26.7	244	107	320	71,257	782	236	52,552
11-Jan	66		40		170	0.388	32.3	251	133	267	71,925	664	232	62,497
12-Jan		54		38			25.2							
13-Jan							33.4							
14-Jan	43		29		159	0.270	26.8	206	90	331	73,982	583	164	36,656
15-Jan	39		33		176	0.222	25.3	232	96	247	52,117	630	192	40,512
16-Jan	36		30		166	0.217	26.2	257	110	234	51,131	638	200	43,702
17-Jan	37		35		180	0.206	23.2	219	83	305	59,014	750	224	43,341
18-Jan	57		33		219	0.260	24.7	202	82	329	67,773	711	254	52,323
19-Jan	36	41	31	32	140	0.257	24.2			213	42,989	520	212	42,788
20-Jan	22		26		115	0.191	22.5			265	49,727	543	196	36,779
21-Jan	21		33		117	0.179	22.7	177	66	241	45,626	555	180	34,077
22-Jan	23		27		126	0.183	23.7	178	69	213	42,101	561	234	46,252
23-Jan	24		29		107	0.224	24.1	171	68	334	67,132	632	210	42,209
24-Jan	23		29		128	0.180	22.8	156	58	238	45,256	679	230	43,735
25-Jan	106		37		287	0.369	24.6	275	111	643	131,920	1,081	280	57,446
26-Jan	56	39	37	31	193	0.290	21.2			226	39,959	601	264	46,677
27-Jan	36		33		153	0.235	24.7			438	90,227	820	254	52,323
28-Jan	56		45		211	0.265	25.4	310	129	260	55,077	709	296	62,703
29-Jan	74		65		262	0.282	29.8	320	156	290	72,074	733	328	81,518
30-Jan	49		56		168	0.292	46.3	190	144	221	85,337	449	196	75,684
31-Jan	42		39		152	0.276	30.4	215	107	274	69,469	591	164	41,580
Average	48		36		182		25.6	251	107	317	67,671	764	281	59,980

Monthly Trends - 2012

	Influent Flow (MGD)	CBOD (mg/L)	CBOD (lb/d)	TSS (mg/L)	TSS (lb/d)	Trickling Filter Loading (lb/d/kcf)	Landfill Load
January	27.2	159	36,133	192	43,477	57	765
February	28.1	153	35,817	180	42,226	48	635
March	27.3	168	38,212	208	47,273	55	1987
April	30.2	184	46,481	280	70,705	54	2090
May	28.1	169	39,507	229	53,669	56	3146
June	25.4	190	40,232	205	43,315	50	9381
July	25.0	194	40,464	260	54,341	54	1880
August	25.7	233	49,813	226	48,380	75	2730
September	27.4	236	53,876	197	44,948	62	5630
October	25.4	277	58,717	240	50,937	80	19269
November	24.0	282	56,466	223	44,726	81	?
December	24.3	340	69,416	284	57,602	98	?
January	25.6	317	67,671	281	59,980	107	?



Design Parameters	28.0	64	200	46,700	200	46,700
Percent Above Design	-9%	67%	59%	45%	41%	28%

Note: Parameters highlighted in yellow are above design values.

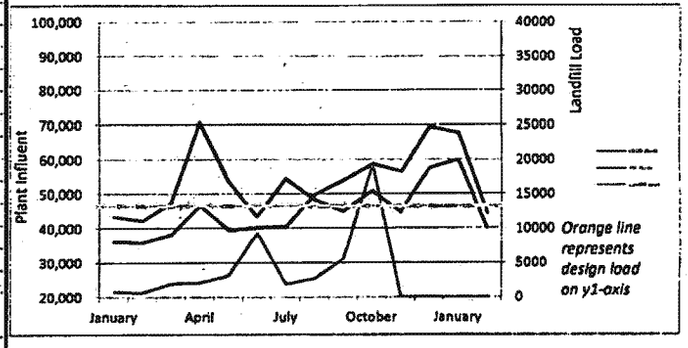
Missouri River - February 2013

	Final Effluent							Primary Effluent		Influent				
	CBOD (mg/L)	Weekly Average (mg/L)	TSS (mg/L)	Weekly Average (mg/L)	COD (mg/L)	CBOD/ COD Ratio	Plant Flow (MGD)	CBOD (mg/L)	Trickling Filter Loading (lb/d/kcf)	CBOD (mg/L)	Influent CBOD Loading (lb/d)	COD (mg/L)	TSS (mg/L)	Influent TSS Loading (lb/d)
1-Feb	55		39		211	0.261	25.5	94	39	275	58,484	559	168	35,729
2-Feb		52		46			29.1							
3-Feb							26.6							
4-Feb	41		43		192	0.214	27.6	189	85	257	59,157	618	192	44,195
5-Feb	23		47		152	0.151	25.9	118	50	210	45,361	530	174	37,585
6-Feb	27		43		163	0.166	25.5	203	85	254	54,018	585	188	39,982
7-Feb	26		45		158	0.165	27.6	157	71	210	48,339	488	176	40,512
8-Feb	26		39		121	0.215	26.7	129	56	244	54,333	455	168	37,410
9-Feb	*31*	29	*55*	43	260	0.119	24.3			190	38,506	453	198	40,127
10-Feb	*30*		*50*		137	0.219	32.3			159	42,832	358	170	45,795
11-Feb	18		35		110	0.164	29.1	96	46	210	50,966	489	150	36,404
12-Feb	16		22		119	0.134	26.4	132	57	124	27,302	396	126	27,742
13-Feb	21		35		109	0.193	29.1	106	51	160	38,831	387	158	38,346
14-Feb	17		35		132	0.129	26.5	114	50	157	34,699	483	204	45,086
15-Feb	16		34		117	0.137	23.2	107	41	213	41,213	470	186	35,989
16-Feb	*24*	18	*47*	32			23.8			209	41,485	468	190	37,713
17-Feb	*15*		*43*				24.2			173	34,916	449	182	36,733
18-Feb	17		37		113	0.150	26.2	111	48	202	44,139	455	170	37,146
19-Feb	17		39		120	0.142	25.0	116	48	179	37,322	448	184	38,364
20-Feb	21		39		180	0.117	24.1	118	47	172	34,571	440	176	35,375
21-Feb	22		55		143	0.154	25.0	148	61	179	37,322	414	186	38,781
22-Feb	20		49		137	0.146	24.3	116	46	232	47,018	426	172	34,858
23-Feb	*32*	19	*65*	44	160	0.200	24.6			213	43,700	447	160	32,826
24-Feb			*61*		130	0.000	25.9			136	29,377	375	198	42,769
25-Feb	21		45		119	0.176	32.2	89	47	162	43,505	401	176	47,264
26-Feb	22		63		124	0.177	51.5	77	65	140	60,131	320	156	67,004
27-Feb	19		45		83	0.229	38.3	83	52	134	42,803	270	126	40,247
28-Feb	18		41		96	0.188	32.8	93	50	155	42,401	340	144	39,391
											-			-
											-			-
											-			-
Average	23		42		141		28.0	120	55	190	44,410	443	172	40,183

Design Parameters			28.0	64	200	46,700	200	46,700
Percent Above Design			0%	-15%	-5%	-5%	-14%	-14%

Monthly Trends - 2012-13

	Influent Flow (MGD)	CBOD (mg/L)	CBOD (lb/d)	TSS (mg/L)	TSS (lb/d)	Trickling Filter Loading (lb/d/kcf)	Landfill Load
January	27.2	159	36,133	192	43,477	57	765
February	28.1	153	35,817	180	42,226	48	635
March	27.3	168	38,212	208	47,273	55	1987
April	30.2	184	46,481	280	70,705	54	2090
May	28.1	169	39,507	229	53,669	56	3146
June	25.4	190	40,232	205	43,315	50	9381
July	25.0	194	40,464	260	54,341	54	1880
August	25.7	233	49,813	226	48,380	75	2730
September	27.4	236	53,876	197	44,948	62	5630
October	25.4	277	58,717	240	50,937	80	19269
November	24.0	282	56,466	223	44,726	81	?
December	24.3	340	69,416	284	57,602	98	?
January	25.6	317	67,671	281	59,980	107	?
February	28.0	190	44,410	172	40,183	55	?



Note: Parameters highlighted in yellow are above design values.

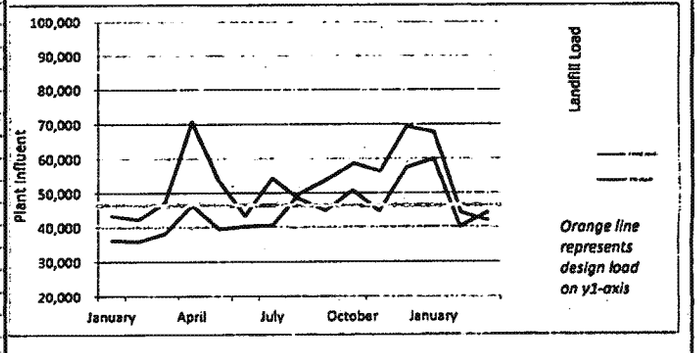
Missouri River - March 2013

	Final Effluent							Primary Effluent		Influent				
	CBOD (mg/L)	Weekly Average (mg/L)	TSS (mg/L)	Weekly Average (mg/L)	COD (mg/L)	CBOD/ COD Ratio	Plant Flow (MGD)	CBOD (mg/L)	Trickling Filter Loading (lb/d/kcf)	CBOD (mg/L)	Influent CBOD Loading (lb/d)	COD (mg/L)	TSS (mg/L)	Influent TSS Loading (lb/d)
1-Mar	19		37		97	0.196	31.6			167	44,012	356	152	40,059
2-Mar		20		46			30.5							
3-Mar							27.5							
4-Mar	16		41		110	0.145	29.1	84	40	166	40,287	367	166	40,287
5-Mar	15		31		96	0.156	31.2	95	49	123	32,006	340	126	32,786
6-Mar	22		34		111	0.198	30.6			181	46,192	407	170	43,385
7-Mar	18		33		108	0.167	28.2	78	36	201	47,273	428	144	33,867
8-Mar	18		34		109	0.165	28.9	108	51	192	46,277	410	178	42,903
9-Mar		18		35			32.6							
10-Mar							42.3							
11-Mar	14		33		78	0.179	42.8	65	46	99	35,338	342	136	48,545
12-Mar	14		30		78	0.179	36.9	73	44	130	40,007	375	148	45,546
13-Mar	13		31		109	0.119	25.4	81	34	235	49,781	707	314	66,517
14-Mar	18		28		93	0.194	38.2	88	55	179	57,027	407	154	49,063
15-Mar	15		20		83	0.181	33.3	90	49	152	42,214	397	156	43,325
16-Mar		15		28			31.7							
17-Mar							33.1							
18-Mar	14		24		69	0.203	46.9	69	53	92	35,985	289	160	62,583
19-Mar	13		20		73	0.178	34.2	74	41	123	35,083	377	132	37,650
20-Mar	17		23		87	0.195	29.3	94	45	156	38,120	355	126	30,790
21-Mar	17		25		68	0.250	35.0	88	50	144	42,034	344	142	41,450
22-Mar	15		17		67	0.224	29.8	90	44	144	35,789	411	144	35,789
23-Mar		15		22			28.3							
24-Mar							31.5							
25-Mar	14		15		82	0.171	34.9	78	45	104	30,271	293	122	35,510
26-Mar	14		21		86	0.163	31.6	114	59	164	43,221	333	124	32,679
27-Mar	19		26		85	0.224	30.9	74	37	124	31,956	319	160	41,233
28-Mar	20		27		91	0.220	49.8	83	68	145	60,223	341	200	83,066
29-Mar	20		23		90	0.222	44.1	83	60	110	40,457	278	144	52,962
30-Mar		17		22			35.9							
31-Mar							32.2							
Average	16		27		89		33.8	85	48	149	42,049	375	157	44,292

Design Parameters			28.0		64	200	46,700	200	46,700
Percent Above Design			21%		-25%	-25%	-10%	-21%	-5%

Monthly Trends - 2012-13

	Influent Flow (MGD)	CBOD (mg/L)	CBOD (lb/d)	TSS (mg/L)	TSS (lb/d)	Trickling Filter Loading (lb/d/kcf)
January	27.2	159	36,133	192	43,477	57
February	28.1	153	35,817	180	42,226	48
March	27.3	168	38,212	208	47,273	55
April	30.2	184	46,481	280	70,705	54
May	28.1	169	39,507	229	53,669	56
June	25.4	190	40,232	205	43,315	50
July	25.0	194	40,464	260	54,341	54
August	25.7	233	49,813	226	48,380	75
September	27.4	236	53,876	197	44,948	62
October	25.4	277	58,717	240	50,937	80
November	24.0	282	56,466	223	44,726	81
December	24.3	340	69,416	284	57,602	98
January	25.6	317	67,671	281	59,980	107
February	28.0	190	44,410	172	40,183	55
March	33.8	149	42,049	157	44,292	48



Note: Parameters highlighted in yellow are above design values.

Missouri River - April 2013

	Final Effluent							Primary Effluent		Influent				
	CBOD (mg/L)	Weekly Average (mg/L)	TSS (mg/L)	Weekly Average (mg/L)	COD (mg/L)	CBOD/ COD Ratio	Plant Flow (MGD)	CBOD (mg/L)	Trickling Filter Loading (lb/d/kcf)	CBOD (mg/L)	Influent CBOD Loading (lb/d)	COD (mg/L)	TSS (mg/L)	Influent TSS Loading (lb/d)
1-Apr	12		17		79	0.152	33.1	90	49	169	46,653	485	160	44,169
2-Apr	13		15		74	0.176	30.6	83	42	162		373	146	
3-Apr	14		15		84	0.167	31.7	105	55	186		428	182	
4-Apr	13		18		76	0.171	29.0	106	50	196	47,405	454	176	42,567
5-Apr	14		15		63	0.222	29.0	112	53	146	35,312	538	224	54,177
6-Apr		13		16			28.4				-			-
7-Apr							26.2				-			-
8-Apr	10		15		66	0.152	29.3	102	49	188	45,940	489	148	36,166
9-Apr	21		15		82	0.256	30.4	101	50	168	42,594	489	176	44,622
10-Apr	10		15		85	0.118	30.7	146	73	220	56,328	501	160	40,966
11-Apr	18		20		82	0.220	43.9	108	78	184	67,367	316	162	59,312
12-Apr	12		11		69	0.174	32.6	67	36	113	30,723	292	136	36,976
13-Apr		14		15			28.9				-			-
14-Apr							31.0				-			-
15-Apr	15		13		72	0.208	34.6	88	50	148	42,707	392	176	50,787
16-Apr	12		11		76	0.158	38.4	82	52	126	40,352	321	134	42,914
17-Apr	11		12		58	0.190	34.8	73	42	92	26,701	282	142	41,213
18-Apr	13		17		48	0.271	52.0	81	69	130	56,378	256	210	91,073
19-Apr	12		19		38	0.316	52.6	56	48	88	38,604	226	92	40,359
20-Apr		13		14			38.8				-			-
21-Apr							35.8				-			-
22-Apr	10		18		58	0.172	35.9	92	54	113	33,833	341	168	50,300
23-Apr	4		14		68	0.059	41.4	74	50	112	38,671	293	136	46,958
24-Apr	11		14		61	0.180	43.7	64	46	106	38,633	262	124	45,193
25-Apr	15		12		54	0.278	34.8	69	39	191	55,434	336	112	32,506
26-Apr	14		13		83	0.169	33.9	90	50	121	34,210	359	134	37,885
27-Apr		11		14			35.6				-			-
28-Apr							38.4				-			-
29-Apr			15		64	0.000	32.7				-	320	148	40,362
30-Apr			13		62	0.000	34.9				-	323	124	36,092
														-
Average	13		15		68		35.1	89	52	148	43,314	367	153	44,846

Design Parameters	28.0	64	200	46,700	200	46,700
Percent Above Design	25%	-19%	-26%	-7%	-23%	-4%

Monthly Trends - 2012-13

	Influent Flow (MGD)	CBOD (mg/L)	CBOD (lb/d)	TSS (mg/L)	TSS (lb/d)	Trickling Filter Loading (lb/d/kcf)
January	27.2	159	36,133	192	43,477	57
February	28.1	153	35,817	180	42,226	48
March	27.3	168	38,212	208	47,273	55
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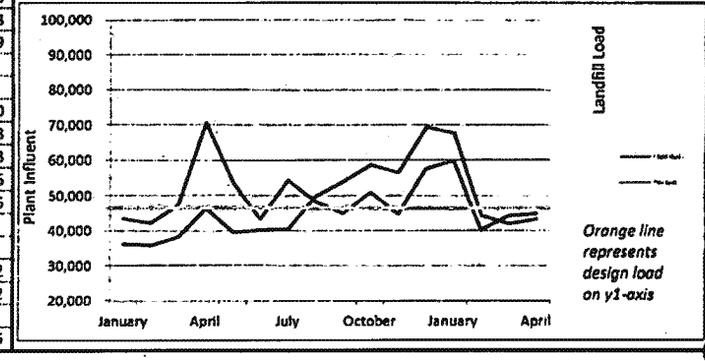
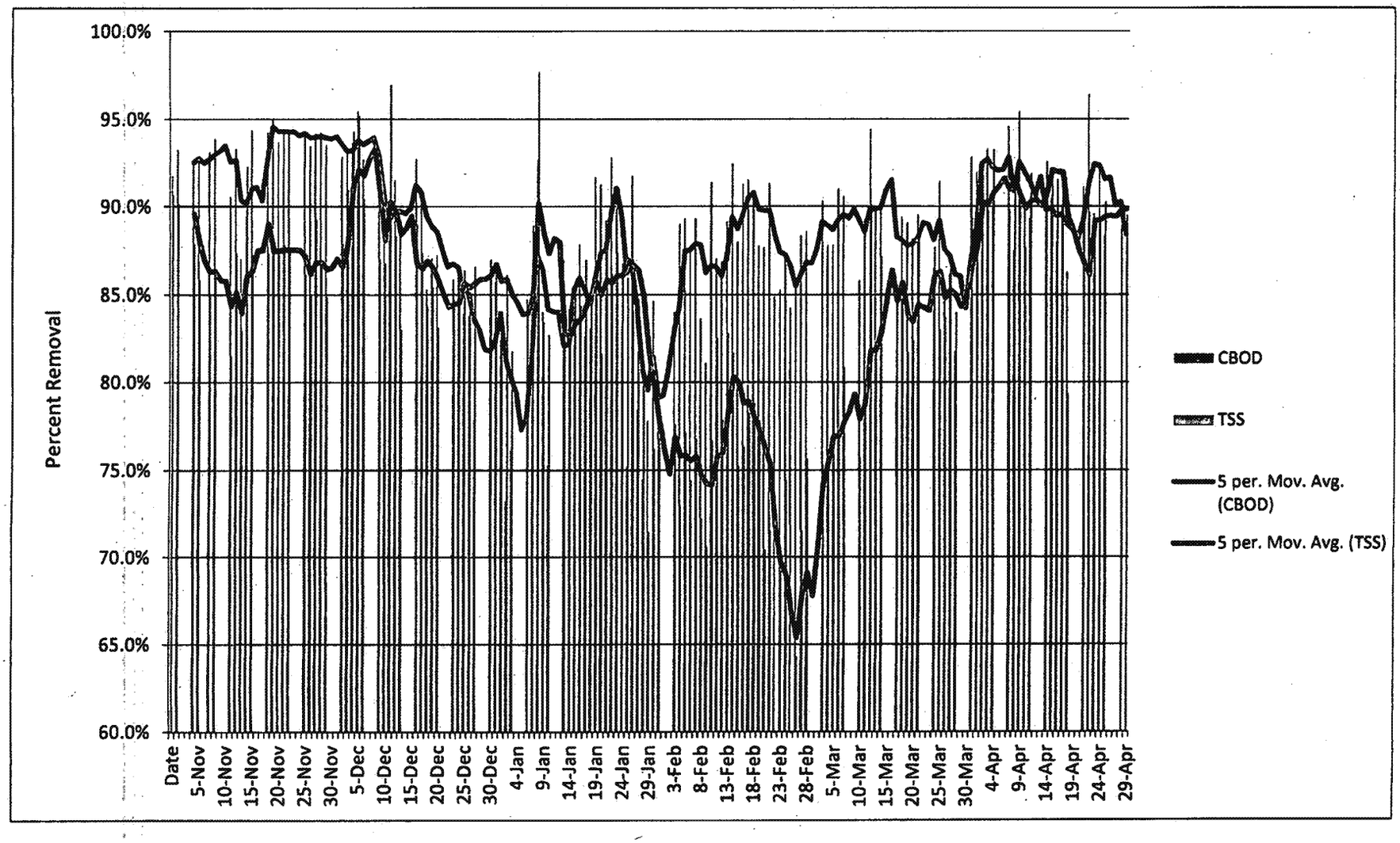
June	25.4	190	40,232	205	43,315	50
July	25.0	194	40,464	260	54,341	54
August	25.7	233	49,813	226	48,380	75
September	27.4	236	53,876	197	44,948	62
October	25.4	277	58,717	240	50,937	80
November	24.0	282	56,466	223	44,726	81
December	24.3	340	69,416	284	57,602	98
January	25.6	317	67,671	281	59,980	107
February	28.0	190	44,410	172	40,183	55
March	33.8	149	42,049	157	44,292	48
April	35.1	148	43,314	153	44,846	52



Note: Parameters highlighted in yellow are above design values.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24-Apr
29-Apr
CBOD
TSS
5 per. Mov. Avg. (CBOD)
5 per. Mov. Avg. (TSS)

MSD

P2

Doug Mendoza

BRIDGETON LANDFILL

From: Doug Mendoza
Sent: Friday, May 03, 2013 8:41 AM
To: Bret A. Berthold; Brian Hoelscher; Christopher J. Bulmahn; Doug Mendoza; John Lodderhose; Jonathon Sprague; Ken Gambaro; Ken Goins; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm
Subject: FW: ftp site - for Bridgeton Landfill data

FYI

From: Doug Mendoza
Sent: Friday, May 03, 2013 8:34 AM
To: 'Ed Galbraith'
Subject: RE: ftp site

Thanks, Ed. Access worked fine. I see that you have already added American Bottoms-related correspondence.

Doug

From: Ed Galbraith [mailto:EGalbraith@barr.com]
Sent: Friday, May 03, 2013 8:28 AM
To: Doug Mendoza
Cc: Merrigan, Jessie (LG)
Subject: ftp site

Doug, the ftp site has been set up and we'll be transferring data to it today. Jessie will send a notice when the transfer is complete. If you would, please test drive the site today to make sure that it will work with MSD's system. Here are the instructions:

Copy this link and paste it into Windows Explorer (NOT Internet Explorer). ftp://ftp.barr.com/bridgetonlandfill/
Enter the User ID and Password into the dialogue box.
User: blfdata
Password: [redacted]

If this does not work, you can try using FileZilla (https://filezilla-project.org/download.php), enter the site name, username and password and click Quickconnect.

Please let me know one way or the other whether you have success.

Thanks.

Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
egalbraith@barr.com
www.barr.com

MSD

Doug Mendoza

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Ed Galbraith

Senior Environmental Scientist
Jefferson City office: 573.638.5024
cell: 573.418.5562
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Doug Mendoza

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Ed Galbraith

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STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

MAY - 3 2013

Mr. Brian Hoelsher, P.E.
Executive Director
Metropolitan St. Louis Sewer District
2350 Market Street
St. Louis, MO 63103-2555

RE: Bridgeton Landfill's Proposal to Resume Discharge of Leachate to the St. Louis Metropolitan Sewer District's Wastewater Treatment Facilities (MSD)

Dear Mr. Hoelsher:

The Missouri Department of Natural Resources received notice of MSD's willingness to accept certain amounts of treated comingled leachate into the St. Louis Metropolitan Sewer District's Missouri River Treatment Facility, Bissell Point Treatment Facility and Lemay Treatment Facility on an emergency and conditional basis. We recognize the extraordinary circumstances created by the Bridgeton landfill subsurface oxidation event and the challenges to leachate management that have resulted from large leachate volumes and the character of leachate being produced. We appreciate MSD's willingness to work with Republic Services to re-establish Bridgeton Landfill's discharge to MSD facilities, as appropriate leachate management is a critical need in the overall plan to address the event and ultimately provide relief to the citizens in the area who have been experiencing frequent periods of increased odors related to the event.

You have informed us that the agreement MSD reached with Republic Services to begin accepting leachate on a limited basis is based on assurances that have been provided by Republic Services. However, you further have stated that MSD cannot say with 100% certainty that the acceptance of the leachate will not result in violations for MSD facilities and will therefore be taking the leachate on a trial basis. Due to the extremely unusual circumstances, and in recognition that facilitating proper leachate management at the facility is in the overall public interest, the department is agreeing to use its enforcement discretion in the event the MSD facilities taking the leachate experience violations that

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are attributable to acceptance of the leachate. This discretion will remain in effect for 90 days from the date MSD began accepting leachate. Within 60 days of the date MSD began accepting leachate the department will reevaluate the need for an extension to this discretion.

If you have any questions about this letter please contact me at (573) 751-0763.

Sincerely,

DIVISION OF ENVIRONMENTAL QUALITY

Leanne Tippett Mosby
Director

LTM:ts

c: Ms. Dorothy Franklin, Director, St. Louis Regional Office, MDNR
Mr. Chris Nagel, Director, Solid Waste Management Program, MDNR
Mr. Joseph Bindbeutel, Attorney General's Office

Doug Mendoza BRIDGETON LANDFILL MSD

From:	Doug Mendoza
Sent:	Thursday, May 02, 2013 2:42 PM
To:	Ed Galbraith (EGalbraith@barr.com) (EGalbraith@barr.com)
Cc:	Nora C. Estopare; John Lodderhose; Rob G Daly; Ken Gambaro; Michael Grace
Subject:	Industries discharging to MSD's Missouri River treatment plant, and associated surcharge levels/BOD loading
Attachments:	Industries Discharging to Missouri River TP.pdf; surcharge mo river industries.pdf

Ed,

Per your request during today's meeting, I have attached a document that lists the MSD-regulated industries discharging to the Missouri River Treatment Plant. Note that they are grouped by trunk sewers. There are three main lines discharging to the plant:

- From the north is Bonfils, which flows into Earth City, which goes to the plant. Bridgeton Landfill discharges to Bonfils.
- From the east is Fee Fee, which goes to the plant.
- From the south is Spirit, which flows into Chesterfield Industrial. Caulks & Bonhomme Creeks joins with Chesterfield Industrial to flow to Caulks Creek A Pump Station. Creve Coeur Creek then joins with Caulks Creek A Pump Station to go to the plant.

I have also attached a document that lists the industries under surcharge that discharge to the Missouri River Treatment Plant. Using their certified surcharge levels for BOD, and their estimated discharge volumes from our database, I have calculated their BOD loading at about 8,800 lb/day. Of course this does not include loading from industries not under surcharge, nor from commercial or residential flow. Note that Bridgeton Landfill's estimated load at 20,000 GPD is about 4,300 lb/day of BOD. At 200,000 GPD it would be 43,000 lb/day of BOD.

---Doug

Acct #	Name	Address	City	Zip	BOD	Vol (gal)	lb BOD/day
100753870	AIR PRODUCTS PRISM MEMBRANES	11444 Lackland Road	St. Louis	63146	1181	117,200	1,154
104952690	ASPEN WASTE SYSTEM OF MISSOURI	13710 Green Ash Ct.	Earth City	63045	611	1,685	9
104185480	BFI WASTE SYSTEMS OF NORTH AMERICA INC	2520 Adie Road	Maryland Heights	63043	47	22,414	9
104432500	BIOMERIEUX INC	595 Anglum Dr.	Hazelwood	63042	682	24,430	139
100380300	BRIDGETON LANDFILL LLC	13570 St. Charles Rock Road	Bridgeton	63044			
100764140	BUCKEYE INTERNATIONAL INC	2700 Wagner Place	Maryland Heights	63043	2607	11,955	260
104627350	CENTRAL MINE EQUIPMENT CO	4215 Rider Trail North	Earth City	63045	413	4,147	14
100762240	COTT BEVERAGES USA	2525 Schuetz Road	Maryland Heights	63043	1526	104,503	1,330
100331690	DIERBERGS CENTRAL COMMISSARY	3400A & 3400B Hollenberg Drive	Bridgeton	63044	1224	22,441	229
104282160	IESI MO CHAMP LANDFILL	2305 Creve Coeur Mill Road	Maryland Heights	63043	234	255,089	498
104511050	LAIRD TECHNOLOGIES	3481 Rider Trail South	Earth City	63045	825	4,300	30
100762030	NESHER PHARMACEUTICALS (USA) LLC	2303 Schuetz Road	St. Louis	63146	467	5,760	22
100766160	ROCKTENN CP LLC	577 Goddard Ave	Chesterfield	63005	1331	26,885	298
104478730	SENSORY EFFECTS FLAVOR SYSTEMS	231 Rock Industrial Park Dr	Bridgeton	63044	2053	49,874	854
100760970	ST LOUIS COCA-COLA BOTTLING CO	78 Progress Parkway	Maryland Heights	63043	2192	201,816	3,689
104855450	STOCK YARDS MEAT PACKING	17395 Edison Avenue	Chesterfield	63005	1033	25,805	222
103723230	WCP LABORATORIES	2326 Millpark Dr	Maryland Heights	63043	2081	3,423	59
						Total:	8,817
100380300	BRIDGETON LANDFILL LLC	13570 St. Charles Rock Road	Bridgeton	63044	26000	200,000	43,368
100380300	BRIDGETON LANDFILL LLC	13570 St. Charles Rock Road	Bridgeton	63044	26000	20,000	4,337

10 - Earth City Pump Station	1048195100	AAA TRAILER SERVICES INC	4601-4605 Crossroads Industrial Dr.	Bridgeton	63044
10 - Earth City Pump Station	1049526900	ASPEN WASTE SYSTEM OF MISSOURI	13710 Green Ash Ct.	Earth City	63045
10 - Earth City Pump Station	1047379500	AUTOMARK MARKETING SYSTEMS	13475 Lakefront Drive	Earth City	63045
10 - Earth City Pump Station	1042557800	AUTOMATION SERVICE	13871 Parks Steed Dr	Earth City	63045
10 - Earth City Pump Station	1003315200	B/E AEROSPACE INC	4050 Lakeview Shores Ct.	Earth City	63045
10 - Earth City Pump Station	1044826000	BELTSERVICE CORP	4143 Rider Trail North	Earth City	63045
10 - Earth City Pump Station	1037508900	CARDINAL HEALTH	13636 Lakefront Dr	Earth City	63045
10 - Earth City Pump Station	1046273500	CENTRAL MINE EQUIPMENT CO	4215 Rider Trail North	Earth City	63045
10 - Earth City Pump Station	1044612800	CORD MOVING & STORAGE	4119 Rider Trail N.	Earth City	63045
10 - Earth City Pump Station	1041837600	CORLEY PRINTING CO	3777 Rider Trail South	Earth City	63045
10 - Earth City Pump Station	1048543200	DIGITAL CONCEPTS OF MISSOURI	3100-3160 Riverport Tech Center Dr.	Maryland Heights	63043
10 - Earth City Pump Station	1047639700	EAGLE PACKAGING INC	3219 Rider Trail South	Bridgeton	63044
10 - Earth City Pump Station	1047270800	ENVIROPAK CORPORATION	4135 Galley Ct.	Earth City	63045
10 - Earth City Pump Station	1003808800	ENVIROPAK CORPORATION	4203 Shoreline Ct.	Earth City	63045
10 - Earth City Pump Station	1003805500	EXIDE BATTERY COMPANY	13738 Rider Trail N	Earth City	63045
10 - Earth City Pump Station	1047014400	FEDEX EXPRESS	13342 Lakefront Dr	Bridgeton	63045
10 - Earth City Pump Station	1046560700	FOAM SUPPLIES INC	4387 North Rider Trail	Earth City	63045
10 - Earth City Pump Station	1047793300	FOREST PHARMACEUTICALS	13600 Shoreline Dr	Earth City	63045
10 - Earth City Pump Station	1042217700	GENERAL CREDIT FORMS	3595 Rider Trail South	Earth City	63045
10 - Earth City Pump Station	1046734900	HUMMERT INTERNATIONAL	4500 Earth City Expressway	Earth City	63045
10 - Earth City Pump Station	1003804700	HUNTLEIGH BUS SALES	13788 Lakefront Drive	Earth City	63045
10 - Earth City Pump Station	1003807800	IMAGE LABEL CORPORATION	4288 Rider Trail N, Bldg E	Earth City	63045
10 - Earth City Pump Station	1045516700	INDUSTRIAL STEEL FABRICATION	12212 Missouri Bottom Rd	Hazelwood	63042
10 - Earth City Pump Station	1042874300	INKWELL PRINTING	4200 Shoreline	Earth City	63045
10 - Earth City Pump Station	1040381200	LABCORP OF AMERICA	13665 Lakefront Drive	Earth City	63045
10 - Earth City Pump Station	1045110500	LAIRD TECHNOLOGIES	3481 Rider Trail South	Earth City	63045
10 - Earth City Pump Station	1047704400	LEGACY PACKAGING	13480 Lakefront Dr.	Earth City	63045
10 - Earth City Pump Station	1037571300	MEGAMET SOLID METALS	13748 Shoreline Court East	Earth City	63045
10 - Earth City Pump Station	1040305601	NESHER PHARMACEUTICALS (USA) LLC	13622 Lakefront Dr.	Earth City	63045
10 - Earth City Pump Station	1047258401	NESHER PHARMACEUTICALS (USA) LLC	13910 St. Charles Rock Road	Bridgeton	63044
10 - Earth City Pump Station	1045199100	NEW SYSTEM CARPET & BLDG CARE LTD	4120 Rider Trail N	Earth City	63045
10 - Earth City Pump Station	1003804600	PENSKE TRUCK LEASING	13690 Lakefront Dr	Earth City	63045
10 - Earth City Pump Station	1003809300	POLYAD SERVICES	4170 Shoreline Drive	Earth City	63045
10 - Earth City Pump Station	1040595500	RAVEN INDUSTRIES	4372 Green Ash Drive	Earth City	63045
10 - Earth City Pump Station	1047777900	ROLAND MACHINERY	4670 Crossroads Industrial Dr.	Bridgeton	63044
10 - Earth City Pump Station	1040018700	SBPI INC	13825 Parks Steed Dr.	Earth City	63045
10 - Earth City Pump Station	1055176800	SCHATTDECOR INC	13950 Riverport Place Dr.	Maryland Heights	63043
10 - Earth City Pump Station	1047324900	SCOTTS LAWN SERVICE	4695 Crossroads Industrial Dr.	Bridgeton	63044
10 - Earth City Pump Station	1046344000	SUN RENTALS INC	11710-11712 St. Charles Rock Road	Bridgeton	63044
10 - Earth City Pump Station	1037533800	TARGET WINDOWS & DOORS INC	13795 St. Charles Rock Road	St. Louis	63044
10 - Earth City Pump Station	1042028200	TEST AMERICA LABORATORIES INC	13715 Rider Trail North	Earth City	63045
10 - Earth City Pump Station	1043447700	UNITED PARCEL SERVICE	13818 Rider Trail Dr.	Earth City	63045
10 - Earth City Pump Station	1003809200	UNITED RENTALS	13727 Shoreline	Earth City	63045
10 - Earth City Pump Station	1043601500	YOUNG DENTAL MANUFACTURING CO	13705-13733 Shoreline Ct. East	Earth City	63045
20 - Bonfils Pump Station	1003782000	AIRPATH INSTRUMENT CO	13150 Taussig	Bridgeton	63044
20 - Bonfils Pump Station	1003779000	ASSEMBLY SOLUTIONS	4328 Bridgeton Industrial Drive	Bridgeton	63044
20 - Bonfils Pump Station	1044325000	BIOMERIEUX INC	595 Anglum Dr.	Hazelwood	63042
20 - Bonfils Pump Station	1003803000	BRIDGETON LANDFILL LLC	13570 St. Charles Rock Road	Bridgeton	63044
20 - Bonfils Pump Station	1047110300	BUDGET TRUCK RENTAL	12000 Missouri Bottom Rd.	Hazelwood	63042
20 - Bonfils Pump Station	1044953400	CONTICO	333 Rock Industrial Park Dr	Bridgeton	63044
20 - Bonfils Pump Station	1003316900	DIERBERGS CENTRAL COMMISSARY	3400A & 3400B Hollenberg Drive	Bridgeton	63044
20 - Bonfils Pump Station	1041659700	DKI MFG	13518 NW Industrial Drive	Bridgeton	63044
20 - Bonfils Pump Station	1003794500	FARMER BROS CO	12832-12838 Pennridge Dr.	Bridgeton	63044
20 - Bonfils Pump Station	1003315000	FLETCHER-REINHARDT SERVICE CO	12900 Boenker	Bridgeton	63044
20 - Bonfils Pump Station	1046275400	HAMMER & STEEL INC	11912 Missouri Bottom Rd.	Hazelwood	63042
20 - Bonfils Pump Station	1044256900	HIGH ENERGY DEVICES LLC	26 Hollenberg Court	Bridgeton	63044
20 - Bonfils Pump Station	1047999600	HUGHES CUSTOMAT	170 Boulder Industrial Drive	Bridgeton	63044
20 - Bonfils Pump Station	1003798900	HUSSMANN CORP	12999 St. Charles Rock Rd.	Bridgeton	63044
20 - Bonfils Pump Station	1055109000	IESI MISSOURI CORP	196 Northwest Industrial Ct.	Bridgeton	63044
20 - Bonfils Pump Station	1047145700	INTERSTATE BATTERIES	13602 Northwest Ind Ct	Bridgeton	63044
20 - Bonfils Pump Station	1041433100	KEY EQUIPMENT & SUPPLY CO	13507 Northwest Ind. Dr.	Bridgeton	63044
20 - Bonfils Pump Station	1003797800	KIRCHNER BLOCK & BRICK	12901 St. Charles Rock Road	Bridgeton	63044
20 - Bonfils Pump Station	1044634900	KIRCHNER BLOCK & BRICK INC	201 Rock Industrial	Bridgeton	63044

20 - Bonfils Pump Station	1003785500	L&L PRINTING	12228 Natural Bridge	Bridgeton	63044
20 - Bonfils Pump Station	1003779700	MACHINE CENTER INC	4344 Bridgeton Industrial Drive	Bridgeton	63044
20 - Bonfils Pump Station	1007784500	MALLINCKRODT LLC	675 McDonnell Blvd	Hazelwood	63042
20 - Bonfils Pump Station	1041427801	MERIDIAN WASTE SERVICES	13524 Northwest Industrial Dr.	Bridgeton	63044
20 - Bonfils Pump Station	1003781300	NEW WORLD VAN LINES OF MISSOURI	12750 Carrollton Industrial Dr.	Bridgeton	63044
20 - Bonfils Pump Station	1045384400	PFI, LLC	12202 Missouri Bottom Rd.	Hazelwood	63042
20 - Bonfils Pump Station	1003798000	PM RESOURCES INC	13001 St. Charles Rock Road	Bridgeton	63044
20 - Bonfils Pump Station	1047232101	REPUBLIC SERVICES	12976 Saint Charles Rock Road	Bridgeton	63044
20 - Bonfils Pump Station	1003793700	RYDER TRANSPORTATION SERVICES	12665 Pennridge	St Louis	63044
20 - Bonfils Pump Station	1003781700	SCHNUCKS MARKET DISTRIBUTION CENTER	12921 Enterprise Way	Bridgeton	63044
20 - Bonfils Pump Station	1044787300	SENSORY EFFECTS FLAVOR SYSTEMS	231 Rock Industrial Park Dr	Bridgeton	63044
20 - Bonfils Pump Station	1047840200	SPECTRUM BRANDS PLANT #4	13260 Corporate Exchange Drive	Bridgeton	63044
20 - Bonfils Pump Station	1003783600	SSM DEPAUL HEALTH CENTER	12303 De Paul Dr	Bridgeton	63044
20 - Bonfils Pump Station	1049735700	STOLZE PRINTING	3435 Hollenberg	Bridgeton	63044
20 - Bonfils Pump Station	1003795700	TAPCO INC	225 Rock Industrial Park Dr.	St. Louis	63044
20 - Bonfils Pump Station	1043160600	WATERJET TECH INC	3353 Hollenberg Drive	Bridgeton	63044
20 - Bonfils Pump Station	1048697000	XTRA LEASE	1632 Park 370 Ct.	Hazelwood	63042
30 - Fee Fee Creek	1007473400	A SQUARE SYSTEMS	11923 Borman Drive	St. Louis	63146
30 - Fee Fee Creek	1007538700	AIR PRODUCTS PRISM MEMBRANES	11444 Lackland Road	St. Louis	63146
30 - Fee Fee Creek	1007625800	ALLEGRA MARKETING PRINT MAIL	2116 Schuetz Rd.	Maryland Heights	63146
30 - Fee Fee Creek	1037610400	AMEREN MISSOURI	12121 Dorsett Ave	Maryland Heights	63043
30 - Fee Fee Creek	1051686200	AMEREN MISSOURI MARYLAND HEIGHTS RENEWABLE ENERGY CENTER	2465 Creve Coeur Mill Road	Maryland Heights	63043
30 - Fee Fee Creek	1007592900	AMERICAN CLEANERS & LAUNDRIES	11041 Olive	St Louis	63141
30 - Fee Fee Creek	1040307100	AMERICAN RADIOLABELED CHEMICALS INC	100-104 ARC Dr.	St Louis	63146
30 - Fee Fee Creek	1007512800	AMERICAN STAMP & MARKING PRODUCTS	500 Fee Fee	Maryland Heights	63043
30 - Fee Fee Creek	1037173500	AMS CONTROLS INC	12180 Pritchard Farm Road	Maryland Heights	63043
30 - Fee Fee Creek	1007498800	ARIZON COMPANIES	11880 Dorsett Rd.	Maryland Heights	63043
30 - Fee Fee Creek	1007569700	AZAR PRINTING CO	20 Millpark Ct.	Maryland Heights	63043
30 - Fee Fee Creek	1037173100	BASTIAN ROBOTICS	2200 Forte Ct.	Maryland Heights	63043
30 - Fee Fee Creek	1007635400	BD ACCU-GLASS	10765 Trenton	St Louis	63132
30 - Fee Fee Creek	1041854800	BFI WASTE SYSTEMS OF NORTH AMERICA INC	2520 Adie Road	Maryland Heights	63043
30 - Fee Fee Creek	1007641400	BUCKEYE INTERNATIONAL INC	2700 Wagner Place	Maryland Heights	63043
30 - Fee Fee Creek	1037572100	BUCKEYE INTERNATIONAL INC	430 Industrial Dr.	Maryland Heights	63043
30 - Fee Fee Creek	1048437900	CARDINAL HEALTH	10718 Trenton Ave.	St. Louis	63132
30 - Fee Fee Creek	1003320100	CATCO	2685 Metro Blvd.	Maryland Heights	63043
30 - Fee Fee Creek	1007615200	CHEMIA CORP	11558-11570 Rock Island Court	Maryland Heights	63043
30 - Fee Fee Creek	1037231900	CHEMIR ANALYTICAL SERVICES	2672 Metro Boulevard	Maryland Heights	63043
30 - Fee Fee Creek	1007464400	CHEVRON CHEMICAL CO	2497 Adie Road	Maryland Heights	63043
30 - Fee Fee Creek	1030933300	CK POWER	1100 Research Boulevard	St. Louis	63132
30 - Fee Fee Creek	1007464600	COMMUNITY TIRE RETREADING	2501 Adie Road	Maryland Heights	63043
30 - Fee Fee Creek	1007622400	COTT BEVERAGES USA	2525 Schuetz Road	Maryland Heights	63043
30 - Fee Fee Creek	1007486600	DAZOR MANUFACTURING CORP	2079 Congressional Drive	St. Louis	63146
30 - Fee Fee Creek	1041883300	DCL FABRICATION	13551 Northwest Ind. Dr.	Bridgeton	63044
30 - Fee Fee Creek	1007533400	DECORATOR FOLD CLEANING & RESTORATION	10730 Indian Head Blvd	St. Louis	63132
30 - Fee Fee Creek	1007534700	DELI FOOD MFG INC	10875 Indian Head Industrial Blvd	St. Louis	63132
30 - Fee Fee Creek	1007529000	DESIGNS FOR TOMORROW INC	2290 Grissom Dr.	St. Louis	63146
30 - Fee Fee Creek	1037225900	EAG LIFE SCIENCES	2662 Metro Blvd.	Maryland Heights	63043
30 - Fee Fee Creek	1044625700	ELECTRO BATTERY MFG	12201 Dorsett Rd	Maryland Heights	63043
30 - Fee Fee Creek	1007619000	ELECTRO REP - ENERGY PRODUCTS INC	2121 Schuetz Road	St. Louis	63146
30 - Fee Fee Creek	1007614300	ENGINEERED LUBRICANTS CO	11525 Rock Island Court	Maryland Heights	63043
30 - Fee Fee Creek	1007476700	EVANS PRODUCTION ENGINEERING CO	2366 Centerline Ind Dr	St. Louis	63146
30 - Fee Fee Creek	1045916300	F&J LANDFILL C/O MARYLAND HEIGHTS GOLF LLC	2497 Driftwood Lane	Maryland Heights	63043
30 - Fee Fee Creek	1007644300	FUCHS LUBRICANT CO	160 Weldon Parkway	Maryland Heights	63043
30 - Fee Fee Creek	1007608500	GOURMET TO GO	25 Progress Pkwy	Maryland Heights	63043
30 - Fee Fee Creek	1007474700	GRAHAM PACKAGING CO	13300 Interstate Dr	Maryland Heights	63043
30 - Fee Fee Creek	7777711400	GRAPHIX ESSENTIALS LLC	10810 Indian Head Industrial	St. Louis	63132
30 - Fee Fee Creek	1007561800	GREY EAGLE DISTRIBUTORS INC	2340 Millpark Dr	Maryland Heights	63043
30 - Fee Fee Creek	1030906300	GROUP 360 DISPLAY GRAPHICS	10835 Midwest Industrial Blvd	St. Louis	63132
30 - Fee Fee Creek	1030904900	HANSON FOODS	10849 Midwest Industrial Blvd	St Louis	63132
30 - Fee Fee Creek	1037599900	HILLYARD INDUSTRIES	815 Fee Fee	Maryland Heights	63043
30 - Fee Fee Creek	1007548100	HY-C COMPANY INC	10950 Linpage Pl.	St. Louis	63132
30 - Fee Fee Creek	1047030300	HYDROMAT INC	11550-11640 Adie Rd	Maryland Heights	63043
30 - Fee Fee Creek	1042821600	IESI MO CHAMP LANDFILL	2305 Creve Coeur Mill Road	Maryland Heights	63043

30 - Fee Fee Creek	1007641900	INTERNATIONAL PAPER	11490 Warnen Rd- Suite 305	Maryland Heights	63043
30 - Fee Fee Creek	1007495700	K&B WOODWORKING LLC	11460 Dorsett Rd.	Maryland heights	63043
30 - Fee Fee Creek	1007491000	LA BONNE BOUCHEE	1889 Craig Road	St. Louis	63146
30 - Fee Fee Creek	1043048900	LAFRANCE MANUFACTURING COMPANY	124 Millwell Drive	Maryland Heights	63043
30 - Fee Fee Creek	1007528300	LIPPMANN PRINTING & GRAPHICS	2369-2391 Grissom Drive	St. Louis	63146
30 - Fee Fee Creek	1007641600	MALLINCKRODT LLC	2703 Wagner Place	Maryland Heights	63043
30 - Fee Fee Creek	1007464500	MARCHEM CORPORATION	2500 Adie Road	Maryland Heights	63043
30 - Fee Fee Creek	1007609400	MARK VII EQUIPMENT INC	60 Progress Parkway	Maryland Heights	63043
30 - Fee Fee Creek	1007535800	MATTHEWS BRAND SOLUTIONS	10866 Indian Head Industrial Boulevard	St Louis	63132
30 - Fee Fee Creek	1007497700	MAXIMUM COLOR PRINTING INC	11856-58 Dorsett Road	Maryland Heights	63043
30 - Fee Fee Creek	1007487200	MERIDIAN MEDICAL TECHNOLOGIES INC	1945 Craig Road	St. Louis	63146
30 - Fee Fee Creek	1007534200	MULTI-PRINTING & LAMINATING	10795 Indianhead Industrial	St. Louis	63132
30 - Fee Fee Creek	1007620300	NESHER PHARMACEUTICALS (USA) LLC	2303 Schuetz Road	St. Louis	63146
30 - Fee Fee Creek	1007540400	ORIGINAL CAST LIGHTING INC	11902 Lackland Rd.	St. Louis	63146
30 - Fee Fee Creek	1007622200	PERMA-GRAPHICS INC	2470 Schuetz Road	Maryland Heights	63043
30 - Fee Fee Creek	1007535500	PONY CORP INC	10792-10804 Indianhead Industrial Blvd.	St. Louis	63132
30 - Fee Fee Creek	1048528100	POTTER ELECTRIC SIGNAL CO	1609 Park 370 Place	Hazelwood	63042
30 - Fee Fee Creek	1007472200	PRIME PACKAGE & LABEL	11880 Borman Dr.	St. Louis	63146
30 - Fee Fee Creek	1007499000	PRINT AVENUE	11901 Dorsett Road	Maryland Heights	63043
30 - Fee Fee Creek	1007575000	PRINT MEDIA	1573 N Warson Road	St. Louis	63132
30 - Fee Fee Creek	1049451100	PRINTING SOURCE	2373 Ball Dr.	Maryland Heights	63146
30 - Fee Fee Creek	1007570500	PRIORITY LITHO INC	2661-2667 Metro Blvd.	Maryland Heights	63043
30 - Fee Fee Creek	1007484500	QUEST DIAGNOSTICS	2040 Concourse	St. Louis	63146
30 - Fee Fee Creek	1007576500	QUEST GRAPHICS LLC	2423 - 2437 Northline Industrial Drive	Maryland Heights	63043
30 - Fee Fee Creek	1007526300	RHEIN MANUFACTURING INC	2265 & 2269 Grissom Drive	St. Louis	63146
30 - Fee Fee Creek	1007538800	RYDER TRANSPORTATION	11447 Page Service Dr.	St. Louis	63146
30 - Fee Fee Creek	1038065400	SCINOMIX INC	4069 Wedgeway Court	Earth City	63045
30 - Fee Fee Creek	1007562400	SENTIO BIOSCIENCES LLC	218 B Millwell Dr.	Maryland Heights	63043
30 - Fee Fee Creek	1007641300	SOPUS PRODUCTS	2625 Wagner Place	Maryland Heights	63043
30 - Fee Fee Creek	1048693400	SPARTECH CORPORATION	11650 Lakeside Crossing Ct.	Maryland Heights	63146
30 - Fee Fee Creek	1007609700	ST LOUIS COCA-COLA BOTTLING CO	78 Progress Parkway	Maryland Heights	63043
30 - Fee Fee Creek	1007502600	ST LOUIS POST DISPATCH LLC	11695 Fairgrove Industrial Blvd	Maryland Heights	63043
30 - Fee Fee Creek	1007646100	STANGE COMPANY	2324 Weldon Parkway	St. Louis	63146
30 - Fee Fee Creek	1047472000	STANLEY STEEMER (JDK PROPERTIES)	2205 Forte Ct	Maryland Heights	63043
30 - Fee Fee Creek	1007511600	STARRCO CO INC	11700 Fairgrove Industrial Blvd.	Maryland Heights	63043
30 - Fee Fee Creek	1007469600	STING RAY MANUFACTURING	2450 Adie Road	Maryland Heights	63043
30 - Fee Fee Creek	1007567500	UNIVAR USA INC	2646 Metro Blvd	Maryland Heights	63043
30 - Fee Fee Creek	1007608700	UNIVERSAL INC	32 Progress Parkway	Maryland Heights	63043
30 - Fee Fee Creek	1048214000	US TAPE & LABEL	2092 Westport Center Dr.	St. Louis	63146
30 - Fee Fee Creek	1007489300	VALENT AEROSTRUCTURES	2280A Chaffee	St. Louis	63146
30 - Fee Fee Creek	1007540600	WATLOW ST LOUIS	12001 Lackland Road	St Louis	63146
30 - Fee Fee Creek	1037232300	WCP LABORATORIES	2326 Millpark Dr	Maryland Heights	63043
30 - Fee Fee Creek	1007546800	WESTPORT QUICKPRINT	11781 Lackland	St. Louis	63146
30 - Fee Fee Creek	1007613600	WILCO DIE TOOL & MOLDING	2435 Rock Island Blvd.	Maryland Heights	63043
30 - Fee Fee Creek	1007648700	WRYMARK INC	11833-11837 Westline Industrial Dr.	St. Louis	63146
50 - Creve Coeur Creek Gravity Lines	1049875701	BARNES-JEWISH OUTPATIENT ORTHOPEDIC CENTER	14532 S Outer Forty	Chesterfield	63017
50 - Creve Coeur Creek Gravity Lines	1007623600	BARNES-JEWISH WEST COUNTY HOSPITAL	12634 Olive Boulevard	St Louis	63141
50 - Creve Coeur Creek Gravity Lines	1007626000	LOGAN COLLEGE OF CHIROPRACTIC	1851 Schoettler Rd	Chesterfield	63017
50 - Creve Coeur Creek Gravity Lines	1007487100	MARYVILLE UNIVERSITY	13350 Conway	St Louis	63141
50 - Creve Coeur Creek Gravity Lines	1037172900	MISSOURI BAPTIST UNIVERSITY	1 College Park Dr.	St. Louis	63141
50 - Creve Coeur Creek Gravity Lines	1007520700	PARKWAY SCHOOL DIST- DEPARTMENT OF GROUNDS	13145 Olive Spur Rd.	St. Louis	63141
50 - Creve Coeur Creek Gravity Lines	1038238600	PARKWAY SCHOOL DIST-DEPT OF TRANSPORT	347 N. Woods Mill Rd.	Chesterfield	63017
50 - Creve Coeur Creek Gravity Lines	1007649800	ST LUKE'S HOSPITAL	232 S Woods Mill Rd & 121 St. Lukes Center Dr	Chesterfield	63017
60 - Caulks Creek A Pump Sta. to Lift Station L-52	7777711500	BRECKENRIDGE MATERIALS	16625 Old Chesterfield Airport Rd.	Chesterfield	63017
60 - Caulks Creek A Pump Sta. to Lift Station L-52	7777710400	CITY OF ST LOUIS WATER DIVISION	14769 Olive Blvd.	Chesterfield	63017
60 - Caulks Creek A Pump Sta. to Lift Station L-52	7777710100	MISSOURI AMERICAN WATER CO	901 Hog Hollow Rd.	Chesterfield	63017
60 - Caulks Creek A Pump Sta. to Lift Station L-52	1037538200	MONSANTO COMPANY	700 Chesterfield Parkway West	Chesterfield	63017
70 - Caulks & Bonhomme Creeks	1045104400	AMEREN MISSOURI	280 Old State Road, MC 653	Ellisville	63021
70 - Caulks & Bonhomme Creeks	1044948600	CASUAL TEES	16161 Westwoods Business Park	Ellisville	63021
70 - Caulks & Bonhomme Creeks	1037797500	COOPER BUSSMANN INC	114 Old State Road	Ellisville	63021
70 - Caulks & Bonhomme Creeks	1045313300	FIRST STUDENT TRANSPORTATION	17146 Manchester	Grover	63040
70 - Caulks & Bonhomme Creeks	1037964800	RIDENHOUR BROS PRINTING	101 Old State Road	Ellisville	63021
70 - Caulks & Bonhomme Creeks	1049831300	ST LOUIS COMMUNITY COLLEGE - WILDWOOD	2645 Generations Dr.	Wildwood	63040

80 - Chesterfield Industrial Pump Station	1040995800	CAMBRIDGE ENGINEERING	760 Long Road Crossing Drive	Chesterfield	63005
80 - Chesterfield Industrial Pump Station	1040848200	GRAPHIC CONNECTIONS GROUP	174 Chesterfield Industrial Blvd.	Chesterfield	63005
80 - Chesterfield Industrial Pump Station	1048309200	MACHINE LABORATORY LLC	527 Trade Center Blvd.	Chesterfield	63005
80 - Chesterfield Industrial Pump Station	1049750200	MASTERCHEM BRANDS INNOVATION CENTER	17889 Chesterfield Airport Road	Chesterfield	63005
80 - Chesterfield Industrial Pump Station	1042790900	POHLMAN INC	140 Long Road	Chesterfield	63005
80 - Chesterfield Industrial Pump Station	1047834200	RELIV INTERNATIONAL	136 Chesterfield Industrial	Chesterfield	63005
80 - Chesterfield Industrial Pump Station	1048554500	STOCK YARDS MEAT PACKING	17395 Edison Avenue	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1007661400	ABC MOVING & STORAGE	633 Goddard Avenue	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1003331700	AERO CHARTER	501 Turbine Ave.	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	7777710600	AMERICAN READY MIX - GUMBO	18395 Chesterfield Airport Road	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1045679700	AVIATION MATERIALS & TECHNICAL SUPPORT	750 N. Beechcraft Ave.	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1007661000	HOWARD PRICE TURF EQUIPMENT CO	18155 Edison Ave.	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1046006400	JETCORP	708 - 718 Goddard Ave.	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1044763300	KATALYST SURGICAL LLC	754 Goddard Ave.	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1040996400	MARK ANDY INC	18081 Chesterfield Airport Road	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1048617300	MIDWEST AVIATION CENTER LLC	525 Turbine Ave.	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1042338300	MILLION AIR ST LOUIS	549 Bell Avenue	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1040541700	PORTA-FAB	18080 Chesterfield Airport Road	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1007661600	ROCKTENN CP LLC	577 Goddard Ave	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1037247400	STONETRENDS LLC	18092 Chesterfield Airport	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1007662300	SURDEX CORP	520 Spirit of St. Louis Blvd	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1046087200	SURDEX HANGAR	18369 Edison	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1007659600	TAC AIR	500, 532 Beechcraft Dr	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1038074600	TREND MANUFACTURING COMPANY	18181 Edison	Chesterfield	63005
90 - Spirit West No. 2 Pump Station	1049775500	WINGS OF HOPE	18370 Wings of Hope Blvd.	Chesterfield	63005

MSD

Doug Mendoza

From: Dave Schepers
Sent: Wednesday, May 01, 2013 12:16 PM
To: Doug Mendoza; Brian G. Gibson
Subject: Bridgeton Lanfill

The Bridgeton Landfill meter reading was at 6,916,856. The reading was taken at 10:40 a.m. on Wednesday, May 1 , 2013.

MSD

Doug Mendoza

From: Doug Mendoza
Sent: Wednesday, May 01, 2013 8:14 AM
To: 'Merrigan, Jessie (LG)'; John Lodderhose; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Lovie Lewis
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Beck, Bill (LG); Ed Galbraith
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

Jessie,

We have discussed this internally, and the extension for this Friday is acceptable.

Doug

From: Merrigan, Jessie (LG) [mailto:JMerrigan@LATHROPGAGE.COM]
Sent: Tuesday, April 30, 2013 4:08 PM
To: John Lodderhose; Doug Mendoza; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe; 'chris.nagel@dnr.mo.gov'; Bret A. Berthold; Jonathon Sprague; Tippett Mosby, Leanne; Blome, Jessica; Ken Gambaro; Mark Bright; Michael Grace; Nora C. Estopare; Rob G Daly; Ryan Sabourin; Todd Heller; Tom Boehm; Susan Myers; Kristol Whatley; Lance LeComb; Steve Grace; Darin Lewis; Sara Kammerer; Lovie Lewis
Cc: Smith, Steve (ssmith10@republicservices.com); Craig Almanza; Beck, Bill (LG); Ed Galbraith
Subject: RE: Bridgeton Landfill Propose to Resume Discharge to MSD

Good afternoon,

Last Wednesday's conditional approval set forth a number of data submission and reporting requirements. We are eager to work with MSD on meeting your information needs, but have some questions and would like to discuss setting up the most efficient way of gathering and conveying data. There is an initial meeting set for Thursday and we have proposed data collection and reporting as an agenda item. We would request that MSD grant us an extension until this Friday May 3rd for the initial reporting obligations. Please confirm if that is acceptable to you.

Thank you,
Jessie

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P: 816-460-5706 | F: 816-292-2001 | jmerrigan@lathropgage.com
www.lathropgage.com

From: John Lodderhose [mailto:JRLODD@stlmsd.com]
Sent: Wednesday, April 24, 2013 6:27 PM
To: Merrigan, Jessie; Doug Mendoza; Brian Hoelscher; Christopher J. Bulmahn; Ken Goins; Bindbeutel, Joe;