



CITY OF COLUMBIA, MISSOURI

UTILITIES DEPARTMENT
SOLID WASTE DIVISION

January 19, 2018

Paul Dickerson, Chief
Water Pollution Compliance/ Enforcement
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RE: Fourth Quarter 2017 NPDES Monitoring Report, Columbia Sanitary Landfill and Compost Facility, MDNR permit # MO-0112640, Boone County

This letter represents the Fourth Quarter 2017 NPDES Monitoring Report for permit number MO-0112640 for Outfalls 002, 003, 004, 005, 006 and 007. Monthly samples were collected from Outfall 004 on October 23, 2017, no discharge was observed during the months of November and December. Quarterly samples were collected from Outfalls 004, and 006 on October 23, 2017. No discharge was observed on Outfalls 002, 003,005, and 007 during the Fourth Quarter of 2017. Daily site precipitation amounts for the Fourth Quarter of 2017 are enclosed with this letter. The precipitation summarized by month is as follows:

Month	Recorded Precipitation
October	4.23"
November	.61"
December	.2"

The results of the quarterly samples collected from Outfalls 004 and 006 indicate no exceedances.

If you have any questions please contact Adam J. White, Landfill Superintendent, at (573)874-7555 or adam.white@como.gov.

Sincerely,

Steve S. Hunt, P.E.
Solid Waste Utility Manager

SSH:wib

Enclosures

c: David A. Sorrell, P.E., Assistant Director
Adam J. White, Landfill Superintendent

4th Quarter 2017 Precipitation Recorded at the City of Columbia Landfill

2017	Day	Daily Rainfall (inches)
October	1	0
	2	0
	3	0.12
	4	0.67
	5	0.38
	6	0.11
	7	0.17
	8	0
	9	0
	10	0.61
	11	0
	12	0
	13	0
	14	1
	15	0.3
	16	0
	17	0
	18	0
	19	0
	20	0
	21	0
	22	0.85
	23	0
	24	0.02
	25	0
	26	0
	27	0
	28	0
	29	0
	30	0
	31	0
Monthly Total		4.23

2017	Day	Daily Rainfall (inches)
November	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
	8	0
	9	0
	10	0
	11	0
	12	0.01
	13	0
	14	0
	15	0.36
	16	0
	17	0
	18	0.24
	19	0
	20	0
	21	0
	22	0
	23	0
	24	0
	25	0
	26	0
	27	0
	28	0
	29	0
	30	0
Monthly Total		0.61

2017	Day	Daily Rainfall (inches)
December	1	0
	2	0
	3	0
	4	0.14
	5	0
	6	0
	7	0
	8	0
	9	0
	10	0
	11	0
	12	0
	13	0
	14	0
	15	0
	16	0
	17	0.06
	18	0
	19	0
	20	0
	21	0
	22	0
	23	0
	24	0
	25	0
	26	0
	27	0
	28	0
	29	0
	30	0
	31	0
Monthly Total		0.2

Table 3
 NPDES Monitoring for Non-Municipal Wastewater Discharges
 Outfall 006
 Fourth Quarter 2017

Facility Name: Columbia Sanitary Landfill & Yard Waste Compost
 Permit Number: MO-0112640
 County: Boone
 Owner: City of Columbia, Missouri
 Type of Facility: Sanitary Landfill & Yard Waste Compost Facility
 Required Frequency of Monitoring: Quarterly
 Report Period: Fourth Quarter 2017

Third Quarter 2017

Parameters	Units	Daily Maximum	Sample Type	Outfall 006 Collected 10/23/2017
Flow	MGD		Est	0.159
COD	mg/L	9	Grab	16.6
Settleable Solids	mL/L/hr		Grab	<0.1
Total Suspended Solids	mg/L	100	Grab	23
pH (field)	SU	6.5 - 9.0	Grab	8.2
Oil & Grease	mg/L	10	Grab	<0.1
TPH	mg/L		Grab	**
Aluminum	ug/L		Grab	802
Aluminum (dissolved)	ug/L		Grab	NS
Copper	ug/L		Grab	<0.5
Iron	ug/L	4000	Grab	630
Lead	ug/L		Grab	<20
Zinc	ug/L		Grab	13

NS - Not Sampled

**** TPH results were not obtained. Sample damaged in shipment from local lab to third party lab for analysis**
**** Another discharge event did not occur for a resample of Outfall 006.**

Table 3
 NPDES Monitoring for Non-Municipal Wastewater Discharges
 Outfall 005
 Fourth Quarter 2017

Facility Name: Columbia Sanitary Landfill & Yard Waste Compost
 Permit Number: MO-0112640
 County: Boone
 Owner: City of Columbia, Missouri
 Type of Facility: Sanitary Landfill & Yard Waste Compost Facility

Required Frequency of Monitoring: Quarterly
 Report Period: Fourth Quarter 2017

Third Quarter 2017

Parameters	Units	Daily Maximum	Sample Type	Outfall 005 No Discharge
Flow	MGD		Est	ND
COD	mg/L		Grab	ND
Settleable Solids	mg/L		Grab	ND
Total Suspended Solids	mg/L		Grab	ND
pH (field)	SU	6.5 - 9.0	Grab	ND
Oil & Grease	mg/L		Grab	ND
Aluminum, Total Recoverable	ug/L		Grab	ND
Copper, Total Recoverable	ug/L		Grab	ND
Iron, Total Recoverable	ug/L		Grab	ND
Lead, Total Recoverable	ug/L		Grab	ND
Zinc, Total Recoverable	ug/l		Grab	ND

ND - No Discharge

NPDES Monitoring for Non-Municipal Wastewater Discharges
Outfalls 002, 003, 004, and 007
Fourth Quarter 2017

Facility Name: Columbia Sanitary Landfill & Yard Waste Compost Required Frequency of Monitoring: Quarterly
 Permit Number: MO-0112640 Report Period: Fourth Quarter 2017

County: Boone
 Owner: City of Columbia, Missouri
 Type of Facility: Sanitary Landfill & Yard Waste Compost Facility

Fourth Quarter 2017

Parameters	Units	Daily Maximum	Sample Type	Outfall 002 Results	Outfall 003 Results	Outfall 004 Results Collected on: 10-23-2017	Outfall 007 Results
Flow	MGD		Est	ND	ND	0.0076	ND
Chemical Oxygen Demand	mg/L	90	Grab	ND	ND	19.7	ND
BOD5	mg/L		Grab	ND	ND	<6	ND
Total Suspended Solids	mg/L	80	Grab	ND	ND	21	ND
pH (field)	SU	6.5 - 9.0	Grab	ND	ND	7.7	ND
Settleable solids	mL/L		Grab	ND	ND	<0.1	ND
Ammonia as N	mg/L		Grab	ND	ND	<0.3	ND
Nitrogen, total	mg/L		Grab	ND	ND	1.1	ND
Phosphorus, total	mg/L		Grab	ND	ND	0.06	ND
Oil & Grease	mg/L	10	Grab	ND	ND	<1.0	ND
Chloride + Sulfates	mg/L	1000	Grab	ND	ND	551.9	ND
Fluoride	mg/L		Grab	ND	ND	33.9	ND
Sulfate	mg/L		Grab	ND	ND	0.41	ND
Benzene	ug/L		Grab	ND	ND	518	ND
Aluminum	ug/L		Grab	ND	ND	**	ND
Aluminum (dissolved)	ug/L		Grab	ND	ND	997	ND
Antimony	ug/L		Grab	ND	ND	NS	ND
Arsenic	ug/L		Grab	ND	ND	6	ND
Beryllium	ug/L		Grab	ND	ND	5	ND
Cadmium	ug/L		Grab	ND	ND	4	ND
Chromium	ug/L		Grab	ND	ND	5	ND
Chromium	ug/L		Grab	ND	ND	10	ND
Cobalt	ug/L		Grab	ND	ND	50	ND
Copper	ug/L		Grab	ND	ND	5	ND
Iron	ug/L	4000	Grab	ND	ND	1,190	ND
Lead	ug/L		Grab	ND	ND	20	ND
Mercury	ug/L		Grab	ND	ND	0.5	ND
Nickel	ug/L		Grab	ND	ND	20	ND
Selenium	ug/L		Grab	ND	ND	5	ND
Silver	ug/L		Grab	ND	ND	5	ND
Thallium	ug/L		Grab	ND	ND	2	ND
Zinc	ug/L		Grab	ND	ND	8	ND

**** Benzene results were not obtained. Sample damaged in shipment from local lab to third party lab for analysis**

**** Another discharge event didn't occur for a resample of Outfall 4**

NA - Not analyzed

ND - No Discharged

Highlighted cell indicated an exceedance of the daily maximum or monthly average limits

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
NPDES DISCHARGE MONITORING REPORT**

16 November 2017

L3782

Facility: Columbia Landfill Stormwater	Permit No.: MO-0112640	Sample Date: 23 October 2017
County: Boone	Frequency: Quarterly	Sample Time: 02:35 PM
Location: Columbia, Missouri	Sample Loc.: Effluent	Sample Type: Grab Sample
Outfall No.: 4	Flow, mgd:	Sample Temp: °C
Description: Stormwater	Collected By: Others	Weather:

Monitoring Period: 01 October 2017 To 31 December 2017 **Report Due:** 28 January 2018

PARAMETER	2462	UNITS	Detection	Method
Biochemical Oxygen Demand	<6	mg/l		
Chemical Oxygen Demand	19.7	mg/l		
Grease & Oil	< 1.0	mg/l		
pH	7.7	units		
Settleable Solids	<0.1	ml/hr		
Total Suspended Solids	21	mg/l		
Ammonia	<0.3	mg/l		
Chloride	33.9	mg/l		
Sulfate	518	mg/l		
Fluoride	0.41	mg/l		
Aluminum	0.997	mg/l		
Arsenic	<0.005	mg/l		
Cadmium	<0.005	mg/l		
Chromium	<0.010	mg/l		
Copper	<0.005	mg/l		
Iron	1.19	mg/l		

Comments: Benzene vials reported broken by PDC Laboratories

Analysis performed in strict accordance with sample holding times & test procedures outlined in "Standard Methods for the Examination of Water and Wastewater", latest edition

INSTRUCTIONS:

1. Date & sign one copy & retain for your records.
2. Date & sign one copy & mail to: **Department of Natural Resources**
Northeast Regional Office
1709 Prospect Drive
Macon, MO 63552

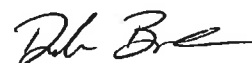
**OWNER
APPROVAL:**

DATE:

cc: Adam White
email: White

Engineering Surveys & Services

BY:



Derek J. Brester

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
NPDES DISCHARGE MONITORING REPORT**

16 November 2017
L3782

Facility: Columbia Landfill Stormwater	Permit No.: MO-0112640	Sample Date: 23 October 2017
County: Boone	Frequency: Quarterly	Sample Time: 02:35 PM
Location: Columbia, Missouri	Sample Loc.: Effluent	Sample Type: Grab Sample
Outfall No.: 4	Flow, mgd:	Sample Temp: °C
Description: Stormwater	Collected By: Others	Weather:

Monitoring Period: 01 October 2017 To 31 December 2017 **Report Due:** 28 January 2018

PARAMETER	2462	UNITS	Method
Lead	<0.02	mg/l	6020A
Selenium	<0.005	mg/l	6020A
Silver	<0.005	mg/l	6020A
Thallium	<0.002	mg/l	6020A
Zinc	0.008	mg/l	6020A
Antimony	0.006	mg/l	6020A
Cobalt	<0.050	mg/l	6020A
Mercury	<0.0005	mg/l	6020A
Nickel	0.02	mg/l	6020A
Digestion	yes		
Chromium, Trivalent	<0.010	mg/l	3500 Cr
Chromium, Hexavalent	<0.005	mg/l	3500 Cr D
Kjeldahl Nitrogen	1.1	mg/l	4500N org
Nitrate Nitrogen	<0.10	mg/l	SM16-418D
Nitrite Nitrogen	<0.005	mg/l	4500-NO2-B
Total Nitrogen	1.1	mg/l	

Comments:

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OWNER APPROVAL:

DATE:

cc: Adam White
email: White

Engineering Surveys & Services

BY:



Derek J. Brester

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
NPDES DISCHARGE MONITORING REPORT

16 November 2017
L3782

Facility: Columbia Landfill Stormwater **Permit No.:** MO-0112640 **Sample Date:** 23 October 2017
County: Boone **Frequency:** Quarterly **Sample Time:** 02:35 PM
Location: Columbia, Missouri **Sample Loc.:** Effluent **Sample Type:** Grab Sample
Outfall No.: 4 **Flow, mgd:** **Sample Temp:** °C
Description: Stormwater **Collected By:** Others **Weather:**
Monitoring Period: 01 October 2017 To 31 December 2017 **Report Due:** 28 January 2018

PARAMETER	2462	UNITS	Method
Phosphorous, Total	0.06	mg/l	4500PBE

Comments:

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Engineering Surveys & Services

BY:



Derek J. Brester

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
NPDES DISCHARGE MONITORING REPORT**

22 December 2017
L3782

Facility: Columbia Landfill Stormwater	Permit No.: MO-0112640	Sample Date: 23 October 2017
County: Boone	Frequency: Quarterly	Sample Time: 02:35 PM
Location: Columbia, Missouri	Sample Loc.: Effluent	Sample Type: Grab Sample
Outfall No.: 4	Flow, mgd:	Sample Temp: °C
Description: Stormwater	Collected By: Others	Weather:
Monitoring Period: 01 October 2017 To 31 December 2017		Report Due: <u>28 January 2018</u>

PARAMETER	2462	UNITS	Method
Phosphorous, Total	0.06	mg/l	4500PBE
Beryllium	<0.004	mg/l	6020A

Comments:

Analysis performed in strict accordance with sample holding times & test procedures outlined in "Standard Methods for the Examination of Water and Wastewater", latest edition

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**OWNER
APPROVAL:**

DATE:

cc: Adam White
email White

Engineering Surveys & Services

BY:

Derek J. Brester

SAMPLE CHAIN OF CUSTODY RECORD



Engineering Surveys and Services

1113 Fay Street * Columbia, Missouri 65201 * (573) 449-2646
 802 El Dorado Drive * Jefferson City, Missouri 65101 * (573) 636-3303
 1775 West Main Street * Sedalia, Missouri 65301 * (660) 826-8618

City of Columbia Landfill	Columbia Landfill Stormwater	Columbia, Missouri
ESS Lab No.: L3782	Outfall: 6	Facility: Stormwater
Sample Date: 10/23/17	Sample Time: 15:00	Sample Temp: deg C Sampled By: AJW

<u>Tests to be Performed</u>	<u>Container/Preservative</u>
Chemical Oxygen Demand	1000 p None
Grease & Oil	500 p H2SO4
pH	500 p HNO3
Settleable Solids	500 p HNO3
Total Suspended Solids	
Aluminum	
Copper	
Iron	
Lead	
Zinc	
Digestion	
GRO	

Additional Information:

Please Return Cooler

Relinquished by:

Received by:

Date and Time
 23 OCT 17
 3:30 p.m.

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
NPDES DISCHARGE MONITORING REPORT**

16 November 2017

L3782

Facility: Columbia Landfill Stormwater	Permit No.: MO-0112640	Sample Date: 23 October 2017
County: Boone	Frequency: Quarterly	Sample Time: 03:00 PM
Location: Columbia, Missouri	Sample Loc.: Effluent	Sample Type: Grab Sample
Outfall No.: 6	Flow, mgd:	Sample Temp: °C
Description: Stormwater	Collected By: Others	Weather:

Monitoring Period: 01 October 2017 To 31 December 2017 **Report Due:** 28 January 2018

PARAMETER	2463	UNITS	Detection	Method
Chemical Oxygen Demand	16.6	mg/l		
Grease & Oil	< 1.0	mg/l		
pH	8.2	units		
Settleable Solids	<0.1	ml/l/hr		
Total Suspended Solids	23	mg/l		
Aluminum	0.802	mg/l		
Copper	<0.005	mg/l		
Iron	0.63	mg/l		
Lead	<0.02	mg/l		
Zinc	0.013	mg/l		
Digestion	Yes			

Comments: GRO vials reported broken by PDC Laboratories

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