

CERTIFIED MAIL: 91 7199 9991 7030 4944 6555

February 2, 2017

City of Springfield Environmental Services Clean Water Operations Attn: Heather Hoggard 755 N. Franklin Ave. Springfield, Missouri 65802-4121

### RE: NABORS Landfill Leachate Report Wastewater Contribution Permit No. # 593 AFIN: 03-00051 Permits: 0249-S1-R2, 0249-S4 Document Identification Number: 70951

Dear Mrs. Hoggard:

The Arkansas Department of Environmental Quality – Office of Land Resources (ADEQ) respectfully submits the NABORS Landfill Leachate Report for the reporting period of September 12, 2016 through December 31, 2016. Attached is the Leachate Report and if you have any questions, please contact me at 501-682-0870 or lee@adeq.state.ar.us

Sincerely Weston Lee

Engineer Regulated Waste Operations – Office of Land Resources

913 681-0030 FAX 913 681-0012 www.scsengineers.com

### SCS ENGINEERS

January 23, 2017 File No. 27214218.01

Heather Hoggard City of Springfield Environmental Services 755 N. Franklin Ave. Springfield, MO 65802

Subject: NABORS Landfill Leachate Report Permit No. #593 1320 Landfill Road Mountain Home, AR 72653

Dear Ms. Hoggard:

On behalf of the Arkansas Department of Environmental Quality, SCS Engineers (SCS) is pleased to submit this semi-annual discharge monitoring report for NABORS Landfill. This report covers leachate discharges at the City of Springfield Southwest Wastewater Treatment Plant between September 12, 2016 (effective date of permit) and December 31, 2016.

A leachate sample was collected on December 29, 2016 and submitted for analysis for the required parameters listed in the permit. Reported concentrations were compared to the daily maximum permit effluent limitations (permit limits). No permit limits were exceeded for the December 29, 2016 sample.

Attached is the signed certification form, summary of the leachate sample results, leachate analytical report, and summary of discharge volumes.

SCS appreciates the opportunity to provide the NABORS Landfill leachate discharge monitoring report to the City of Springfield. If you have any questions or would like to further discuss this letter, please feel free to contact us at (913) 681-0030.

City of Springfield January 20, 2017 Page 2

Sincerely,

Bryan Roos

Bryan Ross Associate Staff Professional SCS ENGINEERS

br/fc

the) Left

Floyd Cotter Vice President/Project Director SCS ENGINEERS

Attachments: Certification Form Summary of Leachate Sample Results Leachate Analytical Report Summary of Discharge Volumes

## Discharge Monitoring Report Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my 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.

All samples and measurements taken are to the best of my knowledge representative of the permitted wastewater discharge.

All sampling, measurements, and analyses were conducted in accordance with guidelines prescribed in 40 CFR 136 and the Wastewater Contribution Permit obtained from the City of Springfield, Missouri.

annette Custier

Signature (Legibl

Engineer P.E. Branch Manager

labors Landfill

2/2/2017

### SUMMARY OF LEACHATE SAMPLE RESULTS

.

### NABORS LANDFILL Leachate Analytical Results December 29, 2016

	Daily Maximum	Result	Units
Arsenic, T	0.51	0.00607	mg/L
Cadmium, T	0.13	ND (0.001)	mg/L
Chromium, T	2.91	0.0148	mg/L
Copper, T	2.44	0.00184	mg/L
Cyanide, T	0.33	ND (0.005)	mg/L
Lead, T	0.53	0.00107	mg/L
Mercury, T	0.02	ND (0.0002)	mg/L
Nickel, T	5.79	0.0435	mg/L
Zinc, T	6.54	0.0147	mg/L
Oil & Grease (A/V)	100	ND (5.56)	mg/L
Ammonia Nitrogen	Monitoring Only	89.0	mg/L
Phosphorus, T	Monitoring Only	0.146	mg/L
pH (Field)	5.0 - 12.5	7.22	SU
Flashpoint	<140° F	Pass	-

ND - Non Detect

### LEACHATE ANALYTICAL REPORT





# ANALYTICAL REPORT

January 09, 2017



### SCS Engineers - Little Rock, AR

Sample Delivery Group:

Samples Received:

Project Number:

Description:

12/30/2016

L881542

Nabors Landfill

Report To:

Stacie Whitmer 11219 Richardson Drive North Little Rock, AR 72113

Entire Report Reviewed By:

Mark W. Beasley Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

### TABLE OF CONTENTS

<sup>1</sup> Cp: Cover Page	1
<sup>2</sup> Tc: Table of Contents	2
<sup>3</sup> Ss: Sample Summary	3
<sup>4</sup> Cn: Case Narrative	4
<sup>5</sup> Sr: Sample Results	5
OUTFALL 001 L881542-01	5
<sup>6</sup> GI: Glossary of Terms	6
<sup>7</sup> AI: Accreditations & Locations	7
<sup>8</sup> Sc: Chain of Custody	8



### SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

OUTFALL 001 L881542-01 WW			Collected by Darren Motley	Collected date/time 12/29/16 13:00	Received date/time 12/30/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 245.1	WG940362	1	01/04/17 15:13	01/05/17 13:06	NJB
Metals (ICPMS) by Method 200.8	WG940200	1	01/03/17 16:47	01/04/17 12:28	LAT
Metals (ICPMS) by Method 200.8	WG940471	1	01/06/17 06:41	01/07/17 15:00	JPD
Wet Chemistry by Method 1664A	WG940659	1	01/05/17 08:23	01/05/17 13:33	SHG
Wet Chemistry by Method 350.1	WG940830	10	01/07/17 15:25	01/07/17 15:25	DR
Wet Chemistry by Method 365.4	WG940096	1	01/03/17 16:58	01/04/17 12:00	DR
Wet Chemistry by Method 4500CN E-2011	WG940413	1	01/04/17 13:14	01/04/17 15:34	DR
Wet Chemistry by Method 4500H+ B-2011	WG940363	1	01/04/17 12:24	01/04/17 12:24	MHM
Wet Chemistry by Method D93/1010A	WG939723	1	01/03/17 11:10	01/03/17 11:10	KK

36

### CASE NARRATIVE

All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been knowledge have been knowledge and that the same been knowledge have been knowledge.

have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley Technical Service Representative

#### Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID

Project Sample ID OUTFALL 001 Method 4500H+ B-2011

#### OUTFALL 001 Collected date/time: 12/29/16 13:00

## SAMPLE RESULTS - 01

Wet Chemistry by	Method 1	664A						10
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	Cp
Analyte	ug/l		ug/l	ug/I		date / time		2
Oil & Grease (Hexane Extr)	U		1160	5560	1	01/05/2017 13:33	WG940659	Tc
Wet Chemistry by	Method 3	350.1						<sup>3</sup> Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/I	ug/l		date / time		4 Cn
Ammonia Nitrogen	89000		317	1000	10	01/07/2017 15:25	WG940830	Cir
Wet Chemistry by	Method 3	365.4						<sup>#</sup> Sr
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	6
Analyte	ug/ł		ug/l	ug/l		date / time		GI
Phosphorus, Total	146	B	35.0	100	1	01/04/2017 12:00	WG940096	
		FORCHE	2011					7 AI

#### Wet Chemistry by Method 4500CN E-2011

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	8
Analyte	ug/I		ug/l	ug/i		date / time		50
Cyanide	U		1.80	5.00	1	01/04/2017 15:34	WG940413	

### Wet Chemistry by Method 4500H+ B-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	SU			date / time	
pH	7.30		1	01/04/2017 12:24	WG940363

#### Sample Narrative:

4500H+ B-2011 L881542-01 WG940363: 7.30 at 18.2c

#### Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	deg F			date / time	
Flashpoint	DNF at 170 F		1	01/03/2017 11:10	WG939723

#### Mercury by Method 245.1

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Mercury	U	J6 O1	0.0490	0.200	1	01/05/2017 13:06	WG940362

### Metals (ICPMS) by Method 200.8

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Arsenic	6.07		0.170	1.00	1	01/04/2017 12:28	WG940200	
Cadmium	U		0.220	1.00	1	01/04/2017 12:28	WG940200	
Chromium	14.8		0.320	1.00	1	01/04/2017 12:28	WG940200	
Copper	1.84		0.270	1.00	1	01/04/2017 12:28	WG940200	
Lead	1.07		0.260	1.00	1	01/04/2017 12:28	WG940200	
Nickel	43.5		0.320	1.00	1	01/04/2017 12:28	WG940200	
Zinc	14.7		1.91	10.0	1	01/07/2017 15:00	WG940471	

### GLOSSARY OF TERMS

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
U	Not detected at the Reporting Limit (or MDL where applicable).

Qualifier	Description
В	The same analyte is found in the associated blank.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
01	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.



### ACCREDITATIONS & LOCATIONS

ONE LAB, NATIONWIDE.

Tc

Ss

Cn

Sr

GI

Sc

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**. \* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

#### State Accreditations

A2LA - ISO 17025 1461.01		AIHA 100	0789
Third Party & Federal A	ccreditations		
Nebraska	NE-OS-15-05		
Montana	CERT0086	Wyoming	A2LA
Missouri	340	Wisconsin	9980939910
Mississippi	TN00003	West Virginia	233
Minnesota	047-999-395	Washington	C1915
Michigan	9958	Virginia	109
Massachusetts	M-TN003	Vermont	VT2006
Maryland	324	Utah	6157585858
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Louisiana	AI30792	Texas	T 104704245-07-TX
Kentucky <sup>2</sup>	16	Tennessee 14	2006
Kentucky '	90010	South Dakota	n/a
Kansas	E-10277	South Carolina	84004
lowa	364	Rhode Island	221
Indiana	C-TN-01	Pennsylvania	68-02979
Illinois	200008	Oregon	TN200002
Idaho	TN00003	Okiahoma	9915
Georgia 1	923	Ohio-VAP	CI 0069
Georgia	NELAP	North Dakota	R-140
Florida	F87487	North Carolina <sup>2</sup>	41
Conneticut	PH 0197	North Carolina 1	DW21704
Colorado	TNOOOO3	North Carolina	Fnv375
California	0115704	New Wexico	11742
Arkansas	A20612	New Mexico	110002
Alaska	051-080	New Hampshire	2975
Alabama	40660	Nevada	IN-03-2002-34

<sup>1</sup> Drinking Water <sup>2</sup>. Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup>. Mold <sup>40</sup> Accreditation not applicable

#### Our Locations

ACCOUNT:

SCS Engineers - Little Rock, AR

Canada

EPA-Crypto

1461.01

TN00003

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.

USDA

S-67674



				Billing Information & Quote Number:				Analysis / Container / Preservative						Chain of Custod	Pageof
SCS Engineers - Little Rock, AR 11219 Richardson Drive North Little Rock, AR 72113 Report to: Stacie Whitmer		Account 11219 R N. Little	Accounts Payable 11219 Richardson Drive N. Little Rock, AR 72113 Email To: swhitmer@scsengineers.com					Nill State						ESC	
		Email To: I									1		12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 605-758-5858		
Project Description: Nabors Landfill		in B	City/State MtM, (407-C)) Collected:			HO	H	N	N				Far: 615-756-5859		
Phone: 501-812-4551 Fax:	2-4551 Client Project #		n whi	Lab Project # CHIROCKAR-NABORS			mb-Na(	-NoPre	NoPres	2504 4				J163	
Collected by (print): Destrey Motley	Site/Facility ID #			P.O. #				IAmb-	DE-HI	DPE-H	DH PD	NoPre		Acctnum: CHIROCKAR	
Collected by (signature):	ediately ed on ice N Y Y		Notified)	Date Results Needed			Somit	t 250m	OmiHE	SomiH	-CIr-A	HDPE		Prelogin: P582450 TSR: 134 - Mark W. Beasley	
mmediately Packed on Ice N YY			50%	FAX?_	P_NO _Yes		nide 7	hpoin	tals 25	3, PT 2	HEX 1	125m		PB 7-7-6-10	
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	Cya	Flas	Me	HN	00	Hd		Rem/Contaminan	Sample # (lab on),
OUTFALL 001	6	ww	15 347	12-29-16	1300	6	X	X	x	X	X	x		10-2	-01
			-	1.00					1		134			1 100	123
	1100				-				1 per						Service .
	Ser March	Contract of	1.1				21		-	1	34				1.000
					-						200			10-12	and the set
81 11 11	11. 1997	12.011.01	1.44			1	1		1.181		1	1			
1.1.1	1.1.1.1.1.1	3. 1	199	2		1	-		200		12				and the second
743	1				1.5.1.6		100	1		1.1	1				and the second
25						1		1	200		12		1000		Contract
3						1			and a			-			
Matrix: \$\$ - Soil GW - Groundwater lemarks:Metals = As,Cd,Cr,Cu	WW - WasteW ,Hg,Ni,Pb,Zn	ater DW - D	inking Wate	er OT - Other_6	<u>v</u>					pH _		Temp	Hold #	8914 70	242
Relinquished by : (Signature)		Date:		Time:	Received by: (Sign	at ire)				Sample	s return	ned via: UPS	Conditio	n: (lab	use only)
Dame     12-29       Relinquished by : (Signature)     Date:   Date:		1-14	1310			2			Temp: "C Bottles Received:			COC Seal Intact:YNNA pH Checked: NCF: <2712			
			Time:	: Received by: (Signature)											
			ime: Received for lab by: (Signature)				Date: Time: 900				Time: 900				PH Check



#### YOUR LAS OF CHOICE

Cooler	Receipt Form				
Client: CHIROCKAR	SI	DG#	8815	42	
Cooler Received/Opened On: 12/ 30/16	eipt:	3, °c			
Received By: Richard Hughes					
Signature: 2		-			
Receipt Check	List		Yes	No	N/A
Were custody seals on outside of cooler and intact	?		1		
Were custody papers properly filled out?	N. C. Canada and States of States		-	12	124
Did all bottles arrive in good condition?			3		
Were correct bottles used for the analyses request	ed?	1.2.2	1-3	8	and a
Was sufficient amount of sample sent in each bott	le?				1
Were all applicable sample containers correctly pro	eserved and			-	
checked for preservation? (Any not in accepted ran	nge noted on COC)		an were		The set
If applicable, was an observable VOA headspace pr	esent?				-
Non Conformance Generated. (If yes see attached	NCF)		1000	1	

### SCS FIELD SERVICES

### Field Groundwater Sampling Record

Facility Nahars	Date 12-29-14	Well No. Leadate OutFallout
Sampling Personnal 0M	OCOISCHARGE YOU WES	Valance
Casing Diameter	Condition of well	Locked?
Well Depth	DTW (from TOC)	Volume H2O in well
Other Information Sunna	510	
2000	in ward	
• /		

Dete	Time	Volume (gallons)	pH (SU)	Temp (°C)	D.O. (mg/L)	ORP (mV)	S.C (µSm)	Turbidity (NTU)
12.29-16	1300		7.22	8.9		181.2	3255	93.5
	-							
					1			

Sampling Date & Time

Notes

### SUMMARY OF DISCHARGE VOLUMES

### NABORS LANDFILL Leachate Discharge Volumes

Date	Volume (gallops)
Sontombor 0, 2016	6 000
September 9, 2010	12,000
September 12, 2010	12,000
September 13, 2016	12,000
September 14, 2016	6,000
September 19, 2016	12,000
September 27, 2016	12,000
October 4, 2016	12,000
October 10, 2016	6,000
October 11, 2016	12,000
October 17, 2016	12,000
October 18, 2016	6,000
October 24, 2016	6,000
October 25, 2016	12,000
October 26, 2016	12,000
October 31, 3016	12,000
November 1, 2016	6,000
November 2, 2016	12,000
November 7, 2016	12,000
November 8, 2016	6,000
November 9, 2016	6,000
November 14, 2016	12,000
November 15, 2016	6,000
November 21, 2016	12,000
November 22, 2016	6,000
December 12, 2016	12,000
December 13, 2016	12,000
Total	252,000



### **REGULATED WASTE OPERATIONS, OFFICE OF LAND RESOURCES ROUTING SLIP**

February 2, 2017

Subject: NABORS Landfill leachate report

From: Weston Lee

<u>Route in turn to:</u>	Action Needed	Date Received	Date Reviewed	<u>Initials</u>
A. Cusher	Concurrence Review	2/2	2/2	AC
T. Hynum	Concurrence Review	2/2/17	2/2/17	A

\*Note: Marking the Concurrence box indicates the individual agrees with the applicable text as it relates to their individual discipline and Work Section (e.g., Engineer; Risk Assessor; Geology; Compliance; Policy/Management), as applicable. Marking the Review box indicates the individual has read the document.

Return to Weston Lee for distribution COMMENTS: