

January 20, 2023

Ms. Heather Hoggard  
 Pretreatment Inspector  
 Springfield Clean Water Services  
 755 N. Franklin Avenue  
 Springfield, MO 65802

**Re: Semi-Annual Leachate Report  
 Second Half 2022  
 NABORS Landfill  
 Mountain Home, Arkansas  
 Wastewater Contribution Permit No. 593**

Dear Ms. Hoggard:

On behalf of the Arkansas Department of Energy and Environment Division of Environmental Quality (DEQ), please find attached the results of leachate analysis for the Second Half 2022 reporting period for the referenced facility. A total of 180,000 gallons of leachate was generated during the reporting period.

The leachate generated at the NABORS Landfill is transported to the City of Springfield, MO wastewater collection system under Wastewater Contribution Permit #593. A sample of the leachate plus a duplicate sample was collected on October 20, 2022 and submitted for laboratory analysis. None of the detected concentrations exceeded the permit requirements. Table 1 below summarizes the analytical methods and results of the analyses. The metals results were converted from micrograms per liter to milligrams per liter for comparison to permit requirements.

**Table 1 – Summary of Leachate Analytical Results – October 2022**

Parameter	Analytical Method	Units	Permit Requirement	Leachate	Leachate Duplicate
Ammonia as N	SM 4500-NH3 B,D,C-2011	mg/L	Monitoring Requirement Only	<b>219</b>	<b>222</b>
Cyanide (total)	SM 4500-CN B,E-2011	mg/L	0.33	< 0.010	< 0.010
Flashpoint	SW 1010A, Rev 1, 2004	°C	<140°F	Did Not Flash	Did Not Flash
Oil and Grease	EPA 1664 Mod, Rev. B 2010	mg/L	100	< 5.00	< 5.38
pH	EPA 150.2 (1982)	S.U.	5.0 (minimum) 12.5 (maximum)	<b>6.71</b>	<b>6.71</b>
Arsenic	EPA 200.8 Rev 5.4 (1994)	mg/L	0.51	<b>0.0377</b>	<b>0.0346</b>

Parameter	Analytical Method	Units	Permit Requirement	Leachate	Leachate Duplicate
Cadmium	EPA 200.8 Rev 5.4 (1994)	mg/L	0.13	< 0.0065	< 0.0065

**Table 1 – Summary of Leachate Analytical Results – October 2022 (Continued)**

Parameter	Analytical Method	Units	Permit Requirement	Leachate	Leachate Duplicate
Chromium	EPA 200.8 Rev 5.4 (1994)	mg/L	2.91	<b>0.0171</b>	<b>0.0162</b>
Copper	EPA 200.8 Rev 5.4 (1994)	mg/L	2.44	< 0.00988	< 0.00988
Lead	EPA 200.8 Rev 5.4 (1994)	mg/L	0.53	< 0.00650	< 0.00650
Mercury	SW7470A/EPA245.1,3.0 (1994)	mg/L	0.02	< 0.00200	< 0.00200
Nickel	EPA 200.8 Rev 5.4 (1994)	mg/L	5.79	<b>0.133</b>	<b>0.125</b>
Phosphorus	EPA 200.8 Rev 5.4 (1994)	mg/L	Monitoring Requirement Only	< 1.04	< 1.04
Zinc	EPA 200.8 Rev 5.4 (1994)	mg/L	6.54	< 0.52	< 0.52

Notes: S.U. – standard units; °C – degrees Celsius; mg/L – milligrams per liter; metals results converted from micrograms per liter to milligrams per liter for comparison to permit requirements.

Also attached is the signed Certification Statement. Let me know if you have any questions or need additional information. Please contact either of the undersigned at 501-663-8800 or via email.

Sincerely,



Thomas A. Huetter, P.G.  
Senior Project Manager  
[thuetter@harborenv.com](mailto:thuetter@harborenv.com)



Leslie Davis  
Principal  
[ldavis@harborenv.com](mailto:ldavis@harborenv.com)

cc: Jarrod Zweifel, P.G.  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

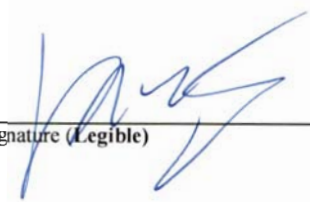
Attachments: *Laboratory Analytical Report*  
*Certification Statement*

# 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.

  
Signature (Legible) JARROD ZWEIFEL

ASSOCIATE DIRECTOR, LAND RESOURCES  
Title

NABORS LANDFILL - ARKANSAS  
Name of Facility

1/20/2023  
Date



8100 National Dr. - Little Rock, AR 72209  
501-455-3233 Fax 501-455-6118

01 November 2022

Tom Huetter  
Harbor Environmental & Safety  
5800 Evergreen Dr.  
Little Rock, AR 72205

Project: NABORS Landfill Leachate Sample(s)

Project Number: October 2022

SDG Number: 2210404

Enclosed are the results of analyses for samples received by the laboratory on 20-Oct-22 15:28. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

<u>Custody Seals</u>	✓
<u>Containers Correct</u>	✓
<u>COC/Labels Agree</u>	✓
<u>Received On Ice</u>	✓
Temperature on Receipt	2.0°C

Sincerely,

A handwritten signature in cursive script that reads "Norma James".

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Norma James  
Technical Director

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01 November 2022



Tom Huetter  
Harbor Environmental & Safety  
5800 Evergreen Dr.  
Little Rock, AR 72205  
Project: NABORS Landfill Leachate Sample(s)  
Project Number: October 2022  
Date Received: 20-Oct-22 15:28

**CASE NARRATIVE**

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Sample Delivery Group – 2210404

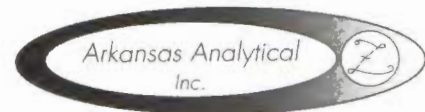
**One OR more of the qualifiers described below may appear in this report. Qualifiers in RED apply to this SDG (Sample Delivery Group).**

**FLASHPOINT QUALIFIER:**

<u>Qualifier</u>	<u>Description</u>
DNF	Did Not Flash at or below method required temperature of 100 degrees C or 212 degrees F

**SAMPLE RECEIPT QUALIFIERS:**

<u>Qualifier</u>	<u>Description</u>
ET	Samples received above required temperature (6°C).
ET	Samples received above required temperature. Although collected and received the same day, no ice was present to indicate the cooling preservation was attempted.
E2	Result qualified as it was received and analyzed outside of holding time. Analysis is considered a "Field" analysis.
E2	Result qualified as it was received and/or analyzed outside of holding time.
E3	Result qualified as it was received in the incorrect container and/or preservation.



**Tom Huetter**  
**Harbor Environmental & Safety**  
**5800 Evergreen Dr.**  
**Little Rock, AR 72205**  
**Project: NABORS Landfill Leachate Sample(s)**  
**Project Number: October 2022**  
**Date Received: 20-Oct-22 15:28**

**ANALYTICAL RESULTS**

**Lab Number:** 2210404-01  
**Sample Name:** Leachate  
**Date/Time Collected:** 10/20/22 11:55  
**Sample Matrix:** Leachate

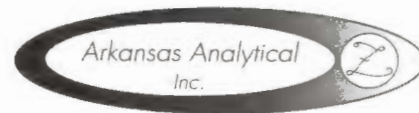
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Arsenic	ug/L	37.7		10/31/22 16:07	B210552	EPA 200.8, Rev. 5.4(1994)
Cadmium	ug/L	< 6.50		10/31/22 16:07	B210552	EPA 200.8, Rev. 5.4(1994)
Chromium	ug/L	17.1		10/31/22 16:07	B210552	EPA 200.8, Rev. 5.4(1994)
Copper	ug/L	< 9.88		10/31/22 16:07	B210552	EPA 200.8, Rev. 5.4(1994)
Lead	ug/L	< 6.50		10/31/22 16:07	B210552	EPA 200.8, Rev. 5.4(1994)
Mercury	ug/L	< 2.00		10/24/22 13:11	B210468	SW7470A/EPA245.1,3.0- 1994
Nickel	ug/L	133		10/31/22 16:07	B210552	EPA 200.8, Rev. 5.4(1994)
Phosphorus	mg/L	< 1.04		10/24/22 11:35	B210467	EPA 200.7, Rev 4.4 (1994)
Zinc	ug/L	< 520		10/31/22 16:07	B210552	EPA 200.8, Rev. 5.4(1994)
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	219		10/25/22 7:03	B210486	SM 4500-NH3 B,D,C-2011
Cyanide (total)	mg/L	< 0.010		10/25/22 14:00	B210491	SM 4500-CN B,E-2011
Flashpoint	°C	Did Not Flash	DNF*	10/26/22 10:00	B210506	SW 1010A, Rev 1, 2004
Oil and Grease	mg/L	< 5.00		10/25/22 10:42	B210488	EPA1664 Mod, Rev B 2010
pH	S.U.	6.71	E2	10/24/22 14:23	B210485	SM 4500-H+ B-2011

**ANALYTICAL RESULTS**

**Lab Number:** 2210404-02  
**Sample Name:** Leachate Duplicate  
**Date/Time Collected:** 10/20/22 11:51  
**Sample Matrix:** Leachate

<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Arsenic	ug/L	34.6		10/31/22 16:11	B210552	EPA 200.8, Rev. 5.4(1994)
Cadmium	ug/L	< 6.50		10/31/22 16:11	B210552	EPA 200.8, Rev. 5.4(1994)
Chromium	ug/L	16.2		10/31/22 16:11	B210552	EPA 200.8, Rev. 5.4(1994)
Copper	ug/L	< 9.88		10/31/22 16:11	B210552	EPA 200.8, Rev. 5.4(1994)
Lead	ug/L	< 6.50		10/31/22 16:11	B210552	EPA 200.8, Rev. 5.4(1994)
Mercury	ug/L	< 2.00		10/24/22 13:14	B210468	SW7470A/EPA245.1,3.0- 1994
Nickel	ug/L	125		10/31/22 16:11	B210552	EPA 200.8, Rev. 5.4(1994)
Phosphorus	mg/L	< 1.04		10/24/22 11:37	B210467	EPA 200.7, Rev 4.4 (1994)
Zinc	ug/L	< 520		10/31/22 16:11	B210552	EPA 200.8, Rev. 5.4(1994)
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	222		10/25/22 7:03	B210486	SM 4500-NH3 B,D,C-2011
Cyanide (total)	mg/L	< 0.010		10/25/22 14:00	B210491	SM 4500-CN B,E-2011
Flashpoint	°C	Did Not Flash	DNF*	10/26/22 10:00	B210506	SW 1010A, Rev 1, 2004
Oil and Grease	mg/L	< 5.38		10/25/22 10:42	B210488	EPA1664 Mod, Rev B 2010
pH	S.U.	6.71	E2	10/24/22 14:23	B210485	SM 4500-H+ B-2011

01 November 2022



Tom Huetter  
 Harbor Environmental & Safety  
 5800 Evergreen Dr.  
 Little Rock, AR 72205  
 Project: NABORS Landfill Leachate Sample(s)  
 Project Number: October 2022  
 Date Received: 20-Oct-22 15:28

**QUALITY CONTROL RESULTS**

**Total Metals -- Batch: B210467 (Water)**  
 Prepared: 24-Oct-22 10:07 By: BS -- Analyzed: 24-Oct-22 11:30 By: BS

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Phosphorus	<0.042 mg/L	102% / NA	100% / 103%		0.559%	

**Total Metals -- Batch: B210468 (Water)**  
 Prepared: 24-Oct-22 10:11 By: BS -- Analyzed: 24-Oct-22 11:41 By: BS

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Mercury	<0.200 ug/L	102% / NA	106% / 105%		1.15%	

**Wet Chemistry -- Batch: B210485 (Water)**  
 Prepared: 24-Oct-22 08:37 By: CJ -- Analyzed: 24-Oct-22 08:37 By: CJ

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
pH	NA	100% / 99.7%	NA / NA		0.286%	

**Wet Chemistry -- Batch: B210486 (Water)**  
 Prepared: 25-Oct-22 07:03 By: MB -- Analyzed: 25-Oct-22 07:03 By: MB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.500 mg/L	89.7% / NA	89.7% / 91.5%		1.87%	

**Wet Chemistry -- Batch: B210488 (Water)**  
 Prepared: 25-Oct-22 10:42 By: BS -- Analyzed: 25-Oct-22 10:42 By: BS

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Oil and Grease	<5.00 mg/L	91.1% / 96.1%	89.5% / NA		5.34%	

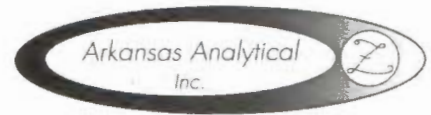
**Wet Chemistry -- Batch: B210491 (Water)**  
 Prepared: 25-Oct-22 10:55 By: JH -- Analyzed: 25-Oct-22 10:55 By: JH

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Cyanide (total)	<0.010 mg/L	113% / 111%	110% / NA		1.79%	

**Wet Chemistry -- Batch: B210506 (Water)**  
 Prepared: 26-Oct-22 08:07 By: CNW -- Analyzed: 26-Oct-22 10:00 By: CNW

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Flashpoint	NA	111% / 111%	NA / NA		0.00%	

01 November 2022



Tom Huetter
Harbor Environmental & Safety
5800 Evergreen Dr.
Little Rock, AR 72205
Project: NABORS Landfill Leachate Sample(s)
Project Number: October 2022
Date Received: 20-Oct-22 15:28

QUALITY CONTROL RESULTS

Total Metals -- Batch: B210552 (Water)
Prepared: 27-Oct-22 14:58 By: ST -- Analyzed: 31-Oct-22 13:34 By: ST

Table with 7 columns: Analyte, BLK, LCS / LCSD, MS / MSD, Dup, RPD, Qualifiers. Rows include Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, and Zinc.

QUALIFIER(S)

\*DNF\*: Did not flash at or below method required temperature of 100 degrees C or 212 degrees F.
\*E2\*: Estimated Result; Analyzed Outside of Holding Time

All Analysis performed according to EPA approved methodology when available :
SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods.
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

Handwritten signature of Norma James

Reviewed by: Norma James
Technical Director





8100 National Drive  
 Little Rock, AR 72209  
 PHONE: 501-455-3233  
 FAX: 501-455-6118

# CHAIN OF CUSTODY RECORD

CLIENT INFORMATION				Project Description			Turnaround Time		Preservation Codes:							
Harbor Environmental & Safety				NABORS Landfill			1 Day (100%)		1. Cool, 6 Degrees Centigrade			4. Thiosulfate for Dechlorination				
5800 Evergreen Dr.				Leachate Sample			2 Day (50%)		2. Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> ), pH < 2			5. Hydrochloric Acid(HCl)				
Little Rock, AR 72205				Reporting Information			3 Day (25%)		3. Nitric Acid (HNO <sub>3</sub> ), pH < 2			6. Sodium Hydroxide (NaOH), pH > 12				
Attn: Tom Huetter				Telephone: 501-663-8800			5 Day (Routine)		TEST PARAMETERS						Bottle Type Code	
Email: thuetter@harborenv.com				Preservative Code:			1	1,2	1,6	1,2	1,3					G Glass; P Plastic
				Bottle Type:			P	P	P	GA	P					V - Septum, A - Amber
Sampler(s) Signature				Sampler(s) Printed			Flashpoint, pH	Ammonia	Cyanide	Oil and Grease	P (200.7), Hg	200.8-(As, Cd, Cr, Cu, Pb, Ni, Zn)				Arkansas Analytical Work Order Number: 2210404
Field Number	SAMPLE COLLECTION		Grab	Comp	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION		Flashpoint, pH	Ammonia	Cyanide	Oil and Grease	P (200.7), Hg	200.8-(As, Cd, Cr, Cu, Pb, Ni, Zn)		
Leachate	10/20/22	1155	X		5	Liquid	Leachate	X	X	X	X	X				01
Leachate Dup	↓	1151	X		5	Liquid	Leachate Duplicate	X	X	X	X	X				02
1. Relinquished by: (Signature)		Date/Time		2. Received by: (Signature)		SAMPLE CONDITION UPON RECEIPT IN LAB				REMARKS / SAMPLE COMMENTS						
		10/20/22 1528				1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes ___ No										
						2. CONTAINERS CORRECT: <input type="checkbox"/> Yes ___ No										
						3. COC/LABELS AGREE: <input type="checkbox"/> Yes ___ No										
3. Relinquished by: (Signature)		Date/Time		4. Received by lab: (Signature)		4. RECEIVED ON ICE: <input type="checkbox"/> Yes ___ No										
						5. TEMPERATURE ON RECEIPT: 2 °C										
						6. TEMPERATURE GUN ID: HHT# 5										
FOR COMPLETION BY LAB ONLY																