

DATE: April 12, 2023

TO: Clay McDaniel, *Engineer, Division of Environmental Quality*  
*Office of Land Resources, Assessment and Remediation, Technical Branch*

FROM: Thomas Huetter, PG, *Harbor Senior Project Manager*

RE: **Explosive Gas Monitoring**  
**NABORS Landfill**  
*Harbor Project No: ADEQ-22515*

AFIN: 03-00051

PMT#: 0249-S1-R2

**Received**

*By Kacy Murillo at 1:23 pm, Apr 20, 2023*

DOC ID#: 83902

TO: MM>FILE <KM

As part of the NABORS landfill groundwater monitoring field work, Harbor conducted explosive gas (methane) monitoring of the existing site perimeter gas probes on site. An RKI Eagle 2 multi-gas monitor was utilized to methane (CH<sub>4</sub>) in percent lower explosive limit (% LEL) from 0 – 100%, (or percent CH<sub>4</sub> if greater than 100% LEL), oxygen (O<sub>2</sub>) in percent volume, carbon monoxide (CO) in parts per million (ppm), and hydrogen sulfide (H<sub>2</sub>S) in ppm. Results of the explosive gas monitoring are summarized in the table below.

<b>NABORS Landfill</b>	
Semi-Annual Explosive Gas Monitoring – October 2022	
<b>Weather Conditions:</b>	Clear, windy, mid 70s to low 80s

Sample Point	Date	Time	CH <sub>4</sub> (% LEL)	% CH <sub>4</sub>	% O <sub>2</sub>	CO	H <sub>2</sub> S
GP-1	10/3/22	1522	2	—	6.5	0	0.0
GP-2	10/3/22	1326	0	—	19.8	0	0.0
GP-3	10/3/22	1318	0	—	16.4	0	0.0
GP-4	10/3/22	1336	0	—	18.4	0	0.0
GP-5	10/3/22	1349	0	—	12.1	0	0.0
GP-6	10/3/22	1355	0	—	19.1	0	0.0
GP-7	10/3/22	1401	0	—	19.8	0	0.0
GP-8	10/3/22	1406	0	—	11.7	0	0.0
GP-9	10/3/22	1412	0	—	17.8	0	0.0
GP-10	10/3/22	1418	0	—	16.8	0	0.0
GP-11	10/3/22	1446	0	—	14.1	0	0.0
GP-12	10/3/22	1431	0	—	3.7	0	0.0
GP-13	10/3/22	—	—	—	—	—	—
GP-14	10/3/22	1515	0	—	17.8	0	0.0
GP-14R	10/3/22	1537	0	—	16.2	0	0.0
GP-15	10/3/22	1503	0	—	18.6	0	0.0

Sample Point	Date	Time	CH <sub>4</sub> (% LEL)	% CH <sub>4</sub>	% O <sub>2</sub>	CO	H <sub>2</sub> S
GP-16	10/3/22	1127	>100	78.5	3.0	0	0.0
GP-16R	10/3/22	1509	0	—	22.8	0	0.0
GP-17	10/3/22	1146	1	—	16.3	0	0.0
GP-18	10/3/22	1207	>100	10.5	3.5	0	0.0
GP-18R	10/3/22	1230	5	—	13.1	0	0.0
Main Office Area	10/3/22	1439	0	—	20.9	0	0.0
Second Office	10/3/22	1439	0	—	20.9	0	0.0
Restroom/Storage	10/3/22	1439	0	—	20.9	0	0.0
Scale House	10/3/22	1422	0	—	20.9	0	0.0

The lock at gas monitoring point GP-13 was rusted and could not be opened. As such, no data was collected for this point. Methane was detected in GP-1, GP-17, and GP-18R at concentrations ranging from 1 to 5% LEL. Methane exceeded 100% LEL in GP-16 and GP-18 and was measured at concentrations ranging from 10.5 to 78.5 percent. No CO or H<sub>2</sub>S was detected in any of the gas probes. Other than normal levels of O<sub>2</sub>, no gas detections were measured in the scale house or office building. It should be noted that historically, no gas detections have occurred in the office building.

Harbor appreciates the opportunity to provide assistance on this project. We look forward to providing additional services to ADEQ in the future.

Sincerely,  
HARBOR



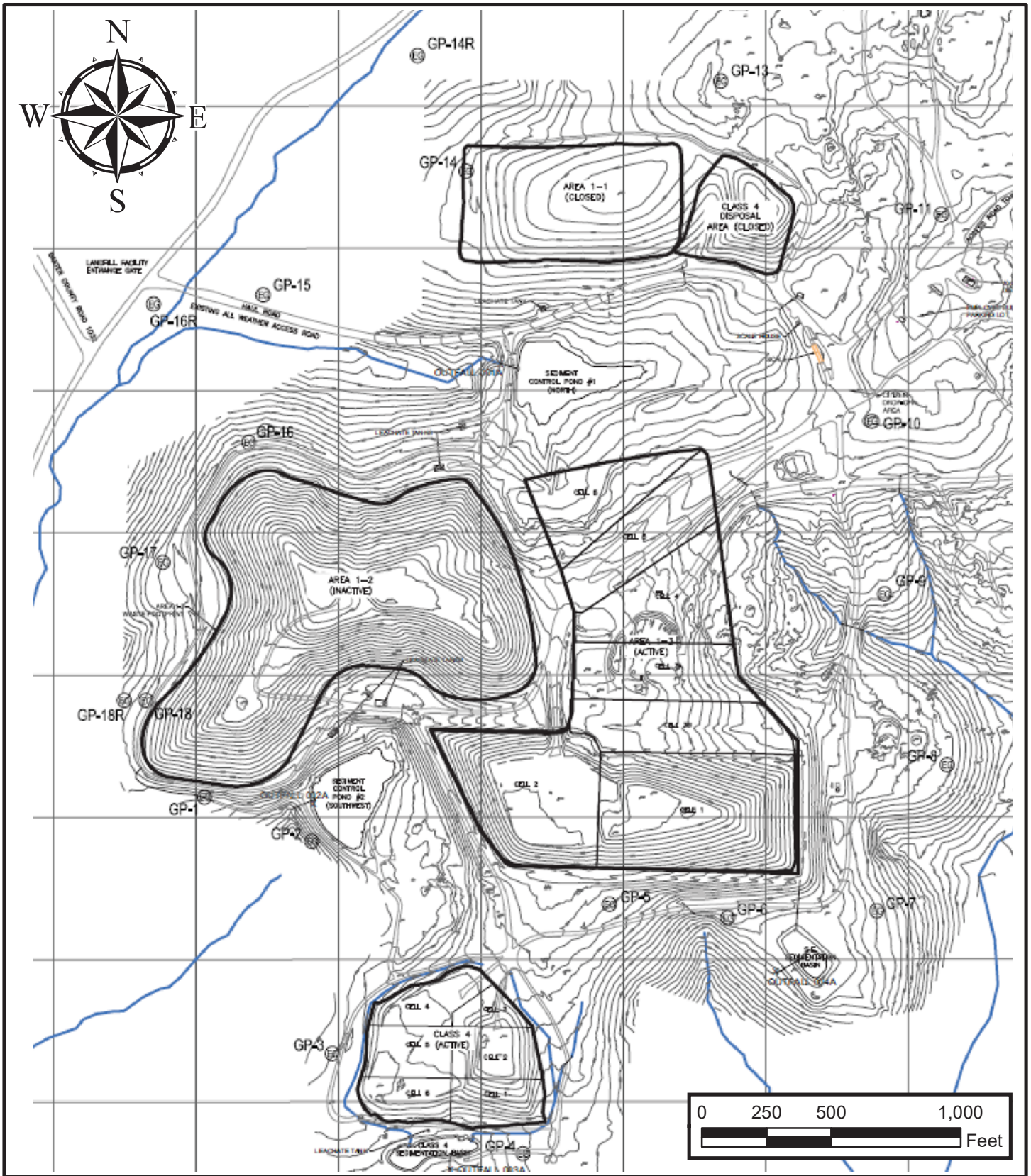
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**Attachments:**

*Sample Point Location Map*  
*Instrument Calibration Record*



**Harbor**  
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 501-663-8800  
 www.harborenv.com

**GAS MONITORING POINTS**  
 NABORS Landfill  
 Mountain Home  
 Baxter County, Arkansas

**DRAWN BY:** TH  
**CHECKED BY:** LR  
**DATE:** 10/24/2022  
**FIGURE NO.:**

**PROJECT NUMBER:**  
**ADEQ-22515**



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**1**



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## RKI Multi-Gas Detector Calibration Certificate

Fresh Air Oxygen	<b>Reading %</b>	<b>Acceptable Range</b>
	18.0	(17.5% - 18.5%) ▼

Cal Gas H2S	<b>Lot #</b>	<b>Expiration</b>	<b>Reading ppm</b>	<b>Acceptable Range</b>
	21-8206	09/27/23	10	(9 - 11) ▼

Cal Gas CO	<b>Lot #</b>	<b>Expiration</b>	<b>Reading ppm</b>	<b>Acceptable Range</b>
	21-8206	09/27/23	50	(48 - 52) ▼

Cal Gas Ch4 % LEL	<b>Lot #</b>	<b>Expiration</b>	<b>Reading %</b>	<b>Acceptable Range</b>
	21-8206	09/27/23	50	(48 - 52)

Cal Gas Ch4 %Vol	<b>Lot #</b>	<b>Expiration</b>	<b>Reading %</b>	<b>Acceptable Range</b>
	na			▼

Cal Gas	<b>Lot #</b>	<b>Expiration</b>	<b>Reading % / ppm</b>	<b>Acceptable Range</b>
▼	na			▼

Cal Gas	<b>Lot #</b>	<b>Expiration</b>	<b>Reading % / ppm</b>	<b>Acceptable Range</b>
▼	na			▼

Cal Gas VOC	<b>Lot #</b>	<b>Expiration</b>	<b>Reading ppm</b>	<b>Acceptable Range</b>
	21-8312	01/18/26	100	(98 - 102)

Model	Eagle 2 ▼		
S/N	E2F435	<b>Pump Flow</b>	
Barcode	u85452x	768	(630 - 770) ▼
Order #	497745		

Calibrated By Roderick Keels ▼

All calibrations performed by FEI conform to manufacturer's specifications. Please report any issues within 24 hours of receiving equipment.

All calibration gas used is traceable to NIST. Additional documentation is available upon request.