

DATE: August 15, 2024

TO: Emily Brickman, P.G., *Senior Project Manager – Geologist, EnSafe*

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

RE: Explosive Gas Monitoring
NABORS Landfill
Mountain Home, AR
Harbor Project No: ENSF-23299

Harbor conducted explosive gas (methane) monitoring of the existing site perimeter gas probes at the NABORS landfill site on May 13 – 14, 2024. An RKI Eagle 2 multi-gas monitor was utilized to measure methane (CH₄) in percent lower explosive limit (% LEL) from 0 – 100%, (or percent CH₄ if greater than 100% LEL), oxygen (O₂) in percent volume, carbon monoxide (CO) in parts per million (ppm), and hydrogen sulfide (H₂S) in ppm. Results of the explosive gas monitoring are summarized in the table below.

NABORS Landfill	
Semi-Annual Explosive Gas Monitoring – May 2024	
Weather Conditions:	Overcast, rainy, mid 60s

Sample Point	Date	Time	CH ₄ (% LEL)	% CH ₄	% O ₂	CO	H ₂ S
GP-1	5/13/24	1210	0	—	4.7	0	0.0
GP-2	5/13/24	1342	0	—	19.2	0	0.0
GP-3	5/13/24	1355	0	—	17.5	0	0.0
GP-4	5/13/24	1358	0	—	18.2	0	0.0
GP-5	5/13/24	1411	0	—	11.2	0	0.0
GP-6	5/13/24	1406	0	—	15.9	0	0.0
GP-7	5/13/24	1427	0	—	16.2	0	0.0
GP-8	5/13/24	1447	0	—	13.9	0	0.0
GP-9	5/13/24	1526	0	—	17.2	0	0.0
GP-10	5/13/24	1530	0	—	11.2	0	0.0
GP-11	5/13/24	1535	0	—	15.2	0	0.0
GP-12	5/14/24	1343	0	—	13.8	0	0.0
GP-13	5/14/24	1357	8	—	1.9	0	0.0
GP-14	5/14/24	1419	81	—	0.0	0	0.0
GP-14R	5/14/24	1408	0	—	16.1	0	0.0
GP-15	5/14/24	1431	0	—	10.6	0	0.0
GP-16	5/13/24	1117	>100	60	11.2	0	0.0

Sample Point	Date	Time	CH ₄ (% LEL)	% CH ₄	% O ₂	CO	H ₂ S
GP-16R	5/14/24	1435	0	—	20.9	0	0.0
GP-17	5/13/24	1126	0	—	10.9	0	0.0
GP-18	5/13/24	1156	>100	5.5	3.5	0	0.0
GP-18R	5/13/24	1154	0	—	10.2	0	0.0
Main Office Area	5/13/24	1539	0	—	20.9	0	0.0
Second Office	5/13/24	1540	0	—	20.9	0	0.0
Restroom/Storage	5/13/24	1540	0	—	20.9	0	0.0
Scale House	5/13/24	1545	0	—	20.9	0	0.0

Methane exceeded 100% LEL in GP-16 and GP-18 and was measured at concentrations of 60 and 5.5 percent, respectively. Methane was measured at 8 and 81 percent LEL in GP-13 and GP-14, respectively. No CO or H₂S was detected in any of the gas probes. Other than normal levels of O₂, 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.

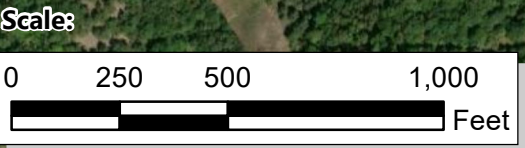
Attachments:

Attachment A – Sample Point Location Map

Attachment B – Instrument Calibration Record

Attachment A

Sample Point Location Map



Legend

Landfill Boundary

Explosive Gas Monitoring Points



Attachment B

Instrument Calibration Record



FIELD ENVIRONMENTAL INSTRUMENTS, INC.

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RKI Multi-Gas Detector Calibration Certificate

ID:22297

Cal Gas

Oxygen

Lot #	Expiration	Reading %	Acceptable Range
23-9936	08/23/25	18.0	(17.5% - 18.5%) ▼

ID:22297

Cal Gas

H2S

Lot #	Expiration	Reading ppm	Acceptable Range
23-9936	08/23/25	10	(9 - 11) ▼

ID:22297

Cal Gas

CO

Lot #	Expiration	Reading ppm	Acceptable Range
23-9936	08/23/25	50	(48 - 52) ▼

ID:22297

Cal Gas

Ch4 % LEL

Lot #	Expiration	Reading %	Acceptable Range
23-9936	08/23/25	50	(48 - 52)

277 OR 107

Cal Gas

CO2 ▼

Lot #	Expiration	Reading % / ppm	Acceptable Range
23-9865	04/30/28	15	(13.5% - 16.5%) ▼

Model

Eagle 2 ▼

S/N

E2G037

Barcode

U87121X

Order #

551492

Pump Flow

757

(600+) ▼

Calibrated By

Jackson Loy ▼

Date of Calibration

05/09/24

Revision 2, 3/29/24

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.