

April 21, 2022

Angel Camacho  
SET Environmental  
450 Sumac Road  
Wheeling, Illinois 60090

RE: Thorium Monitoring – City of Chicago Department of Transportation (CDOT)  
CDOT Permits: 1574632 – 550-639 N. McClurg Ct.  
1578685 – 120-211 E. Erie St.  
1578702 – 400-461 E. Erie St.

Dear Mr. Camacho:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during the excavation for installation of residential lighting improvements at the addresses listed above. The initial monitoring which included concrete removal and helix pole base installations was performed by Mark Dewald, SAHCI Health Physics Technician, on April 4 – April 7, 2022. The next phase which involved excavating pits for horizontal borings was performed by Brian Schmidt on April 11 – April 15, 2022. All activities were conducted under the guidance of document *SET General Procedure for Thorium Monitoring*.

On April 12, 2022, a People's Gas line was impacted during the horizontal boring operation. Brian Schmidt stayed onsite to perform monitoring of the excavation and stockpile of material after the emergency repairs were completed by People's Gas. A separate survey form is included as part of this report that details that excavation.

### Instrumentation

Surface gamma scans were performed using Ludlum Model 2221 Scaler / Ratemeters (serial no. 126497 and 127242) with attached Ludlum Model 44-10 2"x2" NaI Detectors (w/ 6" collimated lead shields). The instruments were calibrated on May 5, 2021. The US Environmental Protection Agency (USEPA) action level of 7.1 picocuries per gram (pCi/g) total thorium for instrument 126497 is 6,383 counts per minute (cpm) and 6,995 cpm for instrument 127242.

The average background count rate for these locations ranged from 1,481 cpm to 1,811 cpm.

### Soil Gamma Scans

Gamma surface scans were performed in the excavations using the Ludlum Model 2221 Scaler / Ratemeters detailed above. Survey data was collected by lowering the detector into the narrow excavation and recording the highest count rate for the floor and walls to a maximum excavation depth of 30 inches below ground surface. All concrete and soil were loaded directly into a truck for disposal.

The maximum gamma count rate for each lift was recorded on the attached Radiation Survey Forms. The count rates in the excavations ranged from 900 cpm to 4,500 cpm. The slightly elevated count rates in some excavations are likely due to the poor survey geometry of the narrow trench. No count rates were found at any time that exceeded the threshold limits of 6,383 cpm and 6,995 cpm, respectively.

### Additional Monitoring

Since no count rates were identified above the 7.1 pCi/gram threshold limit, no additional soil sampling, air monitoring, or personnel monitoring were performed.

I will be providing a copy of this report to both the City of Chicago Department of Public Health and US Environmental Protection Agency, as required.

Thank you for your assistance with this project. If you have any questions or need additional information, please call me at (815) 485-6161.

Sincerely,  
Stan A. Huber Consultants, Inc.



Glenn Huber, CHP  
President

## Radiation Survey Form

**Location/ Project ID:** John Burns-Lake Shore Drive & Erie St. City Lights Install

**Date:** 4/4-7/22

**Technician:** Mark Dewald

**Inst Model:** Ludlum 2221

**Serial No. :** 127242

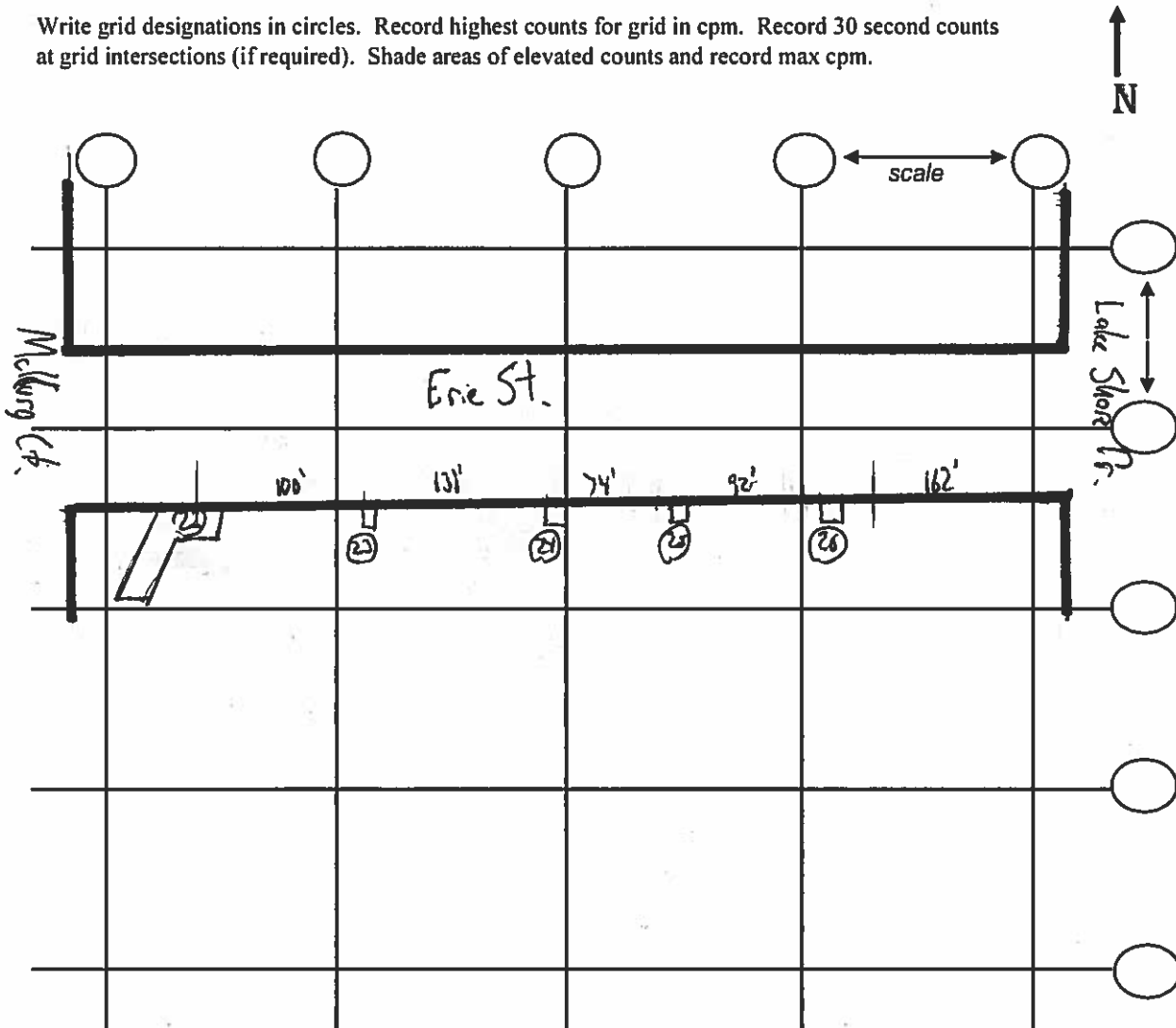
**Probe Type:** 1"x1" NaI 2"x2" NaI  
 Shielded  Not Shielded

**Lift Elevation:** Surface to -30" BGS

**Background** 1,481 cpm

**Action Level:** 6,995 cpm

Write grid designations in circles. Record highest counts for grid in cpm. Record 30 second counts at grid intersections (if required). Shade areas of elevated counts and record max cpm.



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**Date:** 4/4-7/22

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**Serial No. :** 127242

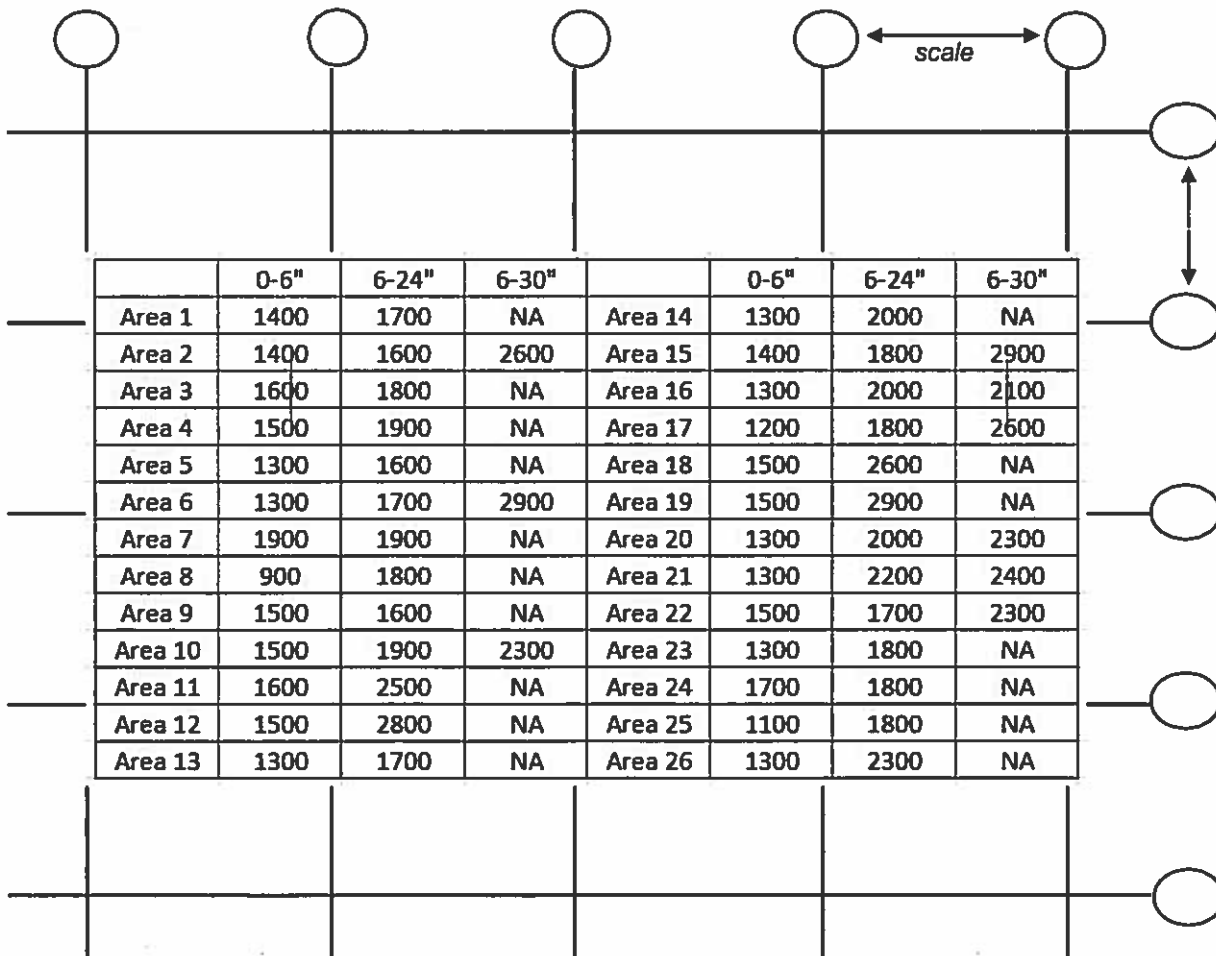
**Probe Type:** 1"x1" NaI 2"x2" NaI  
 Shielded  Not Shielded

**Lift Elevation:** Surface to -30" BGS

**Background** 1,481 cpm

**Action Level:** 6,995 cpm

Write grid designations in circles. Record highest counts for grid in cpm. Record 30 second counts at grid intersections (if required). Shade areas of elevated counts and record max cpm.



### Radiation Survey Form

Location/ Project ID: JOHN DUNN - CITY LIGHT INSTALL - ONTARIO & MCGRAW - ROW RADIOLOGICAL SOIL SURVEY

Date: 4/11-15/2022

Technician: BRIAN SCHMIDT

Inst Model: LUDLUM-2221

Serial No.: 126497

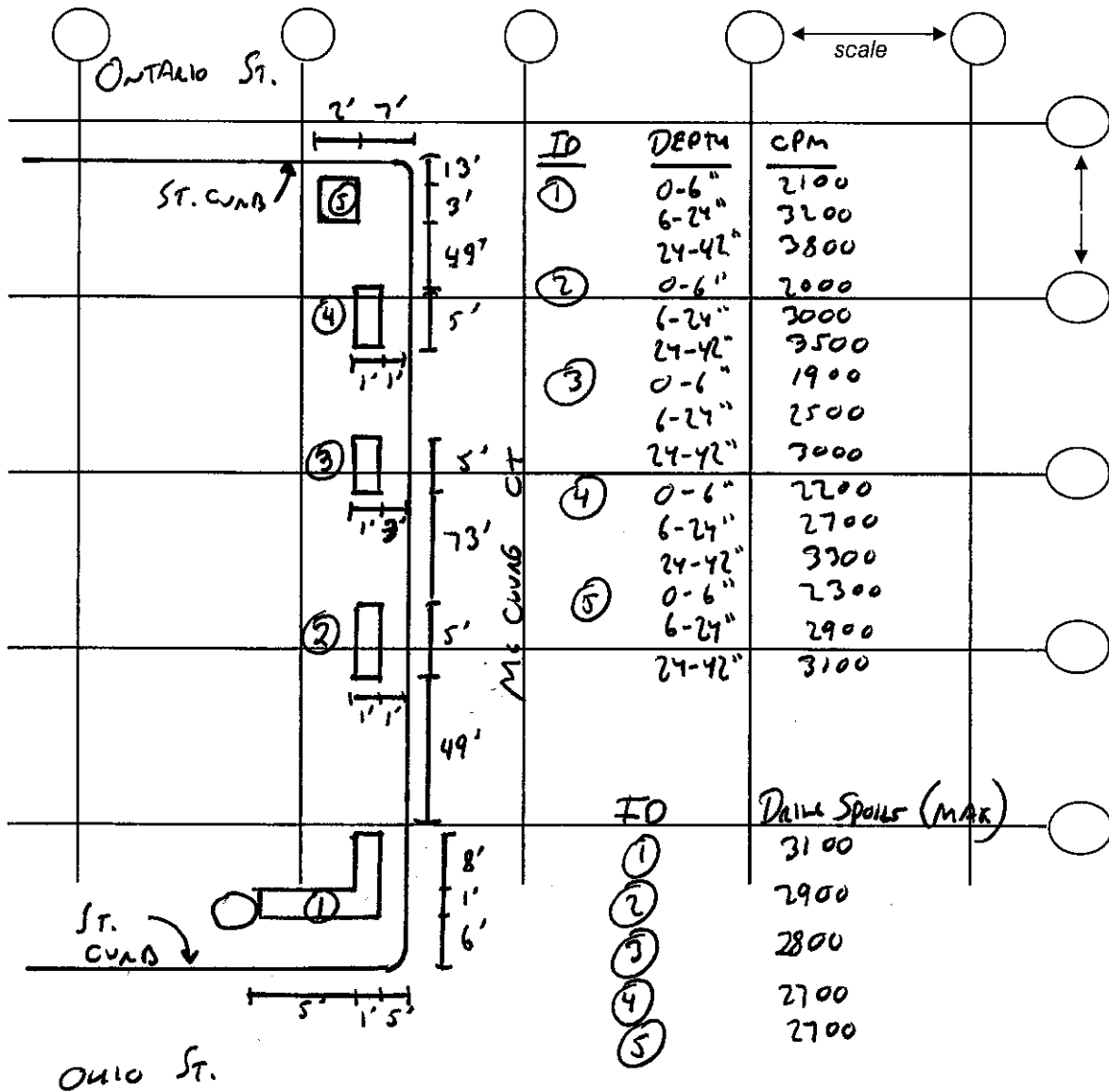
Probe Type: 1"x1" NaI / 2"x2" NaI  
Shielded / Not Shielded

Lift Elevation: 0-24"

Background 1811 cpm

Action Level: 6383 cpm

Write grid designations in circles. Record highest counts for grid in cpm. Record 30 second counts at grid intersections (if required). Shade areas of elevated counts and record max cpm.



### Radiation Survey Form

Location/ Project ID: John Bruns - City Light Install - Erie + St. Clair - Row RADIOLOGICAL  
SOIL SURVEY

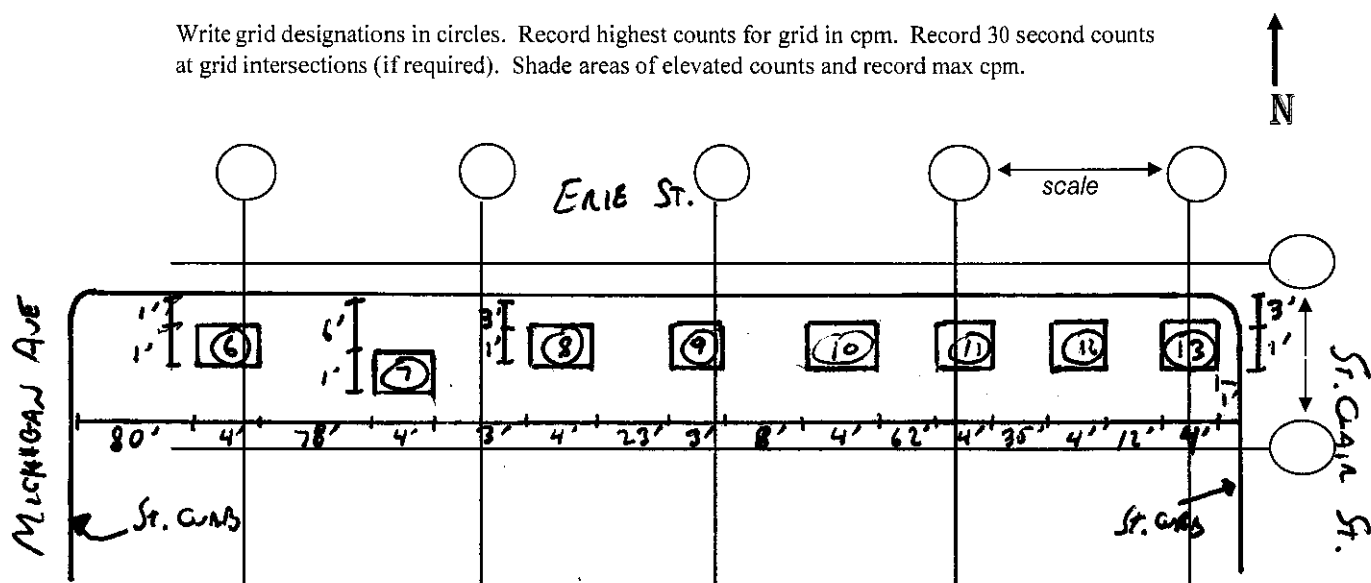
Date: 4/11-15/2022 Technician: BRIAN SCHMIDT

Inst Model: LOWEN-2221 Serial No.: 126497

Probe Type: 1"x1" NaI / 2"x2" NaI  
Shielded / Not Shielded Lift Elevation: 0-24"

Background 1811 cpm Action Level: 6383 cpm

Write grid designations in circles. Record highest counts for grid in cpm. Record 30 second counts at grid intersections (if required). Shade areas of elevated counts and record max cpm.



ID	DEPTH	CPM	ID	DEPTH	CPM	ID	DEPT. SPREAD (MAX)
6	0-6"	2400	10	0-6"	2200	6	2700
	6-24"	3100		6-24"	3100	7	2900
	24-42"	4000		24-42"	3500	8	3500
7	0-6"	2300	11	0-6"	2400	9	3100
	6-24"	2500		6-24"	2800	10	3300
	24-42"	3000		24-42"	3500	11	2700
8	0-6"	2000	12	0-6"	2600	12	3500
	6-24"	3200		6-24"	3400	13	2100
	24-42"	3500		24-42"	3900		
9	0-6"	1900	13	0-6"	2100		
	6-24"	2300		6-24"	2200		
	24-42"	2100		24-42"	2600		

### Radiation Survey Form

Location/ Project ID: JOHN BULLUS - LAKE STREET DR. & ERIE ST - CITY LIGHTS INSTALL - ROW RADIOLOGICAL SOIL SURVEY

Date: 4/11-15/2022

Technician: BRIAN SCHMIDT

Inst Model: LUOLUNA-2221

Serial No.: 126497

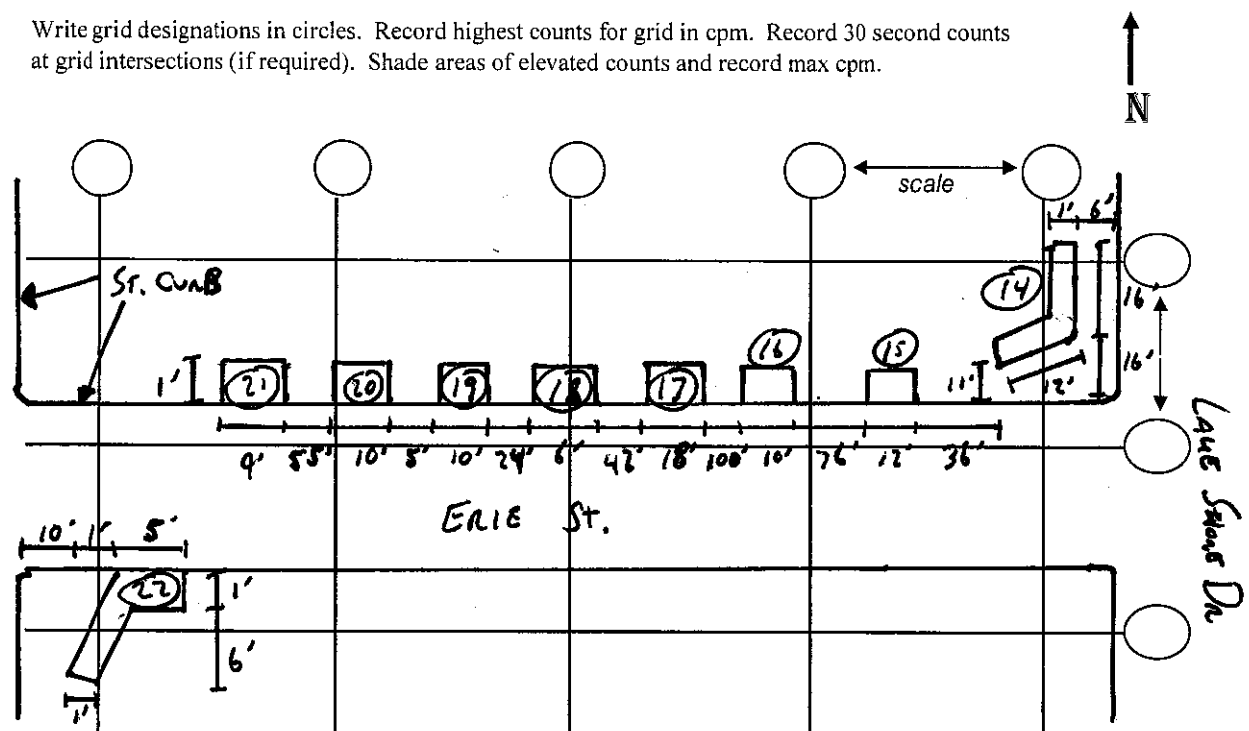
Probe Type: 1"x1" NaI / 2"x2" NaI  
Shielded / Not Shielded

Lift Elevation: 0-24"

Background 1811 cpm

Action Level: 6383 cpm

Write grid designations in circles. Record highest counts for grid in cpm. Record 30 second counts at grid intersections (if required). Shade areas of elevated counts and record max cpm.



IO	DEPTH	CPM	IO	DEPTH	CPM	IO	DRILL SPOILS (max)
(14)	0-6"	2200	(18)	0-6"	2100	(14)	3200
	6-24"	3700		6-24"	2700	(15)	3700
	24-42"	4500		24-42"	3100	(16)	2600
(15)	0-6"	2200	(19)	0-6"	2200	(17)	3300
	6-24"	4000		6-24"	3000		
	24-42"	4300		24-42"	3700	(18)	2600
(16)	0-6"	1800	(20)	0-6"	2400	(19)	3300
	6-24"	2600		6-24"	3700	(20)	3100
	24-42"	2900		24-42"	4300	(21)	2700
(17)	0-6"	2100	(21)	0-6"	2600	(21)	
	6-24"	3200		6-24"	3300		
	24-42"	4300		24-42"	3800		
			(22)	0-6"	1900		
				6-24"	2500		
				24-42"	2700		

### Radiation Survey Form

Location/ Project ID: PEOPLE'S GAS - EMERGENCY GAS SERVICE REPAIR - ERIE ST. - ROW *RADIOLOGICAL SOIL SURVEY*

Date: 4/12/22

Technician: BRIAN SCHMIOT

Inst Model: UNW-2221

Serial No.: 126497

Probe Type: 1"x1" NaI / 2"x2" NaI  
Shielded Not Shielded

Lift Elevation: 0-36"

Background 1811 cpm

Action Level: 6383 cpm

Write grid designations in circles. Record highest counts for grid in cpm. Record 30 second counts at grid intersections (if required). Shade areas of elevated counts and record max cpm.

