



July 28, 2021

Angel Camacho  
SET Environmental  
450 Sumac Road  
Wheeling, Illinois 60090

RE: Thorium Monitoring – 233 E. Chicago Riverwalk (Northman)  
City of Chicago Dept. of Assets, Information, and Services (AIS)  
CDOT Permit: N/A

Dear Mr. Camacho:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during excavation for concrete footings and foundations at two separate locations at 233 E. Chicago Riverwalk (Northman Beer and Cider Garden). There was also an excavation for a low-voltage electric line.

The monitoring for the low-voltage electric line was performed on June 30, 2021, by Brian Schmidt, SAHCI Health Physics Technician. Monitoring for the foundation and footings was performed on July 6, 2021, by Brian Schmidt and July 16, 2021 by Glenn Huber, SAHCI Health Physicist. All activities were conducted under the guidance of document *SET General Procedure for Thorium Monitoring*.

#### Instrumentation

Surface gamma scans were performed using Ludlum Model 2221 Scaler / Ratemeter (serial nos. 126497 and 134542) with attached Ludlum Model 44-10 2"x2" NaI Detectors (w/ 6" collimated lead shields). The instrument were both 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 7,396 cpm for instrument #134542.

The average background count rate for this location ranged from 1,815 cpm to 1,986 cpm.

### Soil Gamma Scans

Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeters described above. Survey data was collected by entering the footing excavations and recording the highest count rate for the floor and walls to a maximum excavation depth of 3 feet below ground surface. The foundation area inside of the footings was only excavated to 6 inches below ground surface.

The maximum gamma count rate for each lift was recorded on the attached Radiation Survey Forms. The count rates in the excavations ranged from 1,600 cpm to 3,600 cpm. No count rates were found at any time that exceeded the threshold limit of 6,383 cpm and 7,396 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

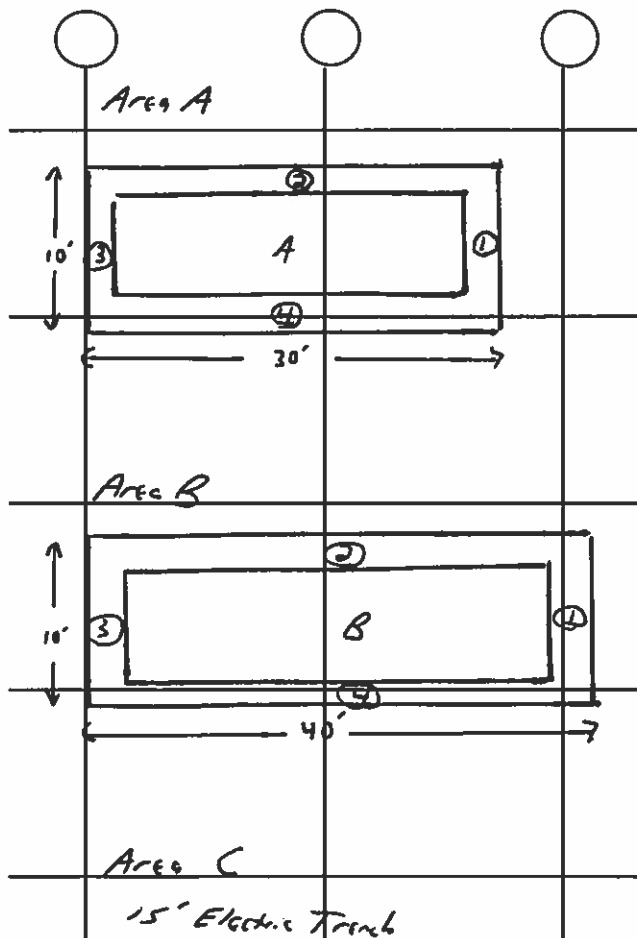
**Location/ Project ID:** 233 E. Chicago Riverwalk - Northman Foundation and Electric  
6/30/21 Electric  
**Date:** 7/6/21, 7/16/21 Foundation **Technician:** Glenn Huber 7/16/21  
Brian Schmidt 6/30/21 and 7/6/21

**Inst Model:** Ludlum 2221 **Serial No.:** 1) 134542 & 2) 126497

**Probe Type:** 1"x1" NaI / 2"x2" NaI  
Shielded / Not Shielded **Lift Elevation:** Surface to -36"

**Background** 1,815-1,986 cpm **Action Level:** #1 - 7,396  
#2 - 6,383 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.



0-18" = 2200 cpm  
8-26" = 2800 cpm

Location A	Depth	CPM
Area A Foundation	Surface	1800
	6"	2800
Footing 1	Surface	1800
	18"	2300
	36"	2600
	Surface	1900
Footing 2	18"	2200
	36"	3100
Footing 3	Surface	2000
	18"	2500
	36"	2900
	Surface	1600
Footing 4	18"	2700
	36"	3000

Location B	Depth	CPM
Area B Foundation	Surface	2200
	6"	2600
Footing 1	Surface	1900
	18"	2600
	36"	2800
	Surface	2200
Footing 2	18"	2400
	36"	3600
Footing 3	Surface	2100
	18"	2500
	36"	3400
	Surface	2200
Footing 4	18"	2500
	36"	3000