

September 6, 2019

Mike Lanenga
SET Environmental
450 Sumac Road
Wheeling, Illinois 60090

RE: Thorium Monitoring: 400 E. Lower Wacker Dr. (Chicago Riverwalk 2FM)
Digger #600696853

Dear Mr. Lanenga:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during the performance of 12 borings for the installation of gates and bollards along the Chicago Riverwalk at 400 E. Lower Wacker Dr. in Chicago, Illinois. The monitoring was performed by John Hummel (RSSI), Health Physics Technician, on August 23 through August 28, 2019. All activities were conducted under the guidance of document *SET General Procedure for Thorium Monitoring*.

Instrumentation

Surface gamma scans were performed using a Ludlum Model 2221 Scaler / Ratemeter (serial no. 126497) with attached Ludlum Model 44-10 2"x2" NaI detector (w/ 6" collimated lead shield). The instrument was calibrated on October 15, 2018. The USEPA action level of 7.1 picocuries per gram (pCi/g) total thorium for this instrument is 6,319 counts per minute (cpm).

The background count rate for this location was found to average 1,977 cpm.

Soil Gamma Scans

Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeter described above. Survey data was by monitoring the bore holes at 1-foot intervals to a maximum depth of 3.5 feet below ground surface. All spoils generated during the boring process were also monitored.

The maximum gamma count rate for each boring interval was recorded on the attached Radiation Survey Form. The count rates of the core samples ranged from 811 cpm to 3,677 cpm. No count rates were found at any time that exceeded the threshold limit of 6,319 cpm.

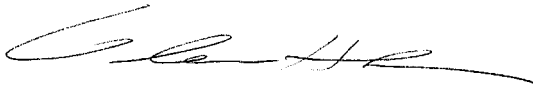
Additional Monitoring

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.

A handwritten signature in black ink, appearing to read 'Glenn Huber', with a long horizontal flourish extending to the right.

Glenn Huber, CHP
President

Radiation Survey Form

Location/ Project ID: Riverwalk - 400 E. Lower Wacker Dr.

Digger# 600696853

Date: 8/23/19-8/28/19

Technician: John Hummel (RSSI)

Inst Model: Ludlum 2221

Serial No. : 126497

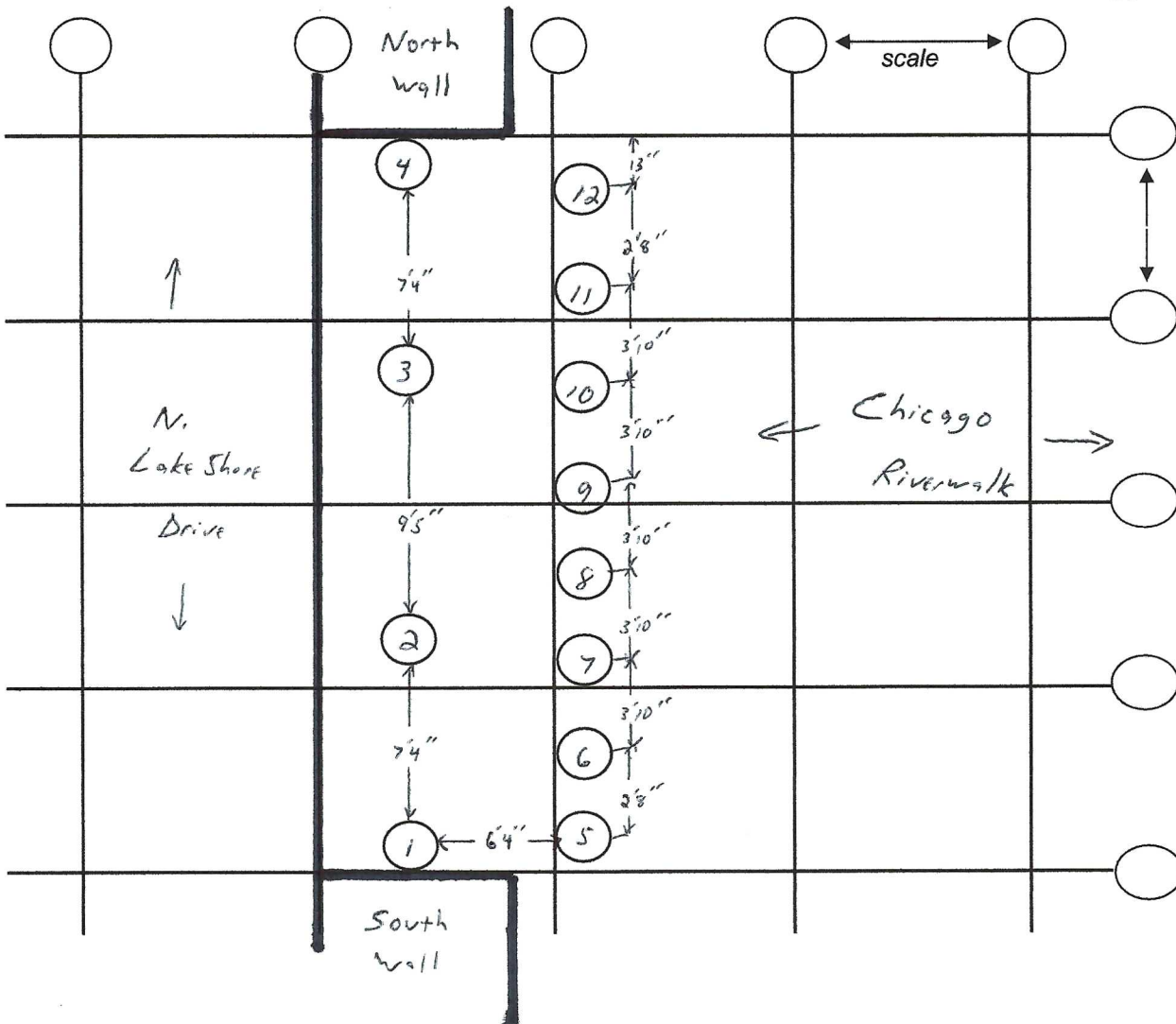
Probe Type: 1"x1" NaI / 2"x2" NaI
Shielded / Not Shielded

Lift Elevation: surface -> 3.5' bgs

Background 1,270 cpm

Action Level: 6,319 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 - Field Data

By: John Hummel (RSSI)
 Dates: 8/23/19 - 8/28/19
 Location: 5 400 E. Lower Wacker Dr.
 Digger # 600696853

Instrument ID: Ludlum Model 2221 w/ Ludlum Model 44-10 2" NaI (6" shield)	Serial No.: 126497 Background: 1977 cpm 7.1 pCi/g Action Level: 6319 cpm
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Location ID: Hole #1	
Date: 8/23/2019	
Depth	CPM
-1'	1206
-2'	811
-3'	1031
spoils	1753

Location ID: Hole #2	
Date: 8/23/2019	
Depth	CPM
-6"	1665
-1'	2425
-2'	2686
-3'	3821

Location ID: Hole #3	
Date: 8/23/2019	
Depth	CPM
-6"	1680
-1'	2719
-2'	2371
-2.5'	2122

Location ID: Hole #4	
Date: 8/23/2019	
Depth	CPM
-1'	1235
-2'	1031
-3'	1631
spoils	1543

Location ID: Hole #5	
Date: 8/27/2019	
Depth	CPM
-6"	1702
-1'	1102
-2'	816
-3'	996

Location ID: Hole #6	
Date: 8/23/2019	
Depth	CPM
-6"	1175
-1'	1377
-2'	1178
-3'	1669
-3.5'	2034

Location ID: Hole #7	
Date: 8/27/2019	
Depth	CPM
-6"	1433
-1'	2381
-2'	2699
-3'	3537
-3.5'	3677

Location ID: Hole #8	
Date: 8/27/2019	
Depth	CPM
-6"	1532
-1'	2775
-2'	3148
-3'	2684

Location ID: Hole #9	
Date: 8/28/2019	
Depth	CPM
-1'	2951
-2'	2798
-3'	2724
-3.5'	2423
spoils	2260

Location ID: Hole #10	
Date: 8/27/2019	
Depth	CPM
-6"	1801
-1'	3081
-2'	3384
-3'	3271

Location ID: Hole #11	
Date: 8/27/2019	
Depth	CPM
-6"	1480
-1'	1795
-2'	2120
-3'	1602
-3.5'	1675

Location ID: Hole #12	
Date: 8/27/2019	
Depth	CPM
-6"	1423
-1'	886
-2'	987
-3'	1211