

January 28, 2020

Mike Lanenga
SET Environmental
450 Sumac Road
Wheeling, Illinois 60090

RE: 545 N. Michigan Ave. Thorium Monitoring – City of Chicago Department of Water Management
CDOT Permit: 1202316

Dear Mr. Lanenga:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during the excavation for repair of a water service leak at 545 N. Michigan Avenue in Chicago, Illinois. The monitoring was performed by Brian Schmidt, SAHCI Health Physics Technician, on January 16 and 17, 2020. 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. 126496) with attached Ludlum Model 44-10 2"x2" NaI Detector (w/ 6" collimated lead shield). The instrument was calibrated on October 18, 2019. The US Environmental Protection Agency (USEPA) action level of 7.1 picocuries per gram (pCi/g) total thorium for this instrument is 7,102 counts per minute (cpm).

The average background count rate for this location was measured as 1,789 cpm.

Soil Gamma Scans

Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeter described above. Survey data was collected by entering the excavation and recording the highest count rate for the floor and walls to a maximum excavation depth of 6 feet below ground surface. Material removed from 3 feet to 6 feet below ground surface was surveyed in the excavator bucket prior to loading in a truck. All asphalt, 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 Form. The count rates in the excavation ranged from 1,500 cpm to 3,100 cpm. No count rates were found at any time that exceeded the threshold limit of 7,102 cpm.

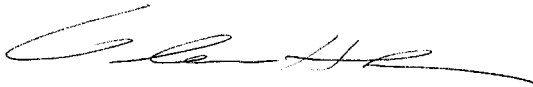
Additional Monitoring

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 'G. Huber', with a long horizontal flourish extending to the right.

Glenn Huber, CHP
President



Radiation Survey Form

Location/ Project ID: DWM - 545 N. MICHIGAN AVE - WATER SERVICE REPAIR - ROW RADIOLOGICAL SURVEY

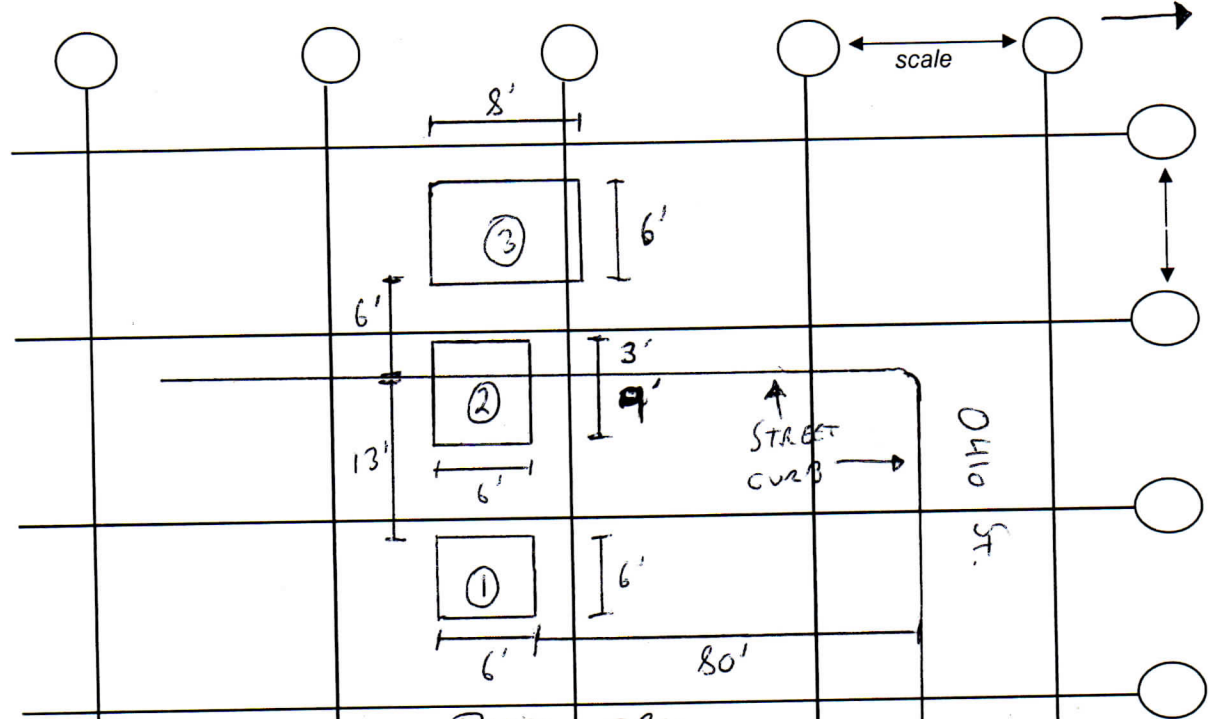
Date: 1/16/2020 + 1/17/2020 Technician: BRIAN SCHMIOT

Inst Model: LUOWM-2221 Serial No.: 126496

Probe Type: 1"x1" NaI / 2"x2" NaI / Shielded / Not Shielded
Lift Elevation: 0-72"

Background 1789 cpm Action Level: 7102 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.



DEPTH	CPM
① 0-6"	1500
6-24"	1800
24-42"	1800
42-60"	2500
② 0-12"	1800
12-30"	2200
30-48"	2400
48-66"	2800
60-78"	2600

DEPTH	CPM
③ 0-6"	1700
6-24"	1900
24-42"	2000
42-60"	2900
60-78"	3000
72-90"	3100