Stan A. Huber Consultants, Inc.
Health Physics and Radiation Safety Services

200 North Cedar Road – New Lenox, Illinois 60451-1751 – (800) 383-0468 or (815) 485-6161 – FAX (815) 485-4433 – Email sahci@sahci.com – Home Page www.sahci.com

January 3, 2020 **revised 7/2/20 GAH**

958946

David Russian
GEI Consultants, Inc.
400 N. Lakeview Parkway, Suite 140
Vernon Hills, IL 60061

RE: Thorium Monitoring at 258 E. Erie St.
CDOT Permit #1189584

Dear Mr. Russian:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiological monitoring during the performance of a preliminary geotechnical boring and excavation for sewer line replacement at 258 E. Erie St. in Chicago, Illinois. The monitoring was performed by Mark Dewald, SAHCI Health Physics Technician, on December 19, 2019 (boring) and December 30, 2019 (excavation).

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 18, 2019. The US Environmental Protection Agency (USEPA) action level of 7.1 picocuries per gram (pCi/g) total thorium for this instrument is 6,179 counts per minute (cpm).

The average background count rate for this location was measured as 1,771 cpm.

Soil Gamma Scans - Boring

Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeter described above. Survey data was collected during the boring operation by scanning soil from each 1.5-foot boring interval, to a maximum depth of 10 feet below ground surface.

The maximum gamma count rate for each sampling interval was recorded on the attached Radiation Survey Form. The count rates of the core samples ranged from 2,800 cpm to 4,000 cpm. No count rates were found at any time that exceeded the instrument specific count rate threshold of 6,179 cpm.

Soil Gamma Scans - Excavation

Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeter described above. Survey data was collected by entering the excavation trench and recording the highest count rate for the floor and walls to a maximum excavation depth of 8 feet below ground surface. Any material excavated below 3 feet in depth was surveyed in the excavator bucket, rather than in the excavation.

The maximum gamma count rate for each lift was recorded on the attached Radiation Survey Form. The count rates in the excavation ranged from 1,900 cpm to 2,200 cpm. No count rates were found at any time that exceeded the threshold limit of 6,179 cpm.

Additional Monitoring

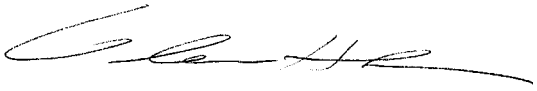
Since no count rates were identified above the 7.1 pCi/gram threshold limit, no additional soil sampling, air monitoring, or personnel monitoring were performed.

Regulatory Notification of Survey Completion

A copy of this report should be submitted 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

sahci
Stan A. Huber Consultants, Inc.

Radiation Survey Form

Location/ Project ID: 258 Grant

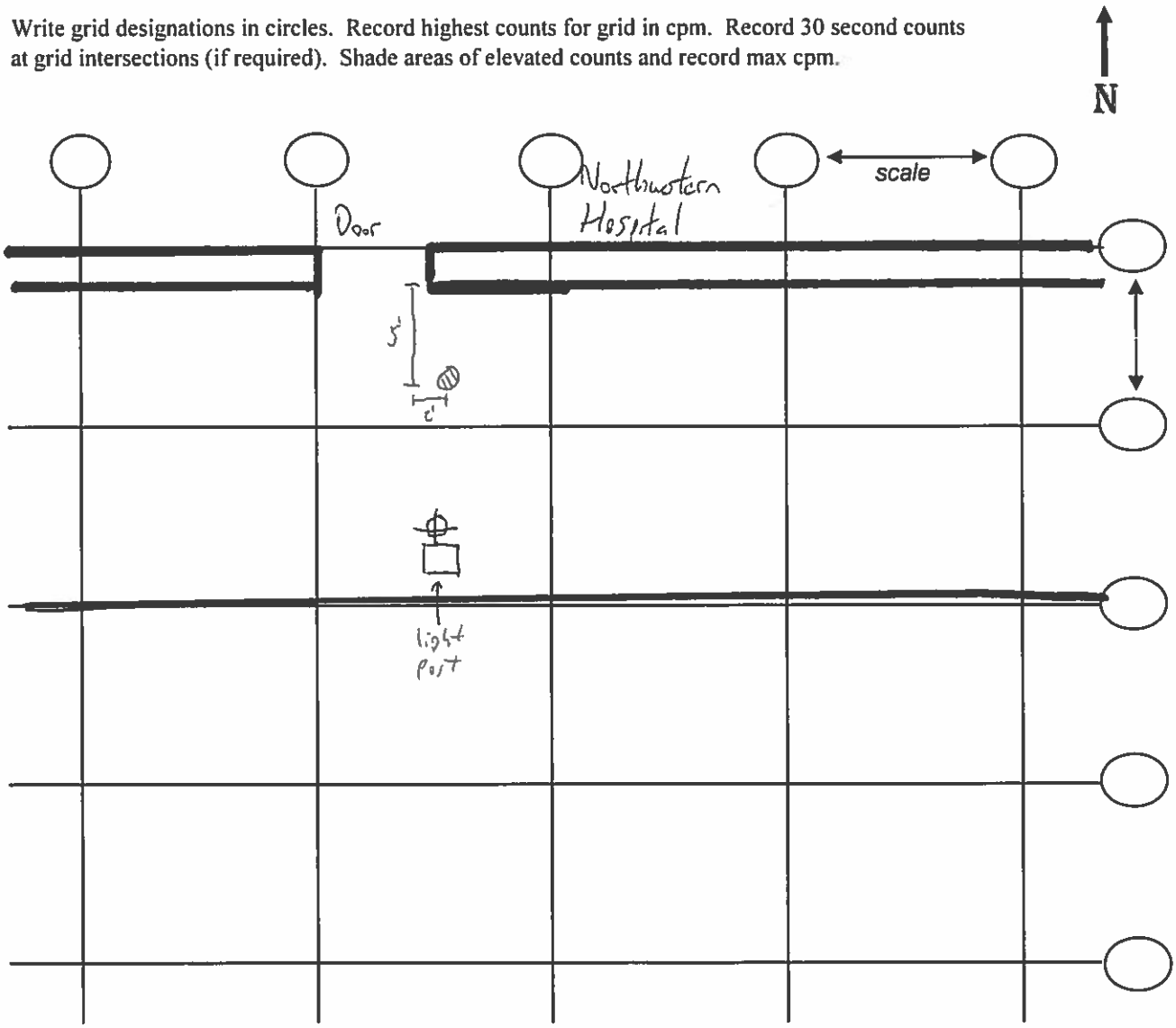
Date: 12/19/2019 **Technician:** Mark Dewald

Inst Model: Ludlum 2221 **Serial No. :** 127242

Probe Type: 1"x1" NaI / 2"x2" NaI (circled) **Lift Elevation:** 0-10'
Shielded (circled) / Not Shielded

Background 1568 **cpm** **Action Level:** 6673 **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
0-1.5'	3300
1.5'-3'	3200
3'-4.5'	3600
4.5'-6'	2500
6'-7.5'	2800
7.5'-9'	3500
9'-10.5'	11000

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Radiation Survey Form

Location/ Project ID: 258 Erie St.

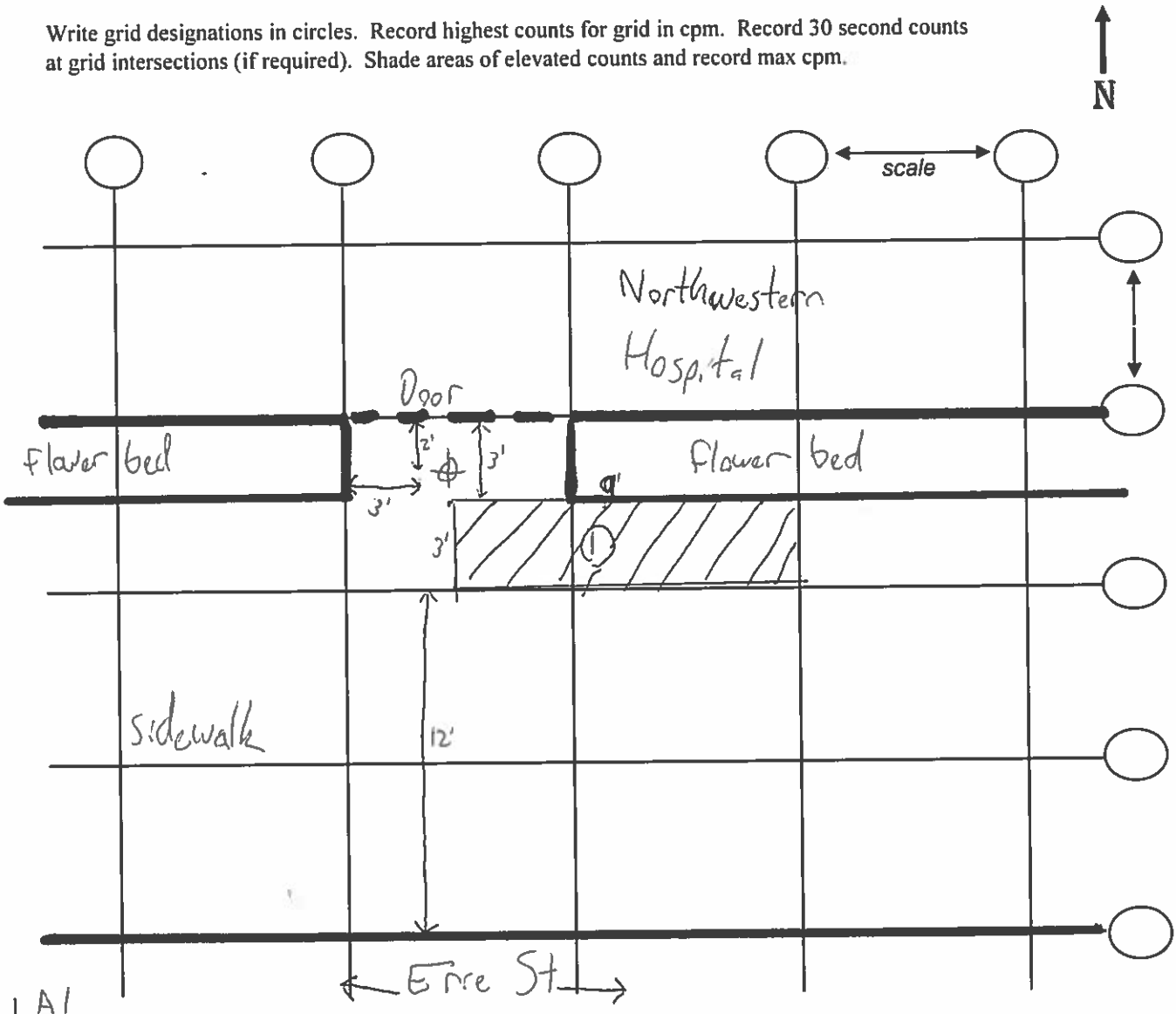
Date: 12/30/2019 **Technician:** Mark Oewald

Inst Model: Ludlum 2221 **Serial No. :** 126497

Probe Type: 1"x1" NaI / ~~2"x2" NaI~~ **Lift Elevation:** 0-8'
(Shielded) / Not Shielded

Background 1974 **cpm** **Action Level:** 6179 **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.



	A1
0-1.5'	1900
1.5-3'	2100
3'-4.5'	1900
4.5'-6'	2200
6'-7.5'	2,000
7.5'-9'	2100