



March 2, 2017

Buddy Hix  
Western Utility Contractors, Inc.  
2565 Palmer Ave.  
University Park, IL 60466

RE: 1-38 W. Hubbard St. Thorium Monitoring 2/14/17-2/17/17  
CDOT Permit #756834

Dear Mr. Hix:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during excavation for a conduit installation project at 1-38 W. Hubbard St. in Chicago, Illinois. The excavation was located in the alley between Hubbard St. and Kinzie St. The monitoring was performed by Chris Lichorobiec, SAHCI Health Physics Technician, on February 14, 2017 through February 17, 2017.

#### Instrumentation

Surface gamma scans were performed using a Ludlum Model 2221 Scaled / Ratemeter (serial no. 132844) with attached 2"x2" NaI probe (w/ 6" collimated lead shield). The instrument was calibrated on August 8, 2016. The US Environmental Protection Agency (USEPA) action level of 7.1 picocuries per gram (pCi/g) total thorium for this instrument is 7,389 counts per minute (cpm).

The average background count rate for this location was determined to be 1,800 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 after each 18-inch lift and recording the highest count rate for the floors and walls to an excavation depth of 3 feet below ground surface. All soil was 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 1,800 cpm to 5,000 cpm. No count rates were found at any time that exceeded the threshold limit of 7,389 cpm. Count rates were noted as being elevated above background levels due to the brick walls on both sides of the alley.

Additional Monitoring

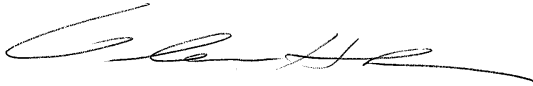
Since no count rates were identified above the 7.1 pCi/gram threshold limit, no additional soil sampling, air monitoring, or personnel monitoring were performed.

Regulatory Notification of Survey Completion

I will be providing a copy of this report to both the City of Chicago Department of Public Health and USEPA, 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:** 1-38 W. Hubbard St. Western Utility #756834

**Date:** 02-14 → 02-15-2017

**Technician:** Chris Lichorobec

**Inst Model:** Ludlum 2221

**Serial No.:** 132841

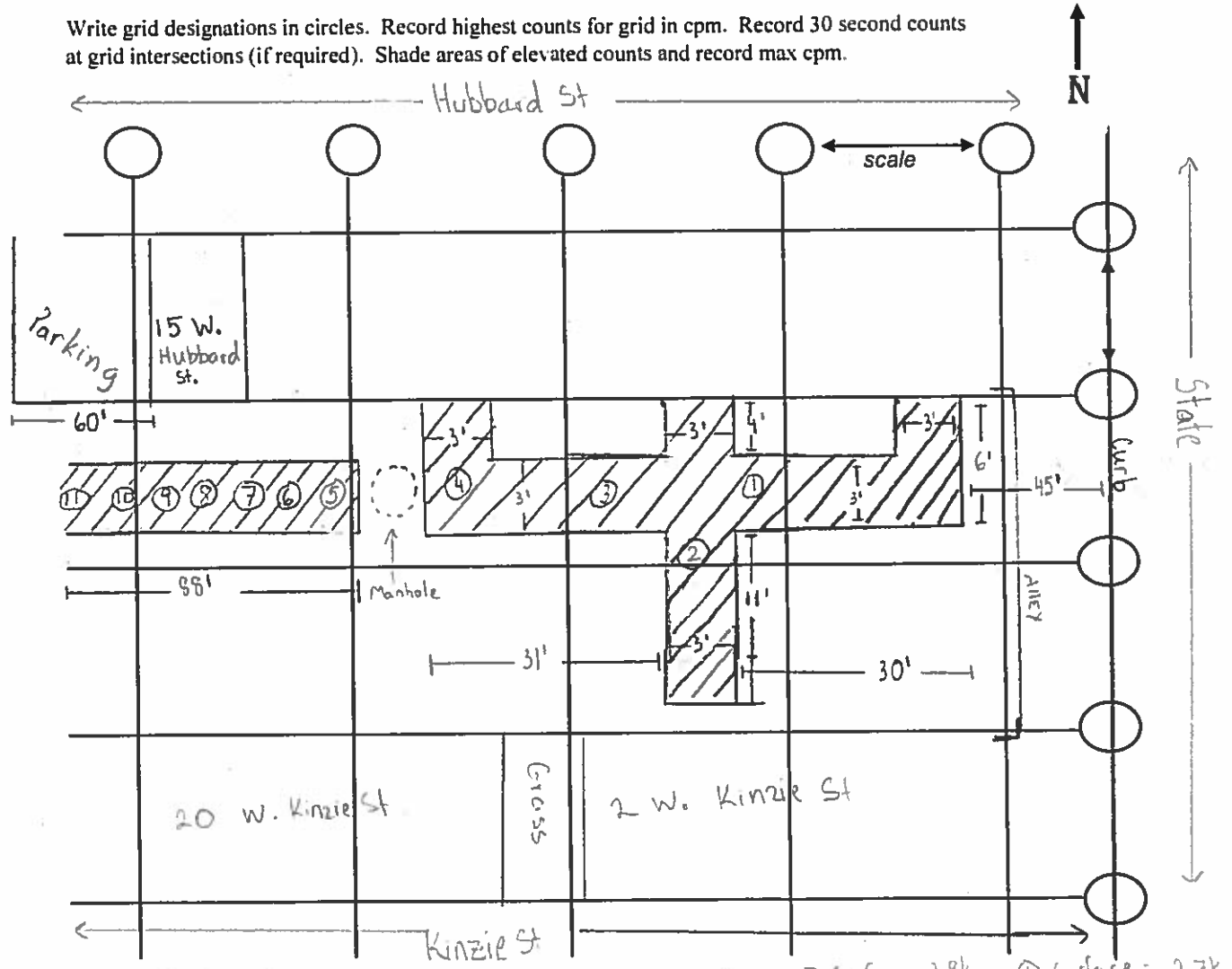
**Probe Type:** 1"x1" NaI / 2"x2" NaI  
Shielded / Not Shielded

**Lift Elevation:** Surface → -36"

**Background** 1800 cpm

**Action Level:** 7.389 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.



- |   |   |   |  |  |   |
|---|---|---|--|--|---|
| 1) Surface = 2.8k<br>-1.5' = 3.2k<br>-3.0' = 3.3k | 2) Surface = 2.7k<br>-1.5' = 3.4k<br>-3.0' = 3.3k | 3) Surface = 3.2k<br>-1.5' = 3.1k<br>-3.0' = 3.3k | 4) Surface = 2.7k<br>-1.5' = 3.3k<br>-3.0' = 3.1k  | 5) Surface = 2.8k<br>-1.5' = 2.6k<br>-3.0' = 2.4k  | 6) Surface = 2.7k<br>-1.5' = 3.4k<br>-3.0' = 2.8k |
| 7) Surface = 2.4k<br>-1.5' = 4.1k<br>-3.0' = 3.4k | 8) Surface = 2.0k<br>-1.5' = 2.6k<br>-3.0' = 2.5k | 9) Surface = 2.3k<br>-1.5' = 2.5k<br>-3.0' = 2.6k | 10) Surface = 2.8k<br>-1.5' = 4.1k<br>-3.0' = 3.6k | 11) Surface = 1.8k<br>-1.5' = 3.6k<br>-3.0' = 3.4k |   |

## Radiation Survey Form

**Location/ Project ID:** 1-38 W. Hubbard St. Western Utility #756834

**Date:** 02-16 → 02-17-2017

**Technician:** Chris Lichorobiec

**Inst Model:** Ludlum 2221

**Serial No.:** 132844

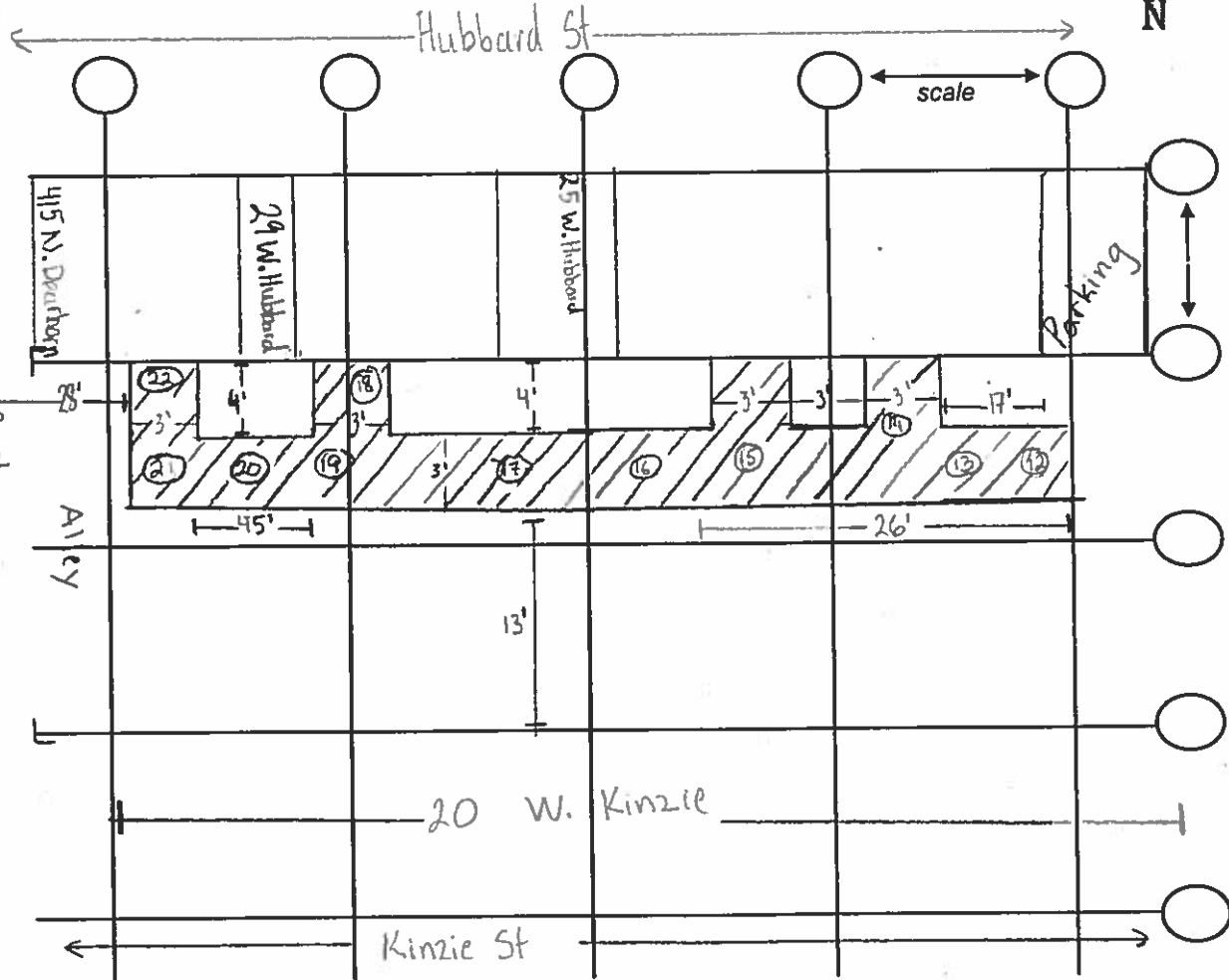
**Probe Type:** 1"x1" NaI / (2"x2" NaI)  
Shielded / Not Shielded

**Lift Elevation:** Surface → -36"

**Background** 1.800 cpm

**Action Level:** 7.389 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.



- |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|
| ⑨ Surface = 2.8k<br>-1.5' = 3.8k<br>-3.0' = 3.7k | ⑬ Surface = 3.2k<br>-1.5' = 4.5k<br>-3.0' = 4.2k | ⑭ Surface = 2.8k<br>-1.5' = 4.8k<br>-3.0' = 3.6k | ⑮ Surface = 2.3k<br>-1.5' = 3.8k<br>-3.0' = 3.6k | ⑯ Surface = 3.2k<br>-1.5' = 4.8k<br>-3.0' = 4.2k | ⑰ Surface = 2.4k<br>-1.5' = 5.0k<br>-3.0' = 4.3k | ⑲ Surface = 2.3k<br>-1.5' = 4.2k<br>-3.0' = 4.0k |
| ⑰ Surface = 2.8k<br>-1.5' = 3.8k<br>-3.0' = 3.7k | ⑲ Surface = 3.3k<br>-1.5' = 3.6k<br>-3.0' = 3.8k | ⑳ Surface = 2.1k<br>-1.5' = 3.8k<br>-3.0' = 3.5k | ㉑ Surface = 3.4k<br>-1.5' = 4.6k<br>-3.0' = 4.1k | ㉒ Surface = 2.4k<br>-1.5' = 2.8k<br>-3.0' = 2.3k |  |  |