**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

December 22, 2020

Verneta Simon
U.S. Environmental Protection Agency
Region 5
77 W. Jackson Blvd., SE-5J
Chicago, IL 60604

RE: Thorium Monitoring at Lakeshore East Development Parcels I, J, K, and L
Interim Report February 1, 2020 – December 21, 2020

Dear Ms. Simon:

This report is being submitted by Stan A. Huber Consultants, Inc. (SAHCI) on behalf of IJKL, LLC. SAHCI was hired by Pioneer Engineering and Environmental Services, LLC (Pioneer) to provide radiological monitoring during construction activities at Parcels I, J, K, and L at the Lakeshore East Development in Chicago, Illinois. This report covers monitoring performed by SAHCI from February 1, 2020 – December 21, 2020.

Thorium monitoring was conducted in accordance with the *Work Plan for Investigation and Removal of Radiologically-Impacted Soil Lakeshore East Development*, final revision dated September 30, 2002 (Work Plan), and approved by U.S. EPA on correspondence dated October 15, 2002, and the subsequent *Addendum to the Work Plan for Parcels I, J, K, and L*, final revision dated December 19, 2018 (Addendum), and approved by U.S. EPA on correspondence dated December 19, 2018. Per the Work Plan, monitoring for thorium is only required within the boundaries of the former boat slips at the Lakeshore East properties in addition to surveys required in right of ways outside of the property.

Thorium monitoring was performed for the following construction activities:

| | |
|---|---|
| N. Harbor Service Drive Sewer Installation | 4/9/20 |
| Sub-Lower Wacker Dr. Gas Line Locate | 5/1/20 |
| People's Gas Utility Excavation | 9/28/20 – 10/24/20 |
| ComEd Electric Utility Excavation | 10/19/20 – 11/10/20 |

Instrumentation

Surface gamma scans were performed using Ludlum Model 2221 Scaler / Ratemeters (serial nos. 132844 and 134542) with attached Ludlum Model 44-10 2"x2" NaI detectors (w/ 6" lead collimator shields). The instruments were calibrated on August 6, 2019 and then re-calibrated on July 28, 2020.

For instrument serial number 132844, the USEPA action level of 7.1 picocuries per gram (pCi/g) total thorium count rate correlation was 7,299 counts per minute (cpm) prior to July 28, 2020 and 7,592 cpm afterwards.

For instrument serial number 134542, the USEPA action level of 7.1 pCi/g total thorium count rate correlation was 6,124 cpm prior to July 28, 2020 and 7,228 cpm afterwards.

N. Harbor Service Drive Sewer Installation

On April 9, 2020 excavation was performed for the installation of a sewer line in North Harbor Service Drive. Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeter (serial no. 132844) 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 a maximum excavation depth of 6 feet below ground surface. Soil excavated from 4 feet to 6 feet below ground surface was surveyed in the excavator bucket as it was removed.

The maximum gamma count rate for each lift was recorded on the attached Radiation Survey Form. See Attachment A – N. Harbor Service Dr. Sewer Installation.

The count rates in the excavation ranged from 1,900 cpm to 3,300 cpm. No count rates were observed at any time that exceeded the instrument specific threshold limit of 7,299 cpm.

Sub-Lower Wacker Dr. Gas Line Locate

On May 1, 2020, 3 excavations were performed to locate a gas line north of the property in Sub-Lower Wacker Drive. Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeter (serial no. 132844) described above. Survey data was collected by entering the excavations after each 18-inch lift and recording the highest count rate for the floors and walls to a maximum excavation depth of 4 feet below ground surface.

The maximum gamma count rate for each lift was recorded on the attached Radiation Survey Form. See Attachment B – Sub-Lower Wacker Dr. Gas Line Locate.

The count rates in the excavations ranged from 1,300 cpm to 2,500 cpm. No count rates were observed at any time that exceeded the instrument specific threshold limit of 7,299 cpm.

People's Gas Utility Excavation

On September 28, 2020 – October 24, 2020 excavation was performed for the installation of People's Gas Utility line along the eastern and southern boundaries of the property. Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeters (serial no. 132844 and 134542) 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 a maximum excavation depth of 5 feet below ground surface. Slightly elevated count rates noted below 3.5 feet were due to the poor survey geometry of the narrow excavation.

The maximum gamma count rate for each lift was recorded on the attached Radiation Survey Form. See Attachment C – People's Gas Utility Excavation.

The count rates in the excavation ranged from 900 cpm to 5,500 cpm. No count rates were observed at any time that exceeded the instrument specific threshold limits of 7,592 cpm and 7,228 cpm.

ComEd Electric Utility Excavation

On October 19, 2020 – November 10, 2020 excavation was performed for the installation of a ComEd electrical utility line along the southern boundary of the property. Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeter (serial no. 132844) 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 a maximum excavation depth of 7.5 feet below ground surface. Soil excavated from 4.5 feet to 7.5 feet below ground surface was surveyed in the excavator bucket as it was removed or when it was stockpiled at the surface.

The maximum gamma count rates for each lift recorded on the attached Radiation Survey Form. See Attachment D – ComEd Electric Utility Excavation.

The count rates in the excavation ranged from 1,700 cpm to 3,900 cpm. No count rates were observed at any time that exceeded the instrument specific threshold limit of 7,592 cpm.

Asbestos

Although no specific asbestos testing was performed, soils were visually screened during excavation for evidence of potentially asbestos containing mantles or mantle strings, per Section 7.8 of the Health and Safety Plan (HASP), revision date December 19, 2018. No potentially asbestos containing materials were identified so no abatement is required at this time.

Upcoming Work Schedule

There are no excavation activities planned for the next couple of months within the former boat slip areas or in the surrounding right of ways. We will continue to send you updates of planned construction activities as they are scheduled.

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

# Attachment A

# N. Harbor Service Drive Sewer Installation

4/9/20

Lakeshore East Development – Parcels I, J, K, and L

*Performed by:*

*Stan A. Huber Consultants, Inc.*
*200 N. Cedar Rd.*
*New Lenox, IL 60451*

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Stan A. Huber Consultants, Inc.

# Radiation Survey Form

**Location/ Project ID:** Lend Lease - IJHI Property - Sewer Installation - ROW Radiological Soil Survey

**Date:** 4/9/2020 **Technician:** Brian Schmidt

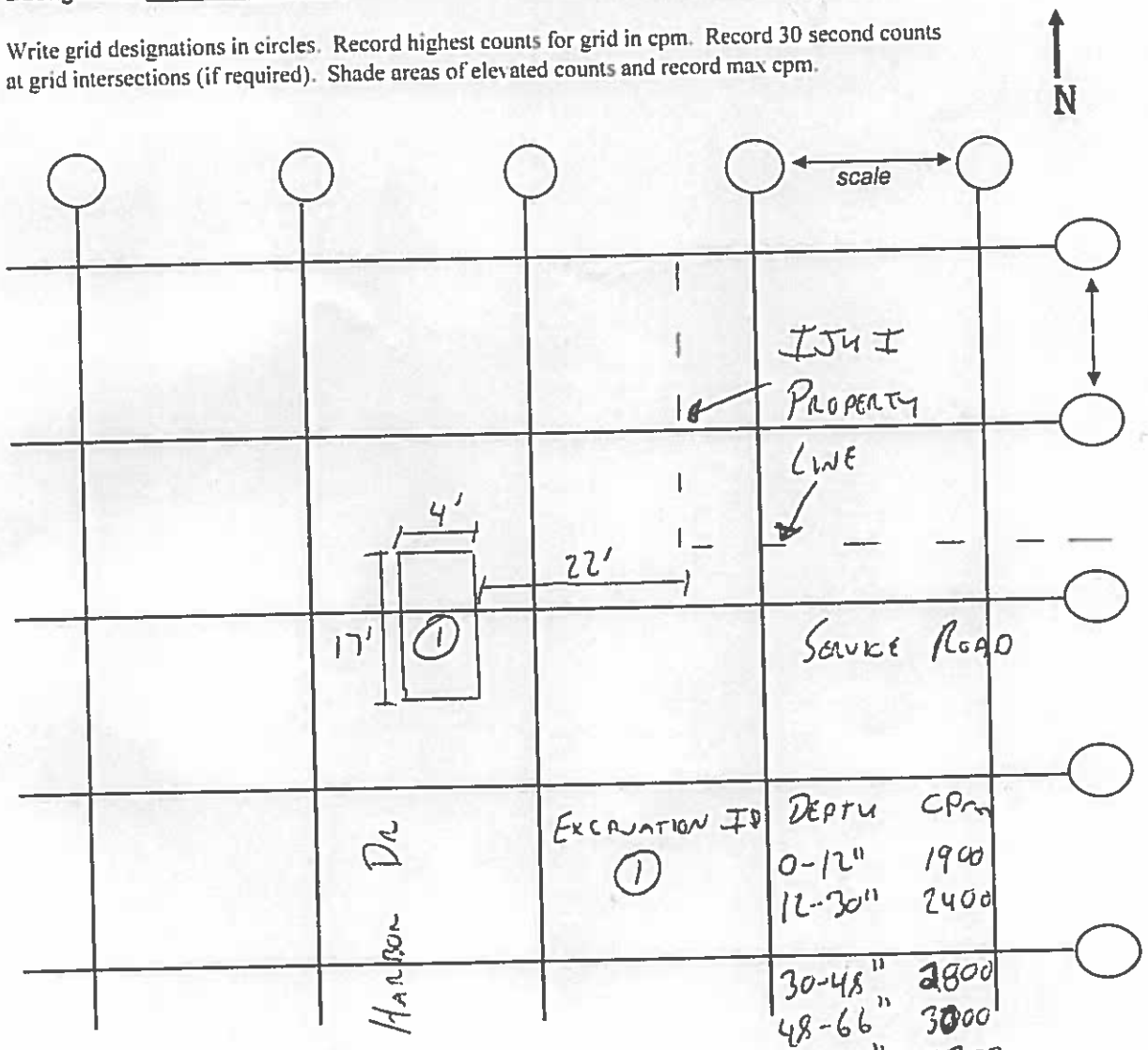
**Inst Model:** Ludlum-2221 **Serial No. :** 132844

**Probe Type:** 1"x1" NaI / ~~2"x2" NaI~~ **Lift Elevation:** 0-72"

~~Shielded~~ / Not Shielded

**Background** 1921 cpm **Action Level:** 7299 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.



# Attachment B

# Sub-Lower Wacker Dr. Gas Line Locate

5/1/20

Lakeshore East Development – Parcels I, J, K, and L

*Performed by:*

*Stan A. Huber Consultants, Inc.*
*200 N. Cedar Rd.*
*New Lenox, IL 60451*

sahci
Stan A. Huber Consultants, Inc.

# Radiation Survey Form

**Location/ Project ID:** LEVO LEASE - ISKI PROPERTY - GAS UTILITY LOCATE TEST PITS - ROW RADIOLOGICAL SOIL SURVEY

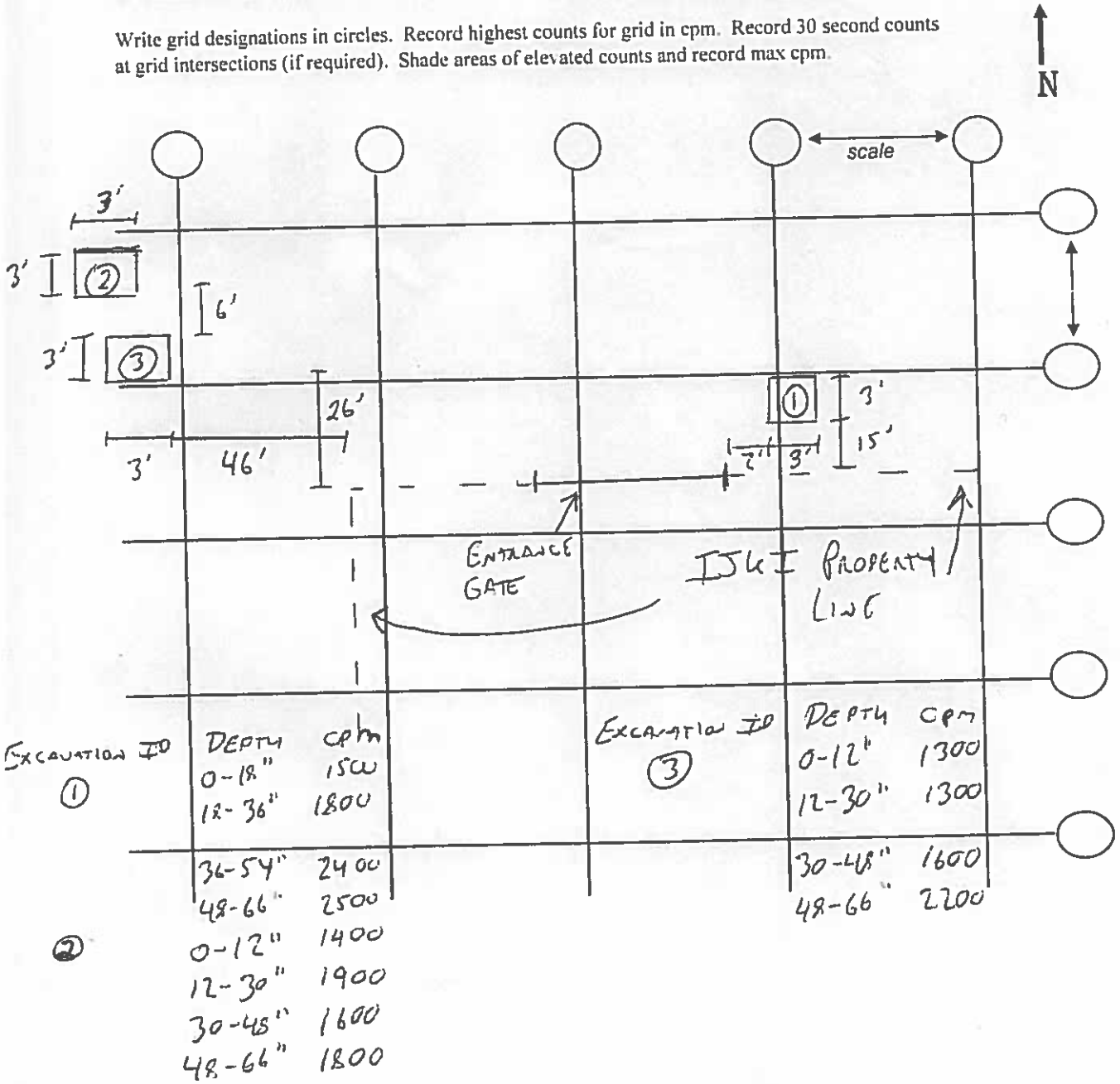
**Date:** 5/1/2020 **Technician:** BRIAN SCHMIDT

**Inst Model:** LUDLUM-2221 **Serial No.:** 132844

**Probe Type:** 1"x1" NaI / 2"x2" NaI (circled) Shielded (circled) / Not Shielded **Lift Elevation:** 0-48"

**Background** 1841 cpm **Action Level:** 7299 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.




| EXCAVATION ID | DEPTH | cpm |
|---|---|---|
| ① | 0-18" | 1500 |
| | 18-36" | 1800 |
| | 36-54" | 2400 |
| | 48-66" | 2500 |
| ② | 0-12" | 1400 |
| | 12-30" | 1900 |
| | 30-48" | 1600 |
| | 48-66" | 1800 |

| EXCAVATION ID | DEPTH | cpm |
|---|---|---|
| ③ | 0-12" | 1300 |
| | 12-30" | 1300 |
| | 30-48" | 1600 |
| | 48-66" | 2200 |

# Attachment C

# People's Gas Utility Excavation

9/28/20 – 10/24/20

Lakeshore East Development – Parcels I, J, K, and L

*Performed by:*

*Stan A. Huber Consultants, Inc.*
*200 N. Cedar Rd.*
*New Lenox, IL 60451*

# Radiation Survey Form

*Stan A. Huber Consultants, Inc.*

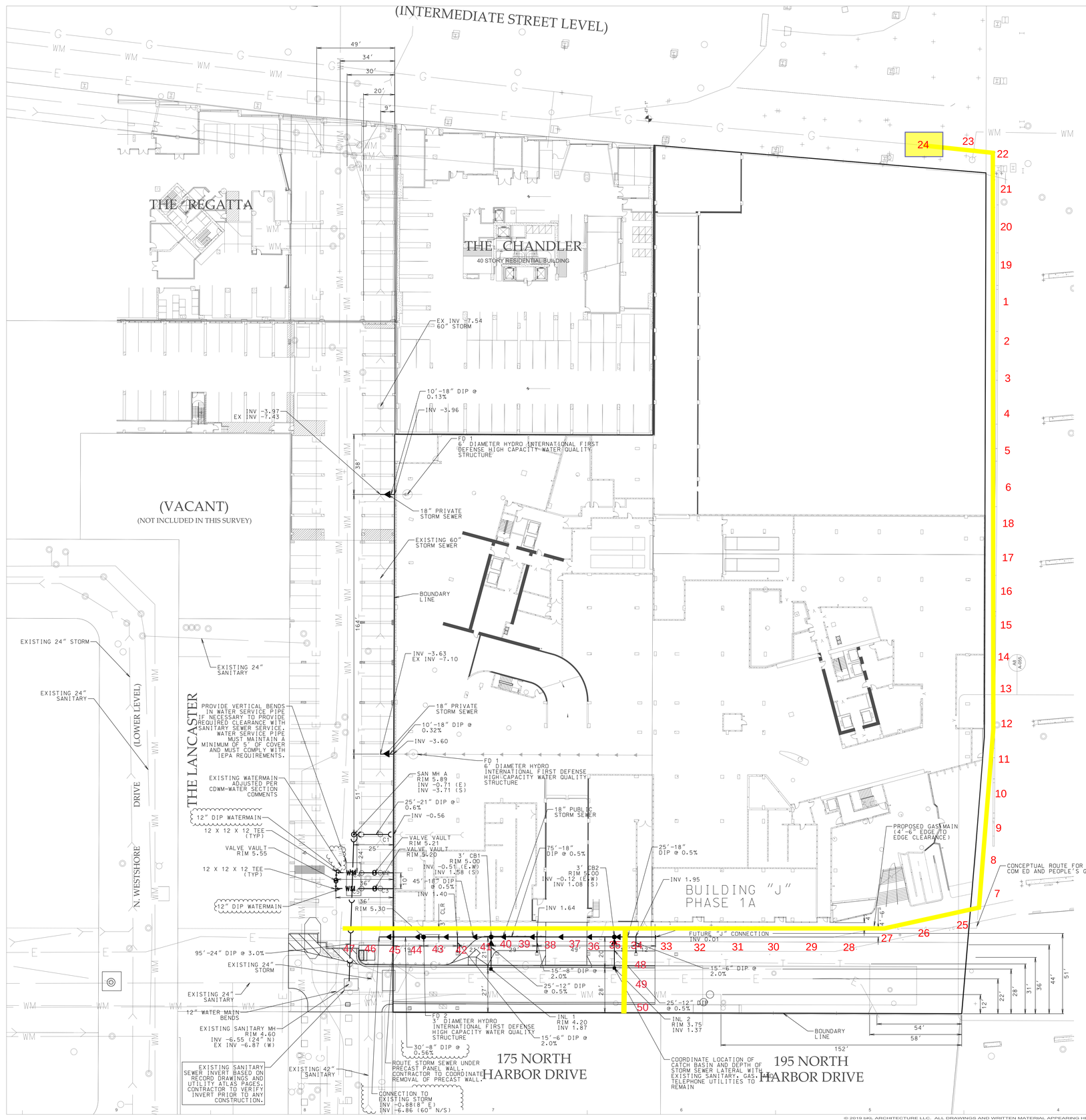
Location: Peoples Gas Service Excavation
Name: Brian Schmidt & Mark Dewald
Date: 9/29/20 - 10/24/20

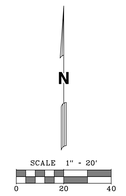
Instrument ID: Ludlum Model 2221 Scaler/Ratemeter w/ Model 44-10 NaI Detector (w/ 6" Lead Shield)
7.1 pCi/g CPM: 7,592 CPM (serial no. 132844) Locations 1-33, 41-50
7,228 CPM (serial no. 134542) Locations 34-40

| | Depth | 0"-6" (bgs) | 6"-24" (bgs) | 24"-42" (bgs) | 42"-60" (bgs) | 60"-78" (bgs) |
|---|---|---|---|---|---|---|
| Date | Gas ID | Survey Results (counts per minute) | | | | |
| 9/29/2020 | 1 | 1600 | 1700 | 3700 | 4000 | 4300 |
| 9/29/2020 | 2 | 1500 | 2000 | 3700 | 4100 | 4800 |
| 9/30/2020 | 3 | 1000 | 1200 | 3300 | 4600 | 4800 |
| 9/30/2020 | 4 | 900 | 1000 | 3800 | 4800 | 5200 |
| 9/30/2020 | 5 | 1100 | 1700 | 3800 | 4300 | 4900 |
| 10/1/2020 | 6 | 1300 | 1900 | 3400 | 3900 | 4600 |
| 10/1/2020 | 7 | 1300 | 1600 | 3900 | 4200 | 4700 |
| 10/2/2020 | 8 | 1100 | 1400 | 3900 | 5300 | 5500 |
| 10/5/2020 | 9 | 1800 | 2000 | 3300 | 4200 | 4500 |
| 10/5/2020 | 10 | 1600 | 1900 | 2800 | 3500 | 3700 |
| 10/6/2020 | 11 | 1100 | 1200 | 2900 | 3500 | 4400 |
| 10/6/2020 | 12 | 1400 | 1700 | 2900 | 3600 | 4100 |
| 10/7/2020 | 13 | 1000 | 1300 | 2600 | 3400 | 3700 |
| 10/7/2020 | 14 | 1300 | 1800 | 3800 | 4400 | 4900 |
| 10/8/2020 | 15 | 1200 | 1300 | 3100 | 3100 | 3600 |
| 10/8/2020 | 16 | 1100 | 1500 | 2700 | 3600 | 3800 |
| 10/8/2020 | 17 | 1500 | 1800 | 3600 | 3900 | 4100 |
| 10/9/2020 | 18 | 1300 | 1600 | 3100 | 4000 | 4900 |
| 10/9/2020 | 19 | 1600 | 1400 | 2300 | 3200 | 3600 |
| 10/12/2020 | 20 | 1300 | 1500 | 2800 | 3500 | 3800 |
| 10/12/2020 | 21 | 1400 | 1900 | 4100 | 3900 | 4200 |
| 10/13/2020 | 22 | 1600 | 2100 | 3700 | 4100 | 4600 |
| 10/13/2020 | 23 | 1800 | 2400 | 3600 | 3100 | 2800 |
| 10/14/2020 | 24 | 2200 | 2900 | 2600 | 3300 | 3400 |

| | Depth | 0"-6" (bgs) | 6"-24" (bgs) | 24"-42" (bgs) | 42"-60" (bgs) | 60"-78" (bgs) |
|---|---|---|---|---|---|---|
| Date | Gas ID | Survey Results (counts per minute) | | | | |
| 10/15/2020 | 25 | 2100 | 2400 | 3600 | 3100 | 3300 |
| 10/15/2020 | 26 | 2200 | 2900 | 3700 | 4200 | 3800 |
| 10/16/2020 | 27 | 2600 | 3300 | 3900 | 3100 | 3300 |
| 10/16/2020 | 28 | 2200 | 2700 | 3000 | 3100 | 3000 |
| 10/19/2020 | 29 | 1900 | 2400 | 2800 | 2900 | 4100 |
| 10/19/2020 | 30 | 2700 | 3600 | 4200 | 3200 | 3200 |
| 10/20/2020 | 31 | 2500 | 2700 | 2700 | 3400 | 3100 |
| 10/20/2020 | 32 | 1800 | 2600 | 3400 | 3900 | 3700 |
| 10/21/2020 | 33 | 2200 | 2800 | 3400 | 3200 | 3100 |
| 10/26/2020 | 34 | 1900 | 2800 | 3300 | 4200 | 3700 |
| 10/26/2020 | 35 | 1600 | 2600 | 3500 | 3800 | 3700 |
| 10/26/2020 | 36 | 2100 | 1900 | 2600 | 2800 | 3100 |
| 10/27/2020 | 37 | 1900 | 2200 | 2200 | 2400 | 3200 |
| 10/27/2020 | 38 | 1800 | 2100 | 2400 | 2600 | 3400 |
| 10/28/2020 | 39 | 2100 | 2800 | 3300 | 3200 | 3100 |
| 10/28/2020 | 40 | 2000 | 2700 | 3600 | 4200 | 4100 |
| 10/23/2020 | 41 | 2000 | 2600 | 2600 | 4800 | 4000 |
| 10/23/2020 | 42 | 2300 | 2300 | 3100 | 4100 | 3800 |
| 10/22/2020 | 43 | 2100 | 2400 | 2700 | 3600 | 3700 |
| 10/22/2020 | 44 | 2100 | 2600 | 3100 | 3100 | 3300 |
| 10/22/2020 | 45 | 2300 | 2100 | 2800 | 3300 | 3500 |
| 10/22/2020 | 46 | 2000 | 2700 | 3100 | 2600 | 2400 |
| 10/22/2020 | 47 | 1900 | 2200 | 3300 | 2900 | 3000 |
| 10/24/2020 | 48 | 1400 | 2100 | 2400 | 2500 | 2200 |
| 10/24/2020 | 49 | 1400 | 2000 | 1800 | 2400 | 2700 |
| 10/24/2020 | 50 | 1600 | 2100 | 2600 | 2600 | 3000 |

# Lakeshore East - Gas Service Installation Location Map




UNDERGROUND UTILITY GENERAL NOTES:

1. ALL SANITARY SEWER SHALL BE DUCTILE IRON PIPE, CLASS 52, UNLESS OTHERWISE INDICATED.
2. ALL WATERMAIN SHALL BE DUCTILE IRON PIPE, CLASS 52, UNLESS OTHERWISE INDICATED.
3. ALL WATERMAIN AND WATER SERVICE LINES SHALL BE PROTECTED FROM OTHER UTILITIES IN ACCORDANCE WITH SECTION 41-2.01 OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS.
4. ALL UNDERGROUND UTILITY INFORMATION NOTED ON THE PLANS IS BASED ON INFORMATION OBTAINED FROM THE MUNICIPALITY, UTILITY COMPANIES OR FIELD MEASUREMENTS. THIS INFORMATION, WHILE BELIEVED TO BE COMPLETED AND ACCURATE CANNOT BE GUARANTEED.
5. CONTRACTOR SHALL VERIFY ALL BUILDING SERVICE LOCATIONS AND SIZES WITH ARCHITECTURAL PLANS PRIOR TO START OF CONSTRUCTION AND NOTIFY THE ENGINEER AND OWNER OF ANY DISCREPANCIES.
6. CONTRACTOR SHALL CONTACT DIGGER (1-312-744-7000) PRIOR TO START OF CONSTRUCTION TO LOCATE ALL UTILITIES WITHIN THE RIGHT-OF-WAY.
7. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES AT ALL PROPOSED CONNECTIONS PRIOR TO START OF CONSTRUCTION AND NOTIFY THE ENGINEER AND OWNER OF ANY DISCREPANCIES.
8. IN CASE OF CONFLICTS, THE CITY OF CHICAGO STANDARDS AND NOTES SHALL TAKE PRECEDENCE.
9. EXISTING PAVEMENT REMOVED FOR UTILITY CONSTRUCTION SHALL BE DONE BY THE RESPECTIVE UTILITY COMPANY AND PAID FOR SEPARATELY BY THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THIS WORK NCIDENTAL TO THE CONTRACT.
10. USE EXTREAME CAUTION NEAR COMED FACILITIES. COMED TRANSMISSION SHALL BE NOTIFIED 2 BUSINESS DAYS PRIOR TO THE START OF WORK. TO SCHEDULE AN ONSITE INSPECTOR DURING CONSTRUCTION.
11. ALL DUCTILE IRON SANITARY SEWER AND STORM SEWER SHALL BE POLY-WRAPPED.
12. A DWM RESIDENT ENGINEER MUST BE PRESENT DURING THE EXCAVATION AND INSTALLATION OF THE PROPOSED SEWER IN CLOSE PROXIMITY TO THE EXISTING 72-INCH WATER MAIN BEND AND ASSOCIATED THRUST BLOCK. CONTACT THE FORCE ACCOUNT CONSTRUCTION MANAGER AT FACM@CTRWATER.NET TWO (2) WEEKS PRIOR TO THE ANTICIPATED CONSTRUCTION DATE SO A DWM RESIDENT ENGINEER CAN BE ASSIGNED TO THE PROJECT. FAILURE TO COMPLY WITH THIS REQUEST MAY RESULT IN ADDITIONAL EXPENSES TO THE PROPOSED PROJECT TO VERIFY THAT ALL WORK CONFORMS TO DWM STANDARDS.

| CROSSING | BTM OF PIPE | TOP OF PIPE | SEPARATION | FINISHED GRADE |
|---|---|---|---|---|
| C1 | SAN -0.51 | STM -2.01 | 1.50 | 5.80 |
| C2 | WTR -0.79 | STM -1.79 | 1.00 | 5.21 |
| C3 | WTR -0.80 | STM -1.80 | 1.00 | 5.20 |
| C4 | WTR -0.79 | SAN -2.35 | 1.56 | 5.21 |
| C5 | WTR -0.80 | SAN -2.71 | 1.91 | 5.20 |

**LEGEND**

Yellow - Peoples Gas

# Attachment D

# ComEd Electric Utility Excavation

10/19/20 – 11/10/20

Lakeshore East Development – Parcels I, J, K, and L

*Performed by:*

*Stan A. Huber Consultants, Inc.*
*200 N. Cedar Rd.*
*New Lenox, IL 60451*

# Radiation Survey Form

*Stan A. Huber Consultants, Inc.*

| | | | |
|---|---|---|---|
| Location: | ComEd Electrical Service Excavation | Instrument ID: | Ludlum Model 2221 Scaler/Ratemeter w/ |
| Name: | Brian Schmidt | | Model 44-10 NaI Detector (w/ 6" Lead Shield) |
| Date: | 10/19/20 - 11/10/20 | 7.1 pCi/g CPM: | 7,592 CPM (serial no. 132844) |

| | Depth | 0"-18" (bgs) | 18"-36" (bgs) | 36"-54" (bgs) | 54"-72" (bgs) | 66"-84" (bgs) | 72"-90" (bgs) | 90"-108" (bgs) | |
|---|---|---|---|---|---|---|---|---|---|
| Date | Electrical ID | Survey Results (counts per minute) | | | | | | | |
| 10/19/2020 | 1 | 1700 | 2100 | 2300 | 2800 | | 2700 | 3400 | excavated to 90" |
| 11/2/2020 | 2 | 1900 | 2600 | 2800 | 3200 | | 3700 | 3900 | excavated to 90" |
| 11/4/2020 | 3 | 2100 | 2900 | 3300 | 3300 | 3400 | | | excavated to 66" |
| 11/4/2020 | 4 | 2200 | 2500 | 3600 | 3400 | 3100 | | | excavated to 66" |
| 11/5/2020 | 5 | 1700 | 2400 | 2700 | 2800 | 3600 | | | excavated to 66" |
| 11/9/2020 | 6 | 2200 | 2800 | 2800 | 3100 | 3200 | | | excavated to 66" |
| 11/10/2020 | 7 | 1900 | 2300 | 2900 | 3100 | 3000 | | | excavated to 66" |

THE LANCASTER

PROVIDE VERTICAL BENDS IN WATER SERVICE PIPE IF NECESSARY TO PROVIDE REQUIRED CLEARANCE WITH SANITARY SEWER SERVICE. WATER SERVICE PIPE MUST MAINTAIN A MINIMUM OF 5' OF COVER AND MUST COMPLY WITH IEPA REQUIREMENTS.

EXISTING WATERMAIN ADJUSTED PER CDWM-WATER SECTION COMMENTS

12" DIP WATERMAIN

12 X 12 X 12 TEE (TYP)

VALVE VAULT RIM 5.55

12 X 12 X 12 TEE (TYP)

12" DIP WATERMAIN

95'-24" DIP @ 3.0%

EXISTING 24" STORM

EXISTING 24" SANITARY

12" WATER MAIN

EX

INV -6.55 (24" N)
EX INV -6.87 (W)

EXISTING SANITARY SEWER INVERT BASED ON RECORD DRAWINGS AND UTILITY ATLAS PAGES. CONTRACTOR TO VERIFY INVERT PRIOR TO ANY CONSTRUCTION.

Note: this portion of trench on North side of gate into Lancaster. Previously Surveyed. GAH 12-21-20

EXISTING 42" SANITARY

18" PRIVATE STORM SEWER

10'-18" DIP @ 0.32%

INV -3.60

FD 1
6' DIAMETER HYDRO INTERNATIONAL FIRST DEFENSE HIGH CAPACITY WATER QUALITY STRUCTURE

SAN MH A
RIM 5.89
INV -0.71 (E)
INV -3.71 (S)

25'-21" DIP @ 0.6%

INV -0.56

VALVE VAULT
RIM 5.21

VALVE VAULT
RIM 5.20

3' CB1
RIM 5.00
INV -0.51 (E,W)
INV 1.58 (S)

45'-18" DIP @ 0.5%

INV 1.40

18" PUBLIC STORM SEWER

75'-18" DIP @ 0.5%

3' CB2
RIM 5.00
INV -0.12 (E,W)
INV 1.08 (S)

INV 1.64

25' DIP

51'

25'

24'

36'

10'

36'

RIM 5.30

C1 C2 C3 C4 C5

CLR

19' 21' 21' 21' 29' 49' 20' 14' 12'

1 2 3 4 5 6 7

15'-8" DIP @ 2.0%

25'-12" DIP @ 0.5%

27' 28'

FD 2
3' DIAMETER HYDRO INTERNATIONAL FIRST DEFENSE HIGH CAPACITY WATER QUALITY STRUCTURE

INL 1
RIM 4.20
INV 1.87

15'-6" DIP @ 2.0%

30'-8" DIP @ 0.56%

ROUTE STORM SEWER UNDER PRECAST PANEL WALL. CONTRACTOR TO COORDINATE REMOVAL OF PRECAST WALL.

CONNECTION TO EXISTING STORM
INV -0.88(8" E)
INV -6.86 (60" N/S)

# 175 NORTH HARBOR DRIVE

## Lakeshore East - Electrical Service Installation Location Map