



July 18, 2016

Mike Lanenga  
SET Environmental  
450 Sumac Road  
Wheeling, Illinois 60090

RE: 25<sup>th</sup>/26<sup>th</sup> Street and Martin Luther King Drive – Radiation Monitoring During Bus Pad Installation; Former Carnotite Reduction Company Permit Hold Area

Dear Mr. Lanenga:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during the installation of bus pads at 25<sup>th</sup>/26<sup>th</sup> Street and Martin Luther King Drive in Chicago, Illinois. The potential contaminants in the area surrounding the Former Carnotite Reduction Company are uranium (U-234+U-235+U-238) and radium (Ra-226+Ra-228). The monitoring was performed on July 14, 2016.

#### Instrumentation

Surface gamma scans were performed by Glenn Huber using a Ludlum Model 2221 Scaled / Ratemeter (serial no. 134542) with attached Ludlum Model 44-10 2"x2" NaI detector (unshielded). The instrument was calibrated on August 13, 2015. The IEMA field action level which would trigger additional monitoring and sampling is twice the average background gamma count rate. The field action level is a conservative estimation of applicable regulatory limits based on the unknown ratios of uranium and radium in the area.

The background count rate for pavement at this location was found to average 4,264 counts per minute (cpm). The background count rate for soil and fill at this location was found to average 7,761 cpm. The field action level for soil contamination was calculated to be 15,522 cpm.

#### Soil Gamma Scans

Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeter described above. Data was collected by monitoring the surface of the pavement prior to excavation. The areas were then resurveyed after the pavement and concrete road base was removed. The depth ranged from 10" to 14" below the road surface.

The maximum gamma count rate for each lift was recorded on the attached Radiation Survey Forms. The count rates in the excavation ranged from 3,800 cpm to 10,400 cpm. No count rates were found at any time that exceeded the field action level of 15,522 cpm. The excavation on the west side of 26<sup>th</sup> Street and Martin Luther King Dr.

had slightly elevated counts due to the fact that soil and fill material was exposed. The other excavations only had sand and/or crushed stone exposed.

Additional Monitoring

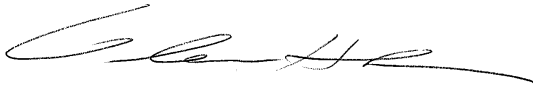
Since no count rates were identified above the field action level, no additional soil sampling, air monitoring, or personnel monitoring were performed.

You will need to forward a copy of this report to the following within two weeks of completion of the onsite monitoring:

City of Chicago Department of Fleet and Facility Management  
Attn: Abby Mazza  
30 North LaSalle St. – Suite 300  
Chicago, IL 60602

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', written in a cursive style.

Glenn Huber, CHP  
President

## Radiation Survey Form

**Location/ Project ID:** SET Environmental 2500-2600 S. Martin Luther King Jr. Drive Bus Pads

**Date:** 7/14/16

**Technician:** Glen Hober

**Inst Model:** Ludlum 2221

**Serial No.:** 134542

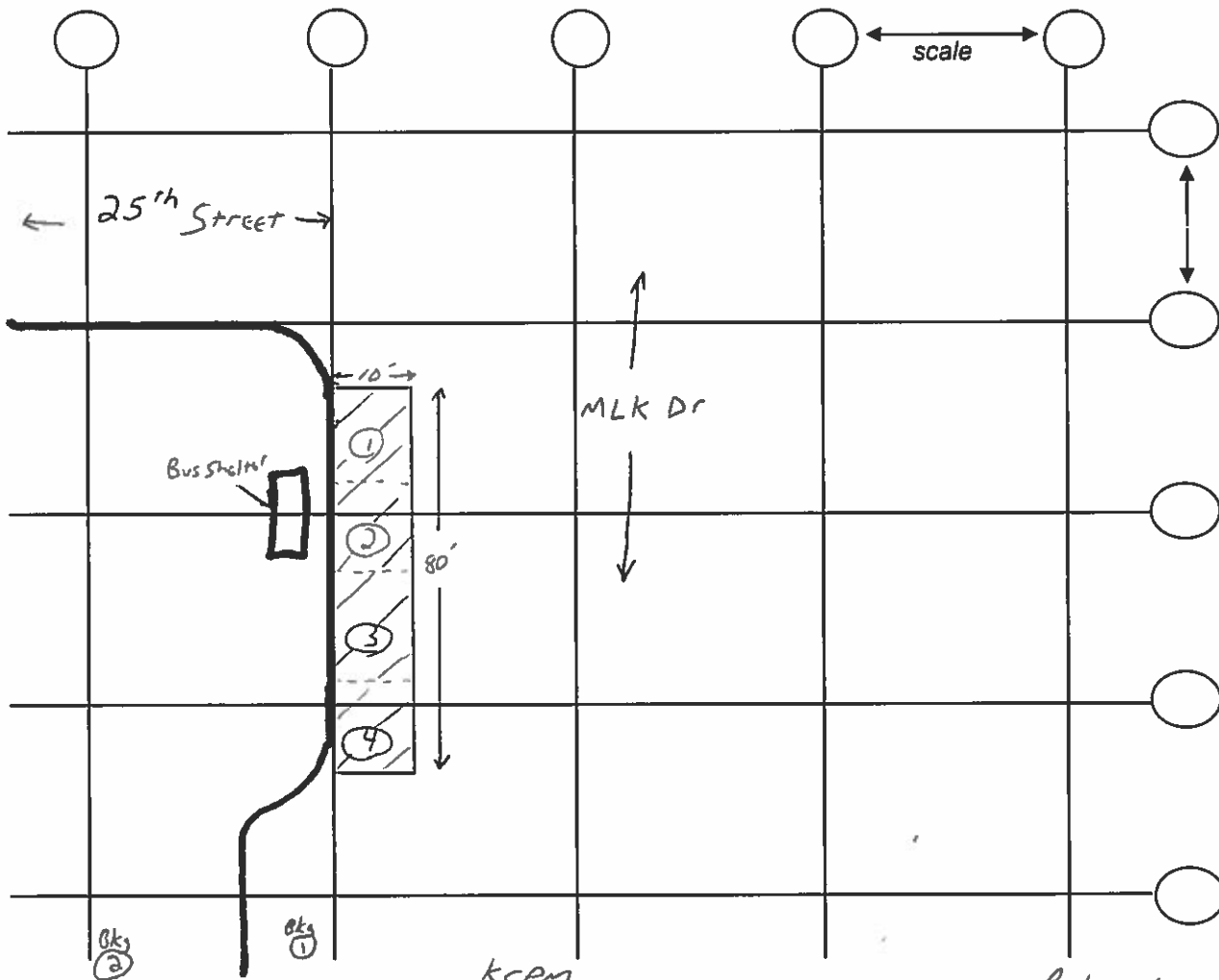
**Probe Type:** 1"x1" NaI / 2"x2" NaI  
Shielded / Not Shielded

**Lift Elevation:** surface → 10" deep

**Background** 7761 cpm (soil)  
4264 (pavement)

**Action Level:** 15,502 cpm 2x Bkg

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.



ID	KCPM	
	Surface	-10"
1	4.8	5.2
2	4.3	5.1
3	4.5	5.5
4	4.2	5.4

Background  
 ① = Bkg #1 pavement  
 ② = Bkg #2 soil

## Radiation Survey Form

**Location/ Project ID:** SET Environmental 2500-2600 S. Martin Luther King Jr. Drive Bus Pads

**Date:** 7/14/16

**Technician:** Glenn Huber

**Inst Model:** Ludlum 2221

**Serial No.:** 134542

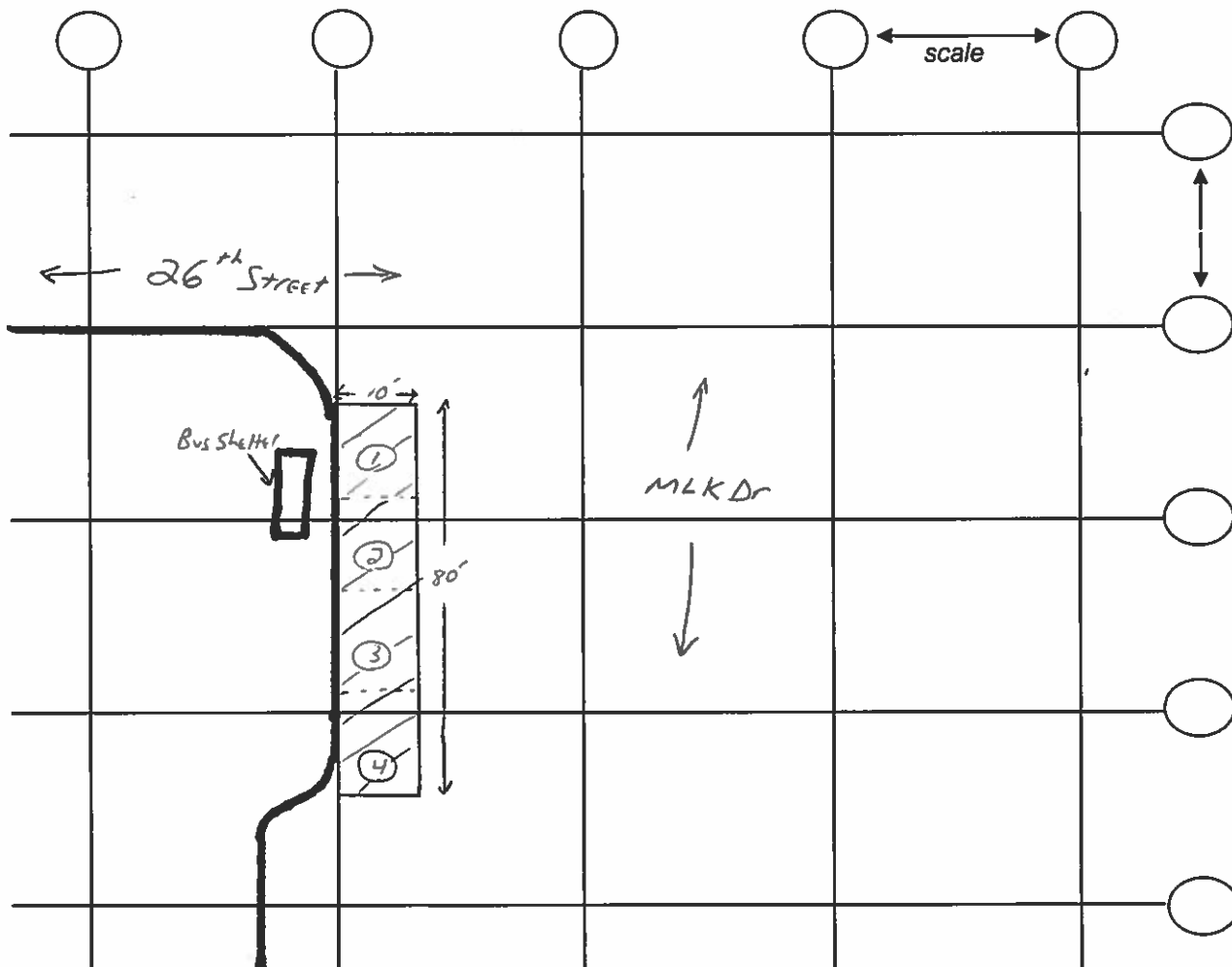
**Probe Type:** 1"x1" NaI / 2"x2" NaI  
Shielded / Not Shielded

**Lift Elevation:** surface → -14" deep

**Background** 7761 cpm (50:1)  
4264 (percent)

**Action Level:** 15,522 cpm 2x Bkgs

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.



ID	Kcpm surface	-14" (50:1)
1	4.1	9.8
2	4.2	10.3
3	4.4	10.1
4	4.0	10.4

## Radiation Survey Form

**Location/ Project ID:** SET Environmental 2500-2600 S. Martin Luther King Jr. Drive Bus Pads

**Date:** 7/14/16

**Technician:** Glean Huber

**Inst Model:** Cedlon 2221

**Serial No.:** 134542

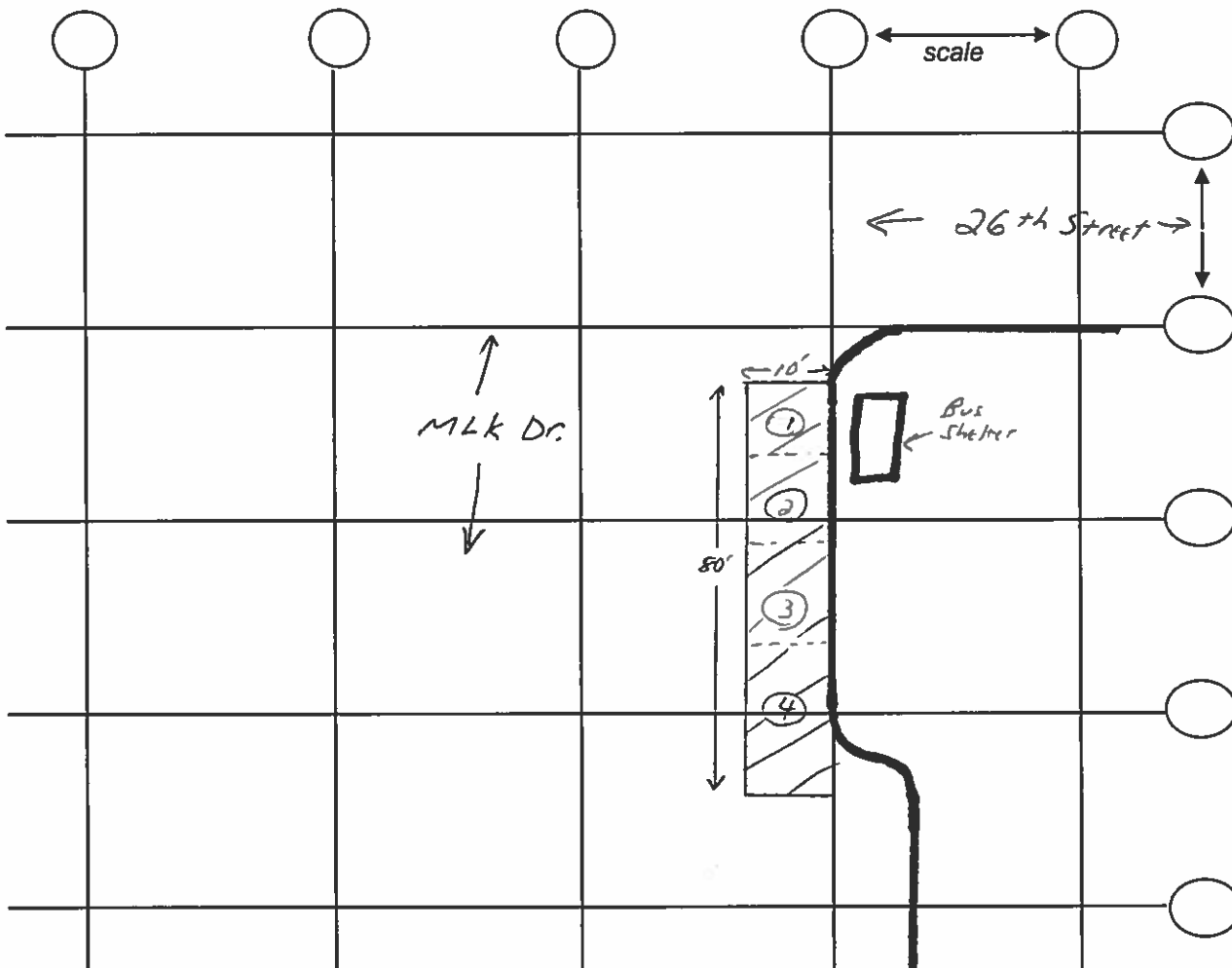
**Probe Type:** 1"x1" NaI / 2"x2" NaI  
Shielded / Not Shielded

**Lift Elevation:** surface → -12" deep

**Background** 7761 cpm (soil)  
4264 (pavement)

**Action Level:** 15,522 cpm  $2 \times Bkg$

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.



ID	Kcpm	
	surface	-12"
1	4.0	4.9
2	3.9	4.8
3	4.1	5.1
4	3.8	5.3