STS | AECOM

STS
750 Corporate Woods Parkway, Vernon Hills, IL 60061
T 847.279.2500 F 847.279.2510 www.sts.aecom.com

June 10, 2008

Mr. Dennis Poulos
Power Construction Company, LLC
2360 N. Palmer Drive
Schaumburg, IL 60173

RE Radiological Survey of Right-of-Way Utility Excavation
Permit No.: 860856801
Permit Address: 403-430 East Illinois Street
STS Project No. 1-27313XC

Dear Mr. Poulos:

Pursuant to conditions specified in a permit (see attached) issued by the City of Chicago, radiation monitoring was required to be performed at the above-referenced site. STS provided the required radiation surveillance for the sidewalk reconstruction on Illinois Street conducted primarily during May 2008. This activity basically replaced the sidewalk and subsequently the street lights from N. McClurg Court to N. Peshtigo Court

The sidewalk reconstruction and radiological surveying started near the western property boundary and continued eastward towards Peshtigo Court. Curbs and sidewalks were being removed, and a trench was excavated for a landscape (tree) planting area as well as new sidewalks. The width of the trench measured approximately 4 feet, down to a depth of approximately 30-36 inches, the depth at which electrical conduit for E. Illinois Street lighting was encountered.

Surveying was performed as curbs and sidewalks were removed, and again as 18-inches of the existing soils were excavated for the trench. The USEPA threshold for Chicago is 7.1 picocuries per gram (pCi/g) total radium (Ra-226 + Ra-228). Gamma radiation count measurements for the project were made using a Ludlum Model 2221 survey meter and an unshielded 2 x 2 NaI probe (Model 44-10). For the instrumentation used, the gamma count indicative of the 7.1 pCi/g threshold was 19,017 counts per minute (cpm).

On May 13 an area of elevated gamma readings (maximum between 28,000 – 30,000 cpm) was found surrounding a light post approximately 240 feet west of the Peshtigo Court curb (refer to Figure). Because of space limitations, the radiologically-impacted soil (about ½ cubic yard) was loaded directly into a super sack, which is temporarily being stored onsite pending the completion of the sidewalk reconstruction along N. McClurg Court and E. Grand Ave.

After the removal of the radiologically-impacted material adjacent to the light pole, the soil/fill was excavated from the trench on either side of the light pole in thin 6-inch lifts. Elevated readings were noted in the trench after removal of the initial 6-12 inches. However, the readings of the spoil in the excavator bucket and at the surface adjacent to the trench indicated gamma readings of about 10,000 cpm. Therefore, the elevated readings appeared to be the result of shine from the soil/fill at a greater depth below the base of the trench. Excavation in thin lifts continued until a depth of 30-36 was reached and the electrical conduit for the street lights was exposed At this point the maximum readings observed in the trench approached 175,000 cpm. A sample was collected from about 6-12 inches below the electrical conduit line and submitted to RSSI for gamma spectroscopy analysis. Per the request of the USEPA, a layer of plastic sheeting was placed in the trench prior to the backfilling. The gamma spectroscopy analysis results indicated a total radium concentration of about 99 pCi/g (refer to attached analytical report).

In summary, radiological surveys conducted in May along the E. Illinois Street generally indicated gamma reading with a maximum of about 14,000 cpm. The only exception was an area near a light pole about 240 feet west of N. Peshtigo Court. It appears that the impacted material adjacent to the light pole was likely spoil brought from a deeper depth during the original installation of the pole. Trench excavations about 10 feet either side of the light pole indicated increasing gamma readings with depth. Specifically, the radiologically-impacted soil/fill appeared to be located below the base of the trench. Additional excavation below the proposed trench depth of 30-36 inches could not be performed because of the presence of the electrical conduit line for the street lights and the close proximity to the street.

Finally, as part of the permit conditions, this letter has been forwarded to:

Chicago Department of Environment
Attention: Ms. Rahmat Begum
30 North LaSalle Street, 25th Floor
Chicago, Illinois 60602

Please contact us with any questions you have regarding this letter or the reported results.

Regards,

Jaclyn Webb
Project Scientist

Steven C. Kornder, Ph.D.
Senior Project Geochemist

cc: Rahmat Begum, Chicago Department of Environment
Brad Toms, MCL
Vince Oleszkiewicz, DuaneMorris
Verneta Simon, USEPA

Attachments: Permit
Sketch
Lab Report

City of Chicago
Richard M. Daley, Mayor

Department of Environment

Twenty-fifth Floor
30 North LaSalle Street
Chicago, Illinois 60602-2575
(312) 744-7000 (Voice)
(312) 744-5431 (FAX)
(312) 744-2586 (TTY)
http://www.cityofchicago.org

CITY OF CHICAGO DEPARTMENT OF ENVIRONMENT
FORM NO. DOE.ROW.01

Notice is hereby given that the site you have requested information on is recorded with the City of Chicago Department of Environment as potentially having environmental contamination on the site and adjacent right-of-way. This environmental contamination could present a threat to human health and safety in connection with work performed at the site, or in the adjacent right-of-way, if proper safeguards are not employed.

A file containing detailed information regarding the aforementioned environmental contamination is available for review at the Department of Environment at 30 N. LaSalle St., 25th Floor, Chicago, Illinois 60602 during normal business hours (8:30 AM - 4:30 PM, Monday through Friday). Contact Rhamat Begum at (312) 744-3152 for an appointment. This file must be reviewed and the remainder of this form completed before the permit can be issued. Please note that for some locations, additional health and safety procedures may be required by law.

Please complete the following:

I have reviewed and understand the documents, maintained by the Department of Environment, regarding environmental contamination of the site and adjacent right-of-way. Further, I will ensure that all work at the subject site and adjacent right-of-way, and any monitoring required including but not limited to radiation monitoring, will be performed in a manner that is protective of human health and the environment and in compliance with all applicable local, state, and federal laws, rules, and regulations, especially those pertaining to worker safety and waste management. I will ensure that the results of any radiation monitoring and/or surveying conducted shall be provided to the Department of Environment within two (2) weeks of their completion. If any elevated levels of radioactive material are detected, I will immediately contact the United States Environmental Protection Agency at (800) 424-8802.

Permit No. 80856801

Date 4/17/08

Site Address

Work Location (describe exact site location) 501-525 McClurg
403-430 E. Illinois

Nature of Work Sidewalk opening

Signature

Name (print) BRAD HARCES

Company Power Construction Inc.

Address 2360 N Palmer DR #360

Phone No. 847 417 3601

Prime Contractor/Contact P Dennis Podes

Address 2360 N Palmer dr

Phone 847417 3601

Safety Officer/Phone ~~Dennis Podes~~ STS Steve KOENCR

Radiation Contractor/ Phone (If applicable) 847 417 3601

Signed by Department of Environment

Date 4/18/08

NEIGHBORHOODS ALIVE!

Please return this completed form to the City of Chicago Department of Transportation at 30 N. LaSalle St., Room 1101, Chicago, Illinois 60602 during normal business hours (8:30 AM - 4:30 PM, Monday through Friday).

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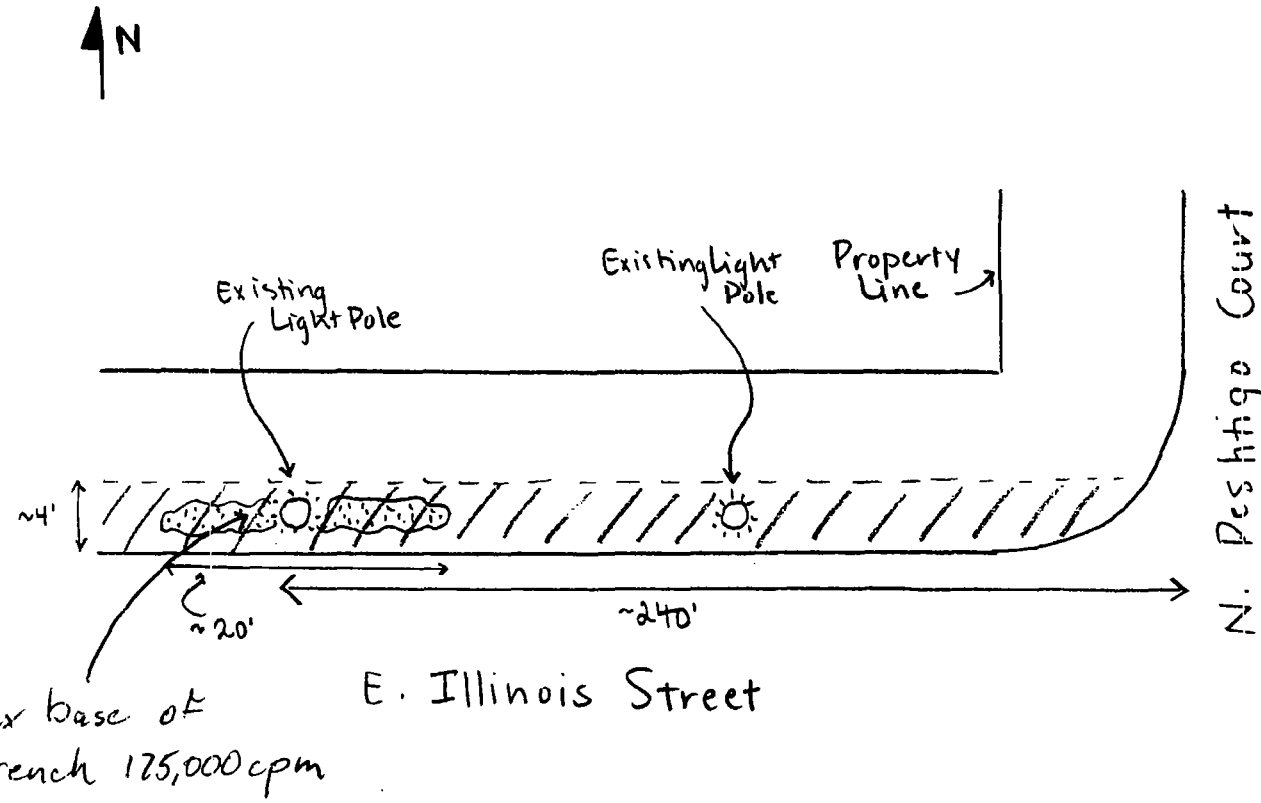
Calculation Sheet

Project	Former Kraft Site - ROW			Subject	Radiologically Impacted Area		
Originated By	Date	Checked By	Date	STS Job No.	Scale	Sheet No.	
J. Webb	5/29/08	SC	6/4/08	X127313 XC		1 of 1	



Measured with Ludlum
Model # 2221
Serial # 172039
Probe # 174469
EPA Threshold Value 19,017 cpm
(unshielded)

Key:

- Trench excavated to ~ 30 to 36" depth for structural soil for landscape planters.
- Radiologically Impacted Soils

GDR/PC RSSI High Resolution Gamma Spectroscopy Ver. 6.02a

Sample ID : 081371 STS ILLINOIS ROW 5-13-08

Sample Size	4.71e+002 g	Spectrum File .	.H:\MAESTROS\081371.CHN
Sampling Start.	05-13-08 13:00	Counting Start.	05-23-08 14:24
Sampling Stop	05-13-08 13:00	Live Time	3600 Sec
Current Date.	05-28-08 14:30	Real Time	3660 Sec

Detector #: 1

Energy(keV)= 7.05 + 0.232*Ch + 0.00e+000*Ch^2 + 0.00e+000*Ch^3 05-23-08 14:24

FWHM(keV) = 0.94 + 0.015*En + 2.91e-004*En^2 + 0.00e+000*En^3 08-13-07 15:28
Where En = Sqrt(Energy in keV)

Sensitivity	0.20	Search Start / End. . . .	0 / 8191
Sigma Multiplier.	1.00		

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.66	291.59	11890	273	506	15231	1.03	a
2	76.87	301.13	20095	267	451	13766	1.15	b
3	84.23	332.84	3319	286	592	13640	1.36	a
4	87.00	344.79	10139	264	500	13316	1.39	b
5	89.74	356.61	7386	239	450	12322	1.27	c
6	93.16	371.37	7195	249	486	11287	1.21	d
7	99.40	398.30	1959	200	388	10389	1.15	
8	105.13	422.99	3288	294	610	14639	1.64	a
9	108.63	438.08	894	221	446	11211	1.18	b
10	115.12	466.07	1177	202	395	10787	1.20	
11	128.91	525.55	4306	231	439	13317	1.04	
12	153.91	633.38	1737	201	391	10563	1.21	
13	209.18	871.74	8290	209	376	9189	1.22	
14	238.59	998.58	89812	370	447	9980	1.25	a
15	240.95	1008.75	7552	180	313	6910	1.06	b
16	270.19	1134.88	5597	156	274	4896	1.20	
17	277.40	1165.96	3758	151	279	4794	1.47	
18	288.10	1212.10	635	134	266	4344	1.30	
19	295.18	1242.65	501	113	223	3205	0.92	a
20	300.04	1263.59	4996	152	277	4118	1.17	b
21	321.51	1356.21	453	129	259	3898	1.97	
22	327.94	1383.94	4161	161	310	3896	1.19	a
23	332.39	1403.14	392	113	221	3307	1.05	b
24	338.29	1428.57	17686	190	280	3961	1.35	c
25	340.86	1439.64	418	128	262	3258	1.15	d
26	351.88	1487.20	1073	118	228	3186	1.25	
27	409.39	1735.18	2361	116	213	2784	1.36	
28	452.80	1922.40	396	93	181	2134	1.26	
29	463.02	1966.50	4815	124	209	2530	1.42	
30	503.99	2143.17	142	84	169	1648	0.98	a NET < CL

31	510.73	2172.27	8226	157	273	2849	1.70	b
32	562.43	2395.25	1033	93	178	1849	1.67	
33	583.29	2485.19	27232	196	215	2553	1.48	
34	609.37	2597.70	773	90	175	1780	1.29	
35	727.42	3106.79	6222	115	172	1554	1.68	
36	735.39	3227.43	838	83	159	1403	1.65	
37	763.83	3263.85	244	89	181	1646	1.29	
38	772.47	3301.08	1082	84	160	1341	1.66	
39	782.42	3344.02	295	81	165	1180	1.47	a
40	785.67	3358.02	797	80	154	1156	1.48	b
41	795.10	3398.67	3034	92	151	1197	1.55	
42	830.70	3552.22	377	77	159	862	1.60	a
43	835.86	3574.49	1229	75	136	894	1.64	b
44	840.57	3594.80	614	78	159	886	1.64	c
45	860.71	3681.66	3165	82	123	795	1.88	
46	893.79	3824.32	195	54	106	627	1.26	
47	904.58	3870.85	412	69	139	729	1.53	a
48	911.36	3900.11	19284	153	138	728	1.75	b
49	944.87	4044.63	109	48	98	480	1.24	
50	958.87	4105.00	126	54	112	504	1.27	a
51	964.98	4131.36	3492	82	120	641	1.83	b
52	969.14	4149.28	11294	122	128	574	1.73	c
53	1033.29	4425.97	125	45	91	414	1.24	
54	1065.50	4564.86	218	43	83	361	2.27	
55	1079.19	4623.89	385	46	87	364	1.82	
56	1094.28	4688.99	395	51	98	407	1.98	
57	1111.12	4761.64	252	44	86	366	2.08	
58	1247.08	5347.97	278	47	92	406	3.30	
59	1460.51	6268.47	998	56	98	407	2.77	
60	1496.13	6422.07	362	49	98	325	1.74	a
61	1501.54	6445.44	204	41	81	266	1.77	b
62	1513.28	6496.06	215	38	73	248	1.76	
63	1557.11	6685.06	114	34	68	212	3.06	
64	1580.67	6786.68	183	40	79	242	1.39	a
65	1588.39	6819.99	1483	60	98	369	2.05	b
66	1592.67	6838.44	793	64	126	415	2.18	c
67	1620.92	6960.28	787	55	104	272	2.05	a
68	1625.18	6978.64	132	45	93	283	2.13	b
69	1630.87	7003.17	764	47	81	266	1.94	c
70	1638.48	7036.00	229	44	89	239	1.76	d
71	1764.51	7579.56	180	35	68	199	3.80	

GDR/PC RSSI High Resolution Gamma Spectroscopy Ver. 6.02a

BACKGROUND SUBTRACT RESULTS

Sample ID : 081371 STS ILLINOIS ROW 5-13-08

Bkg File: . . . .H:\GDR\BKG\NOCAL.BKG | Counting Start. 05-23-08 14:24
ID.:. . . . . 24 Hour Background | Current Date 05-28-08 14:30

PK#	ENERGY (keV)	FWHM (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	NEW NET COUNTS	NEW UN-CERTAINTY	FLAG
1	74.66	1.03	11890	273	11835	273	
3	84.23	1.36	3319	286	3299	286	
6	93.16	1.21	7195	249	7145	249	
14	238.59	1.25	89812	370	89782	370	
19	295.18	0.92	501	113	476	114	
26	351.88	1.25	1073	118	1017	118	
31	510.73	1.70	8226	157	8139	158	
33	583.29	1.48	27232	196	27209	196	
34	609.37	1.29	773	90	679	91	
48	911.36	1.75	19284	153	19261	153	
52	969.14	1.73	11294	122	11282	122	
59	1460.51	2.77	998	56	813	56	
71	1764.51	3.80	180	35	160	35	

GDR/PC RSSI High Resolution Gamma Spectroscopy Ver. 6.02a

NUCLIDE ACTIVITY SUMMARY

Sample ID: 081371 STS ILLINOIS ROW 5-13-08

Sample Size . . . . . 4.71e+002 g	Spectrum File . .H:\MAESTROS\081371.CHN
Sampling Start. 05-13-08 13:00	Counting Start. 05-23-08 14:24
Sampling Stop 05-13-08 13:00	Buildup Time. . . . . 0.00e+000 Hrs
Current Date. 05-28-08 14:30	Decay Time [OFF]. . . . . 0.00e+000 Hrs
Efficiency File.H:\GDR\EFF\500MAR.EFF	Library File. . . . H:\GDR\LIB\1001.LIB
ID. . . . . 500 MARINELLI	ID. . . . . TH, U, AND K SERIES

Eff.= 1/[2.90e-002*En^-2.65e+000 + 9.35e+001*En^8.20e-001] 02-19-08 12:00

Gamma Fraction Limit >= . . . 10.00 %	Decay Limit <=. . . . 8.000 Halflives
Library Energy Tolerance. . . 1.20	

FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (uCi/g)	Halflife (hrs)	Peaks Found
Pb-212	Average:	9.64e-005 +-3.93e-007	1.06e+001	4 of 4
	74.82	I.D.Only		
	77.11	I.D.Only		
	238.63	9.67e-005 +-3.98e-007		
	300.09	8.31e-005 +-2.53e-006		
Pb-214	Average:	1.65e-006 +-1.71e-007	4.47e-001	4 of 4
	77.11	I.D.Only		
	241.98	1.75e-006 +-1.16e-006		
	295.21	1.39e-006 +-3.30e-007		
	351.92	1.75e-006 +-2.02e-007		
Th-228	84.37	I.D.Only	1.68e+004	1 of 2
Th-234	92.80	I.D.Only	5.78e+002	1 of 3
Pa-234	98.44	I.D.Only	6.70e+000	1 of 4
Pa-234m	98.44	I.D.Only	1.95e-002	1 of 4
Ra-224	240.98	8.92e-005 +-2.21e-006	8.69e+001	1 of 1
Tl-208	Average:	3.11e-005 +-2.07e-007	5.09e-002	3 of 3
	277.35	2.96e-005 +-1.19e-006		
	510.84	3.25e-005 +-6.30e-007		
	583.14	3.10e-005 +-2.23e-007		
Bi-212	Average:	1.06e-004 +-1.86e-006	1.01e+000	4 of 4
	288.07	1.10e-004 +-2.32e-005		
	727.17	1.06e-004 +-1.96e-006		
	785.46	8.86e-005 +-8.85e-006		
	1620.60	1.17e-004 +-8.20e-006		
Ac-228	Average:	9.69e-005 +-5.33e-007	6.13e+000	3 of 3
	338.32	9.67e-005 +-1.04e-006		
	911.07	9.61e-005 +-7.65e-007		
	969.11	9.86e-005 +-1.07e-006		

Ra-226

Bi-214	Average:	1.57e-006 +-1.83e-007	3.32e-001	2 of 4
	609.31	1.46e-006 +-1.95e-007		
	1764.50	2.39e-006 +-5.29e-007		
K-40	1460.80	1.55e-005 +-1.07e-006	1.12e+013	1 of 1

TOTAL: 4.38e-004 uCi/g

UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un-Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec
87.00	344.79	10139	264	500	13316	1.39	8.833e+001
89.74	356.61	7386	239	450	12322	1.27	6.198e+001
105.13	422.99	3288	294	610	14639	1.64	2.383e+001
108.63	438.08	894	221	446	11211	1.18	6.347e+000
115.12	466.07	1177	202	395	10787	1.20	8.112e+000
128.91	525.55	4306	231	439	13317	1.04	2.875e+001
153.91	633.38	1737	201	391	10563	1.21	1.172e+001
209.18	871.74	8290	209	376	9189	1.22	6.390e+001
270.19	1134.88	5597	156	274	4896	1.20	5.116e+001
321.51	1356.20	453	129	259	3898	1.97	4.712e+000
327.94	1383.94	4161	161	310	3896	1.19	4.396e+001
332.39	1403.14	392	113	221	3307	1.05	4.188e+000
340.86	1439.65	418	128	262	3258	1.15	4.548e+000
409.39	1735.18	2361	116	213	2784	1.36	2.968e+001
452.80	1922.40	396	93	181	2134	1.26	5.390e+000
463.02	1966.50	4815	124	209	2530	1.42	6.681e+001
562.43	2395.25	1033	93	178	1849	1.67	1.677e+001
755.39	3227.43	838	83	159	1403	1.65	1.730e+001
763.83	3263.85	244	89	181	1646	1.29	5.078e+000
772.47	3301.07	1082	84	160	1341	1.66	2.275e+001
782.42	3344.02	295	81	165	1180	1.47	6.280e+000
795.10	3398.67	3034	92	151	1197	1.55	6.534e+001
830.70	3552.22	377	77	159	862	1.60	8.420e+000
835.86	3574.49	1229	75	136	894	1.64	2.757e+001
840.57	3594.80	614	78	159	886	1.64	1.385e+001
860.71	3681.66	3165	82	123	795	1.88	7.271e+001
893.79	3824.32	195	54	106	627	1.26	4.629e+000
904.58	3870.85	412	69	139	729	1.53	9.861e+000
944.87	4044.63	109	48	98	480	1.24	2.695e+000
958.87	4105.00	126	54	112	504	1.27	3.168e+000
964.98	4131.36	3492	82	120	641	1.83	8.812e+001
1033.29	4425.97	125	45	91	414	1.24	3.327e+000
1065.50	4564.86	218	43	83	361	2.27	5.952e+000
1079.19	4623.89	385	46	87	364	1.82	1.064e+001
1094.28	4688.99	395	51	98	407	1.98	1.104e+001
1111.12	4761.64	252	44	86	366	2.08	7.132e+000
1247.08	5347.97	278	47	92	406	3.30	8.644e+000
1496.13	6422.07	362	49	98	325	1.74	1.307e+001
1501.55	6445.44	204	41	81	266	1.77	7.377e+000
1513.28	6496.06	215	38	73	248	1.76	7.844e+000
1557.11	6685.06	114	34	68	212	3.06	4.257e+000
1580.67	6786.68	183	40	79	242	1.39	6.928e+000
1588.39	6819.99	1483	60	98	369	2.05	5.630e+001
1592.67	6838.44	793	64	126	415	2.18	3.018e+001

1625.18	6978.64	132	45	93	283	2.13	5.122e+000
1630.87	7003.17	764	47	81	266	1.94	2.964e+001
1633.48	7036.00	229	44	89	239	1.76	8.898e+000