Radiological Survey at

630 N. McClurg Court
Chicago, Il 60611

Performed on June 20, 2013

FOR

CABENO Environmental Field Services, LLC
16714 Cherry Creek Court
Joliet, Illinois 60433

BY

RSSI
6312 W. OAKTON STREET
MORTON GROVE, IL 60053

June 20, 2013

I. INTRODUCTION

In the early 1900s, Lindsay Light and Chemical Company used thorium in industrial operations between Illinois Street and Grand Avenue east of Michigan Avenue, in Chicago's Streeterville area. Thorium is naturally radioactive. The predominate isotope of thorium, thorium-232 (Th-232), decays to radium-228 (Ra-228). Another isotope, thorium-230 (Th-230), decays to radium-226 (Ra-226).

The US Environmental Protection Agency (EPA) reported that the material from Lindsay Light and Chemical Company operations may have been in fill used in the 600 block of North McClurg court, Chicago, Illinois. The EPA has set a standard of 5 picocuries per gram (pCi/g) of Ra-226 plus Ra-228 above background concentrations. Background concentrations in the Streeterville area are assumed to be 2.1 pCi/g total resulting in an action level of 7.1 pCi/g combined Ra-226 and Ra-228. receive

II. METHODOLOGY

On June 20, 2013, RSSI performed radiological surveys of 13 sampling wells placed in two areas. Eight wells were on the north east corner of the property. This area was filled primarily with soil and ruble. Five wells were located on both sides of the 600 block of McClurg court. This area was paved with concrete. The wells were removed and filled, and radiation levels were measured on material removed from the wells. (Figure 1). Radiation levels were measured using a 2 inch by 2 inch thallium doped sodium iodide (NaI(Tl)) detector attached to a Ludlum Model 193 survey meter (Model 193).

The Ludlum Model 193 is a general purpose portable survey instrument with a fixed alarm point and a quick deviation alarm. The quick deviation alarm enables detection of subtle changes in radiation levels. The Model 193 is used with a Ludlum Model 44-10 2" X 2"that is highly sensitive to gamma radiation. The detector was shielded to minimize the response to background radiation. The instrument response was approximately 700 counts per minute (cpm) per pCi/g of Ra-226 and Ra-228.

III. RESULTS

	Area 1	
Well #	**Low**	**High**
Background	3200 cpm	3600 cpm
RW-3	3200 cpm	3600 cpm
RW-2	3200 cpm	3200 cpm
RW-1	3200 cpm	3200 cpm
MW-1	3000 cpm	3600 cpm
MW-102	3200 cpm	3600 cpm*
MW-103	3600 cpm	4000 cpm*
MW-101	3200 cpm	4400 cpm*
MW-104	3200 cpm	4000 cpm*
	Area 2	
Background	2400 cpm	2400 cpm
MW-105	2400 cpm	2400 cpm
MW-106	2800 cpm	2800 cpm
MW-107	2400 cpm	2400 cpm
MW-108	2600 cpm	2600 cpm
MW-109	2400 cpm	2400 cpm
*Taken 1ft below the surface.		

The background radiation levels in the area filled with ruble were between 3,200 and 3,600 cpm. Radiation levels of the surface pipe casings and soil in this area brought up from the wells were between 3,000 and 3,600 cpm. After removal of well material, subsurface radiation levels at a depth of 1 foot in wells MW-101 to MW-104 were 3600 to 4400 cpm. Subsurface reading was only possible in these four wells because of pipe casing larger diameter.

The background radiation levels in the area paved with concrete were 2400 cpm. Radiation levels at the surface removed from the five wells in the area were between 2,400 and 2,800 cpm.

Radiation levels measured at the surface of material removed from the wells and at a depth of 1 foot in wells with a larger diameter did not exceed twice background.

DESCRIPTION: FORMER CBS 630 NORTH McCLURG COURT CHICAGO, IL		DRAWN: LB	FIGURE: 1 SITE LAYOUT & WELL LOCATIONS
		CHECK:	
CLIENT:	SCALE: GRAPHIC	DATE: 10/10	FILE: A1854-440-2

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