Moraine Environmental, Inc.
Design • Engineer • Construct

December 21, 2011

Project Reference No. 5310

RECEIVED
MAY 6 2013
By from WEDC

Mr. Brian Delfield
Guy & O'Neill, Inc.
617 Tower Drive
Fredonia, WI 53021

Dear Brian:

RE: Letter Report on Soil Vapor / Indoor Air Sampling for Trichloroethene
Kenro, Inc. Manufacturing Building and Property
200 Industrial Drive
Fredonia, Wisconsin 53021

Moraine Environmental, Inc. (Moraine) has completed the enclosed letter report regarding soil vapor and indoor air sampling conducted for trichloroethene (TCE) at the former Kenro, Inc. (Kenro) manufacturing building and property located at 200 Industrial Drive in Fredonia, Wisconsin. Two copies of our letter report are provided.

Regulatory Guidance

Vapor intrusion at remediation sites in the State of Wisconsin is regulated by the Wisconsin Department of Natural Resources (WDNR) and the Wisconsin Department of Health Services (WDHS). The WDNR issued a guidance document titled "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin", dated December 2010. This guidance document was used by Moraine in the design and implementation of the sub-slab and indoor air sampling program conducted at the former Kenro industrial building. In general, the remedial efforts for the source of the identified contaminants at vapor intrusion sites follows the remedy selection process established in NR 722 of the Wisconsin Administrative Code.

Statement of Problem

Previous environmental investigations have been conducted by others at the former Phillips Plastics, Inc. and Modern Metals, Inc. properties located in the Village of Fredonia Industrial Park.

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The major findings from these investigations include:

- A review of historical manufacturing operations has documented the use of TCE at the Phillips Plastics, Inc. and Modern Metals, Inc. properties.

- Subsurface environmental investigations at the Phillips Plastics, Inc. and Modern Metals, Inc. properties have identified TCE in the soil and groundwater at both properties.

- Active soil remedial measures for TCE were conducted in 2011 at the Phillips Plastics property.

- A review of historical manufacturing operations has documented that TCE was not used at the former Kenro property.

- The groundwater flow direction in the Village of Fredonia Industrial Park is to the east and north from the Phillips Plastics, Inc. and Modern Metals, Inc. properties toward the Kenro, Inc. site. At the Kenro property, the groundwater flow is to the northwest and the northeast.

- Historical TCE releases to the groundwater from the Phillips Plastics, Inc. and Modern Metals, Inc. properties continue to result in NR 140 ES exceedances in the groundwater beneath the Kenro property.

- The contaminated groundwater beneath the Kenro property was caused by chemical releases from the Phillips Plastics, Inc. and Modern Metals, Inc. properties and not from the Kenro property.

- Previous environmental consultants completed a vapor migration evaluation on the Kenro property and the adjoining Forest Glen residential subdivision to the north of the Kenro property. Within soil gas samples collected on the exterior of the Kenro property, TCE was detected at concentrations greater than the Federal target soil gas concentration. This indicates that TCE present in the groundwater is likely volatilizing and migrating upward toward the ground surface.

Soil Gas and Indoor Air Analysis for TCE

As a result of the above-described environmental conditions, Guy & O'Neill, Inc. authorized Moraine to collect interior sub-slab and indoor air samples in the Western Building area within the former Kenro building complex. The western building area was the initial portion of the building complex constructed in 1980.

Moraine installed four soil vapor wells in the western building on December 1, 2011 capable of allowing for the collection of sub-slab soil vapor samples. Each soil vapor well is eight feet deep. As the depth to the groundwater at the former Kenro property is approximately 40 feet below ground surface, the wells are installed well above the top of the groundwater table. Each well was constructed using a five-foot long PVC well screen followed by three feet of PVC riser pipe (not a screen). The diameter of the well screen and riser pipe is one inch. The borehole around the upper two feet of the riser pipe was filled with bentonite chips to provide an air tight seal at the surface of the borehole.

The soil vapor wells were installed in the following locations:

Vapor Well No.	Location
VW – 1	Southwest Corner of the Office Along the West Wall of the Western Building
VW – 2	West Wall of the Office Along the West Wall of the Western Building
VW – 3	West Wall of the Chemical Storage Room Along the West Wall of the Western Building
VW – 4	Northwest Corner of the Western Building

Groundwater monitoring well MW-9 is located in the western parking lot area to the west of the Western Building area. Recent groundwater monitoring has identified increased TCE concentrations in the groundwater at this monitoring well. As a result of the high TCE concentrations at well MW-9, the preliminary soil vapor investigative wells were located along the west exterior wall of the Western Building. A site plan of the former Kenro building depicting the location of the soil vapor wells is provided in **Attachment B.**

Soil vapor samples were collected by Moraine from the four wells on December 8, 2011. The soil vapor samples were collected in vacuum gas "Summa" canisters fitted with a controller to limit vapor flow to no more than 200 milliliters per minute. The "Summa" canisters were obtained from the Pace Analytical laboratory located in Minneapolis, Minnesota under strict chain-of-custody control.

Two ambient air samples were also collected by Moraine within the Western Building area on December 8, 2011. These samples were collected near wells VW – 2 and VW – 4.

The soil vapor samples were analyzed in the Pace Analytical laboratory in Minneapolis using USEPA Method TO–15. USEPA Method TO-15 provides for the analysis of subsets of the 97 volatile organic compounds included in the

group of 189 hazardous air pollutants listed in Title III of the Clean Air Act Amendments of 1990.

Soil Vapor Sampling Results

A summary of the laboratory analytical results for TCE from the soil vapor and indoor air sampling is provided on **Table 1** in **Attachment A.** The WDNR has provided guidance for sub-slab and indoor air allowable concentrations for TCE in industrial settings. The carcinogenic vapor screening level for TCE is 30 micrograms per cubic meter (ug/m3). The non-carcinogenic vapor screening level for TCE is 8.8 ug/m3.

There were no detects for TCE in the soil vapor samples and in the indoor air samples, with the exception of vapor well VW - 2. The TCE concentration in well VW – 2 was 1.9 ug/m3. This concentration is less than the non-carcinogenic vapor screening level for TCE of 8.8 ug/m3. A TCE concentration of 1.9 ug/m3 indicates that there is not a risk to human health due to TCE vapor intrusion and the vapor intrusion pathway for this compound has been adequately addressed.

Summary

Four sub-slab soil vapor samples and two indoor air samples were collected by Moraine in the Western Building area at the former Kenro building in December of 2011. TCE was not detected in either of the two indoor air samples analyzed. TCE was detected in one of the four sub-slab soil vapor samples analyzed at a concentration of 1.9 ug/m3. This concentration is less than the soil vapor levels specified in the WDNR guidance document for TCE. The sub-slab and indoor air sampling and analysis documents that there is no risk to human health due to intrusion of TCE vapors into the Western Building area.

Conclusions and Recommendations

Based on the environmental field activities performed to date at the former Kenro facility located at 200 Industrial Drive, specifically:

- Monitoring of the groundwater monitoring wells and piezometers on the Kenro property is showing continued TCE migration from the Phillips Plastics, Inc. and Modern Metals, Inc. facilities beneath the 200 Industrial Drive property.

- A shallow subsurface Geoprobe investigation around the perimeter of the building at areas of potential dumping or spillage was completed which did not identify any releases of chemicals.

- A subsurface interior sub-slab investigation of the extent of the hydraulic oil release beneath the north-central floor area of the Western Building was

completed. This investigation defined the extent of the hydraulic oil release to be totally beneath the concrete floor in this room.

- And finally, the above-discussed vapor intrusion survey did not identify TCE vapors of significance in the building; thus there is no threat to public health.

Based on the above completed activities, Moraine, from an environmental perspective, recommends the financing and purchase of the 200 Industrial Drive, Fredonia, Wisconsin building and property.

Please call our office if there are any questions concerning this letter report.

Sincerely,
Moraine Environmental, Inc.

Thomas G. Ryan, P.E.
Senior Project Engineer

Thomas C. Sweet
President

F:/WORD/Mswleh53/5310 Soil Gas Sampling Letter

Attachment A

Table 1

Trichloroethene Soil Gas and Indoor Air Sample Results

Table 1

Trichloroethene Soil Gas and Indoor Air Sample Results

Former Kenro, Inc. Building

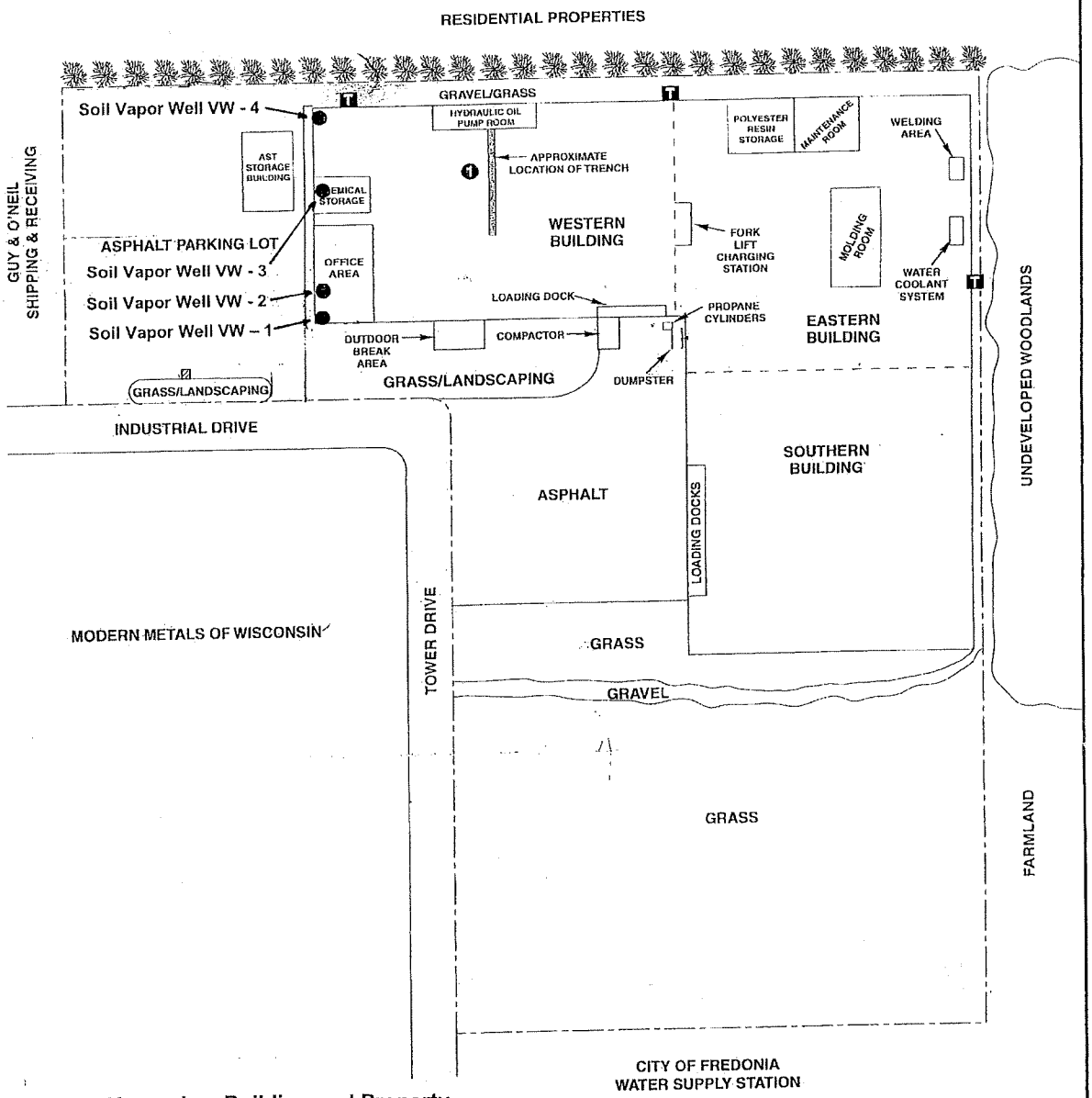
200 Industrial Drive, Fredonia, Wisconsin

Parameter	Date Collected	VW - 1	VW - 2	VW - 3	VW - 4	A - 1	A - 2
Trichloroethene	Dec. 8, 2011	ND	1.9	ND	ND	ND	ND
Laboratory Reporting Limit		0.74	0.76	0.76	0.79	0.74	0.89
Carcinogenic Vapor Screening Level (ug/m3)				30			
Non-Carcinogenic Vapor Screening Level (ug/m3)				8.8			
All values expressed in micrograms per cubic meter (ug/m3)							

Attachment B

Soil Vapor Well Locations Within the Western Building Area

DWG DATE: 19SEP07	PN: CARLISLEWI1179\KENRO	FILE NO.: GRAPHICS	DRAWING: SITE LAYOUT.AI	CHECKED:	APPROVED:	DRAFTER: LMB



Former Kenro, Inc. Building and Property

Soil Gas Wells and Indoor Air Sampling Locations

Well Installation and Air Sampling Conducted by Moraine Environmental, Inc. in December 2011.

LEGEND

- PROPERTY BOUNDARY
- TRANSFORMER
- CATCH BASIN
- TREE LINE

Recognized Environmental Condition

- Hydraulic Oil Trench

N

0 50 100

APPROXIMATE SCALE IN FEET

ARCADIS

SITE LAYOUT

KENRO, INC.
200 INDUSTRIAL DRIVE
FREDONIA, WISCONSIN

FIGURE 2-2