Report

Phase II Environmental Site Assessment Bristol Place

Project I.D.: 13C018.00

City of Champaign
Champaign, Illinois

December 2013

Foth

75 YEARS

2314 West Altorfer Drive
Peoria, IL 61615
(309) 691-5300 • Fax: (309) 691-1892
www.foth.com

12/9/13

City of Champaign – Neighborhood Services Department
Attn: Susan Jones
102 N Neil Street
Champaign, IL 61820

Dear Ms. Jones:

RE: Phase II Environmental Site Assessment of Bristol Place

Enclosed please find the Phase II Environmental Site Assessment for Bristol Place.

It has been our pleasure to serve your respective needs in this phase of the project.

Sincerely,

Foth Infrastructure & Environment, LLC

Dan Bacehowski
Lead Environmental Scientist

Mark Williams
Environmental Scientist

cc:

Phase II Environmental Site Assessment

Distribution

No. of Copies	Sent To
3	City of Champaign - Neighborhood Services Department Attn: Susan Jones 102 N. Neil Street Champaign, Illinois 61820

Phase II Environmental Site Assessment

of

Bristol Place

Project ID: 13C018.00

Prepared for

City of Champaign

102 N Neil Street
Champaign, IL 61820

Prepared by

Foth Infrastructure & Environment, LLC

December 2013

Phase II Environmental Site Assessment

Contents

Phase II Environmental Site Assessment

Report

A Phase II environmental site assessment was conducted on November 4, 2013 for suspect recognized environmental conditions identified during the Phase I ESA. The conditions that were investigated were:

- The unknown subsurface structures at parcel 5006 (213 E. Roper St.)
- Two unknown subsurface structures at Parcel 3017 (110 E Garwood St)
- Possible brick well at parcel 7019 (1209 N Chestnut St)
- Former railroad maintenance facility located at 1302 N. Oak St.

A combination of six (6) samples composed of either soil, sediment or debris and three (3) groundwater samples were collected.

Parcels 5006 and 3017 (subsurface structures)

The subsurface structures at parcels 5006 and 3017 were visually inspected. The two (2) structures at parcel 3017 were filled with debris (dirt, rock, parts of brick, cans, bottles, garbage etc.) up to about 2 ft. from the surface. The structure at 5006 was filled with dirt up to about 2 ft. from the surface. The total depth of the structures could not be ascertained due to the amount of debris contained in the structures. A sample of the material from inside each structure was collected from different areas of the pile and submitted for laboratory analysis.

Parcel 7019 (Possible Well)

The center of the possible well located at parcel 7019 was probed using a geoprobe drill rig. A boring log of the probe is included in Attachment 1. As noted in the log the possible well contains fill material (not naturally occurring) down to a depth of 21 ft. A 2 ft. well sorted sand seam was located at a depth of 21-23 ft. At 23 ft. natural clayey silt was encountered which is probably native material. Whatever this structure formally was, it probably did not extend below a depth of 23 ft. The entire length of the boring core was scanned with a photoionization detector (PID) for volatile organic vapors and none were detected. Water was encountered at a depth of 8 ft. Due to the depth of the fill material and that natural material was not encountered until a depth below the shallow water table. It was concluded that the best sample to determine if contamination exists would be a water sample.

Former Railroad Maintenance Facility

To determine, if any vapor or groundwater contamination migrated from the former railroad maintenance facility towards the Bristol park area. Five (5) probe locations were drilled with the geoprobe along N Chestnut Street between Bradley Ave and Roper St. to investigate this pathway. All the probes were drilled along the east side of N Chestnut Street next to back of curb in the grass area of the City of Champaign Right of Way. The locations of the 5 probes are shown in Fig 1. Each probe was continually sampled and logged until gray clay till (native material) was encountered usually around a depth of 15-16 ft. Boring logs for each probe are included in attachment 1. All of the cores were screened with a PID and no volatile organic vapors were detected. Soil cores in most cases were damp at a depth of 8-10 ft. If not enough

water was present to collect a groundwater sample after probing. The borehole was left open and the geoprobe was moved to the next probe location to give that borehole more time to produce water. After several hours there was still insufficient water in the uppermost zone at probe locations one, four and five to collect groundwater samples so soil samples were collected instead. These soil samples were collected at depths where lithology was deemed to be the most susceptible to contamination. After collection of samples the borehole was filled with bentonite to the surface.

Laboratory Data

All laboratory results were compared to the Remediation Objectives for residential properties found in 35 IAC 742 Tiered Approach to Corrective Action (TACO). Laboratory reports and data are included in Attachment A.

For the subsurface structures at parcels numbers 5006 and 3017, the only exceedance over residential standards was the total lead concentration at the side and back structures at parcel number 3017. The total lead concentration of 370 mg/kg (side structure) and 430 mg/kg (back structure) exceeded the Class I standard for the soil component of the groundwater ingestion exposure route of 107 mg/kg but not the Class II standard of 1420 mg/kg.

At parcel 7019 (possible well) three (3) total metals (lead, manganese, and vanadium) and one (1) semi-volatile compound (benzo (b) flouranthene) were detected in the water sample above Class I Groundwater Standards listed in TACO. Only the total lead result was above both Class I and Class II Standards.

Two groundwater samples and 3 soils samples were collected at the probes along N Chestnut Street. The 3 soil samples (probe locations 1, 4, 5) had no detections above remedial objectives. The 2 groundwater samples (probe locations 2, 3) had low level exceedances of total metals over remedial objectives. Probe 2 exceeded Class I Standards for lead and manganese but neither constituent was over the Class II Standards. While probe 3 exceeded for arsenic, barium, chromium, copper, lead, manganese, nickel, thallium, vanadium and mercury. Arsenic, barium, copper, manganese and vanadium exceeded both Class I and II Groundwater Standards.

Conclusion and Recommendations

There are some total metal concentration and one low level concentration of a semi-volatile compound over the remediation objectives listed in TACO.

Removal of the subsurface structures and debris contained inside the structures at parcel 3017 would most likely mitigate the source of the increased lead concentrations.

The possible well at parcel 7019 is essentially an open hole and potential safety hazard that contains fill material (not native material) to a depth of around 21 ft. The Illinois Water Surveys Domestic Wells Database was accessed for historic information on the possible well at 1209 N Chestnut St. (parcel 7019). No records were found stating that a well had existed at this location. The water sample collected from there could be a combination of natural groundwater and water that has flowed through the fill material. To eliminate this potential contaminant pathway and remove the safety hazard this well should be abandoned (filled in) according to IEPA and health department regulations.

There were some total metal concentrations above TACO Standards in groundwater samples collected from a couple of the probes along Chestnut Street. Total metal concentrations move very slowly in groundwater and it takes a considerable amount of time for metal concentrations to move any appreciable distance. The total metal concentrations could be the natural background values. More importantly is the lack of detection of volatile organic compounds, semi-volatile organic compounds, and Poly Aromatic Hydrocarbons (PAH's) from samples collected along Chestnut Street. The lack of detection of any organic compounds, that the PID did not detect any volatile organic vapors from sample cores, indicates that vapor intrusion into the Bristol Park area from the former rail yard maintenance facility is not occurring.

It does not appear that the Bristol Park area has been impacted by former commercial and residential activities that occurred near the Bristol Park Redevelopment Area. The few exceedances over groundwater standards can be managed with institutional controls such as a groundwater ordinance that the city of Champaign already has in place.

Figures

CITY OF CHAMPAIGN

BRISTOL PARK REDEVELOPMENT AREA
PHASE II ENVIRONMENTAL SITE ASSESSMENT

Project ID: 13C018.00

DATE: 12/06/2013	
PREPARED BY: AFJ	Foth Infrastructure & Environment, LLC
CHECKED BY: MAW	

FIGURE No. 1

X:\CHI\E\2013\13C018.00\CAD\Plans\Site Plan.dwg
Dec 06, 2013 - 4:05pm afj

Attachments

Client: Vermilion County Health Dept.
Project: VCBF West Main Street Parcel
Prepared by: Maw
Checked by:

Project #: 13C018.00
Page: 1 of 1
Date: 12/05/13
Date:

Field Log of Test Boring

Test Boring No.: Probe 1

Start Date: 11/04/13 Location: N Chestnut Street

Completion Date: 11/04/13 Surface Elevation: Boring Depth: 15 ft.

Depth Fr. Lnd. Surf.	Sample No. Depth Interval	Type	N	Rec.	M Color	Description of Material	Class
		CC		36"		Fill material, parts of brick, rock, etc	
5		CC		60"		4 ft. Gray, brown and black clayey silt, slightly cohesive More cohesive, ribbon 7.5 ft. Wet brown silt, little sand, cohesive (8.0 ft.) 9 ft. Lt brown clay, slightly cohesive, small ribbon	
10		CC		60"		12.5 ft. Gray clay till (very hard)	
15						End of boring	

Drilling Method: Rig: Depth of Water: At Completion:

Drilling Contractor: Driller: Hour Later:

Foth

Client: Vermilion County Health Dept.
Project: VCBF West Main Street Parcel
Prepared by: Maw
Checked by:

Project #: 13C018.00
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Date: 12/05/13
Date:

Field Log of Test Boring

Test Boring No.: Probe 2

Start Date: 11/04/13 Location: N Chestnut Street

Completion Date: 11/04/13 Surface Elevation: Boring Depth: 15 ft.

Depth Fr. Lnd. Surf.	Sample No. Depth Interval	Type	N	Rec.	M Color	Description of Material	Class
		CC		48"		Fill dirt, black, pieces of rock, sand, silt	
						3 ft. Olive green, lt brown clay, little sand (hard)	
5		CC		54"		5 ft. Olive green, lt brown, orange, clayey silt, cohesive, ribbon	
						7.5 ft. Brown sand (fine grained, well sorted)	
						(Damp 8.8 ft.)	
10		CC		60"			
						14.5 ft. Gray clay till	
15						End of boring	

Drilling Method: Rig: Depth of Water: At Completion:

Drilling Contractor: Driller: Hour Later:

Foth

Client: Vermilion County Health Dept.
Project: VCBF West Main Street Parcel
Prepared by: Maw
Checked by: _____

Project #: 13C018.00
Page: 1 of 1
Date: 12/05/13
Date: _____

Field Log of Test Boring

Test Boring No.: Probe 3

Start Date: 11/04/13 Location: N Chestnut Street

Completion Date: 11/04/13 Surface Elevation: _____ Boring Depth: 15 ft.

Depth Fr. Lnd. Surf.	Sample No. Depth Interval	Type	N	Rec.	M Color	Description of Material	Class
		CC		36"		Black fill dirt , silt, little sand and rock	
						1.5 ft. Dk- Lt brown clay, hard, small ribbon	
						3.5 ft. Lt brown clayey silt and sand	
						(more sand)	
5		CC		60"		Sand (95%) well sorted, little silt	
						(Damp at 8 ft.)	
10		CC		60"			
						(wet 13 ft.)	
						14 ft. Gray clay , till	
15						End of boring	

Drilling Method: _____ Rig: _____ Depth of Water: At Completion: _____

Drilling Contractor: _____ Driller: _____ Hour Later: _____

Foth

Client: Vermilion County Health Dept.
Project: VCBF West Main Street Parcel
Prepared by: Maw
Checked by: _____

Project #: 13C018.00
Page: 1 of 1
Date: 12/05/13
Date: _____

Field Log of Test Boring

Test Boring No.: Probe 4

Start Date: 11/04/13 Location: N Chestnut Street

Completion Date: 11/04/13 Surface Elevation: _____ Boring Depth: 15 ft.

Depth Fr. Lnd. Surf.	Sample No. Depth Interval	Type	N	Rec.	M Color	Description of Material	Class
		CC		60"		Black fill dirt , rock, silt	
						2 ft.Lt-dk brown silty clay with sand	
						3.5 ft. Lt brown sand, not well sorted , little silt	
5		CC		60"		Reddish brown sand little silt	
						7.5 ft. Reddish brown sand (fine to medium grained)	
						(damp at 9.5 ft.)	
10		CC		60"			
						14.5 ft. Gray clay , till	
15						End of boring	

Drilling Method: _____ Rig: _____ Depth of Water: At Completion: _____

Drilling Contractor: _____ Driller: _____ Hour Later: _____

Foth

Client: Vermilion County Health Dept.
Project: VCBF West Main Street Parcel
Prepared by: Maw
Checked by:

Project #: 13C018.00
Page: 1 of 1
Date: 12/05/13
Date:

Field Log of Test Boring

Test Boring No.: Probe 5

Start Date: 11/04/13 Location: N Chestnut Street

Completion Date: 11/04/13 Surface Elevation: Boring Depth: 20 ft.

Depth Fr. Lnd. Surf.	Sample No. Depth Interval	Type	N	Rec.	M Color	Description of Material	Class
		CC		60"		Black fill dirt , rock, silt	
						1.5 ft.Lt-brown silt	
						4 ft. Lt brown silt and sand	
5		CC		48"		5.2 ft. Lt brown sand fine grained, not well sorted	
						↓	
10		CC		60"		9.5 ft. Gray clay	
						↓	
15		CC		48"			
						↓	
						17 ft. Lt brown sand (wet)	
						18 ft. Gray clay till	
20		CC		54"		End of boring	

Drilling Method: Rig: Depth of Water: At Completion:

Drilling Contractor: Driller: Hour Later:

Foth

Client: Vermilion County Health Dept.
Project: VCBF West Main Street Parcel
Prepared by: Maw
Checked by:

Project #: 13C018.00
Page: 1 of 1
Date: 12/05/13
Date:

Field Log of Test Boring

Test Boring No.: Well

Start Date: 11/04/13 Location: Parcel 7019

Completion Date: 11/04/13 Surface Elevation: Boring Depth: 25 ft.

Depth Fr. Lnd. Surf.	Sample No. Depth Interval	Type	N	Rec.	M Color	Description of Material	Class
		CC		36"		Pieces of brick, silt, clay, glass,	
5		CC		30"		Clay, silt, rock, wood, silt, pieces of glass	
						(damp 8 ft.)	
10		CC		24"		Little silt, wood, rock ,	
15		CC		36"		Black silt, sand and wood	
						(Getting stiffer at 18 ft.)	
20		CC		36"		21 ft. Gray sand well sorted	
						23 ft. Gray clayey silt (natural) Stiff	
25						End of boring	

Drilling Method: Rig: Depth of Water: At Completion:

Drilling Contractor: Driller: Hour Later: