Phase II Environmental Site Assessment

Axline Properties
108 5th Ave. SW, 416, 418, & 422 1st St. SW
Cedar Rapids, Iowa 52404

Prepared for

Mr. David Axline
3173 Westview Drive NE
Solon, IA 52333

Professional Certification:
I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a Nationally Registered Environmental Manager and Professional Geologist.

Edward D. Bertch, PG
Associate Principal/Senior Geologist

October 4, 2010

REGISTERED ENVIRONMENTAL MANAGER
EDWARD D. BERTCH
REM
11149
NREP

Project CR-10-08323

BRAUN
INTERTEC

Braun Intertec Corporation
5915 4th Street SW
Suite 100
Cedar Rapids, IA 52404

Phone: 319.365.0961
Fax: 319.365.1306
Web: brauninterlec.com

October 4, 2010

Project CR-10-08323

Mr. David Axline
3173 Westview Drive
Solon, IA 52333

Re: Phase II Environmental Site Assessment
Axline Properties
108 5th Ave. SW, 416, 418, & 422 1st St. SW
Cedar Rapids, Iowa 52404

Dear Mr. Axline:

In accordance with your authorization, Braun Intertec Corporation (Braun Intertec) has conducted a Phase II environmental site assessment (Phase II ESA) of the referenced Site. The objective of the Phase II ESA was to investigate the findings from the Phase I ESA at the referenced site. Braun Intertec evaluated the findings by collecting soil and groundwater. Based on analytical data, the soil and groundwater has been impacted by total extractable hydrocarbons (TEH).

This Phase II ESA has been prepared on behalf of and for use by Mr. David Axline. No other party has a right to rely on the contents of this Phase II ESA without the written authorization of Braun Intertec Corporation.

For a complete discussion of our assessment, please refer to the attached Phase II ESA report.

We appreciate the opportunity to provide our professional services to you for this project. If you have any questions or comments regarding this report, please call Ed D. Bertch at 319.365.0961.

Sincerely,

BRAUN INTERTEC CORPORATION

Ashley E. Pasakarnis
Project Manager

Ed D. Bertch, PG
Associate Principal/Senior Geologist

Attachment:
Phase II ESA Report

cc:

Table of Contents

A. Introduction

A.1. Authorization

In accordance with your authorization, Braun Intertec Corporation (Braun Intertec) conducted a Phase II Environmental Site Assessment (ESA) for the potential contamination of soil and groundwater by volatile organic compounds (VOCs), Resource Conservation and Recovery Act (RCRA) metals, semi volatiles Organic Compounds (SVOCs) and total extractable hydrocarbons (TEH) at the Axline Properties site, 108 5th Avenue SW, 416, 418, & 422 1st Street SW, Cedar Rapids, Iowa (Site). This Phase II ESA has been prepared on behalf of and for use by the client, Mr. David Axline, in accordance with the contract between the client and Braun Intertec, which includes the Braun Intertec General Conditions. No other party has a right to rely on the contents of this Phase II ESA without the written authorization of Braun Intertec Corporation.

A.2. Project Objective

The objective of the Phase II ESA was to evaluate soil and groundwater beneath the site for current concentrations of VOCs, RCRA metals, SVOCs and TEH.

A.3. Location

The Site is located at 108 5th Avenue SW, 416, 418, and 422 1st Street SW, Cedar Rapids, Iowa (see Figure 1). The Site is located within the northwest quarter of the northwest quarter of Section 28, Township 83 North, Range 7 West, in the City of Cedar Rapids, Linn County, Iowa.

A.4. Project Background

A.4.a. Site History

The site is currently a vacant commercial buildings and vacant paved lots. The historical uses of the properties located at 416 and 418 1st Street SW are residential properties, commercial property including a retail sewing and vacuum sales business operation between 1969 and 2007 and then vacant commercial buildings. The historical uses of the property located at 422 1st Street SW are residential property, commercial property including West Side Sewing Machine Shop (1975-1978) and Stephenson and Sandry Upholstery and then as a vacant commercial building. The historical uses of the property located at 108 5th Avenue SW are residential property, commercial property including a dry cleaner (1930-1972), fabric and upholstery business and warehouse and then as a vacant commercial building.

A.4.b. Potential Source Areas

Based on the historical uses of the property, the Phase I Environmental Site Assessment identified two RECs associated with the properties located to the southwest and west of the Site. The historic use of the property located southwest of the Axline properties is classified as a REC due to the historic uses of the property as an auto body repair and painting facility. Based on its proximity to the property and the inferred groundwater flow direction the historic use of this property has the potential to impact the Site. The historic use of the second property located west of the Axline properties is classified as a REC due to the historic uses of the property as an auto body repair facility. Based on its proximity to the property and the inferred groundwater flow direction the historic use of this property has the potential to impact the Site. (HR Green, 2010)

The Phase I Environmental Site Assessment also identified that the historical uses of the site would classify the property as a REC. The property was a dry cleaner facility from approximately 1930 to 1972. Based on the chemicals associated with this historic use, there is a potential for impacted soil and groundwater. (HR Green, 2010)

A.4.c. Geologic and Hydrogeologic Setting

According to the United States Geological Survey (U.S.G.S) 7.5-minute topographic map series, Cedar Rapids South, Iowa quadrangle, the Site is located at an elevation of approximately 99 feet above mean sea level and the terrain of the Site is relatively flat.

The uppermost bedrock formation in the vicinity of the Site is the Pinicon Ridge Formation of the Middle Devonian Wapsipinicon Group. The formation composition includes generally unfossiliferous carbonates (dolomites and limestones) but burrows, stromatolites, ostracodes, and fish fossils are known; variably shaley, laminated, or brecciated; locally sandy; gypsum and anhydrite occur in the subsurface of central and southern Iowa; contains solution-collapse breccias (Anderson, 1998).

A.5. Scope of Services

The following tasks were conducted at the Site as part of this Phase II ESA:

- Six borings were installed on site. The borings were installed at the following locations:
  - Boring B1 was drilled along the west property line of 416 1st Street SW.
  - Boring B2 was drilled along the west property line of 418 1st Street SW.
  - Boring B3 was drilled along the south property line of 422 1st Street SW.
  - Boring B4 was drilled along the west property line of 422 1st Street SW.
  - Boring B5 was drilled adjacent to the building at 108 5th Avenue SW.
  - Boring B6 was drilled along the west property line of 108 5th Avenue SW.

- The borings were sampled continually to a depth of approximately 15 feet or 5 feet into the first occurrence of groundwater.
- Screened soil samples on one foot intervals with a photo-ionization detector (PID) for the presence of volatile organic vapors.
- Collected one soil sample from each of the soil borings at the highest observed PID reading and submitted to an independent laboratory for analysis of VOCs, RCRA metals, and SVOCs. Soil samples collected from soil borings B1, B2 B4 and B6 were analyzed for VOCs, RCRA metals and TEH. Soil samples collected from soil borings B3 and B5 were analyzed for VOCs.
- After completing the soil borings, each boring was converted to a temporary monitoring well with casing, screen, sand, bentonite seal and a protective well cover. After significant recharge, Braun Intertec collected a groundwater sample from monitoring wells B1, B2, B4, B5 and B6 and submitted it to an independent laboratory for analysis for VOCs, and SVOCs. Braun Intertec collected additional groundwater samples from monitoring wells B2, B4 and B6 and submitted it to an independent laboratory for analysis for RCRA metals.
- Evaluated the data and prepared this Phase II ESA report.
- Bedrock was encountered at 14 feet below ground surface (bgs) at boring B3. Groundwater was not observed in temporary groundwater monitoring well B3.
- Bedrock was encountered at 14 feet below ground surface (bgs) at boring B5.

B. Methods and Procedures

B.1. Soil Boring Locations

Six soil borings (designated B1 through B6) were completed at the Site. The field work relating to the Phase II ESA was conducted on September 1, 2 and 3, 2010. A soil boring location map is attached as Figure 2.

B.2. Soil Boring

The soil borings were performed with an all-terrain rubber tire mounted 550-CME drill equipped with 3 1/4-inch inside-diameter hollow-stem auger. Sampling for the borings was conducted in general accordance with ASTM D 1586, "Penetration Test and Split-Barrel Sampling of Soils." We advanced the boreholes with the hollow-stem auger to the desired test depths. A 140-pound hammer falling 30 inches was then used to drive the standard 2-inch split-barrel sampler a total penetration of 2 feet below the tip of the hollow-stem auger. Samples were taken at 1-foot vertical intervals to the termination depths of the borings.

B.3. Soil Classification

The soils encountered in the soil borings were visually and manually classified in the field by an environmental technician in accordance with ASTM D 2488 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)." Soil boring logs with descriptions of the various soil strata encountered during the soil boring operations and water level information are contained in Appendix A. The depths shown as changes between the soil types are approximate. The actual changes may be transitional, and the transition depths are likely to be horizontally variable. Soils encountered within the soil borings consisted mainly of lean clay. Groundwater was encountered at depths ranging from 8.75 to 15.33 feet below ground surface (bgs).

B.4. Soil Contamination Screening

Soil samples retrieved from the soil borings were examined by an environmental technician for unusual staining, odors and other apparent signs of contamination. In addition, the soil samples collected from borings B1, B2, B4 and B6 were screened for the presence of total organic vapors using a PID (MiniRae 3000). The PID was equipped with a 10.6-electron-volt lamp and calibrated to an isobutylene standard. The soil samples collected from borings B3 and B5 were screened for the presence of total organic vapors using a PID (MiniRae 2000). The PID was equipped with an 11.7-electron-volt lamp and calibrated to an isobutylene standard. The PIDs were used to perform a headspace method of analyses, as recommended by the Iowa Department of Natural Resources (IDNR).

The headspace analytical procedure is used to field-screen total organic vapor levels in soils. The procedure consists of half-filling a new quart-size sealable plastic bag with a soil sample. After the sample has been placed in the bag, the bag is quickly sealed. Headspace development proceeds for a minimum of 10 minutes. The bag is shaken vigorously for 15 seconds, both at the beginning and the end of the headspace development period. After headspace development, the PID probe is inserted through the bag to one-half the headspace depth. The highest PID reading observed is then recorded.

B.5. Soil Contamination Observations

The PID readings were noted at a depth of 1 to 15 feet bgs and ranged from 0.0 to 380.6 parts per million (ppm).

B.6. Sampling Procedures

A summary of the sampling depths, sample type and chemical analysis parameters for each of the

samples is provided in Table 1 below.

Table 1. Summary of Sampling Intervals and Chemical Analysis Parameters

Soil Boring Number and Sampling Depth (feet)	Sample Type	Area of Environmental Concern	Chemical Analysis Parameters
B1 (10)	Soil	Located at 416 1st Street SW along the west property line.	VOCs, RCRA Metals, TEH
B2 (2)	Soil	Located at 418 1st Street SW along the west property line.	VOCs, RCRA Metals, TEH
B3 (8)	Soil	Located at 422 1st Street SW along the south property line.	VOCs
B4 (16)	Soil	Located at 422 1st Street SW along the west property line.	VOCs, RCRA Metals, TEH
B5 (2)	Soil	Located at 108 5th Avenue adjacent to the building.	VOCs
B6 (4)	Soil	Located at 108 5th Avenue along the west property line.	VOCs, RCRA Metals, TEH

B.6.a. Soil Sampling Procedures

Soil samples were collected from each of the soil borings (B1 through B6) for laboratory chemical analyses. Soil samples were collected from the depth interval exhibiting the highest PID reading. Please refer to Appendix B for applicable Standard Operating Procedures.

All soil samples were placed in clean, clear glass screw-top vials with Teflon®-lined caps, correctly preserved, labeled, and transported to our laboratory under refrigerated conditions using chain-of-custody procedures.

The soil samples were analyzed at the Braun Intertec Bloomington, Minnesota laboratory for the presence and concentrations of VOCs by Environmental Protection Agency (EPA) Method 8260 and RCRA Metals by EPA Method 6010B. Additional soil samples were analyzed at the Environmental Science Corporation (ESC) in Mt. Joliet, Tennessee for the presence and concentrations of TEH by Iowa Method OA-2.

B.6.b. Groundwater Sampling Procedures

Temporary monitoring wells were installed in each soil borings and groundwater samples were collected from each for laboratory chemical analyses. A new clean polyethylene bailer

fitted with a clean check-ball valve was used for each temporary monitoring well to collect the groundwater sample.

The groundwater samples were placed in clean, clear glass screw-top 40-mL VOAs with Teflon®-lined caps, correctly preserved, labeled, and transported either Braun Intertec in Bloomington, Minnesota or ESC in Mt. Joliet, Tennessee laboratories under refrigerated conditions using chain-of-custody procedures.

The groundwater samples were analyzed at Braun Intertec for the presence and concentrations of VOCs by EPA Method 8260 and RCRA Metals by EPA Method 6010B. Additional groundwater samples were analyzed at ESC for the presence and concentrations of TEH by Iowa Method OA-2.

C. Results of Laboratory Chemical Analysis

C.1. Results of Soil Sample Analysis

A summary of the analytical results for the soil samples is provided below in Table 2. Soil concentrations are reported in milligrams per kilogram (mg/kg).

Table 2. Soil Analytical Results

Location	B1	B2	B3	B4	B5	B6	
Date	9/1/2010	9/1/2010	9/1/2010	9/1/2010	9/1/2010	9/1/2010	
Depth (feet bgs)	10	2	8	16	2	4	IDNR Target Levels
Concentrations	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TEH							
Gasoline	< 4.0	< 4.0	< 4.0	18	< 4.0	< 4.0	NS
Diesel	< 4.0	< 4.0	< 4.0	25	< 4.0	5.5	3,800
Motor Oil	< 10	< 10	< 10	< 10	< 10	36	NS
Metals							
Arsenic	7.8	2.4	--	< 5.6	--	6.5	17
Barium	48	55	--	23	--	210	15,000
Chromium (total)	15	5.3	--	< 5.6	--	16	210*
Lead	9.4	43	--	11	--	150	400
Mercury	0.022	0.17	--	< 0.021	--	0.14	23

Reference:

567 Iowa Administrative Code (IAC) 135: Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks-Iowa Tier 1 Look-Up Table

567 IAC 137: Iowa Land Recycling Program- Statewide Standards for soil and groundwater

*: Chromium VI soil standard

Bold: Above IDNR target levels

NS: No Standard

-- Not Sampled

The results of the laboratory analysis indicated that:

- The soil within the area of B4 has been impacted by TEH-diesel and TEH-gasoline. The soil within the area of B6 has been impacted by TEH-diesel and TEH-motor oil.
- Current soil analytical results for TEH-diesel are below IDNR target levels.
- The IDNR has not established a standard for TEH-motor oil or TEH-gasoline in soil.
- The soil within the area of B1, B2 and B6 has been impacted by arsenic, barium, chromium, lead and mercury. The soil within the area of B4 has been impacted by barium and lead. It should be noted that these metals are naturally occurring in soils.
- Current soil analytical results for arsenic, barium, total chromium, lead and mercury are below IDNR target levels.

The complete laboratory report is attached in Appendix C.

C.2. Results of Groundwater Sample Analysis

A summary of the analytical results for the groundwater samples is provided in Table 3 below. Groundwater concentrations are reported in milligrams per liter (mg/L).

Table 3. Groundwater Analytical Results

Location	B1	B2	B3	B4	B6	
Date	9/2/2010	9/1/2010	9/2/2010	9/1/2010	9/1/2010	IDNR Target Levels
Concentrations	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
TEH						
Gasoline	< 0.10	< 0.10	--	14	< 0.10	NS
Diesel	< 0.10	< 0.10	--	23	< 0.10	1.2
Motor Oil	< 0.25	< 0.25	--	1.4	< 0.25	0.4
VOCs						
Ethylbenzene	< 0.001	0.0012	< 0.001	< 0.005	0.0023	0.7
Toluene	< 0.001	0.0017	< 0.001	< 0.005	0.0040	1
Tetrachloroethene	< 0.002	< 0.002	< 0.002	< 0.010	0.0029	0.005
Xylenes (total)	< 0.002	< 0.002	< 0.002	< 0.0100	< 0.0024	10
Metals						
Barium	--	0.061	--	0.180	0.075	2
Chromium	--	< 0.005	--	< 0.005	0.0065	10

Reference:

567 Iowa Administrative Code (IAC) 135: Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks-Iowa Tier 1 Look-Up Table

567 IAC 137: Iowa Land Recycling Program- Statewide Standards for soil and groundwater

Bold: Above IDNR target levels

NS: No Standard

--: Not Sampled

The results of the laboratory analysis indicated that:

- Groundwater analytical results indicate that the area in the vicinity of B4 has been impacted by TEH-diesel, TEH-gasoline, and TEH-motor oil.
- Current groundwater analytical results for TEH-diesel and TEH-motor oil are above IDNR target levels.
- The IDNR has not established a standard for TEH-gasoline in groundwater.

- Groundwater analytical results indicate that the area in the vicinity of B2 and B6 has been impacted by ethylbenzene and toluene. Groundwater analytical results indicate that the area in the vicinity of B6 has been impacted by tetrachloroethene.
- Current groundwater analytical results for ethylbenzene, toluene, and tetrachloroethene are below IDNR target levels.
- Groundwater analytical results within the area of B2, B4 and B6 identified barium concentrations however the concentrations are below IDNR standards.
- Groundwater analytical results within the area of B6 identified chromium concentrations however the concentrations are below IDNR standards.

The complete laboratory report is attached in Appendix C.

D. Discussion

Based upon the results of this assessment, groundwater analytical results indicate that there is impacted groundwater in the vicinity of temporary monitoring wells B4 at the site from releases of petroleum products. Temporary groundwater monitoring well B4 was located adjacent to the back bay door of the adjoining property at 423 2nd Street SW. It appears that the activities of the adjacent property, a former automotive facility, impacted the groundwater at temporary monitoring well B4. Soil analytical results indicate the presence of diesel and gasoline in temporary monitoring well B4 and diesel and motor oil in the temporary monitoring wells B6 but results are below IDNR target levels.

E. Conclusions and Recommendations

Based on the results of this soil and groundwater assessment, Braun Intertec has made the following conclusions and recommendations:

- The soil within the area of B4 has been impacted by TEH-diesel and TEH-gasoline. The soil within the area of B6 has been impacted by TEH-diesel and TEH-motor oil.
- Current soil analytical results for TEH-diesel are below IDNR target levels.
- The IDNR has not established a standard for TEH-motor oil or TEH-gasoline in soil.
- The soil within the area of B1, B2 and B6 has been impacted by arsenic, barium, chromium, lead and mercury. The soil within the area of B4 has been impacted by barium and lead.
- Current soil analytical results for arsenic, barium, total chromium, lead and mercury are below IDNR target levels.

- Groundwater analytical results indicate that the area in the vicinity of B4 has been impacted by TEH-diesel, TEH-gasoline, and TEH-motor oil. Temporary groundwater monitoring well B4 was located adjacent to the back bay door of the adjoining property at 423 2nd Street SW. It appears that the activities of the adjacent property, a former automotive facility, impacted the groundwater at temporary monitoring well B4.
- Current groundwater analytical results for TEH-diesel and TEH-motor oil are above IDNR target levels.
- The IDNR has not established a standard for TEH-gasoline in groundwater.
- Groundwater analytical results indicate that the area in the vicinity of B2 and B6 has been impacted by ethylbenzene and toluene. Groundwater analytical results indicate that the area in the vicinity of B6 has been impacted by tetrachloroethene.
- Current groundwater analytical results for ethylbenzene, toluene, and tetrachloroethene are below IDNR target levels.
- Groundwater analytical results within the area of B2, B4 and B6 identified barium concentrations however the concentrations are below IDNR standards.
- Groundwater analytical results within the area of B6 identified chromium concentrations however the concentrations are below IDNR standards.

Based on the soil analytical results, the soil was impacted by TEH-gasoline, TEH-diesel and TEH-motor oil. The concentrations are below IDNR target levels but indicate a release of petroleum products.

The groundwater within the area of B4 and B6 has been impacted by petroleum products. These borings were located on the southwest portion of the 108 5th Avenue SW property. This portion would be most likely impacted by groundwater from the former auto repair shop located adjacent to the property. Based on documented on-site activities from HR Green's Phase I Environmental Site Assessment, one would not expect to identify TEH-gasoline, TEH-diesel and/or TEH-motor oil within the proximity of B4 and B6 unless it was from the former auto repair shop activities on the adjoining property.

The groundwater within the area of B6 has been impacted by tetrachloroethene. This boring was located on the southwest portion of the 108 5th Avenue SW property. If this was from on-site activities, one would expect to see soil concentrations for tetrachloroethene within the proximity of borings B6 and B5.

Based on this it appears that the site has been impacted by a release from the adjacent properties to the west and southwest.

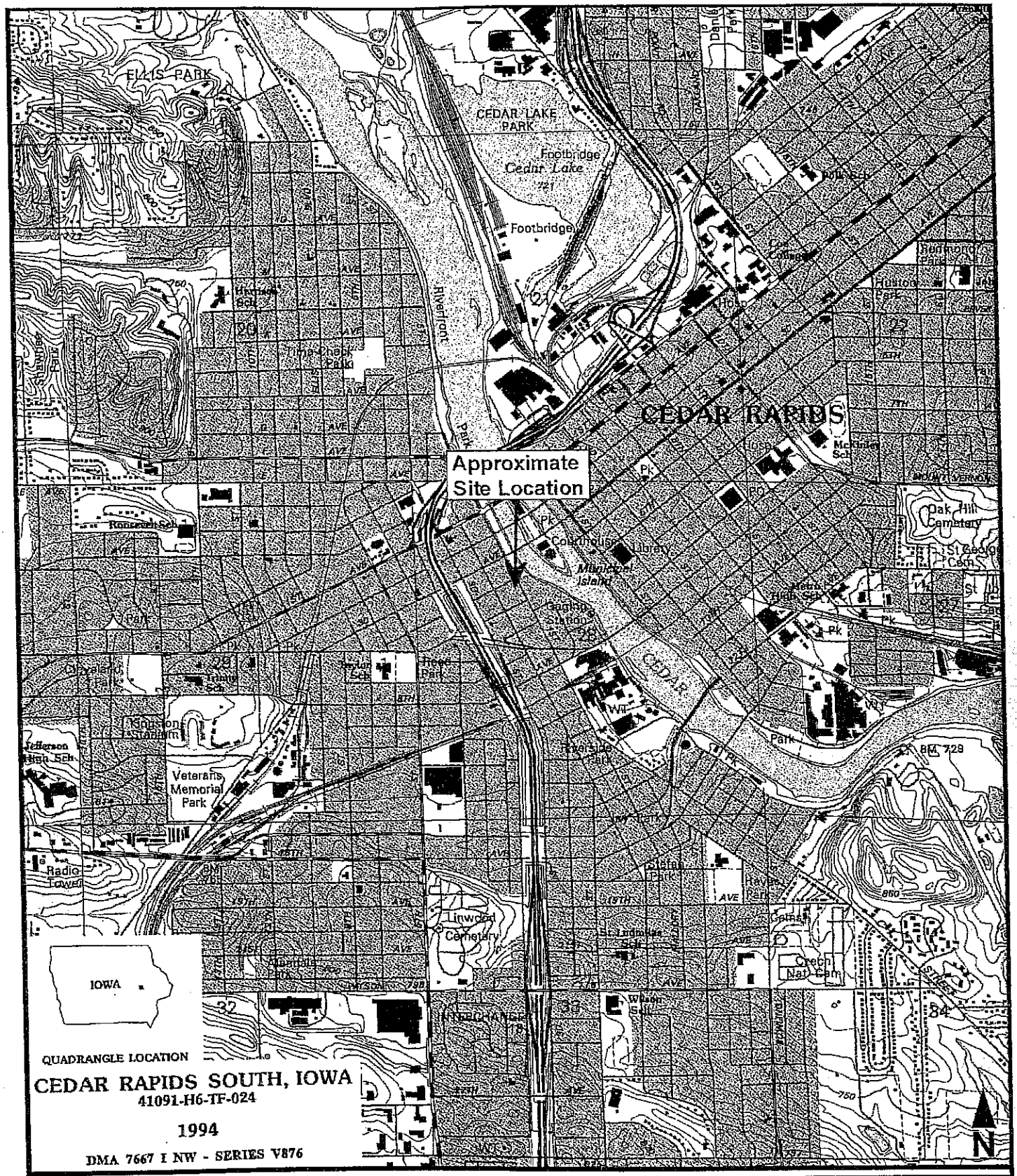
Braun Intertec does not recommend further soil and groundwater investigation at this time on site.

F. Assessment Limitations

The analyses and conclusions submitted in this report are based on our field observations and the results of laboratory chemical analyses of soil samples and groundwater samples collected from the soil borings and temporary monitoring wells completed for this project.

In performing its services, Braun Intertec used that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession practicing in the same location. No other warranty is made or intended.

Figures

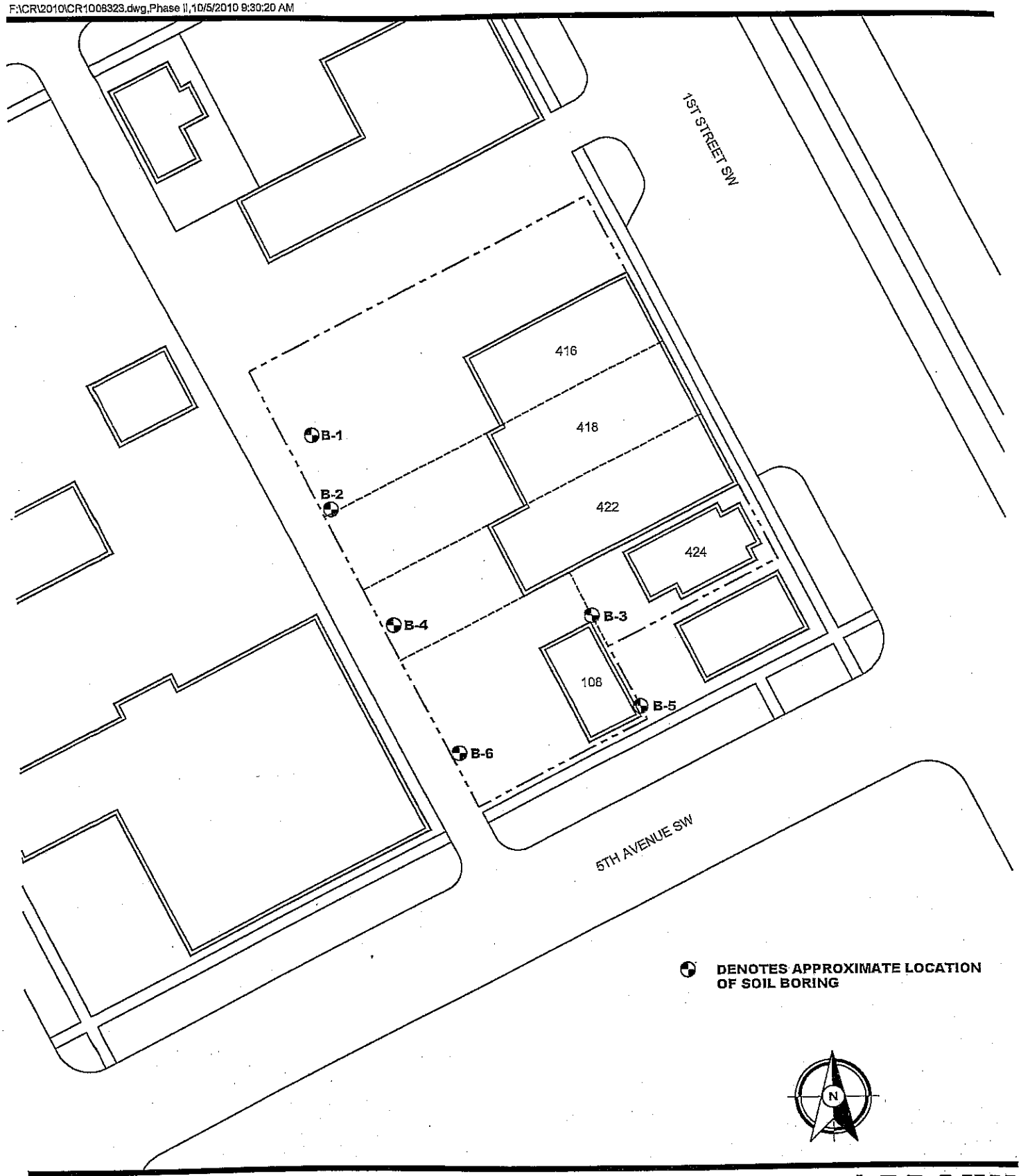


BRAUN INTERTEC

Site Location Map
Axline Properties
108 5th Avenue Southwest
416, 418, & 422 1st Street Southwest
Cedar Rapids, Iowa

USGS TOPOGRAPHIC MAP		
Cedar Rapids South, IA		
DATE:	9/21/2010	
JOB NO:	CR-10-08323	
SCALE:	1 : 24,000	FIGURE NO:
DRAWN BY:	FER	1

F:\CR\2010\CR1008323.dwg,Phase II,10/5/2010 9:30:20 AM



Sheet: of

Fig:

Project No:	CR1008323
Drawing No:	CR1008323
Scale:	NONE
Drawn By:	BJB
Date Drawn:	9/23/10
Checked By:	AEP
Last Modified:	10/5/10

SOIL BORING LOCATION SKETCH
PHASE II ENVIRONMENTAL SITE ASSESSMENT
AXLINE PROPERTIES
108 5TH AVENUE SW AND 416, 418 AND 422 1ST STREET SW
CEDAR RAPIDS, IOWA

BRAUN INTERTEC
11001 Hampshire Avenue So.
Minneapolis, MN 55438
PH. (952) 995-2000
FAX (952) 995-2020