Heartland Environmental Associates, Inc.

REMEDIATION WORK PLAN
Sample Street Business Complex
3702 West Sample Street
South Bend, Saint Joseph County, Indiana 46619
VRP ID # 6120801

August 19, 2013

"Your dependable partner for environmental compliance"

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Prepared For:

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For the Site:

Sample Street Business Complex
3702 West Sample Street
South Bend, St. Joseph County, Indiana 46619
VRP ID # 6120801

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1.0 INTRODUCTION

On behalf of the Urban Enterprise Association of South Bend, Inc. (UEA), Heartland Environmental Associates, Inc. (Heartland) has completed a Remediation Work Plan (RWP) for the Sample Street Business Complex, located at 3702 West Sample Street, South Bend, Indiana 46619. A site location map is provided as Figure 1. This report has been prepared following the Indiana Department of Environmental Management's (IDEM), Remediation Closure Guide (RCG) and the Remediation Program Guide (RPG), dated July 9, 2012.

The site was originally developed as the Torrington Company Heaving Bearing Facility in 1928 and utilized for the manufacture of metal bearings. The facility expanded several times, last expanding in 1967. The site historically operated an approximately 333,000 square foot manufacturing facility on 15 acres of property. The site operated two underground storage tank (UST) areas and five storm water and cooling water ponds located at the south end of the property. The site ceased manufacturing operations in September 1983 and began site closure activities in preparation for sale of the property.

Site closure activities included an environmental assessment of the facility. From 1984 through 1991, numerous subsurface soil and groundwater investigations were conducted at the site around the former UST area and in the vicinity of the storm water and cooling water ponds.

These investigations found elevated concentrations of volatile organic compounds (VOCs) in pond sediments and pond water samples. Elevated concentrations of VOCs and mineral spirits (light hydrocarbon chemicals) were also found in soil and groundwater borings throughout the site, particularly near the loading dock area located in the southwest portion of the site.

In July 1986, five petroleum and solvent USTs were removed from the site. Confirmation samples showed that high levels of VOCs remained in the soils. Four of the five pond areas were also excavated and approximately 1,700 cubic yards of impacted pond sediments were removed from the site.

Further investigations conducted from 1990 through 1991 found additional groundwater impacts. Chemical impacts were also encountered in monitoring wells installed down gradient from the site source areas. Groundwater sampling also showed the presence of free product light non-aqueous phase liquid petroleum (LNAPL) near the loading dock area.

High concentrations of metals were found in fill materials at the site. The highest concentration of impacts was in the southwest portion of the site and associated with the cooling water pond identified as Pond 4. Visual chemical impacts were noted down to 5 feet in the area of the pond. Concentrations of cyanide were encountered in these sediments. However, no PCBs were present.

In 1992, 960 cubic yards of material were excavated and removed from around Pond 4. Soil sampling results showed that VOC impacts to soil remained at depth.

From 1992 through 1994, pilot testing was performed and a soil vapor extraction (SVE) and air sparging (AS) remediation system was designed to remediate the free product petroleum and VOC impacts to both soil and groundwater. The design called for the construction of two separate remediation systems. The first system was to be installed in the loading dock area and the second system was to be installed within the site building.

The system was installed in late 1995 and early 1996 and began full time operation midyear 1996. At the time, the Corrective Action Work Plan referred to IDEM Tier II Cleanup Goals as the standard to monitor the effectiveness of the remediation system. No formal consultation with IDEM was conducted as part of the site investigation or remedial design. The annual system effectiveness report for the year 1998 indicated that the system was running efficiently with a 90% run time; however free product petroleum was still present in groundwater monitoring wells at the loading dock and both trichloroethene (TCE) and tetrachloroethene (PCE) were still encountered at elevated concentrations throughout the site. No additional documentation was available after this date regarding the remediation system or pertaining to any system closure.

Based on the lack of documentation, Heartland recommended that the UEA conduct a Limited Phase II Environmental Site Assessment (ESA) in the formerly identified source areas to evaluate for the presence or absence of residual chemical impacts present in the soil and groundwater.

The Limited Phase II ESA was performed in 2011. Ten soil borings were advanced in the southwest loading dock area, in the southern portion of the site, and in the southeastern and eastern portions of the site. Heartland also collected groundwater samples from 10 of the existing groundwater monitoring wells located in the central and southern portion of the site.

Impacts of metals and total petroleum hydrocarbons – extended range organics (TPH-ERO) were found in some soil samples. No VOC impacts were found in soils. A VOC impact was found in a groundwater sample from one soil boring. No other soil boring or monitoring well exhibited any VOC impacts to groundwater.

1.1 Project Identification

1.1.1 Facility Information

Name:..... Sample Street Business Complex
Address: .....3702 West Sample Street
IDEM Incident Number: .....Not applicable
IDEM VRP ID: 6120801

Facility ID Number: 6466
Telephone Number: 574-235-5845

1.1.2 Site Location

The Sample Street facility is located in Section 16, Township 37 North, Range 2 East and the location is shown on the South Bend West Quadrangle U.S. Geological Survey (USGS) topographic map as Figure 1.

1.1.3 Present Owner/Operator

Site Owner: ..... Urban Enterprise Association of South Bend, Inc.
Address: ..... 227 West Jefferson Boulevard, South Bend, IN46601

1.1.4 Site Contact Person

Company: ..... Urban Enterprise Association of South Bend, Inc.
Site Contact: ..... Ms. Pamela Meyer
Address: ..... 227 West Jefferson Boulevard, South Bend, IN46601
Telephone No.: 574-235-5845

1.1.5 Historical Summary of Site Ownership

The Sample Street Business Complex was developed in 1928 as the Bantam Ball Bearing Corporation and was engaged in the manufacturer of bearings. In 1935, the facility was acquired by the Torrington Company, who continued the manufacture of bearings. Torrington expanded the facility several times, last expanding in 1967. The site historically operated an approximately 333,000 square foot manufacturing facility on 15 acres of property. The site operated two underground storage tank (UST) areas and five storm water and cooling water ponds located at the south end of the property. The site ceased manufacturing operations in September 1983 and began site closure activities in preparation for sale of the property.

In June 1991, the Torrington Company transferred ownership of the site to the UEA of South Bend, Inc. The UEA currently owns and operates the facility as the Sample Street Business Complex, a small business, multi-tenant, manufacturing, warehousing, and office facility.

The site consists of four parcels with a total acreage of 15.02 acres. Two small parcels are located north of Sample Street and are used as parking lots. The main facility is located on two parcels, 9.0 and 4.25 acres in size, and is south of Sample Street.

The site is currently occupied with one large main building with a covered loading dock and a small shed.

No hazardous materials are currently used or stored on-site.

1.2 Supporting Documents

Previous investigation reports and documentation include the following reports.

Torrington Company, Background Document, Torrington Company Plant Site, South Bend, Indiana, May 11, 1984, Appendix M.
The Torrington Company prepared a background document that outlined environmental activities that were being conducted prior to the plant closing. Torrington contracted with Environmental Systems, Inc. to evaluate site conditions. Sediment and water samples were collected from the storm water drainage ponds and analyzed. Groundwater from two on-site production wells was also sampled and analyzed. VOCs were detected in Pond #4.

Canonie Engineers, Inc., Environmental Assessment. Torrington's Bantam Bearing Division Plant. October 1984, Appendix N.
Canonie installed monitoring wells and groundwater samples, collected soil and water samples from ponds, and collected soil samples from hand augured soil borings. Canonie reported that no Polychlorinated biphenyls (PCBs) were detected, that mineral spirits were found in most samples, and VOCs were detected in high concentrations in soils near the fuel oil tanks. VOCs were also detected in groundwater in four wells. No VOCs were detected in the pond water or sediments, but mineral spirits were present in sediments.

Torrington Company, Environmental Assessment, Torrington Company Heavy Bearings Facility, South Bend, Indiana, March 11, 1985 *in* Capsule Environmental Engineering, Inc. Summary Report of Previous Assessment Activities, Former Torrington Heavy Bearings Facility, South Bend, Indiana, September 10, 1992, Appendix O.
The Torrington Company compiled an assessment report for the South Bend Facility that summarized the environmental investigation performed by Canonie in 1984 and the pond and sediment sampling performed by EIS Engineers in 1984 (EIS report not available). Pond and sediment samples were initially thought to be potential sites of contamination because they collected surface runoff and it was thought that hazardous material accumulated over the life of the facility might be concentrated in the pond sediments. Concentrations of VOCs were found in all five pond water samples. Concentrations of VOCs were also found in Pond #4 sediments. No PCBs were detected in the pond water or sediments. Low levels of PCE were found in water samples collected from the two water supply wells, #3 and #4, at the plant.

Based on the results of the Canonie and EIS assessments, Torrington concluded that the only identified area of localized contamination was in the area of the waste oil tank. It was also concluded that, while significant groundwater contamination had not occurred, it was necessary to eliminate the soil contamination as a possible source of groundwater contamination prior to final closure of the facility.

Notification for Underground Storage Tanks – Closure, February 21, 1986, The Torrington

Company, 59 Field Street, Torrington, CT 06790, Appendix P.
In 1986, the Torrington Company notified the IDEM that five USTs were to be removed.

Harza Environmental Services, Inc., Environmental Assessment, The Torrington Company. June 1986 *in* Capsule Environmental Engineering, Inc. Summary Report of Previous Assessment Activities, Former Torrington Heavy Bearings Facility, South Bend, Indiana, September 10, 1992, Appendix Q.
Harza performed an environmental assessment at the Torrington facility to verify previous sampling results and to identify other possible sources of impacts. Harza sampled two shallow soil borings in the area of monitoring well S-3, sediments in two ponds, five shallow wells, and two USTs. Harza did confirm the presence of VOCs in soils, although at lower levels than previous reports. The presence of comparable levels of VOCs in groundwater samples was confirmed.

EIS Environmental Engineers Site Walk-Through Report, November 14, 1988, Appendix R.
EIS conducted a site walk-through inspection of the Torrington facility for a realty company. The purpose of the inspection was to identify obvious areas of environmental concern. The EIS report identified six areas of concern.
1. USTs and drainage ponds
2. Groundwater quality
3. Asbestos Containing Materials
4. Hazardous waste disposal
5. Possible presence of drywells, underground tanks, non-sewered drainage.
6. PCB containing transforms

No sampling or further investigation was performed.
Torrington Company, Final Summary Report of Clean-Up Work, Torrington Company Plant Site, South Bend, Indiana, January 19, 1987, Appendix R2.
The Torrington Company prepared a summary report that outlined summarized environmental clean up activities at the Torrington Company South Bend Site. Based on prior investigations, Torrington determined there were three areas that should be addressed, the storm drainage ponds, the USTs, and an area of contamination. Torrington reported that Ponds #2, #3, #4, and #5 had been filled in. It was also reported that the USTs and impacted soils had been removed. The area of contaminated soil was excavated and 1700 cubic yards of soil were removed and sent to Prairie View landfill. The area was backfilled with clean fill material.

Best Environmental, Inc., Final Report Environmental Assessment, The Torrington Company Bantam Bearing Division Plant, South Bend, Indiana, October 1990, *in* Capsule Environmental Engineering, Inc. Summary Report of Previous Assessment Activities, Former Torrington Heavy Bearings Facility, South Bend, Indiana, September 10, 1992, Appendix S.
Best Environmental conducted sampling activities at the former Torrington site to investigate areas not previously studied and to confirm previous sampling results. Best took soil samples from beneath the plant floor at select locations, collected pit samples, paint chip samples,

installed one monitoring well, and sampled three existing monitoring wells. Best Environmental concluded that no localized plant subfloor contaminants were detected in the main, the foundry, or the solvent still buildings. Pit contents generally were non-hazardous. However, some pits contained oils, process liquids, and sludge that required disposal at a special waste approved facility. Two pits contained water with no contaminants. One pit contained only sand with no contaminants. Paint chip samples contained lead at concentrations above the regulatory limit. Groundwater samples collected from monitoring wells contained VOCs.

Based on previous investigations, Best Environmental concluded that contaminants remaining in pond sediments might still be a source of groundwater impacts.

Best Environmental recommended the removal and off-site disposal of pit wastes, the remediation of paint chips, and the further investigation of soil and groundwater contamination.

Best Environmental, Inc., Subsurface Environmental Assessment and Remedial Action Plan, The Torrington Company, April 1991, Appendix T.

In April 1991, Best Environmental conducted an environmental assessment at the site. Five soil borings were advanced in the vicinity of the filled storm water drainage ponds. Seven new monitoring wells were installed. Four wells were installed on the north side of the facility building (nested pairs), one well was installed on the east side of the building, one well was installed south of the filled-in storm water Pond #2, and one well was installed within the southwest corner of the building. Soil and groundwater samples exhibited VOC impacts at levels exceeding the regulatory limits in effect at that time. The area at the southwest corner of the building evidenced the greatest contaminant levels. Based on groundwater flow, the southwest corner impacts were interpreted as the source area for impacts located down gradient. A remediation system was recommended for this area. Impacts were also detected in the soil boring advanced in the vicinity of Pond #4 and further investigation was recommended.

Best Environmental, Inc., Interior Pit Cleaning Project, Torrington Bearing Plant, September 1991, Appendix U.

In September 1991, Best Environmental removed and containerized waste from various pits located in the Torrington Plant. Solid wastes were disposed of Prairie View Landfill in Wyatt, Indiana. Pit water was disposed of in the South Bend sanitary sewer.

Capsule Environmental Engineering, Inc., Torrington Investigation Report, December 11, 1991, Appendix V.

Capsule conducted an investigation to assess soil impacts in the Pond #4 area and to define the groundwater condition at the northern perimeter of the Torrington facility. Capsule detected elevated levels of TPH, metals, and cyanide in the Pond #4 area. No contaminants were detected in the monitoring wells installed in the west parking area (north of Sample Street). VOCs were detected in the deeper monitoring well installed in the east parking area (north of Sample Street).

Capsule Environmental Engineering, Inc., Phase II, Volumes 1 & 2, Torrington Investigation Report, The Torrington Company, May 26, 1992, Appendix W.
Capsule advanced nine soil borings and collected soil samples in the Pond #4 area (PD4-1 to PD4-9). Thirteen soil borings were advanced in the S-3 area (S3-1 to S3-9 and S3I-1 to S3I-4). Twenty existing monitoring wells were sampled. An additional monitoring well north of Sample Street was installed (W-16). Water Well records were searched to determine potential receptors. IDEM records on neighboring facilities were searched. Monitoring well groundwater levels were gauged and the flow direction in the shallow aquifer was determined to be to the north.

Analysis of Pond #4 soil boring soil samples exhibited VOC impacts and trace amounts of Resource Conservation and Recovery Act (RCRA) metals and cyanide.

Soil samples collected from borings in the S-3 area showed evidence of VOC contamination attributable to petroleum and solvents.

Groundwater samples from 10 monitoring wells showed evidence of one or more VOC compounds, including 1,1,1-trichloroethane (TCA), trichloroethylene (TCE), 1,1-dichloroethane (1,1-DCA), and 1,1-dichloroethylene (1,1-DCE).

Capsule Environmental Engineering, Inc. Soil Gas Study Report, July 30, 1992, Appendix X.
Tracer Research Corporation performed a soil gas survey and collected confirmatory soil samples in 1992 for Capsule Environmental. Capsule identified two areas of concern, the S-3 monitoring well area at the southwest corner of the building, and in the north central part of the main manufacturing building.

Capsule Environmental Engineering, Inc. Summary Report of Previous Assessment Activities, Former Torrington Heavy Bearings Facility, South Bend, Indiana, September 10, 1992, Appendix Y.
Capsule and Law Engineering reviewed prior assessments conducted at the former Torrington facility and determined that the full vertical and lateral extent of impacts had not been assessed. They also determined that there was a potential for additional unidentified sources. Therefore, they recommended that a full site characterization be performed at the site. Based on a full site characterization, remedial alternatives could be evaluated.

Law Environmental, Inc., Remedial Investigation Work Plan, The Torrington Company, September 21, 1992, Appendix Z.
Law Environmental prepared a Remedial Investigation Work Plan for further site investigation activities for the purpose of developing feasible remedial action alternatives.

Law Engineering, Inc., Report of Soil Gas Investigation, Former Torrington Heavy Bearings Facility, February 12, 1993, Appendix AA.
In 1992, Law Engineering performed a soil gas survey at the Torrington site for Capsule

Environmental. Their report incorporated the previous Soil Gas Study performed in 1992 by Tracer Research Corporation and summarized the results of both studies. A total of 155 soil gas borings were attempted, but only 136 locations could be sampled because of high water or refusal. VOCs, including benzene, toluene, ethylbenzene, and total xylenes (BTEX compounds) and chlorinated hydrocarbons, were detected in soil gas samples from within the main building, the southeast corner of the site, and the S-3 monitoring well area. Law recommended additional monitoring wells to assess the horizontal and vertical extent of soil and groundwater impacts.

Capsule Environmental Engineering, Inc., Soil Vapor Extraction/Air Sparging Documentation Report & Conceptual Design, The Torrington Company, June 21, 1994, Appendix AB.
Capsule conducted two pilot tests at the site to determine the feasibility of using air sparging/soil vapor extraction (AS/SVE) to remediate soils and groundwater. This report includes the results of the pilot tests and concluded that AS/SVE was a desirable method of remediation. A conceptual design of an AS/SVE system was presented.

Capsule Environmental Engineering, Inc., Corrective Action Work Plan, Revision 1, Torrington Company Former Heavy Bearings Facility, February 27, 1995, Appendix AC.
Capsule prepared a work plan to outline the specific tasks associated with the installation, operation, and maintenance of the proposed AS/SVE remediation system.

Capsule Environmental Engineering, Inc., Operation & Maintenance Manual, In Situ Volatilization/Air Sparging System, Volumes 1 & 2. Torrington Company, July 1996, Appendix AD.
Capsule prepared an operation and maintenance manual for the AS/SVE remediation system. Complete system specifications and drawings are included.

Capsule Environmental Engineering, Inc., 1997 Annual System Effectiveness Report, Torrington Company Former Heavy Bearings Facility. March 5, 1998
This report was not available.

Capsule Environmental Engineering, Inc., 1998 Annual System Effectiveness Report, Torrington Company Former Heavy Bearings Facility, February 16, 1999, Appendix AE.
This report documents the operation and maintenance of the AS/SVE remediation system from January to December 1998 and the semi-annual groundwater monitoring results. This is the second annual effectiveness report. There were actually two separate AS/SVE systems installed at the facility. In 1998, the north system operated for 317 days and the south system operated for 316 days. The volumes of TCA, 1,1-DCA, and 1,1-DCE removed were calculated as 0.91, 0.44, and 0.69-gallons, respectively. The 1997 results for TCA, 1,1-DCA, and 1,1-DCE were 1.84, 0.51, and 0.29-gallons, respectively.

The report states that the water table is relatively flat and that groundwater flows to the north. It was reported that the measured oil thickness in monitoring wells in the S-3 area ranged from 0 to

8-inches in thickness in July 1998. All sampling locations, except for W-10B, EV-13, and S-3, exhibited VOC concentrations below the U.S. EPA Maximum Contaminant Levels (MCLs).

It was also reported that a pilot bailing study had been performed over a three-month period in 1998 and that petroleum product thickness had stabilized at a thickness of about 2-inches.

Quality Environmental Professional, Inc. Document Review and Findings Report, September 27, 2010, Appendix AF.
Quality Environmental Associates, Inc. (QEPI) prepared a review of previous environmental investigations conducted at the site. QEPI concluded that significant data gaps existed in the documentation of the remediation system. QEPI noted that no formal consultation with the IDEM regarding the system design, installation, or operation had been performed. It was also noted that no further documentation regarding the system operation or shutdown was available. QEPI concluded that, potentially, contamination might still exist at the site. QEPI recommended further investigation to determine the effectiveness of the remediation system and to investigate the potential for additional sources.

Heartland Environmental Associates, Inc., Limited Phase II Environmental Site Assessment, June 19, 2011, Appendix AG.
In 2011, Heartland Environmental Associates, Inc. (Heartland) conducted a Limited Phase II Site Assessment to evaluate the current status of previously reported impacts at the Torrington site. Heartland concluded that previous remedial actions appeared to have been successful in reducing contaminant levels. However, the remedial efforts were not performed under the IDEM guidance and there was insufficient documentation to determine if contaminant levels had been reduced across the site. Heartland recommended that the UEA enroll the site in the IDEM Voluntary Remediation Program (VRP). The IDEM VRP allows for self-lead assessment and remedial efforts to be conducted, in accordance with IDEM guidance, and provides a Certificate of Completion for remedial efforts and provides site closure in accordance with IDEM protocols.

1.3 Overview of Site Conditions

1.3.1 Date of Spill/Release

Environmental investigations completed by Canonie Engineers, Harza Environmental, Best Environmental, Capsule Environmental, Law Engineering, and Heartland have documented the presence of chemical impacts to soil and groundwater at the Sample Street Business Complex.

In 1984, in preparation for site closure, the Torrington Company had an environmental assessment conducted at the facility (Appendix M). Preliminary screening showed there were three areas of concern. Further investigations were conducted in the areas of the storm drainage ponds, the former UST areas, and an area of TCA impacted soil on the southwest corner of the building.

As part of closure activities, water and sediment samples were collected from the storm water drainage ponds. No evidence of impacts was found at that time. Subsequently, storm water drainage Ponds #2, #3, #4, and #5 were filled in. The #1 Pond was retained to accept roof drainage from the facility building.

According to the IDEM records, five USTs, in two separate areas, were formerly present onsite (Appendix O). According to the UST Notification form filed in 1986, UST#1 had a capacity of 8,000-gallons and contained Stoddard Solvent, UST #2 had a capacity of 8,000-gallons and contained cutting oil, UST #3 had a capacity of 12,000-gallons and contained cutting oil, USTs #4 and #5 had capacities of 20,000-gallons each and contained fuel oil. USTs #1 and #2 were located near the southeast corner of the main building. USTs #3, #4, and #5 were located under an earthen mound near the southwest corner of the main building.

All USTs were removed in 1986. The UST removal notification form states that the date of installation of the five USTs was unknown (Appendix O). Two Stoddard Fluid and cutting oil USTs were located under a concrete pad on the southeast corner of the building. No evidence of impacts was noted during the removal of those USTs. Three cutting oil and heating oil USTs were located under an earthen mound at the southwest corner of the building. Evidence of soil impacts was noted in the soils around a UST under the earthen mound. Impacted soils were excavated and removed from the site. Further soil impacts were found in soils around the cutting oil and heating oil USTs. Approximately 1700 cubic yards of soils were excavated from the area of the product lines and removed from the site.

According to subsequent ESA reports (Best, 1990, 1991 and Capsule, 1991), during UST removal, petroleum impacted soils were found around the fuel oil tanks and along product line piping runs. Impacted soils were excavated and removed. Tank pits were backfilled with clean fill.

According to assessment reports, no spills or releases of chemical other the UST release have been documented. It is likely that impacts originating from operation of the storm water drainage ponds or from other sources were accumulative impacts resulting from small releases over the operational life of the facility (1928 through 1983).

1.3.2 Discovery of Spill/Release

In 1984 as part of site closure activities, Torrington contracted with Environmental Systems, Inc. to evaluate site conditions. Sediment and water samples were collected from the storm water drainage ponds and analyzed. Groundwater from two on-site production wells was also sampled and analyzed. VOCs were detected in Pond #4.

In 1984, Canonie conducted a soil and groundwater investigation at the site that found soil and

groundwater impacts present at the site.

In 1985, Harza performed an environmental assessment that confirmed the presence of contaminants.

In April 1991, Best Environmental conducted an environmental assessment at the site. Five soil borings were advanced in the vicinity of the filled storm water drainage ponds. Seven new monitoring wells were installed. Four wells were installed on the north side of the facility building (nested pairs), one well was installed on the east side of the building, one well was installed south of the filled-in storm water Pond #2, and one well was installed within the southwest corner of the building. Soil and groundwater samples exhibited VOC impacts at levels exceeding the MCLs. The area at the southwest corner of the building evidenced the greatest contaminant levels. Based on groundwater flow, the southwest corner impacts were interpreted as the source area for impacts located down gradient. A remediation system was recommended for this area. Impacts were also detected in the soil boring advanced in the vicinity of Pond #4 and further investigation was recommended.

In 1991, Capsule performed an environmental investigation to assess soils in the Pond #4 area and to determine if impacts extended north of Sample Street. Capsule found petroleum impacts in the Pond #4 area and determined that VOC impacts were present north of Sample Street.

Capsule Environmental conducted a Phase II ESA at the Torrington site in 1992. The purpose of the investigation was to determine the extent and magnitude of impacts at Pond #4, to determine if a contaminant source remained at S-3 (southwest corner of building), and to install a downgradient monitoring well north of Sample Street to delineate the groundwater contaminant plume. Capsule also performed record searches to identify potential groundwater receptors. Capsule concluded that impacts at Pond #4 were due to fuel oil, impacts at S-3 were concentrated beneath a concrete bermed area and along the west wall of the building, and that the VOC plume had migrated north of Sample Street. They also concluded that there was no evidence that off-site sources had impacted the facility or that a remediation system operated at the Allied-Bendix facility was influencing groundwater levels at the Torrington facility.

In 2011, Heartland conducted a limited Phase II ESA to evaluate the presence/absence of chemical contaminants at the facility and to evaluate the effectiveness of the remediation system that had been installed in 1995 and operated through 1998.

1.3.3 Remediation of Free Product/Recovery Measures Taken

In 1994, Capsule Environmental recommended an AS/SVE remediation system to remediate VOC impacts in soil and groundwater at the Torrington Facility. A pilot test was conducted and in January 1995, Capsule prepared a system design and contract bid specification package. Capsule also prepared a Corrective Action Plan (CAP) for the site. Two separate AS/SVE

systems were installed in 1995-1996 and began operation in 1996. The systems included 24 vapor extraction vents and 6 air-sparging points. The vents and sparge points were installed in three areas, Area A, Area B, and Area S3.

Area A included the northeast portion of the main building. Nine extraction vents and two air sparge points were installed in Area A.

Area B included the northwest portion of the main building. Four extraction vents and one air sparge point were installed in Area B.

Area S3 included the southwest portion of the main building and the area around monitoring well S-3 on the southwest corner of the building. Eleven extraction vents and three sparge points were installed in Area S3.

The sparge points were drilled to depths of approximately 60-feet and were constructed with 2-inch polyvinyl chloride (PVC) well casings. Sparge points were screened with 2-feet of PVC screen. The bottom 5-feet of each point was sand-packed and the remainder of the annular space was grouted to the surface. The extraction vents were drilled to depths of approximately 25-feet. The extraction vents were screened with 20-feet of 4-inch PVC. Vents were sand-packed to one foot above the screen and grouted to the surface.

The system was designed for unattended operation with automatic controls and an auto dialer system to alert the operators in case of system malfunction. A regular schedule of operations and maintenance was specified to ensure the continuous operation of the system. A regular schedule of air and groundwater sampling was also specified to determine the system efficacy.

The system was in operation from 1996 through 1998. The 1998 annual system effectiveness report indicated that the system was running efficiently with a 90% run time. However, free product petroleum was still present in the groundwater monitoring wells at the loading dock and both TCE and PCE were still present at elevated concentrations throughout the site. No additional documentation was available after 1998 regarding system operation or system closure.

1.3.4 Source of Spill/Release

Petroleum impacts are most likely associated with the former cutting oil and heating oil USTs that were located at the southwest corner of the main building. Chlorinated hydrocarbon contamination could not be attributed to a single source or release. It is likely the chlorinated impacts were due to accumulated minor releases from manufacturing operations.

1.3.5 Volume of Spill/Release

The volume of the release(s) is unknown.

1.3.6 Areas Impacted

Previous subsurface investigations indicated that petroleum related contamination existed in the area on the southwestern corner of the building (Area S3, Figure 8). This area had previously contained cutting oil and heating oil USTs and product lines and a waste oil above ground storage tank (AST). The previous investigations also indicated that chlorinated hydrocarbons were present across the site.

A site map showing monitoring well and soil boring locations are shown on Figures 4, 5, and 6. Soil analytical data is summarized in Table 2 and groundwater analytical data is summarized on Table 3. Soil boring logs and monitoring well construction diagrams are included in Appendix B.

1.3.7 Date of Incident Reporting

Soil impacts were detected during site closure activities in 1984 and during subsequent investigations. Although the IDEM was made aware of investigation results and voluntary cleanup activities, no incident number has been assigned to any of the detected releases.

An application to enter the site into the VRP was submitted to IDEM in August 2012. The site was approved in a letter from IDEM dated October 12, 2012 and assigned the VRP #6120801. The letter is included as Appendix C.

1.3.8 Existing Deed/Land-Use Restrictions

The site is zoned for commercial use. At the time of this report, no deed and/or land-use restrictions were found in relation to the property.

1.4 Remedial Action Objectives

1.4.1 Cleanup objectives

Based on historic operations of the site and the location of the site with respect to commercial properties and residential properties, the RCG Residential Direct Contact and Groundwater Ingestion Screening Levels are applicable cleanup objectives for on-site soil and groundwater impacts.

Under the Indiana VRP, this site will be evaluated using the RCG Default Screening Levels. The potential chemicals of concern (COCs) at the site have been identified as VOCs.

1.4.2 Work Items Planned

Soil and groundwater confirmation borings will be advanced south, southeast, and east of the main building to determine the presence or absence of impacts. Two off-site nested pairs of wells completed in the lower and upper water bearing zones will be installed (Figure 4).

The process water supply well, PW-3, located in the main building interior, will be abandoned. Pump and associated piping will be removed and the well will be abandoned is in accordance with the State of Indiana well abandonment rules and regulations (IC 25-39-4-6, IAC 312 IAC 13, Rule 10).

Heartland will commence quarterly sampling of the monitoring well network and perform quarterly monitoring of the well network for a minimum of four quarters. Quarterly groundwater samples will be analyzed for VOCs. Quarterly monitoring reports will be submitted after each sampling event. A Groundwater Remediation Completion Report will be submitted after the completion of four quarters of sampling.

2.0 INVESTIGATION ACTIVITIES

2.1 Summary of Information Used to Select Remedy

2.1.1 Geologic and Hydrogeologic Summary

2.1.1.1 Surficial & Unconsolidated Geology

The site is located in the Kankakee Outwash and Lacustrine Plain physiographic province of the Northern Lake and Moraine Physiographic Region. The Kankakee Outwash and Lacustrine Plain is a broad nearly level plain that was once occupied by a glacial lake. It is surrounded by uplands of glacial moraines. The plain is about two miles wide at South Bend and widens to about eight miles at the Illinois border. The plain is drained by the Kankakee River and its tributaries.

In the vicinity of the Sample Street site, the unconsolidated surficial deposits are approximately 200-feet thick and consist of gravel and sand outwash deposits as well as lacustrine silt and clay deposits (IDNR, 1990).

Surface soils at the site consist of the Urban land-Maumee complex and the Maumee loamy fine sand. Maumee series soils (NRCS, 2013) The Maumee series consists of very deep, poorly drained or very poorly drained soils formed in sandy outwash or sandy sediments in depressions on outwash plains and lake plains. Maumee soils consist of loamy fine sand, loamy sand, or sand, or their mucky analogues. In urban settings, soils and soil horizons are often modified by the addition of fill materials and leveling.

2.1.1.2 Bedrock Geology

In the vicinity of the site, the unconsolidated surficial materials are underlain by the Ellsworth Shale bedrock formation. The Ellsworth Shale consists of alternating beds of gray-green shale and black shale (Shaver, et al, 1986). The bedrock surface elevation is about 550-feet a.m.s.l. and slopes toward the southwest.

2.1.1.3 Regional Aquifer

The site is located in the Kankakee Aquifer System, which grades into the St. Joseph Aquifer system to the northeast. The aquifer consists of fine to medium-grained sands interbedded with gravel in the upper part of the basin. Well yields in this aquifer typically range from 100 to 1,200 gallons per minute.

2.1.1.4 Regional Depth to Groundwater & Seasonal Fluctuations

The principal aquifers in St. Joseph County are the unconsolidated and gravel glacial deposits

(IDNR, 1990). Aquifer thickness is variable, but is generally at least 30-feet thick. Based on monthly observation well data (USGS, 2013), the average seasonal variation in water level in the Kankakee Aquifer is about 2.3-feet.

2.1.1.5 Groundwater Flow

Regional groundwater flow in the vicinity of the site is likely to the southwest towards the Kankakee River (IDNR, 1990). However, localized flow, as determined from monitoring well gauge data, is towards the northwest.

2.1.2 Geographic Information

2.1.2.1 Political Geographic Data

The Sample Street Business Complex is located at 3702 West Sample Street, South Bend, Indiana. The facility is shown on the South Bend West, 7.5 Minute U.S. Geological Survey Quadrangle Map in Section 16, Township 37 North, Range 2 East (Figure 1). The Universal Transverse Mercator (UTM NAD83) coordinates for the site are Zone 16, 558,364 meters north and 4,612,774 meters east.

2.1.2.2 Physical Geographic Data

2.1.2.2.1 Topography & Surface Drainage

The site is relatively level. The site elevation is approximately 713-feet above mean sea level. Storm water surface drains are present in the asphalt parking lot and the adjacent roadways. Regional surface water flow is likely southwest towards Dixon West Place Ditch.

2.1.2.2.2 Nearby Surface Waters, Wetlands & Drainage Ways

The nearest surface water body is Dixon West Place Ditch, located approximately 0.5 mile southwest of the site. Dixon West Place Ditch flows southwest to the Kankakee River, the major drainage of the Kankakee River basin.

There were no indicators of wetlands observed at the site. An inspection of the United States Department of the Interior, Fish & Wildlife Service, National Wetlands Inventory Map did not identify designated wetlands on the site property (Appendix E). The nearest designated wetlands are located approximately 0.5-mile southwest of the facility and consist of a freshwater scrub/shrub seasonally flooded wetland and a seasonally flooded emergent wetland.

2.1.2.2.3 Nearby Floodways & Flood Plains

Dixon West Place Ditch is located approximately 0.5 mile southwest of the site. The facility is not located in a designated floodway (IndianaMap, 2013)

2.1.3 Extent of Subsurface Work

Excavation and removal of soils associated with the removal of the USTs is described in previous reports (Appendices P, R, and S)

2.1.3.1 Boring Logs and Monitoring Well Construction Logs

Logs of borings advanced in the Phase II ESA (Heartland, 2011) and monitoring well construction logs installed as part of this RWP are included in Appendix B. Monitoring well elevation and construction details are included in Table 1.

2.1.3.2 Maps & Figures

Maps and figures are located in the Figures section.

2.2 Summary of Site Investigation

2.2.1 Identification of all contaminants

2.2.1.1 Chemical and physical properties

The COCs at the site have been identified as VOC compounds.

Contaminants of Concern and RCG Appendix A Screening Levels		
Compound	**Migration to Groundwater mg/kg**	**Ingestion µg/L**
Benzene	0.051	5
Toluene	14	1000
Ethylbenzene	16	700
Xylenes, total	200	10000

Contaminants of Concern and RCG Appendix A Screening Levels		
Compound	**Migration to Groundwater mg/kg**	**Ingestion µg/L**
Tetrachloroethylene	0.045	5
Trichloroethene	0.036	5
cis 1,2-Dichloroethylene	0.41	70
trans 1,2-Dichloroethylene	0.59	100
1,1,1-Trichloroethane	1.4	200
1,1-Dichloroethane	0.14	24
1,1-Dichloroethylene	0.05	7
Vinyl chloride	0.014	2
Lead	270	15

2.2.1.2 Contaminant Toxicological Data

Based on the operation of petroleum USTs at the site and the results of prior subsurface investigations, the identified COCs are VOCs and lead.

2.2.1.2.1 Description of Hazard Categories Present

The National Fire Protection Association (NFPA) has adopted a standard that presents a simple, readily recognizable, and easily understood system of markings that provides a general idea of the hazards of materials and the severity of those hazards as they relate to emergency response. The standard addresses the health, flammability, instability, and related hazards that are presented by short-term acute exposure to a material under conditions of fire, spill, or similar emergencies (NFPA 704, 2012).

Petroleum hydrocarbon materials have a general health hazard rating of 2 indicating delayed, chronic health hazards and a fire hazard rating of 3 to 4, which indicates extremely flammable material. The components in gasoline have a health hazard rating of 1 indicating possible immediate (acute) health hazards and a fire hazard of 3 indicating the materials are flammable. In addition, benzene is a known carcinogen and ethylbenzene is noted as a possible carcinogen. Gasoline constituents are known to cause eye, skin, dermal, and inhalation irritation.

Contaminants of Concern Hazard Categories			
Compound	**Health**	**Flammability**	**Instability**
Benzene	2	3	0
Toluene	2	3	0
Ethylbenzene	2	3	0
Xylenes, total	2	3	0

Tetrachloroethylene	2	0	0
Trichloroethene	2	1	0
cis 1,2-Dichloroethylene	2	3	2
trans 1,2-Dichloroethylene	2	3	2
1,1,1-Trichloroethane	2	1	0
1,1-Dichloroethane	1	3	0
1,1-Dichloroethylene	2	4	2
Vinyl chloride	2	4	2
Lead	2	0	0

2.2.1.3 Potential Effects of Residual Contamination

2.2.2 Summary of Site-Specific Geology and Hydrogeology

Heartland completed a limited Phase II investigation at the site in June 2011 to characterize subsurface soil and groundwater. Ten soil borings, SB-1 – SB-10, were advanced in the areas of monitoring well S-3, the former Pond #2 and #4, the site of a former solvent still, and on the east and southeast sides of the main building.

In April 2013, Heartland also installed shallow and deep monitoring wells, W-100A, W-100B, W-101A, and W-101B, off-site at the adjoining Jupiter Aluminum facility to characterize and monitor off-site migration. One groundwater sampling event of the monitoring well network was performed in April 2013. Soil analytical data is summarized in Table 2 and groundwater analytical data is summarized in Table 3.

2.2.2.1 Site Stratigraphy

A soil boring, SB-4, was advanced in the backfilled Pond #4, in the southwest portion of the site. Medium to coarse-grained brown sand was found to a depth of 8-feet bgs. Underlying the brown sand was sand and gravel to a depth of 55-feet. Cobbles were encountered at 12 and 22-feet bgs. At 55-feet, five feet of dark gray silty clay was encountered. The sand and gravel was saturated at 8-feet.

Soil boring SB-8 was advanced in the area southeast of the main building to a depth of 62-feet bgs. Dark brown silt loam was found to a depth of 2-feet. Beneath, sand and gravel and medium to coarse-grained sand, was found to a depth of 60-feet. Materials were saturated at 8-feet. Cobbles were encountered at 37 and 54-feet. At 60-feet, dark gray silty clay with gravel was encountered. The boring was terminated in silty clay at 62-feet.

Soil boring SB-12 was advanced in the south central portion of the site. Fine to medium sand, medium to coarse sand, and coarse sand to medium gravel was found to 57-feet. Saturated

materials were found at a depth of 8-feet. At 57-feet, hard brown-gray silt with gravel was encountered. The boring terminated in silt at a depth of 60-feet.

Soil boring SB-14 was advanced on the east adjoining Jupiter Aluminum property. A dark brown loam was encountered to a depth of 4-feet. Beneath, medium to coarse-grained sand was encountered to 41-feet. At 41-feet, fine to medium gravel was found to a depth of 47.5-feet where about 1-foot of hard brown silt was encountered. Medium yellow-brown sand was found below the silt to a depth of 50-feet.

Soil boring logs and monitoring well construction diagrams are provided in Appendix B. Cross sections are provided in prior reports included in Appendices M-AD.

2.2.2.2 Site Hydrogeology

During the advancement of soil borings, groundwater was encountered at depths ranging from 6 to 8-feet bgs.

Previous groundwater monitoring well gauging showed that the depth to groundwater in the monitoring well network ranges from 5.73 to 10.84 (Best, 1991), 5.88 to 14.00 (Capsule, 1992), and 5.94 to 11.98-feet bgs (Capsule, 1992). Local groundwater flow has been determined to be south to north (Best, 1991 and Capsule, 1992). In April 2013, groundwater levels were gauged in 20 monitoring wells. The depth to groundwater ranged from 7.48 to 11.88 feet bgs. A potentiometric surface map of those groundwater levels shows that groundwater flow is towards the west northwest (Figure 4). The groundwater elevation data is summarized in the following table. Available previous potentiometric surface maps are included in Appendix H.

Static Water Elevations

Well ID	Best 2/91	Capsule 3/92	Capsule 4/92	Heartland 4/29/2013
S-3	704.43	704.24	704.18	701.22
W-1	704.37	706.09	705.51	704.38
W-2	704.66	704.29	704.38	-
W-3	704.61	705.35	704.89	705.11
W-4	704.57	704.12	704.02	-
W-5	704.62	704.19	-	704.34
W-7	704.31	704.52	704.52	704.64
W-8	704.30	703.91	703.91	704.09
W-9	704.88	704.52	704.35	704.58
W-10A	704.00	703.63	703.61	703.75
W-10B	704.00	703.64	703.59	703.74
W-11A	703.95	703.30	705.76	-
W-11B	703.96	703.79	705.98	-
W-12	704.34	704.06	-	704.17
W-13	704.39	704.15	-	704.25
W-14A		704.12	703.52	704.16
W-14B		700.94	703.48	703.06

Static Water Elevations				
Well ID	Best 2/91	Capsule 3/92	Capsule 4/92	Heartland 4/29/2013
W-15A		703.60	703.58	703.74
W-15B		703.57	703.58	703.71
W-16		703.70	703.52	703.66
W-100A				705.15
W-100B				705.16
W-101A				704.93
W-101B				704.91

Changes in flow direction may be due to nearby high capacity pumpage and/or seasonal variations in water levels.

Subsurface materials consist of porous, conductive sands and sands and gravels. Although geotechnical analysis has not been performed on any sample from the subsurface soil, a site-specific hydraulic conductivity can be estimated based on lithology. The U.S. EPA On-line Tools for Site Assessment Calculation multiple point tool (U.S. EPA, 2013) was used to calculate the hydraulic gradient and flow direction for the April 29, 2013 groundwater gauging data. The calculated gradient was 0.002417 feet/foot and the flow direction was 280.3° from north.

The saturated zone found at the site is approximately 43-feet thick and is composed of fine to medium sand with lenses of gravel. Clean sand was selected as the representative saturated soil type. The average groundwater horizontal flow velocity (v) for the site can be calculated using the following formula (Freeze and Cherry, 1979):

$v = K(i) / n_e$

where:

K = hydraulic conductivity (feet/day)
i = hydraulic gradient (feet/foot)
n_e = effective porosity

Using a representative effective porosity of 33% (Morris & Johnson, 1967) for fine sand, a representative hydraulic conductivity range of 1.3 to 283 feet/day for clean sand (Freeze and Cherry, 1979), and the calculated hydraulic gradient of 0.002417 feet/foot; a horizontal groundwater flow velocity range of 0.01 to 2.1 feet/day (3.6 to 758 feet/year) was calculated for the site.

2.2.3 Discussion of Sources of Contamination

Previous subsurface investigations indicated that petroleum related contamination existed in the area on the southwestern corner of the building. This area had previously contained cutting oil

and heating oil USTs, product lines, and a waste oil AST. The previous investigations also indicated that chlorinated hydrocarbons were present across the site. No source or release has been identified for chlorinated hydrocarbons. It is likely that chlorinated compounds are present due to long-term minor releases from manufacturing operations.

2.2.4 Summary and Map of Extent of Contamination

Previous investigations found subsurface impacts in an area near the southwestern portion of the main building (identified as S3 Area in previous reports), Pond #4, the area near the southeastern loading docks, the interior steam cleaning room area (identified as Area A), and the northwest manufacturing area (Area B) (Figure 7).

In a Phase II investigation performed in 2011, Heartland found impacts exceeding IDEM Risk Integrated System of Closure (RISC) Industrial Default Closure Levels (IDCLs) for TPH-ERO were present in the southwestern loading dock area of the site. Soil borings SB-1, SB-2, and SB-3 exhibited TPH-ERO concentrations that exceeded the RISC IDCL that were current at that time. Currently the site is being regulated under the RCP, which has no Screening Levels for TPH in soil or groundwater. Soil boring SB-1 exhibited an elevated concentration of lead in the 3 to 4-feet interval. However, the concentration, 240 mg/kg, was less than the RCG Migration to Groundwater (MTG) Screening Level and is well below the RCG Residential Direct Contact Level of 560 mg/kg. Soil boring SB-2 exhibited a 1,2,4-trimethylbenzene concentration of 861 µg/kg in the sample interval of 10 to 12-feet bgs, which exceeded the RCG MTG Screening Level of 440 µg/kg.

Soil borings advanced in the former backfilled cooling ponds (Ponds #2, #4, and #5) did not encounter any concentrations of VOCs or metals in soils or groundwater that exceed the RCG Screening Levels.

Soil borings advanced in the area southeast of the main building (SB-7, 8, and 9) did not encounter any concentrations of VOCs or metals in soil or groundwater that exceeded the RCG Screening Levels.

A soil boring advanced on the east side of the main building, SB-10, did not exhibit any concentrations of VOCs or metals in soil that exceeded the RCG Screening Levels. A groundwater sample collected from SB-10, did exhibit a concentration of 1,1-dichloroethene of 8.88 µg/L, which exceeded the RCG MTG Screening Level of 7 µg/L.

2.2.5 Summary of Risks Associated with Site

2.2.6 Human Risks

2.2.6.1 Inhalation Exposure Pathway

Based on current site conditions, there is limited potential for exposure via volatilization, ingestion, and dermal contact. Soil and groundwater impacts of most COCs have been substantially remediated to levels below the RCG Default Screening Levels.

Inhalation has been evaluated as it pertains to vapors entering residential homes through basements and/or crawl spaces and through water wells. No residences are located immediately adjacent to the Sample Street Business Complex. The nearest down gradient residences are located approximately 240-feet north of the site. Monitoring wells located downgradient of historical impacted areas will be sampled as part of this work plan and potential impacts will be further evaluated.

2.2.6.1.1 Vapor Intrusion

The potential for Vapor Intrusion into nearby buildings was evaluated using the preliminary screening methods for chlorinated hydrocarbons and petroleum chemicals presented in the RCG.

Post-remedial action detected COCs were compared with the RCG Screening Levels for vapor intrusion to determine if concentrations exceeded Vapor Exposure Screening Levels. One monitoring well, W-101A exhibited a concentration of 1,1-dichloroethene of 8.41µg/L, which is slightly in excess of the RCG Screening Level of 7 µg/L. One monitoring well, W-101B exhibited at concentration of 2.29 µg/L that exceeds the RCG Residential Vapor Intrusion Groundwater Screening Level (VI GWSL) of 2.0 µg/L. W-101A and W-101B are located 40-feet east of the Main Building. The depth to groundwater in W-101A was measured at 9.19 feet and W-101B was measured at 9.18 feet in April 2013.

Preliminary Screening shows that the Main Building should be considered low-risk for vapor intrusion because the measured concentration of 2.29 µg/L is less than 5 times the VI GWSL. Furthermore, No detectable concentrations of 1,1-dichloroethene or vinyl chloride were detected in the W-12 groundwater sample. W-12 is located 9-feet east of the Main Building and 38-feet northwest of W-101B.

No historic source of vinyl chloride has been identified for the area of W-12 and W-101B. Vinyl chloride concentration in these wells will be monitored and the potential for Vapor Intrusion will be re-evaluated if concentrations increase.

2.2.6.2 Ingestion Exposure Pathway

Ingestion of impacted groundwater is unlikely because groundwater impacts have been substantially remediated. Furthermore, the site and surrounding area is supplied with potable water by the South Bend Public Water Supply. No potable water supply wells are located onsite.

2.2.6.2.1 Drinking Water Sources & Wellhead Protection Areas

The site and surrounding area is supplied with potable water by the South Bend Public Water Supply. Two water wells used for manufacturing or fire suppression are currently located on the property. No drinking water supply wells are located on site. Ingestion of impacted groundwater at the site is unlikely. The nearest high capacity water well is located at the Raco facility, which is located at the western adjoining property. The site is not located in a Wellhead Protection Area (Appendix D).

Based on a review of IDNR files, there are 29 registered high-capacity water wells recorded within a two-mile radius of the site with depths ranging from 31 to 192 feet bgs (IDNR 2011). Well locations are shown on Figure 3, and copies of the high-capacity well records are included in Appendix G.

Residents in the area are supplied with potable water by the South Bend Water Department. Based on a review of IDNR files, there are approximately 84 low-capacity water wells recorded within a one-mile radius of the site (IDNR, 2012). Well locations are shown on Figure 3, and copies of the low-capacity well records are included in Appendix G.

Water well records include wells installed at the Torrington facility and other industrial facilities in the area. Well depths range from 20 to 213-feet.

2.2.6.3 Dermal Absorption Exposure Pathway

Dermal contact of impacted soil and/or water is unlikely because soil and groundwater impacts have been substantially remediated. However, minor amounts of impacted soils may be present in limited areas. Impacted areas below the main building flooring do not present an exposure hazard.

The potential exposure to impacted soils via direct contact or through fugitive dust generation poses a limited risk due to the depth of impacted soils below 7-feet bgs.

2.2.6.4 Socially Susceptible Areas

The site is located in a mixed industrial and residential area southwest of downtown South Bend, Indiana. The site is bordered on the north by Sample Street. The area north of Sample Street is occupied by residential properties. The site is bordered to the east and west by industrial facilities. The site is bordered to the east by a commercial storage building and further east by Indiana Street. The site is bordered to the south by unoccupied land and railroad lines. No

hospitals, schools, or childcare facilities were located within 1,000 feet of the site. The nearest school is the Pierre Navarre School located approximately 4,000-feet northwest of the site. An adjacent properties map is included as Figure 2.

2.2.7 Ecological Risks

There were no indicators of wetlands observed at the site. Review of the U.S. Department of the Interior, Fish & Wildlife Service, National Wetlands Inventory Wetland Mapper (2013) did not identify designated wetlands on the site property (Appendix E). The nearest designated potential wetland is a freshwater scrub-shrub seasonally flooded wetland located to the 0.51-miles southwest of the site (Figure 14).

2.2.7.1 Potentially Affected Species of Endangered Flora & Fauna

A request was submitted to the Indiana Natural Heritage Data Center for information on federal and state endangered, threatened, and rare species, high quality natural communities, and significant natural areas in the site vicinity. According to the response, there are no endangered, threatened, or rare species/areas documented for the project area (Appendix I).

Heartland also fulfilled the requirement for further consultation with the U.S. Fish and Wildlife Service as required under Section 7 of the Endangered Species Act of 1973. Section 7(a)(2) obligations were fulfilled by reviewing the U.S. Fish and Wildlife Service's species list for St. Joseph County (Appendix I). Based on the location of site and surrounding habitat, neither the listed species nor their critical habitats were affected by site actions or current conditions.

2.2.8 Environmental Risks

2.2.8.1 Transport Mechanism to Surface Water

Nearly the entire site is covered with concrete or asphalt pavement. The rest of the site is capped with grass. Storm water surface drains are present in the asphalt parking lot and the adjacent roadways. Most surface water flows into these storm water drains or infiltrates into the soil. The nearest water body is Dixon West Place Ditch, located approximately 0.5 mile southwest of the site. The distance and direction to this receptor does not present a potential for exposure via site leaching to surface water bodies. The potential for exposure to site impacts via surface runoff or site leaching to surface water bodies appears to pose no risk.

2.2.8.2 Transport Mechanisms to Groundwater

From 1984 to 1994, soil samples collected at the site exhibited impacts exceeding regulatory limits for VOCs. Impacts were detected in the shallow subsurface down to the zone directly overlying the first groundwater saturated zone. Based on analytical results and the permeable nature of subsurface materials, it is likely that soil impacts were a source of impacts to groundwater. Impacted soils in the vicinity of the fuel oil and Stoddard solvent USTs were

excavated and removed in 1986. Impacted soils were excavated and disposed from Pond #4 in 1992. Impacted soils beneath the main building and in the S-3 area could not feasibly be removed. Additional remediation was deemed necessary to address impacts to soils and groundwater in areas not subjected to soil removal. Therefore, AS/SVE systems were installed and operated from 1996 through 1998.

Post-remedial soil samples collected from the site in 2011 showed that VOC impacts had been remediated for all compounds for all soil borings except soil boring SB-2. Soil boring SB-2 exhibited a concentration of 1,2,4-trimethylbenzene that exceeded the RCG Screening Level. The soil sample from SB-2 required dilution due to a high level of TPH, which caused detection levels to be greater than regulatory limits for several VOC compounds.

In 2011, one groundwater sample collected from soil boring SB-10, on the east side of the building, exhibited a concentration of 1,1-DCE that slightly exceeded the regulatory limit.

Groundwater samples were collected from selected monitoring wells in April 2013. One monitoring well, W-101A, located on the adjoining Jupiter Aluminum property, exhibited a concentration of 1,1-DCE that slightly exceeded the RCG Screening Level. Monitoring well W-101B exhibited a concentration of vinyl chloride that slightly exceeded the RCG Screening Level.

2.2.9 Other Transport Mechanisms

During site investigation activities, no other transport mechanisms were identified on the site.

2.2.10 Impact of Current and Future Land-Use Issues

A draft Environmental Restrictive Covenent is included in Appendix F.

2.3 Background Concentration Assessment

No concentrations of background chemicals that exceed RCG Screening Levels are known to be present.

2.4 Additional Field Investigation Requirements

No additional field investigations are required at this time. Under this RWP, Heartland will conduct four quarters groundwater monitoring prior to requesting closure from the IDEM.

3.0 REMEDIATION PLAN

3.1 Evaluation of Remedial Alternatives

No remedial alternatives were considered.

3.2 Selected Remediation Technology

Based on historic operations of the site and the location of the site with respect to commercial properties and residential properties, the RCG Residential Direct Contact and Groundwater Ingestion Screening Levels are applicable cleanup objectives for on-site soil and groundwater impacts.

Under the Indiana VRP, this site will be evaluated using the RCG Default Screening Levels. The potential COCs at the site have been identified as VOCs.

Soil and groundwater confirmation borings will be advanced south, southeast, and east of the main building to determine the presence or absence of impacts. Soil borings were completed in April 2013. Two off-site nested pairs of wells completed in the lower and upper water bearing zones were installed in April 2013.

The process water supply well, PW-3, located in the main building interior, will be abandoned. Pump and associated piping will be removed and the well will be abandoned is in accordance with the State of Indiana well abandonment rules and regulations (IC 25-39-4-6, IAC 312 IAC 13, Rule 10). A second process water supply well, PW-4, was abandoned sometime prior to 2011.

Heartland will commence quarterly sampling of the monitoring well network and perform quarterly monitoring of the well network for a minimum of four quarters. Quarterly groundwater samples will be analyzed for VOCs. Quarterly monitoring reports will be submitted after each sampling event. A Groundwater Remediation Completion Report will be submitted after the completion of four quarters of sampling.

3.3 Monitoring and Sampling Plan

3.3.1 Sampling Plan Details

3.3.1.1 Sampling and monitoring parameters

Groundwater samples will be submitted for laboratory analysis of total VOCs using USEPA SW-846 Method 8260 and total lead using USEPA SW-846 Method 6010. Field duplicates, Matrix

Spike, and Matrix Spike Duplicate QA/QC samples will be collected. Laboratory Level IV documentation will be provided at the conclusion of the minimum four quarters.

3.3.1.2 Sampling and monitoring frequency

Groundwater samples will be collected from selected wells on a quarterly basis for a minimum of four quarters to monitor groundwater impacts. At the conclusion of the four quarters of monitoring, the site will be evaluated for adherence to IDEM RCG Screening Levels. Upon completion of the necessary monitoring, a Groundwater Remediation Completion Report will be submitted and closure for groundwater will be requested at the site.

3.3.1.3 Reporting Schedule

Quarterly monitoring reports will be prepared and submitted to the IDEM for review and evaluation after each quarterly sampling event. At the conclusion of four quarters, a final closure report will be prepared and submitted for review and analysis.

3.3.2 Data Management Details

The goal for the proposed sampling activities is to collect groundwater samples to monitor groundwater impacts at the site for comparison with RCG Screening Levels.

Confirmation sample analysis will be conducted according to Data Quality Objectives (DQO) Level IV. This provides the highest level of data quality and is used for verification that cleanup standards have been met. These analyses require full analytical and data validation procedures in accordance with U.S. EPA recognized protocol. Sampling and reporting procedures are detailed in the site specific Quality Assurance Project Plan (QAPP) (Appendix K). This QAPP documents the responsibility and authority of all organizations and key personnel involved with the implementation of the sampling and analysis program. The overall quality assurance objective is to develop and implement procedures for field sampling, chain of custody, laboratory analysis, and reporting which will provide results that are scientifically valid, and the levels of which are sufficient to meet the identified Data Quality Objectives (DQOs). Specific procedures for sampling, chain of custody, laboratory instrument calibration, laboratory analysis, reporting of data, internal quality control, preventive maintenance of field equipment, and corrective action are described in the QAPP.

Quarterly monitoring reports will include, at a minimum, identify project, sampling locations, potentiometric surface maps, seasonal fluctuation in ground water depth, ground water flow direction, and ground water contamination, laboratory reports, and chain of custody.

The Remediation Completion Report will identify the project and provide site background, current owner, site location map, analytic result summary, sampling site maps, evaluation of confirmation sampling results, laboratory reports, and chain of custody. The Remediation Completion Report will be completed in accordance with the Remediation Completion Report

Completeness Checklist (IDEM Form 54168).

3.4 Project Work Schedule

3.4.1 Projected Installation and Startup

The process water supply well will be abandoned within six months of the approval of the RWP.

Groundwater monitoring will be continued for a minimum of four quarters as approved by IDEM. Following four quarters of groundwater monitoring with groundwater concentrations below IDEM RCG Screening Levels for onsite monitoring wells, a Groundwater Remediation Completion Report will be submitted to IDEM within 45 days of the final quarterly sampling.

3.4.2 Operations and Maintenance Plan

Operation and Maintenance plan not applicable.

4.0 REFERENCES

Indiana Department of Environmental Management (IDEM), Risk Integrated System of Closure (RISC) Technical Resources Guidance Document, Indianapolis, Indiana. February 2001.

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5.0 DISCLAIMER

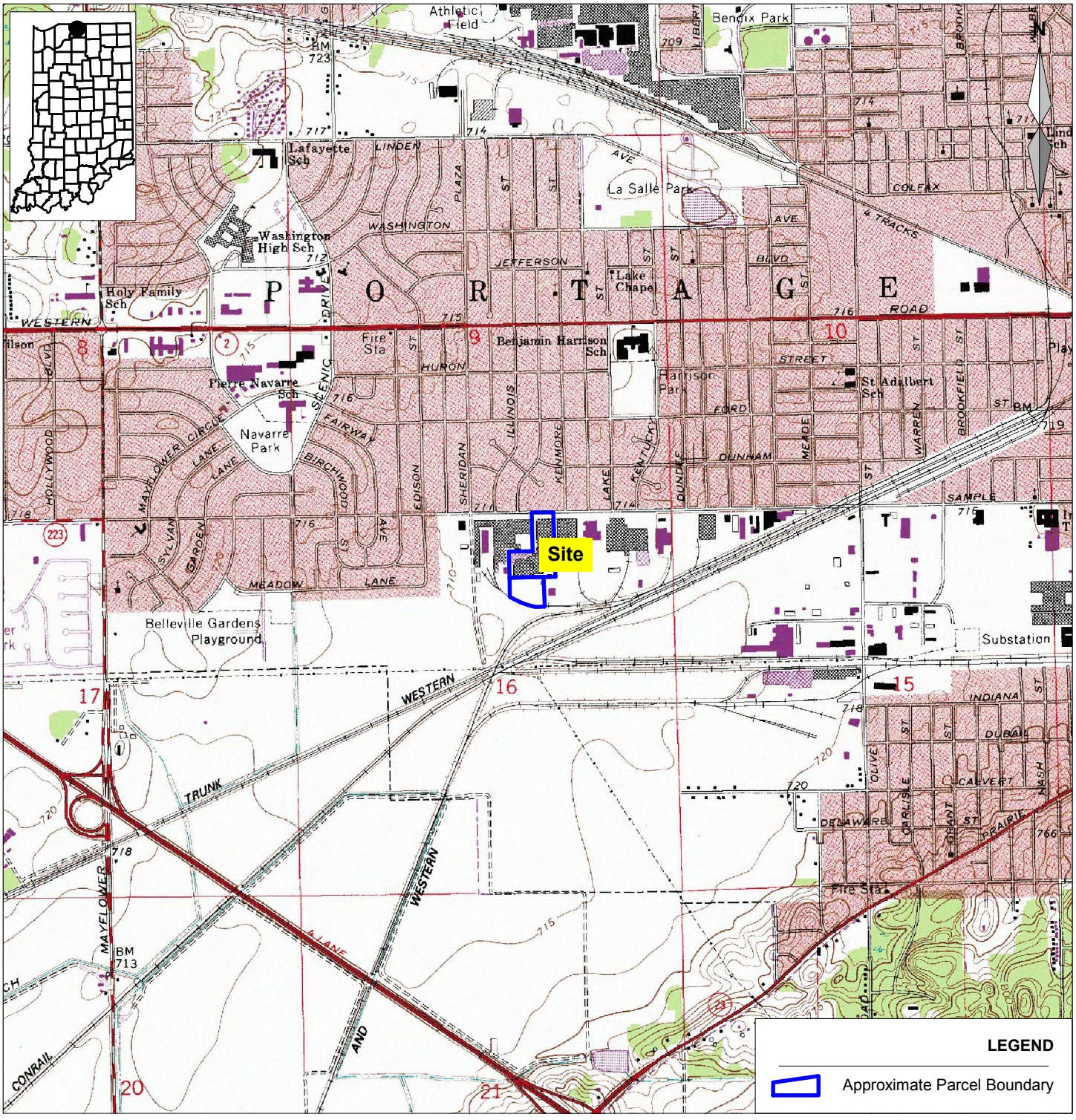
Heartland has prepared this RWP using the IDEM Remediation Closure Guide (RCG) and the Remediation Program Guide (RPG, dated July 9, 2012. Conclusions and recommendations expressed herein were developed from site evaluation and limited research, and we are not responsible for unrecorded data pertaining to this site. Heartland makes no warranties, expressed or implied, as to the fitness or merchantability of said property for any particular purpose, and we are not responsible for independent conclusions or opinions made by others on this report.

6.0 SIGNATURE PAGE

This VRP RWP was prepared in accordance with the objectives of the Indiana Administrative Code (IAC) Title 329, Article 9, Rule 5, Section 4 (329 IAC 9-5-4) along with 40 Code of Federal Regulation (CFR) 280.62 through 280.65. The report was prepared by Mr. Nivas R. Vijay, Project Manager and reviewed by:

Nivas R. Vijay, CHMM
Project Manager

FIGURES



Location
Saint Joseph County, Portage Township
SOUTH BEND WEST Quadrangle
Section 16 T 37N R 2E

Parcel boundaries, as shown, are approximate and are not suitablefor conveyance or property boundary descriptions. This data should not be used as a substitute for a professional land survey.

Base map: U.S. Geological Survey Digital Raster Graphic

Heartland Environmental Associates, Inc.
3410 Mishawaka Ave.
South Bend, IN 46615

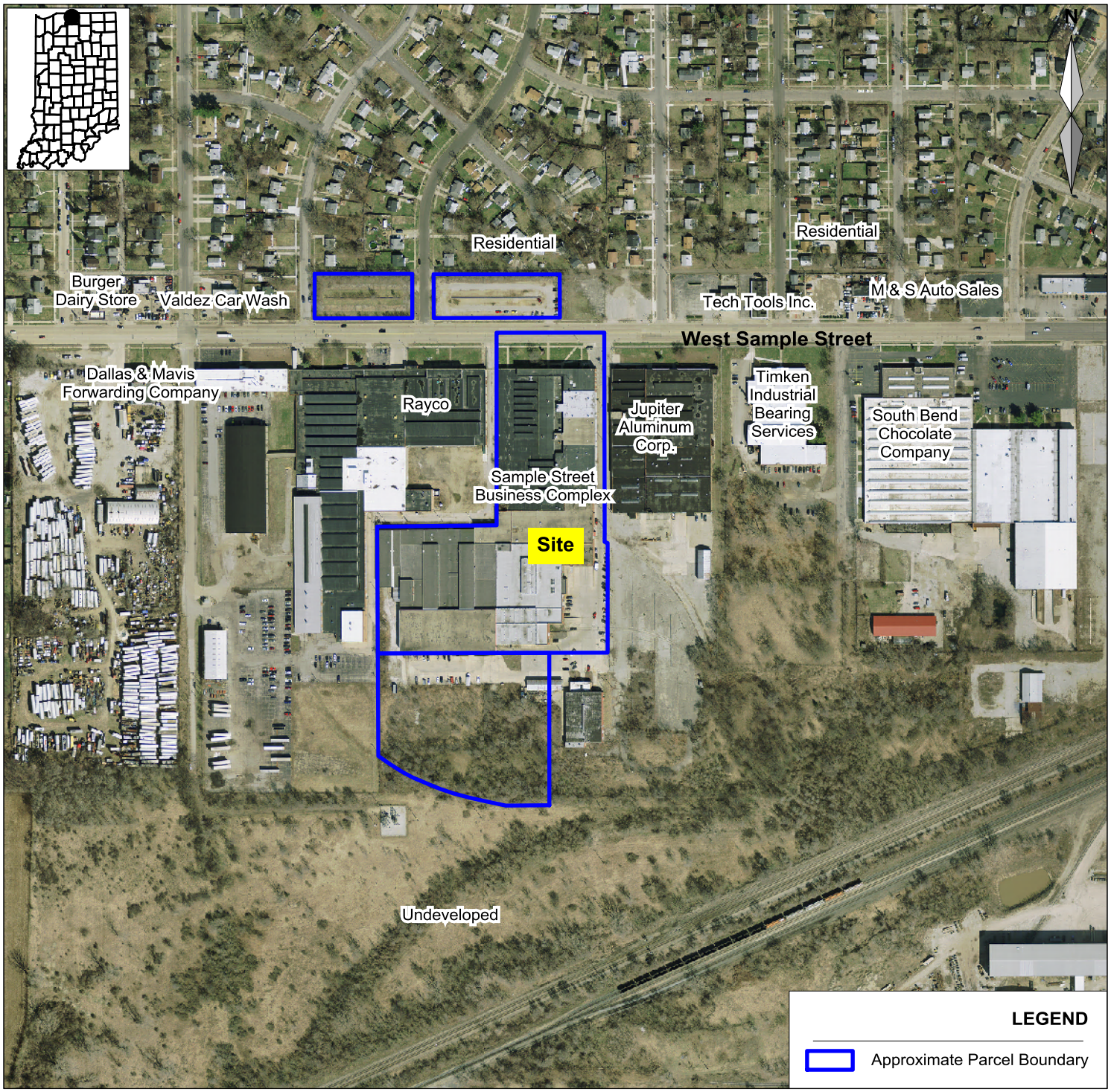
Figure 1
Topographic Map
Sample Street Business Complex
3702 West Sample Street
South Bend, Indiana 46619

Client:
Urban Enterprise Assoc., of South Bend, Inc.

Date:
4/5/2013

Drawn by:
JRB

Scale:
1 in : 2000.00 ft



0 500 ft US

Location
Saint Joseph County, Portage Township
SOUTH BEND WEST Quadrangle
Section 16 T 37N R 2E

Base Map: 2011 IndianaMap Orthophotography and LIDAR

Heartland Environmental Associates, Inc.
3410 Mishawaka Ave.
South Bend, IN 46615

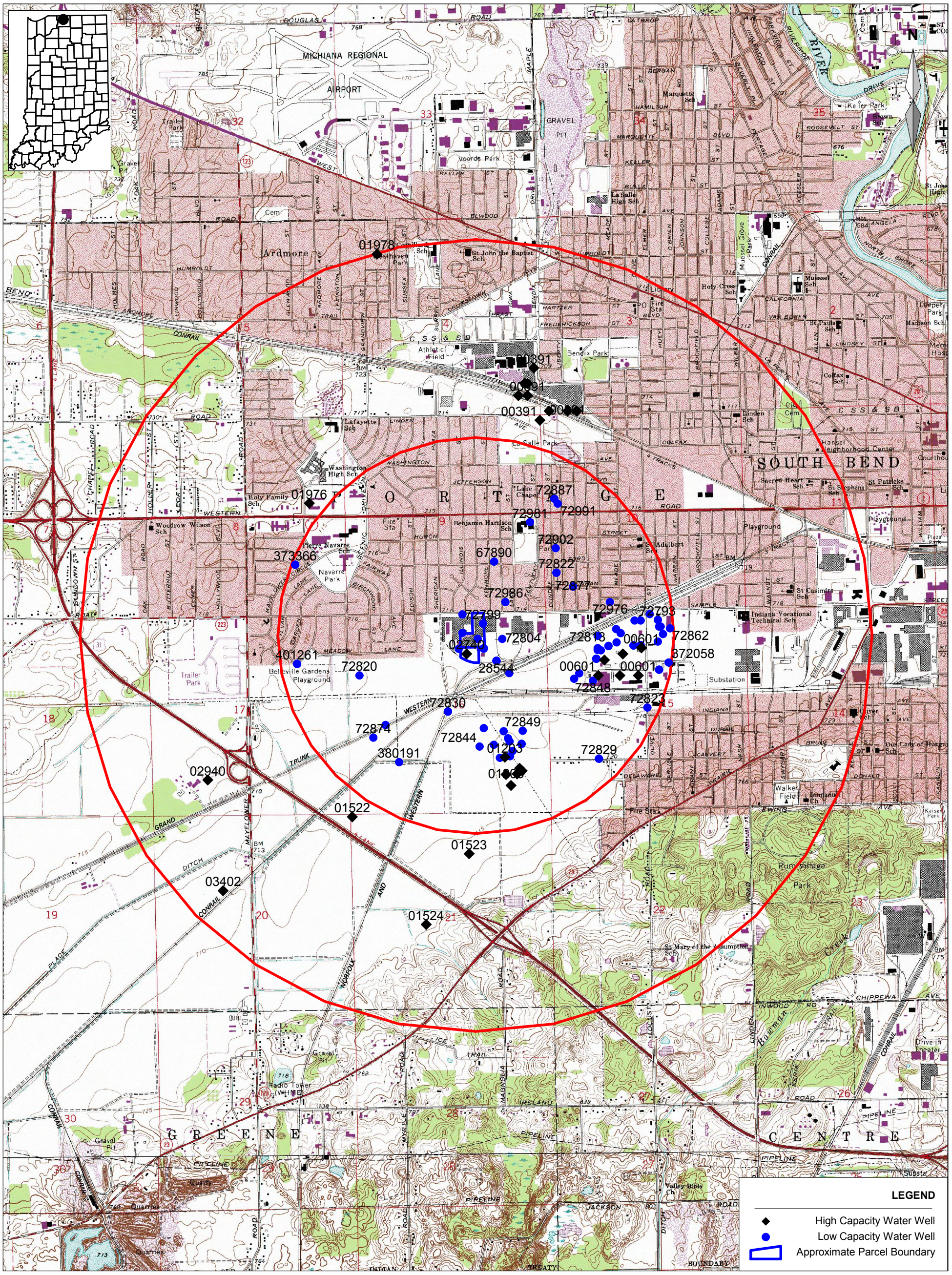
Figure 2
Site Map and
Adjacent Properties
Sample Street Business Complex
3702 West Sample Street
South Bend, Indiana 46619

Client:
Urban Enterprise Assoc.,
of South Bend, Inc.

Date:
8/8/2013

Drawn by:
JRB

Scale:
1 in : 400.00 ft



Location
Saint Joseph County, Portage Township
SOUTH BEND WEST Quadrangle
Section 16 T 37N R 2E

Base map: U.S. Geological Survey Digital Raster Graphic

Water Well Records - Indiana Department of Natural Resources, Division of Water

Heartland Environmental Associates, Inc.
3410 Mishawaka Ave. South Bend, IN 46615

Figure 3
Water Well Location Map
Sample Street Business Complex
3702 West Sample Street
South Bend, Indiana 46619

Client:
Urban Enterprise Assoc., of South Bend, Inc.

Date:
7/2/2013

Drawn by:
JRB

Scale:
1 in : 2500.00 ft

N

703.66
W-16
Parking Lot
703.74
W-15B W-15A
703.71
Parking Lot
703.06 704.16
W-14B W-14A
West Sample Street
703.75
W-10A
W-10B
M-1
703.74
704.00
W-11A
W-11B
RACO
Jupiter Aluminum Corp.
704.64
W-7
W-8
704.09
704.00
PW-3
704.17
W-12
704.91
SB-14 (W-101A & B)
704.93
W-13
704.25
SB-10
Main Building (Former Torrington)
Loading Dock
SB-9
PW-4
W-1
704.38
Former Waste Oil Tank
S3-A
S3-D
S3-C
SB-1
701.22
S3-B
RW-1
SB-2
S3-C
Former Oil & Stoddard Fluid USTs
Former Quench Oil Tank
SB-7
SB-3
Loading Dock
705.11
W-3
705.15
SB-13 (W-100A & B)
705.16
W-4
SB-11
SB-8
704.00
Former Shed
Former Solvent Still
Former Fuel Oil & Stoddard Fluid USTs
704.34
W-5
SB-12
W-2
Pond #4 (Backfilled)
SB-4
SB-5
Pond #5 (Backfilled)
Pond #3 (Backfilled)
SB-6
Pond #2 (Backfilled)
Pond #1
705.00
Former Foundry Building
704.58
M-2
W-9

LEGEND

- SOIL BORING (INSTALLED BY HEARTLAND)
- SOIL BORING
- SOIL SAMPLE FOR BACKGROUND METALS

Former UST

Water Levels Measured 4/29/2013

SCALE
feet
0 100 200

Heartland Environmental Associates, Inc.
3410 Mishawaka Ave.
South Bend, Indiana 46615

Figure 4
Potentiometric Surface Groundwater Flow Map

Sample Street Business Complex
3702 West Sample Street
South Bend, Indiana

Client: Urban Enterprise Association of South Bend, Inc.

Date: 7/31/2013

Drawn by: JRB

Sample ID	SB - 3		
Date	5/11/11		
Depth	2' - 4'	5' - 7'	7.8' - 9.8'
TPH (ERO)	<22	**455**	**600**

Sample ID	SB - 2	
Date	5/11/11	
Depth	6.8' - 7.8'	10' - 12'
TPH (ERO)	135	**5,400**
Vinyl Chloride	<2	**<57**

Sample ID	SB - 1	
Date	5/11/11	
Depth	3' - 4'	10' 12'
TPH (ERO)	73.1	**3,670**

Sample ID	SB - 1	
Date	5/11/11	
Depth	3' - 4'	10' 12'
Lead	**240**	6.5

Sample ID	SB - 9
Date	5/13/11
Depth	2' - 4'
Arsenic	**4.5**

POND #5 (BACKFILLED)
POND #4 (BACKFILLED)
POND #3 (BACKFILLED)
POND #2 (BACKFILLED)
POND #1
GRASS AREA
LOADING DOCK
FORMER STORAGE BUILDING
FORMER FOUNDRY BUILDING
DEMOLISHED SOLVENT STILL BUILDING
PARKING AREA
PARKING AREA
SAMPLE STREET
UNKNOWN WELL
LOADING DOCK

SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, SB-7, SB-8, SB-9, SB-10
A-2, A-3, A-4, A-5, A-6, A-7
UNK -1, UNK -2
W-1, W-2, W-3, W-4, W-5, W-7, W-8, W-9, W-10A, W-10B, W-11A, W-11B, W-12, W-13, W-14A, W-14B, W-15A, W-15B, W-16
PW-3, PW-4
M-1, M-2

NOTES:
VALUES PRESENTED IN PARTS PER BILLION (PPB) OR UG/L.
TPH PRESENTED IN PARTS PER MILLION (PPM) OR MG/KG.
BOLD CELL DENOTES VALUE EXCEEDS RISC DEFAULT RESIDENTIAL CLOSURE LEVEL.
SHADED CELLDENOTES VALUE EXCEEDS RISC DEFAULT INDUSTRIAL CLOSURE LEVEL.

SCALE
0 100 200

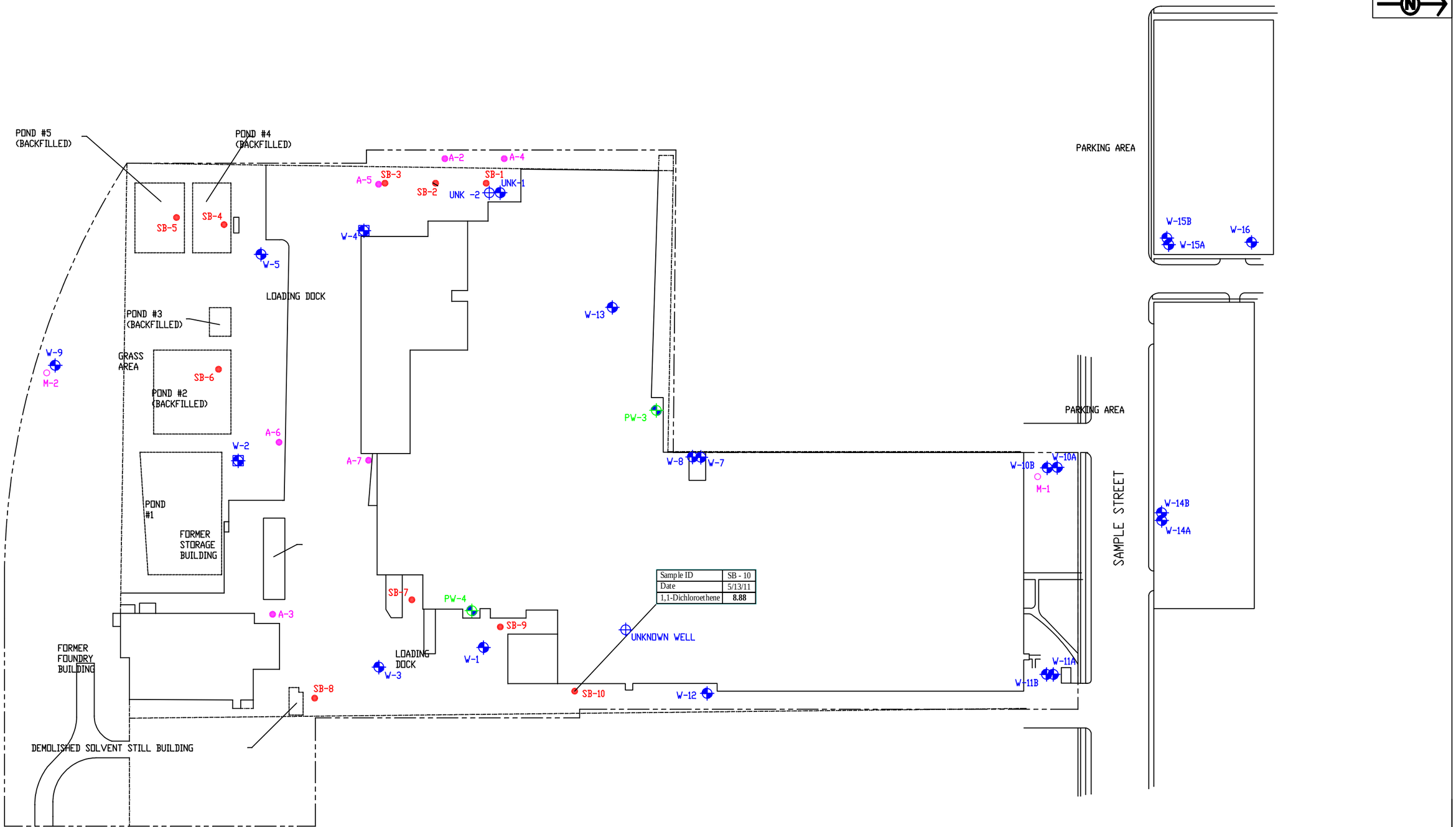
SOIL BORING (INSTALLED BY HEARTLAND)
SOIL BORING
SOIL SAMPLE FOR BACKGROUND METALS

Heartland Environmental Associates, Inc.
3410 Mishawaka Avenue, South Bend, Indiana
46615

FIGURE 5
SOIL ANALYTICAL MAP

SAMPLE STREET BUSINESS COMPLEX
3702 WEST SAMPLE STREET
SOUTH BEND, INDIANA

Date: 6/19/11
Scale: 1"=60'
Drawn By: NV



NOTES:
VALUES PRESENTED IN PARTS PER BILLION (PPB) OR UG/L.
BOLD CELL DENOTES VALUE EXCEEDS RISC DEFAULT RESIDENTIAL CLOSURE LEVEL.

Heartland Environmental Associates, Inc.
3410 Mishawaka Avenue, South Bend, Indiana
46615

FIGURE 6
GROUNDWATER ANALYTICAL MAP

SAMPLE STREET BUSINESS COMPLEX
3702 WEST SAMPLE STREET
SOUTH BEND, INDIANA

Date:
6/19/11

Scale:
1"=60'

Drawn By:
NV

N

Parking Lot

Parking Lot

W-16

W-15B W-15A

W-14B W-14A

West Sample Street

RACO

Jupiter Aluminum Corp.

W-10A
W-10B
M-1

W-11A
W-11B

AREA B

AREA A

W-12

SB-14 (W-101A & B)

W-7
W-8

PW-3

AREA S3

W-13

SB-10

Main Building (Former Torrington)

Loading Dock

Former Waste Oil Tank

A-4

S3-A
S3-D
S-3

SB-1

S3-B

RW-1

A-2

SB-2
S3-C

SB-9

W-1

PW-4

Former Oil & Stoddard Fluid USTs

Former Quench Oil Tank

SB-7

A-5

SB-3

Loading Dock

W-3

SB-13 (W-100A & B)

A-7

W-4

SB-11

SB-8

A-6

A-3

Former Shed

Former Solvent Still

Former Fuel Oil & Stoddard Fluid USTs

SB-12

W-2

Pond #4 (Backfilled)

W-5

SB-4

SB-5

Pond #5 (Backfilled)

Pond #3 (Backfilled)

SB-6

Pond #2 (Backfilled)

Pond #1

Former Foundry Building

M-2

W-9

LEGEND

- SOIL BORING (INSTALLED BY HEARTLAND)
- SOIL BORING
- SOIL SAMPLE FOR BACKGROUND METALS
- AS/SVE System Vapor Extraction Well
- AS/SVE System Air Sparge Well
- Former UST

SCALE
feet
0 100 200

Heartland Environmental Associates, Inc.
3410 Mishawaka Ave.
South Bend, Indiana 46615

Figure 7
Previously Impacted Areas and Remediated Areas
Sample Street Business Complex
3702 West Sample Street
South Bend, Indiana

Client: Urban Enterprise Association of South Bend, Inc.

Date: 4/15/2013

Drawn by: JRB

TABLES

Table 1 Monitoring Well Construction

Well ID	SP East	SP North	Top of Casing Feet	Total Depth Feet	Screen Interval Feet	Status
W-1	155266.95	2337077.73	713.09	62.90	59-64	Active
W-2	155049.89	2336775.86	712.59	37.00	32-37	Removed
W-3	155288.74	2336956.13	712.59	58.03	56-61	Active
W-4	154781.83	2336904.56	712.90	34.00	28-33	Removed
W-5	154808.26	2336785.32	713.32	36.32	30-35	Active
S-3	154734.84	2337078.28	710.12	50.10	19-24	Active
W-7	155038.80	2337328.06	714.02	31.90	26.8-31.8	Active
W-8	155039.96	2337319.55	713.71	59.92	54.3-59.3	Active
W-9	154940.91	2336554.90	714.71	53.28	44.56-54.56	Active
W-10A	155047.58	2337736.59	714.53	62.10	48.51-58.51	Active
W-10B	155047.58	2337728.31	714.59	31.31	18.13-28.13	Active
W-11A	155288.05	2337749.13	714.32	56.50	45.1-55.1	Removed
W-11B	155288.51	2337742.74	714.56	30.08	20.08-30.08	Removed
W-12	155313.32	2337346.01	712.83	29.26	19.81-29.81	Active
W-13	154866.24	2337202.17	713.95	35.48	25.29-35.29	Active
W-14A	155106.16	2337865.96	715.50	60.95	49-59	Active
W-14B	155098.98	2337866.44	714.94	44.13	31-41	Active
W-15A	154785.14	2337869.35	714.50	35.30	22-32	Active
W-15B	154778.86	2337868.86	713.84	11.18	8.0-18.0	Active
W-16	154783.75	2337962.43	715.30	60.55	47-57	Active
W-100A	155360.60	2336956.96	713.62	33.98	23.98-33.98	Active
W-100B	155360.60	2336956.96	713.70	50.90	40.9-50.9	Active
W-101A	155345.52	2337318.89	714.12	34.64	24.64-34.64	Active
W-101B	155345.52	2337318.89	714.09	46.35	36.35-46.35	Active

Table 2. Metals in Soil

Sample Location	Date Sampled	Sample Depth (feet)	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Chromium, Total mg/kg	Copper mg/kg	Lead mg/kg	Mercury mg/kg	Nickel (Soluble Salts) mg/kg	Selenium mg/kg	Silver mg/kg	Thallium mg/kg	Zinc mg/kg	Cyanide (CN-) mg/kg
RCG Residential Migration to GW			5.4	5.9	1700	63	7.5	1000000	920	270	2.1	17000	5.3	12	2.9	NA	40
RCG Residential Direct Contact			43	5.5	21000	220	98	NA	4300	560	3.1	2100	550	550	1.1	32000	2200
PD4-2	2/1/1992	6-8 ft		BPQL	6		0.3	BPQL		BPQL	0.031		1.3	BPQL			0.24
PD4-6	2/1/1992	2-4 ft		3.2	51		1.4	33.0		61.0	0.58		3.1	BPQL			0.53
M-1	2/7/1991	Sand under office floor		2.9	67		0.4	10.8		76.6	<0.1		<0.2	<0.2			
M-2	2/7/1991	W-9 cuttings		2.1	<3		<0.2	4.6		<3	<0.1		<0.2	<0.2			
Pond 4	9/15/1991	2-4 ft	NA	14.0	NA	NA	7.1	56.0	1000.0	220	0.6	49.0	<4	NA	NA	NA	0.78
SB - 1	5/11/2011	3' - 4'	NA	<2	82	NA	<2	6.4	NA	240	<1	NA	<2	<2	NA	NA	NA
SB - 1	5/11/2011	10 ' 12'	NA	<2	34	NA	<2	5.8	NA	6.5	<1	NA	<2	<2	NA	NA	NA
SB - 2	5/11/2011	6.8' - 7.8'	NA	<2	22	NA	<2	4.0	NA	6.9	<1	NA	<2	<2	NA	NA	NA
SB - 2	5/11/2011	10' - 12'	NA	<2	5.9	NA	<2	4.6	NA	3.1	<1	NA	<2	<2	NA	NA	NA
SB - 3	5/11/2011	2' - 4'	NA	<2	36	NA	<2	5.0	NA	11	<1	NA	<2	<2	NA	NA	NA
SB - 3	5/11/2011	5' - 7'	NA	<2	36	NA	<2	4.0	NA	17	<1	NA	<2	<2	NA	NA	NA
SB - 3	5/11/2011	7.8' - 9.8'	NA	<2	30	NA	<2	5.4	NA	20	<1	NA	<2	<2	NA	NA	NA
SB - 4	5/12/2011	2' - 4'	<2	<2	NA	<1	<2	7.0	65	7.9	<1	5.2	<2	<2	<2	35	NA
SB - 5	5/12/2011	2' - 4'	<2	2.3	NA	<1	<2	4.7	41	14	<1	6.3	<2	<2	<2	160	NA
SB - 6	5/12/2011	2 ' - 4'	<2	<2	NA	<1	<2	3.3	48	2.4	<1	4.3	<2	<2	<2	15	NA
SB - 7	5/13/2011	2' - 4'	<2	<2	NA	<1	<2	4.4	70	7.1	<1	4.4	<2	<2	<2	35	NA
SB - 8	5/12/2011	2' - 4'	<2	3.1	NA	<1	<2	13	65	4.9	<1	12	<2	<2	<2	39	NA
SB - 9	5/13/2011	2' - 4'	<2	4.5	NA	<1	<2	5.9	49	7.4	<1	7.1	<2	<2	<2	36	NA
SB - 10	5/13/2011	2' - 4'	<2	3.3	NA	<1	<2	16	73	9.4	<1	6.3	<2	<2	<2	32	NA

Notes:

µg/kg - micrograms per kilogram, **mg/kg** - milligrams per kilogram

ppb - parts per billion, **ppm** - parts per million

ND - Not Detected, **NA -** Not Analyzed, **BPQL -** Below Practical Quantification Limit

Blank Entries - Not analyzed or not reported

Concentrations exceeding the Residential Migration to Groundwater Screening Level are shown in **bold**

Concentrations exceeding the Residential Direct Contact Screening Level are shaded

Remediation Work Plan
Sample Street Business Complex
3702 West Sample Street
South Bend, Indiana 46619
VRP ID # 6120801

Table 2. VOCs in Soil

Sample Location	Date Sampled	Sample Depth (feet)	1,1,1-Trichloroethane µg/kg	1,1,2,2-Tetrachloroethane µg/kg	1,1,2-Trichloroethane µg/kg	1,1-Dichloroethane µg/kg	1,1-Dichloroethene µg/kg	1,2,4-Trimethylbenzene µg/kg	1,2-Dibromoethane (EDB) µg/kg	1,2-Dichlorobenzene µg/kg	1,2-Dichloroethane µg/kg	1,2-Dichloropropane µg/kg	1,3,5-Trimethylbenzene µg/kg	1,3-Dichlorobenzene µg/kg	1,4-Dichlorobenzene µg/kg	2-Butanone (MEK) µg/kg	Acetone µg/kg	Benzene µg/kg	Carbon Tetrachloride µg/kg	Chloroform µg/kg	cis-1,2-Dichloroethene µg/kg	Ethylbenzene µg/kg	Isopropylbenzene (Cumene) µg/kg	Methylene Chloride µg/kg	Naphthalene µg/kg	n-Butylbenzene µg/kg	n-Propylbenzene µg/kg	sec-Butylbenzene µg/kg	tert-Butylbenzene µg/kg	Tetrachloroethene µg/kg	Toluene µg/kg	trans-1,2-Dichloroethene µg/kg	Trichloroethene µg/kg	Vinyl Chloride µg/kg	Xylene (Total) µg/kg
RCG Residential Migration to GW			1400	5.2	32	140	50	440	0.28	12000	28	33	2500	NA	1400	21000	49000	51	39	440	410	16000	13000	25	92	50000	20000	NA	NA	45	14000	590	36	14	200000
RCG Residential Direct Contact			640000	7800	2200	46000	340000	87000	480	380000	6000	13000	180000	NA	34000	28000000	85000000	15000	8500	4100	220000	76000	270000	150000	50000	110000	260000	NA	NA	7700	820000	210000	6200	840	260000
BP-4	2/7/1991	2-4 ft				560																													
BP-5	2/7/1991	2-4 ft				ND																													
CI	9/12/1991	2-4 ft	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<14000	<14000	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<1400	<700
W15A	9/13/1991	30-32 ft	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<14000	<14000	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<1400	<700
CI	9/12/1991	60-61ft	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<14000	<14000	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<1400	<700
CI	9/12/1991	34-36 ft	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<14000	<14000	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<1400	<700
W14B	9/10/1991	10-12ft	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<14000	<14000	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<1400	<700
CI	9/12/1991	0-2ft	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<14000	<14000	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<1400	<700
WI4A	9/11/1991	2/L	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<14000	<14000	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<1400	<700
PD 3-1	9/15/1991	2-4 ft	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<14000	<14000	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<700	<1400	<700
S3-2	2/25/1992	4-6 ft	ND			ND	ND										ND	ND		ND				3200						ND	ND		ND		ND
S3-2	2/25/1992	8-10 ft	800			ND	ND										ND	ND		ND				3600						ND	ND		ND		ND
S3-3	2/25/1992	4-6 ft	42000			950	3100										ND	ND		ND				3300						ND	400		ND		800
S3-3 (601)	2/25/1992	4-6 ft	9500			BPQL	ND								BPQL		ND	BPQL		ND		2500		1600						BPQL	360		ND		4300
S3-3	2/25/1992	12-14 ft	660			920	ND										880	ND		ND				2900						ND	ND		ND		ND
S3-4	2/25/1992	4-6 ft	12000			410	600										1100	ND		ND				3300						150	200		ND		ND
S3-5	2/25/1992	8-10 ft	3600			150	ND										ND	ND		ND				3300						ND	ND		ND		ND
S3-6	2/25/1992	6-8 ft	55000			1000	5900										1100	ND		ND				3300						150	ND		ND		ND
S3-6	2/25/1992	8-10 ft	2200			ND	ND										ND	ND		ND				3200						ND	ND		ND		ND
S3-7	2/29/1992	8-8.5 ft	1300			170	ND								ND		ND	ND		ND		ND		2700						ND	ND		520		170
S3-8	2/25/1992	8-8.5 ft	3500			ND	ND								ND		ND	ND		ND		ND		3200						ND	ND		ND		190
S3-9	2/25/1992	8-8.5 ft	660			ND	ND								ND		ND	ND		ND		ND		2900						170	ND		260		ND
S3I-1	2/25/1992	2-2.5 ft	5400				BPQL											BPQL				420		1500						540	BPQL				630
S3I-2	2/25/1992	6-6.5 ft	350			260	ND										ND	ND		ND				3300						ND	ND				ND
S3I-3	2/25/1992	6-6.5 ft	ND			-											ND							3600						ND					
S3I-4	2/25/1992	8-8.5 ft				ND												ND		ND				3100											
PD4-2	2/25/1992	6-8 ft	ND			ND					ND						ND	ND		ND				3100						ND	ND	ND	ND		ND
PD4-3	2/25/1992	2-4 ft	ND			ND					ND						ND	ND		ND				3500						ND	ND	ND	ND		ND
PD4-4	2/25/1992	4-6 ft	ND			ND					ND						680	ND		ND				3300						ND	ND	ND	ND		ND
PD4-5	2/25/1992	4-6 ft	ND			ND					ND						1300	ND		ND				3100						ND	ND	ND	ND		ND
PD4-6	2/25/1992	2-4 ft	ND			ND					ND						1200	ND		ND				3500						ND	ND	ND	ND		ND
PD4-7	2/25/1992	4-6 ft	ND			ND					ND						1300	ND		ND				3200						ND	ND	ND	ND		ND
PD4-8	2/25/1992	4-6 ft	ND			ND					ND						ND	ND		ND				3500						ND	ND	ND	ND		ND
PD4-9	2/25/1992	2-4 ft	ND			ND					ND						850	ND		ND				3300						ND	ND	ND	ND		ND
S3-1	2/25/1992	12-14 ft	ND			ND					ND						1200	ND		ND				3300						ND	ND	ND	ND		ND
SB - 1	5/11/2011	3' - 4'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<23	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2	<11
SB - 1	5/11/2011	10 ' 12'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<23	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2	<11
SB - 2	5/11/2011	6.8' - 7.8'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<22	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2	<11
SB - 2	5/11/2011	10' - 12'	<142	**<142**	**<142**	**<142**	**<142**	**861**	**<142**	<142	**<142**	**<142**	243	<142	<142	<284	ND	<34	**<142**	ND	<142	<142	<142	**<142**	**<142**	206	<142	230	<142	**<142**	<142	<142	**<142**	**<57**	<284
SB - 3	5/11/2011	2' - 4'	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<11	ND	<5	<5	ND	<5	<5	<5	<22	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<11
SB - 3	5/11/2011	5' - 7'	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<11	ND	<5	<5	ND	<5	<5	<5	**<25**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<11
SB - 3	5/11/2011	7.8' - 9.8'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<13	ND	<6	<6	ND	<6	<6	<6	<21	<6	<6	<6	<6	<6	<6	<6	<6	<6	<3	<13
SB - 4	5/12/2011	2' - 4'	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<10	ND	<5	<5	ND	<5	<5	<5	<23	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
SB - 4	5/12/2011	6' - 8'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<23	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2	<11

Remediation Work Plan
Sample Street Business Complex
3702 West Sample Street
South Bend, Indiana 46619
VRP ID # 6120801

Table 2. VOCs in Soil

Sample Location	Date Sampled	Sample Depth (feet)	1,1,1-Trichloroethane µg/kg	1,1,2,2-Tetrachloroethane µg/kg	1,1,2-Trichloroethane µg/kg	1,1-Dichloroethane µg/kg	1,1-Dichloroethene µg/kg	1,2,4-Trimethylbenzene µg/kg	1,2-Dibromoethane (EDB) µg/kg	1,2-Dichlorobenzene µg/kg	1,2-Dichloroethane µg/kg	1,2-Dichloropropane µg/kg	1,3,5-Trimethylbenzene µg/kg	1,3-Dichlorobenzene µg/kg	1,4-Dichlorobenzene µg/kg	2-Butanone (MEK) µg/kg	Acetone µg/kg	Benzene µg/kg	Carbon Tetrachloride µg/kg	Chloroform µg/kg	cis-1,2-Dichloroethene µg/kg	Ethylbenzene µg/kg	Isopropylbenzene (Cumene) µg/kg	Methylene Chloride µg/kg	Naphthalene µg/kg	n-Butylbenzene µg/kg	n-Propylbenzene µg/kg	sec-Butylbenzene µg/kg	tert-Butylbenzene µg/kg	Tetrachloroethene µg/kg	Toluene µg/kg	trans-1,2-Dichloroethene µg/kg	Trichloroethene µg/kg	Vinyl Chloride µg/kg	Xylene (Total) µg/kg
RCG Residential Migration to GW			1400	5.2	32	140	50	440	0.28	12000	28	33	2500	NA	1400	21000	49000	51	39	440	410	16000	13000	25	92	50000	20000	NA	NA	45	14000	590	36	14	200000
RCG Residential Direct Contact			640000	7800	2200	46000	340000	87000	480	380000	6000	13000	180000	NA	34000	28000000	85000000	15000	8500	4100	220000	76000	270000	150000	50000	110000	260000	NA	NA	7700	820000	210000	6200	840	260000
SB - 4	5/12/2011	14' - 16'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<24	<6	<6	<6	<6	<6	<6	<6	<6	<2	<11
SB - 5	5/12/2011	2' - 4'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<12	ND	<6	<6	ND	<6	<6	<6	<24	<6	<6	<6	<6	<6	<6	<6	<6	<2	<12
SB - 5	5/12/2011	6' - 8'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<23	<6	<6	<6	<6	<6	<6	<6	<6	<2	<12
SB - 5	5/12/2011	12' - 14'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<21	<6	<6	<6	<6	<6	<6	<6	<6	<2	<12
SB - 6	5/12/2011	2 ' - 4'	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<11	ND	<5	<5	ND	<5	<5	<5	<23	<5	<5	<5	<5	<5	<5	<5	<5	<2	<11
SB - 6	5/12/2011	6' - 8'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<21	<6	<6	<6	<6	<6	<6	<6	<6	<2	<11
SB - 7	5/13/2011	2' - 4'	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<10	ND	<5	<5	ND	<5	<5	<5	<23	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
SB - 7	5/13/2011	6' - 8'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<23	<6	<6	<6	<6	<6	<6	<6	<6	<2	<11
SB - 8	5/12/2011	2' - 4'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<12	ND	<6	<6	ND	<6	<6	<6	<23	<6	<6	<6	<6	<6	<6	<6	<6	<2	<12
SB - 8	5/12/2011	6' - 8'	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<10	ND	<5	<5	ND	<5	<5	<5	<23	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
SB - 8	5/12/2011	14' - 16'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<23	<6	<6	<6	<6	<6	<6	<6	<6	<2	<11
SB - 9	5/13/2011	2' - 4'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<23	<6	<6	<6	<6	<6	<6	<6	<6	<2	<11
SB - 9	5/13/2011	6' - 8'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<23	<6	<6	<6	<6	<6	<6	<6	<6	<2	<11
SB - 10	5/13/2011	2' - 4'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<23	<6	<6	<6	<6	<6	<6	<6	<6	<2	<11
SB - 10	5/13/2011	6' - 8'	<5	<5	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<11	ND	<5	<5	ND	<5	<5	<5	<22	<5	<5	<5	<5	<5	<5	<5	<5	<2	<11
SB - 10	5/13/2011	12' - 14'	<6	**<6**	<6	<6	<6	<6	**<6**	<6	<6	<6	<6	<6	<6	<11	ND	<6	<6	ND	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2	<11

Notes:
µg/kg - micrograms per kilogram, **mg/kg** - milligrams per kilogram
ppb - parts per billion, **ppm** - parts per million
VOCs - volatile organic compounds
ND - Not Detected, **NA -** Not Analyzed, **BPQL -** Below Practical Quantification Limit
Blank Entries - Not analyzed or not reported
Concentrations exceeding the Residential Migration to Groundwater Screening Level are shown in **bold**
Concentrations exceeding the Residential Direct Contact Screening Level are shaded

Table 3. Metals in Groundwater

Sample Location	Date Sampled	Antimony µg/L	Arsenic µg/L	Barium µg/L	Beryllium µg/L	Cadmium µg/L	Chromium, Total µg/L	Copper µg/L	Lead µg/L	Mercury µg/L	Nickel (Soluble Salts) µg/L	Selenium µg/L	Silver µg/L	Thallium µg/L	Zinc µg/L	Cyanide (CN-) µg/L
RCG Ingestion		6	5.9	1700	63	7.5	1000000	920	270	2.1	17000	5.3	12	2.9	NA	40
W-1	1/29/1991		2.0				1.0		1							
W-2	1/29/1991		2.0				1.0		1.0							
W-3	1/29/1991		2.0				1.0		1.0							
W-4	1/29/1991		2.0				1.0		1.0							
W-5	1/29/1991		2.0				1.0		1.0							
W-7	1/30/1991		2.0				1.0		1.0							
W-8	1/30/1991		11.0				1.0		1.0							
W-9	2/7/1991		3.0				1.0		1.0							
W-10A	2/7/1991		7.0				1.0		1.0							
W-10B	2/7/1991		2.0				1.0		1.0							
W-11A	2/7/1991		3.0				1.0		1.0							
W-11B	2/7/1991		15.0				32.0		10.0							
W-12	2/7/1991		2.0				1.0		1.0							
W-13	2/7/1991		2.0				1.0		1.0							
S-3	1/30/1991		2.0				1.0		1.0							
S-3	1/30/1991		<5				<1		<5							

Notes:

µg/kg - micrograms per kilogram, **mg/kg** - milligrams per kilogram

ppb - parts per billion, **ppm** - parts per million

ND - Not Detected, **NA -** Not Analyzed, **BPQL -** Below Practical Quantification Limit

Concentrations exceeding the Residential Ingestion Screening Level are shown in **bold**

Concentrations exceeding the Residential Migration to Groundwater Screening Level are shown in **bold**

Concentrations exceeding the Residential Direct Contact Screening Level are shaded

Table 3. VOCs in Groundwater

Sample Location	Date Sampled	1,1,1-Trichloroethane µg/L	1,1,2,2-Tetrachloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dibromoethane (EDB) µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	1,2-Dichloropropane µg/L	1,3,5-Trimethylbenzene µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone (MEK) µg/L	Acetone µg/L	Benzene µg/L	Carbon Tetrachloride µg/L	Chloroethane µg/L	cis-1,2-Dichloroethene µg/L	Dichlorobromomethane µg/L	Ethylbenzene µg/L	Isopropylbenzene (Cumene) µg/L	Methylene Chloride µg/L	Mineral Spirits µg/L	Naphthalene µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	sec-Butylbenzene µg/L	tert-Butylbenzene µg/L	Tetrachloroethene µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylene (Total) µg/L
RCG Residential Groundwater Ingestion		200	0.66	5	24	7	15	0.05	600	5	5	87	NA	75	4900	12,000	5	5	NA	70	NA	700	390	5	NA	1.4	780	530	NA	NA	5	1,000	100	5	1,100	2.00	10,000
T-3	Aug-84	ND	ND	NA	ND	ND				ND						NA			ND	NA	ND			ND	ND						ND	ND	ND	ND		ND	
S-3	Sep-84	**4900**	ND	NA	**3230**	**150**				ND						NA			<10	NA	<10			ND	175						ND	ND	ND	**<10**		**<10**	
W-1	Sep-84	ND	ND	NA	ND	ND				ND						NA			ND	NA	ND			ND	<100						ND	ND	ND	ND		ND	
W-2	Sep-84	30	ND	NA	**30**	ND				ND						NA			ND	NA	ND			ND	<100						ND	ND	ND	ND		ND	
W-3	Sep-84	ND	ND	NA	ND	ND				ND						NA			ND	NA	ND			ND	<100						ND	ND	ND	ND		ND	
W-4	Sep-84	**285**	ND	NA	**65**	**20**				ND						NA			ND	NA	ND			ND	<100						ND	ND	ND	ND		ND	
W-5	Sep-84	55	ND	NA	14	ND				ND						NA			ND	NA	ND			ND	<100						ND	ND	ND	ND		ND	
T-3	1984	ND	ND	NA	ND	ND				ND						NA			ND	NA	ND			ND	NA						2.6	ND	ND	ND		ND	
W-8	Sep-84	ND	ND	NA	ND	ND				ND						NA			ND	NA	ND			ND	ND						ND	ND	ND	ND		ND	
S-3	Oct-84	**6000**	ND	NA	**3100**	**170**				ND						NA			<10	NA	220			ND	12						ND	ND	ND	**<10**		**<10**	
S-3	Oct-84	**1300**	ND	NA	**740**	**29**				ND						NA			180	NA	<10			ND	22						ND	ND	ND	**<10**		ND	
W-7	Oct-84	72	**<10**	NA	**97**	**28**				ND						NA			ND	NA	ND			ND	510						ND	<10	<10	**<10**		ND	
S-3	Nov-84	**1300**	ND	NA	**940**	**25**				ND						NA			75	NA	<1			ND	NA						ND	ND	ND	2		**3**	
W-7	Nov-84	12	**<1**	NA	12	2				ND						NA			ND	NA	ND			ND	NA						ND	10	3	1		ND	
W-7	Dec-84	83	**20**	NA	**65**	**55**				ND						NA			ND	NA	ND			ND	265						ND	<10	<10	**<10**		ND	
W-7	Dec-84	<0.5	<0.5	NA	16	1.3				ND						NA			ND	NA	ND			ND	NA						ND	<0.5	<0.5	<0.5		ND	
S-3	Apr-86	**510**	NA	NA	ND	**<50**				**1000**						ND			<100	NA	NA			ND	NA						ND	ND	**220**	ND		ND	
S-3	Apr-86	**580**	NA	NA	ND	**<50**				**1200**						ND			<100	NA	NA			ND	NA						ND	ND	**260**	ND		ND	
W-2	Apr-86	<5	NA	NA	<5	ND				ND						ND			ND	NA	NA			ND	NA						ND	ND	ND	ND		ND	
W-4	Apr-86	**470**	NA	NA	ND	**10**				**94**						ND			11	NA	NA			ND	NA						ND	ND	ND	ND		ND	
W-5	Apr-86	<5	NA	NA	<5	ND				ND						ND			ND	NA	NA			ND	NA						ND	ND	ND	ND		ND	
W-7	Apr-86	33	NA	NA	ND	ND				**5**						92			ND	NA	NA			ND	NA						ND	<5	<5	ND		ND	
W-7 DUP	Apr-86	26	NA	NA	ND	ND				<5						62			ND	NA	NA			ND	NA						ND	<5	ND	ND		ND	
S-3	Aug-90	**5600**	ND	NA	**1600**	**58**				ND						ND			110	**3400**	NA			ND	NA						ND	38	17	**190**		ND	
W-1	Aug-90	18	ND	NA	6	ND				ND						ND			ND	ND	NA			ND	NA						ND	ND	ND	ND		ND	
W-4	Aug-90	190	ND	NA	**160**	6				ND						ND			15	ND	NA			ND	NA						ND	ND	ND	ND		ND	
S-3	Sep-90	**3600**	ND	NA	**1200**	**29**				ND						ND			140	**5500**	NA			ND	NA						ND	39	16	**580**		ND	
W-1	Sep-90	ND	ND	NA	ND	ND				ND						ND			ND	ND	NA			ND	NA						ND	ND	ND	ND		ND	
W-4	Sep-90	81	ND	NA	**26**	ND				ND						ND			ND	ND	NA			ND	NA						ND	ND	ND	ND		ND	
W-8	Oct-90	ND	ND	NA	ND	ND				ND						ND			ND	ND	NA			ND	NA						ND	ND	ND	ND		ND	
W-1	1/29/1991	ND			ND	ND											ND	ND	ND	ND	NA				NA						ND	ND	ND	ND		ND	
W-2	1/29/1991	ND			ND	ND											ND	ND	ND	ND	NA				NA						ND	ND	ND	ND		ND	
W-3	1/29/1991	ND			ND	ND											ND	ND	ND	ND	NA				NA						ND	ND	ND	ND		ND	
W-4	1/29/1991	110			**87**	ND											ND	ND	ND	ND	NA				NA						ND	ND	ND	ND		ND	
W-5	1/29/1991	ND			ND	ND											ND	ND	ND	ND	NA				NA						ND	ND	ND	ND		ND	
W-7	1/30/1991	7			10	**10**											ND	ND	ND	62	NA				NA						ND	ND	ND	ND		ND	
W-8	1/30/1991	ND			ND	ND											ND	ND	ND	ND	NA				NA						ND	ND	ND	ND		ND	
W-9	2/7/1991	ND			ND	ND											ND	ND	ND	ND	NA				NA						ND	ND	ND	ND		ND	
W-10A	2/7/1991	ND			ND	ND											ND	ND	ND	14	NA				NA						ND	ND	ND	ND		ND	
W-10B	2/7/1991	130			**29**	**12**											ND	ND	ND	7	NA				NA						ND	ND	ND	**19**		ND	
W-11A	2/7/1991	ND			ND	ND											ND	ND	ND	38	NA				NA						ND	ND	ND	ND		ND	
W-11B	2/7/1991	ND			ND	ND											ND	ND	ND	28	NA				NA						ND	ND	ND	ND		ND	

Table 3. VOCs in Groundwater

Sample Location	Date Sampled	1,1,1-Trichloroethane µg/L	1,1,2,2-Tetrachloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dibromoethane (EDB) µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	1,2-Dichloropropane µg/L	1,3,5-Trimethylbenzene µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone (MEK) µg/L	Acetone µg/L	Benzene µg/L	Carbon Tetrachloride µg/L	Chloroethane µg/L	cis-1,2-Dichloroethene µg/L	Dichlorobromomethane µg/L	Ethylbenzene µg/L	Isopropylbenzene (Cumene) µg/L	Methylene Chloride µg/L	Mineral Spirits µg/L	Naphthalene µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	sec-Butylbenzene µg/L	tert-Butylbenzene µg/L	Tetrachloroethene µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylene (Total) µg/L
RCG Residential Groundwater Ingestion		200	0.66	5	24	7	15	0.05	600	5	5	87	NA	75	4900	12,000	5	5	NA	70	NA	700	390	5	NA	1.4	780	530	NA	NA	5	1,000	100	5	1,100	2.00	10,000
W-12	2/7/1991	ND			5	**32**											ND	ND	ND	ND	NA				NA						ND	ND	ND	ND		ND	
W-13	2/7/1991	ND			**33**	ND											ND	ND	36	ND	NA				NA						ND	ND	ND	ND		ND	
S-3	1/30/1991	**1700**	ND	ND	**860**	**33**									ND	ND	ND	ND	210	**770**	NA			ND	NA						ND	ND	5	**100**	ND	**26**	ND
S-3	1/30/1991	**1500**	<5	<5	**690**	6.2			<5	<5	<5		<5	<5	<50		<5	166	210	**620**	<5	<5		<25							<5	<5	<5	**66**	<5	**<50**	<5
W-14A	9/23/1991	31	<5	<5	45	38			<5	<5	<5		<5	<5	<100	<100	<5	<5	<10		<5	<5		<5							<5	<5	<5	5.4	<10	<10	<5
W-14B	9/23/1991	<5	<5	<5	<5	<5			<5	<5	<5		<5	<5	<100	<100	<5	<5	<10		<5	<5		<5							<5	<5	<5	<5	<10	<10	<5
W-15A	9/23/1991	<5	<5	<5	<5	<5			<5	<5	<5		<5	<5	<100	<100	<5	<5	<10		<5	<5		<5							<5	<5	<5	<5	<10	<10	<5
W-15B	9/23/1991	<5	<5	<5	<5	<5			<5	<5	<5		<5	<5	<100	<100	<5	<5	<10		<5	<5		5.7							<5	<5	<5	<5	<10	<10	<5
W-1	3/4/1992	BEQL			ND	ND													ND		NA				NA							ND	ND	ND		ND	
W-2	3/4/1992	ND			ND	ND													ND		NA				NA							ND	ND	ND		ND	
W-3	3/4/1992	ND			ND	ND													ND		NA				NA							ND	ND	BEQL		ND	
W-4	3/4/1992	81			**82**	**7**													7		NA				NA							ND	ND	ND		ND	
W-5	3/4/1992	ND			BEQL	ND													ND		NA				NA							ND	ND	ND		ND	
S-3	2/1/1992	**390**			**450**	**50**													110		NA				NA							BEQL	BEQL	**73**		**43**	
W-7	3/4/1992	35			**24**	BEQL													BEQL		NA				NA							ND	ND	ND		ND	
W-8	3/4/1992	ND			BEQL	ND													ND		NA				NA							ND	ND	ND		ND	
W-9	3/4/1992	ND			ND	ND													ND		NA				NA							ND	ND	ND		ND	
W-10A	3/4/1992	ND			ND	ND													ND		NA				NA							ND	ND	ND		ND	
W-10B	3/4/1992	110			**25**	**19**													ND		NA				NA							ND	ND	**16**		ND	
W-11A	3/4/1992	ND			ND	ND													ND		NA				NA							ND	ND	ND		ND	
W-11B	3/4/1992	ND			ND	5													ND		NA				NA							ND	ND	ND		ND	
W-12	3/4/1992	ND			ND	**14**													ND		NA				NA							ND	ND	ND		**5**	
W-13	3/4/1992	ND			21	BEQL													150		NA				NA							ND	ND	BEQL		ND	
W-14A	3/4/1992	ND			BEQL	ND													ND		NA				NA							ND	ND	ND		ND	
W-14A DUP	3/4/1992	ND			BEQL	ND													ND		NA				NA							ND	ND	ND		ND	
W-14B	3/4/1992	BEQL			18	**33**													18		NA				NA							ND	ND	BEQL		ND	
W-15A	3/4/1992	ND			BEQL	ND													ND		NA				NA							ND	6	BEQL		ND	
W-15B	3/4/1992	ND			ND	ND													ND		NA				NA							ND	ND	BEQL		ND	
W-16	3/4/1992	ND			BEQL	ND													ND		NA				NA							ND	ND	ND		ND	
S-3	May-94	**1000**	ND	ND	**1200**	ND				ND						ND			120	BEQL	ND			ND	NA						ND	ND	ND	ND		ND	
S3-A	May-94	**17000**	ND	ND	**13000**	**610**				ND						ND			1200	**<125**	ND			ND	NA						ND	ND	**<125**	ND		ND	
S3-D	May-94	130	ND	ND	**48**	6.1				ND						ND			2.6	BEQL	ND			ND	NA						ND	ND	ND	BEQL		ND	
W-I	Jun-94	ND	ND	ND	ND	ND				ND						ND			ND	ND	ND			ND	NA						ND	ND	ND	ND		ND	
W-2	Jun-94	ND	ND	ND	ND	ND				3.3						ND			ND	ND	NA			ND	NA						ND	ND	ND	ND		ND	
W-3	Jun-94	29	ND	**9**	2.2	ND				**43**						ND			ND	BEQL	ND			ND	NA						ND	BEQL	ND	BEQL		ND	
W-4	Jun-94	140	ND	ND	**290**	**86**				2.3						ND			15	ND	ND			ND	NA						ND	ND	ND	ND		BEQL	
W-5	Jun-94	ND	ND	ND	BEQL	ND				BEQL						ND			ND	ND	ND			ND	NA						ND	ND	ND	BEQL		ND	
S-3	Jun-94	110	ND	ND	**45**	2.4				ND						ND			28	34	ND			ND	NA						ND	BEQL	ND	**7.5**		BEQL	
S3-D	Jun-94	190	ND	**11**	21	5.3				**54**						3.9			BEQL	BEQL	ND			ND	NA						ND	BEQL	ND	ND		ND	
W-7	Jun-94	5.1	ND	BEQL	9.7	BEQL				**6.3**						ND			ND	2.9	ND			ND	NA						ND	ND	ND	ND		ND	
W-8	Jun-94	2.7	ND	4.6	2.5	ND				**20**						ND			ND	BEQL	ND			ND	NA						ND	BEQL	ND	ND		ND	
W-9	Jun-94	<5	ND	ND	ND	ND				ND						<10			ND	ND	ND			ND	NA						ND	ND	ND	ND		ND	

Table 3. VOCs in Groundwater

Sample Location	Date Sampled	1,1,1-Trichloroethane µg/L	1,1,2,2-Tetrachloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dibromoethane (EDB) µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	1,2-Dichloropropane µg/L	1,3,5-Trimethylbenzene µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone (MEK) µg/L	Acetone µg/L	Benzene µg/L	Carbon Tetrachloride µg/L	Chloroethane µg/L	cis-1,2-Dichloroethene µg/L	Dichlorobromomethane µg/L	Ethylbenzene µg/L	Isopropylbenzene (Cumene) µg/L	Methylene Chloride µg/L	Mineral Spirits µg/L	Naphthalene µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	sec-Butylbenzene µg/L	tert-Butylbenzene µg/L	Tetrachloroethene µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylene (Total) µg/L
RCG Residential Groundwater Ingestion		200	0.66	5	24	7	15	0.05	600	5	5	87	NA	75	4900	12,000	5	5	NA	70	NA	700	390	5	NA	1.4	780	530	NA	NA	5	1,000	100	5	1,100	2.00	10,000
W-10A	Jun-94	130	ND	ND	BEQL	ND				ND						<10			ND	4.1	ND			ND	NA						ND	ND	ND	ND		ND	
W-10B	Jun-94	69	ND	ND	18	**14**				ND						ND			3.4	2.8	ND			ND	NA						ND	ND	ND	**14**		ND	
W-11A	Jun-94	ND	ND	ND	BEQL	ND				ND						ND			ND	BEQL	NA			ND	NA						ND	ND	ND	ND		ND	
W-11B	Jun-94	ND	ND	ND	BEQL	3.6				ND						ND			ND	BEQL	ND			ND	NA						ND	ND	ND	ND		ND	
W-12	Jun-94	18	ND	**52**	**29**	**46**				**310**						ND			16	16	ND			ND	NA						ND	ND	ND	ND		ND	
W-13	Jun-94	28	ND	**7.4**	BEQL	BEQL				**98**						ND			ND	BEQL	ND			ND	NA						ND	BEQL	ND	BEQL		ND	
W-14A	Jun-94	ND	ND	ND	BEQL	ND				ND						ND			ND	4.1	ND			ND	NA						ND	ND	ND	ND		ND	
W-14A DUP	Jun-94	29	ND	ND	**52**	**40**				ND						ND			6.3	3.8	ND			ND	NA						ND	ND	BEQL	BEQL		ND	
W-15A	Jun-94	ND	ND	ND	ND	ND				ND						ND			ND	ND	ND			ND	NA						ND	ND	ND	ND		ND	
W-15B	Jun-94	ND	ND	ND	ND	ND				ND						ND			ND	ND	ND			ND	NA						ND	ND	ND	ND		ND	
W-16	Jun-94	ND	ND	ND	BEQL	ND				ND						ND			ND	ND	ND			ND	NA						ND	ND	ND	BEQL		ND	
S3-B	Jan-95	ND	ND	ND	**490**	ND				ND						ND			830	**2000**	ND			ND	NA						ND	ND	**<125**	ND		ND	
W-1	Dec-96	<5	**<5**	<5	<5	<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-2	Dec-96	<5	**<5**	<5	<5	<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-3	Dec-96	<5	**<5**	<5	<5	<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-5	Dec-96	<5	**<5**	<5	<5	<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
S-3	Dec-96	**960**	**<125**	**<125**	**1500**	**<125**				**<125**						<250			400	**<125**	<125			**<125**	NA						**<125**	<125	**<125**	**<125**		**<125**	
S-3(DUP)	Dec-96	**970**	**<125**	**<125**	**1500**	**<125**				**<125**						<250			420	**<125**	<125			**<125**	NA						**<125**	<125	**<125**	**<125**		**<125**	
S3-A	Dec-96	**970**	**<125**	**<125**	**1300**	**<125**				**<125**						<250			470	**2200**	<125			**<125**	NA						**<125**	<125	ND	**<125**		**<125**	
S3-B	Dec-96	<125	**<125**	**<125**	**1000**	**<125**				**<125**						<250			320	6	<125			**<125**	NA						**<125**	<125	<5	**<125**		**<125**	
S3-C	Dec-96	14	**<5**	<5	**230**	<5				<5						61			81		<5			<5	NA						<5	<5		<5		**<5**	
S3-D	Dec-96	**420**	**<50**	**<50**	**66**	**<50**				**<50**						<100			<50	<50	<50			**<50**	NA						**<50**	<50	<50	**<50**		**<50**	
W-7	Dec-96	36	**<5**	<5	**30**	<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-8	Dec-96	<5	**<5**	<5	<5	<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-9	Dec-96	ND	**<5**	<5	<5	<5				<5						ND			<5	<5	<6			<5	NA						<5	<5	<5	<5		**<5**	
W-10A	Dec-96	110	**<5**	<5	<5	<5				<5						ND			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-10B	Dec-96	170	**<5**	<5	23	**23**				<5						<10			6	<5	<5			<5	NA						<5	<5	<5	**11**		**<5**	
W-11A	Dec-96	<5	**<5**	<5	<5	<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-11B	Dec-96	<5	**<5**	<5	<5	<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-12	Dec-96	<5	**<5**	<5	<5	**74**				<5						<10			<5	<5	<5			**7**	NA						<5	<5	<5	<5		**<5**	
W-13	Dec-96	17	**<5**	<5	<5	<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-14A	Dec-96	<5	**<5**	<5	<5	<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-14A	Dec-96	<5	**<5**	<5	<5	**16**				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-15A	Dec-96	<5	**<5**	<5	<5	<5				<5						<10			<5	18	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-15B	Dec-96	<5	**<5**	<5	<5	<5				<5						<10			<5	<5	<5			<5	<5						<5	<5	<5	<5		**<5**	
W-16	Dec-96	<5	**<5**	<5	<5	<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
EV-7	Dec-96	9	**<5**	<5	<5	'<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
EV-8	Dec-96	10	**<5**	<5	**180**	<5				<5					<10	<10			39	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
EV-9	Dec-96	180	**<5**	<5	**170**	**7**				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
EV-10	Dec-96	<5	**<5**	<5	9	<5				<5						<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
EV-13	Dec-96	15	**<5**	<5	7	<5				<5						<10			<5	28	<5			<5	NA						**21**	<5	<5	**13**		**<5**	
S-3	Mar-97	**8900**	**<5**	<5	**3700**	**49**				<5					14	<10			210	7	<5			<5	NA						<5	<5	<5	**8**		**<5**	

Remediation Work Plan
Sample Street Business Complex
3702 West Sample Street
South Bend, Indiana 46619
VRP ID #6120801

Table 3. VOCs in Groundwater

Sample Location	Date Sampled	1,1,1-Trichloroethane µg/L	1,1,2,2-Tetrachloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dibromoethane (EDB) µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	1,2-Dichloropropane µg/L	1,3,5-Trimethylbenzene µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone (MEK) µg/L	Acetone µg/L	Benzene µg/L	Carbon Tetrachloride µg/L	Chloroethane µg/L	cis-1,2-Dichloroethene µg/L	Dichlorobromomethane µg/L	Ethylbenzene µg/L	Isopropylbenzene (Cumene) µg/L	Methylene Chloride µg/L	Mineral Spirits µg/L	Naphthalene µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	sec-Butylbenzene µg/L	tert-Butylbenzene µg/L	Tetrachloroethene µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylene (Total) µg/L
RCG Residential Groundwater Ingestion		200	0.66	5	24	7	15	0.05	600	5	5	87	NA	75	4900	12,000	5	5	NA	70	NA	700	390	5	NA	1.4	780	530	NA	NA	5	1,000	100	5	1,100	2.00	10,000
S-3(DL)	Mar-97	**12000**	**<50**	**<50**	**4600**	**<50**				**<50**					<100	<100			290	<50	<50			**<50**	NA						**<50**	<50	<50	**<50**		**<50**	
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W-10B	Mar-97	**250**	**<5**	<5	**29**	**18**				<5						<10			6	<5	<5			<5	NA						<5	<5	<5	**12**		**<5**	
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W-15A	Mar-97	<5	**<5**	<5	<5	<5				<5						<10			<5	30	<5			<5	NA						<5	<5	<5	<5		**<5**	
EV-13	Mar-97	12	**<5**	<5	6	<5				<5						<10			<5	21	<5			<5	NA						**27**	<5	<5	**18**		**<5**	
S-3	Jun-97	**11000**	**<500**	**<500**	**4400**	**<500**				**<500**					<1000	<1000			280	**<500**	<500			**<500**	NA						**<500**	<500	**<500**	**<500**		**<500**	
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W-13	Jun-97	<5	**<5**	<5	10	<5				<5					<10	<10			<5	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
W-15A	Jun-97	<5	**<5**	<5	<5	<5				<5					<10	<10			<5	34	<5			<5	NA						<5	<5	<5	<5		**<5**	
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EV-13	Sep-97	<5	**<5**	<5	<5	<5				<5					<10	<10			<5	51	<5			<5	NA						<5	<5	<5	<5		**<5**	
EV-18	Sep-97	<5	**<5**	<5	9	<5				<5					<10	<10			12	<5	<5			<5	NA						<5	<5	<5	<5		**<5**	
S-3	Jan-98	**4400**	**<5**	<5	**2200**	**36**				<5					19	30			<5	9	<5			**22**	NA						<5	<5	<5	**110**		**<5**	
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W-10B	Jan-98	130	**<5**	<5	**34**	**15**				<5					<10	27			<5	<5	<5			<5	NA						<5	<5	<5	**11**		**<5**	
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S-3	Jul-98	**6400**	**<5**	<5	**4400**	<5				<5					<5	1000			810	ND	<5			**75**	NA						<5	<5	ND	<5		**<10**	
W-7	Jul-98	25	**<5**	<5	**36**	2				<5					<10	<10			<10	6	<5			<5	NA						<5	<5	<5	<5		**<10**	
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W-15A	Jul-98	<5	**<5**	<5	1	<5				<5					<10	<10			<5	12	<5			<5	NA						<5	<5	0.9	<5		**<10**	
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SB - 1	5/11/2011	<5	**<5**	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<10		<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	**<5**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
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Table 3. VOCs in Groundwater

Sample Location	Date Sampled	1,1,1-Trichloroethane µg/L	1,1,2,2-Tetrachloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dibromoethane (EDB) µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	1,2-Dichloropropane µg/L	1,3,5-Trimethylbenzene µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone (MEK) µg/L	Acetone µg/L	Benzene µg/L	Carbon Tetrachloride µg/L	Chloroethane µg/L	cis-1,2-Dichloroethene µg/L	Dichlorobromomethane µg/L	Ethylbenzene µg/L	Isopropylbenzene (Cumene) µg/L	Methylene Chloride µg/L	Mineral Spirits µg/L	Naphthalene µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	sec-Butylbenzene µg/L	tert-Butylbenzene µg/L	Tetrachloroethene µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylene (Total) µg/L
RCG Residential Groundwater Ingestion		200	0.66	5	24	7	15	0.05	600	5	5	87	NA	75	4900	12,000	5	5	NA	70	NA	700	390	5	NA	1.4	780	530	NA	NA	5	1,000	100	5	1,100	2.00	10,000
SB - 5	5/12/2011	<5	**<5**	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<10		<5	<5	<5	<5	<5	<5	<5	<5	NA	**<5**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
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W - 1	5/19/2011	<5	**<5**	<5	<5	<5	<5	**<5**	<5	<5	<5	<5	<5	<5	<10		<5	<5	<5	<5	<5	<5	<5	<5	NA	**<5**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
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W5	4/29/13	<5	<0.66	<5	<5	<5	<5	**<1**	<5	<5	<5	<5	<5	<5	<10	<100	<5	<5	<5	<5	<5	<5	<5	<5	NA	<1.4	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
W-7	4/30/13	<5	<0.66	<5	<5	<5	<5	**<1**	<5	<5	<5	<5	<5	<5	<10	<100	<5	<5	<5	<5	<5	<5	<5	<5	NA	<1.4	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
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W-16	4/30/13	<5	<0.66	<5	<5	<5	<5	**<1**	<5	<5	<5	<5	<5	<5	<10	<100	<5	<5	<5	<5	<5	<5	<5	<5	NA	<1.4	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
W-101A	4/30/13	<5	<0.66	<5	<5	**8.41**	<5	**<1**	<5	<5	<5	<5	<5	<5	<10	<100	<5	<5	<5	8.07	<5	<5	<5	<5	NA	<1.4	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
W-101B	4/30/13	<5	<0.66	<5	<5	6.25	<5	**<1**	<5	<5	<5	<5	<5	<5	<10	<100	<5	<5	<5	5.54	<5	<5	<5	<5	NA	<1.4	<5	<5	<5	<5	<5	<5	<5	<5	**2.29**	<10
W-100A	4/30/13	<5	<0.66	<5	<5	<5	<5	**<1**	<5	<5	<5	<5	<5	<5	<10	<100	<5	<5	<5	<5	<5	<5	<5	<5	NA	<1.4	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
W-100B	4/30/13	<5	<0.66	<5	<5	<5	<5	**<1**	<5	<5	<5	<5	<5	<5	<10	<100	<5	<5	<5	<5	<5	<5	<5	<5	NA	<1.4	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
UNK-1 (5-3A)	4/29/13	<5	<0.66	<5	<5	<5	<5	**<1**	<5	<5	<5	<5	<5	<5	<10	<100	<5	<5	<5	<5	<5	<5	<5	<5	NA	<1.4	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
UNK-2 (5-3)	4/29/13	<5	<0.66	<5	<5	<5	<5	**<1**	<5	<5	<5	<5	<5	<5	<10	<100	<5	<5	<5	<5	<5	<5	<5	<5	NA	<1.4	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10

Notes:
µg/L - micrograms per Liter **mg/L** - milligrams per Liter
ppb - parts per billion, **ppm** - parts per million
VOCs - volatile organic compounds
ND - Not Detected, **NA -** Not Analyzed, **BPQL -** Below Practical Quantification Limit
Concentrations exceeding the Residential Ingestion Screening Level are shown in **bold**
Table compiled from summary tables of previous reports. Previous analyses used analytical methods other than 8260 and, therefore, may not have analyzed for all compounds shown in table. Blank cells represent either no analysis available or no value reported in summary

APPENDIXA

IDEM Comment Letter

APPENDIX B

Soil Boring Logs and Monitoring Well Construction Diagrams

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VRP Acceptance Letter

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Wellhead Protection Proximity Determination

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Quality Assurance Project Plan

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Health and Safety Plan

APPENDIX M

Background Document, Torrington Company Plant Site, South Bend, Indiana, May 11, 1984,Torrington Company

APPENDIX N

Environmental Assessment. Torrington's Bantam Bearing Division Plant. October 1984, Canonie Engineers, Inc.

APPENDIX O

Environmental Assessment, Torrington Company Heavy Bearings Facility, South Bend, Indiana, March 11, 1985,Torrington Company

APPENDIX P

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APPENDIX Q

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APPENDIX R

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APPENDIX S

Final Report Environmental Assessment, The Torrington Company Bantam Bearing Division Plant, South Bend, Indiana, October 1990, Best Environmental, Inc.

APPENDIX T

Subsurface Environmental Assessment and Remedial Action Plan Torrington Site, April 1991, Best Environmental, Inc

APPENDIX U

Interior Pit Cleaning Project, Torrington Bearing Plant. September 1991, Best Environmental, Inc.

APPENDIX V

Torrington Investigation Report. December 11, 1991, Capsule Environmental Engineering

APPENDIX W

Phase II, Volumes 1 & 2, Torrington Investigation Report, The Torrington Company. May 26, 1992, Capsule Environmental Engineering

APPENDIX X

Soil Gas Study Report, July 30, 1992, Capsule Environmental Engineering

APPENDIX Y

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APPENDIX Z

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