RCRA FACILITY INVESTIGATION, PART 1 REPORT

C&D TECHNOLOGIES
200 WEST MAIN STREET
ATTICA, INDIANA

RCRA-05-2007-0003, U.S.EPA ID NO.: IND 000 810 754

Prepared for

C&D Technologies, Inc.
1400 Union Meeting Road
Blue Bell, Pennsylvania 19422-0858

October 30, 2008

URS
1000 Corporate Centre Drive
Suite 250
Franklin, Tennessee 37067
(615) 771-2480
URS Project No 20500205.00001

C&D TECHNOLOGIES, INC.
Power Solutions

1400 Union Meeting Road
P.O. Box 3053
Blue Bell, PA 19422-0858
Telephone (215) 619-2700
Fax (215) 619-7840

October 29, 2008

Ms. Bhooma Sundar
Toxicologist/Project Manager
RCRA Corrective Action
Mail Code DE-9J
USEPA Region 5
77 W. Jackson Blvd.
Chicago, Ill 60604

Dear Bhooma;

Subject: AOC US EPA Docket No. RCRA-05-2007-0003
C&D Technologies, Inc., Attica Facility

Attached is the RCRA Facility Investigation, Part 1 Report and appendices for your review.

Please contact me (215-619-7886) should you have any questions or comments.

Sincerely,

WE Kozlowski

Walter E. Kozlowski
Director – Environment, Health & Safety

Cc:
Aria Klees – Deputy General Counsel
C&D Technologies

Jack Waggener – Principal/Senior Engineering Manager
URS Corporation

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EXECUTIVE SUMMARY

C&D Technologies has implemented a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at C&D's Attica Indiana Facility located at 200 West Main Street, Attica, Fountain County, Indiana (the "Site" or "Facility"). The work was conducted in accordance with the RFI Work Plan for the Attica Facility (URS, 2007a) and Addendum to RFI Work Plan dated December 4, 2007 (URS, 2007b) which incorporated proposed changes and comments suggested by United States Environmental Protection Agency (U.S.EPA) Region 5 during an October 2007 site meeting. Well installation and soil sampling for the investigation were conducted in December 2007/January 2008 and March-June of 2008.

The Site is located along the eastern bank of the Wabash River within west central Indiana approximately 900 feet northeast of US Highway 41 in Fountain County, Indiana. The Site has been utilized as an industrial Facility since the late 1800s. The Site was initially identified to the U.S. EPA in the form of a notification pursuant to section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The notification form listed the waste type as acids and heavy metals, and the waste source as a lead-acid battery plant. A total of 16 SWMUs /AOCs (Areas) were identified in the Current Conditions Report (Clayton 2007) and the Site was sampled for groundwater, surface water, sediment and soil. Also, three new Areas were added for soil sampling: the Riverbank Area, Residential Area, and a Background Area. In addition, the Wabash River was sampled for surface water and sediment. These data were evaluated to address potential impacts to human receptors. Environmental Indicator Reports were developed and submitted for Groundwater Migration and Human Health (URS 2008a and b). Data, findings and recommended actions are reported in this Part I RFI Report. A subsequent Part II RFI Report will address the Contaminants of Concern (COCs) identified in Part I and potential risks to ecological receptors.

Industrial Area Soils

For soil in the industrial areas of the Site, the maximum detected concentrations in soil samples were compared with human health screening values (SVs) for the industrial exposure scenario. Screening for risks associated with lead in soil was evaluated in two tiers: (1) the maximum concentration was compared with the Industrial SV of 970 mg/kg/lead; and (2) if one or more samples exceeded the Industrial SV, an arithmetic mean was calculated and compared with the Industrial SV. If the arithmetic mean of lead exceeded the SV, or if the maximum concentration for other constituents exceeded their respective SVs, they were identified as a COC.

No Further Action was recommended for the following Areas:

- Area 1 – Wastewater Treatment Plant
- Area 4 – Stormwater Sewers (with the exception of surface soil at one location)
- Area 5 – Exterior Former Hazardous Waste Materials Storage
- Area 8 – Former Drive-Up Disposal Area
- Area 10 – Southwest Former Container Storage
- Area 12 – Central Vacuum System/Baghouses
- Area 13 – Former Oxide Mill
- Area 14 – Former Onsite Filling Station (based on information provided with RFI Work Plan)
- Area 16 – DC Generator Area

For some Areas for which soil is covered with pavement or concrete, there were no risks indicated under current exposure conditions. However, should excavation beneath the surface occur in these Areas in the future, the exposure route to soils may potentially be complete for the construction worker. This exposure route will be evaluated in Part II of the RFI Report for the following Areas and COCs:

- Area 3 – Arsenic
- Area 7 – Arsenic
- Area 11 – Lead
- Area 15 – Arsenic

On the basis of the human health risk screening, additional soil sampling is recommended for one of the industrial Areas:

- Areas 4 and 9 (grouped) – Surface soil sampling to determine the extent of TCE contamination at one location.

Off-Site Area Soils

The soil in two off-site Areas was evaluated using Residential SVs with the following results:

- Riverbank Area – Arsenic exceeded the Residential SV; however, arsenic concentrations in Riverbank soil were similar to background. Therefore, No Further Action is recommended. Lead exceeded the Residential SV in two samples. As a result, a Tier 2 Human Health Risk Assessment was performed, which evaluated both adult and children as recreational users of the Riverbank Area. The results indicated that lead levels in surface soil samples collected on the Riverbank do not pose an adverse impact to human health. Therefore, no further action is recommended.
- Off-Site Residential Area – Arsenic exceeded the Residential SV in surface soil and data were insufficient (N = 2) for a statistical comparison with background. Therefore, additional surface soil sampling and analysis for arsenic is recommended. In addition, although risks to residents were not indicated based on the arithmetic mean of lead in surface soil, a construction worker may be exposed to lead in subsurface soil if excavation were to occur. Therefore, additional sampling and analysis for lead is recommended for subsurface soil in the Residential Area.

Groundwater

Trichloroethylene (TCE) was detected in MW-1 and MW-2 at concentrations in excess of the IDEM RDCL for groundwater during the 2006 and December 2007/January 2008 sampling events. The concentration of lead in MW-4S in June 2008 exceeded the IDEM RDCL. There were no IDEM RDCL exceedances in the two wells installed in Area 8 (MW-9S and MW-10S) to monitor the potential leaching of arsenic and lead to groundwater. Wells adjacent to the Wabash River (MW-4S, MW-5S, MW-7S, MW-9S and MW-10S) were evaluated for potential discharge and impacts to human health from exposure to surface water by comparison with surface water SVs. Although arsenic concentrations in well water exceeded the human health SV for arsenic even when a 10-fold dilution factor was applied, upstream (background) surface water samples also exceeded the arsenic human health SV. An additional round of groundwater sampling is recommended for all wells except MW-9S and MW-10S.

Surface Water

Arsenic and BEHP concentrations in surface water adjacent to the Site exceeded the human health SV. However, surface water samples upgradient of the Site (background) also exceeded these two SVs. Therefore, No Further Action is recommended for surface water, on the basis of human health exposure.

Sediment

Because human health SVs are not available for sediment, sediment concentrations were compared with Residential Human Health SVs. The concentration of arsenic in sediment adjacent to the Site exceeded the Residential SV; however, a sample means comparison indicated that sediment concentrations adjacent to the Site were similar to sediment background concentrations. Therefore, No Further Action is recommended for sediment, on the basis of human health exposure.

C&D Technologies (C&D) has retained URS Corporation (URS) to develop and implement environmental investigative programs for C&D's Attica Indiana Facility located at 200 West Main Street, Attica, Fountain County, Indiana (the Site or Facility). This Resource Conservation Recovery Act (RCRA) Facility Investigation (RFI) Report describes work conducted in accordance with the RFI Work Plan for the C&D Facility (URS, 2007a) and Addendum to RCRA Facility Investigation Work Plan dated December 4, 2007 (URS, 2007b), which incorporated proposed changes and comments suggested by United States Environmental Protection Agency (U.S.EPA) Region 5 during an October 2007 site meeting.

1.1 ADMINISTRATIVE ORDER OF CONSENT BACKGROUND

An Administrative Order of Consent was issued by U.S.EPA to C&D on January 18, 2007 under Section 3008(h) of the Solid Waste Disposal Act, commonly referred to as RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984. The Order states that C&D must identify and define the nature and extent of releases of hazardous constituents at or from the Facility, beginning with the submittal of a Current Conditions Report (CCR). C&D submitted the CCR which identified 15 solid waste management units (SWMUs) and areas of concern (AOCs) (herein collectively identified as Areas) for further evaluation to U.S.EPA on March 1, 2007 (Clayton, 2007). The CCR is incorporated into the RFI by reference.

In correspondence dated April 20, 2007 to C&D concerning the CCR, U.S.EPA questioned the location of PCB containing capacitors that were mentioned in the *Screening Site Inspection Report for Eltra Corporation C&D Batteries Division Attica, IN Facility* (SSI Report) by Ecology and Environmental, Inc. submitted to U.S.EPA on October 12, 1990. C&D responded in a June 7, 2007 letter to U.S.EPA that low level PCBs were contained in two former DC Generators that were taken out of service in 1988. As a result of the DC Generators having contained PCBs, the former location of the DC Generators was subsequently identified as an Area for investigation during the RFI.

1.2 RCRA CORRECTIVE ACTION PROGRAM GOALS

C&D has developed RCRA objectives at the Attica Facility to guide the approach to complete the RFI, meet the Environmental Indicator (EI) determinations, and propose final corrective measures if needed. C&D has, therefore, identified the following RFI Goals:

- Ensure protection of human health and the environment through the development and use of a conceptual site model (CSM) based on a thorough understanding of Facility chemicals of concern (COCs), migration pathways, and exposure potential.
- Prioritize actions taken during the RFI using a risk-based phased approach to address potentially significant issues early in the process and focus, if needed, final corrective measure decision making.
- Appropriately comply with all regulatory requirements, focusing on obtaining positive Government Performance Report Act (GPRA) EI determinations in a timely manner.

The following general approaches have been established to meet each of the above stated goals.

Protection of Human Health and Environment

C&D has incorporated the information from individual Areas, along with more general Facility data, into a Facility-wide CSM. The CSM was developed from information on potential sources, physicochemical characteristics, potential constituent release mechanisms, potential exposure pathways, and potential receptors for the Facility. The CSM allows development of reasonable exposure scenarios to focus future investigative activities and to support appropriate risk-based decision making. The CSM is dynamic and is refined as needed when additional Facility-specific information, collected in a phased approach, is obtained. The preliminary CSM for the Attica Facility is presented in Section 2.5. This Part I RFI report addresses potential impacts to human receptors from on-site Areas and additional off-site sample Areas (Riverbank, Surface Water, Sediments, and Residential Soils Areas).

Risk Based Approach

In an effort to facilitate efficient decision-making during the RFI process, C&D is applying a risk-based phased approach at the Attica Facility. The primary objective of the risk-based phased approach is to focus the investigation on those COCs and Areas (i.e., SWMUs or AOCs) that are determined to present a potential risk to human health and/or the environment. To this end, the initial phases of the RFI were designed to collect sufficient information regarding the nature of environmental conditions at the Facility to develop a prioritized approach for addressing corrective action needs for the Facility. Implementing the prioritized approach will result in one of the following decisions for each Area in the RFI:

- No Further Action Under the Current Use Scenario;
- Additional Data Collection and/or Risk Evaluation;
- Interim Measures (if needed); or
- Corrective Measures Proposal (CMP) or Corrective Measures Study (CMS) (if needed).

This approach accelerates corrective action where it is most necessary, rather than waiting until all units have been fully delineated and characterized before corrective measures are implemented.

Environmental Indicators Determination

Environmental Indicators are measures being used by the RCRA RFI program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment (U.S.EPA, 1999a). The two EI reports (URS, 2008a and b) developed and submitted to EPA on July 30, 2008 “indicate the quality of the environment in relation to current human exposures to contamination” (EI RCRIS Code CA725) and the “migration of contaminated groundwater” (EI RCRIS Code CA750). A positive EI CA725 indicates that there are no “unacceptable” human exposures to “contamination” that can be reasonably expected under current land- and groundwater-use conditions, while a positive EI CA750 indicates that the migration of “contaminated” groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original “area of contaminated groundwater”.

1.3 GENERAL DESCRIPTION

The C&D Facility is located at 200 West Main Street in Attica, Fountain County, Indiana along the eastern bank of the Wabash River in west central Indiana within the Middle Wabash River Basin. The C&D Facility manufactures large motive and standby power lead acid batteries for commercial, industrial, and military applications. Manufacturing processes include casting / curing lead battery parts, pasting battery grids, plate processing, battery assembling, charging and finishing. Supporting operations at the Facility include material receiving, product shipment, quality control laboratory analysis, equipment maintenance, wastewater pretreatment, waste management, and administration.

The Facility is mostly surrounded by chain-link fencing and occupies approximately 12.5 acres in which there are approximately 295,000 square feet of interconnected buildings existing on-site. Adjacent land use is characterized by industrial, commercial, and residential properties. The Attica Wellhead Protection Area is located southwest of the Facility along the Wabash River.

The C&D Facility is located approximately 3,000 feet west of the Radio Materials Corporation (RMC) site. The RMC site is located topographically and hydraulically upgradient from the C&D facility. The RMC site encompasses approximately 38 acres. RMC is located at the edge of the Wabash River basin on a local topographic high at approximately 670 feet above mean sea level (amsl). From this local high, there is a slope to the south toward an intermittent stream in Ravine Park and a regional slope to the northwest, toward the C&D Facility and the Wabash River (approximately 500 feet amsl). RMC began operations in 1948 with the manufacture of television tubes and disc capacitors. Based on the U.S.EPA PA/VSI information and the past releases and management areas at the RMC site, the U.S.EPA Region 5 issued a RCRA 3008 (h) Consent Order to RMC that became effective on March 1, 1999. The manufacturing byproducts at RMC included chlorinated solvents, acetone, isopropyl alcohol, phenolic resins, ceramic byproduct, waxes and paints. An investigation (RFI) was completed at the RMC site and the results of the investigation are presented in the Phase I RFI Report (BSI, 2000). The pre-RFI, Phase I RFI, and Phase IIA RFI information form the basis for the "Phase IIB RFI Work Plan, Radio Materials Corporation Facility, Attica, Indiana" (CRA, 2003). Further RFI results are presented in CRA (2004). Waste management activities at the RMC site have resulted in documented soil and groundwater impacts of tetrachloroethene (PCE), tricholorethene (TCE), and other organic contaminants. Groundwater impacted with TCE and TCE biodegradation products have been detected at off-site locations downgradient of the RMC site.

1.3.1 Facility Location and Description

The C&D Facility is located within the Middle Wabash River Valley in west central Indiana. The Site is located along the eastern bank of the Wabash River approximately 900 feet northeast of US Highway 41 in Fountain County, Indiana. The elevation of the Site is approximately 520 feet amsl. A Site Location Map is included as **Figure 1-1**.

The physical setting surrounding the Site is characterized as the northwest border of the Tipton Till Plain physiographic province of Indiana. The Tipton Till plain is generally featureless, flat to gently-rolling plain, which is interrupted in places by very low-relief end moraines and extensive areas of ice disintegration features that resulted from the Wisconsinan glacial advancement. The

border of the Tipton Till plain is marked by the Wabash River Valley, which is the principal feature beneath the Site (USDA, 2003).

1.3.1.1 Regional Geology and Hydrogeology

The regional geology consists of unconsolidated glacial sediments deposited in the "U-shaped" paleochannel of the Wabash River. The Wabash River paleochannel is cut into the bedrock consisting of clastic and carbonate bedrock units. The glacial deposits include till deposits of cobbles to sand mostly in the boundaries of the Wabash River channel. Bedrock consists of shale and sandstone with limestone that dips to the southwest (USGS, 1994).

In Wisconsinan times, the Wabash River basin was completely covered by glaciation. Ice lobes advanced into the Wabash Valley as the Attica outwash fan was deposited. The outwash fan consists of cobbles, gravel, and sand. The Wabash River Valley is underlain by approximately 120 to 140 feet of unconsolidated, valley-train glaciofluvial deposits consisting of sand and gravel. The unconsolidated deposits occur in a narrow band that parallels the Wabash River within the U-shaped paleochannel.

The Wabash River alluvium has very steep sidewalls in connection with the bedrock valley walls that run approximately parallel to the river. Located below the unconsolidated deposits are Pennsylvanian age sandstones of the Raccoon Creek Group and Carbondale Group and the Mississippian age siltstones and shales of the Borden Group (USGS, 1994).

West of the Site lies the contact between the Pennsylvanian and Mississippian age bedrock units. The Raccoon Creek and Carbondale group consists of interbedded shale and sandstone with thin beds of limestone and coal. The Borden Group consists of siltstone and shale with minor sandstone and discontinuous limestone (USGS, 1994). The groundwater entering the bedrock in the upgradient areas east and southeast of the Site flows in a northwest direction to its discharge point, the alluvium, and the Wabash River (IDEM, 1999).

1.3.1.2 Local Geology and Hydrogeology

The local geology consists of glacially derived unconsolidated sediments (alluvium) underlain by, and in contact with steep bedrock paleochannel walls that run approximately parallel to the Wabash River. The unconsolidated sediments are approximately 120 to 140 feet of primarily sand and gravel. The underlying and adjacent bedrock consists of shale and sandstone with limestone that dips to the southwest (USGS, 1994). The vertical wall of the U-shaped paleochannel is located east of the Facility. This feature represents the lateral contact between the unconsolidated sediments and sandstone, shale, and siltstone bedrock units.

A map showing the locations of Site monitoring wells and cross-section lines is shown as **Figure 1-2**.

Overburden Geology

The alluvial sediments generally consist of a downward coarsening sequence of clay, silt, sand, and gravel, as depicted in the cross sections provided as **Figures 1-3 and 1-4**. The upper 10 to 15 feet across the Site consists of varying thicknesses of fill, topsoil, and silty clay. Beneath the

uppermost strata are silty and sandy clays interbedded with sand and gravel deposits that are generally found in the upper 20 to 30 feet of the sequence. An approximately 4 to 6-foot thick layer of hard clay (glacial till) extends under the entire Site a depth of 45 to 50 feet. This till layer acts as a leaky aquitard that represents the vertical boundary between shallow and deep zones of the alluvial aquifer. Below the till is approximately 20 to 30 feet of fine- to coarse-grained sand. Underlying this sand is approximately 60 to 80 feet of fine- to coarse-grained sand and gravel.

Bedrock Geology

The bedrock underlying the Site is Pennsylvanian age sandstones of the Raccoon Creek Group and Carbondale Group and the Mississippian age siltstones and shale of the Borden Group (USGS, 1994). The sandstone of the Raccoon Creek Group has been described as massive and cross-bedded (Shaver, et al., 1986, p. 120-121).

The bedrock cores collected as part of the RMC RFI investigations showed the Pennsylvanian age sandstone to be underlain by intermixed siltstones and shale of the Borden Group. "*The Borden Group is composed dominantly of gray argillaceous siltstone and of shale. Fine-grained sandstone is common. Interbedded limestones form discontinuous lenses and facies*" (Shaver, et al., 1986, p. 17). The shale of this unit differs from the black, fissile shale in that it is more competent and massive with fewer fractures. The siltstones tend to be thickly bedded, uniform, and very competent. Small layers of limestone and sandstone were also encountered in various borings. These layers appear to be discontinuous and local to the individual area that each boring was installed in (Shaver, et al., 1986, p. 17-18).

Hydrogeology

The depth to groundwater at the Site typically ranges from 25 to 30 feet below ground surface (bgs). Groundwater flow in the alluvial aquifer is typically to the northwest toward the Wabash River. However, interaction between the alluvial aquifer and the Wabash River can impact the groundwater flow direction near the river, causing groundwater to flow subparallel to the river in a westerly direction.

Groundwater that enters bedrock in the upgradient areas east and southeast of the C&D Facility (i.e., RMC site) flows in a northwest direction to its discharge point, the alluvium, and ultimately the Wabash River (IDEM, 1999).

Recharge Sources

Primary recharge to the alluvium can be from seepage from the Wabash River, underflow from upstream areas, direct recharge from precipitation from topographically upgradient areas east and southeast of the Site (including intermittent streams (e.g., Ravine Park), and seepage from the buried bedrock unit that forms the east sidewall of the bedrock valley.

Aquifer Yield

Groundwater pumping and yield information for the alluvial aquifer was obtained from groundwater production wells owned by the City of Attica. These wells are located approximately 300 to 400 feet to the southwest of the C&D Site. The Attica city wells are completed in the deeper portion of the alluvial sand and gravel at a depth of approximately 110

to 120 feet bgs. These sand and gravel deposits can produce upwards of 1,600 gallons per minute (gpm), and have been test pumped at up to 2,500 plus gpm.

Flow Direction and Gradient

The direction of groundwater flow at the C&D Site has been shown to vary based on interaction with the Wabash River. Depth-to-water (DTW) measurements were collected from Facility monitoring wells on January 9, March 25, and June 3, 2008. Water table elevations for each well were calculated from the DTW data and potentiometer contour maps were drawn to estimate the flow direction and gradient (see **Figures 1-5, 1-6 and 1-7**). All three maps depict a shallow gradient; however, the potentiometer contours from January 9 and June 3 indicate a groundwater flowing toward, but sub-parallel to the Wabash River. Potentiometer contours from March 25 indicate groundwater flow towards the Wabash River. This variation in flow direction is likely due to water table interaction with the river level at the time DTW was measured.

Horizontal Gradient

The horizontal potentiometric gradient across the Site is very shallow and varies depending on the elevation of the Wabash River. The potentiometric gradient across the Site in January and June, as calculated from the DTW measurements, was 0.002 feet/foot in a south-southwesterly direction (sub-parallel to the Wabash River). The potentiometric gradient as determined from the March DTW measurement was 0.0003 feet/foot in a westerly direction (perpendicular to the Wabash River).

Vertical Gradient

Slight variations in groundwater elevation measurements from shallow/deep well pairs (MW-1/MW-1S, MW-2/MW-2S, MW-3/MW-3S, and MW-4/4S) (potentiometric head) indicate a leaky connection between the shallow and deeper portions of the alluvial aquifer. Small negative head differences (downward flow) were noted in well pairs 1, 2 and 3 during the January and June DTW measurements, while a positive head difference (upflow) was observed in March. MW-4/MW-4S exhibited a slight positive vertical gradient in the January and March DTW, with a less than 0.01 feet difference in the June DTW measurements. Both the January and June DTW events occurred when the Wabash River was elevated, indicating hydraulic communication between the river and the alluvial aquifer capable of altering the vertical gradient.

1.3.2 Water Resources

1.3.2.1 Surface Runoff and Surface Water Resources

Regional drainage flows in a southwestern direction off the western side of the Cincinnati Arch. The Wabash River is a trunk stream that flows generally to the southwest except in areas that were modified by ice age deposits or erosional surfaces of bedrock. The Wabash River flows across the Pennsylvanian sandstone in a shallow bedrock channel wall toward Attica where the river channel joins the deep buried bedrock channel that contains the thickest sand and gravel deposits.

At the C&D Facility, the deepest part of the buried channel is not under the Wabash River bed, but located beneath the Facility on the eastern bank of the Wabash River. There is more than 140 feet of sediment above the bottom of the buried channel beneath the Site.

Fountain County is within the drainage basin of the Wabash River. Most of the surface water in the county drains into the river through two main tributaries and their branches. In the northern part of the county, Shawnee Creek flows west and empties into the river south of Attica. Coal Creek, which drains a much larger area than Shawnee Creek, heads in Montgomery County, enters the east central part of Fountain County, and flows southwest. It empties into the Wabash River directly south of the county line. Several other creeks that have small watersheds empty into the Wabash River at various places (USDA, 2003).

One additional surface water body is the intermittent stream that is located upgradient approximately 1,400 feet southeast of the Site. The intermittent stream is located in Ravine Park which is south of the main plant of the former RMC site. The stream enters a lined culvert and is conveyed beneath the Facility through a subsurface drainage pipe that discharges to the Wabash River immediately northwest of the Site.

1.3.2.2 Groundwater Resources

The Attica Wellhead Protection Area is located southwest of the Facility along the Wabash River. The City of Attica water supply is withdrawn from production wells installed in the alluvium sand and gravel deposits along the east bank of the Wabash River. Some potable water is obtained from the Mississippian and Pennsylvanian shale and sandstone bedrock east and southeast of the Site. Regional groundwater flow is toward the northwest in the direction of the Wabash River. Beneath the Site, groundwater flow may be influenced by the Wabash River levels and by withdrawal from the City of Attica production wells.

Several aquifer types have been identified within the region of the Wabash River Basin, including (1) the unconsolidated aquifers (surficial sand and gravel outwash, buried alluvium sand and gravel deposits, and discontinuous buried sand and gravel) and the bedrock unit aquifers (upper weathered-bedrock zone of the Borden Group, sandstone of the Mansfield Formation, Mississippian and Silurian-Devonian carbonate rocks, and interbedded sandstone, shale, coal and limestone of the Raccoon Creek and Carbondale groups).

Primary recharge to the alluvium can be from seepage from the Wabash River, underflow from upstream areas, direct recharge from precipitation from topographically upgradient areas east and southeast of the Site (including intermittent streams (e.g., Ravine Park), and seepage from the buried bedrock unit that forms the east sidewall of the bedrock valley.

1.3.3 Soils

The soils in Fountain County were formed either during the Wisconsinan age glacial drift, outwash, and till, or from loess windblown silty and sandy material deposits, or from sandstone, siltstone, and shale residuum. Fountain County has been glaciated several times. Meltwater flowing from glaciers cut channels and rearranged the existing stream patterns. The glaciers and meltwater were the predominant source of soil deposition. The glaciers directly deposited till, a compact mixture of pebbles, sand, silt, and clay and the meltwater streams deposited sand and

gravel known as outwash. Along the edges of some of the larger streams, the wind deposited dune sand. The wind also deposited blankets of silt, known as loess, over most of the county.

The youngest deposits include sand and silt in the valleys of the present streams. The county is covered by a mantle of glacial drift that ranges in thickness from less than 5 feet on rock terraces along the valley of the Wabash River to more than 200 feet in some of the preglacial valleys. The terrace material along the Wabash River was carried in by glacial meltwater. Fountain County is completely covered by a mantle of loess that ranges from a few inches to more than 6 feet in thickness and is underlain by the landforms that existed when the loess was deposited. Deposits as much as 7 feet thick have been found. In about half of the county, the mantle of loess is 20 to 40 inches thick (USDA, 2003).

1.3.4 Climate

The climate in Fountain County is a humid continental climate characterized by warm summers and cold winters with an average winter temperature of 29 degrees Fahrenheit (°F) and an average summer temperature of 72 °F. The average annual total precipitation is 36.21 inches. Of this, about 51 percent usually falls in May through September. Thunderstorms occur on about 43 days each year, and most occur between April and August. The average seasonal snowfall is 22.3 inches. The greatest snow depth at any one time was 21 inches. On an average, 37 days per year have at least 1 inch of snow on the ground.

The average humidity may range from approximately 60 percent to 85 percent depending on the time of day. The prevailing wind is usually from the southwest but is from the west-northwest from January to March. Average windspeed is highest, 11 to 12 miles per hour, from February to April. Winds from all directions are greater than 16 knots 1.0 percent of the time. The annual average wind speed is 5.6 knots, and the maximum is 50 knots, which occurred in May of 1998 (USDA, 2003).

1.3.5 Operational History

The Site has been utilized as an industrial Facility since the late 1800s. The earliest available historical record (1886 Sanborn fire insurance map) identified the subject property as the Jas Martin & Company Grain Elevator, residential properties, a vacant foundry and a lumber yard. The current Site use as a battery manufacturing operation began in 1955. Prior to 1955, Sanborn fire maps identify the following companies or entities operating or occupying the Site: Attica Bridge and Machine Works, H.C. Martin & Company Lumber Yard, chicken coop, grain elevators, Attica Saw Mill, William McMurtrie Planning Mill, Wabash Valley Canning Company, Mackemer & Means Lumber Company, wood working shop, general store, Timber Products Corporation Saw Mill, Cabinet Craft Corporation (casket and radio cabinet manufacturer), Howard Radio Company (HRC), restaurant and a gasoline filling station.

Aerial photographs, previous reports and interviews indicated that the west side of the subject property was utilized as a drive up disposal area for the City of Attica. Operators of the disposal area accepted household trash and materials from drive up disposal, and, according to local citizens, may have accepted drums and industrial wastes (E&E, 1990). The entire disposal area covered an area of approximately 6 acres and it is alleged that deposited material was placed up to the Wabash River edge (E&E, 1990). Disposal activities were observed along the west side of the property in very close proximity to the Wabash River's bank in the aerial photographs

reviewed. Previous reports reviewed indicated that the disposal area closed in 1958. Aerial photographs indicated drive up disposal activities into the middle 1960s.

A portion of the original old foundry building observed on the 1886 fire insurance map is one of the central sections of the current east building. Major additions were completed in the 1940's and 1950's when the east side of the Site was occupied by HRC. Prior to 1955 HRC became Radio Materials Corporation (RMC). In approximately 1945, an unknown portion of the RMC property was leased to American Express Field Warehousing Corporation, a company whose operations are unknown. At this time, the west building was owned by Cabinet Craft, Incorporated (CCI), a manufacturer of burial caskets and radio cabinets for RMC. CCI assembled, stained, and finished these products at the Site. CCI also operated an on-site lumber mill, Forest Products, Incorporated (FPI). During this period, the drive up disposal area was operating in the area west of the buildings (E&E, 1990).

In 1955, the Electric Auto-Lite Company (EA-L) purchased a portion of the east building from RMC and began on-site battery manufacturing operations. RMC continued its operations in the remainder of the east building. The west building continued to house operations of CCI and FPI.

In 1960, EA-L purchased the west building and the remainder of the east building, although FPI's lumber mill remained. EA-L became a division of Eltra Corporation (EC) in 1963. New buildings were constructed west of the railroad track spur in 1963. EC purchased a 3.5-acre portion of the drive up disposal area in 1974. The purchased property was located northwest of the on-site buildings. Multiple additions were constructed on the southwest corner of the west building in the early and middle 1970s. EC also purchased the FPI property and the remaining Attica disposal area in 1976. This property purchase consisted of land located west of the western-most building, and extended to the Wabash River (E&E, 1990). A portion of the disposal area was covered in 1978 by EC for construction of the on-site parking lot. In 1979, EC became a division of Allied Chemical Corporation and the Facility became known as C&D Batteries. The Facility became known as C&D Charter Power Systems, Inc., in 1986 (E&E, 1990).

Based on aerial photography the alley way enclosure was constructed circa 1990. The front office building was added to the subject property in 2000, and the new tank farm building for the WWPTP was constructed in 2004.

1.4 FACILITY RCRA CORRECTIVE ACTION HISTORY

U.S.EPA tasked the E&E Field Investigation Team to conduct a Screening Site Inspection (SSI) of the Eltra Corporation C&D Batteries Division Site. C.C. Johnson and Malhotra, P.C. (CCJM), a subcontractor to E&E under the above contract, was responsible for conducting the investigation.

The Site was initially identified to the U.S.EPA in the form of a notification pursuant to section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The notification was prepared by William M. Reiter, Corporate Director for Pollution Control of Allied Chemical Corporation, of Morristown, New Jersey, the parent company of Eltra Corporation. The notification form listed the waste type as acids and heavy metals, and the waste source as a lead-acid battery plant (U.S.EPA, 1981). Subsequently, the Site was evaluated in the form of a Preliminary Assessment (PA), prepared by Scott McCone of E&E

and dated March 8, 1983. A revised executive summary was added to the PA by Mary Anne Hunter of the Indiana Department of Environmental Management (IDEM) and dated June 9, 1987 (U.S.EPA, 1987).

E&E prepared an SSI work plan for the C&D Site under Technical Directive Document (TDD) F05-8710-075, issued on October 15, 1987. The work plan for the C&D Site was approved on October 26, 1988. The SSI of the C&D Site was tasked on October 31, 1988, under the same TDD and was conducted on August 7, 8, and 9, 1989.

The E&E SSI included an interview with Site representatives, a reconnaissance inspection of the Site, the collection of environmental samples (twelve soil samples, three municipal well samples, two surface water samples, and nine soil gas samples), and obtaining photographs of current Site conditions and sampling locations.

In February 2005, a meeting was held between the City of Attica, Hannum, Wagle & Cline Engineering (HWC), U.S.EPA, IDEM, C&D, and RMC to discuss the trichloroethylene (TCE) concentration detected in samples from the City of Attica drinking water supply wells. As a result of this meeting, C&D agreed to install monitoring wells around their property to investigate concentrations of any possible contaminants originating from the Site. On January 5, 2006, C&D submitted to U.S.EPA a VOC Investigation Work Plan (Clayton 2006a). Clayton conducted detailed groundwater profiling at the Facility in addition to the installation and sampling of five monitoring wells in January and February 2006. On April 12, 2006, C&D provided to EPA the VOC Investigation Report on the findings of the January and February 2006 sampling event performed by Clayton. The results of the groundwater investigations summarized in VOC Investigation Report (Clayton, 2006b) provide the following conclusions:

- The Wabash River alluvial sequence in the vicinity of the Site is approximately 145 feet thick.

- Groundwater within the river alluvium in the vicinity of the Site flows from east-southeast to west-northwest to discharge to the Wabash River at an approximate hydraulic gradient of 0.0007.

- The results from collecting VOC groundwater grab samples during vertical profiling of the alluvial aquifer while performing hydrostratigraphic control borings agreed well with the groundwater sampling results from monitoring wells installed afterward.

- The elevated TCE concentration in upgradient groundwater monitoring wells, and the depth interval at which this TCE occurs within the river alluvium suggests a distal upgradient source of the TCE.

- The lack of any detection of TCE in groundwater in monitoring wells installed between the alleged landfill on the Site and Attica's water supply wells, and the direction of groundwater flow from east-southeast to west-northwest indicate that the Site does not contribute TCE or any other VOCs to the well field contamination.

- A till layer with a thickness of about 4 to 6 feet is present at a depth of about 47 to 55 feet bgs (elevation range of ~445 to 433 feet NGVD) in the vicinity of the C&D Site. This till

appears to separate the alluvium into two distinct water-bearing zones. Groundwater impacted with TCE in MW-1, MW-2 and MW-3 occurs at depths below this till indicating a distal contaminant source rather than a local source in the vicinity of the Site.

The conclusions of the VOC Investigation Report indicate a wide-spread source occurring at a distal location to the vicinity of the C&D Site. No evidence of TCE groundwater contamination was identified on the C&D Facility that is attributable to the Facility.

U.S.EPA Region 5 issued C&D the Administrative Order of Consent on January 18, 2007. As part of this Order, C&D submitted to U.S.EPA a Current Conditions Report on March 1, 2007 (Clayton, 2007), and the RFI Work Plan and Addendum in late 2007 (URS, 2007a,b). This RFI Report is another required submittal under the Order.

1.5 RFI SWMUS AND AOCS

The RFI SWMUs and AOCs (Areas) requiring investigation activities as identified in the CCR and subsequent discussions with U.S.EPA are listed below. Locations of the SWMUs and AOCs are illustrated on **Figure 1-8**.

- Area 1 - Wastewater Pretreatment Plant
- Area 2 - Current/Former Acid Lofts
- Area 3 - Lead Oxide Storage Silos
- Area 4 - Stormwater Sewers
- Area 5 - Exterior Former Hazardous Material Storage Areas
- Area 6 - Exterior Former Drum Storage Area and Transfer Pad
- Area 7 - Poly-mixing Room
- Area 8 - Historical Drive-Up Disposal Area
- Area 9 - Historical Former Waste and Dust Storage Room
- Area 10 - Southwest Historical Former Container Storage Area
- Area 11 - Northeastern Historical Former Container Storage Area
- Area 12 - Central Vacuum Systems
- Area 13 - Former Oxide Mill Area
- Area 14 - Former On-site Filling Station
- Area 15 - West Container Storage Area
- Area 16 - Former DC Generators Location

Physical descriptions of each Area and descriptions of the waste managed were previously provided in the CCR and are briefly provided in Section 4.2.3 of the RFI Work Plan.

1.6 ADDITIONAL INVESTIGATION AREAS

1.6.1 Surface Water

In response to the RFI Work Plan Addendum, December 4, 2007, sampling was conducted on the Wabash Riverbank adjacent to the Site. This additional sampling resulted in detected values of Site related constituents. In response to these detected constituents, additional sediment and surface water sampling was performed upstream, adjacent to and downstream of the Site. These locations were selected to assess the potential risk of exposure to Site related constituents in the Wabash River associated with recreational use. Sample locations are identified on **Figure 1-9.**

1.6.2 Sediments

In addition to surface water samples, sediment samples were also collected from the Wabash River at similar locations to the surface water samples as depicted on **Figure 1-9**. Sediment samples were also collected for ecological risk evaluation to be reported in Part II of the RFI Report.

1.6.3 Residential and Background Soils

Off-site residential soils were collected to the north and east of the facility to represent potential exposure of nearby residents to Site related contaminants to soils in their neighborhood. Soil samples were also collected to establish background concentrations of naturally occurring analytes (i.e., metals). Background soil samples were collected from seven soil boring locations in an area approximately five miles north of the City of Attica where it was considered unlikely to have been impacted by Site activities (see **Figure 1-10)**.

2.1 RFI GOALS AND OBJECTIVES

The RFI was performed to further characterize the release or potential for release from specific Areas to soil, groundwater, surface water and sediment and to assess the potential for adverse effects to human health and the environment as a result of releases from those units or areas.

Specifically, the objective of the RFI was to make one or more of the following recommendations for each Area investigated:

- No further action under the industrial use scenario (or other scenarios applicable to the Site):
- Additional data collection / or risk evaluation;
- Interim measures (if needed); or
- Corrective Measures Plan (CMP) or Corrective Measures Study (CMS), if needed.

The specific Areas investigated during the RFI are shown on **Figure 1-8**. Soil boring locations associated with this investigation are shown on **Figure 2-1**. The number and location of soil borings were selected based on historical analytical data from previous Site investigations. Soil boring locations were selected to provide sufficient coverage of the Areas to delineate the nature and extent of constituents of concern (COCs) in surface and subsurface soils and provide a sufficient number of samples for statistical characterization of the exposure endpoint concentration relative to receptors in the risk evaluation.

To achieve the RFI goals and objectives, groundwater samples were also collected and submitted for chemical analysis. Groundwater samples were collected from existing monitoring wells as well as groundwater monitoring wells installed during the RFI. Monitoring well locations are presented on **Figure 2-2**.

Surface water and sediment samples were collected to achieve the RFI goals and objectives as modified by the December 2007 RFI Work Plan Addendum. Surface water and sediment were sampled adjacent to, upstream and downstream of the Facility. Sample locations are depicted on **Figure 1-9**.

2.2 RFI SOIL INVESTIGATION METHODS

Sampling approaches and methods of the RFI program for soils are presented in the following subsections.

2.2.1 General Sampling Approach

The purpose of the soil investigation was to identify the nature and extent of any releases of hazardous waste or hazardous constituents to the environment; and provide information for a risk-based evaluation of the environmental media to which a release has been confirmed. The general approach applied to sampling for the RFI was devised to target locations where the value of the data from each sample was maximized to achieve these goals and reduce the need for additional sample collection.

RFI Areas were identified in the CCR based on current and historical Site usage, documented releases, and materials management practices. URS personnel conducted a preliminary field reconnaissance of each Area in March 2007 to confirm current manufacturing features, surface drainage patterns, and unit boundaries. The results of the reconnaissance (coupled with review of historical information) were then used to target the most likely soil boring locations and sample depths to confirm known and potential releases.

Sampling depth intervals were chosen for each Area to evaluate the nature and extent of any releases and to assess potential risks to the receptors identified. Sampling depth intervals for the RFI were identified as follows:

- Surface samples – from surface to 1 foot bgs;
- Mid-depth samples – from 4 to 5 feet bgs, and;
- Subsurface samples – unit specific (20 feet bgs at soil borings installed in Area 8 and various depths at remaining Areas based on subsurface drainage features).

Sampling depth intervals were chosen for each Area to evaluate the nature and extent of any releases and to assess potential risks to the receptors identified in the U.S.EPA approved RFI Work Plan. Subsurface samples not associated with subsurface drainage features were only analyzed if analytical results of the mid-depth samples indicated COC impacts were present. The intent of the subsurface samples collected at areas where subsurface drainage features were present was to determine if releases from these drainage features impacted subsurface soils and groundwater. Targeted boring terminating depths were presented in the RFI Work Plan.

2.2.2 Specific Soil Sampling Location and Methods

As indicated in the Field Sampling Plan, some of the Area boundaries overlap; therefore, soil borings installed in these Areas were used to evaluate the presence of COCs for multiple units. Analytical parameters were combined in these Areas to fulfill the analytical requirements for each SWMU or AOC. Soil sample collection depths in overlap Areas were also affected. Where overlap of Areas occurred, the soil boring was advanced to the terminating depth of the deepest soil boring and soil samples were collected at the designated depth intervals for each soil boring represented at that sample location.

In addition, U.S.EPA suggested (as described in the Addendum to RFI Work Plan dated December 4, 2007), grouping several sets of soil borings/soil samples as well as certain Areas that are either in close proximity or overlap. The intent of grouping the Areas was to assist in data review and statistical evaluation (potentially applicable to the tiered risk assessment to be completed in Part II of the RFI Report). The Areas were grouped as follows:

A) Areas 1, 4, 6, and 8;

B) Areas 5, 11, and 12;

C) Areas 2 and 3;

D) Areas 9, 12, and 16;

E) Areas 10, 12, and 13;

F) Area 15, and;

G) Area 7.

In addition, soils samples were collected from the potential riverbank recreation area adjacent to the Wabash River and west of the facility, the residential area to the north and east of the facility, and an off-site background area not affected by Site operations. Grouping of the areas was also intended to focus the human health risk assessment to broader areas to ensure statistical validity and adequate coverage to maximize the analytical data.

The following text contains a brief discussion of each Area as identified in the CCR, RFI Work Plan and RFI Work Plan Addendum, and includes a discussion of RFI sampling activities. Soil boring locations associated with this investigation are shown on **Figure 2-1**. Logs for soil borings are provided in Appendix A.

Area 1 – Wastewater Treatment Plant

According to the CCR, releases of acids, acid impacted water, and lead impacted liquids have occurred in the WWTP area. This area includes the former exterior wastewater storage silos, concrete walkway, drainage ditch, and ground surface leading to a drainage ditch on the northwest side of the Site.

During the RFI, URS installed nine soil borings in this area (CB-SB-2 through 10); CD-SB-2 through 5 and CD-SB-7 through CD-SB-10 were installed to a terminating depth of 5 feet bgs while CD-SB-6 was terminated at 20 feet bgs. Soil samples were collected from surface and mid-depth intervals at each soil boring location and from the subsurface depth interval (19 to 20 feet bgs) at CD-SB-6. Soil sample analyses included pH, total RCRA metals, total lead, Appendix IX metals, VOCs, SVOCs and PCBs.

Area 2 – Current and Former Acid Storage Lofts

Documented operational releases have been attributed to tanker overfills and spill/leak incidents. Area 2 was formerly located in a former alley/former railroad spur area. The alley was enclosed in the early 1990s. Spills of lead oxide dust documented in Area 3 may have impacted soils in Area 2.

Two soil borings were proposed for this area, CD-SB-11 and 12. However, due to limited access created by current production equipment, no samples were collected in Area 2. The nearest samples are at CD-SB-16 (Area 12) in the former alley to the southwest, and CD-SB-14 in Area 3, immediately northeast of Area 2. Area 2 is grouped with Area 3.

Area 3 – Lead Oxide Storage Silos

Releases of lead oxide dust from the storage silos during tanker truck loading operations have been documented in Area 3. Areas beneath the storage silos, concrete alley and storm drains in the alley may have been impacted by releases of the lead oxide dust.

URS installed three soil borings in Area 3 (CD-SB-13 through 15). Soil borings CD-SB-13 and CD-SB-15 were terminated at 5 feet bgs while CD-SB-14 was terminated at 10 feet bgs. Soil samples were analyzed for pH, total lead, Appendix IX metals, VOCs and SVOCs.

Area 4 – Stormwater Sewers

According to the CCR, releases from various Areas may have impacted the stormwater sewer. Documented releases include acids, lead oxide dust, and contact cooling water.

To provide adequate coverage of the stormwater sewers, URS installed ten soil borings at various locations across the Site. Soil borings were also colocated with soil borings installed in areas overlapping the stormwater sewers. Soil borings CD-SB-16 through 18 and CD-SB-20 were area specific while the remaining six soil borings were colocated with soil borings CD-SB-6 and 9 (Area 1), CD-SB-13 and 14 (Area 3), CD-SB-21 (Area 9), and corresponding depth and CD-SB-39 (Area 12).

Soil borings were terminated at depths ranging from 5 to 20 feet bgs, depending on the presence and corresponding depth of stormwater sewers at the boring locations. Soil samples were collected from the surface, mid-depth, and subsurface depth intervals. Soil samples were analyzed for one or more of the following: pH, lead, Appendix IX metals, VOCs, SVOCs, and PCBs.

Area 5 – Exterior Former Hazardous Waste Materials Storage Area

According to the CCR, no documented releases were identified in the former hazardous waste materials storage area. However, additional investigation was warranted to determine if impacts of the potential COCs exist in this area.

URS installed two soil borings (CD-SB-22 and 23) to a terminating depth of 5 feet bgs. Soil samples were collected from surface and mid-depth sample intervals and analyzed for Appendix IX metals, VOCs, and SVOCs at CD-SB-22 and pH, VOCs, and RCRA metals at CD-SB-23.

Area 6 – Exterior Former Drum Storage Area and Transfer Pad

Three storage areas have been documented in historical aerial photographs and previous site assessments. No documented releases from staged materials were noted in this area; however, this area was included within previous releases from Area 1.

Since releases from Area 1 may have also impacted Area 6, soil borings CD-SB-1 and CD-SB-4 installed in Area 1 were also used to evaluate potential impacts to Area 6. Soil samples were collected from surface and mid-depth sample intervals and analyzed for pH and Appendix IX metals, VOCs, and SVOCs at CD-SB-1 and lead at CD-SB-2.

Area 7 – Poly-Mixing Room

This area was identified as a SWMU based on the historical use of and storage of solvents in this area, including PCE, since 1982. No documented releases from this area were identified during site research as presented in the CCR. Additional investigation was necessary to determine if impacted soils in the vicinity of Area 2 exist based on the historical usage of this area.

URS installed two soil borings in Area 7 to a terminating depth of 5 feet bgs. Soil samples were collected from surface and mid-depth sample intervals and analyzed for pH and Appendix IX metals, VOCs, and SVOCs (CD-SB-25) and VOCs only (CD-SB-26).

Area 8 – Historical Drive Up Disposal Area

According to the CCR, dumping activities occurred from the early 1900s through the 1960s in this area. The dump area reportedly accepted household trash and materials from drive-up disposal.

URS installed nine soil borings in Area 8. Soil borings were colocated with soil borings installed in Areas 1 and 15. Each soil boring was advanced to a terminating depth of 20 feet bgs to investigate the nature and extent of materials previously disposed in the Area. Soil samples were collected from surface, mid-depth, and subsurface depth intervals and analyzed for one or more of the following: pH, VOCs, PAH via 8270, RCRA metals, Appendix IX metals, and SVOCs.

Area 9 – Historical Former Waste and Dust Storage Room

Area 9 was identified as a SWMU based on a 1948 fire insurance map which identified the room as a "waste and dust storage room". The area is currently utilized as a compressor room.

URS installed one soil boring in the area, to a terminating depth of 10 feet bgs. The soil boring was colocated with soil boring CD-SB-21 that was installed in Area 4 as part of the stormwater sewer investigation. Soil samples were collected from surface, mid-depth, and subsurface depth intervals and analyzed for pH, Appendix IX metals, VOCs, and SVOCs.

Area 10 – Southwest Historical Former Container Storage Area

A large container storage area was identified in a 1960s historical aerial photograph where the current Expander Mill and warehouse building is located. What appeared to be drums, ASTs, and other unknown items were staged in this area. This area was identified as a SWMU since the material storage practices are unknown. Additional investigation was necessary to evaluate whether impacts to subsurface soils in the vicinity of Area 10 exist based on the historical usage of this area.

URS installed two soil borings to a terminating depth of 5 feet bgs. Soil samples were collected from the surface and mid-depth sample intervals and analyzed for pH and Appendix IX metals, VOCs, and SVOCs at CD-SB-34 and VOCs, PAHs, and RCRA metals at CD-SB-35.

Area 11 – Northeastern Historical Former Container Storage Area

A container storage area was observed on the west side near the northeast end of the railroad spur/concrete alley in historical aerial photographs dated 1988 and 1993. The storage area appeared to be concrete. The area has been identified as a SWMU since the historical material storage practices in this area are unknown. The former container storage area is located under a concrete slab in the shipping building which also contains the Facility's hazardous waste storage area.

URS installed two soil borings to a terminating depth of 5 feet bgs. Soil samples were collected at surface and mid-depth intervals and analyzed for VOCs and RCRA metals at CD-SB-36 and pH and Appendix IX metals, VOCs, and SVOCs at CD-SB-37.

Area 12 – Central Vacuum System / Baghouses

This area consists of four former baghouse locations and has been identified as a SWMU based on the historical operations of the baghouses as the most likely locations for potential lead impacts to the Site. The central vacuum system utilizes five internally located baghouses.

URS installed three soil borings associated with separate baghouse areas, one of which was colocated with CD-SB-16 installed in Area 4. Soil samples were collected at surface and mid-depth sample intervals at each soil boring location and from the subsurface depth interval at CD-SB-16 (14 to 15 feet bgs) and CD-SB-39 (9 to 10 feet bgs). Soil samples were analyzed for one or more of the following: pH, VOCs, lead, Appendix IX metals, and SVOCs.

Area 13 – Former Oxide Mill Area

According to the CCR, historical operational releases to emissions and possible soil impacts were noted in documents reviewed during the CCR in the area around the former oxide mill. Potential lead impacts may exist around the perimeter of the oxide mill building and lead oxide loading area.

URS installed 8 soil borings in Area 13, including a colocated soil boring, CD-SB-40 installed in Area 4. With the exception of CD-SB-40, each soil boring was terminated at 5 feet bgs. CD-SB-40 was terminated at 6.5 feet bgs due to the presence of a subsurface drainage feature. Soil samples were analyzed for one or more of the following: pH, lead, Appendix IX metals, VOCs, and SVOCs.

Area 14 – Former On-Site Filling Station

A review of historical Sanborn fire insurance maps and aerial photographs indicates a gasoline filling station was located on the south side of the Site (currently used for employee parking). The property was acquired by C&D in 2000. The previous owner indicated all USTs had been removed. However, during Site development as a parking area, five USTs were excavated and removed. Thirty soil samples were collected from soils excavated from the tank pit and analyzed for total petroleum hydrocarbons (TPH). Analytical results indicate TPH was detected at 12 parts per million (ppm) in one soil sample. TPH concentrations in the remaining soil samples were below the laboratory detection limit of 10 ppm. As agreed upon in the U.S.EPA approved RFI Work Plan, no additional investigation is required for this area.

Area 15 – West Container Storage Area

Drums, an AST and other debris were observed along the western and northwestern perimeter of the former western employee parking areas during a review of aerial photographs. The parking area did not appear paved in the aerial photographs. Based on Site interviews, containers in this area would have been empty.

URS installed six soil borings in this area. Because the boundaries of Area 15 and Area 8 overlap, three soil borings were colocated (CD-SB-27, 28, and 31). Three samples were collected at these locations to a depth of 20 feet each. Samples from CD-SB-31 were analyzed for VOCs, PAHs and RCRA metals. Samples from CD-SB-27 and 28 were analyzed for pH, Appendix IX metals, VOCs, SVOCs and PCBs.

Area 16 – DC Generator Area

C&D indicated that low level PCBs were contained in two former DC Generators used at the Site. The generators were taken out of service in 1988. As a result of the DC Generators having contained PCBs, C&D has identified the area where the DC Generators were located as a SWMU/AOC to be further investigated.

URS installed two soil borings to a terminating depth of 5 feet bgs. Soil samples (CD-SB-53 and 54) were collected at surface and mid-depth depth intervals and analyzed for pH and PCBs.

Riverbank Area Sampling (Recreational Use)

Soil samples were collected from the Wabash Riverbank area to determine if Site constituents had mobilized to the riverbank where recreational human use might result in exposure. Samples were collected on two occasions and included samples CD-SB-55, 56, 57, 58, 59, 87, 88, 89, 90, 91, 92, 93, 94, and 95. Samples were analyzed for PAHs and Appendix IX metals. Soils were collected as surface samples (0 to 1 feet bgs) only.

Off-Site Residential Properties Sampling

Off-site residential soils were collected to the north and east of the facility. A total of 21 samples, one foot deep, were collected; sample numbers included CD-SB-60 through 66, and CD-SB-74 through 86. Samples were analyzed for pH, PAHs and Appendix IX metals.

Background Sampling

During the RFI, soil samples were collected to establish background concentrations of naturally occurring analytes (i.e., metals). Background soil samples were collected from seven (7) soil boring locations in an area unlikely to have been impacted by Site activities; sample locations included CD-SB-67 through 73. The background soil borings terminated at 5 feet bgs. Soil samples were collected at surface and mid-depth intervals and analyzed for pH, PAHs and Appendix IX metals. The locations were selected to meet the following criteria:

- Soils types are similar to those found at the C&D Site;
- No stormwater runoff has affected these areas;
- No flooding from any adjacent streams has occurred in these areas;
- There have been no previous industrial activities in these areas; and
- There has been no inadvertent “dumping” from outside entities.

Background sample locations met these criteria.

Analytical Methods

Soil samples submitted for chemical analyses were analyzed for one or more of the following constituents’ USEPA SW-846 methodologies, unless otherwise noted:

- VOCs – Method 8260B/5035A (Appendix IX)
- PAHs and SVOCs – Method 8270C (Appendix IX)
- Metals – Method 6010B / 7471A (Hg) (Appendix IX)
- Total Lead – Method 6010B
- PCBs – Method 8082

Sampling and analytical methods, sampling containers, preservation, and hold times for soil samples collected during the RFI are summarized in **Table 4.1** of the RFI Work Plan Quality Assurance Project Plan (QAPP). Note that not all analyses were conducted on all soil samples

collected from each AOC or SWMU. Rather, soil samples were submitted for chemical analysis according to **Table 4-1** of the RFI Work Plan based on unit characteristics and historical use.

Sample Identification, Handling, and Documentation

Soil samples were given a unique sample identification number in the field upon sample collection. An example of the sample identification system used for soil samples in the RFI is as follows:

CD-SB-01-(0-1)

CD – denotes C&D Technologies;

SB-01 – denotes soil boring number;

(0 to 1) – denotes soil sample was collected from surface to 1 feet bgs

Subsequent to sample collection and labeling, soil samples were placed on ice in an insulated cooler. The sample identification, date and time of collection, and analytical were recorded in the field notebook. Samples were transported under standard URS chain-of-custody protocol according to Section 5 of the RFI Work Plan QAPP.

2.3 RFI GROUNDWATER INVESTIGATION METHODS

Analytical results of a VOC groundwater investigation conducted at the Site in January and February 2006 indicate low concentrations of TCE were detected in groundwater samples collected from three of five on-site monitoring wells (Clayton, 2006b). Monitoring wells installed during the 2006 investigation were screened in the deeper water bearing zone. The Clayton report indicated the deeper groundwater bearing zone is separated from the shallow water bearing zone by a dense gray till layer present at approximately 47 to 55 feet bgs. TCE was not detected in grab samples collected from the shallow water bearing zone during vertical profiling conducted during monitoring well installation.

The RFI groundwater investigation was focused on the shallow water bearing zone to determine if TCE and/or other VOCs and lead are present that could potentially impact the deeper water bearing zone. As indicated in the RFI Work Plan (URS, 2007a), URS proposed to install four groundwater monitoring wells (MW-1S through -4S) to assess groundwater quality in the shallow water bearing zone. However, U.S.EPA suggested the proposed monitoring well locations and existing monitoring well network were not sufficient to address groundwater quality and groundwater flow direction along the western side of the Site adjacent to the Wabash River. C&D agreed to install three additional shallow groundwater monitoring wells (MW-6S through -8S) along the western side of the Site in Areas 8 and 15 to assess groundwater quality and establish additional data points to confirm groundwater flow direction.

Upon review of analytical data from soil borings CD-SB-28, 31, and 32, and conversations with U.S.EPA, it was decided two additional monitoring wells were needed to determine if elevated lead concentrations detected at these soil sample locations were impacting groundwater. C&D agreed to install a monitoring well (MW-9S) adjacent to CD-SB-28, but contended that existing well MW-7S was sufficient to determine impacts at CD-SB-31 and CD-SB-32 since the monitoring well appeared to be downgradient of these soil boring locations. Additionally,

U.S.EPA recommended additional datapoints were needed to sufficiently determine that groundwater flow direction was sub-parallel with the river and suggested using the upgradient RMC monitoring wells for potentiometric purposes. C&D, however, subsequently agreed to install both wells (MW-9S and MW-10S) to evaluate shallow groundwater quality for Appendix IX metals.

The current sitewide groundwater monitoring well network consists of five deeper groundwater monitoring wells (MW-1 through 5) and nine shallow groundwater monitoring wells (MW-1S through MW-4S and MW-6S through MW-10S), although MW-9S and 10S may be unnecessary following a confirming analysis for metals associated with soil borings CD-SB-28, 31, and 32.

2.3.1 Regional Hydrogeology

The Site is located in the Wabash River Valley, which is underlain by approximately 140 feet of unconsolidated, valley-train glaciofluvial deposits consisting of sand and gravel.

The local geology consists of glacially derived unconsolidated sediments (alluvium) underlain by and in contact with steep bedrock valley walls that run approximately parallel to the Wabash River. The underlying and adjacent bedrock consists of shale and sandstone with limestone that dips to the southwest (USGS, 1994). East of the facility lies the contact between the unconsolidated sediments and sandstone, shale, and siltstone bedrock units.

Water is produced from the sand and gravel of Pleistocene age that is overlain by till (USGS, 1994). The depth to groundwater at the Site (as measured in three events in 2008) typically ranges from 15 to 20 feet bgs in wells nearest the riverbank, and 20 to 30 feet bgs in wells away from the river. Groundwater flow in the alluvial aquifer is typically to the northwest toward the Wabash River. However, interaction between the alluvial aquifer and the Wabash River can impact the groundwater flow direction near the river, causing groundwater to flow subparallel to the river in a westerly direction.

Groundwater that enters bedrock in the upgradient areas east and southeast of the C&D facility (i.e., RMC site) flows in a northwest direction to its discharge point, the alluvium, and ultimately the Wabash River (IDEM, 1999). Groundwater flow in both the bedrock and alluvial aquifers is depicted on **Figure 2-3**.

Groundwater production wells owned by the City of Attica are located approximately 300 to 400 feet to the southwest of the Site. These wells are completed in the alluvial sand and gravel deposits along the east bank of the Wabash River at a depth of approximately 110 to 120 feet bgs. The RMC EI CA750 Documentation of EI Determination indicates that groundwater flow is influenced by these wells.

Depth to water (DTW) measurements were collected from the Site monitoring wells on January 9, March 25, and June 3, 2008. Water table elevations for each well were calculated from the DTW data and potentiometer contour maps were drawn to estimate the flow direction and gradient (see **Figures 1-5, 1-6, and 1-7**). All three maps depict a shallow gradient; however, the potentiometer contours from January 9 and June 3 indicate a groundwater flowing toward, but sub-parallel to the Wabash River. Potentiometer contours from March 25 indicate groundwater flow towards the Wabash River. This variation in flow direction is likely due to water table interaction with the river level at the time DTW was measured.

2.3.2 Groundwater Monitoring Well Installation

Groundwater monitoring wells were installed in accordance with the procedures outlined in the Field Sampling Plan of the U.S.EPA-approved Phase I RFI work plan. At each monitoring well location, a direct push drill rig was used to install the soil boring from ground surface to a terminating depth determined to be immediately above the till layer. Soil samples were collected continuously where possible, using stainless steel drill tooling and disposable acetate liners in general accordance with ASTM D-1586. Upon sample collection, each liner was opened and soils were classified by a URS on-site representative according to the USCS soil classification.

Upon reaching the terminating depth, the soil boring was overdrilled using hollow-stem auger drilling techniques. Since the soil boring had previously been completed using a direct push drill rig, no additional subsurface soil samples were collected for analytical or classification purposes. Due to auger refusal, monitoring wells MW-1S and MW-2S were installed using sonic drilling technology.

Monitoring wells MW-9S and MW-10S were installed during field activities conducted in June 2008. Because of difficult subsurface conditions encountered during the installation of MW-1S and MW-2S, it was decided to utilize sonic drilling technology to install these monitoring wells. Soil samples were collected continuously from surface to a terminating depth determined to be immediately above the till layer. Upon completion of each depth interval, soil samples were extruded from the drill tooling and classified by a URS representative according to the USCS soil classification system.

The monitoring wells were constructed according to the Field Sampling Plan using 2.0-inch diameter schedule 40 PVC flush-threaded well casing and well screen and riser. The monitoring well was constructed using a 10 feet length of 0.010-inch slotted well screen connected to solid well casing. The well material was lowered down through the hollow stem auger to the terminating depth. Approximately 0.5 foot of filter sand was added to the bottom of the boring prior to installing the well casing. A No. 3 silica sand pack was placed around the well screen as the hollow stem augers sonic drill casing were periodically retracted. The sand pack was extended approximately 2 feet above the top of the screened interval. An approximately 2 feet bentonite pellet seal was placed over the filter pack and hydrated with potable water. The remaining annular space was backfilled from the bentonite seal to surface with a cement grout/bentonite slurry using a tremie pipe. The surface of each well was completed with a 2 by 2 feet concrete pad and a secure well vault.

Following installation, each monitoring well was developed to ensure well integrity, remove fines from the well, and create an effective filter pack around the screen interval. A submersible Whaler ® pump with dedicated high-density polyethylene (HDPE) tubing was used for monitoring well development. Prior to development, total well depth and depth to water were measured using an acoustic water level indicator. The well volume at each monitoring well was then calculated using these measurements. Groundwater quality measurements for pH, specific conductance, turbidity, dissolved oxygen, and temperature were recorded during development using a water quality meter. Water quality measurements were recorded upon the evacuation of each well volume. During development, the pump was raised and lowered throughout the screened interval to ensure that suspended sediments and fines were removed to the extent possible. Four to five well volumes were typically evacuated from each monitoring well during

development. Well development was considered complete when groundwater quality measurements stabilized and no visible fines or sediment were observed in the development water.

2.3.3 Groundwater Sample Collection

Groundwater samples were collected using low-flow purging and sampling techniques per the Low-Flow (Minimal Drawdown) Ground Water Sampling Procedures (U.S.EPA, 1996a). Prior to sample collection, a QED Sample Pro® submersible bladder pump, equipped with a disposable polyethylene bladder and dedicated high-density polyethylene (HDPE) tubing, was positioned in the middle to upper portion of the screened interval of the well to minimize the disturbance of suspended sediment that may be present in the bottom of the well casing. Ground water was purged from the well at a flow rate between 100 and 500 mL/minute. Purge water was placed in buckets and then transferred to 55-gallon drums for subsequent disposal. During purging, water quality parameters including temperature, pH, specific conductance, turbidity, oxidation-reduction potential (ORP), and dissolved oxygen were recorded at regular intervals (typically 10 minutes) until the parameters stabilized. Well draw down was monitored during purging using a water level indicator. Upon achieving parameter stabilization (i.e., temperature constant for three consecutive readings, pH ± 0.1 standard unit, specific conductance ± 10%), ground water samples were collected using low-flow techniques. The bladder pump was decontaminated between each monitoring well following the standard EPA protocol previously described. A new pump bladder and tubing were installed for each monitoring well.

2.4 RFI SURFACE WATER AND SEDIMENT INVESTIGATION METHODS

Initially, surface water and sediment sampling was not included in the RFI Work Plan. Following meetings with Region V EPA, an addendum to the Work Plan (URS, 2007b) was prepared December 4, 2007. The addendum included issues related to human health and ecological exposures to Site related constituents in sediments and surface water of the Wabash River. EPA recommended that a complete pathway for groundwater to sediments be evaluated and that the viability and function of the benthic community (in the river) be assessed. Based on these recommendations, surface water and sediment sampling was conducted in the Wabash River in June 2008. The sediment sampling relative to human health exposure included sample collection from gravel bars/potential wading areas exposed during low water near the mouth of the creek that discharges at the Facility and at a location in the Riverfront park, downstream of the facility. Background locations were sampled upstream of the facility. The surface water and sediment sample locations utilized for the human health exposure scenario are depicted on **Figure 1-9.**

It was determined that proposed transects and sampling locations would be verified in the field prior to sampling based upon the river morphology (i.e., gravel bars, depositional areas). Sediment samples collected were potentially applicable to both Ecological and Human Health Assessment, however for clarity, separate designations were given in the field. The number of surface water samples selected was six, while the number of sediment samples for human health assessment was ten; five were collected from the background area and five from potential wading exposure locations. Eight sediment samples were collected for ecological assessment.

Surface water and sediment samples were collected June 5 and 6, 2008. The location of the surface water and sediment samples is as follows:

- Surface water samples (six collected):
  - Three upstream locations on one transect (composited into one sample labeled SW-BKG 01);
  - Two locations (SW-01 and SW-02) along near bank adjacent to the facility (downstream of first drainage ditch confluence); and
  - One location (SW-03) downstream of old railroad bridge and second drainage ditch.
- Sediment samples (18 collected):
  - Five samples were collected from an upstream gravel bar on the right descending bank;
  - Three samples were collected on the gravel bar adjacent to the upstream end of the facility on the left descending bank; and
  - Two samples were collected on the left descending bank adjacent to the boat ramp area of the City Park.
  - Eight additional sediment samples were collected for use in the ecological assessment (to be reported in the Part II RFI report).

Sediments were collected using a clam-shell sampling device (ponar dredge). Submerged sediments were collected up to a depth from 2 to 6 inches, depending on sediment type. During the sampling event, water elevation in the Wabash River was only a few feet below flood stage and was observed to be a couple of feet below the bank in most places. No exposed sediment was observed or sampled.

Sediment samples collected for Human Health Assessment were collected from gravel bars and depositional areas where recreational users may wade. These gravel bars and shallow areas were submerged during the time of the survey. The depth was determined from the survey boat with a depth finder. Water depth in the channel was typically 12 to 15 feet, while depth over the gravel bars was 5 to 7 feet. Water depth adjacent to the park was generally over 12 feet deep as the banks were generally steep sloped. The only area at the park where wading was determined to potentially occur was near the boat ramp and occupied a relatively small area.

Sediment samples for Ecological Assessment were collected at approximately 50 feet, 150 feet and 250 feet from the left descending bank (facility side) along the proposed transects. Substrate size hindered the collection of sediment in some locations, as cobble sized material was encountered in a number of locations. Generally, sediment consisted of fine to medium sand. A limited amount of muck was sampled in depositional areas where slower water velocity allowed the settling of finer material. Sediment samples were analyzed for total metals including mercury, VOCs, SVOCs and TOC. Sediment samples were collected for QA/QC as follows:

- CD-SED-06-MS
- CD-SED-06-MSD
- CD-SED-BKG-01-MS
- CD-SED-BKG-01-MSD

- CD-SED-07-dup
- CD-SED-BKG-02-dup

Surface water samples were collected at mid-water depth using a peristaltic pump and analyzed for total and dissolved metals including mercury, VOCs, SVOCs and hardness. Samples were collected for total analysis, followed by a sample for filtered analysis. In addition, a Horiba water quality meter was used to collect in-situ parameters: temperature, pH, specific conductance, turbidity and dissolved oxygen. All tubing was replaced between water samples to avoid cross contamination. QA/QC samples were collected from the background water sample:

- CD-SW-BKG-MS
- CD-SW-BKG-MSD
- CD-SW-BKG-dup

2.5 HUMAN HEALTH RISK EVALUATION METHODS

Analytical results for environmental media collected under the RFI program are being evaluated using a tiered risk-based approach, consistent with U.S.EPA guidance (U.S.EPA, 1989b). The tiered risk-based approach facilitates efficient decision making regarding the need for corrective measures and streamlines the investigation and remediation by focusing on those chemicals and SWMUs and AOCs that are most likely to present a potential risk. Data were initially evaluated using the Tier 1 screening process as described below to: 1) aid in the determination of whether further investigation is warranted, and 2) help define the scope of any further investigation, where appropriate. The fundamentals of the tiered risk-based approach are summarized below:

- Tier 1 – In Tier 1, chemical concentrations are compared with readily available conservative risk-based criteria and Facility-specific background concentrations to identify COCs. The Tier 1 screening was conducted using available IDEM RISC levels and, if unavailable, U.S.EPA Region 9 Preliminary Remediation Goals (PRGs).
- Tier 2 – The Tier 2 risk evaluation will consist of a Facility-specific risk evaluation conducted on the COCs identified in Tier 1. The risk evaluation will follow U.S.EPA guidance. The results will be compared with a cumulative target risk level of 10^{-4} for carcinogens and a cumulative target hazard index of one for noncarcinogens, the latter may be required based on cumulative toxic effects on the same target organs.
- Tier 3 - If COCs are identified following the Tier 2 risk evaluation, further evaluation may be conducted, i.e., a Tier 3 risk evaluation. In a Tier 3 human health risk assessment, exposure assessment and risk characterization may be refined using several techniques.

The results of the tiered risk evaluations will be used to identify if no further action is appropriate, or where further evaluations or remedial actions are necessary at the Facility. The quantitative risk evaluation will be performed using U.S.EPA risk assessment guidance (U.S.EPA, 1989b; 1991; 1992a, b; 1997, 2004a) and information from the scientific literature.

This Part I RFI Report supports the Environment Indicators (EI) Assessment provided July 30, 2008. This includes the Tier 1 risk assessment for human exposures to potential Site-related

constituents in soil, groundwater, sediment and surface water, as well as a Tier 2 assessment for exposure to lead in soil only.

2.5.1 Human Health Conceptual Site Model

Conceptual Site Models (CSMs) are used to guide evaluation of the potential risks to human health and the environment associated with the Site. CSMs are evolving depictions of the current best understanding of exposure potential. They present graphical information about sources of chemicals and the movement of chemicals through environmental media to locations where human and ecological receptors may come into contact.

Exposure pathways are determined by environmental conditions (e.g., location of surface waters, groundwater, vegetative cover, prevailing wind direction, meteorological factors), by the potential for chemical migration from one environmental medium (e.g., soil, groundwater, surface water, or air) to another, and by the general activities of the potentially exposed populations (e.g., exposure frequency and duration, type of activity in the area of interest). Each pathway describes a unique mechanism by which a population or an individual receptor may be exposed to a chemical(s). Although several potential pathways may exist, not all are usually complete or significant. For a pathway to be complete, the following conditions must exist (U.S.EPA, 1989b):

- A source and mechanism of chemical release to the environment;
- An environmental transport medium (e.g., air, water, soil);
- A point of potential receptor contact with the medium; and
- An exposure route at the contact point (e.g., inhalation, ingestion, dermal contact).

Those pathways identified as potentially complete are used to define sampling needs in the RFI, and will be examined further in the risk evaluation process. Potentially complete exposure pathways found to be insignificant (i.e., those for which no chemicals are identified at concentrations greater than screening criteria) will not be retained for further evaluation in the risk evaluation.

A preliminary CSM is presented in **Figure 2-4** that identifies potential sources of chemicals, environmental release mechanisms, exposure pathways, exposure routes, and human receptors specific to interior or covered SWMUs at the Site. Potential exposure pathways have been identified as potentially complete or incomplete. The majority of the SWMUs at the Facility are located in enclosed areas of the Facility infrastructure or below concrete or pavement, and there is no longer any evidence of waste handling activities. In these areas, direct soil exposures to industrial workers are incomplete because there is a barrier (e.g., floors or pavement) between soils and workers. Rather, remnants of historical releases are associated with soils beneath floors or paved areas. In these areas, potentially complete direct exposure pathways exist for maintenance/utility workers, or future construction workers. If volatile chemicals are present in subsurface soils or groundwater, inhalation via vapor intrusion represents a potential complete exposure pathway for industrial workers, as well as maintenance/utility, or construction workers. Chemicals in the subsurface soils may also leach to groundwater, where off-site migration may contribute to drinking water supplies. Groundwater may also discharge to the adjacent surface

water in the Wabash River, where potentially bioaccumulative chemicals may accumulate in fish and subsequently be caught and ingested by anglers.

A preliminary CSM depicting potential transport and exposure pathways for exterior SWMUs and AOCs is shown in **Figure 2-5**. SWMUs and AOCs that are currently, or were historically exterior to buildings could be subjected to wind and precipitation. Windblown particulates may have been deposited on soils adjacent to the Facility, including off-site residential and recreational areas. Precipitation subjects materials to stormwater runoff. The majority of on-site runoff is currently captured in the stormwater management system which is subject to regular monitoring. Soils on or adjacent to the Site could also be subject to erosion, whereby particulates deposited on soils historically, are transported downgradient toward the adjacent Wabash River and deposited in the riparian zone or in river sediments. In addition to soil erosion, river sediments and surface water may also be impacted by groundwater discharge.

Based on knowledge of current conditions at the Site and surrounding areas, the following text summarizes the exposure pathways evaluation for potential receptor populations at the Site:

- **Industrial Worker –** Industrial workers, in general, are unlikely to be exposed to soils because the majority of the Site is covered with buildings or pavement. There is a gravel parking area to the north of the Facility; however, this area is limited in extent and covers any soils that may historically have been exposed. Therefore, industrial workers in exterior areas are unlikely to experience significant exposure through any medium. For industrial workers in interior settings, vapor intrusion could occur in areas where solvents were historically released and act as a continuing source to building interiors. Therefore, the only significant pathway for the current or future industrial worker is inhalation of surface soil-derived or groundwater-derived vapors.
- **On-Site Construction Worker -** Construction workers may potentially be exposed to chemicals in surface and subsurface soils during future Site construction activities. Construction activities are assumed to be limited to the upper 5 feet bgs; therefore, subsurface soil depths are assumed to be 1 to 5 feet bgs. Potentially complete exposure pathways include incidental ingestion and dermal contact with surface and subsurface soils, and inhalation of soil-derived particulates and vapors. Dermal exposure to groundwater is not expected to be a complete exposure pathway because water depths were measured to be 25 to 36 feet bgs (Clayton, 2006). As groundwater depths are well below 5 feet bgs, exposure to groundwater is considered an incomplete pathway for the construction worker.
- **On-Site Maintenance/Utility Worker -** A maintenance/utility worker may potentially be exposed to chemicals in surface and subsurface soils during the installation and repair of subsurface utility lines. Subsurface soil depths were identified as 1 to 5 ft bgs based on current and anticipated future industrial activities. However, local areas with utilities at greater depths (up to 20 feet bgs) occur to the northeast of the Facility. Exposure pathways evaluated include incidental ingestion and dermal contact with soils, and inhalation of soil-derived particulates and vapors. Dermal exposure to chemicals present in groundwater is considered to be incomplete if the assumed maximum excavation depth is limited to 20 feet bgs.

- **Off-Site Resident** – Windblown dust associated with past releases may have been deposited on soils of residents adjacent to the Facility. Dermal exposure and incidental ingestion of soils are potentially complete exposure pathways. As noted previously, a municipal groundwater withdrawal well is located south of the Facility. Groundwater flow direction is to the west northwest and away from the residences located to the northeast. Vapor intrusion could potentially occur if VOCs have contaminated groundwater plumes migrating off-site.
- **Recreational User** – There is evidence of recreational use of the riparian area adjacent to the Facility along the Wabash River. Exposure scenarios may be complete for a recreational receptor that may walk or picnic along the shoreline of the Wabash River and be exposed to floodplain soils or exposed sediments during low water periods. Dermal exposure and incidental ingestion of soils or exposed sediments are potentially complete exposure pathways. Swimming is not considered a likely exposure scenario.
- **Angler** – Potentially bioaccumulative chemicals transported via groundwater or surface water runoff may accumulate in fish, which are subsequently caught and ingested. Fish ingestion represents a potentially complete exposure pathway if bioaccumulative chemicals are present. Examples of bioaccumulative chemicals are PCBs. Lead is not considered a bioaccumulative chemical of concern.

Currently, there are no known on-site exposures to groundwater. The Attica municipal water withdrawal wells are located just to the southwest of the Facility. As reported by E&E (1990) the nearest private residential water well is located 0.7 miles east (upgradient) of the Facility. The potential exposure to groundwater is via the indirect pathway to surface water and sediment of the Wabash River.

For the EI, consideration was given to potential exposure to soil for sensitive receptors (i.e., children in day-care facilities and nursing home residents). However, this pathway was considered incomplete because neither day-care nor nursing home facilities were identified within a 2,500-foot radius of the Facility.

2.5.2 RFI Risk Evaluation for Soils

The tiered risk-based evaluation process will be described in greater detail in the Part II RFI Report. Tier 1 is a screening step as discussed below. If the concentrations of any chemicals exceed the Tier 1 screening criteria, a quantitative Tier 2 risk evaluation may be conducted. Tier 3 may be used to further refine human health risk estimates.

2.5.2.1 Tier 1 Screening

Chemical concentrations detected in soil samples collected during the RFI were compared with the most current IDEM Closure Levels. For either the Industrial or Residential scenario, the lower of the Construction or Soil Direct Closure Level was used as a conservative screening value (SV). The IDEM Migration to Groundwater Closure Level was not considered because groundwater was measured directly at the Site. If an IDEM Closure Level was not available for a chemical, U.S.EPA Region 9 Preliminary Remediation Goals (PRGs) were used. Region 9 PRGs are conservative risk-based criteria developed with a target cancer risk of 10^{-6} and a target hazard index of one for noncarcinogens (U.S. EPA, 2004b). For the Site, on-site land use is industrial

and will remain so; therefore, the SV for industrial soil was used. The industrial soil SVs were also considered appropriate screening criteria for the recreational user exposure scenario as the frequency and duration of exposure for the recreational receptor is much less than the daily exposures assumed for the industrial scenario.

Per U.S.EPA guidance, a chemical whose maximum detected concentration exceeds its soil SV was considered a COC for that SWMU or AOC and was carried into the next tier of the process (U.S.EPA, 1999a). Chemicals identified as essential nutrients (calcium, chloride, iodine, magnesium, phosphorus, potassium, and sodium) were not included in the risk screening.

In addition, chemical concentrations in soil were compared with Facility-specific natural and/or anthropogenic background concentrations. Background comparisons were made following approaches outlined in U.S.EPA guidance (U.S.EPA, 2004b) and in the guidance for ProUCL version 4.00.02 (U.S.EPA, 2007a). If an inorganic detected at a C&D area exceeded its respective SV, a statistical comparison was made with background, giving consideration to soil depth (i.e., Site surface soil was compared with background surface soil and Site subsurface soil was compared with background subsurface soil). The first step of the background comparison was to determine the distributions of the Site and background data using ProUCL. If one or both of the data distributions were non-parametric, the Gehan test was used to test the null hypothesis that Site data differed from background. As there were no cases where both datasets had a parametric distribution (normal or lognormal), parametric tests were not used. Any chemical that exceeded its respective SV but was less than background was not evaluated further. If the number of samples was less than 3, statistical analyses could not be conducted; therefore, the maximum concentrations for Site and background were qualitatively compared.

Chemicals retained after the background comparison step were identified as COCs and will be carried forward to the next tier of evaluation.

2.5.2.2 Risk Evaluation for Lead

The risk evaluation and toxicological approach used by U.S.EPA and other agencies for lead is unique from other chemicals. Specifically, no U.S.EPA-approved slope factors or reference doses are available for lead (IRIS, 2007). This is because there is uncertainty about the shape of the dose-response curve for lead.

Much of the toxicological information for lead describes dose-response in terms of blood lead levels rather than in terms of exposure or intake dose. Therefore, mathematical models have been developed to estimate blood lead levels that may result as a consequence of exposure to lead in the environment. Consistent with USEPA's risk guidance, a tiered approach for human health risk evaluation for lead was used.

The first tier consisted of comparison of facility concentrations with screening levels for lead, including background. For the residential scenario, an SV of 400 mg/kg was used (IDEM Residential Soil Direct Closure Level). For the industrial scenario, an SV of 970 mg/kg was used (IDEM Construction Closure Level). A drinking water screening level of 15 µg/L for lead was used for comparison with groundwater (U.S.EPA, 2000).

The appropriate facility concentration to be used in conjunction with the child and adult lead model is the arithmetic mean concentration (U.S.EPA, 1994; 1996b; 2004). However, the Tier 1

screening step for lead was first conducted using the maximum detected concentration. If an exceedance occurred, the arithmetic mean concentration was then compared with the appropriate screening level. Areas with arithmetic mean concentrations of lead which were less than the appropriate screening level were not considered to present a risk associated with lead, and were not considered further. If the arithmetic mean concentration exceeded the screening value, then the arithmetic mean concentration will be used in the appropriate models in Tier 2.

2.5.3 RFI Risk Evaluation for Groundwater

A tiered risk-based approach was also used for evaluating analytical results from groundwater. Groundwater represents a potentially complete exposure pathway as there is a municipal water withdrawal well south of the Facility.

2.5.3.1 Tier 1 Screening

Chemical concentrations detected in groundwater samples collected during the RFI were compared with the IDEM Residential Groundwater Default Closure Levels. Chemicals identified as essential nutrients (calcium, chloride, iodine, magnesium, phosphorus, potassium, and sodium) were not included in the risk screening. An organic chemical whose maximum detected concentration exceeded the Tier 1 screening criterion was considered a COC and will be carried into the next tier of the process (Tier 2).

To further refine the COC list for inorganic constituents, concentrations in groundwater were compared with Facility-specific natural and/or anthropogenic background concentrations, as part of the Tier 1 screening. Wells CD-MW-3 and CD-MW-3S were determined to be upgradient of the Site and served as Facility-specific background. As described in the approved RFI Work Plan, the maximum concentration of a chemical detected in a Facility well was compared with two times the arithmetic mean concentration detected in the Facility-specific background samples. Any chemical that exceeded its respective Tier 1 screening criterion but was less than its background concentration was not evaluated further.

Chemicals retained after this step are identified as COCs and are carried forward to the next tier of evaluation.

2.5.4 RFI Risk Evaluation for Surface Water

Although swimming is not considered a likely exposure scenario, human exposure to surface water was evaluated as a potentially complete pathway. A tiered risk-based approach was used for evaluating the analytical results from surface water samples.

2.5.4.1 Tier 1 Screening

As a conservative evaluation, surface water results were compared with IDEM criterion continuous concentration (CCC) for human health outside of the mixing zone and with Federal ambient water quality criteria for human health consumption of organisms only. If a chemical concentration exceeded either criterion, further evaluation was conducted by comparing results associated with the Site with the results from upstream (background) samples. Site results that were comparable to background were not considered site related.

2.5.5 RFI Risk Evaluation for Sediment

Recreational users were assumed to be exposed to sediments during low water periods or while wading. A tiered risk-based approach was used for evaluating the analytical results from sediment samples.

2.5.5.1 Tier 1 Screening

State or Federal human health-based screening values are not available for sediment exposure. As a conservative screening tool, detected concentrations were compared with IDEM Residential Soil DCLs. If a chemical concentration exceeded either criterion, further evaluation was conducted by comparing results associated with the Site with the results from upstream (background) samples. Site results that were comparable to background were not considered site related.

3.1 DATA EVALUATION AND RISK SCREENING

As discussed in Section 2.5, a tiered risk-based approach is being used to evaluate the environmental data collected from the Facility and associated areas. This section presents the initial data evaluation consisting of a Tier 1 screening in which the maximum constituent concentrations were compared with conservative screening values. The screening values were determined for each medium within each SWMU or AOC, based on the two preliminary CSMs: one specific to interior or covered SWMUs (see **Figure 2-4**) and the other specific to exterior SWMUs and AOCs (see **Figure 2-5**). The potential exposure pathways identified in each preliminary CSM determined the appropriate risk-based screening value to be used for comparison. The rationale for the risk-based screening values was presented in **Section 2.5.2.1**. Risk-based screening values (SVs) are presented for detected constituents in **Appendix B**. The following exposure scenarios were considered: industrial worker, on-site construction worker, on-site maintenance/utility worker, off-site resident and recreational user.

The following subsections present the results of the Tier 1 screening and are organized by medium. Soil data are evaluated by Area, including the riverbank soils adjacent to the Wabash River and residential soils. The groundwater data are evaluated next followed by the surface water and sediment data evaluation. The tables referred to in each subsection discussion present the detected values only. The complete analytical data tables and laboratory reports are provided in **Appendix C**. A data validation report is provided in **Appendix D.**

3.2 SOIL SAMPLE RESULTS BY AREA

Soil data (detected constituents only) are presented in **Tables 3-1a through 3-16** and are tabulated by Area. The complete soil analytical data tables are provided in **Appendix C-1**. Soil samples were collected from 14 areas evaluated for the Site, as well as two adjacent, off-site residential areas. Area 2, an on-site area, was inaccessible and was grouped with Area 3. Area 14 was eliminated as an area of concern as described and approved in the RFI Work Plan.

Screening of the soil data compared with Human Health SVs is provided as **Tables 3-1a to 3-16**. On-site soil data were compared with Industrial Soil SVs. Off-site soil data (Riverbank and Residential Soils) were compared with the Residential Soil SVs. Screening of the Riverbank data are provided in **Tables 3-14a and 3-14b**. For residential scenarios, lead was evaluated by a different process than the other inorganics (see **Section 2.5.2.2**). Therefore, screening for inorganics (without lead) and lead (alone) are provided in **Tables 3-15a and 3-15b,** respectively.

The soil data used for background were collected from 7 locations approximately 2 miles northeast of the facility in an undeveloped area used for agriculture; soil types were similar to those encountered at the C&D Facility. Background soil data are presented in **Table 3-16**.

Exceedances of criteria are discussed herein for each Area. Soils did not exceed SVs in Areas 1, 6, 10, 12, 13, and 16. Exceedances of SVs were observed in Areas 3, 4, 5, 7, 8, 11 and 15, the offsite residential properties, the Riverbank area and background soils.

Area 1 – Wastewater Treatment Plant

Detected values for soil in Area 1 are provided in **Tables 3-1a, 3-1b, and 3-1c** (Organics, Inorganics and PAHs, respectively). No Industrial SVs were exceeded for Area 1 soil.

Area 2 – Current and Former Acid Storage Lofts

No samples were collected due to site inaccessibility. Area 2 will be grouped with Area 3.

Area 3 – Lead Oxide Storage Silos

Detected values for soil in Area 3 are provided in **Tables 3-2a, 3-2b, and 3-2c**. Lead was detected in sample CD-SB-13 at the 0 to 1 foot interval (1,460 mg/kg) and the 4 to 5 foot interval (2,040 mg/kg) at concentrations greater than the Industrial SV (970 mg/kg). However, the average concentrations of lead at Area 3 (837 mg/kg at the 0 to 1 foot interval and 721 mg/kg at the 4 to 5 foot interval) are below the SV. Arsenic exceeded its SV of 20 mg/kg at one location (CD-SB-14; 31.7 mg/kg, 0 to 1 foot interval). This location is under concrete; therefore, the current exposure pathway is incomplete. If construction below the pavement were to occur in the future, workers may become exposed to the arsenic in the soil. This scenario will be evaluated in Part II of the RFI.

Area 4 – Stormwater Sewers

Detected values for soil in Area 4 are provided in **Tables 3-3a, 3-3b, and 3-3c**. No releases from subsurface drainage features are indicated. However, surface sample CD-SB-21 was impacted. The Industrial SV of 1,500 ug/kg was exceeded in sample CD-SB-21 in the 0 to 1 foot interval for benzo(a)pyrene (2,100 ug/kg). In the December 2007 sampling, TCE was detected at 6,000 ug/kg in sample CD-SB-21 in the 0 to 1 foot interval. U.S.EPA requested a confirmation sample, which was collected nearby on June 4, 2008. The result for sample location CD-SB-21B (0-1) was 31,000 ug/kg TCE, which exceeds the Industrial SV of 24,000 ug/kg. This outside area (which does not appear to be associated with the deeper, stormwater sewers) will be further investigated prior to the Part II RFI Report.

Area 5 – Exterior Former Hazardous Waste Materials Storage Area

Detected values for soil in Area 5 are provided in **Tables 3-4a, 3-4b, and 3-4c**. The detected concentration of lead exceeded its SV of 970 mg/kg at one location (CD-SB-22; 7,840 mg/kg). Additional soil samples were collected in the vicinity of CD-SB-22. The results of this investigation indicate that elevated lead was localized at CD-SB-22. The average concentration of 914 mg/kg for lead in all surface soil samples (including 7,840 mg/kg at CD-SB-22) was below the Industrial SV of 970 mg/kg. Therefore, no unacceptable risks to human health are associated with these soil concentrations.

Area 6 – Exterior Former Drum Storage Area and Transfer Pad

Detected values for soil in Area 6 are provided in **Tables 3-5a and 3-5b**. No Industrial SVs were exceeded for soil in Area 6.

Area 7 – Poly-Mixing Room

Detected values for soil in Area 7 are provided in **Tables 3-6a and 3-6b**. The Industrial Soil SV for arsenic (20 mg/kg) was exceeded in sample CD-SB-26 at the 4 to 5 foot interval (27 mg/kg). However, the concentration of arsenic in the 0 to 1 foot interval at the same location was 6

mg/kg, well below the arsenic SV. Therefore, unacceptable risks are not expected under current conditions. The possibility that construction workers may be exposed during future excavation to 4 to 5 feet will be evaluated in Part II of the RFI Report.

Area 8 – Historical Drive-Up Disposal Area

Detected values for soil in Area 8 are provided in **Tables 3-7a, 3-7b and 3-7c**. The Industrial SV for arsenic (20 mg/kg) was exceeded in samples CD-SB-28 and CD-SB-3 at the 19 to 20 foot interval (29.6 and 32.7 mg/kg, respectively). The SV for lead (970 mg/kg) was exceeded in the 19 to 20 foot interval in samples CD-SB-31 (1,050 mg/kg) and CD-SB-32 (1,460 mg/kg). As a result, monitoring wells MW-9S and -10S were installed and sampled to evaluate whether metals in deep soils were leaching to groundwater (see discussions in **Section 3.3.3**). Direct exposure to these soils is not expected because they are deeper than potential excavation depths.

Area 9 – Historical Former Waste and Dust Storage Room

Soil borings CD-SB-21 and -21B were installed as co-located borings for Area 9 and Area 4. Exceedences observed at CD-SB-21 and -21B are described under **Area 4 – Stormwater Sewers**.

Area 10 – Southwest Historical Former Container Storage Area

Detected values for soil in Area 10 are provided in **Tables 3-8a, 3-8b, and 3-8c**. No Industrial SVs were exceeded for soil in Area 10.

Area 11 – Northeastern Historical Former Container Storage Area

Detected values for soil in Area 11 are provided in **Tables 3-9a, 3-9b, and 3-9c**. The Industrial SV for lead (970 mg/kg) was exceeded in sample CD-SB-36 at the 0 to 1 foot interval (2,930 mg/kg). However, this sample location is under pavement resulting in an incomplete exposure pathway under current conditions. Risk associated with exposure to soil during any future construction will be evaluated in Part II of the RFI Report.

Area 12 – Central Vacuum System / Baghouses

Detected values for soil in Area 12 are provided in **Tables 3-10a, 3-10b, and 3-10c**. No Industrial SVs were exceeded for soil in Area 12.

Area 13 – Former Oxide Mill Area

Detected values for soil in Area 13 are provided in **Tables 3-11a and 3-11b**. No Industrial SVs were exceeded for soil in Area 13.

Area 14 – Former Onsite Filling Station

As determined in the U.S.EPA approved RFI work plan, no additional investigation is required for this area.

Area 15 – West Container Storage Area

Detected values for soil in Area 15 are provided in **Tables 3-12a, 3-12b, and 3-12c**. The benzo(a)pyrene concentration in the 9 to 10 foot interval of soil sample CD-SB-50 was equivalent to the Industrial SV for benzo(a)pyrene of 1,500 ug/kg. The SV for arsenic (20 mg/kg) was exceeded in sample CD-SB-52 at the 0 to 1 foot interval (24.4 mg/kg). The SV for

lead (970 mg/kg) was exceeded in the 4 to 5 foot interval in sample CD-SB-50 (1,040 mg/kg). The average lead concentration for the 4 to 5 foot interval (426 mg/kg) was less than the SV. The average concentration of lead in surface soil (0 to 1 foot interval) was 28.8 mg/kg. Because average lead concentrations do not exceed the SV, unacceptable risks from exposure to lead in soil under current or future scenarios are not expected. The area is covered with pavement; therefore, current exposure for industrial workers is incomplete. Risks potentially associated with exposure to arsenic in soil during any future excavation will be evaluated in Part II of the RFI Report.

Area 16 – DC Generator Area

Soils from Area 16 were analyzed for PCBs and pH only. Detected values for soil in Area 16 are provided in **Table 3-13**. PCBs were not detected. Detection limits for PCBs ranged from 36 to 40 µg/kg which were less than the Industrial SV of 1,800 µg/kg.

Riverbank Area Sampling (Recreational Use)

Detected values for soil in the Riverbank Area are provided in **Tables 3-14a and 3-14b**. The exposure scenario for Riverbank soil was assumed to be recreational users; therefore, Residential Soil SVs were used as a conservative screening evaluation. The Residential Soil SV for arsenic (3.9 mg/kg) was exceeded in 12 of 14 riverbank samples at the 0 to 1 foot interval (concentrations ranging from 4.1 to 21 mg/kg). However, arsenic concentrations in all of the background soil samples also exceeded the Residential SV (**Table 3-16**). A statistical comparison for arsenic using the Gehan test of ProUCL 4.0 indicated that the Riverbank surface soil was similar to background surface soil (see **Appendix E** for ProUCL output sheets). Therefore, exposure to arsenic in Riverbank soil is not expected to pose a Site-related risk to human health.

The Residential SV for cadmium (12 mg/kg) was exceeded in sample CD-SB-59 (0 to 1 foot interval; 14 mg/kg). No other riverbank soil sample was found to exceed the Residential SV for cadmium. A statistical comparison for cadmium indicated that the Riverbank surface soil was similar to background surface soil (see **Appendix E**).

The residential SV for lead (400 mg/kg) was exceeded in samples CD-SB-55 (1,050 mg/kg) and CD-SB-59 (6,260 mg/kg). As a result, a Tier 2 human health risk assessment was performed. Risks potentially associated with recreational receptors' exposure to lead in Riverbank soil were evaluated based on the mean concentration of lead in Riverbank surface soil (558 mg/kg) and receptors visiting the area once or twice per week, as described as follows:

- For adults, the Adult Lead Model (ALM) (U.S. EPA, 2003a) was used to estimate blood lead concentrations. This represents a conservative approach because the ALM was designed to evaluate risks for adult females of child-bearing age in a non-residential setting and is based on the most sensitive receptors (i.e., developing fetuses). Blood lead concentrations were estimated to be 1.7 µg/dL based on an exposure frequency of one visit per week (**Table 3-14c**) and 1.9 µg/dL based on an exposure frequency of two visits per week (**Table 3-14d)**. Both values are below the target blood lead concentration of concern (10 µg/dL).
- For children, the Integrated Exposure Uptake Biokinetic Model (IEUBK) (U.S.EPA, 2002) was used to estimate blood lead concentrations. As described in "Assessing

Intermittent and Variable Exposures at Lead Sites" (U.S.EPA, 2003b), a time-weighted approach was used. A time-weighted concentration of lead was estimated based on the concentration of lead in soil at their residence and at the Riverbank and the relative amount of time spent at home and the Riverbank. This time-weighted lead exposure concentration was used in the IEUBK Model to estimate blood lead concentrations. The time-weighted lead exposure concentration was estimated based on the assumed exposure frequency of one visit per week or two visits per week as follows:

- For 1 visit/week:

  Pbtwsoil = (Pbsoilyard * EFyard) + (Pbsoilsite * EFsite)
  = (180.43*6/7) + (558*1/7)
  = 234.37 mg/kg

  Where:

  Pbtwsoil = Time-weighted concentration of lead in soil (mg/kg)
  Pbsoilyard = Concentration of lead in residence yard (mg/kg)
  EFyard = Exposure frequency expressed as the fraction of the week when children stay home (i.e., 6 of 7 days)
  Pbsoilsite = Concentration of lead at site (mg/kg)
  EFsite = Exposure frequency expressed as the fraction of the week when children visit the site (i.e., 1 of 7 days)

- For 2 visits/week:

  Pbtwsoil = (Pbsoilyard * EFyard) + (Pbsoilsite * EFsite)
  = (180.43*5/7) + (558*2/7)
  = 288.3 mg/kg

- As indicated on the output tables (**Tables 3-14e and 3-14f**), estimated blood lead concentrations using these time-weighted soil concentrations are below the target blood lead level of concern (10 µg/dL).

Therefore, levels of lead detected in surface soil samples collected from Riverbank soils do not pose an adverse impact to human health.

Off-Site Residential Properties Sampling

The northernmost Residential Area is located due east of the Facility in the area bounded by West Columbia and West Yount Streets. The southernmost Residential Area is located east of the trailer storage area on North Perry Street and is bounded by West Yount to the northeast and North Fifth Street to the southeast.

Detected values for soil in the Residential Area are provided in **Tables 3-15a and 3-15b**. Residential Soil SVs were used for screening this Area. The Residential SV for arsenic (3.9 mg/kg) was exceeded in samples CD-SB-61 (14.6 mg/kg), CD-SB-61-DUP (13.2 mg/kg) and CD-SB-64 (10.4 mg/kg) at the 0 to 1 foot interval. The Residential SV for arsenic was also exceeded by all background samples (see **Table 3-16**). As there were only two samples from the Residential Area, a statistical comparison with background could not be made. Arsenic concentrations in the two Residential Area samples were 10.4 mg/kg and 13.9 mg/kg, whereas the maximum detection in background soil was 10.5 mg/kg. The Residential Area will be sampled for further evaluation of arsenic for Part II of the RFI Report.

The Residential SV for lead (400 mg/kg) was exceeded in samples CD-SB-64 (520 mg/kg), CD-SB-64 (777 mg/kg) and CD-SB-64-DUP (483 mg/kg). An arithmetic mean lead concentration was calculated for each 0.5 acre exposure area (default value for a residential lot) (**Table 3-15b**) after taking the average of duplicate and parent samples. The Residential SV was not exceeded for any exposure area based on the mean lead concentration.

Background Sampling

Background soil samples were collected from seven soil boring locations. Each boring was sampled at the 0 to 1 foot and 4 to 5 foot intervals (**Table 3-16**). Arsenic was found in concentrations that exceeded the Residential SV for arsenic (3.9 mg/kg) in all samples. The average concentration of arsenic in the 0 to 1 foot interval was 8.13 mg/kg while the average concentration in the 4 to 5 foot interval was 8.0 mg/kg.

Based on these background concentrations of arsenic, Riverbank soil is less than or similar to background (**Appendix E**). However, one of the two soil samples from the Residential Area exceeded the maximum background concentration for arsenic.

3.3 GROUNDWATER RESULTS

Detected values for groundwater collected in the current RFI investigation are presented in **Tables 3-17a through 3-17d**. The complete groundwater data are provided in **Appendix C-2**. Groundwater data were collected in 2006, 2007, and 2008 and indicate groundwater quality for locations on and around the C&D facility. A VOC investigation was conducted by Clayton Group Services, Inc. (Clayton) in January and February 2006. On-site sampling was conducted by URS in December 2007, January 2008, and June 2008. Groundwater data were compared with IDEM Residential Default Closure Levels (RDCLs) as a conservative screening. Federal Safe Drinking Water Act (SDWA) maximum contaminant levels (MCLs) represent the default RDCL for those contaminants where an MCL has been established.

3.3.1 2006 Groundwater Investigation and Evaluation

Of the five monitoring wells installed on the site in 2006, low concentrations of TCE were detected in groundwater samples from three wells (MW-1, -2, and -3). Monitoring well locations are shown on **Figure 2-2.** Laboratory results are summarized in Clayton (2006). TCE was detected in MW-1 and its duplicate (5.7 and 6.0 ug/L, respectively) and MW-2 (20 ug/L) at concentrations exceeding the RDCL of 5 ug/L.

3.3.2 2007-08 Groundwater Investigation and Evaluation

Seven additional monitoring wells (MW-1S, -2S, -3S, -4S, -6S, -7S, and -8S) were installed at the Facility in December 2007 and January 2008 to provide additional monitoring coverage. The wells were sampled on December 17, 18, 19, 2007 and January 9, 2008 for VOCs, SVOCs and metals. As shown in **Table 3-17a**, TCE was detected above the RDCL (5 ug/L) in the samples from MW-1 and MW-2 at 7.3 ug/L and 20 ug/L, respectively.

Inorganics concentrations did not exceed the IDEM RDCL for any constituent in the December 2007 and January 2008 sampling (see **Table 3-17c**).

3.3.3 2008 Groundwater Investigation and Evaluation

In response to RFI soil boring sample results showing relatively high lead and arsenic values in Area 8 soils (at SB-28, SB- 31, and SB-32 at the 19 to 20 feet interval), two additional wells (MW-9S and -10S) were installed in early June (see **Figure 2-2**). These wells were sampled on June 5, 2008 and analyzed for metals. Lead was not detected, and arsenic values did not exceed SVs in wells MW-9S and -10S. On June 3, 4, and 5, 2008, samples were also taken from wells MW-1, -1S, -2, -2S, -3, -3S, -4, -4S, -5, -6S, -7S, and -8S and analyzed for VOCs, SVOCs, and metals. The concentration of lead in CD-MW-4S (22.2 µg/L) exceeded the IDEM RDCL of 15 µg/L (see **Table 3-17d**).

3.3.4 Comparison with Background

Groundwater values were compared with background concentrations in the upgradient wells MW-3 and MW-3S. As presented in the approved RFI Work Plan, comparison with background was conducted by comparing the maximum Site concentration with two-times the mean background concentrations (see **Section 2.5.3.1**). The maximum detected concentration of arsenic in the deep wells (6.6 µg/L) exceeded the arsenic background screening value for deep wells (2.04 µg/L). All other inorganics in deep wells were less than background screening values for deep wells. The maximum detected concentration in shallow wells exceeded their respective background screening value for arsenic, barium, cobalt, copper, lead, nickel and zinc.

3.3.5 Potential Discharge to Surface Water

This subsection addresses risks to human receptors potentially exposed to groundwater after it mixes with surface water in the Wabash River. Potential risks to ecological receptors will be addressed in the Ecological Risk Assessment in Part II of the RFI Report. Human receptors are assumed to be recreational users occasionally exposed to chemicals discharged from groundwater into surface water. Water quality criteria used to evaluate risk were the IDEM 4-day average (criteria continuous concentration) for human exposure outside of the mixing zone. If an IDEM value from the mixing zone was not available, the IDEM Human Health value for point of water intake was used. If no IDEM value was available, National Ambient Water Quality Criterion (AWQC) for human health consumption of organisms only was used (U.S.EPA, 2007b). If no other value was available, National AWQC for consumption of water plus organisms was used. For some constituents, neither IDEM nor Federal criteria have yet been established. A dilution factor of 10 was considered for groundwater mixing with surface water.

Six monitoring wells adjacent to the Wabash River were used for this screening evaluation: MW-4S, -6S, -7S, -8S, -9S and -10S. It was assumed that the shallow groundwater is representative of discharges to the River. Detected values from the December 2007/January 2008 sampling are presented in **Table 3-17e**, and those from the June 2008 sampling are presented in **Table 3-17f**. Arsenic concentrations in all wells for both sampling events exceeded the IDEM surface water SV for human health. However, when a dilution factor of 10 is applied to the arsenic IDEM SV (0.175 µg/L x 10 = 1.75 µg/L), data from MW-7S and MW-8S are not in exceedance. Furthermore, the surface water sample upgradient of the Site (background)

indicates elevated arsenic concentrations in the Wabash River water (CD-SW-BKG01, 2.6 µg/L). U.S.EPA is currently reassessing the surface water criterion for arsenic.

3.4 SURFACE WATER AND SEDIMENT RESULTS

3.4.1 Surface Water

Surface water data are presented in **Appendix C-3**. Detected constituents and comparisons with screening values are shown in **Tables 3-18a and 3-18b**. Surface water chemical data indicated a limited number of parameters were detected above the reporting limit. Arsenic exceeded IDEM and AWQC SV values in all samples including background. Bis-2-ethyl-hexyl phthalate (BEHP) did not exceed the IDEM SV but did exceed the AWQC SV in sample CD-SW-03 and in the background sample. Because arsenic and BEHP were found in background surface water, any risks associated with these two constituents are not considered to be Site related.

3.4.2 Sediment Results

A total of 10 sediment samples were sampled and analyzed for Appendix IX metals, VOCs, PAHs, total organic carbon (TOC) and percent solids. Five samples were located along the Wabash River adjacent to the Site; the remaining five were located upgradient of the Site for background comparison. Percent solids in the background samples ranged from 82 to 91 percent indicating sediments with low moisture content. These samples were collected from a gravel bar area and were described in the field notes as coarse sand and gravel. The percent solids in the sample locations adjacent to the Site ranged from 52 to 75 percent indicating sediment that could retain much more moisture and might be finer in grain size and higher in TOC. The TOC in the background samples ranged from 1,200 mg/kg to 2,100 mg/kg while the TOC in the sediments from Site locations ranged from 6,300 mg/kg to 27,000 mg/kg. The highest TOC was detected in sediment sample CD-SED-02 (27,000 mg/kg) with the TOC in sediment sample CD-SED-01 reported at 18,000 mg/kg. Field notes indicate that sediment sample CD-SED-02 was collected in the most shallow water location (5.4 feet deep) and appeared to consist primarily of silt and clay. The sediment samples were collected close to the facility outfall and near the bank side of the gravel bar area. This part of the gravel bar area would be expected to be dry land when the water level is at normal or low pool. The depth of the gravel bar as it extended into the river channel ranged from 6.5 feet to approximately 8.0 feet. Sediment was not collected directly from the gravel bar as the substrate on the bar is kept swept of fine material by high velocity water during high water periods. The only substrate material collected directly from the gravel bar was large gravel and cobble (1 to 3 inch diameter rock).

Detected concentrations are summarized in **Tables 3-19a, 3-19b, and 3-19c**, and the complete data are presented in **Appendix C-4**. Because there are currently no State or Federal screening values for human exposure to sediment, detected concentrations were compared with IDEM Residential DCLs for soil as a conservative screening. Arsenic in samples CD-SED-01 and -02 (4.8 mg/kg and 5.2 mg/kg, respectively) exceeded the Residential DCL for arsenic (3.9 mg/kg). However, three of the five background samples also exceeded the Residential DCL for arsenic: CD-SED-BKG04 (4.3 mg/kg), CD-SED-BKG06 (4.5 mg/kg) and CD-SED-BKG07 (5.1 mg/kg).

A statistical comparison of Site and background sediment indicated that Site sediment was similar to background (see **Appendix E**).

3.5 SUMMARY OF RESULTS

3.5.1 Soil Summary by Area

The following table summarizes the findings for the human health risk screening for soil.

Area	Human Health Screening Results	Recommended Actions
Area 1 – Wastewater Treatment Plant	No Industrial SVs exceeded.	No Further Action
Area 2 – Current and Former Acid Storage Lofts	Grouped with Area 3	See actions for Area 3
Area 3 – Lead Oxide Storage Silos	Arsenic > SV in one sample under concrete. No current exposure pathway, but potential future exposure for construction worker.	Exposure pathway for construction worker will be evaluated for arsenic in Part II of the RFI.
Area 4 – Stormwater Sewers	TCE > SV in surface soil sample (not related to sewer)	No Further Action for Stormwater Sewers Additional surface soil sampling for TCE for Part II of the RFI.
Area 5 – Exterior Former Hazardous Waste Materials Storage	Lead > SV for one location; however, average lead concentration < SV.	No Further Action
Area 6 – Exterior Former Drum Storage & Transfer Pad	No Industrial SVs exceeded.	No Further Action
Area 7 – Poly-Mixing Room	No unacceptable risks under current conditions. Arsenic > SV at the 4-5 foot level. Potential for future exposure to construction worker.	Exposure pathway for construction worker will be evaluated for arsenic in Part II of the RFI.
Area 8 – Former Drive-Up Disposal Area	No unacceptable risks under current or future conditions.	Additional groundwater monitoring event for potential leaching of arsenic and lead from deep soil.
Area 9 –Former Waste and Dust Storage Room	Samples co-located with Area 4. See Area 4 results.	See Area 4 Actions (additional surface soil sampling)
Area 10 – Southwest Former Container Storage	No Industrial SVs exceeded.	No Further Action
Area 11 – Northeastern Former Container Storage	Lead > SV in one sample under concrete. No current exposure pathway, but potential future exposure for construction worker.	Exposure pathway for construction worker will be evaluated for lead in Part II of the RFI.
Area 12 – Central Vacuum System/Baghouses	No Industrial SVs exceeded.	No Further Action

Area	Human Health Screening Results	Recommended Actions
Area 13 – Former Oxide Mill	No Industrial SVs exceeded.	No Further Action
Area 14 – Former Onsite Filling Station	Excluded in approved RFI Work Plan	No Further Action
Area 15 – West Container Storage	Arsenic > SV at 4-5 ft sample	Exposure pathway for construction worker will be evaluated for arsenic in Part II of the RFI.
Area 16 – DC Generator Area	No Industrial SVs exceeded.	No Further Action
Riverbank Area	Arsenic and cadmium similar to background. Lead > Residential SV in two samples. Tier 2 human health assessment showed no adverse impacts.	No Further Action
Off-Site Residential	Arsenic > Residential SV Lead > Residential SV in three samples; however, mean lead concentrations < SV for surface soil. Exposure to lead in subsurface soil may occur during excavation.	Additional soil sampling for arsenic (surface) and lead (subsurface) for Part II of the RFI.

SV – Screening Value

3.5.2 Groundwater Summary

The following table summarizes the human health screening results for groundwater.

Groundwater	Human Health Screening Results	Recommended Actions
All Wells	TCE > RDCL MW-1 and MW-2 in 2006 and 2007/08 Lead > RDCL MW-4S in 2008	Additional groundwater monitoring event for Part II of the RFI for all wells.
Area 8 - MW-9S and MW-10S	No RDCLs exceeded	One additional monitoring event.
Discharge to Surface Water - MW-4S, -6S, -7S, -9S and 10S	Arsenic > SW SV; however, Wabash River also > SW SV	No further action for arsenic.

RDCL – Residential Default Closure Level

3.5.3 Surface Water Summary

The following table summarizes the human health screening results for surface water.

Surface Water	Human Health Screening Results	Recommended Actions
Wabash River	Arsenic and BEHP > SV adjacent to Site; however, background also exceeded SVs for arsenic and BEHP	No Further Action

SV – Screening Value; BEHP – bis(2-ethylhexyl)phthalate

3.5.4 Sediment Summary

The following table summarizes the human health screening results for sediment.

Sediment	Human Health Screening Results	Recommended Actions
River Sediment	Arsenic > SV; however, not different than background	No Further Action

4.1 RECOMMENDATIONS FOR SOIL

As a result of the data evaluation and human health risk screening, additional soil sampling is recommended for two Areas.

- Areas 4 and 9 (grouped) – Surface soil will be sampled in the vicinity of CD-SB-21 and CD-SB-21B to determine the extent of TCE contamination. Four additional surface soil samples will be collected at a 5 to 10-foot radius surrounding CD-SB-21B and analyzed for VOCs.
- Off-Site Residential – Six additional surface composite soil samples will be collected and analyzed for arsenic. Six additional subsurface composite soil samples will be collected and analyzed for lead.

In addition, in the event that covered soil may be excavated in the future, the exposure pathway for the construction worker will be evaluated for the following Areas and COPCs:

- Areas 2 and 3 – Arsenic
- Area 7 – Arsenic
- Area 11 – Lead
- Area 15 - Arsenic

4.2 RECOMMENDATIONS FOR GROUNDWATER

An additional groundwater sampling event will be conducted and samples analyzed for VOCs and metals.

4.3 RECOMMENDATIONS FOR SURFACE WATER AND SEDIMENT

No further evaluation is recommended for surface water or sediment based on the human health risk screening.

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Tables

Table 3-1a
C&D Technologies
Attica, IN
Area 1 Organics Soil Data

SAMPLE ID		pH (solid)		Aroclor 1260		Carbon disulfide		Toluene		Trichloroethene		Dichlorodifluoromethane		Benzene	
CD-SB-1 (0-1)	1/9/2008	8.5		13	J	0.34	J								
CD-SB-1 (0-1) DUP	1/9/2008	8.5				0.49	J								
CD-SB-1 (4-5)	1/9/2008	8.4				0.45	J								
CD-SB-2 (0-1)	12/15/2007														
CD-SB-2 (4-5)	12/15/2007														
CD-SB-3 (0-1)	12/13/2007														
CD-SB-3 (4-5)	12/13/2007														
CD-SB-4 (0-1)	12/13/2007							24							
CD-SB-4 (4-5)	12/13/2007														
CD-SB-5(0-1)	12/12/2007														
CD-SB-5(4-5)	12/12/2007														
CD-SB-6(0-1)	12/11/2007	8.5						0.44	J			0.39	J	0.24	J
CD-SB-6(4-5)	12/11/2007	7.9										0.44	J		
CD-SB-6(19-20)	12/11/2007	7.8													
CD-SB-7(0-1)	12/12/2007														
CD-SB-7(4-5)	12/12/2007														
CD-SB-8(0-1)	12/12/2007														
CD-SB-8(4-5)	12/12/2007														
CD-SB-8(4-5)DUP	12/12/2007														
CD-SB-9(0-1)	12/12/2007					0.38	J								
CD-SB-9(4-5)	12/12/2007											0.36	J		
CD-SB-9 (19-20)	12/12/2007														
CD-SB-10 (0-1)	12/13/2007	8.1				0.17	J	0.32	J	1.2	J				
CD-SB-10 (4-5)	12/13/2007	8				0.36	J	8.2		1.2	J	0.46	J		
CD-SB-10 (19-20)	12/13/2007	7.6								1.7	J				
CD-SB-10 (19-20)DUP	12/13/2007	7.6								2.7	J				
IDEM Human Health		**NE**		**5300**		**480000**		**310000**		**24000**		**310000000**		**14000**	
Region 9 PRG		**NE**		**740**		**720000**		**310000**		**110**		**310000**		**1400**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV

(if IDEM Human Health SV not available).

Table 3-1a cont.
C&D Technologies
Attica, IN
Area 1 Organics Soil Data

SAMPLE ID		Chloroethane		bis(2-Ethylhexyl) phthalate		2-Butanone (MEK)		Dibenzofuran		Methylene chloride	
CD-SB-1 (0-1)	1/9/2008										
CD-SB-1 (0-1) DUP	1/9/2008										
CD-SB-1 (4-5)	1/9/2008										
CD-SB-2 (0-1)	12/15/2007										
CD-SB-2 (4-5)	12/15/2007										
CD-SB-3 (0-1)	12/13/2007										
CD-SB-3 (4-5)	12/13/2007										
CD-SB-4 (0-1)	12/13/2007										
CD-SB-4 (4-5)	12/13/2007										
CD-SB-5(0-1)	12/12/2007										
CD-SB-5(4-5)	12/12/2007										
CD-SB-6(0-1)	12/11/2007	0.5	J	77	J						
CD-SB-6(4-5)	12/11/2007			76	J			25	J		
CD-SB-6(19-20)	12/11/2007			110	J	13	J				
CD-SB-7(0-1)	12/12/2007										
CD-SB-7(4-5)	12/12/2007										
CD-SB-8(0-1)	12/12/2007										
CD-SB-8(4-5)	12/12/2007										
CD-SB-8(4-5)DUP	12/12/2007										
CD-SB-9(0-1)	12/12/2007									1.4	J
CD-SB-9(4-5)	12/12/2007										
CD-SB-9 (19-20)	12/12/2007										
CD-SB-10 (0-1)	12/13/2007										
CD-SB-10 (4-5)	12/13/2007										
CD-SB-10 (19-20)	12/13/2007										
CD-SB-10 (19-20)DUP	12/13/2007										
IDEM Human Health		**120000**		**980000**		**28000000**		**980000**		**200000**	
Region 9 PRG		**6500**		**120000**		**110000000**		**1600000**		**21000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available).

Table 3-1b
C&D Technologies
Attica, IN
Area 1 Inorganics Soil Data

SAMPLE ID		Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper	
CD-SB-1 (0-1)	1/9/2008	0.46	Jv	9		49.3		0.14	B	0.72		9.6		3.1	B E	25.7	
CD-SB-1 (0-1) DUP	1/9/2008			4.1		37.7		0.094	B	0.6		18.3		2.8	B	26.8	
CD-SB-1 (4-5)	1/9/2008			3.3		66.1		0.34	B	0.48	B	14.5		2.8	B	24.1	
CD-SB-2 (0-1)	12/15/2007																
CD-SB-2 (4-5)	12/15/2007																
CD-SB-3 (0-1)	12/13/2007																
CD-SB-3 (4-5)	12/13/2007																
CD-SB-4 (0-1)	12/13/2007			11.7		51.5				0.93	B G	110					
CD-SB-4 (4-5)	12/13/2007			7.9		24.4						57.1					
CD-SB-5(0-1)	12/12/2007																
CD-SB-5(4-5)	12/12/2007																
CD-SB-6(0-1)	12/11/2007			5.5		28.9	J	0.098	B	0.22	B	8.1		3.2	B	10.9	
CD-SB-6(4-5)	12/11/2007			2.3		22.6	B J	0.13	B	0.16	B	7.2		2.2	B	8	
CD-SB-6(19-20)	12/11/2007			8.3		83		0.38	B E	0.5	B	9.1		5.5	B	15.4	
CD-SB-7(0-1)	12/12/2007																
CD-SB-7(4-5)	12/12/2007																
CD-SB-8(0-1)	12/12/2007																
CD-SB-8(4-5)	12/12/2007																
CD-SB-8(4-5)DUP	12/12/2007																
CD-SB-9(0-1)	12/12/2007			2.9		31.2				0.37	B	14.9					
CD-SB-9(4-5)	12/12/2007			1.1		21.8	B			0.17	B	4.7					
CD-SB-9 (19-20)	12/12/2007			8.8		110	J			0.45	B	18					
CD-SB-10 (0-1)	12/13/2007			7.2		24.1				0.39	B	10					
CD-SB-10 (4-5)	12/13/2007			9		57.7				0.14	B	11.3					
CD-SB-10 (19-20)	12/13/2007			5.3		62.3				0.14	B	7.7					
CD-SB-10 (19-20)DUP	12/13/2007			5.8		63				0.11	B	9.8					
IDEM Human Health		**460**		**20**		**220000**		**2300**		**590**		**1000000**		**NE**		**46000**	
Region 9 PRG		**410**		**NE**		**67000**		**1900**		**450**		**450**		**1900**		**41000**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected below the quantitation limit, but above the MDL.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-1b cont.
C&D Technologies
Attica, IN
Area 1 Inorganics Soil Data

SAMPLE ID		Lead		Nickel		Thallium		Vanadium		Zinc		Silver		Mercury	
CD-SB-1 (0-1)	1/9/2008	144		13.8		0.9	B	9.5		147					
CD-SB-1 (0-1) DUP	1/9/2008	108		12		0.95	B	5.4		94.2		0.18	B J		
CD-SB-1 (4-5)	1/9/2008	44.5		11.5				6.5		102					
CD-SB-2 (0-1)	12/15/2007	128													
CD-SB-2 (4-5)	12/15/2007	27													
CD-SB-3 (0-1)	12/13/2007	14.2													
CD-SB-3 (4-5)	12/13/2007	34.7													
CD-SB-4 (0-1)	12/13/2007	661										0.23	B	0.061	B
CD-SB-4 (4-5)	12/13/2007	98.3	Jv									0.75	B	0.037	B
CD-SB-5(0-1)	12/12/2007	17.7													
CD-SB-5(4-5)	12/12/2007	12.8													
CD-SB-6(0-1)	12/11/2007	37.9		8.9				8.3		50.3					
CD-SB-6(4-5)	12/11/2007	7.5		16.7				3.8	B	35.9					
CD-SB-6(19-20)	12/11/2007	70.8		12.4		1.4		15.5		127				0.81	
CD-SB-7(0-1)	12/12/2007	60.6													
CD-SB-7(4-5)	12/12/2007	17.9													
CD-SB-8(0-1)	12/12/2007	37.8													
CD-SB-8(4-5)	12/12/2007	12.3													
CD-SB-8(4-5)DUP	12/12/2007	15.8													
CD-SB-9(0-1)	12/12/2007	113													
CD-SB-9(4-5)	12/12/2007	16.6													
CD-SB-9 (19-20)	12/12/2007	30.6												0.077	B
CD-SB-10 (0-1)	12/13/2007	311													
CD-SB-10 (4-5)	12/13/2007	18.1													
CD-SB-10 (19-20)	12/13/2007	20.8												0.048	B
CD-SB-10 (19-20)DUP	12/13/2007	11.8												0.023	B
IDEM Human Health		**970**		**23000**		**80**		**NE**		**340000**		**5700**		**340**	
Region 9 PRG		**800**		**20000**		**67**		**1000**		**100000**		**5100**		**310**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected below the quantitation limit, but above the MDL.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-1c
C&D Technologies
Attica, IN
Area 1 PAH Soil Data

SAMPLE ID		1-Methylnaphthalene		2-Methylnaphthalene		Acenaphthene		Acenaphthylene		Anthracene		Benzo(a)anthracene	
CD-SB-6(0-1)	12/11/2007	35		58						19			
CD-SB-6(4-5)	12/11/2007	53		130									
CD-SB-6(19-20)	12/11/2007			21									
CD-SB-9(0-1)	12/12/2007	24		44						24		120	
CD-SB-9(4-5)	12/12/2007	31		53									
CD-SB-9 (19-20)	12/12/2007	9.9		12				21		26		100	
CD-SB-10 (19-20)	12/13/2007	33		46		19		9		22		110	
CD-SB-10 (19-20)DUP	12/13/2007	7.9		8.8		11				11		86	
IDEM Human Health		**NE**		**1600000**		**24000000**		**2800000**		**120000000**		**15000**	
Region 9 PRG		**NE**		**NE**		**29000000**		**190000**		**100000000**		**2100**	

SAMPLE ID		Benzo(a)pyrene		Benzo(b)fluoranthene		Pyrene		Chrysene		Fluoranthene		Dibenz(a,h)anthracene	
CD-SB-6(0-1)	12/11/2007	16		37		20		26		36			
CD-SB-6(4-5)	12/11/2007					26				43			
CD-SB-6(19-20)	12/11/2007	42		84		65		69		110			
CD-SB-9(0-1)	12/12/2007	120		170		160		120		190			
CD-SB-9(4-5)	12/12/2007					31				39			
CD-SB-9 (19-20)	12/12/2007	140		220		170		140		210		44	
CD-SB-10 (19-20)	12/13/2007	120		160		200		140		210		34	
CD-SB-10 (19-20)DUP	12/13/2007	110		180		140		130		140		36	
IDEM Human Health		**1500**		**15000**		**12000000**		**1500000**		**16000000**		**1500**	
Region 9 PRG		**210**		**2100**		**29000000**		**210000**		**22000000**		**210**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-1c cont.
C&D Technologies
Attica, IN
Area 1 PAH Soil Data

SAMPLE ID		Fluorene		Naphthalene		Phenanthrene		Benzo(k)fluoranthene		Benzo(g,h,i)perylene		Indeno(1,2,3-c,d)pyrene	
CD-SB-6(0-1)	12/11/2007			37		53							
CD-SB-6(4-5)	12/11/2007			95		94							
CD-SB-6(19-20)	12/11/2007					84		43					
CD-SB-9(0-1)	12/12/2007			27		94		110		87		76	
CD-SB-9(4-5)	12/12/2007			36		57							
CD-SB-9 (19-20)	12/12/2007					90		68		120		94	
CD-SB-10 (19-20)	12/13/2007	12		23		170		61		93		85	
CD-SB-10 (19-20)DUP	12/13/2007					62		51		81		77	
IDEM Human Health		**16000000**		**8000000**		**1200000**		**150000**		**NE**		**15000**	
Region 9 PRG		**26000000**		**190000**		**29000000**		**21000**		**12000000**		**2100**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-2a
C&D Technologies
Attica, IN
Area 3 Organics Soil Data

SAMPLE ID		pH (solid)		2-Butanone (MEK)		4-Methyl-2-pentanone (MIBK)		Acetone		Benzene		Carbon disulfide	
CD-SB-13 (0-1)	12/15/2007	9.1		45		47		46		0.84	J	2.1	J
CD-SB-13 (4-5)	12/15/2007	8.6		7.1	J	7.3	J	45		0.77	J	5.8	
CD-SB-13 (9-10)	12/15/2007	8.1				4.5	J	31		1.5	J		
CD-SB-14 (0-1)	12/15/2007							15	J	0.47	J		
CD-SB-14 (4-5)	12/15/2007							12	J	0.4	J		
CD-SB-14 (4-5)DUP	12/15/2007			6.5	J			39		0.57	J	0.78	J
CD-SB-15 (0-1)	12/15/2007												
CD-SB-15 (4-5)	12/15/2007												
IDEM Human Health		**NE**		**28000000**		**8700000**		**51000000**		**14000**		**480000**	
Region 9 PRG		**NE**		**110000000**		**47000000**		**54000000**		**1400**		**720000**	

SAMPLE ID		cis-1,2-Dichloroethene		Ethylbenzene		Tetrachloroethene		Toluene		Trichloroethene		Xylenes (total)	
CD-SB-13 (0-1)	12/15/2007	3.9	J	0.5	J	7.2		1.5	J	33		1.2	J
CD-SB-13 (4-5)	12/15/2007	9.1		0.56	J	3.2	J	1.8	J	23		1.2	J
CD-SB-13 (9-10)	12/15/2007	0.43	J			2.1	J	1.5	J	13			
CD-SB-14 (0-1)	12/15/2007					29	Jv	1.5	Jv	1.2	J		
CD-SB-14 (4-5)	12/15/2007					2.5	J	0.48	J	0.37	J		
CD-SB-14 (4-5)DUP	12/15/2007					0.47	J	0.74	J				
CD-SB-15 (0-1)	12/15/2007												
CD-SB-15 (4-5)	12/15/2007												
IDEM Human Health		**140000**		**160000**		**16000**		**310000**		**24000**		**170000**	
Region 9 PRG		**150000**		**400000**		**1300**		**310000**		**110**		**420000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-2a cont.
C&D Technologies
Attica, IN
Area 3 Organics Soil Data

SAMPLE ID		Dibenzofuran		Di-n-butyl phthalate		Bromoform		Diethyl phthalate	
CD-SB-13 (0-1)	12/15/2007								
CD-SB-13 (4-5)	12/15/2007								
CD-SB-13 (9-10)	12/15/2007								
CD-SB-14 (0-1)	12/15/2007	49	J	140	J				
CD-SB-14 (4-5)	12/15/2007								
CD-SB-14 (4-5)DUP	12/15/2007	38	J			0.69	J	23	J
CD-SB-15 (0-1)	12/15/2007								
CD-SB-15 (4-5)	12/15/2007								
IDEM Human Health		**980000**		**760000**		**580000**		**840000**	
Region 9 PRG		**1600000**		**62000000**		**220000**		**100000000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-2b
C&D Technologies
Attica, IN
Area 3 Inorganics Soil Data

SAMPLE ID		Lead		Antimony		Arsenic		Barium		Chromium		Cobalt		Copper		Nickel	
CD-SB-13 (0-1)	12/15/2007	1460															
CD-SB-13 (4-5)	12/15/2007	2040															
CD-SB-13 (9-10)	12/15/2007	37.3															
CD-SB-14 (0-1)	12/15/2007	226		3.4	Jv	31.7		157	Jv	10.5		2.6	B	24.9		9.3	
CD-SB-14 (4-5)	12/15/2007	33.9		0.67	Jv	9.9		39.8	J	6.1		2.1	B	10.2		6.7	
CD-SB-14 (4-5)DUP	12/15/2007	7.4				3.1		38.7	J	3.9		1.5	B	5.6		4.3	B
CD-SB-15 (0-1)	12/15/2007	824															
CD-SB-15 (4-5)	12/15/2007	101															
IDEM Human Health		**970**		**460**		**20**		**220000**		**1000000**		**NE**		**46000**		**23000**	
Region 9 PRG		**800**		**410**		**NE**		**67000**		**450**		**1900**		**41000**		**20000**	

SAMPLE ID		Silver		Thallium		Vanadium		Zinc		Mercury	
CD-SB-13 (0-1)	12/15/2007										
CD-SB-13 (4-5)	12/15/2007										
CD-SB-13 (9-10)	12/15/2007										
CD-SB-14 (0-1)	12/15/2007	0.21	B	0.99	B	14.7		53.2		0.16	
CD-SB-14 (4-5)	12/15/2007					10.1		36.8		0.018	B
CD-SB-14 (4-5)DUP	12/15/2007					8.9		19.6		0.057	B
CD-SB-15 (0-1)	12/15/2007										
CD-SB-15 (4-5)	12/15/2007										
IDEM Human Health		**5700**		**80**		**NE**		**340000**		**340**	
Region 9 PRG		**5100**		**67**		**1000**		**100000**		**310**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-2c
C&D Technologies
Attica, IN
Area 3 PAH Soil Data

SAMPLE ID		Dibenz(a,h)anthracene	2-Methylnaphthalene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene
CD-SB-14 (0-1)	12/15/2007	220	130	170	220	900	940
CD-SB-14 (4-5)	12/15/2007						24
CD-SB-14 (4-5)DUP	12/15/2007	66		59	130	310	270
IDEM Human Health		**1500**	**1600000**	**2800000**	**120000000**	**15000**	**1500**
Region 9 PRG		**210**	**NE**	**190000**	**100000000**	**2100**	**210**

SAMPLE ID		Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Naphthalene	Chrysene	1-Methylnaphthalene	Fluoranthene
CD-SB-14 (0-1)	12/15/2007	1300	620	84	1600	99	810
CD-SB-14 (4-5)	12/15/2007						33
CD-SB-14 (4-5)DUP	12/15/2007	350	180	35	300		780
IDEM Human Health		**15000**	**NE**	**8000000**	**1500000**	**NE**	**16000000**
Region 9 PRG		**2100**	**12000000**	**190000**	**210000**	**NE**	**22000000**

SAMPLE ID		Indeno(1,2,3-c,d)pyrene	Benzo(k)fluoranthene	Phenanthrene	Pyrene	Fluorene
CD-SB-14 (0-1)	12/15/2007	560	470	350	700	
CD-SB-14 (4-5)	12/15/2007			26		
CD-SB-14 (4-5)DUP	12/15/2007	180	180	500	560	49
IDEM Human Health		**15000**	**150000**	**1200000**	**12000000**	**16000000**
Region 9 PRG		**2100**	**21000**	**29000000**	**29000000**	**26000000**

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-3a
C&D Technologies
Attica, IN
Area 4 Organics Soil Data

SAMPLE ID		pH (solid)		2-Butanone (MEK)		Acetone		Benzene		Carbon disulfide		Ethylbenzene		Tetrachloroethene		Toluene	
CD-SB-16(0-1)	12/14/2007	8.6		3.9	J	23		1.7	J	1.5	J	0.91	Jv	0.4	Jv	3.7	Jv
CD-SB-16(4-5)	12/14/2007	7.9		5.1	J	38											
CD-SB-16(14-15)	12/14/2007	8.6				3.1	J	3.7	J			2.9	J			10	
CD-SB-17 (0-1)	12/13/2007	8.3								0.26	J						
CD-SB-17 (4-5)	12/13/2007	8.1								1.8	J						
CD-SB-18 (0-1)	12/13/2007									0.17	J						
CD-SB-18 (4-5)	12/13/2007									0.25	J						
CD-SB-18 (7-8)	12/13/2007									0.26	J						
CD-SB-20 (0-1)	12/13/2007															0.23	J
CD-SB-20 (4-5)	12/13/2007			1.1	J											0.27	J
CD-SB-20 (9-10)	12/13/2007					17		0.2	J							0.24	J
CD-SB-21 (0-1)	12/13/2007	8.2												130	J		
CD-SB-21 (4-5)	12/13/2007	8.4															
CD-SB-21 (9-10)	12/13/2007	8.5															
CD-SB-21 (9-10)DUP	12/13/2007	8.8				4.8	J										
CD-SB-21B(0-1)	6/4/2008													250	J		
IDEM Human Health				**28000000**		**51000000**		**14000**		**480000**		**160000**		**16000**		**310000**	
Region 9 PRG				**110000000**		**54000000**		**1400**		**720000**		**400000**		**1300**		**310000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-3a cont.
C&D Technologies
Attica, IN
Area 4 Organics Soil Data

SAMPLE ID		Trichloroethene		Xylenes (total)		bis(2-Ethylhexyl) phthalate		Dibenzofuran		Bromoform	
CD-SB-16(0-1)	12/14/2007	15		2.2	Jv	26	J	36	J		
CD-SB-16(4-5)	12/14/2007					38	J			0.56	J
CD-SB-16(14-15)	12/14/2007			9.1	J	20	J			0.93	J
CD-SB-17 (0-1)	12/13/2007										
CD-SB-17 (4-5)	12/13/2007										
CD-SB-18 (0-1)	12/13/2007										
CD-SB-18 (4-5)	12/13/2007										
CD-SB-18 (7-8)	12/13/2007										
CD-SB-20 (0-1)	12/13/2007										
CD-SB-20 (4-5)	12/13/2007										
CD-SB-20 (9-10)	12/13/2007										
CD-SB-21 (0-1)	12/13/2007	6000						370	J		
CD-SB-21 (4-5)	12/13/2007	3.6	J								
CD-SB-21 (9-10)	12/13/2007										
CD-SB-21 (9-10)DUP	12/13/2007										
CD-SB-21B(0-1)	6/4/2008	31000									
IDEM Human Health		**24000**		**170000**		**980000**		**980000**		**580000**	
Region 9 PRG		**110**		**420000**		**120000**		**1600000**		**220000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-3a cont.
C&D Technologies
Attica, IN
Area 4 Organics Soil Data

SAMPLE ID		Iodomethane		Dichlorodifluoromethane		Trichlorofluoromethane		4-Methyl-2-pentanone (MIBK)		Aroclor 1260		Acetonitrile	
CD-SB-16(0-1)	12/14/2007												
CD-SB-16(4-5)	12/14/2007	1	J										
CD-SB-16(14-15)	12/14/2007												
CD-SB-17 (0-1)	12/13/2007												
CD-SB-17 (4-5)	12/13/2007			0.56	J								
CD-SB-18 (0-1)	12/13/2007					0.7	J						
CD-SB-18 (4-5)	12/13/2007												
CD-SB-18 (7-8)	12/13/2007												
CD-SB-20 (0-1)	12/13/2007												
CD-SB-20 (4-5)	12/13/2007							1.1	J				
CD-SB-20 (9-10)	12/13/2007												
CD-SB-21 (0-1)	12/13/2007									130		370	J
CD-SB-21 (4-5)	12/13/2007												
CD-SB-21 (9-10)	12/13/2007												
CD-SB-21 (9-10)DUP	12/13/2007												
CD-SB-21B(0-1)	6/4/2008												
IDEM Human Health		**NE**		**310000000**		**NE**		**8700000**		**5300**		**NE**	
Region 9 PRG		**NE**		**310000**		**2000000**		**47000000**		**740**		**1800000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-3b
C&D Technologies
Attica, IN
Area 4 Inorganics Soil Data

SAMPLE ID		Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper	
CD-SB-16(0-1)	12/14/2007	1.4	B	7.9		76.6	J	0.12	B	0.22	B	8.6		5.1	B	30.6	
CD-SB-16(4-5)	12/14/2007			8.9		63.2	J	0.27	B			12.7		6.7		13.1	
CD-SB-16(14-15)	12/14/2007			5.2		13.8	B J			0.087	B	8		5	B	8.1	
CD-SB-17 (0-1)	12/13/2007																
CD-SB-17 (4-5)	12/13/2007																
CD-SB-18 (0-1)	12/13/2007																
CD-SB-18 (4-5)	12/13/2007																
CD-SB-18 (7-8)	12/13/2007																
CD-SB-20 (0-1)	12/13/2007			4.4		19.7	B			0.09	B	5.1					
CD-SB-20 (4-5)	12/13/2007			9.4		52.2						15.2					
CD-SB-20 (9-10)	12/13/2007			6.2		12.8	B			0.13	B	5.3					
CD-SB-21 (0-1)	12/13/2007			10.7		69.5		0.44	B	0.97		8.9		5.9		38.2	
CD-SB-21 (4-5)	12/13/2007			4.1		48.9		0.071	B			7.6		4.5	B	6.4	
CD-SB-21 (9-10)	12/13/2007			6.8		23		0.052	B			7.4		4.6	B	10.8	
CD-SB-21 (9-10)DUP	12/13/2007			3.9		12.5	B			0.055	B	5.3		2.7	B	6.1	
IDEM Human Health		**460**		**20**		**220000**		**2300**		**590**		**1000000**		**NE**		**46000**	
Region 9 PRG		**410**		**NE**		**67000**		**1900**		**450**		**450**		**1900**		**41000**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected below the quantitation limit, but above the MDL.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-3b cont.
C&D Technologies
Attica, IN
Area 4 Inorganics Soil Data

SAMPLE ID		Lead		Nickel		Thallium		Vanadium		Zinc		Mercury		Silver	
CD-SB-16(0-1)	12/14/2007	103		11.7		1.6		13.5		72.8		0.098	B		
CD-SB-16(4-5)	12/14/2007	11.6		15.7		1.2		21.5		51.9		0.041	B		
CD-SB-16(14-15)	12/14/2007	5.8		10.5		1	B	10.3		35.3					
CD-SB-17 (0-1)	12/13/2007	84.1													
CD-SB-17 (4-5)	12/13/2007	63.4													
CD-SB-18 (0-1)	12/13/2007	80.8													
CD-SB-18 (4-5)	12/13/2007	22.3													
CD-SB-18 (7-8)	12/13/2007	6.6													
CD-SB-20 (0-1)	12/13/2007	27.3										0.088	B		
CD-SB-20 (4-5)	12/13/2007	11.6										0.026	B		
CD-SB-20 (9-10)	12/13/2007	14													
CD-SB-21 (0-1)	12/13/2007	141		13.1		1.5		13.2		534		0.17		0.16	B
CD-SB-21 (4-5)	12/13/2007	6.3		11.3		1.1	B	14.6		27.6					
CD-SB-21 (9-10)	12/13/2007	8.4		13.4		1.2		11.2		49.3					
CD-SB-21 (9-10)DUP	12/13/2007	5.1		8.5		1.2		8.7		24.6					
IDEM Human Health		**970**		**23000**		**80**		**NE**		**340000**		**340**		**5700**	
Region 9 PRG		**800**		**20000**		**67**		**1000**		**100000**		**310**		**5100**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected below the quantitation limit, but above the MDL.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-3c
C&D Technologies
Attica, IN
Area 4 PAH Soil Data

SAMPLE ID		1-Methylnaphthalene		2-Methylnaphthalene		Benzo(b)fluoranthene		Benzo(g,h,i)perylene		Chrysene	
CD-SB-16(0-1)	12/14/2007	60		68		87		39		44	
CD-SB-21 (0-1)	12/13/2007	740		1300		2600		1900		1900	
IDEM Human Health		**NE**		**1600000**		**15000**		**12000000**		**1500000**	
Region 9 PRG		**NE**		**NE**		**2100**		**NE**		**210000**	

SAMPLE ID		Fluoranthene		Naphthalene		Phenanthrene		Pyrene		Acenaphthene	
CD-SB-16(0-1)	12/14/2007	73		40		120		45			
CD-SB-21 (0-1)	12/13/2007	1100		2000		1400		970		230	
IDEM Human Health		**16000000**		**8000000**		**1200000**		**12000000**		**24000000**	
Region 9 PRG		**22000000**		**190000**		**29000000**		**29000000**		**29000000**	

SAMPLE ID		Anthracene		Benzo(a)anthracene		Benzo(a)pyrene		Benzo(k)fluoranthene	
CD-SB-16(0-1)	12/14/2007								
CD-SB-21 (0-1)	12/13/2007	680		950		2100		900	
IDEM Human Health		**120000000**		**15000**		**1500**		**150000**	
Region 9 PRG		**100000000**		**2100**		**210**		**21000**	

SAMPLE ID		Acenaphthylene		Dibenz(a,h)anthracene		Fluorene		Indeno(1,2,3-c,d)pyrene	
CD-SB-16(0-1)	12/14/2007								
CD-SB-21 (0-1)	12/13/2007	560		520		230		1600	
IDEM Human Health		**2800000**		**1500**		**16000000**		**15000**	
Region 9 PRG		**190000**		**210**		**26000000**		**2100**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-4a
C&D Technologies
Attica, IN
Area 5 Organics Soil Data

SAMPLE ID		pH (solid)		Carbon disulfide		Dibenzofuran		Acetone		Benzene		Toluene		Ethylbenzene		Xylenes (total)	
CD-SB-22 (0-1)	12/13/2007			0.39	J	320	J										
CD-SB-22 (4-5)	12/13/2007			0.63	J			3.7	J	0.45	J	0.33	J				
CD-SB-23 (0-1)	12/13/2007	8										130	J	120	J	1100	
CD-SB-23 (4-5)	12/13/2007	8.1															
IDEM Human Health		**NE**		**480000**		**980000**		**51000000**		**14000**		**310000**		**160000**		**170000**	
Region 9 PRG		**NE**		**720000**		**1600000**		**54000000**		**1400**		**310000**		**400000**		**420000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-4b
C&D Technologies
Attica, IN
Area 5 Inorganics Soil Data

SAMPLE ID		Lead		Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper		Nickel		Silver	
CD-SB-22 (0-1)	12/13/2007	7840		8	J	8.7		85.3		0.29	B	0.16	B	46.2		4.7	B	102		26.3		0.15	B
CD-SB-22 (4-5)	12/13/2007	26.3				8.2		68.1		0.14	B			9		7.3		12.2		13.9			
CD-SB-23 (0-1)	12/13/2007	135				4.7		33.4				0.11	B	11.2									
CD-SB-23 (4-5)	12/13/2007	236				10.9		89.7				0.05	B	17									
CD-SB-96(0-1)	6/2/2008	139																					
CD-SB-96(1-2)	6/2/2008	50.1																					
CD-SB-97(0-1)	6/2/2008	129																					
CD-SB-97(1-2)	6/2/2008	21.8																					
CD-SB-98(0-1)	6/2/2008	232																					
CD-SB-98(1-2)	6/2/2008	15.9																					
CD-SB-99(0-1)	6/2/2008	108																					
CD-SB-99(1-2)	6/2/2008	15.8																					
CD-SB-100(0-1)	6/2/2008	125																					
CD-SB-100(1-2)	6/2/2008	35.7																					
CD-SB-101(0-1)	6/2/2008	197																					
CD-SB-101(1-2)	6/2/2008	25.3																					
CD-SB-102(0-1)	6/2/2008	178																					
CD-SB-102(1-2)	6/2/2008	66.2																					
CD-SB-103(0-1)	6/2/2008	705																					
CD-SB-103(0-1)DUP	6/2/2008	612																					
CD-SB-103(1-2)	6/2/2008	71.9																					
CD-SB-103(1-2)DUP	6/2/2008	118																					
CD-SB-104(0-1)	6/2/2008	262																					
CD-SB-104(1-2)	6/2/2008	36.3																					
IDEM Human Health		**970**		**460**		**20**		**220000**		**2300**		**590**		**1000000**		**NE**		**46000**		**23000**		**5700**	
Region 9 PRG		**800**		**410**		**NE**		**67000**		**1900**		**450**		**450**		**1900**		**41000**		**20000**		**5100**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-4b cont.
C&D Technologies
Attica, IN
Area 5 Inorganics Soil Data

SAMPLE ID		Thallium		Tin		Vanadium		Zinc		Mercury	
CD-SB-22 (0-1)	12/13/2007	1.7		21.6	J	10.8		99.3		0.039	B
CD-SB-22 (4-5)	12/13/2007	1.1				16.8		52.5		0.021	B
CD-SB-23 (0-1)	12/13/2007									0.052	B
CD-SB-23 (4-5)	12/13/2007									0.11	B
CD-SB-96(0-1)	6/2/2008										
CD-SB-96(1-2)	6/2/2008										
CD-SB-97(0-1)	6/2/2008										
CD-SB-97(1-2)	6/2/2008										
CD-SB-98(0-1)	6/2/2008										
CD-SB-98(1-2)	6/2/2008										
CD-SB-99(0-1)	6/2/2008										
CD-SB-99(1-2)	6/2/2008										
CD-SB-100(0-1)	6/2/2008										
CD-SB-100(1-2)	6/2/2008										
CD-SB-101(0-1)	6/2/2008										
CD-SB-101(1-2)	6/2/2008										
CD-SB-102(0-1)	6/2/2008										
CD-SB-102(1-2)	6/2/2008										
CD-SB-103(0-1)	6/2/2008										
CD-SB-103(0-1)DUP	6/2/2008										
CD-SB-103(1-2)	6/2/2008										
CD-SB-103(1-2)DUP	6/2/2008										
CD-SB-104(0-1)	6/2/2008										
CD-SB-104(1-2)	6/2/2008										
IDEM Human Health		**80**		**NE**		**NE**		**340000**		**340**	
Region 9 PRG		**67**		**100000**		**1000**		**100000**		**310**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-4c
C&D Technologies
Attica, IN
Area 5 PAH Soil Data

SAMPLE ID		1-Methylnaphthalene		2-Methylnaphthalene		Anthracene		Benzo(a)anthracene		Benzo(a)pyrene	
CD-SB-22 (0-1)	12/13/2007	780		1400		160		260		370	
CD-SB-22 (4-5)	12/13/2007	34		36							
IDEM Human Health		**NE**		**1600000**		**120000000**		**15000**		**1500**	
Region 9 PRG		**NE**		**NE**		**100000000**		**2100**		**210**	

SAMPLE ID		Benzo(b)fluoranthene		Benzo(g,h,i)perylene		Benzo(k)fluoranthene		Chrysene		Fluoranthene	
CD-SB-22 (0-1)	12/13/2007	530		270		270		360		480	
CD-SB-22 (4-5)	12/13/2007										
IDEM Human Health		**15000**		**NE**		**150000**		**1500000**		**16000000**	
Region 9 PRG		**2100**		**NE**		**21000**		**210000**		**22000000**	

SAMPLE ID		Indeno(1,2,3-c,d)pyrene		Naphthalene		Phenanthrene		Pyrene	
CD-SB-22 (0-1)	12/13/2007	270		900		1000		410	
CD-SB-22 (4-5)	12/13/2007					62			
IDEM Human Health		**15000**		**8000000**		**1200000**		**12000000**	
Region 9 PRG		**2100**		**190000**		**29000000**		**29000000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-5a
C&D Technologies
Attica, IN
Area 6 Organics Soil Data

SAMPLE ID		pH (solid)		Aroclor 1260		Carbon disulfide		Toluene	
CD-SB-1 (0-1)	1/9/2008	8.5		13	J	0.34	J		
CD-SB-1 (0-1) DUP	1/9/2008	8.5				0.49	J		
CD-SB-1 (4-5)	1/9/2008	8.4				0.45	J		
CD-SB-4 (0-1)	12/13/2007							24	
IDEM Human Health		**NE**		**5300**		**480000**		**310000**	
Region 9 PRG		**NE**		**740**		**720000**		**310000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-5b
C&D Technologies
Attica, IN
Area 6 Inorganics Soil Data

SAMPLE ID		Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper		Lead	
CD-SB-1 (0-1)	1/9/2008	0.46	Jv	9		49.3		0.14	B	0.72		9.6		3.1	B E	25.7		144	
CD-SB-1 (0-1) DUP	1/9/2008			4.1		37.7		0.094	B	0.6		18.3		2.8	B	26.8		108	
CD-SB-1 (4-5)	1/9/2008			3.3		66.1		0.34	B	0.48	B	14.5		2.8	B	24.1		44.5	
CD-SB-4 (0-1)	12/13/2007			11.7		51.5				0.93	B G	110						661	
CD-SB-4 (4-5)	12/13/2007			7.9		24.4						57.1						98.3	Jv
IDEM Human Health		**460**		**20**		**220000**		**2300**		**590**		**1000000**		**NE**		**46000**		**970**	
Region 9 PRG		**410**		**NE**		**67000**		**1900**		**450**		**450**		**1900**		**41000**		**800**	

SAMPLE ID		Nickel		Thallium		Vanadium		Zinc		Silver		Mercury	
CD-SB-1 (0-1)	1/9/2008	13.8		0.9	B	9.5		147					
CD-SB-1 (0-1) DUP	1/9/2008	12		0.95	B	5.4		94.2		0.18	B J		
CD-SB-1 (4-5)	1/9/2008	11.5				6.5		102					
CD-SB-4 (0-1)	12/13/2007									0.23	B	0.061	B
CD-SB-4 (4-5)	12/13/2007									0.75	B	0.037	B
IDEM Human Health		**23000**		**80**		**NE**		**340000**		**5700**		**340**	
Region 9 PRG		**20000**		**67**		**1000**		**100000**		**5100**		**310**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-6a
C&D Technologies
Attica, IN
Area 7 Organics Soil Data

SAMPLE ID		pH (solid)		Carbon disulfide		Dichlorodifluoromethane		Tetrachloroethene		Trichloroethene	
CD-SB-25(0-1)	12/14/2007			0.41	J	0.34	J				
CD-SB-25(0-1)DUP	12/14/2007			0.39	J						
CD-SB-25(4-5)	12/14/2007			0.42	J						
CD-SB-26(0-1)	12/14/2007	7.6		0.34	J			1.8	J	0.72	J
CD-SB-26(4-5)	12/14/2007	7.7		0.41	J						
IDEM Human Health		**NE**		**480000**		**310000000**		**16000**		**24000**	
Region 9 PRG		**NE**		**720000**		**310000**		**1300**		**110**	

SAMPLE ID		bis(2-Ethylhexyl) phthalate	
CD-SB-25(0-1)	12/14/2007		
CD-SB-25(0-1)DUP	12/14/2007		
CD-SB-25(4-5)	12/14/2007		
CD-SB-26(0-1)	12/14/2007		
CD-SB-26(4-5)	12/14/2007	21	J
IDEM Human Health		**980000**	
Region 9 PRG		**120000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-6b
C&D Technologies
Attica, IN
Area 7 Inorganics Soil Data

SAMPLE ID		Arsenic		Barium		Beryllium		Chromium		Cobalt		Copper		Lead		Nickel		Thallium	
CD-SB-26(0-1)	12/14/2007	6.2		55.1	J	0.25	B	10.4		5.7	B	8.3		9.6		11.4		0.81	B
CD-SB-26(4-5)	12/14/2007	25.7		80.4	J	0.44	B	15.2		7.4		23		24.8		23.6		1.8	
IDEM Human Health		20		220000		2300		1000000		0		46000		970		23000		80	
Region 9 PRG		0		67000		1900		450		1900		41000		800		20000		67	

SAMPLE ID		Vanadium		Zinc		Mercury	
CD-SB-26(0-1)	12/14/2007	20.3		43			
CD-SB-26(4-5)	12/14/2007	22.5		101		0.032	B
IDEM Human Health		0		340000		340	
Region 9 PRG		1000		100000		310	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-7a
C&D Technologies
Attica, IN
Area 8 Organics Soil Data

SAMPLE ID		pH (solid)		2-Butanone (MEK)		Acetone		Carbon disulfide		Toluene		Benzene		Xylenes (total)	
CD-SB-28(0-1)	12/11/2007	8.8								0.25	J				
CD-SB-28(4-5)	12/11/2007	8.2		48		88	B	3.7	J	0.25	J	0.24	J	0.72	J
CD-SB-28 (19-20)	12/11/2007														
CD-SB-29(0-1)	12/11/2007	9		16		34	B	1.4	J						
CD-SB-29(4-5)	12/11/2007	7.7													
CD-SB-31(0-1)	12/11/2007			11	J	99		4.3		4.7		2.3	J	2.7	J
CD-SB-31(4-5)	12/11/2007			4.8	J	26		3	J	4.8		2.2	J	3.3	J
CD-SB-31 (19-20)	12/11/2007														
CD-SB-32(0-1)	12/11/2007	8		6.3	J	48		0.65	J	3.3	J	2	J	1.4	J
CD-SB-32(0-1)DUP	12/11/2007	8.3		20	J	73				6.7		2.5	J	4.4	J
CD-SB-32(4-5)	12/11/2007	8.6		5.4	J	39				2.6	J	1.9	J	0.84	J
CD-SB-32 (19-20)	12/11/2007	8.1		31	Jv	160	Jv	12	Jv	3.3	Jv	2.5	Jv	1.7	Jv
CD-SB-6(0-1)	12/11/2007	8.5								0.44	J	0.24	J		
CD-SB-6(4-5)	12/11/2007	7.9													
CD-SB-6(19-20)	12/11/2007	7.8		13	J										
CD-SB-9(0-1)	12/12/2007							0.38	J						
CD-SB-9(4-5)	12/12/2007														
IDEM Human Health		**NE**		**28000000**		**51000000**		**480000**		**310000**		**14000**		**170000**	
Region 9 PRG		**NE**		**110000000**		**54000000**		**720000**		**310000**		**1400**		**420000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-7a cont.
C&D Technologies
Attica, IN
Area 8 Organics Soil Data

SAMPLE ID		bis(2-Ethylhexyl) phthalate		Dibenzofuran		Bromomethane		Ethylbenzene		Iodomethane		Methylene chloride	
CD-SB-28(0-1)	12/11/2007												
CD-SB-28(4-5)	12/11/2007	190	J										
CD-SB-28 (19-20)	12/11/2007	46	Jv										
CD-SB-29(0-1)	12/11/2007	44	J	49	J								
CD-SB-29(4-5)	12/11/2007												
CD-SB-31(0-1)	12/11/2007					1.3	J	1.3	J				
CD-SB-31(4-5)	12/11/2007							1.3	J				
CD-SB-31 (19-20)	12/11/2007											100	Jv
CD-SB-32(0-1)	12/11/2007							0.65	J				
CD-SB-32(0-1)DUP	12/11/2007							1.9	J				
CD-SB-32(4-5)	12/11/2007												
CD-SB-32 (19-20)	12/11/2007							0.91	Jv				
CD-SB-6(0-1)	12/11/2007	77	J										
CD-SB-6(4-5)	12/11/2007	76	J	25	J								
CD-SB-6(19-20)	12/11/2007	110	J										
CD-SB-9(0-1)	12/12/2007											1.4	J
CD-SB-9(4-5)	12/12/2007												
IDEM Human Health		**980000**		**980000**		**9900**		**160000**		**NE**		**200000**	
Region 9 PRG		**120000**		**1600000**		**13000**		**400000**		**NE**		**21000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-7a cont.
C&D Technologies
Attica, IN
Area 8 Organics Soil Data

SAMPLE ID		Trichloroethene		5-Nitro-o-toluidine		Tetrachloroethene		cis-1,2-Dichloroethene		Chloroethane		Dichlorodifluoromethane	
CD-SB-28(0-1)	12/11/2007												
CD-SB-28(4-5)	12/11/2007												
CD-SB-28 (19-20)	12/11/2007												
CD-SB-29(0-1)	12/11/2007												
CD-SB-29(4-5)	12/11/2007												
CD-SB-31(0-1)	12/11/2007												
CD-SB-31(4-5)	12/11/2007												
CD-SB-31 (19-20)	12/11/2007	470	Jv			62	Jv						
CD-SB-32(0-1)	12/11/2007	0.35	J										
CD-SB-32(0-1)DUP	12/11/2007												
CD-SB-32(4-5)	12/11/2007												
CD-SB-32 (19-20)	12/11/2007	0.64	Jv					1.8	Jv				
CD-SB-6(0-1)	12/11/2007									0.5	J	0.39	J
CD-SB-6(4-5)	12/11/2007											0.44	J
CD-SB-6(19-20)	12/11/2007												
CD-SB-9(0-1)	12/12/2007												
CD-SB-9(4-5)	12/12/2007											0.36	J
IDEM Human Health		**24000**		**NE**		**16000**		**140000**		**120000**		**310000000**	
Region 9 PRG		**110**		**NE**		**1300**		**150000**		**6500**		**310000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-7b
C&D Technologies
Attica, IN
Area 8 Inorganics Soil Data

SAMPLE ID		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper		Lead		Nickel	
CD-SB-6(0-1)	12/11/2007	5.5		28.9	J	0.098	B	0.22	B	8.1		3.2	B	10.9		37.9		8.9	
CD-SB-6(4-5)	12/11/2007	2.3		22.6	B J	0.13	B	0.16	B	7.2		2.2	B	8		7.5		16.7	
CD-SB-6(19-20)	12/11/2007	8.3		83		0.38	B E	0.5	B	9.1		5.5	B	15.4		70.8		12.4	
CD-SB-9(0-1)	12/12/2007	2.9		31.2				0.37	B	14.9						113			
CD-SB-9(4-5)	12/12/2007	1.1		21.8	B			0.17	B	4.7						16.6			
CD-SB-9 (19-20)	12/12/2007	8.8		110	J			0.45	B	18						30.6			
CD-SB-27(0-1)	12/11/2007	4.9		79.3	J	0.25	B	0.42	B	11.7		4.8	B	13.2		65		10.4	
CD-SB-27(0-1)DUP	12/11/2007	2.6		43.9	J	0.27	B	0.21	B	6.6		3.3	B	11.9		18.7		10.1	
CD-SB-27(4-5)	12/11/2007	7.5		75.2	J	0.26	B	0.43	B	13.5		7		24.9		89		17.6	
CD-SB-27(24-25)	12/11/2007	6		12700	J			1.7		11.9				72.7		141		16.1	
CD-SB-28(0-1)	12/11/2007	5.5		22.8	J			0.21	B	9.7		3.9	B	12.2		10.3		9.6	
CD-SB-28(4-5)	12/11/2007	6.4		75.2	J	0.14	B	0.42	B	13.4		6.2		15.9		69.7		13	
CD-SB-28 (19-20)	12/11/2007	29.6		379	J	0.56	B	3.2		41.2		14.1		210		916		57.6	
CD-SB-29(0-1)	12/11/2007	6.1		61.7	J	0.22	B	0.36	B	8.4		4.6	B	22.9		83.5		11.2	
CD-SB-29(4-5)	12/11/2007	2.8		33.2	J	0.15	B	0.18	B	6.2		2.6	B	7.9		6.4		8.3	
CD-SB-31(0-1)	12/11/2007	4.8		47.5	J			0.37	B	5.9						70.3			
CD-SB-31(4-5)	12/11/2007	6.7		37.3	J			0.36	B	8.5						27.2			
CD-SB-31 (19-20)	12/11/2007	32.7		19000	J			10.9		55.7						1050			
CD-SB-32(0-1)	12/11/2007	3.9		38.8	J			0.23	B	8.8						96.1			
CD-SB-32(0-1)DUP	12/11/2007	10.6		91.2	J			1.6		11.8						325			
CD-SB-32(4-5)	12/11/2007	0.94	Jv	11.8	B J			0.12	B	4.4						6.3			
CD-SB-32 (19-20)	12/11/2007	13.3		1330	J			4		29.1						1460			
IDEM Human Health		**20**		**220000**		**2300**		**590**		**1000000**		**NE**		**46000**		**970**		**23000**	
Region 9 PRG		**NE**		**67000**		**1900**		**450**		**450**		**1900**		**41000**		**800**		**20000**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-7b cont.
C&D Technologies
Attica, IN
Area 8 Inorganics Soil Data

SAMPLE ID		Vanadium		Zinc		Mercury		Antimony		Silver		Thallium		Tin	
CD-SB-6(0-1)	12/11/2007	8.3		50.3											
CD-SB-6(4-5)	12/11/2007	3.8	B	35.9											
CD-SB-6(19-20)	12/11/2007	15.5		127		0.81						1.4			
CD-SB-9(0-1)	12/12/2007														
CD-SB-9(4-5)	12/12/2007														
CD-SB-9 (19-20)	12/12/2007					0.077	B								
CD-SB-27(0-1)	12/11/2007	12.2		80.4		0.13									
CD-SB-27(0-1)DUP	12/11/2007	6.3		47.3		0.024	B								
CD-SB-27(4-5)	12/11/2007	16.9		93.6		0.098	B								
CD-SB-27(24-25)	12/11/2007	14.3		350		0.07	B	8.4	Jv	3.5		1.1	B	168	J
CD-SB-28(0-1)	12/11/2007	10.4		33.4											
CD-SB-28(4-5)	12/11/2007	16.9		93.7		0.15									
CD-SB-28 (19-20)	12/11/2007	21.2	B G	908				9.7	Jv	0.76	B			283	J
CD-SB-29(0-1)	12/11/2007	10.8		98		0.12		0.56	B						
CD-SB-29(4-5)	12/11/2007	5.8	B	30.4											
CD-SB-31(0-1)	12/11/2007					0.11									
CD-SB-31(4-5)	12/11/2007														
CD-SB-31 (19-20)	12/11/2007					0.041	B			38.3					
CD-SB-32(0-1)	12/11/2007					0.035	B								
CD-SB-32(0-1)DUP	12/11/2007					0.25									
CD-SB-32(4-5)	12/11/2007														
CD-SB-32 (19-20)	12/11/2007					0.37				65.8					
IDEM Human Health		**NE**		**340000**		**340**		**460**		**5700**		**80**		**NE**	
Region 9 PRG		**1000**		**100000**		**310**		**410**		**5100**		**67**		**100000**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-7c
C&D Technologies
Attica, IN
Area 8 PAH Soil Data

SAMPLE ID		2-Methylnaphthalene		Acenaphthene		Acenaphthylene		Anthracene		Benzo(a)anthracene		Benzo(a)pyrene	
CD-SB-27(0-1)	12/11/2007	50		100		100		240		540		620	
CD-SB-27(0-1)DUP	12/11/2007	83		100		130		200		420		480	
CD-SB-27(24-25)	12/11/2007	79		150		210		490		1500		1200	
CD-SB-27(4-5)	12/11/2007					230		270		1200		1300	
CD-SB-28 (19-20)	12/11/2007									10	Jv	9.3	Jv
CD-SB-28(0-1)	12/11/2007	120								130		170	
CD-SB-28(4-5)	12/11/2007	150		74		200		250		720		760	
CD-SB-29(0-1)	12/11/2007	140		41		36		83		210		200	
CD-SB-29(4-5)	12/11/2007	32											
CD-SB-31 (19-20)	12/11/2007							9.8	Jv	100	Jv	100	Jv
CD-SB-31(0-1)	12/11/2007	89				67		99		370		370	
CD-SB-32 (19-20)	12/11/2007	41	Jv	20	Jv	67	Jv	100	Jv	420	Jv	390	Jv
CD-SB-32(0-1)	12/11/2007	78				290		250		720		840	
CD-SB-32(0-1)DUP	12/11/2007	46		15		39		90		560		460	
CD-SB-32(4-5)	12/11/2007	42								10			
CD-SB-6(0-1)	12/11/2007	58						19				16	
CD-SB-6(19-20)	12/11/2007	21										42	
CD-SB-6(4-5)	12/11/2007	130											
CD-SB-9 (19-20)	12/12/2007	12				21		26		100		140	
CD-SB-9(0-1)	12/12/2007	44						24		120		120	
CD-SB-9(4-5)	12/12/2007	53											
IDEM Human Health		**1600000**		**24000000**		**2800000**		**120000000**		**15000**		**1500**	
Region 9 PRG		**NE**		**29000000**		**190000**		**100000000**		**2100**		**210**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-7c cont.
C&D Technologies
Attica, IN
Area 8 PAH Soil Data

SAMPLE ID		Benzo(b)fluoranthene		Benzo(g,h,i)perylene		Benzo(k)fluoranthene		Chrysene		Dibenz(a,h)anthracene	
CD-SB-27(0-1)	12/11/2007	840		310		430		580		120	
CD-SB-27(0-1)DUP	12/11/2007	670		270		290		500			
CD-SB-27(24-25)	12/11/2007	1800		690		610		1600		270	
CD-SB-27(4-5)	12/11/2007	1700		660		910		1200		280	
CD-SB-28 (19-20)	12/11/2007	16	Jv	12	Jv			11	Jv		
CD-SB-28(0-1)	12/11/2007	400						160			
CD-SB-28(4-5)	12/11/2007	990		400		500		740		160	
CD-SB-29(0-1)	12/11/2007	290		130		150		250			
CD-SB-29(4-5)	12/11/2007	32									
CD-SB-31 (19-20)	12/11/2007	160	Jv	91	Jv	39	Jv	130	Jv		
CD-SB-31(0-1)	12/11/2007	600		300		370		460			
CD-SB-32 (19-20)	12/11/2007	580	Jv	260	Jv	200	Jv	600	Jv	71	Jv
CD-SB-32(0-1)	12/11/2007	1600		520		550		880		270	
CD-SB-32(0-1)DUP	12/11/2007	870		340		330		570		120	
CD-SB-32(4-5)	12/11/2007	23						11			
CD-SB-6(0-1)	12/11/2007	37						26			
CD-SB-6(19-20)	12/11/2007	84				43		69			
CD-SB-6(4-5)	12/11/2007										
CD-SB-9 (19-20)	12/12/2007	220		120		68		140		44	
CD-SB-9(0-1)	12/12/2007	170		87		110		120			
CD-SB-9(4-5)	12/12/2007										
IDEM Human Health		**15000**		**12000000**		**150000**		**1500000**		**1500**	
Region 9 PRG		**2100**		**NE**		**21000**		**210000**		**210**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-7c cont.
C&D Technologies
Attica, IN
Area 8 PAH Soil Data

SAMPLE ID		Fluoranthene		Fluorene		Indeno(1,2,3-c,d)pyrene		Naphthalene		Phenanthrene		Pyrene		1-Methylnaphthalene	
CD-SB-27(0-1)	12/11/2007	990		150		350		48		560		770			
CD-SB-27(0-1)DUP	12/11/2007	630		180		300		84		540		480		63	
CD-SB-27(24-25)	12/11/2007	2800		300		630				2500		2300		74	
CD-SB-27(4-5)	12/11/2007	1100				610				330		950			
CD-SB-28 (19-20)	12/11/2007	13	Jv			9.2	Jv			9.5	Jv	17	Jv		
CD-SB-28(0-1)	12/11/2007	190								140		150			
CD-SB-28(4-5)	12/11/2007	1000		110		410		110		560		910		110	
CD-SB-29(0-1)	12/11/2007	380		51		130		67		340		320		94	
CD-SB-29(4-5)	12/11/2007	33						25		37				17	
CD-SB-31 (19-20)	12/11/2007	150	Jv			64	Jv			70	Jv	220	Jv		
CD-SB-31(0-1)	12/11/2007	500				270		35		200		470		44	
CD-SB-32 (19-20)	12/11/2007	1300	Jv	98	Jv	240	Jv	68	Jv	1400	Jv	1500	Jv	39	Jv
CD-SB-32(0-1)	12/11/2007	870		26		610		59		380		890		60	
CD-SB-32(0-1)DUP	12/11/2007	940		33		350		32		400		780		32	
CD-SB-32(4-5)	12/11/2007	13						31		28		12		24	
CD-SB-6(0-1)	12/11/2007	36						37		53		20		35	
CD-SB-6(19-20)	12/11/2007	110								84		65			
CD-SB-6(4-5)	12/11/2007	43						95		94		26		53	
CD-SB-9 (19-20)	12/12/2007	210				94				90		170		9.9	
CD-SB-9(0-1)	12/12/2007	190				76		27		94		160		24	
CD-SB-9(4-5)	12/12/2007	39						36		57		31		31	
IDEM Human Health		**16000000**		**16000000**		**15000**		**8000000**		**1200000**		**12000000**		**NE**	
Region 9 PRG		**22000000**		**26000000**		**2100**		**190000**		**29000000**		**29000000**		**NE**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-8a
C&D Technologies
Attica, IN
Area 10 Organics Soil Data

SAMPLE ID		pH (solid)		Carbon disulfide		Tetrachloroethene		Trichloroethene		bis(2-Ethylhexyl) phthalate	
CD-SB-34(0-1)	12/14/2007	11.7		0.31	J	2.8	J	25		1000	J
CD-SB-34(4-5)	12/14/2007	7.3		0.46	J			1.7	J	25	J
CD-SB-34(4-5) DUP	12/14/2007	7.4		0.38	J						
CD-SB-35(0-1)	12/14/2007			0.19	J						
CD-SB-35(4-5)	12/14/2007			0.47	J	7.8		10			
IDEM Human Health		**NE**		**480000**		**16000**		**24000**		**980000**	
Region 9 PRG		**NE**		**720000**		**1300**		**110**		**120000**	

SAMPLE ID		Acetone		Dichlorodifluoromethane		Toluene	
CD-SB-34(0-1)	12/14/2007						
CD-SB-34(4-5)	12/14/2007	8	J	0.39	J	0.39	J
CD-SB-34(4-5) DUP	12/14/2007						
CD-SB-35(0-1)	12/14/2007						
CD-SB-35(4-5)	12/14/2007	10	J			0.25	J
IDEM Human Health		**51000000**		**310000000**		**310000**	
Region 9 PRG		**54000000**		**310000**		**310000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-8b
C&D Technologies
Attica, IN
Area 10 Inorganics Soil Data

SAMPLE ID		Antimony		Arsenic		Barium		Cadmium		Chromium		Cobalt		Copper		Lead		Nickel		Thallium	
CD-SB-34(0-1)	12/14/2007	0.73	B	3.5		24.1	J	0.11	B	3.7		4.6	B	16.3		123		8		0.66	B
CD-SB-34(4-5)	12/14/2007			9.6		63	J			13		8.3		9.9		11.4		14.8		0.93	B
CD-SB-34(4-5) DUP	12/14/2007			3.6		47.1	J	0.11	B	6.2		3.9	B	9.9		38.8		8.6			
CD-SB-35(0-1)	12/14/2007			6.1		17.8	B J	0.11	B	5.3						12.1					
CD-SB-35(4-5)	12/14/2007			12.1		56.4	J			15.2						17.1					
IDEM Human Health		**460**		**20**		**220000**		**590**		**1000000**		**NE**		**46000**		**970**		**23000**		**80**	
Region 9 PRG		**410**		**NE**		**67000**		**450**		**450**		**1900**		**41000**		**800**		**20000**		**67**	

SAMPLE ID		Vanadium		Zinc		Mercury		Beryllium	
CD-SB-34(0-1)	12/14/2007	13.1		39.2		0.038	B		
CD-SB-34(4-5)	12/14/2007	24.4		38.9		0.026	B	0.3	B
CD-SB-34(4-5) DUP	12/14/2007	10.6		63.6		0.055	B	0.11	B
CD-SB-35(0-1)	12/14/2007								
CD-SB-35(4-5)	12/14/2007					0.021	B		
IDEM Human Health		**NE**		**340000**		**340**		**2300**	
Region 9 PRG		**1000**		**100000**		**310**		**1900**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-8c
C&D Technologies
Attica, IN
Area 10 PAH Soil Data

SAMPLE ID		Benzo(a)pyrene		Pyrene		1-Methylnaphthalene		2-Methylnaphthalene		Benzo(b)fluoranthene	
CD-SB-34(0-1)	12/14/2007	320		190							
CD-SB-34(4-5) DUP	12/14/2007	59		76		38		46		71	
CD-SB-35(0-1)	12/14/2007	44		53		140		150		71	
IDEM Human Health		**1500**		**12000000**		**NE**		**1600000**		**15000**	
Region 9 PRG		**210**		**29000000**		**NE**		**NE**		**2100**	

SAMPLE ID		Benzo(g,h,i)perylene		Benzo(k)fluoranthene		Chrysene		Fluoranthene		Indeno(1,2,3-c,d)pyrene	
CD-SB-34(0-1)	12/14/2007										
CD-SB-34(4-5) DUP	12/14/2007	43		33		47		100		52	
CD-SB-35(0-1)	12/14/2007					47		88			
IDEM Human Health		**12000000**		**150000**		**1500000**		**16000000**		**15000**	
Region 9 PRG		**NE**		**21000**		**210000**		**22000000**		**2100**	

SAMPLE ID		Phenanthrene		Naphthalene	
CD-SB-34(0-1)	12/14/2007				
CD-SB-34(4-5) DUP	12/14/2007	80			
CD-SB-35(0-1)	12/14/2007	210		52	
IDEM Human Health		**1200000**		**8000000**	
Region 9 PRG		**29000000**		**190000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-9a
C&D Technologies
Attica, IN
Area 11 Organics Soil Data

SAMPLE ID		pH (solid)		2-Butanone (MEK)		Acetone		Benzene		Bromoform		cis-1,2-Dichloroethene	
CD-SB-36 (0-1)	12/15/2007			11	J	34		2.9	J	0.43	J	0.28	J
CD-SB-36 (4-5)	12/15/2007			31		100		0.56	J				
CD-SB-36 (4-5)DUP	12/15/2007			18		100		0.33	J	0.42	J		
CD-SB-37 (0-1)	12/15/2007	7.8										640	J
CD-SB-37 (0-1)DUP	12/15/2007	8										510	J
CD-SB-37 (4-5)	12/15/2007	7.3		19	Jv	160						0.85	J
IDEM Human Health		**NE**		**28000000**		**51000000**		**14000**		**580000**		**140000**	
Region 9 PRG		**NE**		**110000000**		**54000000**		**1400**		**220000**		**150000**	

SAMPLE ID		Aroclor 1248		Toluene		Trichloroethene		Xylenes (total)		Carbon disulfide		Tetrachloroethene	
CD-SB-36 (0-1)	12/15/2007			8		1	J	4.9	J			34	
CD-SB-36 (4-5)	12/15/2007			5.8						1.2	J	6.6	
CD-SB-36 (4-5)DUP	12/15/2007			3.4	J					0.69	J	5.1	
CD-SB-37 (0-1)	12/15/2007											730	J
CD-SB-37 (0-1)DUP	12/15/2007	21	J									640	J
CD-SB-37 (4-5)	12/15/2007					0.41	J					4.1	J
IDEM Human Health		**5300**		**310000**		**24000**		**170000**		**480000**		**16000**	
Region 9 PRG		**740**		**310000**		**110**		**420000**		**720000**		**1300**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-9a cont.
C&D Technologies
Attica, IN
Area 11 Organics Soil Data

SAMPLE ID		Iodomethane		1,2,4-Trichlorobenzene		Dibenzofuran		Ethylbenzene		Aroclor 1260	
CD-SB-36 (0-1)	12/15/2007							2.2	J		
CD-SB-36 (4-5)	12/15/2007										
CD-SB-36 (4-5)DUP	12/15/2007										
CD-SB-37 (0-1)	12/15/2007										
CD-SB-37 (0-1)DUP	12/15/2007									11	J
CD-SB-37 (4-5)	12/15/2007	0.72	J	170	J	25	J				
IDEM Human Health		**NE**		**1100000**		**980000**		**160000**		**5300**	
Region 9 PRG		**NE**		**220000**		**1600000**		**400000**		**740**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-9b
C&D Technologies
Attica, IN
Area 11 Inorganics Soil Data

SAMPLE ID		Arsenic		Barium		Cadmium		Chromium		Lead		Mercury		Antimony		Beryllium		Cobalt	
CD-SB-36 (0-1)	12/15/2007	8.9		45.6	J	0.2	B	14.6		2930		0.041	Jv						
CD-SB-36 (4-5)	12/15/2007	6.7		78.2	J			10.1		40.3		0.061	B						
CD-SB-36 (4-5)DUP	12/15/2007	4.1		29.1	J	0.081	B	7.1		11		0.035	B						
CD-SB-37 (0-1)	12/15/2007	5.6		22.4	J	0.09	B	5.3		127				0.68	Jv	0.062	B	3	B
CD-SB-37 (0-1)DUP	12/15/2007	5.5		23.6	J	0.047	B	11.4		386		0.029	B	1.5	Jv			3.7	B
CD-SB-37 (4-5)	12/15/2007	8.2		86.6	J			10.4	Jv	15.1	Jv	0.074	B			0.19	B	8.3	
IDEM Human Health		**20**		**220000**		**590**		**1000000**		**970**		**340**		**460**		**2300**		**NE**	
Region 9 PRG		**NE**		**67000**		**450**		**450**		**800**		**310**		**410**		**1900**		**1900**	

SAMPLE ID		Copper		Nickel		Thallium		Vanadium		Zinc	
CD-SB-36 (0-1)	12/15/2007										
CD-SB-36 (4-5)	12/15/2007										
CD-SB-36 (4-5)DUP	12/15/2007										
CD-SB-37 (0-1)	12/15/2007	14.7		9.4		1.3		6.5		47.7	
CD-SB-37 (0-1)DUP	12/15/2007	20.1		11.3		0.94	B	6.8		55	
CD-SB-37 (4-5)	12/15/2007	13.3		14.8		1.1	Jv	20.9	Jv	53.3	
IDEM Human Health		**46000**		**23000**		**80**		**NE**		**340000**	
Region 9 PRG		**41000**		**20000**		**67**		**1000**		**100000**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-9c
C&D Technologies
Attica, IN
Area 11 PAH Soil Data

SAMPLE ID		1-Methylnaphthalene		Phenanthrene		Fluoranthene		2-Methylnaphthalene		Anthracene	
CD-SB-37 (0-1)	12/15/2007	810		110							
CD-SB-37 (0-1)DUP	12/15/2007	7800		990		710					
CD-SB-37 (4-5)	12/15/2007	43		84		84		58		38	
IDEM Human Health		**NE**		**1200000**		**16000000**		**1600000**		**120000000**	
Region 9 PRG		**NE**		**29000000**		**22000000**		**NE**		**100000000**	

SAMPLE ID		Benzo(a)pyrene		Benzo(b)fluoranthene		Chrysene		Naphthalene		Pyrene	
CD-SB-37 (0-1)	12/15/2007										
CD-SB-37 (0-1)DUP	12/15/2007										
CD-SB-37 (4-5)	12/15/2007	41		69		66		24		56	
IDEM Human Health		**1500**		**15000**		**1500000**		**8000000**		**12000000**	
Region 9 PRG		**210**		**2100**		**210000**		**190000**		**29000000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-10a
C&D Technologies
Attica, IN
Area 12 Organics Soil Data

SAMPLE ID		pH (solid)		Acetone		2-Butanone (MEK)		Carbon disulfide		Dichlorodifluoromethane	
CD-SB-39 (0-1)	12/13/2007	8.9		5.1	J						
CD-SB-39 (4-5)	12/13/2007	8.1									
CD-SB-39 (9-10)	12/13/2007	8.4									
CD-SB-40(1.5-2.5)	12/12/2007					1.1	J	0.21	J		
CD-SB-40(5.5-6.5)	12/12/2007							0.18	J	0.3	J
IDEM Human Health		**NE**		**51000000**		**28000000**		**480000**		**310000000**	
Region 9 PRG		**NE**		**54000000**		**110000000**		**720000**		**310000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-10b
C&D Technologies
Attica, IN
Area 12 Inorganics Soil Data

SAMPLE ID		Lead		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper		Nickel	
CD-SB-39 (0-1)	12/13/2007	104																	
CD-SB-39 (4-5)	12/13/2007	151																	
CD-SB-39 (9-10)	12/13/2007	4.8																	
CD-SB-40(1.5-2.5)	12/12/2007	132	Jv	4.2		30.3		0.16	B	0.23	B	4.8	Jv	2.8	B	14	Jv	5.7	
CD-SB-40(5.5-6.5)	12/12/2007	14.1		1	B	17.7	B	0.072	B	0.42	B	2.4		0.63	B	12.8		8.3	
IDEM Human Health		**970**		**20**		**220000**		**2300**		**590**		**1000000**		**NE**		**46000**		**23000**	
Region 9 PRG		**800**		**NE**		**67000**		**1900**		**450**		**450**		**1900**		**41000**		**20000**	

SAMPLE ID		Tin		Vanadium		Zinc		Mercury	
CD-SB-39 (0-1)	12/13/2007								
CD-SB-39 (4-5)	12/13/2007								
CD-SB-39 (9-10)	12/13/2007								
CD-SB-40(1.5-2.5)	12/12/2007	10.6	B J	6.3		55.8	Jv	0.11	B
CD-SB-40(5.5-6.5)	12/12/2007			1.9	B	163		0.036	B
IDEM Human Health		**NE**		**NE**		**340000**		**340**	
Region 9 PRG		**100000**		**1000**		**100000**		**310**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-10c
C&D Technologies
Attica, IN
Area 12 PAH Soil Data

SAMPLE ID		1-Methylnaphthalene		2-Methylnaphthalene		Anthracene		Pyrene		Chrysene	
CD-SB-40(1.5-2.5)	12/12/2007	130		130		110		430		290	
CD-SB-40(5.5-6.5)	12/12/2007			45		35		130		180	
IDEM Human Health		**NE**		**1600000**		**120000000**		**12000000**		**1500000**	
Region 9 PRG		**NE**		**NE**		**100000000**		**29000000**		**210000**	

SAMPLE ID		Benzo(a)anthracene		Phenanthrene		Benzo(a)pyrene		Benzo(b)fluoranthene		Benzo(g,h,i)perylene	
CD-SB-40(1.5-2.5)	12/12/2007	280		340							
CD-SB-40(5.5-6.5)	12/12/2007			110		150		240		100	
IDEM Human Health		**15000**		**1200000**		**1500**		**15000**		**12000000**	
Region 9 PRG		**2100**		**29000000**		**210**		**2100**		**NE**	

SAMPLE ID		Fluoranthene		Naphthalene		Benzo(k)fluoranthene		Indeno(1,2,3-c,d)pyrene	
CD-SB-40(1.5-2.5)	12/12/2007	520		85					
CD-SB-40(5.5-6.5)	12/12/2007	180		31		150		100	
IDEM Human Health		**16000000**		**8000000**		**150000**		**15000**	
Region 9 PRG		**22000000**		**190000**		**21000**		**2100**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-11a
C&D Technologies
Attica, IN
Area 13 Organics Soil Data

SAMPLE ID		pH (solid)		Carbon disulfide		Toluene		Benzo(a)anthracene		Chrysene		Fluoranthene	
CD-SB-42(0-1)	12/14/2007	8.8											
CD-SB-42(4-5)	12/14/2007	8.3											
CD-SB-48(0-1)	12/12/2007	8.1											
CD-SB-48(4-5)	12/12/2007	9.7											
CD-SB-49(0-1)	12/12/2007			0.2	J	0.35	J	19		27		60	
CD-SB-49(4-5)	12/12/2007			0.26	J	0.45	J						
IDEM Human Health		**NE**		**480000**		**310000**		**15000**		**1500000**		**16000000**	
Region 9 PRG		**NE**		**720000**		**310000**		**2100**		**210000**		**22000000**	

SAMPLE ID		Pyrene		bis(2-Ethylhexyl) phthalate		Benzene		Phenanthrene	
CD-SB-42(0-1)	12/14/2007								
CD-SB-42(4-5)	12/14/2007								
CD-SB-48(0-1)	12/12/2007								
CD-SB-48(4-5)	12/12/2007								
CD-SB-49(0-1)	12/12/2007	46						23	
CD-SB-49(4-5)	12/12/2007			32	J	0.26	J		
IDEM Human Health		**12000000**		**980000**		**14000**		**1200000**	
Region 9 PRG		**29000000**		**120000**		**1400**		**29000000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-11b
C&D Technologies
Attica, IN
Area 13 Inorganics Soil Data

SAMPLE ID		Lead		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper		Nickel		Vanadium		Zinc	
CD-SB-42(0-1)	12/14/2007	10.6																					
CD-SB-42(4-5)	12/14/2007	21.7																					
CD-SB-43(0-1)	12/14/2007	18																					
CD-SB-43(4-5)	12/14/2007	13.8																					
CD-SB-44(0-1)	12/14/2007	10.8																					
CD-SB-44(4-5)	12/14/2007	11.1																					
CD-SB-45(0-1)	12/12/2007	74.9																					
CD-SB-45(4-5)	12/12/2007	14.9																					
CD-SB-47(0-1)	12/12/2007	15.3																					
CD-SB-47(4-5)	12/12/2007	3.3																					
CD-SB-48(0-1)	12/12/2007	33.7																					
CD-SB-48(4-5)	12/12/2007	7.4																					
CD-SB-49(0-1)	12/12/2007	462		4.7		28		0.21	B	0.23	B	5.6		4	B	9.7		9.2		10.1		39.8	
CD-SB-49(4-5)	12/12/2007	10.7		4.8		32.1		0.25	B	0.18	B	8.4		4.4	B	11		10.1		12.3		39.1	
IDEM Human Health		**970**		**20**		**220000**		**2300**		**590**		**1000000**		**NE**		**46000**		**23000**		**NE**		**340000**	
Region 9 PRG		**800**		**NE**		**67000**		**1900**		**450**		**450**		**1900**		**41000**		**20000**		**1000**		**100000**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-12a
C&D Technologies
Attica, IN
Area 15 Organics Soil Data

SAMPLE ID		pH (solid)		Benzene		cis-1,2-Dichloroethene		Toluene		Acetone		Xylenes (total)	
CD-SB-50(0-1)	12/11/2007	8.3		0.83	J			1.8	J	6.6	J		
CD-SB-50(4-5)	12/11/2007	7.9				2.3	J			10	J		
CD-SB-50 (9-10)	12/11/2007	7.9		47	Jv	310	Jv	26	Jv			39	Jv
CD-SB-51(0-1)	12/11/2007							0.29	J	40			
CD-SB-51(4-5)	12/11/2007									28	B		
CD-SB-51 (9-10)	12/11/2007												
CD-SB-52(0-1)	12/11/2007	7.8						0.46	J				
CD-SB-52(4-5)	12/11/2007	8.1								78	B		
IDEM Human Health		**NE**		**14000**		**140000**		**310000**		**51000000**		**170000**	
Region 9 PRG		**NE**		**1400**		**150000**		**310000**		**54000000**		**420000**	

SAMPLE ID		Vinyl acetate		Tetrachloroethene		Carbon disulfide		Aroclor 1242		Aroclor 1254		Aroclor 1248	
CD-SB-50(0-1)	12/11/2007	1.1	J	1.2	J	2.2	J						
CD-SB-50(4-5)	12/11/2007							97		47			
CD-SB-50 (9-10)	12/11/2007												
CD-SB-51(0-1)	12/11/2007												
CD-SB-51(4-5)	12/11/2007									20	J		
CD-SB-51 (9-10)	12/11/2007					0.22	Jv					30	Jv
CD-SB-52(0-1)	12/11/2007												
CD-SB-52(4-5)	12/11/2007					0.54	J						
IDEM Human Health		**1400000**		**16000**		**480000**		**5300**		**5300**		**5300**	
Region 9 PRG		**1400000**		**1300**		**720000**		**740**		**740**		**740**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-12a cont.
C&D Technologies
Attica, IN
Area 15 Organics Soil Data

SAMPLE ID		Aroclor 1260		Trichloroethene		bis(2-Ethylhexyl) phthalate		2-Butanone (MEK)	
CD-SB-50(0-1)	12/11/2007			0.45	J				
CD-SB-50(4-5)	12/11/2007			0.53	J				
CD-SB-50 (9-10)	12/11/2007			220	Jv				
CD-SB-51(0-1)	12/11/2007							21	
CD-SB-51(4-5)	12/11/2007								
CD-SB-51 (9-10)	12/11/2007	23	Jv			41	Jv		
CD-SB-52(0-1)	12/11/2007								
CD-SB-52(4-5)	12/11/2007							30	
IDEM Human Health		**5300**		**24000**		**980000**		**28000000**	
Region 9 PRG		**740**		**110**		**120000**		**110000000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-12b
C&D Technologies
Attica, IN
Area 15 Inorganics Soil Data

SAMPLE ID		Arsenic		Barium		Cadmium		Chromium		Lead		Silver		Mercury	
CD-SB-50(0-1)	12/11/2007	8.4		56.5	J	0.3	B	12		15.6					
CD-SB-50(4-5)	12/11/2007	9.2		407	J	2.7		16.1		1140		11.8		0.089	B
CD-SB-50 (9-10)	12/11/2007	15.8		326	J	2.1		17.2		885		0.98	B	0.68	
CD-SB-51(0-1)	12/11/2007	5.6		40.5	J	0.32	B	12.2		53.1				0.054	B
CD-SB-51(4-5)	12/11/2007	11.7		44.7	J	0.57		7.1		34.4					
CD-SB-51 (9-10)	12/11/2007	7.7		261	J	0.83		13.7		471		5.3		0.056	B
CD-SB-52(0-1)	12/11/2007	24.4		20.7	B J	0.23	B	5.3		17.7					
CD-SB-52(4-5)	12/11/2007	5.2		84.1	J	0.43	B	11.8		103				0.11	B
IDEM Human Health		**20**		**220000**		**590**		**1000000**		**970**		**5700**		**340**	
Region 9 PRG		**NE**		**67000**		**450**		**450**		**800**		**5100**		**310**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-12c
C&D Technologies
Attica, IN
Area 15 PAH Soil Data

SAMPLE ID		1-Methylnaphthalene		2-Methylnaphthalene		Acenaphthene		Acenaphthylene		Anthracene	
CD-SB-50(0-1)	12/11/2007							100		120	
CD-SB-50(4-5)	12/11/2007	34		54				43		90	
CD-SB-50 (9-10)	12/11/2007	62	Jv	74	Jv	140	Jv	130	Jv	510	Jv
CD-SB-51(0-1)	12/11/2007	32		59				85		160	
CD-SB-51(4-5)	12/11/2007									33	
CD-SB-51 (9-10)	12/11/2007							25	Jv	32	Jv
CD-SB-52(0-1)	12/11/2007	21		34		8.9		29		51	
CD-SB-52(4-5)	12/11/2007	33		51		21		36		91	
IDEM Human Health		**NE**		**1600000**		**24000000**		**2800000**		**120000000**	
Region 9 PRG		**NE**		**NE**		**29000000**		**190000**		**100000000**	

SAMPLE ID		Benzo(a)anthracene		Benzo(a)pyrene		Benzo(b)fluoranthene		Benzo(g,h,i)perylene		Benzo(k)fluoranthene	
CD-SB-50(0-1)	12/11/2007	460		730		1100		520		370	
CD-SB-50(4-5)	12/11/2007	360		380		660		240		280	
CD-SB-50 (9-10)	12/11/2007	1600	Jv	1500	Jv	2200	Jv	960	Jv	730	Jv
CD-SB-51(0-1)	12/11/2007	800		690		1300		510		370	
CD-SB-51(4-5)	12/11/2007	34		57		69					
CD-SB-51 (9-10)	12/11/2007	110	Jv	150	Jv	250	Jv	150	Jv	84	Jv
CD-SB-52(0-1)	12/11/2007	180		260		370		290		130	
CD-SB-52(4-5)	12/11/2007	370		290		480		200		180	
IDEM Human Health		**15000**		**1500**		**15000**		**12000000**		**150000**	
Region 9 PRG		**2100**		**210**		**2100**		**NE**		**21000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-12c cont.
C&D Technologies
Attica, IN
Area 15 PAH Soil Data

SAMPLE ID		Chrysene		Dibenz(a,h)anthracene		Fluoranthene		Fluorene		Indeno(1,2,3-c,d)pyrene		Naphthalene	
CD-SB-50(0-1)	12/11/2007	570		180		450				480			
CD-SB-50(4-5)	12/11/2007	400				470				250		39	
CD-SB-50 (9-10)	12/11/2007	1700	Jv	320	Jv	2900	Jv	210	Jv	860	Jv	94	Jv
CD-SB-51(0-1)	12/11/2007	860		240		1200		26		470		28	
CD-SB-51(4-5)	12/11/2007	64				39							
CD-SB-51 (9-10)	12/11/2007	130	Jv	38	Jv	93	Jv	7.9	Jv	110	Jv		
CD-SB-52(0-1)	12/11/2007	220		84		230				180		24	
CD-SB-52(4-5)	12/11/2007	430		75		510		39		190		43	
IDEM Human Health		**1500000**		**1500**		**16000000**		**16000000**		**15000**		**8000000**	
Region 9 PRG		**210000**		**210**		**22000000**		**26000000**		**2100**		**190000**	

SAMPLE ID		Phenanthrene		Pyrene	
CD-SB-50(0-1)	12/11/2007	120		440	
CD-SB-50(4-5)	12/11/2007	220		410	
CD-SB-50 (9-10)	12/11/2007	1700	Jv	3400	Jv
CD-SB-51(0-1)	12/11/2007	420		1000	
CD-SB-51(4-5)	12/11/2007	42		53	
CD-SB-51 (9-10)	12/11/2007	54	Jv	110	Jv
CD-SB-52(0-1)	12/11/2007	120		270	Jv
CD-SB-52(4-5)	12/11/2007	260		480	
IDEM Human Health		**1200000**		**12000000**	
Region 9 PRG		**29000000**		**29000000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

URS used IDEM's Human Health Industrial Pyrene Screening Level Number of 12,000,000 ug/kg for Benzo(g,h,i)perylene.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-13
C&D Technologies
Attica, IN
Area 16 Soil Data

SAMPLE ID		pH (solid)
CD-SB-53(0-1)	12/14/2007	8.6
CD-SB-53(4-5)	12/14/2007	10
IDEM Human Health		**NE**
Region 9 PRG		**NE**

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM Human Health = IDEM human health industrial screening level.

Region 9 PRG = EPA Region 9 PRG screening level.

Total PCB's number of 5,300 ug/kg used for each Aroclor.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-14a
C&D Technologies
Attica, IN
Riverbank Area Inorganics Soil Data

SAMPLE ID		Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper		Lead	
CD-SB-55 (0-1)	1/8/2008	5.5	Jv	7		384	J	0.39	B	2.6		17.5		6.3	B	48.5		1050	
CD-SB-55 (0-1) DUP	1/8/2008	2.1	Jv	4.8		196	J	0.35	B	0.75		11.9		5	B	21			
CD-SB-56 (0-1)	1/8/2008			6		115	J	0.46	B	0.74		13.2		6.5		18.3		69.3	
CD-SB-57 (0-1)	1/8/2008			3.6		69.5	J	0.25	B	0.5	B	7.6		3.9	B	10.8		16.8	
CD-SB-58 (0-1)	1/8/2008	0.52	Jv	6.4		297	J	0.38	B	1		13.1		6.5	B	28		53.7	
CD-SB-59 (0-1)	1/8/2008	43.5	Jv	21		835	J	0.56	B	14.4		48.5		13.6		196		6260	
CD-SB-87(0-1)	4/9/2008	0.77	Jv	5.7		135		0.18	B	1.4		15.2		6.1	B	20.7		65.2	
CD-SB-88(0-1)	4/9/2008			6.7		146		0.25	B	1.5		21.8		6.9	B	26.6		69.9	
CD-SB-89(0-1)	4/9/2008			5.4		227		0.18	B	0.92		16.1		5.4	B	39.6		61.2	
CD-SB-90(0-1)	4/9/2008			5.4		118		0.2	B	1.4		16.1		5.7	B	19.9		70	
CD-SB-90(0-1)DUP	4/9/2008			5.3		116		0.2	B	1.3		14.3		5.2	B	21.3		73.1	
CD-SB-91(0-1)	4/9/2008			4.1		70.8		0.13	B	0.47	B	9.1		4.4	B	11.2		18.2	
CD-SB-92(0-1)	4/9/2008			2.9		54.3				0.26	B	6.3		3.1	B	8.2		13	
CD-SB-93(0-1)	4/9/2008			4.9		84.1		0.21	B	0.37	B	10.4		5	B	14.6		18.3	
CD-SB-94(0-1)	4/9/2008			6.8		119		0.18	B	0.36	B	12.8		6.3	B	24.2		31.8	
CD-SB-95(0-1)	4/9/2008			5.5		90.8		0.2	B	0.42	B	11.6		5.6	B	15		19.8	
IDEM HH Res		**140**		**3.9**		**63000**		**680**		**12**		**520000**		**NE**		**14000**		**400**	
Region 9 PRG Res		**31**		**NE**		**5375**		**154**		**37**		**NE**		**903**		**3129**		**400**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM HH Res = IDEM RISC Residential Soil DCL screening level.

Region 9 PRG Res = EPA Region 9 Residential PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

E = Matrix Interference.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-14a cont.
C&D Technologies
Attica, IN
Riverbank Area Inorganics Soil Data

SAMPLE ID		Nickel		Silver		Tin		Vanadium		Zinc		Mercury		Thallium	
CD-SB-55 (0-1)	1/8/2008	17.6		4.9		20.2	J	16.7		372		0.099	B		
CD-SB-55 (0-1) DUP	1/8/2008	13.2	E	1.2				14.1		136		0.069	B	0.79	B
CD-SB-56 (0-1)	1/8/2008	16.2		0.21	B			18.5		83.5		0.049	B	1.2	B
CD-SB-57 (0-1)	1/8/2008	9.7		0.14	B			10.1		49.4		0.028	B		
CD-SB-58 (0-1)	1/8/2008	16.7		1.3				16.1		105		0.042	B	0.77	B
CD-SB-59 (0-1)	1/8/2008	43		2.1		153	J	23.4	B G	2760		0.13		3.9	B G
CD-SB-87(0-1)	4/9/2008	16.3		0.25	B			17		94.7		0.16			
CD-SB-88(0-1)	4/9/2008	32.4		0.94	B			18.3		249		0.15		1	B
CD-SB-89(0-1)	4/9/2008	15.1		0.71	B			15.8		128		0.066	B		
CD-SB-90(0-1)	4/9/2008	15.9		0.56	B			15.5		94.5		0.29		0.86	B
CD-SB-90(0-1)DUP	4/9/2008	14.9		0.17	B			15.7		90.4		0.21		0.83	B
CD-SB-91(0-1)	4/9/2008	11.5		0.21	B			12.5		61.7		0.04	B		
CD-SB-92(0-1)	4/9/2008	7.3		0.38	B			8.6		37.5		0.026	B		
CD-SB-93(0-1)	4/9/2008	12.7						14.7		61.4		0.062	B	1.2	B
CD-SB-94(0-1)	4/9/2008	17.3		0.2	B			16.7		74.6		0.064	B	0.76	B
CD-SB-95(0-1)	4/9/2008	13.9	E					16.3		65.8		0.058	B	0.82	B
IDEM HH Res		**6900**		**1700**		**NE**		**NE**		**100000**		**100**		**24**	
Region 9 PRG Res		**1564**		**391**		**46924**		**78**		**23463**		**NE**		**5**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM HH Res = IDEM RISC Residential Soil DCL screening level.

Region 9 PRG Res = EPA Region 9 Residential PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

E = Matrix Interference.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-14b
C&D Technologies
Attica, IN
Riverbank Area PAH Soil Data

SAMPLE ID		1-Methylnaphthalene		2-Methylnaphthalene		Acenaphthene		Acenaphthylene		Anthracene	
CD-SB-55 (0-1)	1/8/2008	8.6	U	8.6	U	8.6	U	17		26	
CD-SB-55 (0-1) DUP	1/8/2008	7.1	U	7.1	U	7.1	U	15		14	
CD-SB-56 (0-1)	1/8/2008	8.7	U	8.7	U	8.7	U	39		26	
CD-SB-57 (0-1)	1/8/2008	9.1	U	9.1	U	9.1	U	9.1	U	9.1	U
CD-SB-58 (0-1)	1/8/2008	8.8	U	8.8	U	8.8	U	8.8	U	13	
CD-SB-59 (0-1)	1/8/2008	8.9	U	8.9	U	8.9	U	8.9	U	13	

SAMPLE ID		Fluoranthene		Fluorene		Naphthalene		Phenanthrene	
CD-SB-55 (0-1)	1/8/2008	180		8.6	U	8.6	U	73	
CD-SB-55 (0-1) DUP	1/8/2008	77		7.1	U	7.1	U	30	
CD-SB-56 (0-1)	1/8/2008	130		8.7	U	8.7	U	47	
CD-SB-57 (0-1)	1/8/2008	55		9.1	U	9.1	U	26	
CD-SB-58 (0-1)	1/8/2008	97		8.8	U	8.8	U	44	
CD-SB-59 (0-1)	1/8/2008	96		8.9	U	8.9	U	52	

SAMPLE ID		Total LMW PAH
CD-SB-55 (0-1)	1/8/2008	317.5
CD-SB-55 (0-1) DUP	1/8/2008	153.75
CD-SB-56 (0-1)	1/8/2008	263.75
CD-SB-57 (0-1)	1/8/2008	112.85
CD-SB-58 (0-1)	1/8/2008	180.4
CD-SB-59 (0-1)	1/8/2008	187.7
EPA Eco Risk SV		**1100**

Notes:

All results reported in micrograms per kilogram (ug/kg)

EPA Eco Risk SV = EPA SSL screening value for Total Low Molecular Weight and Total High Molecular Weight PAH values.

U = Not Detected

= Constituent detected above the EPA Ecologicial Risk Screening Value.

Table 3-14b cont.
C&D Technologies
Attica, IN
Riverbank Area PAH Soil Data

SAMPLE ID		Benzo(a)anthracene		Benzo(a)pyrene		Benzo(b)fluoranthene		Chrysene		Benzo(k)fluoranthene	
CD-SB-55 (0-1)	1/8/2008	150		170		230		160		96	
CD-SB-55 (0-1) DUP	1/8/2008	74		97		170		99		59	
CD-SB-56 (0-1)	1/8/2008	120		210		250		180		160	
CD-SB-57 (0-1)	1/8/2008	28		35		48		40		21	
CD-SB-58 (0-1)	1/8/2008	61		58		78		75		39	
CD-SB-59 (0-1)	1/8/2008	80		74		86		97		68	

SAMPLE ID		Benzo(g,h,i)perylene		Dibenz(a,h)anthracene		Indeno(1,2,3-c,d)pyrene		Pyrene	
CD-SB-55 (0-1)	1/8/2008	110		34		96		230	
CD-SB-55 (0-1) DUP	1/8/2008	82		27		69		110	
CD-SB-56 (0-1)	1/8/2008	150		41		130		190	
CD-SB-57 (0-1)	1/8/2008	32		9.1	U	24		69	
CD-SB-58 (0-1)	1/8/2008	47		8.8	U	45		130	
CD-SB-59 (0-1)	1/8/2008	52		8.9	U	53		130	

SAMPLE ID		Total HMW PAH
CD-SB-55 (0-1)	1/8/2008	1276
CD-SB-55 (0-1) DUP	1/8/2008	787
CD-SB-56 (0-1)	1/8/2008	1431
CD-SB-57 (0-1)	1/8/2008	301.55
CD-SB-58 (0-1)	1/8/2008	537.4
CD-SB-59 (0-1)	1/8/2008	644.45
EPA Eco Risk SV		**29000**

Notes:

All results reported in micrograms per kilogram (ug/kg)

EPA Eco Risk SV = EPA SSL screening value for Total Low Molecular Weight and Total High Molecular Weight PAH values.

U = Not Detected

= Constituent detected above the EPA Ecologicial Risk Screening Value.

Table 3-14c

Blood Lead Concentration Calculation/Recreational Scenario--1 Visit Per Week

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 05/19/05 **EDIT RED CELLS**

Exposure Variable	Description of Exposure Variable	Units	Region OR Ethnic GSDi and PbBo Data from NHANES III Analysis							
			All/All	All/White	All/Black	All/Mexican	Northeast/All	Midwest/All	South/All	West/All
PbS	Soil lead concentration	ug/g or ppm	1197	1288	938	794	1092	558	1366	1287
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
GSD_i	Geometric standard deviation PbB	--	2.1	2.1	2.2	2.3	2.0	2.2	2.1	2.1
PbB_0	Baseline PbB	ug/dL	1.5	1.5	1.8	1.7	2.0	1.5	1.4	1.4
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--	--	--	--	--	--	--
W_S	Weighting factor: fraction of IR_{S+D} ingested as outdoor soil	--	--	--	--	--	--	--	--	--
K_{SD}	Mass fraction of soil in dust	--	--	--	--	--	--	--	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	219	219	219	219	219	1	219	219
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365	365	365	365	365	7	365	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**3.3**	**3.3**	**3.1**	**2.8**	**3.6**	**1.7**	**3.4**	**3.3**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	10.0	10.0	10.0	10.0	10.0	5.6	10.0	10.0
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**5.0%**	**5.0%**	**5.0%**	**5.0%**	**5.0%**	**0.8%**	**5.0%**	**5.0%**

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Table 3-14d

Blood Lead Concentration Calculation/Recreational Scenario--2 Visits Per Week

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 05/19/05 **EDIT RED CELLS**

Exposure Variable	Description of Exposure Variable	Units	Region OR Ethnic GSDi and PbBo Data from NHANES III Analysis Midwest/All
PbS	Soil lead concentration	ug/g or ppm	558
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	2.2
PbB_0	Baseline PbB	ug/dL	1.5
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--
K_{SD}	Mass fraction of soil in dust	--	--
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	2
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	7
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**1.9**
$PbB_{fetal, 0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	6.2
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	10.0
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**1.2%**

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

Cells highlighted in green are based on default values. Cells highlighted in yellow are based on site-specific input parameters.

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Table 3-14e
IEUBK Output
Children/Recreational Scenario (One visit per week)

```
==============================================================================
     Model Version: 1.0 Build 264
     User Name:
     Date:
     Site Name:
     Operable Unit:
     Run Mode: Research

==============================================================================
     The time step used in this model run: 1 - Every 4 Hours (6 times a day).

     ****** Air ******

     Indoor Air Pb Concentration: 30.000 percent of outdoor.
     Other Air Parameters:

     Age        Time        Ventilation          Lung          Outdoor Air
              Outdoors          Rate          Absorption         Pb Conc
              (hours)        (m^3/day)            (%)          (ug Pb/m^3)
     ---------------------------------------------------------------------
     .5-1      1.000           2.000            32.000           0.100
     1-2       2.000           3.000            32.000           0.100
     2-3       3.000           5.000            32.000           0.100
     3-4       4.000           5.000            32.000           0.100
     4-5       4.000           5.000            32.000           0.100
     5-6       4.000           7.000            32.000           0.100
     6-7       4.000           7.000            32.000           0.100

     ****** Diet ******

     Age     Diet Intake(ug/day)
     ----------------------------------
     .5-1      5.530
     1-2       5.780
     2-3       6.490
     3-4       6.240
     4-5       6.010
     5-6       6.340
     6-7       7.000

     ****** Drinking Water ******

     Water Consumption:
     Age     Water (L/day)
     ----------------------------------
     .5-1      0.200
     1-2       0.500
     2-3       0.520
     3-4       0.530
     4-5       0.550
     5-6       0.580
     6-7       0.590

     Drinking Water Concentration: 4.000 ug Pb/L

     ****** Soil & Dust ******

     Age          Soil (ug Pb/g)       House Dust (ug Pb/g)
     ---------------------------------------------------------
     .5-1              234.370              164.060
```

		C&D_1 dy per wk
1-2	234.370	164.060
2-3	234.370	164.060
3-4	234.370	164.060
4-5	234.370	164.060
5-6	234.370	164.060
6-7	234.370	164.060

****** Alternate Intake ******

Age	Alternate (ug Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 2.500 ug Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (ug/day)	Diet (ug/day)	Alternate (ug/day)	Water (ug/day)
.5-1	0.021	2.538	0.000	0.367
1-2	0.034	2.629	0.000	0.910
2-3	0.062	2.983	0.000	0.956
3-4	0.067	2.904	0.000	0.986
4-5	0.067	2.853	0.000	1.044
5-6	0.093	3.031	0.000	1.109
6-7	0.093	3.358	0.000	1.132

Year	Soil+Dust (ug/day)	Total (ug/day)	Blood (ug/dL)
.5-1	4.581	7.507	4.1
1-2	7.209	10.781	4.5
2-3	7.287	11.289	4.2
3-4	7.376	11.333	4.0
4-5	5.574	9.538	3.4
5-6	5.053	9.287	2.9
6-7	4.788	9.372	2.7

Table 3-14f: IEUBK Output Children/Recreational Scenario (Two visits per week)

Model Version: 1.0 Build 264
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

The time step used in this model run: 1 - Every 4 Hours (6 times a day).

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (ug Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(ug/day)
.5-1	5.530
1-2	5.780
2-3	6.490
3-4	6.240
4-5	6.010
5-6	6.340
6-7	7.000

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 4.000 ug Pb/L

****** Soil & Dust ******

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
.5-1	288.310	201.820
1-2	288.310	201.820
2-3	288.310	201.820
3-4	288.310	201.820
4-5	288.310	201.820
5-6	288.310	201.820
6-7	288.310	201.820

****** Alternate Intake ******

Age	Alternate (ug Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 2.500 ug Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (ug/day)	Diet (ug/day)	Alternate (ug/day)	Water (ug/day)
.5-1	0.021	2.510	0.000	0.363
1-2	0.034	2.593	0.000	0.897
2-3	0.062	2.949	0.000	0.945
3-4	0.067	2.874	0.000	0.976
4-5	0.067	2.834	0.000	1.037
5-6	0.093	3.015	0.000	1.103
6-7	0.093	3.342	0.000	1.127

Year	Soil+Dust (ug/day)	Total (ug/day)	Blood (ug/dL)
.5-1	5.572	8.466	4.6
1-2	8.749	12.274	5.1
2-3	8.860	12.816	4.8
3-4	8.982	12.899	4.5
4-5	6.811	10.748	3.8
5-6	6.182	10.394	3.3
6-7	5.862	10.425	3.0

Table 3-15a
C&D Technologies
Attica, IN
Residential Area Inorganics Soil Data

SAMPLE ID		Lead**		Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper	
CD-SB-61 (0-1)	1/8/2008	144		0.68	Jv	14.6		35.2	J	0.29	B	0.48	B	8.4		4.4	B	19.3	
CD-SB-61 (0-1) DUP	1/8/2008	241		1.1	Jv	13.2		51.5	J	0.64		0.55	B	9		4.9	B	24.4	
CD-SB-64 (0-1)	1/8/2008	520		1.1	Jv	10.4		98.8	J	0.37	B	0.98		14.6		6.5		44.2	
IDEM HH Res		**400**		**140**		**3.9**		**63000**		**680**		**12**		**520000**		**NE**		**14000**	
Region 9 PRG Res		**400**		**31**		**NE**		**5375**		**154**		**37**		**NE**		**903**		**3129**	

SAMPLE ID		Nickel		Thallium		Vanadium		Zinc		Mercury		Silver	
CD-SB-61 (0-1)	1/8/2008	14.6		1.2		11.6		70.4		0.085	B		
CD-SB-61 (0-1) DUP	1/8/2008	18.7		1.1	B	13.2		82.9		0.13			
CD-SB-64 (0-1)	1/8/2008	17.5		1.2		18.3		306		0.28		0.32	B
IDEM HH Res		**6900**		**24**		**NE**		**100000**		**100**		**1700**	
Region 9 PRG Res		**1564**		**5**		**78**		**23463**		**NE**		**391**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

Lead** = see Table 3-15b for all residential area lead results.

IDEM HH Res = IDEM RISC Residential Soil DCL screening level.

Region 9 PRG Res = EPA Region 9 Residential PRG screening level.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

E = Matrix Interference.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-15b
C&D Technologies
Attica, IN
Residential Area Lead Soil Data

SAMPLE ID		Lead	Concentration at Each Location (a)	Concentration at Each Exposure Area (b)
CD-SB-60 (0-1)	1/8/2008	91.6	91.6	
CD-SB-61 (0-1)	1/8/2008	144		
CD-SB-61 (0-1) DUP	1/8/2008	241	192.5	
CD-SB-62 (0-1)	1/8/2008	777		
CD-SB-62 (0-1) DUP	1/8/2008	483	630	304.7
CD-SB-63 (0-1)	1/8/2008	212		
CD-SB-63 (0-1) DUP	1/8/2008	113	162.5	
CD-SB-64 (0-1)	1/8/2008	520	520	
CD-SB-65 (0-1)	1/8/2008	233		
CD-SB-65 (0-1) DUP	1/8/2008	158	195.5	292.67
CD-SB-66 (0-1)	1/8/2008	9.9		
CD-SB-66 (0-1) DUP	1/8/2008	5.7	7.8	7.8
CD-SB-74 (0-1)	3/24/2008	164	164	164
CD-SB-75 (0-1)	3/24/2008	203	203	203
CD-SB-76 (0-1)	3/24/2008	170	170	170
CD-SB-77 (0-1)	3/24/2008	80.5		
CD-SB-77 (0-1) DUP	3/24/2008	178	129.25	129.25
CD-SB-78 (0-1)	3/24/2008	280	280	280
CD-SB-79 (0-1)	3/24/2008	253	253	253
CD-SB-80 (0-1)	3/24/2008	126	126	126
CD-SB-81 (0-1)	3/24/2008	217	217	217
CD-SB-82 (0-1)	3/24/2008	176	176	176
CD-SB-83 (0-1)	3/24/2008	130	130	130
CD-SB-84 (0-1)	3/24/2008	126		
CD-SB-84 (0-1) DUP	3/24/2008	109	117.5	117.5
CD-SB-85 (0-1)	3/24/2008	146	146	146
CD-SB-86 (0-1)	3/24/2008	170	170	170
IDEM HH Res		**400**		
Region 9 PRG Res		**400**		
Arithmetic Mean				**180.43**

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM HH Res = IDEM RISC Residential Soil DCL screening level.

Region 9 PRG Res = EPA Region 9 Residential PRG screening level.

(a) Concentration of the primary and duplicate samples were averaged.

(b) The arithmetic mean concentration was calculacted based on an expsoure area of 0.5 acre (the default for a residential lot). Data from sample locations that are within a 0.5-acre area (CD-SB-60/CD-SB-61/CD-SB-62 and CD-SB-63/CD-SB-64/CD-SB-65) were grouped as one exposure area.

= Constituent detected above the IDEM Human Health SV

= Constituent detected above the Region 9 PRG SV (if IDEM Human Health SV not available)

Table 3-16
C&D Technologies
Attica, IN
Soil Background Data

SAMPLE ID		Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper		Lead		Nickel	
CD-SB-67 (0-1)	1/7/2008	7.9	UJ	8.5		124	J	0.62	B	0.74		15.1		8.8		20.1		15.4		22	
CD-SB-67 (4-5)	1/7/2008	7.9	UJ	9.4		130	J	0.68		0.85		17.2		10		22.5		14.7		25.2	
CD-SB-68 (0-1)	1/7/2008	8.7	UJ	9.3		138	J	0.73		0.83		18.5		10.3		23.2		15.9		26	
CD-SB-68 (4-5)	1/7/2008	7.3	UJ	8.3		107	J	0.59	B	0.67		14.7		8.7		18.5		11.4		21.9	
CD-SB-69 (0-1)	1/7/2008	7.7	UJ	8.8		123	J	0.62	B	0.77		14.7		9.4		24.2		13.9		23.8	
CD-SB-69 (4-5)	1/7/2008	7.6	UJ	9		118	J	0.59	B	0.75		14.3		9.2		21.3		12.9		22.9	
CD-SB-70 (0-1)	1/7/2008	7.8	UJ	7		105	J	0.55	B	0.67		14.3		7.7		17.3		13.1		19.4	
CD-SB-70 (4-5)	1/7/2008	8.3	UJ	10		139	J	0.71		0.84		17.8		10.9		23.8		14.2		27.1	
CD-SB-71 (0-1)	1/7/2008	8.1	UJ	10.5		149	J	0.78		0.9		19.4		11.3		25.3		15.8		28.8	
CD-SB-71 (4-5)	1/7/2008	8.2	UJ	9.5		121	J	0.63	B	0.76		15.6		9.6		20.1		12.6		24	
CD-SB-72 (0-1)	1/7/2008	7.5	UJ	7.8		116	J	0.6	B	0.77		15.3		8.3		20.2		17.4		20.8	
CD-SB-72 (4-5)	1/7/2008	8	UJ	10.1		118	J	0.69		0.69		17.6		10.1		20.7		14.4		24.8	
CD-SB-73 (0-1)	1/7/2008	0.56	Jv	5		67.6	J	0.37	B	0.76		11.3		5.3	B	13.1		14.1		13.2	
CD-SB-73 (4-5)	1/7/2008	7.9	UJ	7.4		110	J	0.57	B	0.63	B	15.1		8.4		19.1		12.6		20.8	
IDEM HH Res		**140**		**3.9**		**63000**		**680**		**12**		**520000**		**903**		**14000**		**400**		**6900**	

SAMPLE ID		Selenium		Silver		Thallium		Tin		Vanadium		Zinc		Mercury	
CD-SB-67 (0-1)	1/7/2008	0.66	U	1.3	U	1.3	U	13.2	UJ	21.5		80.3		0.043	B
CD-SB-67 (4-5)	1/7/2008	0.66	U	1.3	U	1.3	U	13.1	UJ	23.9		88.6		0.025	B
CD-SB-68 (0-1)	1/7/2008	0.73	U	1.5	U	1.8		14.5	UJ	26.1		91.2		0.048	B
CD-SB-68 (4-5)	1/7/2008	0.6	U	1.2	U	1.1	B	12.1	UJ	20.8		73.2		0.042	B
CD-SB-69 (0-1)	1/7/2008	0.64	U	1.3	U	0.72	B	12.9	UJ	19.5		84.5		0.07	B
CD-SB-69 (4-5)	1/7/2008	0.63	U	1.3	U	1.3	U	12.6	UJ	20.6		80.1		0.041	B
CD-SB-70 (0-1)	1/7/2008	0.65	U	1.3	U	1.3		13	UJ	20.5		70.8		0.048	B
CD-SB-70 (4-5)	1/7/2008	0.69	U	1.4	U	1.4	U	13.8	UJ	25.3		90.3		0.023	B
CD-SB-71 (0-1)	1/7/2008	0.67	U	1.3	U	1.2	B	13.4	UJ	27.1		97.5		0.048	B
CD-SB-71 (4-5)	1/7/2008	0.69	U	1.4	U	1	B	13.7	UJ	22.3		77.3		0.025	B
CD-SB-72 (0-1)	1/7/2008	0.62	U	1.2	U	1	B	12.4	UJ	22.2		82.6		0.077	B
CD-SB-72 (4-5)	1/7/2008	0.67	U	1.3	U	0.96	B	13.3	UJ	24.7		87.8		0.041	B
CD-SB-73 (0-1)	1/7/2008	0.59	U	1.2	U	0.99	B	11.8	UJ	14.9		59.3		0.044	B
CD-SB-73 (4-5)	1/7/2008	0.65	U	1.3	U	0.85	B	13.1	UJ	20.9		74.4		0.073	B
IDEM HH Res		**1700**		**1700**		**24**		**46924**		**78**		**100000**		**100**	

Notes:

All results reported in milligrams per kilogram (mg/kg)

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected below the quantitation limit, but above the MDL.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated RL due to matrix interference.

Table 3-17a
C&D Technologies
Attica, IN
Organics Groundwater Data
December 17, 18, 19, 2007 and January 9, 2008

LOCATION	cis-1,2-Dichloroethene		Toluene		Trichloroethene		Carbon disulfide		Carbon tetrachloride	
CD-MW-1	0.22	J	0.22	J	7.3					
CD-MW-1S					1.5					
CD-MW-1S-DUP					1.6					
CD-MW-2	3				20					
CD-MW-2S			0.23	J	2.1		0.34	J	0.3	J
CD-MW-3(1)			0.18	J	1.9					
CD-MW-3S(1)			0.17	J						
CD-MW-4			0.22	J						
CD-MW-5			0.25	J						
CD-MW-5-DUP			0.25	J						
CD-MW-6S					0.55	J				
IDEM RDCL	**70**		**1000**		**5**		**1300**		**5**	

Notes:

Table shows detected values only.

All results reported in micrograms per liter (ug/L)

IDEM RDCL = Indiana Department of Environmental Management Residential Default Closure Level - Federal Safe Drinking Water Act (SWDA) maximum contaminant levels (MCLs) represent the default RDCL for those contaminants where an MCL has been established.

SW SV = Surface water quality screening value

(1) = Well is considered to be a background well.

(2) = bis(2-Ethylhexyl) phthalate is listed as a common lab and field contaminant in the National Functional Guidelines for Data Review.

NE = IDEM RDCL or SW SV has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM RDCL

Table 3-17b
C&D Technologies
Attica, IN
Organics Groundwater Data
June 3, 4, 5, 2008

LOCATION	cis-1,2-Dichloroethene		Trichloroethene		bis(2-Ethylhexyl) phthalate[2]		Styrene		2-Butanone (MEK)		Bromodichloromethane	
CD-MW-1	0.25	J	6.9		1	J						
CD-MW-1-DUP	0.25	J	6.8									
CD-MW-1S	0.35	J	3.6									
CD-MW-2	2.1		16									
CD-MW-2S			1.8									
CD-MW-2S-DUP			1.7									
CD-MW-3[1]			2.5				0.44	J				
CD-MW-4					1.3	J						
CD-MW-5					0.98	J						
CD-MW-6S					1	J						
CD-MW-CITY2									0.7	J	2.7	
IDEM RDCL	**70**		**5**		**6**		**100**		**8400**		**80**	

Notes:

Table shows detected values only.

All results reported in micrograms per liter (ug/L)

IDEM RDCL = Indiana Department of Environmental Management Residential Default Closure Level - Federal Safe Drinking Water Act (SWDA) maximum contaminant levels (MCLs) represent the default RDCL for those contaminants where an MCL has been established.

SW SV = Surface water quality screening value

(1) = Well is considered to be a background well.

(2) = bis(2-Ethylhexyl) phthalate is listed as a common lab and field contaminant in the National Functional Guidelines for Data Review.

NE = IDEM RDCL or SW SV has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM RDCL

Table 3-17b cont.
C&D Technologies
Attica, IN
Organics Groundwater Data
June 3, 4, 5, 2008

LOCATION	Bromoform		Chloroform		Dibromochloromethane	
CD-MW-1						
CD-MW-1-DUP						
CD-MW-1S						
CD-MW-2						
CD-MW-2S						
CD-MW-2S-DUP						
CD-MW-3(1)						
CD-MW-4						
CD-MW-5						
CD-MW-6S						
CD-MW-CITY2	1.2		4.7		2.7	
IDEM RDCL	**80**		**80**		**NE**	

Notes:

Table shows detected values only.

All results reported in micrograms per liter (ug/L)

IDEM RDCL = Indiana Department of Environmental Management Residential Default Closure Level - Federal Safe Drinking Water Act (SWDA) maximum contaminant levels (MCLs) represent the default RDCL for those contaminants where an MCL has been established.

SW SV = Surface water quality screening value

(1) = Well is considered to be a background well.

(2) = bis(2-Ethylhexyl) phthalate is listed as a common lab and field contaminant in the National Functional Guidelines for Data Review.

NE = IDEM RDCL or SW SV has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM RDCL

Table 3-17c
C&D Technologies
Attica, IN
Inorganics Groundwater Data
December 17, 18, 19, 2007 and January 9, 2008

LOCATION	Barium		Antimony		Cobalt		Copper		Lead		Nickel		Vanadium		Zinc		Arsenic		Chromium		Thallium	
CD-MW-1	83.6	B J	0.14	B	0.76	B	1.4	B	1.3		4.2		0.86	B								
CD-MW-1S	84	B J	0.13	B	0.77	B	5.8		0.83	B	4.8		1.2	B	8.7	B	0.69	B				
CD-MW-1S-DUP	83.8	B J			0.72	B	5.8		0.89	B	4.6		1.2	B	9.2	B	0.65	B				
CD-MW-2	104	B J			0.7	B	1.4	B	0.62	B	3.7		1.2	B			0.79	B				
CD-MW-2S	85.8	B J	0.16	B	4		7.5		2.2		13.2		3	B	13.5	B	1.9		5.4	B	0.17	B
CD-MW-3(1)	109	B J	0.34	B	3.6		5.2		2		5.4		3.9	B			1.4		7.1	B		
CD-MW-3S(1)	56	B J			1.3		2.5		1.1		6		2	B	14	B	1.5					
CD-MW-4	83.8	B J			0.58	B	1.5	B	0.81	B	2.7		1.4	B	5.9	B	0.69	B				
CD-MW-4S	210	J	0.17	B	3.1		8.1		3.2		7.7		2.8	B	19.9	B	7.6		2.3	B		
CD-MW-5	125	B J			1.4		2.3		0.95	B	4		2	B	10.2	B	4.7					
CD-MW-5-DUP	125	B J			1.6		2.7		1.9		4.5		2.4	B	11.1	B	5.2					
CD-MW-6S	81.6	B J	0.22	B	1.9		7		4.4		7.8		4.6	B	21.7		4.6		3.3	B		
CD-MW-7S	65.2	B J			0.47	B	1.1	B	0.56	B	3.4		0.52	B			0.6	B				
CD-MW-8S	74.9	B J	0.38	B	0.72	B	3.4		1.4		5.2		1.9	B	10.7	B	1.2					
IDEM RDCL	**2000**		**6**		**NE**		**1300**		**15**		**730**		**NE**		**11000**		**10**		**100**		**2**	

Notes:

Table shows detected values only.

All results reported in micrograms per liter (ug/L)

IDEM RDCL = Indiana Department of Environmental Management Residential Default Closure Level - Federal Safe Drinking Water Act (SWDA) maximum contaminant levels (MCLs) represent the default RDCL for those contaminants where an MCL has been established.

(1) = Well is considered to be a background well.

SW SV = Surface water quality screening value

NE = IDEM RDCL or SW SV has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM RDCL

Table 3-17d
C&D Technologies
Attica, IN
Inorganics Groundwater Data
June 3, 4, 5, 2008

LOCATION	Arsenic		Barium		Cadmium		Chromium		Cobalt		Copper		Lead		Nickel	
CD-MW-1	2		80.3	B J	0.14	B	8.5	B	1.4		4	Jv	2		3.1	J
CD-MW-1-DUP	1.2		80.6	B J			3.2	B	0.57	B			0.89	B		
CD-MW-1S	1.1		71.6	B J			1.1	B	0.4	B			0.7	B	0.97	B
CD-MW-2	2		91	B J			4.5	B	0.91	B			0.84	B	1.8	B
CD-MW-2S	2.2		76	B J			5.8	B	1.7		3.9	Jv	2.9		5.4	
CD-MW-2S-DUP	2.1		77.9	B J			5.7	B	1.8		3.9	Jv	3		5.9	
CD-MW-3(1)	0.64	B	93.2	B J					0.46	B			0.96	B		
CD-MW-3S(1)	3.9		62.7	B J			2.9	B	1.8		5.1	J	3.1		4.4	J
CD-MW-4	1		61.4	B J			2	B	0.6	B			1.2		1.5	B
CD-MW-4S	4.2		225	J	0.18	B	2.9	B	1.8		11.9	J	22.2		5.6	
CD-MW-5	6.6		118	B J			0.97	B	1.5				2.1		2.3	
CD-MW-6S	2.1		82.4	B J			1.3	B	0.75	B	4	Jv	2.3		2.4	
CD-MW-7S	1.2		84	B J					0.36	B			1.8		1.7	B
CD-MW-8S	1.3		61.5	B J					0.35	B			1.5		2.5	
CD-MW-9S	2.2		86.3	B J			2.5	B	1.3		4.1	J	2.8	J	4.5	
CD-MW-10S	3.1		189	B J			1.2	B	1.5		2.3	J			3.9	
IDEM RDCL	**10**		**2000**		**5**		**100**		**NE**		**1300**		**15**		**730**	

Notes:

Table shows detected values only.

All results reported in micrograms per liter (ug/L)

IDEM RDCL = Indiana Department of Environmental Management Residential Default Closure Level - Federal Safe Drinking Water Act (SWDA) maximum contaminant levels (MCLs) represent the default RDCL for those contaminants where an MCL has been established.

(1) = Well is considered to be a background well.

SW SV = Surface water quality screening value

NE = IDEM RDCL or SW SV has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM RDCL

Table 3-17d cont.
C&D Technologies
Attica, IN
Inorganics Groundwater Data
June 3, 4, 5, 2008

LOCATION	Vanadium		Zinc		Antimony		Selenium		Beryllium		Lead, diss		Tin		Thallium	
CD-MW-1	4.3	B	11.6	B												
CD-MW-1-DUP	1.6	B	3.7	B												
CD-MW-1S	1.8	B			0.17	B	1.4	B								
CD-MW-2	2.4	B														
CD-MW-2S	4.9	B			0.15	B	1.8	B								
CD-MW-2S-DUP	4.6	B			0.18	B	1.6	B								
CD-MW-3(1)																
CD-MW-3S(1)	6	B	15.8	B	0.18	B	1.5	B								
CD-MW-4	2.7	B														
CD-MW-4S	3.9	B	30.7	Jv	0.24	B			0.25	B	0.22	B	1.4	B		
CD-MW-5	2.9	B					1.2	B								
CD-MW-6S	2.4	B			0.16	B							0.92	B		
CD-MW-7S	1.1	B			0.14	B										
CD-MW-8S	1.8	B			0.4	B										
CD-MW-9S	3	B			0.3	B							0.31	B	0.15	B
CD-MW-10S	1.1	B			0.2	B										
IDEM RDCL	**NE**		**11000**		**6**		**50**		**4**		**NE**		**NE**		**2**	

Notes:

Table shows detected values only.

All results reported in micrograms per liter (ug/L)

IDEM RDCL = Indiana Department of Environmental Management Residential Default Closure Level - Federal Safe Drinking Water Act (SWDA) maximum contaminant levels (MCLs) represent the default RDCL for those contaminants where an MCL has been established.

(1) = Well is considered to be a background well.

SW SV = Surface water quality screening value

NE = IDEM RDCL or SW SV has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM RDCL

Table 3-17e
C&D Technologies
Attica, IN
Inorganics Groundwater Data - Potential Discharge to Surface Water
December 17, 18, 19, 2007 and January 9, 2008

LOCATION	Barium		Antimony		Cobalt		Copper		Lead		Nickel		Vanadium		Zinc		Arsenic		Chromium	
CD-MW-4S	210	J	0.17	B	3.1		8.1		3.2		7.7		2.8	B	19.9	B	7.6		2.3	B
CD-MW-6S	81.6	B J	0.22	B	1.9		7		4.4		7.8		4.6	B	21.7		4.6		3.3	B
CD-MW-7S	65.2	B J			0.47	B	1.1	B	0.56	B	3.4		0.52	B			0.6	B		
CD-MW-8S	74.9	B J	0.38	B	0.72	B	3.4		1.4		5.2		1.9	B	10.7	B	1.2			
IDEM CCC	**1000 [(a)]**		**45000**		**NE**		**NE**		**50 [(a)]**		**100**		**NE**		**NE**		**0.175**		**3433000**	
AWQC	**1000 [(b)]**		**640**		**NE**		**1300 [(b)]**		**NE**		**4600**		**NE**		**26000**		**0.14**		**NE**	

Notes:

Table shows detected values only.

All results reported in micrograms per liter (ug/L)

IDEM CCC = Criterion Continuous Concentration (4-day average) for human health outside the mixing zone, except where noted (a) at point of water intake.

AWQC = National ambient water quality criterion for human health consumption of organisms only, except where noted (b) as organisms + water.

NE = IDEM CCC or AWQC has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM CCC

= Constituent detected above the AWQC

= Constituent detected above both the IDEM CCC and the AWQC

Table 3-17f
C&D Technologies
Attica, IN
Inorganics Groundwater Data - Potential Discharge to Surface Water
June 3, 4, 5, 2008

LOCATION	Arsenic		Barium		Cadmium		Chromium		Cobalt		Copper		Lead		Nickel	
CD-MW-4S	4.2		225	J	0.18	B	2.9	B	1.8		11.9	J	22.2		5.6	
CD-MW-6S	2.1		82.4	B J			1.3	B	0.75	B	4	Jv	2.3		2.4	
CD-MW-7S	1.2		84	B J					0.36	B			1.8		1.7	B
CD-MW-8S	1.3		61.5	B J					0.35	B			1.5		2.5	
CD-MW-9S	2.2		86.3	B J			2.5	B	1.3		4.1	J	2.8	J	4.5	
CD-MW-10S	3.1		189	B J			1.2	B	1.5		2.3	J			3.9	
IDEM CCC	**0.175**		**1000 [(a)]**		**10 [(a)]**		**3433000**		**NE**		**NE**		**50 [(a)]**		**100**	
AWQC	**0.14**		**1000 [(b)]**		**NE**		**NE**		**NE**		**1300 [(b)]**		**NE**		**4600**	

LOCATION	Vanadium		Zinc		Antimony		Beryllium		Lead, diss		Tin		Thallium	
CD-MW-4S	3.9	B	30.7	Jv	0.24	B	0.25	B	0.22	B	1.4	B		
CD-MW-6S	2.4	B			0.16	B					0.92	B		
CD-MW-7S	1.1	B			0.14	B								
CD-MW-8S	1.8	B			0.4	B								
CD-MW-9S	3	B			0.3	B					0.31	B	0.15	B
CD-MW-10S	1.1	B			0.2	B								
IDEM CCC	**NE**		**NE**		**45000**		**1.17**		**50 [(a)]**		**NE**		**48**	
AWQC	**NE**		**26000**		**640**		**NE**		**NE**		**NE**		**0.47**	

Notes:

Table shows detected values only.

All results reported in micrograms per liter (ug/L)

IDEM CCC = Criterion Continuous Concentration (4-day average) for human health outside the mixing zone, except where noted (a) at point of water intake.

AWQC = National ambient water quality criterion for human health consumption of organisms only, except where noted (b) as organisms + water.

NE = IDEM CCC or AWQC has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM CCC

= Constituent detected above the AWQC

= Constituent detected above both the IDEM CCC and the AWQC

Table 3-18a
C&D Technologies
Attica, IN
Surface Water Data

SAMPLE ID		Antimony		Arsenic		Barium		Chromium		Cobalt		Copper		Lead		Nickel		Thallium	
CD-SW-01	6/5/2008	0.31	B	2.6		67.7	B J	4.4	B	1.3		5.1	J	2.5	J	4.6		0.22	B
CD-SW-02	6/5/2008	0.24	B	2.7		67.9	B J	3.8	B	1.3		5.6	J	2.6	J	4.5		0.15	B
CD-SW-03	6/5/2008	0.24	B	2.7		63.8	B J	4.2	B	1.3		5.5	J	2.6	J	4.7			
IDEM CCC		**45000**		**0.175**		**1000 [(a)]**		**3433333**		**NE**		**NE**		**50 [(a)]**		**100**		**48**	
AWQC		**640**		**0.14**		**1000 [(b)]**		**NE**		**NE**		**1300 [(b)]**		**NE**		**4600**		**0.47**	

SAMPLE ID		Vanadium		Zinc		bis(2-Ethylhexyl) phthalate		Beryllium	
CD-SW-01	6/5/2008	8.4	B	20.1	J	0.91	J		
CD-SW-02	6/5/2008	7.6	B	19.2	B J	1.4	J		
CD-SW-03	6/5/2008	8	B	24.1	J	2.3		0.35	B
IDEM CCC		**NE**		**NE**		**50000**		**1.17**	
AWQC		**NE**		**26000**		**2.2**		**NE**	

Notes:

Table shows detected values only.

All results reported in micrograms per liter (ug/L)

IDEM CCC = Criterion Continuous Concentration (4-day average) for human health outside the mixing zone, except where noted (a) at point of water intake.

AWQC = National ambient water quality criterion for human health consumption of organisms only, except where noted (b) as organisms + water.

NE = IDEM CCC or AWQC has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM CCC

= Constituent detected above the AWQC

= Constituent detected above both the IDEM CCC and the AWQC

Table 3-18b
C&D Technologies
Attica, IN
Surface Water Background Data

SAMPLE ID		Copper, Dissolved		Arsenic		Barium		Chromium		Cobalt		Copper		Thallium		Vanadium	
CD-SW-BKG01	6/5/2008	4.5	J	2.6		67.1	B J	3.7	B	1.3		5.8	J	0.43	B	7.9	B
IDEM CCC		**NE**		**0.175**		**1000 [(a)]**		**3433333**		**NE**		**NE**		**48**		**NE**	
AWQC		**1300 [(a)]**		**0.14**		**1000 [(b)]**		**NE**		**NE**		**1300 [(b)]**		**0.47**		**NE**	

SAMPLE ID		bis(2-Ethylhexyl) phthalate		Zinc		Antimony		Tin		Methylene chloride		Lead		Nickel	
CD-SW-BKG01	6/5/2008	2.4		21.1	J	0.47	B	0.32	B	0.5	J	2.6	J	4.4	
IDEM CCC		**50000**		**NE**		**45000**		**NE**		**NE**		**50 [(a)]**		**100**	
AWQC		**2.2**		**26000**		**640**		**NE**		**590**		**NE**		**4600**	

Notes:

Table shows detected values only.

All results reported in micrograms per liter (ug/L)

IDEM CCC = Criterion Continuous Concentration (4-day average) for human health outside the mixing zone, except where noted (a) at point of water intake.

AWQC = National ambient water quality criterion for human health consumption of organisms only, except where noted (b) as organisms + water.

NE = IDEM CCC or AWQC has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM CCC

= Constituent detected above the AWQC

= Constituent detected above both the IDEM CCC and the AWQC

Table 3-19a
C&D Technologies
Attica, IN
Organics Sediment Data

SAMPLE ID		2-Butanone (MEK)		Acetone		Acrolein		Benzene		Ethylbenzene		4-Methylphenol	
CD-SED-01	6/4/2008	99		420		34	J	3.1	J	1.1	J	310	J
CD-SED-02	6/4/2008	330		1900	B			11	J	7.2	J	660	
CD-SED-03	6/4/2008	600		2600	B			5	J				
CD-SED-04	6/4/2008	30	J	570				0.99	J				
CD-SED-05	6/4/2008	13	J	240		26	J	2.3	J	0.75	J		
IDEM DCLs Res		**44000000**		**35000000**		**500**		**8400**		**4600000**		**910000**	

SAMPLE ID		bis(2-Ethylhexyl) phthalate		Carbon disulfide		Trichloroethene		Toluene		Xylenes (total)		3-Methylphenol	
CD-SED-01	6/4/2008	45	J					30		2.4	J	310	J
CD-SED-02	6/4/2008	51	J	16	J			690		15	J	660	
CD-SED-03	6/4/2008	49	J	110				11	J				
CD-SED-04	6/4/2008	250	J					2.3	J				
CD-SED-05	6/4/2008			1.9	J	0.37	J	4.2	J	1.5	J		
IDEM DCLs Res		**300000**		**900000**		**710**		**8800000**		**690000**		**9100000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM DCLs Res = IDEM Direct Contact Levels for Residential areas.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM DCLs SV

Table 3-19b
C&D Technologies
Attica, IN
Inorganics Sediment Data

SAMPLE ID		Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Mercury		Zinc	
CD-SED-01	6/4/2008			4.8		69.8	J	0.46	B J	0.31	B	10.1		4.9	B	0.044	B	55.9	
CD-SED-02	6/4/2008			5.2		87.6	J	0.55	B J	0.36	B	12.5		6	B	0.09	B	69.9	
CD-SED-03	6/4/2008			2.6		63.2	J	0.3	B J	0.28	B	7.1		3.1	B			40.8	
CD-SED-04	6/4/2008	1.4	Jv	2.8		70.3	J	0.31	B J	0.28	B	6.6		3.2	B			37.2	
CD-SED-05	6/4/2008			2.6		26.4	B J	0.25	B J	0.16	B	5.6		2.7	B	0.023	B	32.4	
IDEM DCLs Res		**140**		**3.9**		**63000**		**680**		**12**		**430**		**NE**		**100**		**100000**	

SAMPLE ID		Copper		Lead		Nickel		Silver		Thallium		Vanadium	
CD-SED-01	6/4/2008	12.3		12.3		12.1				2.6		14.2	
CD-SED-02	6/4/2008	15.3		17.1		14.7		0.28	B	2.2		17.5	
CD-SED-03	6/4/2008	8.2		9		7.8				2		8.9	
CD-SED-04	6/4/2008	7.7		8.7		7.6				3		8.9	
CD-SED-05	6/4/2008	4.7		9.3		6.2						7.7	
IDEM DCLs Res		**14000**		**400**		**6900**		**1700**		**24**		**NE**	

Notes:

Table shows detected values only.

All results reported in milligrams per kilogram (mg/kg)

IDEM DCLs Res = IDEM Direct Contact Levels for Residential areas.

NE = Screening value has not been established for this constituent.

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated reporting limit due to matrix interference.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

B = Analyte was detected below the quantitation limit, but above the MDL.

= Constituent detected above the IDEM DCLs SV

Table 3-19c
C&D Technologies
Attica, IN
PAH Sediment Data

SAMPLE ID		Benzo(a)anthracene		Benzo(a)pyrene		Benzo(b)fluoranthene		Benzo(g,h,i)perylene		Benzo(k)fluoranthene		Chrysene	
CD-SED-01	6/4/2008	67		57		80		49		42		72	
CD-SED-02	6/4/2008	110		100		120		75		74		110	
CD-SED-03	6/4/2008	78		61		88		45		34		83	
CD-SED-04	6/4/2008	45		41		46		27		24		48	
CD-SED-05	6/4/2008	66		54		68		41		43		70	
IDEM DCLs Res		**5000**		**500**		**5000**		**NE**		**50000**		**500000**	

SAMPLE ID		Indeno(1,2,3-c,d)pyrene		Fluoranthene		Phenanthrene		Dibenz(a,h)anthracene		Anthracene		Pyrene	
CD-SED-01	6/4/2008	38		140		52						110	
CD-SED-02	6/4/2008	61		260		94		17		16		190	
CD-SED-03	6/4/2008	38		140		46						130	
CD-SED-04	6/4/2008	23		83		38						67	
CD-SED-05	6/4/2008	29		130		58				14		100	
IDEM DCLs Res		**5000**		**6300000**		**470000**		**500**		**47000000**		**4700000**	

Notes:

Table shows detected values only.

All results reported in micrograms per kilogram (ug/kg)

IDEM DCLs Res = IDEM Direct Contact Levels for Residential areas.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

= Constituent detected above the IDEM DCLs SV

Table 3-20a
C&D Technologies
Attica, IN
Surface Water Background Data

SAMPLE ID		Copper, Dissolved		Arsenic		Barium		Chromium		Cobalt		Copper		Thallium		Vanadium	
CD-SW-BKG01	6/5/2008	4.5	J	2.6		67.1	B J	3.7	B	1.3		5.8	J	0.43	B	7.9	B
IDEM SWQS		**NE**		**0.175**		**1000**		**3433333**		**NE**		**NE**		**48**		**NE**	

SAMPLE ID		bis(2-Ethylhexyl) phthalate		Zinc		Antimony		Tin		Methylene chloride		Lead		Nickel	
CD-SW-BKG01	6/5/2008	2.4		21.1	J	0.47	B	0.32	B	0.5	J	2.6	J	4.4	
IDEM SWQS		**50000**		**NE**		**45000**						**50**		**100**	

Notes:

Table shows detected values only.

All surface water results reported in micrograms per liter (ug/L).

IDEM SWQS = IDEM human health surface waer quality standards.

NE = Screening value has not been established for this constituent.

J = Compound detected below the quantitation limit, but above the MDL.

Jv = Result is considered to be an estimated value based on data validation.

B = Analyte was detected in method blank.

B J = Analyte was detected in method blank and below the quantitation limit.

UJ = Analyte is considered not detected for QA/validation reason.

U = Not Detected.

= Constituent detected above the IDEM SWQS SV

Table 3-20b
C&D Technologies
Attica, IN
Sediment Background Data

SAMPLE ID		Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt	
CD-SED-BKG03	6/4/2008			2.2		12.6	B J					4.4		2.3	B
CD-SED-BKG04	6/4/2008	1.9	Jv	3.8		27	J	0.25	B J	0.1	B			3.2	B
CD-SED-BKG05	6/4/2008	0.46	Jv	4.3		27.8	J	0.23	B J	0.066	B	7.9		4.2	B
CD-SED-BKG06	6/4/2008			4.5		35.1	J			0.052	B	3.6		2.5	B
CD-SED-BKG07	6/4/2008			5.1		26.9	J			0.098	B	2.7		3.9	B
IDEM DCLs Res		**140**		**3.9**		**63000**		**680**		**12**		**430**		**NE**	

SAMPLE ID		Vanadium		Zinc		Thallium		Mercury		Nickel		Lead		Copper	
CD-SED-BKG03	6/4/2008	6.3		16						4.7		4.1		1.7	B
CD-SED-BKG04	6/4/2008	7.5		25.8		1	B	0.026	B	6.4		4.6		3	B
CD-SED-BKG05	6/4/2008	8.7		27		2.1				8.7		4.8		3.5	
CD-SED-BKG06	6/4/2008	5.6	B	25.3		1.7				6.3		4.5		4.2	
CD-SED-BKG07	6/4/2008	3.9	B	35.6		2.3				7.8		5.7		3.6	
IDEM DCLs Res		**NE**		**100000**		**24**		**100**		**6900**		**400**		**14000**	

SAMPLE ID		bis(2-Ethylhexyl) phthalate		2-Butanone (MEK)		Carbon disulfide		Chloromethane		Benzene	
CD-SED-BKG03	6/4/2008			4.4	J			0.97	J	3.4	J
CD-SED-BKG04	6/4/2008			5.4	J	2.3	J			2.6	J
CD-SED-BKG05	6/4/2008	250	J	4.4	J					2.2	J
CD-SED-BKG06	6/4/2008			4.7	J	2.3	J			2.3	J
CD-SED-BKG07	6/4/2008									2.1	J

SAMPLE ID		Ethylbenzene		Toluene		Xylenes (total)		Acetone	
CD-SED-BKG03	6/4/2008	2.1	J	7.5		3.5	J	49	
CD-SED-BKG04	6/4/2008	0.96	J	4.5	J	2.1	J	76	
CD-SED-BKG05	6/4/2008	1.5	J	5.4		2.9	J	22	
CD-SED-BKG06	6/4/2008	1.5	J	5.3		3	J	84	
CD-SED-BKG07	6/4/2008	1.1	J	4.2	J	2.4	J	23	

Notes:

Table shows detected values only.

All inorganic sediment results reported in milligrams per kilogram (mg/kg).

IDEM DCLs Res = IDEM Direct Contact Levels for Residential areas.

All organic sediment results reported in micrograms per kilogram (ug/kg).

J = Compound detected in the method or prep blank.

Jv = Result is considered to be an estimated value based on data validation.

B G = Analyte was detected above the MDL but below the quantitation limit. Elevated RL due to matrix interference.

= Constituent detected above the IDEM DCLs SV

U = Not Detected

UJ = Analyte is considered not detected for QA/validation reason.

B J = Analyte was detected in method blank and below the quantitation limit.

B E = Analyte was detected above the MDL but below the quantitation limit. Matrix Interference.

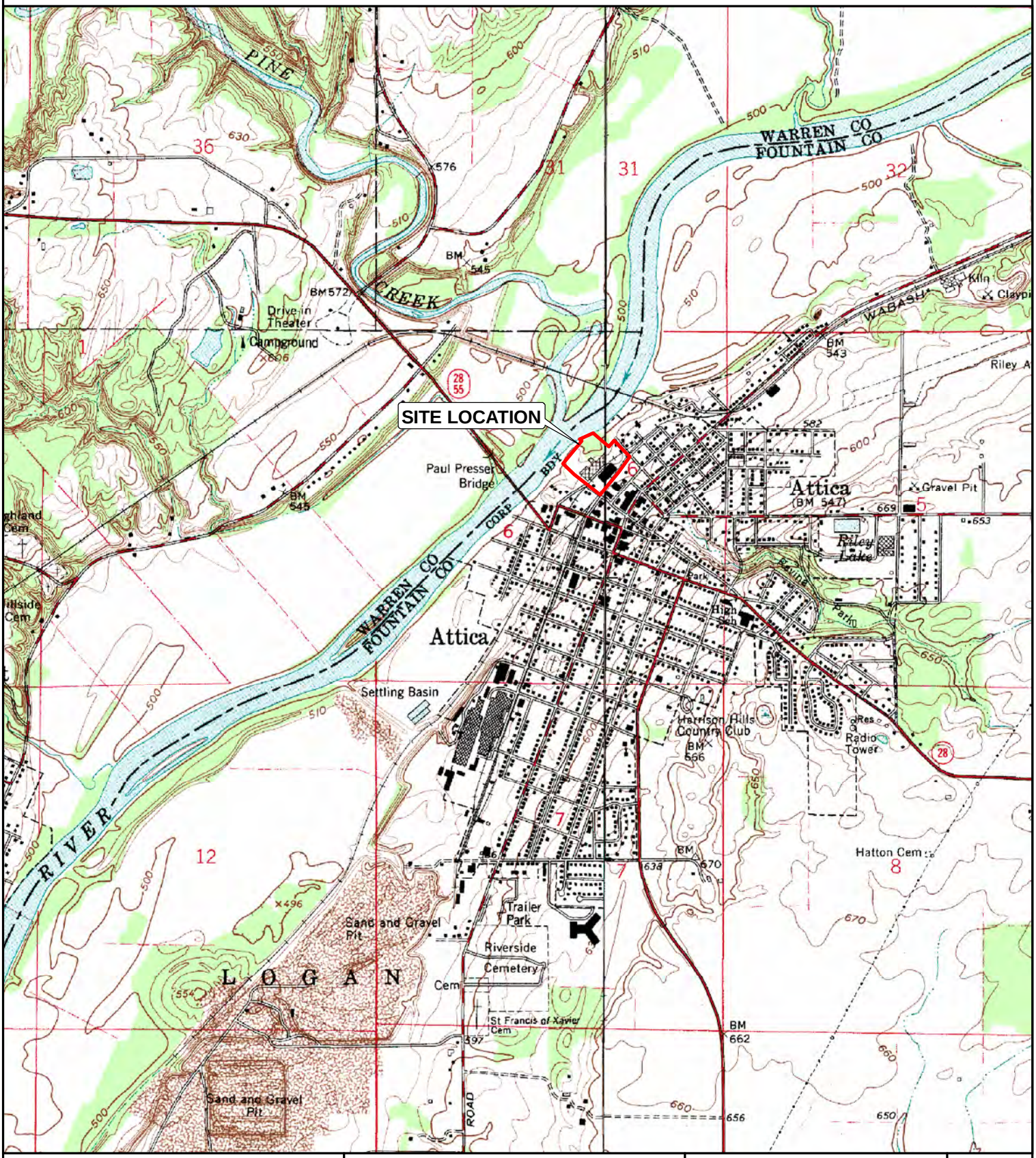
B = Analyte was detected below the quantitation limit, but above the MDL.

Figures

UNITED STATES DEPARTMENT
OF THE INTERIOR
GEOLOGICAL SURVEY

N

ATTICA AND WILLIAMSPORT
7.5 MINUTE QUADRANGLES



C & D TECHNOLOGIES, INC.
200 West Main Street
Attica, Indiana

URS
Franklin, Tennessee

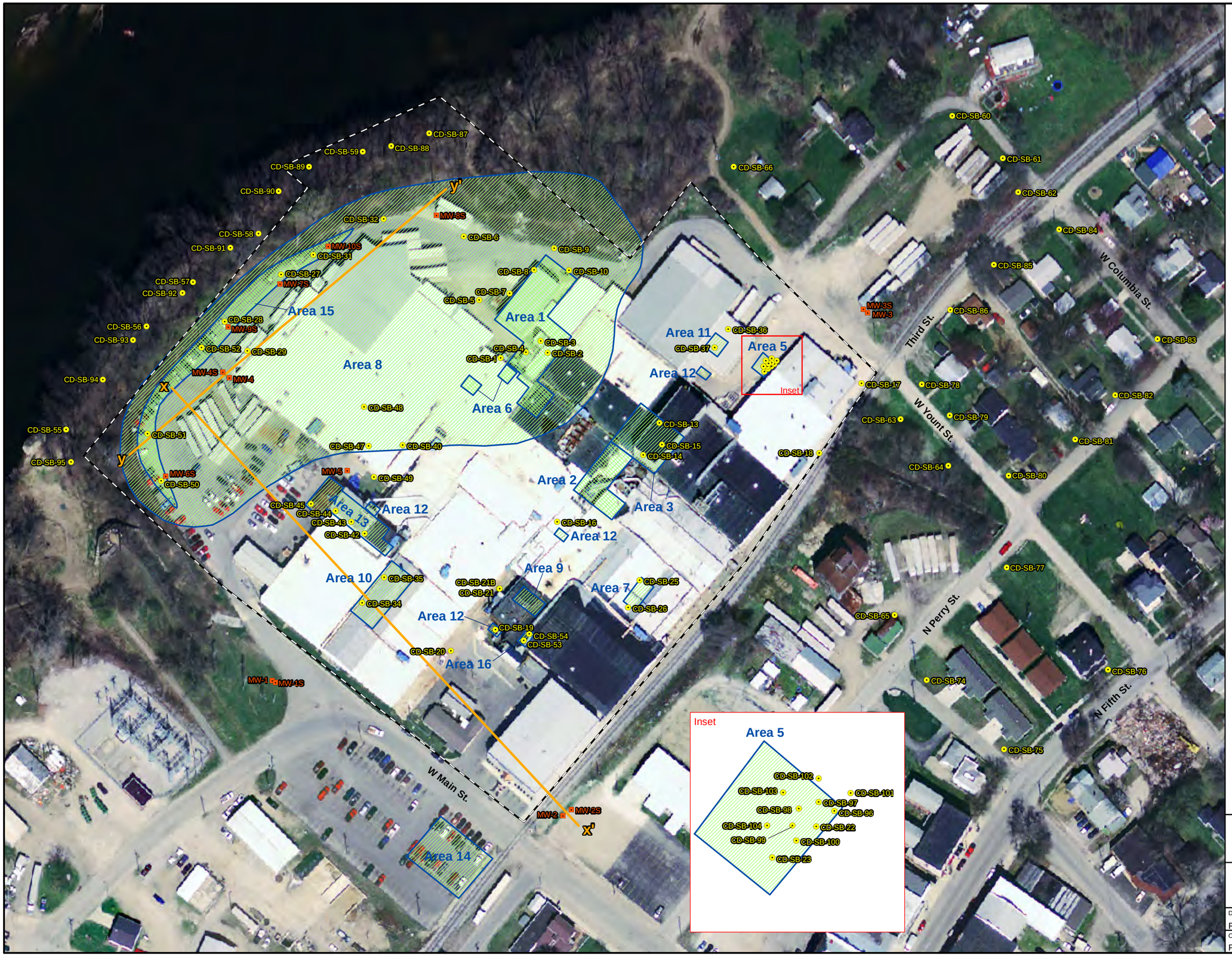
SCALE:	DRAWN BY: RL	DATE: 06/25/08
1:24,000	CHECKED BY: JW	DATE: 06/25/08

G:/C_D_Technologies/deliverables/EI Report/8x11-SiteLocation.mxd

SITE LOCATION MAP

PROJECT NO: 20500205 .00001

FIGURE NO: 1-1



Legend

- Monitoring Well
- Soil Boring
- Geologic Cross Section Reference Line
- Property Boundary (approximate)
- SWMU/AOC Boundary

SWMU/AOCs

1 - Wastewater pre-treatment plant
2 - Current/former acid lofts
3 - Lead oxide storage silos
4 - Storm water sewers (not shown)
5 - Exterior former hazardous material storage area
6 - Exterior former drum storage area and transfer pad
7 - Poly-mixing room
8 - Historical drive-up disposal area
9 - Historical former waste and dust storage room
10 - Southwest historical former container storage area
11 - Northeastern historical former container storage area
12 - Central vacuum systems
13 - Former oxide mill area
14 - Former onsite filling station
15 - West container storage area
16 - Former DC Generators Location

N

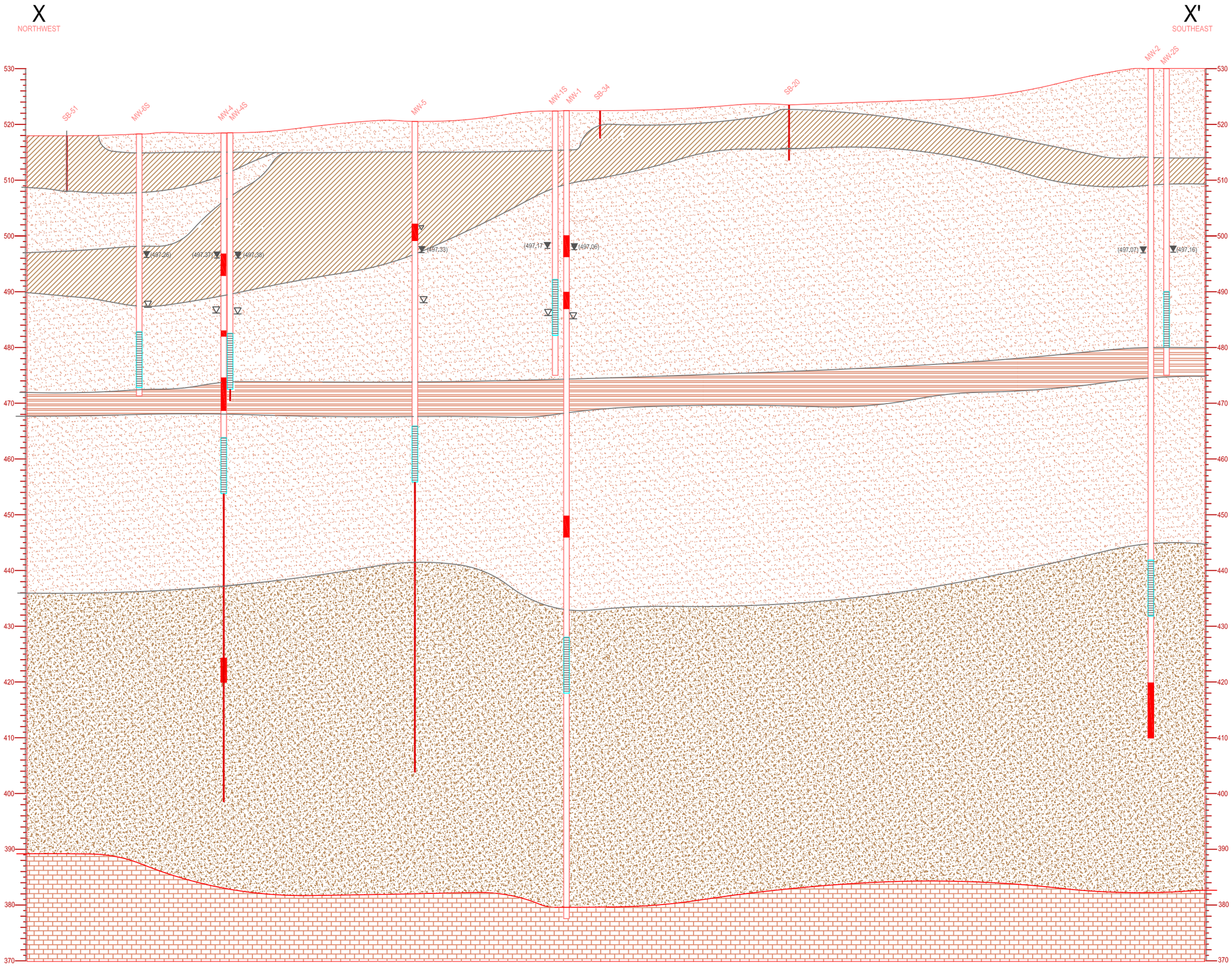
0 50 100 Feet

URS
Franklin, Tennessee

Figure 1-2
Geologic Cross Section Reference Lines

C & D Technologies, Inc.
200 West Main Street
Attica, Indiana

Drawn By:	Projection:
RL	UTM, Zone 16N, NAD83, Meters
Checked By:	Source(s):
PR	Indiana Spatial Data Portal - 2005 aerial



LEGEND:

- SAND
- SAND AND GRAVEL
- SILTY CLAY
- CLAY
- BED ROCK

(501.01) = STATIC WATER LEVEL
WATER LEVEL MEASURED ON 6/3/08

= WATER ENCOUNTERED WHILE DRILLING

= SOIL BORING

= SCREENED INTERVAL

= NO RECOVERY

HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE AS SHOWN

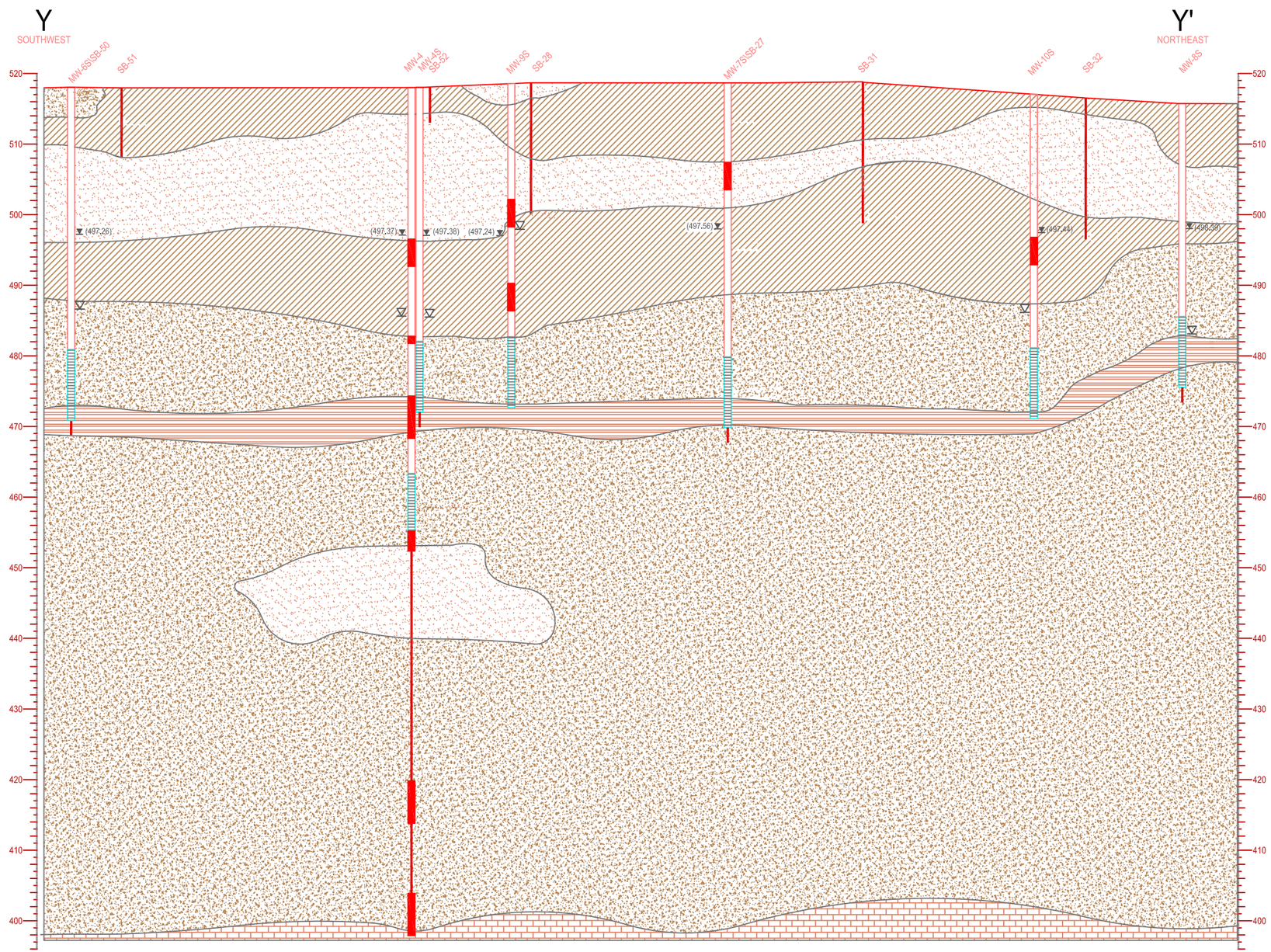
GEOLOGIC CROSS SECTION X–X'

C & D TECHNOLOGIES,INC.
200 WEST MAIN STREET
ATTICA, IN

Franklin, Tennessee

Drawn By: JAE	Date: 04/2/08	Project No. 20500205 .00001	
Checked By: CAB	Date: 04/2/08	Figure No. 1–3	
AS NOTED			

J:\2008\C & D TECH\X-SECTION408.dwg



LEGEND:

SAND

SAND AND GRAVEL

SILTY CLAY

CLAY

BED ROCK

(501.01) = STATIC WATER LEVEL
WATER LEVEL MEASURED ON 6/3/08

= WATER ENCOUNTERED WHILE DRILLING

= SOIL BORING

= SCREENED INTERVAL

= NO RECOVERY

HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE AS SHOWN

GEOLOGIC CROSS SECTION Y–Y'

C & D TECHNOLOGIES,INC.
200 WEST MAIN STREET
ATTICA, IN

Franklin, Tennessee

Project No. 20500205 .00001

Drawn By:	JAE	Date: 04/2/08	Figure No.
Checked By:	CAB	Date: 04/2/08	1–4
AS NOTED			

J\2008\C & D TECH\X-SECTION408.dwg

Legend

- Monitoring Well
- Soil Boring
- Groundwater Elevation Contour
- Property Boundary (approximate)
- SWMU/AOC Boundary
- Apparent Groundwater Flow Directions

SWMU/AOCs

1 - Wastewater pre-treatment plant
2 - Current/former acid lofts
3 - Lead oxide storage silos
4 - Storm water sewers (not shown)
5 - Exterior former hazardous material storage area
6 - Exterior former drum storage area and transfer pad
7 - Poly-mixing room
8 - Historical drive-up disposal area
9 - Historical former waste and dust storage room
10 - Southwest historical former container storage area
11 - Northeastern historical former container storage area
12 - Central vacuum systems
13 - Former oxide mill area
14 - Former onsite filling station
15 - West container storage area
16 - Former DC Generators Location

N

0 50 100 Feet

URS
Franklin, Tennessee

Figure 1-5
Groundwater Potentiometric Surface
Shallow Wells
January 9, 2008

C & D Technologies, Inc.
200 West Main Street
Attica, Indiana

Drawn By:	Projection:
RL	UTM, Zone 16N, NAD83, Meters
Checked By:	Source(s):
PR	Indiana Spatial Data Portal - 2005 aerial

Legend

- Monitoring Well
- Soil Boring
- Groundwater Elevation Contour
- Property Boundary (approximate)
- SWMU/AOC Boundary
- Apparent Groundwater Flow Directions

SWMU/AOCs

1 - Wastewater pre-treatment plant
2 - Current/former acid lofts
3 - Lead oxide storage silos
4 - Storm water sewers (not shown)
5 - Exterior former hazardous material storage area
6 - Exterior former drum storage area and transfer pad
7 - Poly-mixing room
8 - Historical drive-up disposal area
9 - Historical former waste and dust storage room
10 - Southwest historical former container storage area
11 - Northeastern historical former container storage area
12 - Central vacuum systems
13 - Former oxide mill area
14 - Former onsite filling station
15 - West container storage area
16 - Former DC Generators Location

N

0 50 100 Feet

URS
Franklin, Tennessee

Figure 1-6
Groundwater Potentiometric Surface
Shallow Wells
March 25, 2008

C & D Technologies, Inc.
200 West Main Street
Attica, Indiana

Drawn By:	Projection:
RL	UTM, Zone 16N, NAD83, Meters
Checked By:	Source(s):
PR	Indiana Spatial Data Portal - 2005 aerial

Legend

- Monitoring Well
- Soil Boring
- Groundwater Elevation Contour
- Property Boundary (approximate)
- SWMU/AOC Boundary
- Apparent Groundwater Flow Directions

SWMU/AOCs

1 - Wastewater pre-treatment plant
2 - Current/former acid lofts
3 - Lead oxide storage silos
4 - Storm water sewers (not shown)
5 - Exterior former hazardous material storage area
6 - Exterior former drum storage area and transfer pad
7 - Poly-mixing room
8 - Historical drive-up disposal area
9 - Historical former waste and dust storage room
10 - Southwest historical former container storage area
11 - Northeastern historical former container storage area
12 - Central vacuum systems
13 - Former oxide mill area
14 - Former onsite filling station
15 - West container storage area
16 - Former DC Generators Location

N

0 50 100 Feet

URS
Franklin, Tennessee

Figure 1-7
Groundwater Potentiometric Surface
Shallow Wells
June 3, 2008

C & D Technologies, Inc.
200 West Main Street
Attica, Indiana

Drawn By:	Projection:
RL	UTM, Zone 16N, NAD83, Meters
Checked By:	Source(s):
PR	Indiana Spatial Data Portal - 2005 aerial

Legend

Property Boundary (approximate)

SWMU/AOC Boundary

SWMU/AOCs

1 - Wastewater pre-treatment plant
2 - Current/former acid lofts
3 - Lead oxide storage silos
4 - Storm water sewers (not shown)
5 - Exterior former hazardous material storage area
6 - Exterior former drum storage area and transfer pad
7 - Poly-mixing room
8 - Historical drive-up disposal area
9 - Historical former waste and dust storage room
10 - Southwest historical former container storage area
11 - Northeastern historical former container storage area
12 - Central vacuum systems
13 - Former oxide mill area
14 - Former onsite filling station
15 - West container storage area
16 - Former DC Generators Location

N

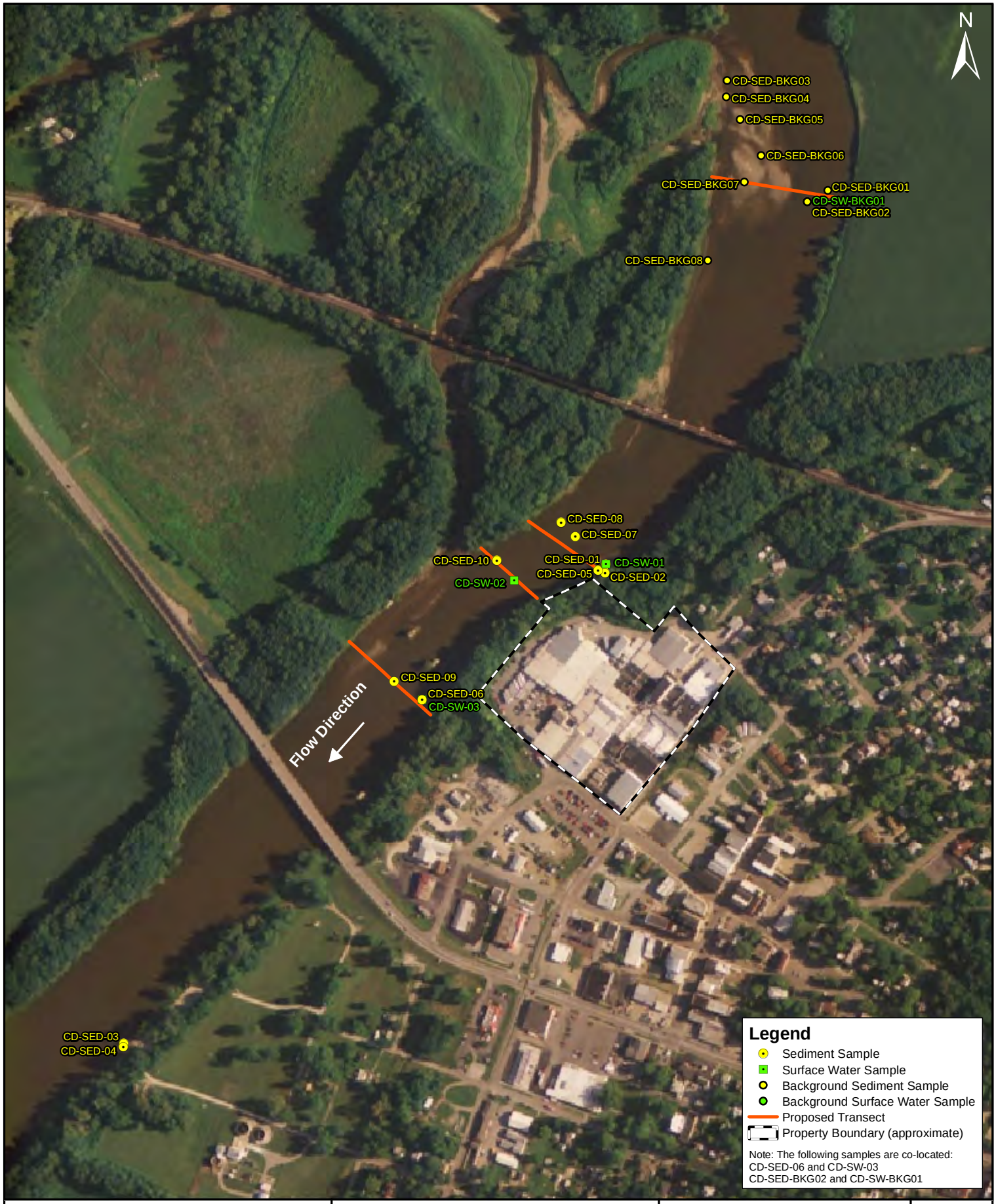
0 50 100 Feet

URS
Franklin, Tennessee

Figure 1-8
SWMUs and AOCs

C & D Technologies, Inc.
200 West Main Street
Attica, Indiana

Drawn By:	Projection:
RL	UTM, Zone 16N, NAD83, Meters
Checked By:	Source(s):
PR	Indiana Spatial Data Portal - 2005 aerial



C & D TECHNOLOGIES, INC.
200 West Main Street
Attica, Indiana

URS
Franklin, Tennessee

SCALE:	DRAWN BY: RL	DATE: 07/14/08
1:6,000	CHECKED BY: JO	DATE: 07/14/08

G:/C_D_Technologies/deliverables/8x11-SedimentandWS_SampleLocations.mxd

SEDIMENT AND SURFACE WATER SAMPLE LOCATIONS
JUNE, 2008

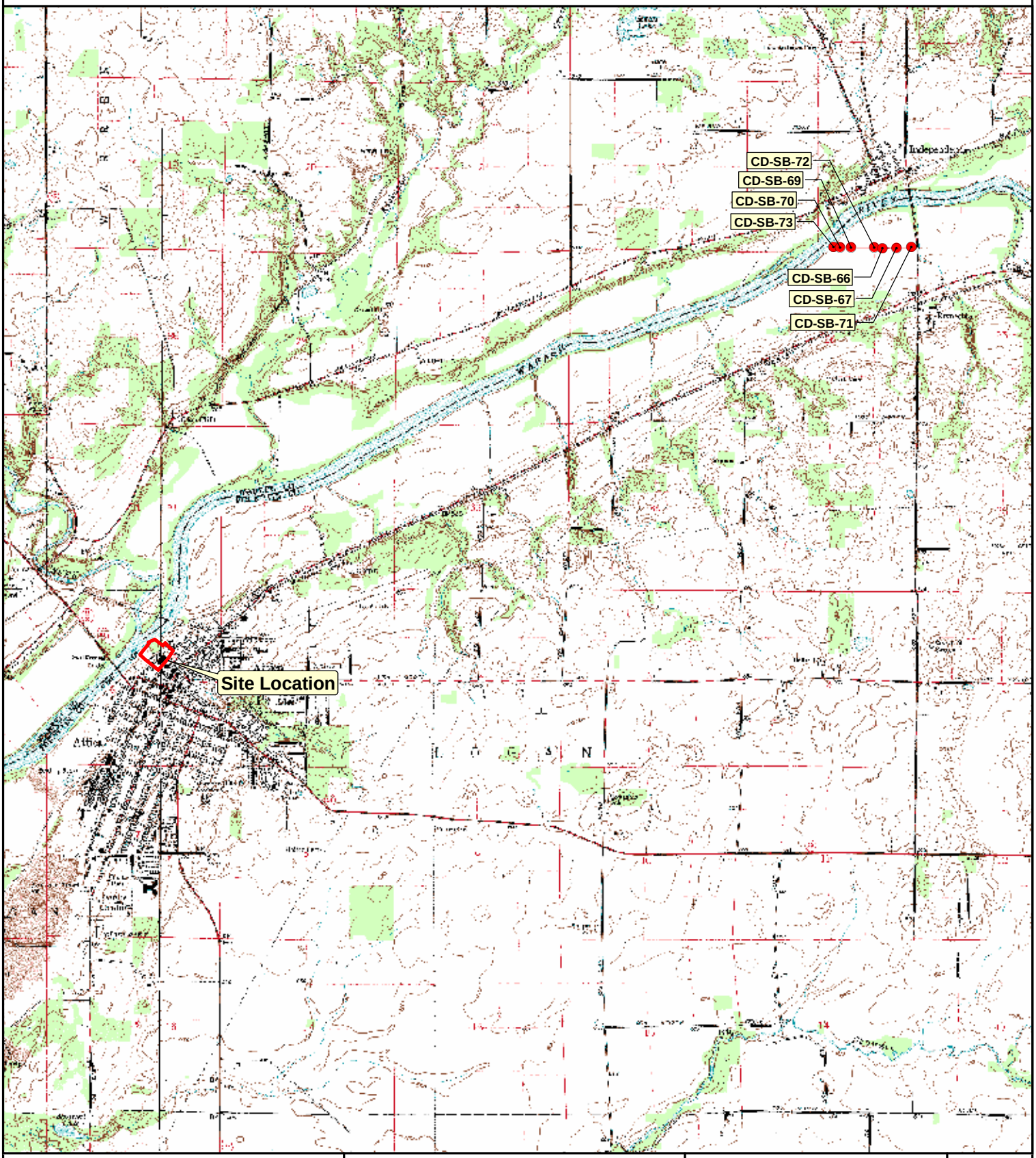
PROJECT NO: 20500205 .00001

FIGURE NO: 1-9

UNITED STATES DEPARTMENT
OF THE INTERIOR
GEOLOGICAL SURVEY

N

ATTICA AND WILLIAMSPORT
7.5 MINUTE QUADRANGLES



C & D TECHNOLOGIES, INC.
200 West Main Street
Attica, Indiana

URS
Franklin, Tennessee

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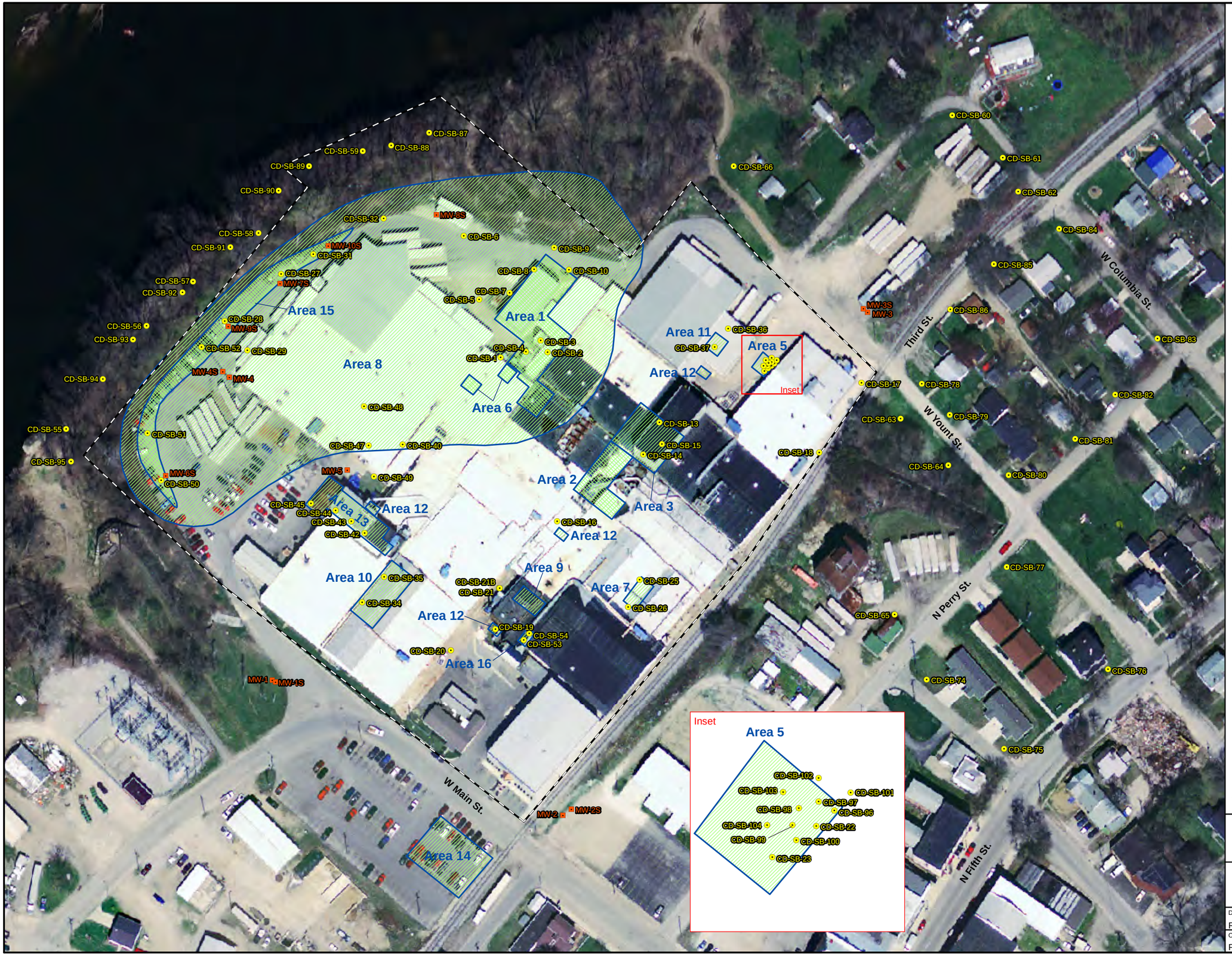
1:48,000	CHECKED BY: JW	DATE: 07/28/08

G:/C_D_Technologies/deliverables/RFIReport/fig1-4BkgrdSO.mxd

BACKGROUND SOIL
SAMPLE LOCATIONS

PROJECT NO:
20500205
.00001

FIGURE NO:
1-10



Legend

- Monitoring Well
- Soil Boring
- Property Boundary (approximate)
- SWMU/AOC Boundary

SWMU/AOCs

1 - Wastewater pre-treatment plant
2 - Current/former acid lofts
3 - Lead oxide storage silos
4 - Storm water sewers (not shown)
5 - Exterior former hazardous material storage area
6 - Exterior former drum storage area and transfer pad
7 - Poly-mixing room
8 - Historical drive-up disposal area
9 - Historical former waste and dust storage room
10 - Southwest historical former container storage area
11 - Northeastern historical former container storage area
12 - Central vacuum systems
13 - Former oxide mill area
14 - Former onsite filling station
15 - West container storage area
16 - Former DC Generators Location

N

0 50 100 Feet

URS
Franklin, Tennessee

Figure 2-1
SWMU/AOCs, Monitoring Wells and Soil Sample Locations

C & D Technologies, Inc.
200 West Main Street
Attica, Indiana

Drawn By:	Projection:
RL	UTM, Zone 16N, NAD83, Meters
Checked By:	Source(s):
PR	Indiana Spatial Data Portal - 2005 aerial

C & D TECHNOLOGIES, INC.

200 West Main Street
Attica, Indiana

URS
Franklin, Tennessee

SCALE:	DRAWN BY: RL	DATE: 07/31/08
1:1,800	CHECKED BY: JO	DATE: 07/31/08

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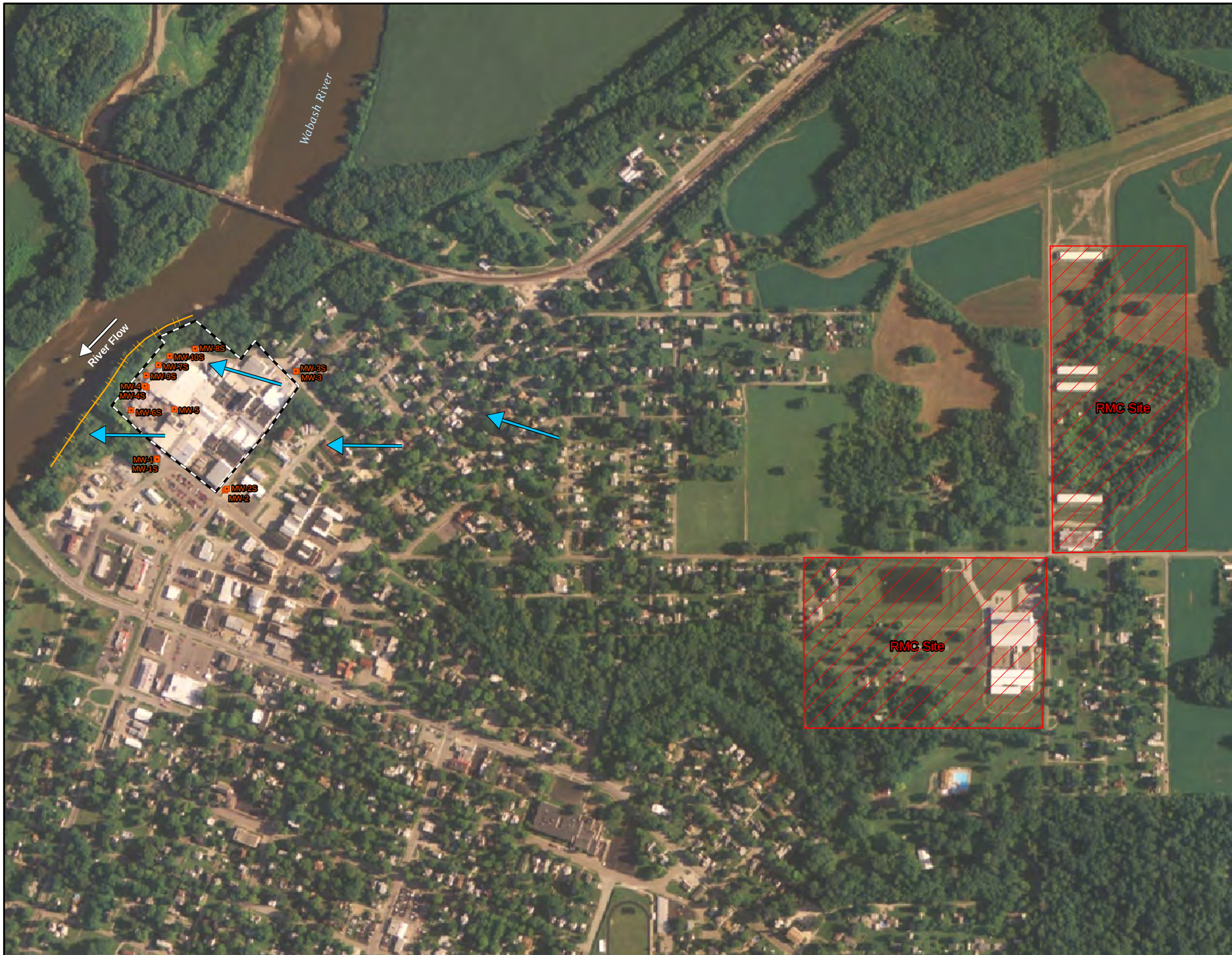
MONITORING WELL LOCATIONS

PROJECT NO: 20500205 .00001

FIGURE NO: 2-2



Legend

- C & D Property Boundary
- Monitoring Well
- Discharge to Surface Water from Site
- RMC Site
- Groundwater Flow Direction
- Wabash River Flow Direction

N

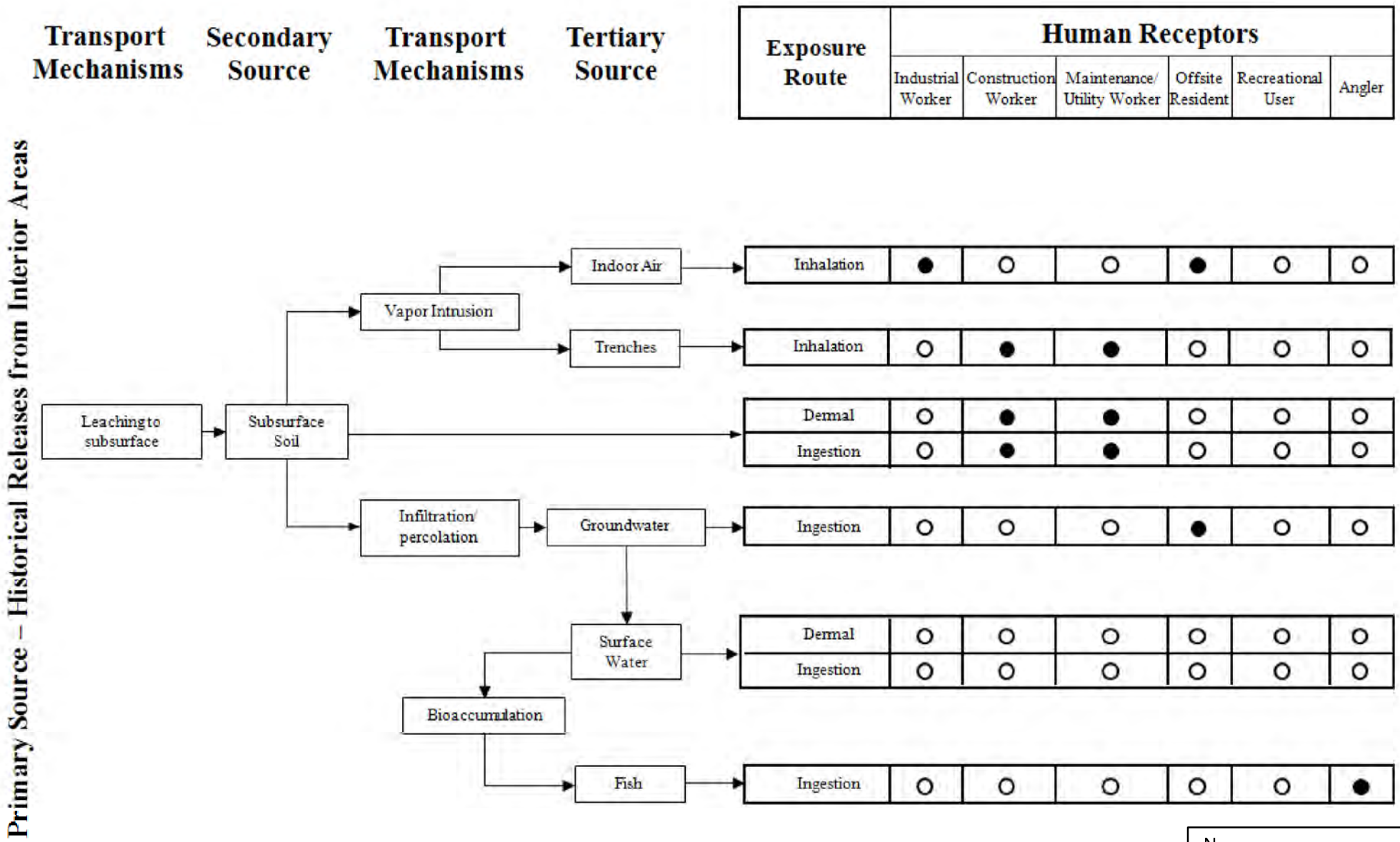
0 250 500 Feet

URS
Franklin, Tennessee

Figure 2-3
Conceptual Groundwater Flow and Discharge

C & D Technologies, Inc.
200 West Main Street
Attica, Indiana

Drawn By:	Projection:
RL	UTM, Zone 16N, NAD83, Meters
Checked By:	Source(s):
BS	Indiana Spatial Data Portal - 2005 aerial



● Potentially Complete Pathway

⊙ Potentially Complete but Insignificant

○ Pathway Incomplete

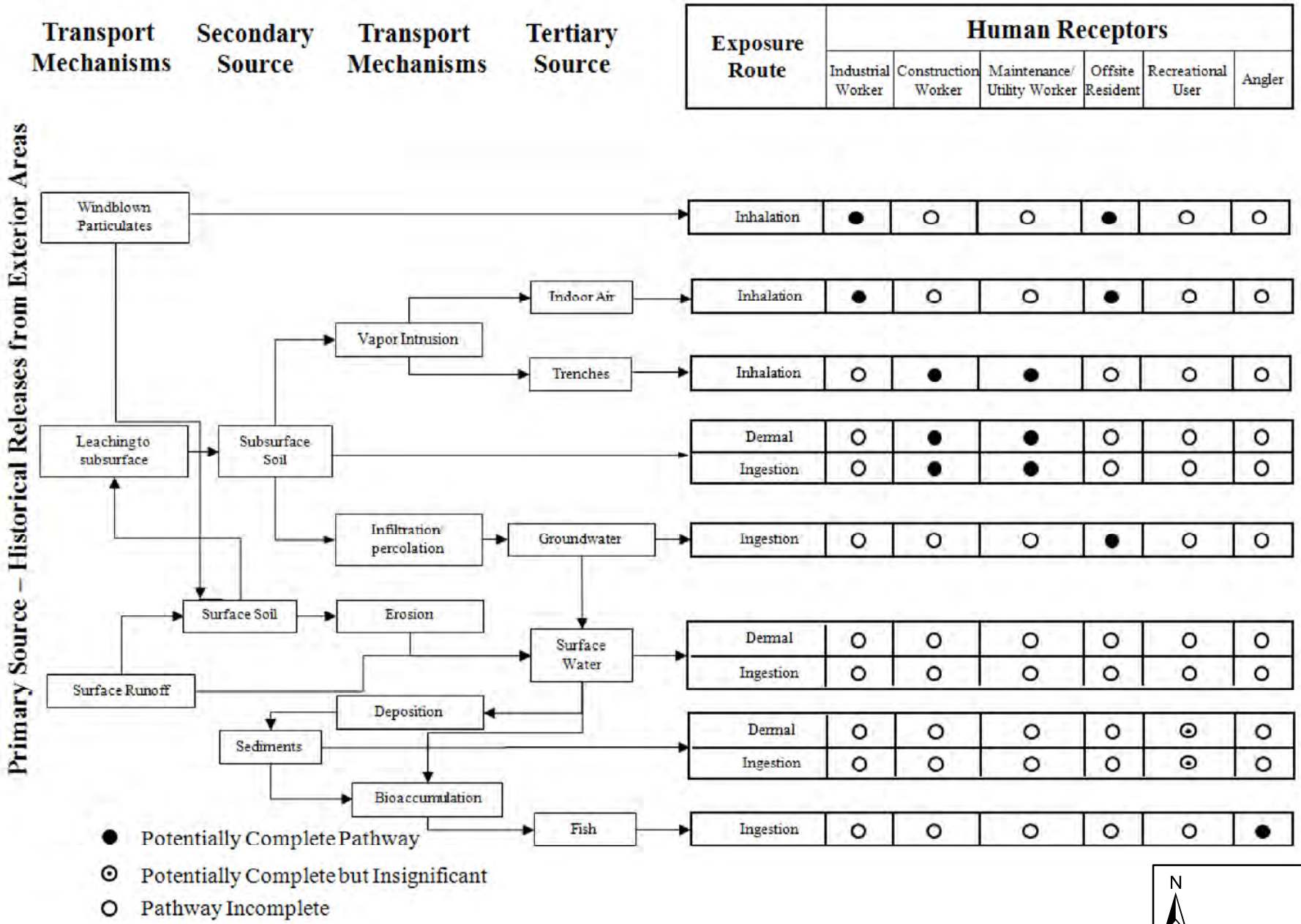
N

URS
Franklin, Tennessee

Figure 2-4
Human Health Conceptual Site Model - Interior Areas

C & D Technologies, Inc.
200 West Main Street
Attica, Indiana

Drawn By: RL	Projection: N/A
Checked By: JO	Source(s): URS Corporation



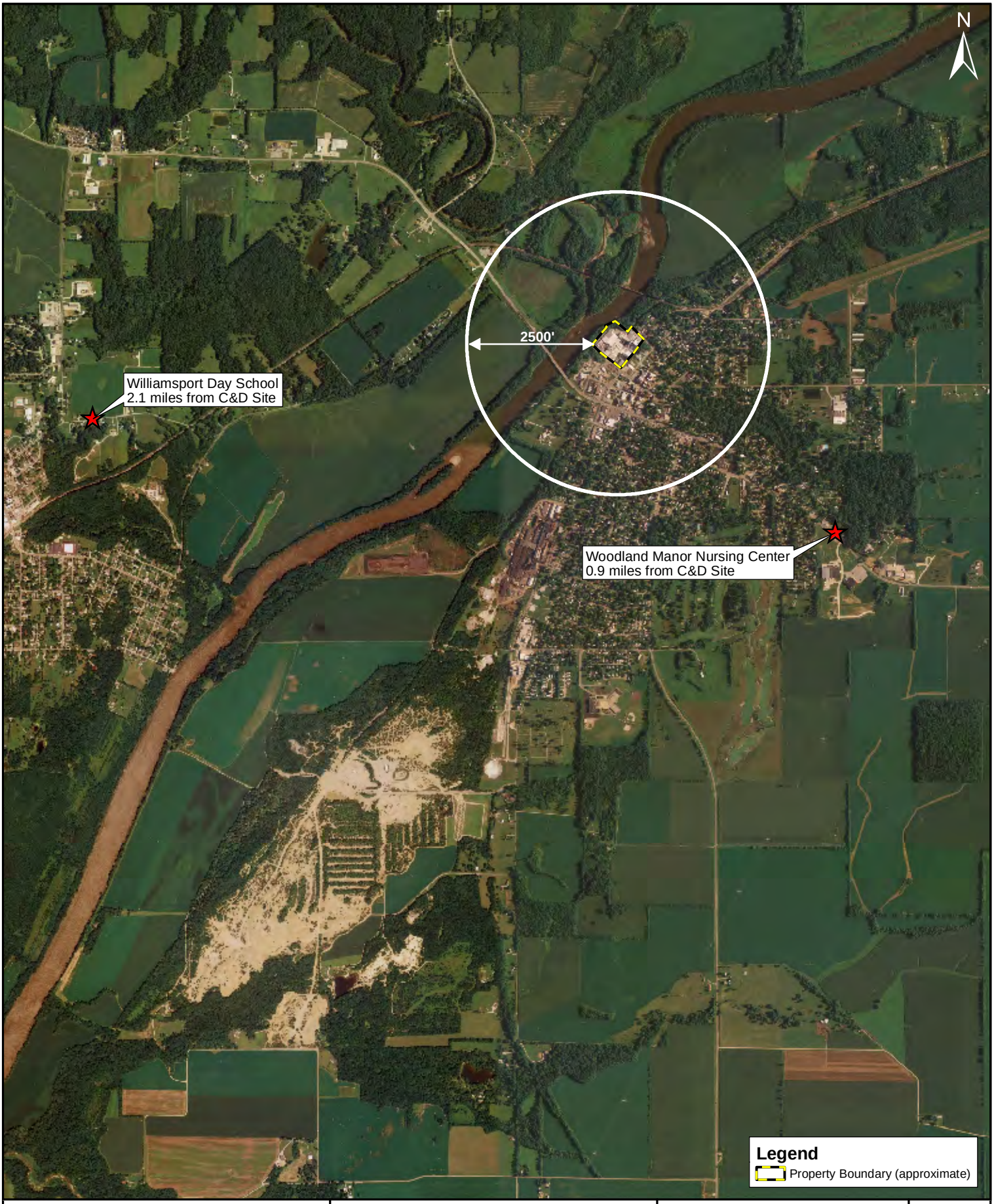
N

URS
Franklin, Tennessee

Figure 2-5
Human Health Conceptual Site Model - Exterior Areas

C & D Technologies, Inc.
200 West Main Street
Attica, Indiana

Drawn By: RL	Projection: N/A
Checked By: JO	Source(s): URS Corporation



C & D TECHNOLOGIES, INC.
200 West Main Street
Attica, Indiana

URS
Franklin, Tennessee

SCALE:	DRAWN BY: RL	DATE: 07/16/08
1:30,000	CHECKED BY: JO	DATE: 07/16/08

G:/C_D_Technologies/deliverables/8x11-SedimentandWS_SampleLocations.mxd

DAY-CARE AND SENSITIVE RECEPTORS

PROJECT NO: 20500205 .00001

FIGURE NO: 4-1

Appendix A
Soil Boring Logs

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

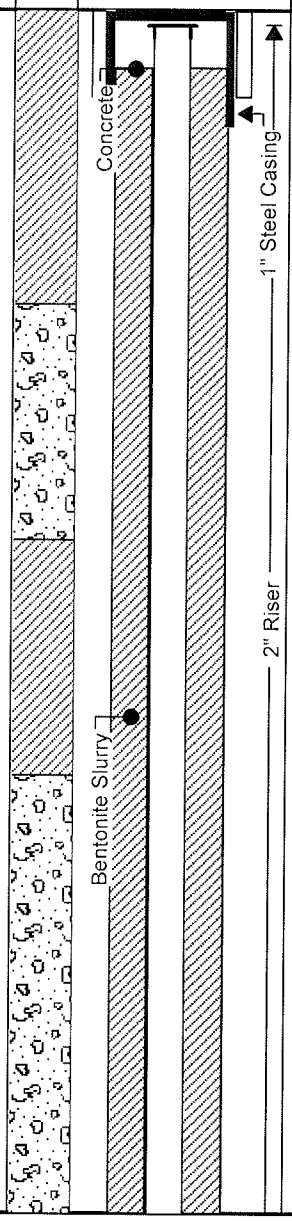
Boring ID: CD-MW-1S

Well: 2" Monitoring Well

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Top Soil Brown silty clay, trace fine sand, moist. CL		0.0			No Soil Samples Taken
2			4.0/3.5				
3				0.0			
4							
5	517.60			0.0			
		Loose brown fine sand, some cobble, moist. SW					
6			4.0/1.0				
7				0.0			
8							
9	513.60			0.0			
		Firm brown sandy clay, little medium gravel, moist. CL					
10			4.0/3.0				
11				0.0			
12							
13	509.60			0.0			
		Dense fine to coarse sand and gravel, some cobble, trace clay, very moist. SP					
14			4.0/1.5				
15				0.0			
16							
17				0.0			
18			4.0/0.0				
19				0.0			
20							



Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: 40 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-1S

Project: RFI Work Plan

Well: 2" Monitoring Well

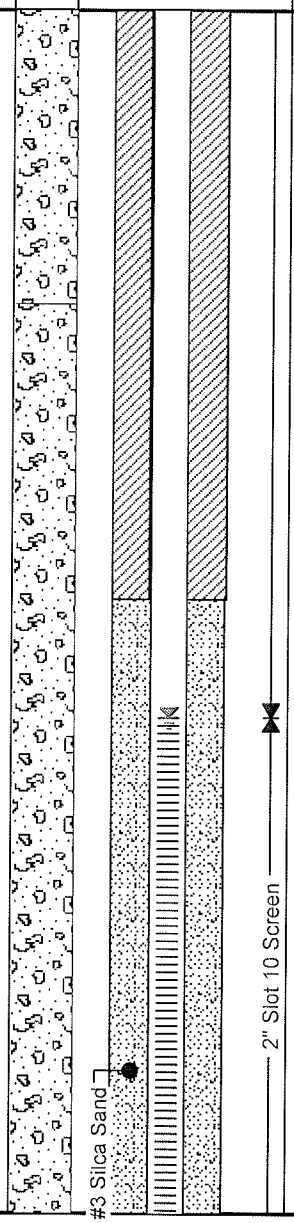
Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
21				0.0			
22			4.0/0.0				
23				0.0			
24							
25	497.60	Dense fine to coarse sand and gravel, some cobble, trace clay, very moist. SP		0.0			
26			4.0/1.0				
27				0.0			
28							
29				0.0			
30			4.0/1.5				
31				0.0			
32							
33				0.0			
34			4.0/1.0				
35				0.0			
36							
37				0.0			
38			4.0/3.0				
39				0.0			
40							



Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: 40 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-1S

Project: RFI Work Plan

Well: 2" Monitoring Well

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
41				0.0			
42			4.0/3.0				
43				0.0			
44	478.60						
		Dense brown coarse sand and gravel, trace cobble, wet. SP.					
45				0.0			
46			4.0/4.0				
47		Boring terminated at 48 feet		0.0			
48	474.60						
49				0.0			
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: 40 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

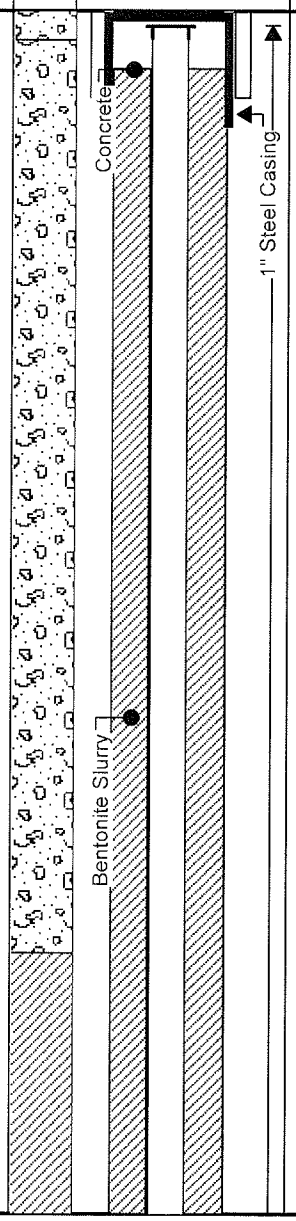
Boring ID: CD-MW-2S

Well: 2" Monitoring Well

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
	529.50	Gravel Fill					
1		Loose brown fine sand, some cobble, moist. SW		0.0			No Soil Samples Taken
2			4.0/3.5				
3				0.0			
4							
5				NR			
6			4.0/1.0				
7				0.0			
8							
9				NR			
10			4.0/1.0				
11				0.0			
12							
13				NR			
14			4.0/1.5				
15				NR			
16	514.00	Firm brown sandy clay, little medium gravel, moist. CH					
17				NR			
18			4.0/0.0				
19				NR			
20							



Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: 40 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-2S

Project: RFI Work Plan

Well: 2" Monitoring Well

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
21	509.00			NR			
		Dense fine to coarse sand and gravel, some cobble, trace clay, very moist. SP					
22			4.0/0.0				
23				NR			
24							
25				NR			
26			4.0/1.0				
27				0.0			
28							
29				0.0			
30			4.0/1.5			2" Riser	
31				0.0			
32							
33				NR			
34			4.0/3.0				
35				0.0			
36							
37				0.0			
38			4.0/2.0				
39				NR			
40	490.00						

Drilling Contractor: Midway Services

Datum: N/A

HA- Hand Auger

Drill Method: Geoprobe

Depth of Water During Drilling: 40 Feet BGS

Drill Date: 12/13/07

Static Water Level: N/A

Project No: 20500205

Boring ID: CD-MW-2S

Project: RFI Work Plan

Well: 2" Monitoring Well

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
41		Dense brown coarse sand and gravel, trace cobble, wet. SP.		0.0			
42			4.0/3.0				
43				0.0			
44							
45				NR		#3 Silca Sand	
46			4.0/3.0				
47				0.0			
48							
49				NR			
50	480.00		4.0/2.0			2" Slot 10 Screen	
51		Hard brown silty clay some coarse sand and gravel, slightly moist. CH		0.0			
52							
53				0.0			
54		Boring Terminated at 55 feet.					
55	475.00			0.0			
56							
57							
58							
59							
60							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: 40 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

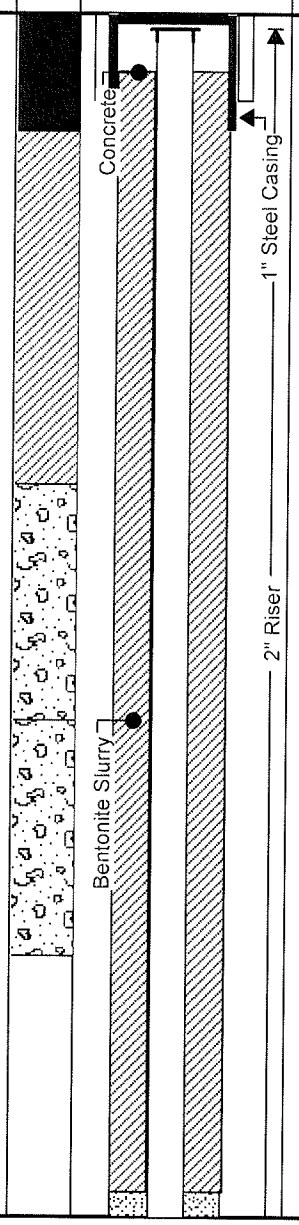
Boring ID: CD-MW-3S

Well: 2" Monitoring Well

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Black to brown gravel fill. GP		0.0			No Soil Samples Taken
2	521.40	Stiff brown sandy clay with medium gravel, moist. CL					
3				NR			
4			4.0/2.0				
5				0.0			
6							
7				NR			
8	515.40	Brown fine sand and gravel, moist. SP	4.0/3.0				
9				NR			
10							
11				0.0			
12	511.40	Brown coarse sand and gravel, with cobbles.	4.0/3.0				
13		Refusal at 16 with geo-probe'. Advanced hollow stem auger to 32 feet.		0.0			
14							
15				0.0			
16							
17							
18							
19							
20							



Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/12/07

Datum: N/A

Depth of Water During Drilling: 32 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-3S

Project: RFI Work Plan

Well: 2" Monitoring Well

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
21							
22							
23							
24							
25							
26							
27						#3 Silica Sand	
28							
29							
30							
31							
32						2" Slot 10 Screen	
33	490.40						
34							
35							
36							
37							
38							
39							
40							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/12/07

Datum: N/A

Depth of Water During Drilling: 32 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-10S

Project: RFI Work Plan

Well: 2" Monitoring Well

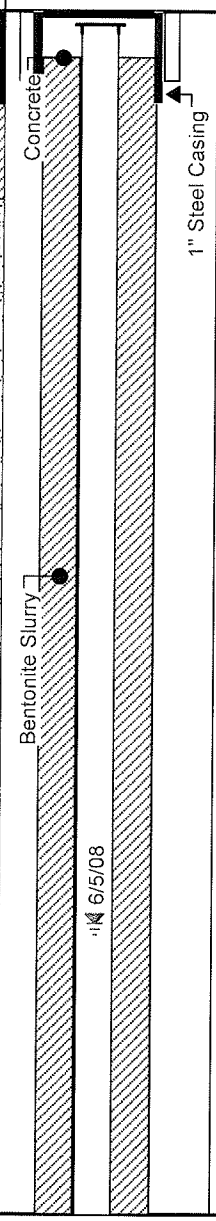
Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Asphalt					No Soil Samples Taken
2	516.67						
	516.01						
3		Brown, sandy clay, medium plastic, moist					
4	514.67	Light brown sandy clay, gravel, loose, moist					
5		Red to brown coarse sand, few gravel, moist	5.0/5.0				
6	512.67	becoming light brown					
7							
8							
9	509.67	dark gray, coarse sand, moist					
10	508.67	same as above, few medium gravel	5.0/5.0				
11							
12	506.67	tan coarse sand, brick fragments, moist					
13							
14							
15			5.0/5.0				
16	502.67	same as above with glass fragments, metal framents and lumber fragments					
17							
18							
19							
20	498.67	No Recovery	5.0/0.0				
21							
22							
23							
24							
25	493.67		5.0/2.5				



Drilling Contractor: Boart Longyear

Drill Method: Mini-Sonic

Drill Date: 6/4/08

Datum: N/A

Depth of Water During Drilling: 31 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-10S

Project: RFI Work Plan

Well: 2" Monitoring Well

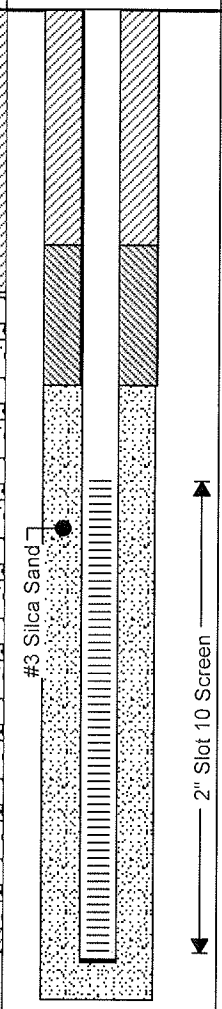
Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
26		light gray, sandy clay, some silt, soft, moist					
27							
28							
29							
30			5.0/3.0				
31	487.67	brown, medium to coarse, sand and gravel, wet					
32							
33							
34							
35			5.0/4.0				
36							
37							
38							
39							
40			5.0/2.0				
41							
42							
43							
44	474.17						
45	473.67	Gray, tight clay, moist Boring Terminated at 45 feet.	5.0/5.0				
46							
47							
48							
49							
50							



Drilling Contractor: Boart Longyear

Drill Method: Mini-Sonic

Drill Date: 6/4/08

Datum: N/A

Depth of Water During Drilling: 31 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-4S

Project: RFI Work Plan

Well: 2" Monitoring Well

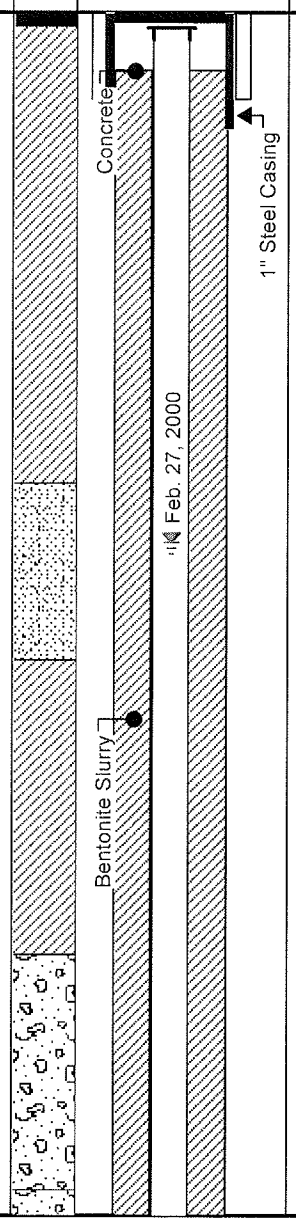
Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Ashpalt		0.0			No Soil Samples Taken
2			4.0/2.0				
3		Firm light gray silty clay, trace fine sand to fine gravel, moist. CL		0.0			
4							
5				0.0			
6			4.0/4.0				
7				0.0			
8	510.67						
		Loose gray fine sand, moist. SP					
9		becoming dense light green sand at 10'.		0.0			
10			4.0/4.0				
11	507.67			0.0			
		Firm light brown silty clay, trace fine sand and gravel. CL					
12							
13				0.0			
14			4.0/1.5				
15				0.0			
16	502.67						
		Dense light brown poorly sorted fine to coarse sand and gravel, moist. SP					
17				0.0			
18		Encountered white chaulky slightly sticky substance at 19-20'.	4.0/1.0				
19				NR			
20	498.67						



Drilling Contractor: Midway Services

Datum: N/A

HA- Hand Auger

Drill Method: Geoprobe

Depth of Water During Drilling: 32 Feet BGS

Drill Date: 12/11/07

Static Water Level: N/A

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-MW-4S

Well: 2" Monitoring Well

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
21		Soft brown fine to coarse sand and gravel, some clay, moist. SP		0.0			
22			4.0/1.5				
23				0.0			
24	494.67	Soft light gray silty clay, trace fine sand, moist. CL					
25				NR			
26			4.0/2.0				
27				0.0			
28							
29				NR			
30			4.0/3.0				
31				0.0			
32	486.67	Brown medium size gravel some fine sand, wet. SP					
33				0.0			
34			4.0/1.5				
35				0.0			
36						#3 Silca Sand	
37				NR			
38			4.0/1.0				
39				0.0			
40	478.67					2" Slot 10 Screen	

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/11/07

Datum: N/A

Depth of Water During Drilling: 32 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-4S

Project: RFI Work Plan

Well: 2" Monitoring Well

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
41		Loose poorly sorted coarse sand and gravel, wet. SP		NR			
42			4.0/2.0				
43				0.0			
44	474.17						
45		Hard light gray silty clay, trace fine gravel, slightly moist. CL		NR			
46			4.0/1.0				
47		Boring terminated at 45 feet		0.0			
48	470.67						
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							

Drilling Contractor: Midway Services

Datum: N/A

HA- Hand Auger

Drill Method: Geoprobe

Depth of Water During Drilling: 32 Feet BGS

Drill Date: 12/11/07

Static Water Level: N/A

Project No: 20500205

Boring ID: CD-MW-6S/SB-50

Project: RFI Work Plan

Well: 2" Monitoring Well

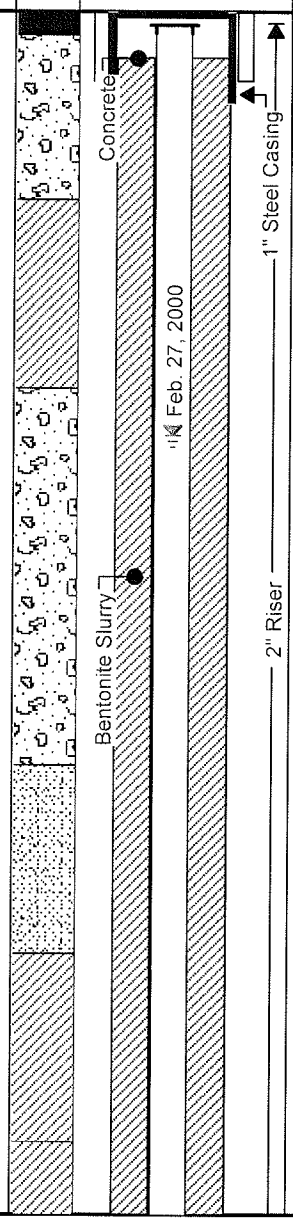
Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Asphalt Subbase					
1–4		Brown well sorted fine sand and gravel, moist. SW	4.0/3.0				No Soil Samples Taken
4	514.29						
4–8		Firm light gray silty clay, trace fine sand, moist. CL	4.0/2.0				
8	510.29						
8–16		Loose black silty sand and gravel. SP	4.0/3.0 4.0/1.5				
16	502.29						
16–20		Loose black and brown coarse sand, trace clay, moist. SP	4.0/1.0				
20	498.29						
20–24		Firm light brown silty clay, trace fine sand and gravel, moist. CL	4.0/3.5				
24	494.29						
24–25		Firm light brown silty clay, trace fine sand, moist. CL					



Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/11/07

Datum: N/A

Depth of Water During Drilling: 32 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-6S/SB-50

Project: RFI Work Plan

Well: 2" Monitoring Well

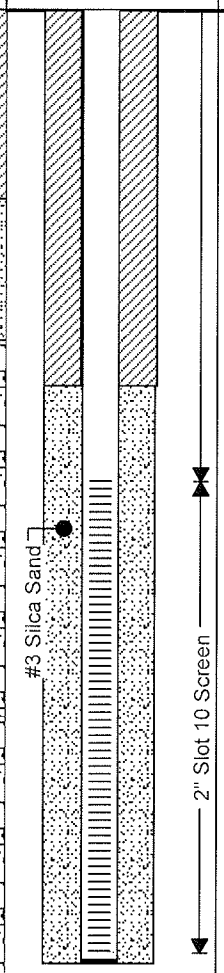
Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
26			4.0/2.0				
27							
28							
29	489.29						
		Dense brown fine sand, moist. SW					
30			4.0/2.0				
31							
32	486.29						
		Brown medium grade gravel, wet. GW					
33							
34			4.0/4.0				
35							
36							
37							
38			4.0/3.0				
39							
40	478.29						
		Brown poorely sorted medium to large gravel, wet.					
41							
42			4.0/4.0				
43							
44							
45							
46	472.29						
		Hard gray silty clay, trace fine sand, moist. CL					
47	471.29						
48		Boring Terminated at 47 feet.					
49							
50							



Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/11/07

Datum: N/A

Depth of Water During Drilling: 32 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-7S/SB-27

Project: RFI Work Plan

Well: 2" Monitoring Well

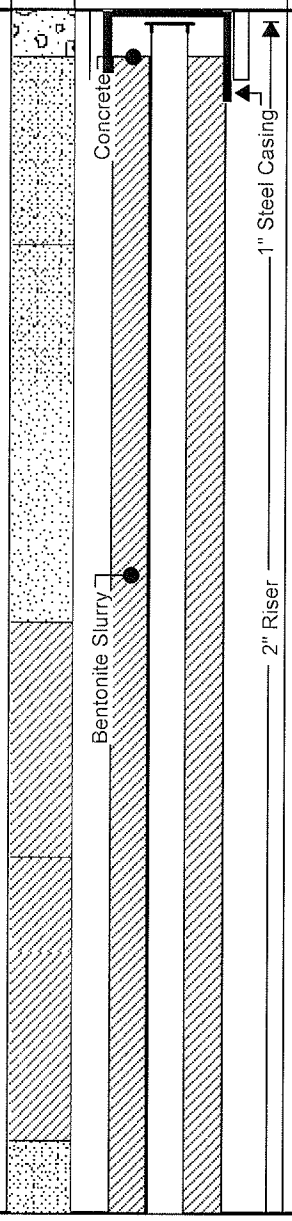
Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1	517.50	Sand and Gravel Fill					No Soil Samples Taken
2		Dense dark grey fine sand, moist. SW	4.0/3.5				
3							
4							
5	513.50						
6		Same As Above (SAA) brown fine sand and gravel, moist.	4.0/1.0				
7							
8	510.50	becoming dark grey					
9							
10			4.0/1.0				
11							
12							
13	505.50	Firm brown clay with medium subrounded gravel, moist. CL					
14			4.0/1.5				
15							
16							
17							
18	500.50	Firm stiff grey silty clay, trace fine sand, moist. CL	4.0/0.0				
19							
20	498.50	SAA, some medium gravel					
21							
22			4.0/0.0				
23							
24	494.50						
25							



Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/11/07

Datum: N/A

Depth of Water During Drilling: 36 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-7S/SB-27

Project: RFI Work Plan

Well: 2" Monitoring Well

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
26		Dense gray coarse sand and gravel, moist. SW	4.0/1.0				
27		wet at 32 feet					
28							
29							
30			4.0/1.5				
31							
32	486.50						
33		Coarse brown sand and gravel, moist. SP					
34			4.0/3.0				
35							
36						#3 Silica Sand	
37							
38			4.0/2.0				
39							
40							
41							
42	476.50		4.0/3.0				
43		Hard gray silty clay, trace fine gravels, slightly moist. CH					
44	474.50	Boring terminated at 44 feet.					
45							
46			4.0/3.0				
47							
48							
49							
50							

2" Slot 10 Screen

Drilling Contractor: Midway Services

Datum: N/A

HA- Hand Auger

Drill Method: Geoprobe

Depth of Water During Drilling: 36 Feet BGS

Drill Date: 12/11/07

Static Water Level: N/A

Project No: 20500205

Boring ID: CD-MW-8S

Project: RFI Work Plan

Well: 2" Monitoring Well

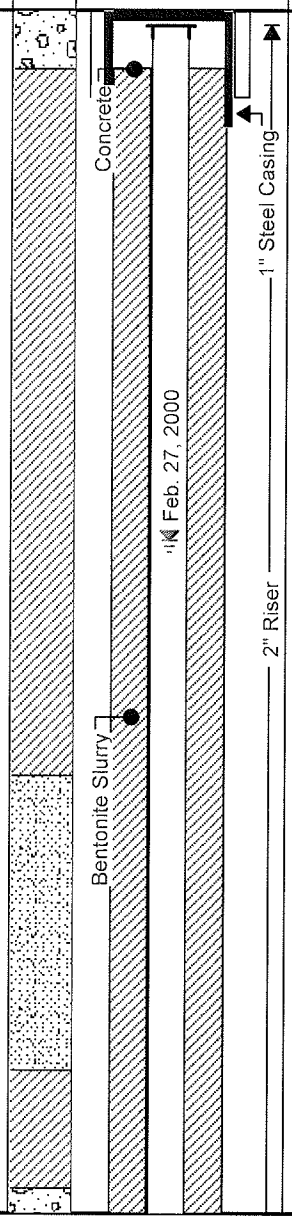
Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
	-1.00	Sand and Gravel Fill		0.0			No Soil Samples Taken
1		Firm light graysilty clay, trace fine sand to fine gravel, moist. CL					
2			4.0/3.0				
3				0.0			
4							
5				0.0			
6			4.0/2.0				
7				0.0			
8							
9				NR			
10			4.0/3.0				
11				0.0			
12							
13	-13.00	Loose gray fine sand, moist. SP		0.0			
14		becoming dense light green sand at 10'.	4.0/1.5				
15				0.0			
16							
17				0.0			
18	-18.00	Firm light brown silty clay, trace fine sand and gravel. CL	4.0/1.0				
19				0.0			
20	-20.00						



Drilling Contractor: Midway Services

Datum: N/A

HA- Hand Auger

Drill Method: Geoprobe

Depth of Water During Drilling: 32 Feet BGS

Drill Date: 12/12/07

Static Water Level: N/A

Project No: 20500205

Boring ID: CD-MW-8S

Project: RFI Work Plan

Well: 2" Monitoring Well

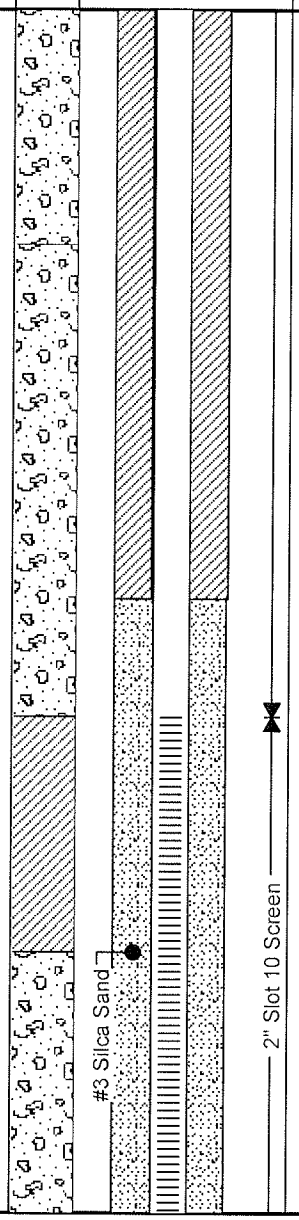
Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
21		Dense light brown poorley sorted fine to coarse sand and gravel, moist. SP		0.0			
22		Encountered white chaulky slightly sticky substance at 19-20'.	4.0/3.5				
23				0.0			
24	-24.00	Soft brown fine to coarse sand and gravel, some clay, moist. SP					
25				0.0			
26			4.0/2.0				
27				0.0			
28							
29				0.0			
30			4.0/2.0				
31				0.0			
32	-32.00	Soft light gray silty clay, trace fine sand, moist. CL					
33				NR			
34			4.0/4.0				
35				0.0			
36	-36.00					#3 Silca Sand	
37				0.0			
38			4.0/3.0				
39				0.0			
40							



Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/12/07

Datum: N/A

Depth of Water During Drilling: 32 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-MW-8S

Well: 2" Monitoring Well

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
41		Brown medium size gravel some fine sand, wet. SP		0.0			
42			4.0/4.0				
43				0.0			
44	-44.00	Boring Terminated at 44 feet.					
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/12/07

Datum: N/A

Depth of Water During Drilling: 32 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-9S

Project: RFI Work Plan

Well: 2" Monitoring Well

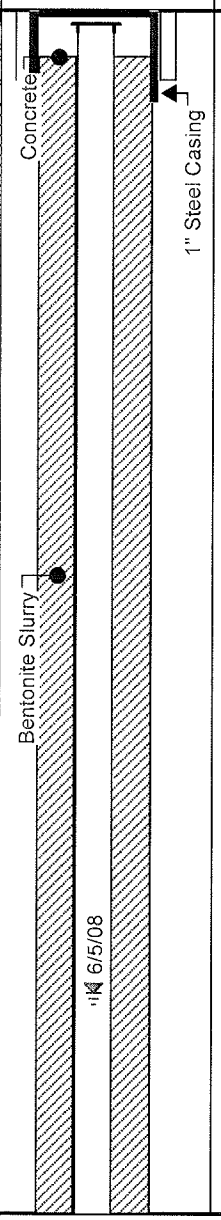
Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
	517.67	Asphalt					No Soil Samples Taken
1		Brown coarse sand, moist					
2	516.67	becoming black with few gravels					
3		Dark gray mottled brown, stiff sandy clay, few gravels, moist					
4							
5			5.0/4.0				
6							
7							
8							
9							
10	508.67	Same as above with few glass fragments	5.0/4.5				
11							
12	506.67	Light brown coarse sand and gravel, fill debris, moist					
13							
14							
15	503.67	No Recovery	5.0/0.0				
16							
17							
18							
19							
20	498.67	Brown coarse sand and gravel, fill debris, wet	5.0/2.5				
21							
22							
23							
24							
25	493.67		5.0/0.0				



Drilling Contractor: Boart Longyear

Drill Method: Mini-Sonic

Drill Date: 6/3/08

Datum: N/A

Depth of Water During Drilling: 20 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-MW-9S

Project: RFI Work Plan

Well: 2" Monitoring Well

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
26		No Recovery					
27							
28							
29							
30			5.0/1.5				
31	487.67	Gray, med plastic, medium soft, sandy clay, moist					
32							
33							
34							
35	483.67	Gray, rounded to subrounded, gravel and cobble, with coarse sand, wet	5.0/3.0				
36						#3 Silica Sand	
37							
38							
39							
40			5.0/3.0				
41							
42							
43							
44							
45			5.0/3.5				
46	472.67	Gray, tight clay, moist					
47							
48		Boring Terminated at 50 feet.					
49							
50	468.67					2" Slot 10 Screen	

Drilling Contractor: Boart Longyear

Drill Method: Mini-Sonic

Drill Date: 6/3/08

Datum: N/A

Depth of Water During Drilling: 20 Feet BGS

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-2

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
	-0.50	Frim brown fine to coarse sand and gravel, moist. SW					CD-SB-2 (0-1)
1		Dense dark gray fine sand, trace medium gravel, moist. SW	5.0/5.0				
2				0.0			
3		Boring terminated at 5.0 feet.					
4				0.0			CS-SB-2 (4-5)
5	-5.00						
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Datum: N/A

HA- Hand Auger

Drill Method: Geoprobe

Depth of Water During Drilling: N/A

Drill Date: 12/15/07

Static Water Level: N/A

Project No: 20500205

Boring ID: CD-SB-3

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Dark brown fine sand, moist. SW					CD-SB-3 (0-1)
1			5.0/3.5				
2				0.3			
3		Boring terminated at 5.0 feet.					
4				0.1			
5	-5.00						CD-SB-3 (4-5)
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-4

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Dark brown fine sand poorly sorted with fine gravel, moist. SP	5.0/3.5				CD-SB-4 (0-1)
2				0.0			
3		Boring terminated at 5.0 feet.					
4				0.0			
5	-5.00						CD-SB-4 (4-5)
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-5

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Frim dark grey coarse sandy clay, moist. SC	5.0/2.0				CD-SB-5 (0-1)
2				0.0			
3	-3.00			0.0			
		Dark brown fine sand, moist. SW					
4	-4.00	Brown coarse sand, moist. SW		0.0			CD-SB-5 (4-5)
5	-5.00	Boring Terminated at 5 feet.					
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/12/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-6

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Dark gray fine sand moist. SW		0.0			CD-SB-6 (0-1)
2							
3							
4			5.0/2.5				
5				0.6			CD-SB-6 (4-5)
6							
7							
8	-8.00	Light to dark gray fine sand, moist. SW	4.0/2.0				
9							
10				0.9			
11							
12	-12.00	Dark gray silty clay, moist, plyable. CH	4.0/2.5				
13		becoming sandy clay.		0.7			
14							
15	-15.00	Black fine sand, moist.					
16	-16.00	Dark brown sandy clay, moist. CH	4.0/0.5	2.0			
17							
18							
19		Boring Terminated at 20 feet.		2.1			
20	-20.00						CD-SB-6 (19-20)

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/11/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-7

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Brown fine sandy clay with mixed medium gravel, plyable, moist. SC	5.0/3.5	1.7			CD-SB-7 (0-1)
2	-2.50						
3		Dark gray fine sandy clay, moist. SC		0.0			
4	-4.00			0.0			
5	-5.00	Brown coarse sand, moist. SW Boring Terminated at 5.0 feet.					CD-SB-7 (4-5)
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/12/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-8

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Browm clay mixed with fine to coarse sand and gravel, moist. SC	5.0/3.5				CD-SB-8 (0-1)
2				0.0			
3		Boring Terminated at 5.0 feet.		0.0			
4				0.0			
5	-5.00						CD-SB-8 (4-5)
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/12/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-10

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Firm brown sandy clay, with coarse sands and gravel, moist. CH		0.2			CD-SB-10 (0-1)
2							
3							
4			4.0/1.0				
5				0.0			CD-SB-10 (4-5)
6							
7							
8	-8.00	Dark brown fine sand, moist. SW	4.0/1.0				
9							
10				0.4			
11							
12			4.0/2.5				
13				1.2			
14							
15	-15.00	Stiff gray sandy clay, moist. CH					
16			4.0/4.0	2.0			
17							
18							
19		Boring Terminated at 20 feet.		1.1			
20	-20.00						CD-SB-10 (19-20)

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/11/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-13

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Loose brown coarse sand with gravel and brick, moist. Fill material.	4.0/3.0	0.0			CD-SB-13 (0-1)
2							
3							
4			4.0/2.5				
5				0.0			CD-SB-13 (4-5)
6							
7				0.0			
8		Boring Terminated at 10 feet.					
9							CD-SB-13 (9-10)
10	-10.00			0.0			
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/15/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-14

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Brown fine sandy clay, moist. CL	5.0/2.5	0.0			CD-SB-14 (0-1)
2	-2.00	Dark brown fine sand, moist. SW					
3							
4		Boring Terminated at 5.0 feet.		0.0			CD-SB-14 (4-5)
5	-5.00						
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/15/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-15

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Dark gray fine to coarse sand, some fine gravel, moist. SP	5.0/2.5	0.0			CD-SB-15 (0-1)
2							
3							
4	-4.00	Brown sandy clay with medium gravel, moist. CL		0.0			CD-SB-15 (4-5)
5	-5.00	Boring Terminated at 5.0 feet.					
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/15/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-16

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Dark gray fine sand moist. SW		0.0			CD-SB-16 (0-1)
2	-2.00	Brown fine sand, moist.					
3	-3.00	Brown sandy clay, plyable, moist. CL					
4			5.0/2.5				
5				0.0			CD-SB-16 (4-5)
6							
7							
8	-8.00	Brown coarse sand with gravel, moist. SP	4.0/2.0				
9							
10				0.0			
11							
12			3.0/3.0				
13				0.0			
14		Boring terminated at 15 feet.		0.0			
15	-15.00						
16							
17							
18							
19							
20							CD-SB-16 (14-15)

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/14/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-17

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Dark brown fine to coarse sand and gravel, moist. SP	5.0/2.5	0.0			CD-SB-17 (0-1)
1							
2							
3							
4				0.0			
5	-5.00	Boring Terminated at 5.0 feet.					CD-SB-17 (4-5)
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-18

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Dark brown with some red staining, fine sand, moist. SP	4.0/3.0	0.2			CD-SB-18 (0-1)
2							
3							
4							
5			4.0/2.0	0.0			CD-SB-18 (4-5)
6							
7		Boring Terminated at 8.0 feet.					
8	-8.00			0.0			CD-SB-18 (7-8)
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-20

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1	-1.00	Dark brown to brown fine to coarse sand, moist. SP	5.0/3.0	1.0			CD-SB-20 (0-1)
		Firm brown sandy clay, some fine gravel, moist. CL					
5			5.0/2.5	0.0			CD-SB-20 (4-5)
7				2.3			
8	-8.00	Brown coarse sand with medium gravel, moist. SP					
9		Boring Terminated at 10.0 feet.		0.3			CD-SB-20 (9-10)
10	-10.00						

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-21

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1	-0.98	Dark brown to brown fine sandy clay, moist. CL	5.0/3.0	3.2			CD-SB-21 (0-1)
		Firm brown sand, some clay, moist. SP					
5			5.0/2.5	5.5			CD-SB-21 (4-5)
7				3.0			
	-7.81						
8		Brown coarse sand with medium gravel, moist.					
9		Boring Terminated at 10.0 feet.		2.7			CD-SB-21 (9-10)
10	-10.00						

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-22

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Dark brown coarse to medium sand, moist. SP	5.0/3.0	0.0			CD-SB-22 (0-1)
4	-4.00	Light brown fine sandy clay, moist. SC		0.1			CD-SB-22 (4-5)
5	-5.00	Boring Terminated at 5.0 feet.					

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-23

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Dark brown fine sand, moist. SW					CD-SB-23 (0-1)
1			5.0/2.5				
2				0.0			
3		Boring Terminated at 5.0 feet.					
4				0.0			
5	-5.00						CD-SB-23 (4-5)
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-25

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Stiff brown sandy clay with coarse gravel, moist, CL	5.0/3.5	0.0			CD-SB-25 (0-1)
2							
3							
4	-4.00	Brown coarse sand and gravel, moist. SP		0.0			CD-SB-25 (4-5)
5	-5.00	Boring Terminated at 5.0 feet.					
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/14/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-26

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Stiff brown sandy clay with coarse gravel, moist, CL	5.0/5.0	0.1			CD-SB-26 (0-1)
	-4.00	Brown coarse sand and gravel, moist. SP		0.0			CD-SB-26 (4-5)
	-5.00	Boring Terminated at 5.0 feet.					

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/14/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-28

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Brown coarse sand, moist. SW becoming black		0.1			CD-SB-28 (0-1)
2	-2.00	Dark gray mottled reddish brown sandy clay, plyable, stiff. CH					
3							
4	-4.00	Dark gray sandy clay, moist.	5.0/2.5				
5				0.5			CD-SB-28 (4-5)
6							
7							
8	-8.00	less sandy	4.0/2.0				
9							
10				0.0			
11							
12			4.0/2.5				
13	-13.00	Light brown coarse sand, moist. SW		0.1			
14							
15							
16	-16.00	Dark gray coarse sand with brick fill material, moist. SP	4.0/0.5	0.0			
17							
18	-18.50						
19		Dark gray sandy clay, moist. CH Boring Terminated at 20 feet.		0.0			
20	-20.00						CD-SB-28 (19-20)

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/11/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-31

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1	-1.00	Dark brown sandy clay, moist, plyable. CH Light brown sandy clay, moist.		0.1			CD-SB-31 (0-1)
2							
3							
4	-4.00	Light brown coarse sand, moist. SW	5.0/2.5	0.5			CD-SB-31 (4-5)
5							
6							
7							
8	-8.00	Dark gray sandy clay, moist. CH	4.0/2.0				
9							
10				0.0			
11							
12			4.0/2.5				
13				0.1			
14							
15							
16	-16.00	Brown sandy clay, moist plyable.	4.0/0.5	0.0			
17							
18							
19		Boring terminated at 20 feet.		0.0			
20	-20.00						CD-SB-31 (19-20)

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/11/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-32

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Dark gray fine sand, moist. SW					
1	-1.00	Dark gray clayey sand, moist. SC		0.0			CD-SB-32 (0-1)
2							
3							
4	-4.00	Dark gray fine sand, moist. SW	5.0/2.5				
5				0.2			CD-SB-32 (4-5)
6							
7							
8			4.0/2.0				
9							
10				0.0			
11							
12			4.0/2.5				
13				0.0			
14							
15							
16	-16.00	Light gray medium sand, moist.	4.0/0.5	0.0			
17							
18	-18.00	Gray silty clay, moist. SC Boring Terminated at 20 feet.					
19				2.6			
20	-20.00						CD-SB-32 (19-20)

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/11/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-34

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Brown fine to coarse sand, moist. SP					CD-SB-34 (0-1)
1			5.0/2.0				
				4.4			
2		becoming gray with trace clay.					
3							
4	-4.00			0.0			
		Stiff brown fine sandy clay, moist. CL					CD-SB-34 (4-5)
5	-5.00	Boring Terminated at 5.0 feet.					
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/14/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-35

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Brown fine to coarse sand, trace fine gravel, moist. SP	5.0/1.5	0.0			CD-SB-35 (0-1)
2							
3							
4	-4.00	Stiff brown fine sandy clay, moist. CL		0.0			CD-SB-35 (4-5)
5	-5.00	Boring Terminated at 5.0 feet.					
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/14/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-36

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
	-1.00	Concrete/subbase					CD-SB-36 (0-1)
1		Stiff brown fine sandy clay, moist. CL	5.0/2.0	0.0			
2							
3							
4		Boring Terminated at 5.0 feet.		0.0			CD-SB-36 (4-5)
5	-5.00						
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/15/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-37

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
	-1.00	Stiff dark gray sandy clay, moist. CL					CD-SB-37 (0-1)
1		Dark brown fine sand some fine gravel, moist. SP	5.0/5.0	0.0			
2							
3							
4	-4.00	Light brown sandy clay, moist. CL		0.0			CD-SB-37 (4-5)
5	-5.00	Boring Terminated at 5.0 feet.					
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/15/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-39

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Dark brown to brown fine to coarse sand, intermixed gravel, moist. SP	5.0/2.0	0.3			CD-SB-39 (0-1)
2							
3							
4							
5			5.0/3.0	0.0			CD-SB-39 (4-5)
6							
7				0.0			
8							
9		Boring Terminated at 10 feet.		0.0			CD-SB-39 (9-10)
10	-10.00						
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/13/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-40

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1	-1.50	Concrete					
2		Grey sandy clay, mixed gravel fill, moist, plyable. CL	4.0/3.0	0.2			CD-SB-40 (1.5-2.5)
3							
4							
5	-5.50						
6	-6.50	Black fine sand, moist, SW Boring Terminated at 6.5 feet.		0.7			CD-SB-40 (5.5-6.5)
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/12/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-42

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Brown clay with coarse sand and gravel, moist. CL					CD-SB-42 (0-1)
1			5.0/2.0				
2				0.0			
3							
4				0.0			
5	-5.00	Boring Terminated at 5.0 feet.					CD-SB-42 (4-5)
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/14/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-43

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Brown coarse sand with coarse gravel, moist. SP	5.0/3.0	0.0			CD-SB-43 (0-1)
4	-4.00	Stiff brown fine sandy clay, moist. CL		0.0			CD-SB-43 (4-5)
5	-5.00	Boring Terminated at 5.0 feet.					

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/14/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-44

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Brown coarse sand with coarse gravel, moist. SP	5.0/3.0	0.0			CD-SB-44 (0-1)
2							
3							
4	-4.00	Stiff brown fine sandy clay, moist. CL		0.0			CD-SB-44 (4-5)
5	-5.00	Boring Terminated at 5.0 feet.					
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/14/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-45

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Dark gray sandy clay, moist. CL	5.0/3.0	1.6			CD-SB-45 (0-1)
1							
2							
3				0.0			
4	-4.00	Dark gray fine sand, moist. SW		0.6			CD-SB-45 (4-5)
5	-5.00	Boring Terminated at 5.0 feet.					
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/12/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-47

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Dark gray sandy clay, moist. CL	5.0/3.5	1.8			CD-SB-47 (0-1)
1							
2							
3				0.0			
4	-4.00	Dark gray fine sand, moist. SW		0.4			CD-SB-47 (4-5)
5	-5.00	Boring Terminated at 5.0 feet.					
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/12/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-48

Project: 20500205

Well: NA

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Dark brown to brown sandy clay, moist. CL	5.0/3.5	2.0			CD-SB-48 (0-1)
2							
3	-3.50			1.7			
4		Brown coarse sand, moist. SW					
5	-5.00	becoming dark gray at 4.0 feet.		1.0			CD-SB-48 (4-5)
6		Boring Terminated at 5.0 feet.					
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/12/07

Datum: NA

Depth of Water During Drilling: NA

Static Water Level: NA

HA- Hand Auger

Project No: 20500205

Project: 20500205

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-49

Well: NA

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Brown sandy clay, moist. CL	5.0/2.5	1.1			CD-SB-49 (0-1)
2							
3	-3.00	Brown coarse sand, moist. SW		1.0			
4	-4.00	Brown fine sandy clay, moist. CL		1.9			CD-SB-49 (4-5)
5	-5.00	Boring Terminated at 5.0 feet.					
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/12/07

Datum: NA

Depth of Water During Drilling: NA

Static Water Level: NA

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-51

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1		Dark gray sandy clay, mixed gravel moist. CL	4.0/3.0	1.0			CD-SB-51-(0-1)
2							
3							
4			4.0/3.0				
5				0.7			CD-SB-51-(4-5)
6							
7				0.2			
8	-8.00		2.0/2.0				
9		Gray sandy clay, mixed gravel fill, moist, plyable. CL Boring Terminated at 10.0 feet.		0.5			CD-SB-51-(9-10)
10	-10.00						
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/11/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-52

Project: 20500205

Well: NA

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
1	-1.00	Light brown coarse sand, moist. SP	5.0/4.5				CD-SB-52 (0-1)
2		Grey to dark grey sandy clay, moist. CL		0.6			
3							
4							
5	-5.00	Boring Terminated at 5.0 feet.		0.7			CD-SB-52 (4-5)
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/11/07

Datum: NA

Depth of Water During Drilling: NA

Static Water Level: NA

HA- Hand Auger

Project No: 20500205

Project: RFI Work Plan

Client: C & D Technologies, INC.

Site Location: Attica, IN

Boring ID: CD-SB-53

Well: N/A

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Stiff brown sandy clay some medium gravel, moist. CL					CD-SB-53 (0-1)
1			5.0/5.0				
2				0.0			
3							
4		Boring terminated at 5.0 feet.		0.0			CD-SB-53 (4-5)
5	-5.00						
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/14/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Project No: 20500205

Boring ID: CD-SB-54

Project: RFI Work Plan

Well: N/A

Client: C & D Technologies, INC.

Site Location: Attica, IN

URS Representative:

URS Corporation
1000 Corporate Centre Drive
One Corporate Centre, Suite 250
Franklin, TN

Depth	Relative Elevation	Description	Drive/Recovery	PID	USCS	Well Construction	Soil Sample Obtained for Lab Analysis
		Stiff brown sandy clay some medium gravel, moist. CL					CD-SB-54 (0-1)
1			5.0/2.5				
2				0.0			
3							
4		Boring terminated at 5.0 feet.		0.0			
5	-5.00						CD-SB-54 (4-5)
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drilling Contractor: Midway Services

Drill Method: Geoprobe

Drill Date: 12/14/07

Datum: N/A

Depth of Water During Drilling: N/A

Static Water Level: N/A

HA- Hand Auger

Appendix B
Screening Values

Appendix B
Screening Values

Table 1
C&D Technologies
Attica, IN
Sediment Data Screening Values
(detected analytes only)

ANALYTE	IDEM DCLs Res
2-Butanone (MEK)	44000000
3-Methylphenol	9100000
4-Methylphenol	910000
Acetone	35000000
Acrolein	500
Anthracene	47000000
Antimony	140
Arsenic	3.9
Barium	63000
Benzene	8400
Benzo(a)anthracene	5000
Benzo(a)pyrene	500
Benzo(b)fluoranthene	5000
Benzo(g,h,i)perylene	NE
Benzo(k)fluoranthene	50000
Beryllium	680
bis(2-Ethylhexyl) phthalate	300000
Cadmium	12
Carbon disulfide	900000
Chloromethane	
Chromium	430
Chrysene	500000
Cobalt	NE
Copper	14000
Dibenz(a,h)anthracene	500
Ethylbenzene	4600000
Fluoranthene	6300000
Indeno(1,2,3-c,d)pyrene	5000
Lead	400
Mercury	100
Nickel	6900
Percent Solids	
Phenanthrene	470000
Pyrene	4700000
Silver	1700
Thallium	24
Toluene	8800000
Total Organic Carbon	
Trichloroethene	710
Vanadium	NE
Xylenes (total)	690000
Zinc	100000

**IDEM DCLs Res = IDEM Direct Contact Levels for Residential Areas.

Table 2
C&D Technologies
Attica, IN
Groundwater Data Screening Values
(detected analytes only)

ANALYTE	IDEM RDCL	SW SV
2-Butanone (MEK)	8400	2200
Antimony	6	80
Arsenic	10	0.175
Barium	2000	220
Beryllium	4	1.17
bis(2-Ethylhexyl)	6	0.3
Bromodichloromethane	80	
Bromoform	80	
Cadmium	5	2
Carbon disulfide	1300	15
Carbon tetrachloride	5	69.4
Chloroform	80	140
Chromium	100	380
cis-1,2-Dichloroethene	70	910
Cobalt		24
Copper	1300	25
Dibromochloromethane		
Lead	15	6.7
Lead, dissolved		2.5
Nickel	730	100
Selenium	50	35
Styrene	100	32
Thallium	2	10
Tin		180
Toluene	1000	253
Trichloroethene	5	47
Vanadium		12
Zinc	11000	230

**IDEM RDCL = IDEM Residential Default Closure Level - Federal Safe Drinking Water Act (SWDA) maximum

**SW SV = Surface water quality screening value

Table 3
C&D Technologies
Attica, IN
Surface Water Data Screening Values
(detected analytes only)

ANALYTE	IDEM SWQS	AWQC
Antimony	45000	640
Arsenic	0.175	0.14
Barium	1000	NE
Beryllium	1.17	NE
bis(2-Ethylhexyl) phthalate	50000	2.2
Chromium	3433333	NE
Cobalt	NE	NE
Copper	NE	1300
Copper, Dissolved		
Hardness, as CaCO3		
Lead	50	NE
Methylene chloride		
Nickel	100	4600
Thallium	48	0.47
Tin		
Vanadium	NE	NE
Zinc	NE	26000

**IDEM SWQS = IDEM human health surface waer quality standards.

**AWQC = Federal ambient water quality criteria.

Table 4
C&D Technologies
Attica, IN
Soil Data Screening Values
(detected analytes only)

ANALYTE	IDEM Human Health	Region 9 PRG
1,2,4-Trichlorobenzene	1100000	220000
1-Methylnaphthalene	6000	6000
2-Butanone (MEK)	28000000	110000000
2-Methylnaphthalene	1600000	190000
4-Methyl-2-pentanone	8700000	47000000
5-Nitro-o-toluidine		
Acenaphthene	24000000	29000000
Acenaphthylene	2800000	190000
Acetone	51000000	54000000
Acetonitrile	1800000	1800000
Anthracene	120000000	100000000
Antimony	460	410
Aroclor 1242	5300	740
Aroclor 1248	5300	740
Aroclor 1254	5300	740
Aroclor 1260	5300	740
Arsenic	20	
Barium	220000	67000
Benzene	14000	1400
Benzo(a)anthracene	15000	2100
Benzo(a)pyrene	1500	210
Benzo(b)fluoranthene	15000	2100
Benzo(g,h,i)perylene	12000000	
Benzo(k)fluoranthene	150000	21000
Beryllium	2300	1900
bis(2-Ethylhexyl) phthalate	980000	120000
Bromoform	580000	220000
Bromomethane	9900	13000
Cadmium	590	450
Carbon disulfide	480000	720000
Chloroethane	120000	6500
Chromium	1000000	450
Chrysene	1500000	210000
cis-1,2-Dichloroethene	140000	150000
Cobalt	1900	1900
Copper	46000	41000
Dibenz(a,h)anthracene	1500	210
Dibenzofuran	980000	1600000

**IDEM Human Health = IDEM human health industrial screening level.

**Region 9 PRG = EPA Region 9 PRG screening level.

Table 4 cont.
C&D Technologies
Attica, IN
Soil Data Screening Values
(detected analytes only)

ANALYTE	IDEM Human Health	Region 9 PRG
Dichlorodifluoromethane	310000000	310000
Diethyl phthalate	840000	100000000
Di-n-butyl phthalate	760000	62000000
Ethylbenzene	160000	400000
Fluoranthene	16000000	22000000
Fluorene	16000000	26000000
Indeno(1,2,3-c,d)pyrene	15000	2100
Iodomethane		
Lead	970	800
Mercury	340	310
Methylene chloride	200000	21000
Naphthalene	8000000	190000
Nickel	23000	20000
Percent Solids		
pH (solid)		
Phenanthrene	1200000	29000000
Pyrene	12000000	29000000
Silver	5700	5100
Tetrachloroethene	16000	1300
Thallium	80	67
Tin	100000	100000
Toluene	310000	310000
Trichloroethene	24000	110
Trichlorofluoromethane	2000000	2000000
Vanadium	1000	1000
Vinyl acetate	1400000	1400000
Xylenes (total)	170000	420000
Zinc	340000	100000

**IDEM Human Health = IDEM human health industrial screening level.

**Region 9 PRG = EPA Region 9 PRG screening level.

Appendix C
Analytical Data

Appendix C-1
Soil Analytical Data

Appendix C-2
Groundwater Analytical Data

Appendix C-3
Surface Water Analytical Data

Appendix C-4
Sediment Analytical Data

Appendix D
Data Validation Report

Appendix E
Background Comparison Statistics

Comparison of Groundwater Background Screening Value with Maximum Concentrations from Site Wells

	ANTIMONY		ARSENIC		BARIUM		CHROMIUM		COBALT		COPPER		LEAD		NICKEL		VANADIUM		ZINC	
	Dec07/Jan08	Jun08	Dec07/Jan08	Jun08	Dec07/Jan08	Jun08	Dec07/Jan08	Jun08	Dec07/Jan08	Jun08	Dec07/Jan08	Jun08	Dec07/Jan08	Jun08	Dec07/Jan08	Jun08	Dec07/Jan08	Jun08	Dec07/Jan08	Jun08
Background Wells																				
CD-MW-3	0.34	2U	1.4	0.64	109	93.2	7.1	10U	3.6	0.46	5.2	2U	2	0.96	5.4	2U	3.9	10U	20U	20U
Average	0.67		1.02		101.1		6.05		2.03		3.1		1.48		3.2		4.45		10	
2XAve	1.34		2.04		202.2		12.1		4.06		6.2		2.96		6.4		8.9		20	
CD-MW-3S	2U	0.18	1.5	3.9	56	62.7	10U	2.9	1.3	1.8	2.5	5.1	1.1	1.5	6	4.4	2	6	14	15.8
Average	0.59		2.7		59.35		3.95		1.55		3.8		1.3		5.2		4		14.9	
2XAve	1.18		5.4		118.7		7.9		3.1		7.6		2.6		10.4		8		29.8	
Site Wells																				
Max Detect D	0.14	B	6.6		125	BJ	8.5	B	1.6		4	Jv	2.1		4.5		4.3	B	11.6	B
Max Detect S	0.38	B	7.6		225	J	5.8	B	4		11.9	J	22.2		13.2		4.9	B	30.7	Jv

Units - µg/L

U - Not detected; value presented is the reporting limit

B - Analyte was detected in method blank

BJ - Analyte was detected in method blank and below the reporting limit

Jv - Result is considered to be and estimate based on data validation

Max Detect D - Maximum detection of all deep Site wells

Max Detect S - Maximum detection of all shallow Site wells

Background screening value; 2 x the average of the Dec07/Jan08 and Jun08 results. (1/2 the reporting limit used for Non-detects)

Value greater than the background screening level (2 x average)

	A	B	C	D	E	F	G	H	I	J	K	L
1				Gehan Site vs Background Comparison Hypothesis Test for Data Sets with Non-Detects								
2			User Selected Options									
3			From File	WorkSheet.wst								
4			Full Precision	OFF								
5			Confidence Coefficient	95%								
6			Substantial Difference	0								
7			Selected Null Hypothesis	Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1)								
8			Alternative Hypothesis	Site or AOC Mean/Median Greater Than Background Mean/Median								
9												
10												
11	Area of Concern Data: Arsenic River Soil											
12	Background Data: Arsenic Background Soil											
13												
14				Raw Statistics								
15					Site	Background						
16				Number of Valid Samples	14	7						
17				Number of Non-Detect Data	0	0						
18				Number of Detect Data	14	7						
19				Minimum Non-Detect	N/A	N/A						
20				Maximum Non-Detect	N/A	N/A						
21				Percent Non detects	0.00%	0.00%						
22				Minimum Detected	2.9	5						
23				Maximum Detected	21	10.5						
24				Mean of Detected Data	6.446	8.129						
25				Median of Detected Data	5.6	8.5						
26				SD of Detected Data	4.34	1.768						
27												
28				Site vs Background Gehan Test								
29												
30	H0: Mean/Median of Site or AOC <= Mean/Median of background											
31												
32				Gehan z Test Value	-2.462							
33				Critical z (0.95)	1.645							
34				P-Value	0.993							
35												
36	Conclusion with Alpha = 0.05											
37	Do Not Reject H0, Conclude Site <= Background											
38	P-Value >= alpha (0.05)											
39												

	A	B	C	D	E	F	G	H	I	J	K	L
1				Gehan Site vs Background Comparison Hypothesis Test for Data Sets with Non-Detects								
2			User Selected Options									
3			From File	WorkSheet.wst								
4			Full Precision	OFF								
5			Confidence Coefficient	95%								
6			Substantial Difference	0								
7			Selected Null Hypothesis	Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1)								
8			Alternative Hypothesis	Site or AOC Mean/Median Greater Than Background Mean/Median								
9												
10												
11	Area of Concern Data: Cadmium River Soil											
12	Background Data: Cadmium Background Soil											
13												
14				Raw Statistics								
15					Site	Background						
16				Number of Valid Samples	14	7						
17				Number of Non-Detect Data	0	0						
18				Number of Detect Data	14	7						
19				Minimum Non-Detect	N/A	N/A						
20				Maximum Non-Detect	N/A	N/A						
21				Percent Non detects	0.00%	0.00%						
22				Minimum Detected	0.26	0.67						
23				Maximum Detected	14.4	0.9						
24				Mean of Detected Data	1.812	0.777						
25				Median of Detected Data	0.83	0.77						
26				SD of Detected Data	3.654	0.072						
27												
28				Site vs Background Gehan Test								
29												
30	H0: Mean/Median of Site or AOC <= Mean/Median of background											
31												
32				Gehan z Test Value	0.149							
33				Critical z (0.95)	1.645							
34				P-Value	0.441							
35												
36	Conclusion with Alpha = 0.05											
37	Do Not Reject H0, Conclude Site <= Background											
38	P-Value >= alpha (0.05)											
39												

	A	B	C	D	E	F	G	H	I	J	K	L
1				Gehan Site vs Background Comparison Hypothesis Test for Data Sets with Non-Detects								
2			User Selected Options									
3			From File	WorkSheet.wst								
4			Full Precision	OFF								
5			Confidence Coefficient	95%								
6			Substantial Difference	0								
7			Selected Null Hypothesis	Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1)								
8			Alternative Hypothesis	Site or AOC Mean/Median Greater Than Background Mean/Median								
9												
10												
11	Area of Concern Data: Arsenic Residential Area Soil											
12	Background Data: Arsenic Background Soil											
13												
14				Raw Statistics								
15					Site	Background						
16				Number of Valid Samples	2	7						
17				Number of Non-Detect Data	0	0						
18				Number of Detect Data	2	7						
19				Minimum Non-Detect	N/A	N/A						
20				Maximum Non-Detect	N/A	N/A						
21				Percent Non detects	0.00%	0.00%						
22				Minimum Detected	10.4	5						
23				Maximum Detected	13.9	10.5						
24				Mean of Detected Data	12.15	8.129						
25				Median of Detected Data	12.15	8.5						
26				SD of Detected Data	2.475	1.768						
27												
28				Site vs Background Gehan Test								
29												
30	H0: Mean/Median of Site or AOC <= Mean/Median of background											
31												
32				Gehan z Test Value	1.757							
33				Critical z (0.95)	1.645							
34				P-Value	0.0395							
35												
36	Conclusion with Alpha = 0.05											
37	Reject H0, Conclude Site > Background											
38	P-Value < alpha (0.05)											
39												

	A	B	C	D	E	F	G	H	I	J	K	L
1				Gehan Site vs Background Comparison Hypothesis Test for Data Sets with Non-Detects								
2			User Selected Options									
3			From File	WorkSheet.wst								
4			Full Precision	OFF								
5			Confidence Coefficient	95%								
6			Substantial Difference	0								
7			Selected Null Hypothesis	Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1)								
8			Alternative Hypothesis	Site or AOC Mean/Median Greater Than Background Mean/Median								
9												
10												
11	Area of Concern Data: AREA3 Arsenic Soil											
12	Background Data: Arsenic BKG0-5 Soil											
13												
14				Raw Statistics								
15					Site	Background						
16				Number of Valid Samples	2	14						
17				Number of Non-Detect Data	0	0						
18				Number of Detect Data	2	14						
19				Minimum Non-Detect	N/A	N/A						
20				Maximum Non-Detect	N/A	N/A						
21				Percent Non detects	0.00%	0.00%						
22				Minimum Detected	6.5	5						
23				Maximum Detected	31.7	10.5						
24				Mean of Detected Data	19.1	8.614						
25				Median of Detected Data	19.1	8.9						
26				SD of Detected Data	17.82	1.459						
27												
28				Site vs Background Gehan Test								
29												
30	H0: Mean/Median of Site or AOC <= Mean/Median of background											
31												
32				Gehan z Test Value	0.159							
33				Critical z (0.95)	1.645							
34				P-Value	0.437							
35												
36	Conclusion with Alpha = 0.05											
37	Do Not Reject H0, Conclude Site <= Background											
38	P-Value >= alpha (0.05)											
39												

	A	B	C	D	E	F	G	H	I	J	K	L
1				Gehan Site vs Background Comparison Hypothesis Test for Data Sets with Non-Detects								
2			User Selected Options									
3			From File	WorkSheet.wst								
4			Full Precision	OFF								
5			Confidence Coefficient	95%								
6			Substantial Difference	0								
7			Selected Null Hypothesis	Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1)								
8			Alternative Hypothesis	Site or AOC Mean/Median Greater Than Background Mean/Median								
9												
10												
11	Area of Concern Data: Arsenic Sediment											
12	Background Data: Background Arsenic Sediment											
13												
14				Raw Statistics								
15					Site	Background						
16				Number of Valid Samples	5	5						
17				Number of Non-Detect Data	0	0						
18				Number of Detect Data	5	5						
19				Minimum Non-Detect	N/A	N/A						
20				Maximum Non-Detect	N/A	N/A						
21				Percent Non detects	0.00%	0.00%						
22				Minimum Detected	2.6	2.2						
23				Maximum Detected	5.2	5.1						
24				Mean of Detected Data	3.6	3.98						
25				Median of Detected Data	2.8	4.3						
26				SD of Detected Data	1.288	1.099						
27												
28				Site vs Background Gehan Test								
29												
30	H0: Mean/Median of Site or AOC <= Mean/Median of background											
31												
32				Gehan z Test Value	-0.104							
33				Critical z (0.95)	1.645							
34				P-Value	0.542							
35												
36	Conclusion with Alpha = 0.05											
37	Do Not Reject H0, Conclude Site <= Background											
38	P-Value >= alpha (0.05)											
39												