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Phase II Site Investigation

Former Wabash Alloys Aluminum Recycling Facility
Oak Creek, Wisconsin

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Section 1
Introduction

1.1 Site Location and Description

The Former Wabash Alloys facility is located at 9100 South 5th Avenue, in Oak Creek, Wisconsin (site). Historically, the facility was used for recycling and smelting aluminum, in addition to former wood treatment and chemical production operations. The site is owned by Connell Aluminum Properties, LLC (Connell). The property is currently zoned as industrial, and the facility is located in an area of mixed industrial and residential properties on the southern side of the City of Oak Creek in Milwaukee County, Wisconsin (Figure 1). The area in which the property is located is designated as a redevelopment zone by the City of Oak Creek. Figure 2 shows the main plant building, which included office and ingot storage, a furnace room, a crusher room, a maintenance area, and the scrap storage area. Air pollution control baghouses are located on the north and south sides of the building. The property and surrounding properties are also depicted on Figure 1.

1.2 Site Operation and Investigation History

Wabash Alloys operated an aluminum recycling and smelting operation on the site from 1986 to 2001, at which time operations ceased. In 2007, Connell sold Wabash Alloys. Property ownership was transferred to Connell. Prior to Wabash Alloy's operations, Vulcan Materials performed similar aluminum smelting activities onsite beginning in 1968. The property was vacant from 1960 to 1968; however, conflicting information is provided from GeoTrans (2009), which reports the property continued to manufacture creosote from 1960-1968 under the ownership of Arthur A. Levin and Saul Padek. From 1935 to 1960, the property was owned by Koppers Company (formerly Koppers Gas and Coke Company). Koppers Company used the facility and property to manufacture wood treatment chemicals (Weston Solutions, 2009). Figure 3 shows the former facility in 1955. The site was used for similar operations starting in 1917.

No records of specific operations at the former wood treatment facility are available, but buildings and numerous above ground tanks and several surface ponds are visible in Figure 3. The use of the facility to manufacture creosote is consistent with the types of structures seen in this aerial photograph.

The current layout of the facility is assumed to be the same as when aluminum processing started in 1968. A summary of the process is as follows:

- Aluminum scrap arrived at the facility via rail and truck at the eastern end of the building.
- The aluminum was then processed (shredded/crushed) to make it into more uniform sizes, and then dried to remove liquids and contaminants; the processed aluminum was either stored in bins or directly melted.
- The processed aluminum was remelted and cast into ingots. Ingots were stored in the warehouse area at the western end of the building.

Much of the smelting equipment remains in the building. The structure itself is in general disrepair, with some dust, debris, or other materials and equipment still present throughout portions of the facility.

Several previous investigations identified and defined areas of potential soil and groundwater contamination. A PCB spill in 1984 resulted in removal and replacement of all PCB transformers and capacitors from the building (RMT 1990). In 1993, RMT notified the WDNR that LUST removals at the facility observed non-UST related contamination in the tank pits. In 1995, Wabash reported a release of creosote to the City of Oak Creek sewer to the WDNR. Other studies were typically associated with similar issues. (RMT, 1990, Sigma 1991, Weston Solutions, 2009). Results of these investigations identified soil and groundwater contamination consisting of one or more of the following: volatile organic compounds (VOCs) from former underground storage tanks and creosote; polychlorinated biphenyls (PCBs) from processing objects containing PCBs; polycyclic aromatic hydrocarbons (PAHs) from creosote manufacturing; and metals from aluminum processing.

1.3 Purpose and Scope

The purpose of this Phase II Site Investigation report is to document results of environmental sampling conducted by RMT, Inc., during the Phase II Environmental Site Assessment (ESA) of the site. The scope of work specifically addresses the Recognized Environmental Conditions (RECs) and recommendations identified in the Phase I ESA for the Connell Aluminum Site (Weston Solutions, 2009) as specified in the Phase II Workplan (RMT, 2010).

Section 2
Site Inspection and Sampling

2.1 Introduction

The project team reviewed the Phase I ESA and conducted a records search to better understand the site history and geologic setting. This was followed by a site walkover to confirm the findings in the Phase I and design the Phase II investigation.

2.2 General Site Conditions and Layout

2.2.1 Building Interior

The building interior is divided into approximately 5 areas/rooms, as described above, with 20-30 foot ceilings and covering approximately 250,000 square feet. The walls and ceiling of the building are constructed of steel and/or composite siding, with steel I-beam supports, and the floor is composed of thick concrete that is generally intact and in good condition. Utility service was shut down in the building for some time and only limited natural light is available through skylights. Trespassers removed much of the copper wiring and piping.

Much of the former smelting equipment remains in the furnace and crusher rooms, including the conveyors, crusher, ladles, and furnaces. There is limited equipment scattered throughout the remaining rooms. Several drains, sumps, and pits (collectively labeled as pits) are present in the facility and are generally located in the maintenance, furnace, and crusher rooms. All of the rooms contain a small amount of waste material (dust, dirt, metal shavings, etc.) which was left behind when the facility was vacated.

2.2.2 Site Property

The site property including the building covers approximately 23 acres. The property perimeter is secured by a chain-link fence and locked gates. The building complex and former parking lots are located on the western portion of the property; and a mix of trees and meadow on the eastern portion of the property. An abandoned rail line runs along the northern edge of the property with three spurs that at one time split and ran along the northern edge, as well as entered the building. The property is bounded by Depot Street, several residences and an abandoned factory to the North; Fifth Ave and residential/commercial property to the west; Lake Michigan to the east; and an access road owned by the City of Oak Creek (City) to the south. The land south of the access

road was also a former factory (see below) that has been demolished with only the foundation and parking area remaining.

In general the site gradually slopes to the south and southeast, and then steepens dramatically as a bluff at Lake Michigan. The southeast portion of the property once sloped steeply to a ditch that drained to the lake. The City placed a sewer in the ditch and covered it with a road to access a pumping station. There are several marshy areas within the property that contain groundwater seeps, some standing water, and cattails. On the eastern end of the building and former loading docks, some waste material (aluminum scrap, bricks, gravel, old equipment, etc.) is present as well as the ruins of a former wastewater treatment facility that ceased operations prior to Wabash's ownership of the plant. An area east of the paved area is also partially covered with shredded wood pallets.

2.2.3 Surrounding Properties (Historical)

Some of the adjacent properties were used for industrial purposes that may have adversely affected the site. The former Hynite property and Oak Creek Storage and Disposal property (former Peter Cooper Site) are located north of the site. USTs were reported for both of these properties and both properties are currently being investigated for environmental contamination (PAHs, VOCs, and metals). The former DuPont site (both former DuPont facility and Allis Chalmers/ DuPont landfill), located to the south of the property is also undergoing investigation and remediation for metals, VOCs, and acid contamination.

2.3 April 2010 Reconnaissance

RMT conducted a site walkthrough on April 13, 2010 to verify the findings of the Phase I Assessment report and develop the logistics required for sampling in, and around, the facility. In general, the Phase I findings were confirmed and some additional information was gathered. The various process areas are described below:

- The building is a concrete-floored, steel-framed building with siding consisting of aluminum and other unknown materials. RMT did not perform a survey of potential asbestos-containing materials as part of the April walkthrough. The building measures approximately 650 feet by 400 feet with three connected process buildings, and another portion for storage, offices and maintenance shops. The building roof is approximately 30 feet high along the center spans, and slopes to approximately 20 feet at the sides. Much of the building is in poor condition with several areas missing portions of the roof and sidewalls.

- The offices and ingot storage rooms were in fair to good condition with no significant issues encountered. One storm drain contained standing water (~3 feet deep), and an elevated tank was present in the maintenance area.
- The furnace room is in poor condition with several sections of roof missing and the concrete floor is significantly eroded in portions. A section of the floor is displaced upward in the southwest portion of the room (Photo 4, Appendix C). This room contains seven ladle pits (Photos 43 and 44) that contain water as well as two below grade sumps in the chlorine room that contain water and a floating layer of a black oil (Photos 20 and 21). There are three furnaces remaining in this room, which contain aluminum materials (spilled product and scrap) both inside and surrounding the furnaces. The northwest corner of the furnace room contains a steel AST with a sign over it saying "Used Oil". The AST is full of waste oil and the concrete around this area is stained.
- The crusher room is in good condition overall with large pieces of equipment in the eastern half of the room, which includes a dryer and crusher. The remainder of this room is divided up by concrete-walled storage bins (Photo 8). Each bin is approximately 15 by 25 feet, with concrete walls approximately 8-10 feet tall. Some of these bins contain piles of processed metal, dust, dirt and other unidentified materials. There are two plastic ASTs present in this room, both with liquid present in them. One AST is apparently full of unused oil; the other contains a smaller amount of an oil. The crusher conveyor extends into a pit approximately 20-30 feet below floor grade, and unknown liquid is present at the base of the conveyor.
- The scrap storage room contains concrete bins similar to the crusher room. There are piles of dust, dirt and unidentified material present in these bins. Near the eastern exterior wall of the building there is a hydraulic oil tank. In the northwest corner of this room is the dryer cyclone, which contains dust/dirt in the bottom.
- The skim room (or dross room) is a smaller room located in the northeast corner of the building, with a brick/ concrete floor. The outer walls of the room contain concrete bins, one of which is labeled "cyclone dirt" (Photo 18). There is also a large piece of equipment that resembles a long rectangular bin with an auger that runs down the middle (Photo 17). This equipment appears to contain some aluminum material. Site documentation states that dross, baghouse dust, and cyclone dust were stored in this room.
- The exterior of the building on the north side near the furnace room is in very poor condition with much of the steel corroded and sections of the ceiling are missing. Chloride rail cars were parked in this area, and chlorine gas was used in the aluminum melting process.
- Piping at the north end of the building mentioned in the Phase I appears to be associated with former propane tanks (now removed). There was no evidence of UST vent pipes observed.

Section 3
Sampling and Analytical Results

3.1 Introduction

Environmental sampling was conducted by RMT in May and June 2010 to determine the nature and extent of subsurface contamination, and characterize the remaining unidentified waste material in the building. The interior of the building and exterior were investigated separately; however, samples taken from within the building were further segregated by room as outlined in Figure 2 (e.g. Maintenance Room, Furnace Room, Crusher Room, Dryer Room, and Scrap Storage Area). Samples collected inside the building included waste pile sampling (10 samples), concrete sampling (10 samples), wipe sampling (10 samples), pit/sump/drain/tank sampling (11 samples), and paint samples (3). Subsurface sampling (both inside and outside the building) consisted of 20 soil borings and 11 temporary monitoring well installations

3.2 Building Interior Sampling

RMT conducted sampling of the building interior on May 20-21, 2010. Sampling was conducted to evaluate the nature of constituents identified as RECs in the Phase I ESA (EPA 2010). RMT collected representative samples of various surfaces and materials in the building to evaluate the nature of any hazardous constituents and assist in planning for proper disposal of demolition materials. All samples were analyzed by Pace Laboratories of Green Bay, WI. A summary of the sampling program is included in Table 1. Laboratory reports are included in Appendix A.

3.2.1 Floor Sampling

The building floors were sampled for PCBs. The floors are primarily composed of concrete, although some brick flooring is present in the dross/skim room. The floors were sampled using a percussion hammer drill to produce a concrete powder for sampling as described by USEPA (1997). Ten samples of the flooring were collected at the locations shown on Figure 3. Photos 38, 39, and 42 show examples of floor sample locations. Three samples were collected from the furnace room (FRF-1, FRF-2, and FRF-3), five samples from the crusher room (CRF-1 through CRF-5) and two from the scrap storage area (SRF-1 and SRF-2). CRF-1 was collected within an area with a recent oil spill (probably from trespassers; see Photo 13 in work plan).

Analytical results are summarized in Table 2. PCBs were detected in all samples. PCB concentrations ranged from 0.695 mg/kg to 26.4 ppm. The highest concentrations were

found in the crusher room and furnace room. No samples exceeded the concentration (50 ppm) that identifies the material as a "PCB waste."

3.2.2 Wipe Sampling

EPA defines nonporous surfaces as "smooth, unpainted solid surface that limits penetration of liquid containing PCBs beyond the immediate surface". Nonporous surfaces identified in the building included structural steel beams, metal equipment, some elevated walkways, scales, manholes, piping, and protective steel plates. A total of ten wipe samples were collected from nonporous surfaces. Specific sample collection details are presented in Section 3.1.2 of the work plan. The general sampling locations were developed based on observations made during the April 13, 2010, site inspection and are summarized in the work plan. Photos 47 and 48 in Appendix C show some representative swipe sample locations. Samples were collected at the following approximate locations as shown on Figure 4:

- Scrap storage room
  - SSW-1 collected from steel wall reinforcement in the south end
  - SSW-2 was collected from the dryer cyclone in the northwest corner of the room
- Crusher room
  - CRW-1 was collected from below a conveyor that exited the crusher pit
  - CRW-2 was collected from the conveyor that fed the crusher
  - CRW-3 was collected from a large baghouse that served the crusher and dryer
  - CRW-4 was collected from equipment within the crusher pit
  - CRW-5 was collected from the scrap dryer
  - CRW-6 was collected from the scale in the lunch room
- Furnace room
  - FRW-1 (and duplicate) was collected from furnace # 4
  - FRW-2 was collected from a metal door for electrical equipment in the baghouse control room on the south side

Wipe sample PCB analytical results are summarized in Table 3. PCBs were detected on eight of 10 sampled surfaces at concentrations ranging from 0.26 µg/100 cm^2 to

18.3 µg/100 cm². PCBs were detected in each room, with the highest concentrations found in the crusher room. Nine of the 10 samples detected PCBs below 10 µg/100 cm².

3.2.3 Waste Pile Sampling

Samples were collected from small piles of residual granular material within bins, around equipment, and in dust accumulations. Photos 40 and 45 show representative dust piles. Such materials were present throughout the buildings with the exception of the ingot storage, maintenance and office areas. Ten representative samples were collected from the locations shown on Figure 5. Samples were analyzed for the eight RCRA metals and PCBs. In addition, a composite sample was collected from an aliquot taken from each of the ten samples and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals and total PCBs. Samples were collected from the following locations:

- Scrap storage and dross room
  - WP-DR1 – material found in an auger (see Photo 17 in work plan)
  - WP-DR2 – dust in a stall marked "cyclone dirt"(see Photo 18 in work plan)
  - WP-SS1 – from material below cyclone
  - WP –SS2 – floor dust in bin 44
- Crusher room
  - WP-CR1 – piles near the dryer at north end
  - WP-CR2 – dust below conveyor out of crusher pit
  - WP-CR3 – material in bin in crusher room
  - WP-CR4 – dust on top of roof over lunch room/offices
- Furnace room
  - WP-FR1 – floor dust in south end
  - WP-FR2 – floor dust in north end

Analytical results for the waste/dust piles show elevated concentrations of metals and PCBs (Table 4). PCBs were detected in material in a bin in the crusher room (sample WP-CR3). A composite sample collected from aliquots of each sample contained PCBs at a concentration of 7.12 µg/kg.

The residual materials sampled contain elevated concentrations of RCRA metals. The highest concentrations were found in samples from the crusher room. In accordance

with the work plan, analytical results were screened against the "20-times rule" to determine if the waste piles should be further analyzed to determine if they are characteristically hazardous according to the TCLP. The screening indicates that all samples collected have at least one parameter that exceeds the 20-times rule for barium, cadmium, chromium, lead, or mercury (Table 4). However, a composite of all samples analyzed by the TCLP indicates that all parameters were well below their maximum allowable hazardous waste limits. However, the data suggest that disposal companies may require additional TCLP analyses prior to accepting the waste.

3.2.4 Liquids and Sludge Sampling

Eleven (11) liquids and one sludge sample were collected from various sumps, drains, tanks, and pits and analyzed for VOCs, PAHs, RCRA metals, and PCBs. The liquids were sampled using a peristaltic pump in accordance with the workplan. Water in the sumps and pits was typically only slightly turbid and had a consistent level about 4 feet below the floor grade. The exception was the crusher pit, where the water level was approximately 10 feet below the floor level. The water in the crusher pit contained abundant algal or bacterial growth. It could not be determined whether the pits were filled with water from infiltration of groundwater or was residual process water. The northernmost ladle pits may receive some precipitation due to the missing roof in the vicinity.

The following locations were sampled for liquids (Figure 5):

- Crusher room – CRL-1 - crusher pit
- Furnace room
    - FRL-1 collected from subgrade tank or pit adjacent to chlorine room. 1-2 inches of black oil floating on water. Appears to be connected to pit in chlorine room. Petroleum odor.
    - FRL-2 collected from manhole in chlorine room. A thin layer of black oil floating on top of water in pit. Sludge at bottom could not be sampled. Petroleum odor.
    - FRL-3 through 9 - seven ladle pits.
- Maintenance room – MRL-1 – manhole over apparent catch basin.

Analytical results are summarized in Table 5. A variety of metals and organic compounds were detected in the liquid samples. FRL-2 contains the highest concentrations of several constituents including arsenic, barium, benzene, cadmium, chromium, lead, mercury, selenium, and silver. The lead concentration (6,200 ug/L)

exceeds the TCLP maximum allowable concentration. No other liquid sample exceeded the TCLP values.

One sludge sample was collected from a steel pit south of the ladle pits. The pit housed connections to hydraulic lines leading into the floor (see Photo 5 and 17 in work plan). The sludge consists of an "oil-dry" type of material covered in yellow-orange oil (presumed to be hydraulic oil) with a slight petroleum odor. Analysis of the sludge detected trimethylbenzenes (expected for heavy oils) and di-n-butyl phthalate at a concentration of 24.1 mg/L.

3.2.5 Paint Sampling

Three samples of paint were collected at the locations shown on Figure 4 to determine the presence of lead-based paint. The sample locations are described in Table 6. The paint samples confirm that lead-based paint is present in the building with concentrations up to 69,200 mg/kg (6.9% lead).

3.3 Site Property Sampling

Subsurface soil and groundwater samples were collected from the property to determine the nature and general distribution of contaminants. Fieldwork was conducted on June 1-4, 2010.

3.3.1 Soil Borings and Subsurface Soil Sampling

Twenty soil borings (B-1 through B-20) were installed using a Geoprobe 7730 DT operated by OnSite Environmental. Borings were advanced to depths ranging from 15 to 20 feet below ground surface (bgs). Locations of the borings are shown on Figure 1. Soils were classified by an RMT geologist and screened with a photoionization detector (PID). Boring logs were prepared in the field and are included as Appendix B. Samples for laboratory analyses were collected from intervals with elevated PID readings or visual/olfactory evidence of contamination. Typically two samples were collected from each boring. If no contamination was detected in the soil with the PID or from visual observations (as at B-7, B-10, or B-11), only one sample was submitted for analyses. A total of 36 soil samples were analyzed for VOCs, SVOCs, PCBs, RCRA metals, and cyanide.

The subsurface soil near the buildings typically consists of 0-8 feet of clayey, gravelly fill underlain by native soil. The soil consists of variably weathered glacial till sediment (probably the Oak Creek Formation). The till is described as typically brownish gray, plastic, lean clay and silty clay with traces of gravel.

Eleven of the 20 borings encountered free-phase creosote within the soil or fill. PID readings of organic vapors as high as 707 ppm were recorded (B-17). The creosote has a distinctive odor. The creosote migrates preferentially through thin sand and silt layers and/or fractures in the clay till (Photo 59 in Appendix C). Visible creosote was encountered in borings B-5, B-6, B-8,and B-12 through B-19. The area where creosote was encountered covers approximately one-half of the site. Borings along the northern and western site perimeter (upgradient) did not detect creosote.

Boring B-16 was placed immediately upgradient of a creosote seep that emanates from the pavement on the southeast side of the building (outside of the scrap storage area). The seep is actively producing creosote that migrates along the pavement (see Photos 34-37 and 49-53, Appendix C). Another active seep is located near boring B-12 in an eroded drainage ditch (Photos 27 and 28). The distribution of creosote is consistent with the location of the former creosote plant (Figure 3). Contamination extends south of the former operation areas, and also east of the plant, where ponds were once located. Borings in the former pond area conducted in 1980 also encountered creosote (Wisconsin Testing Labs, 1980). Migration of creosote is occurring towards the former drainage ditch along the south side of the property that now contains a sewer main. Creosote was discharging into the ditch in 1980, and was found during construction activity as early as 1968 (EPA, 2009). Contamination was also encountered during an underground storage tank investigation north of the building in 1991, when it was concluded that "Several compounds detected are not consistent with materials stored in the underground tanks and may be the result of past site operations or off-site sources" (Sigma Environmental Services, Inc. 1991).

Table 7 includes all constituents detected in the soil samples collected during this investigation. Figure 6 uses the highest concentration of the two samples at each location. Note that only trace concentrations of PAHs and no BTEX are present at upgradient locations of the site (B-1, B-2, B-7, B-9, B-10, and B-11), but concentrations increase dramatically to the south.

The vertical extent of contamination decreases with increasing depth, but the vertical extent of this contamination was not defined at all locations (Table 7). The distribution of the creosote related compounds (i.e., VOCs and SVOCs) is consistent with observed free-phase creosote observed in the subsurface.

3.3.2 Monitoring Well Installation and Groundwater Sampling

Eleven monitoring wells (MW-1, MW-2, MW-3, MW-5, MW-8, MW-9, MW-14, MW-15, MW-16, MW-18, and MW-20) were installed along the north and south property

boundaries and in locations of observed contamination as determined by the soil borings. Wells were constructed of 1-inch Schedule 40 PVC at depths ranging from 15 to 20 feet bgs, with the exception of MW-16 which was constructed of 2-inch PVC. Wells were installed and developed in accordance with Wisconsin Administrative Code NR 141. Groundwater samples were collected from the wells via low flow methods using a peristaltic pump. Samples were analyzed for VOCs, SVOCs, RCRA metals, and cyanide by Pace Analytical. MW-3 did not recharge sufficiently to provide a sample.

Groundwater analytical results are summarized in Table 8. Twelve constituents exceed the NR 140 Enforcement Standard (ES). Analytical results for groundwater in wells upgradient from the site (MW-1, MW-2, and MW-9) have no ES exceedences, but arsenic and lead concentrations exceed the PAL at MW-2 and MW-9, and naphthalene exceeds the PAL at MW-1. For the most part, constituents detected (and those that exceed the ES) in groundwater represent the more soluble fraction of the constituents detected in soil at the site. Especially noteworthy is that PAHs, the most common contaminant associated with creosote, are less frequently detected in groundwater, although those constituents are detected at high concentrations in the soil. This is because most PAHs have much lower solubilities than BTEX constituents. Therefore, the BTEX compounds are commonly detected in groundwater, while the PAHs are not.

In addition to the organic compounds, concentrations of arsenic in groundwater also exceed the ES. The ES exceedences occur in a well with other exceedences (MW-8). No other metal or cyanide exceeded their respective ES.

3.4 Oil/Creosote Forensic Analysis

RMT collected five samples of creosote, and five samples of oils found within the building, and submitted the samples to Meta Environmental Inc. of Watertown, Massachusetts (META) for forensic analysis. META concluded that the creosote samples found outside the building are not related to the oils found in the building (see Appendix D.) The creosote samples are consistent with being derived from distillation through pyrogenic processes. Pyrogenic processes are defined as when a substance is heated at high temperatures in the absence of oxygen, while petrogenic hydrocarbons are formed over long periods of time at lower temperatures, as with crude oil. The oils found within the building are of petrogenic origin.

3.5 Management of Investigation-Derived Waste

Investigation-derived waste (IDW) included soil samples, a small amount of development and purge water, decontamination liquids, and bulk materials, such as disposable gloves, discarded sampling templates, bailers, and general products used to collect and handle environmental

samples. Bulk investigation-derived wastes were bagged in commercially available garbage bags and then disposed in accordance with 40 CFR 761.61 (a)(5)(v)(A), which allows for disposal at a "... facility permitted, licensed, or registered by a State to manage municipal solid waste subject to part 258 of this chapter." Licensed municipal waste landfills within the State of Wisconsin are permitted under 40 CFR 258, and therefore meet this requirement. All IDW was placed in 55-gallon drums, appropriately labeled and secured and left at the site for later disposal (Photo 67).

Section 4
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Table 1
Summary of Samples and Locations
Former Wabash Alloys Metal Recycling Facility
Oak Creek, Wisconsin

SAMPLE MEDIA	NUMBER OF SAMPLES	ANALYTES	LOCATIONS	COMMENTS
Water	10	VOCs, SVOCs, metals, cyanide	11 monitoring wells	Monitoring wells were installed to a depth of approximately 20 feet bgs. Well numbered as per their boring number, i.e., B-5 became MW-5.
Soil	36	VOCs, SVOCs, metals, cyanide	20 soil borings	Samples at surface and subsurface (above water table).
Water/Liquids	11	VOCs, SVOCs, metals, PCBs	Ladle Pits, Crusher Sump, floor drains (interior)	Samples were collected from the pits and sumps using a peristaltic pump.
Sludge	1	VOCs, SVOCs, metals, PCBs	Pit with hydraulic equipment in furnace room	Collected as a grab sample directly from the pit.
Waste Piles/Dust	11	PCBs, metals, TCLP metals and PCBs	2 from dross room, 2 from scrap storage room, 4 from crusher room, 2 from furnace room	Samples were collected from four different rooms in the building. One sample was composited for analysis for TCLP metals.
Concrete	10	PCBs	5 from crusher room, 3 from furnace room, 2 from scrap storage area	Concrete were drilled with a hammer drill at stained locations, the cuttings from the drill will be sampled. Multiple holes will be drilled within a sample location to obtain sufficient sample volume.
Wipe	10	PCBs	6 from crusher room, 2 from furnace room, 2 from scrap storage room	Wipe samples were collected from non porous surfaces such as metal beams and equipment.
Paint	3	Lead	One each from scrap storage, crusher, and furnace rooms	Samples were collected from three surfaces with chipping or peeling paint.
QA/QC	5	VOCs, SVOCs, RCRA Metals, PCBs as appropriate	Varied	One duplicate and one matrix spike/matrix spike duplicate was collected from each sample media (except paint and sludge), and analyzed for the same parameters as the parent sample. Inadvertently, no duplicate collected of subsurface soil.
Total number of samples	**97**			

Prepared by: N. Keller
Checked by: L. Bakken

Table 2
Summary of Concrete Floor Sample Results
Former Wabash Alloys Facility
Oak Creek, Wisconsin

SAMPLE ID	LOCATION	TOTAL PCB CONCENTRATION (mg/kg)
CRF-1	Crusher room	2.16
CRF-2	Crusher room	17.6
CRF-3	Crusher room	6.44
CRF-4	Crusher room	16.3
CRF-DUP	Crusher room	22.3
CRF-5	Crusher room	2.65
FRF-1	Furnace room	2.97
FRF-2	Furnace room	5.65
FRF-3	Furnace room	26.4
SRF-1	Scrap storage room	0.695
SRF-2	Scrap storage room	0.733

Note:
CRF-DUP collected from CRF-4 location.

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Table 3
Summary of Wipe Sample Results
Former Wabash Alloys Facility
Oak Creek, Wisconsin

SAMPLE ID	SAMPLE LOCATION	PCB, TOTAL (Total ug)		
SSW-1	Steel reinforcement wall - south end		2.6	
SSW-2	Dryer cyclone/afterburner - north end		0.30	J
CRW-1	Exit conveyor from crusher pit		4.6	
CRW-2	Incoming conveyor to crusher pit		3.2	
CRW-3	Crusher baghouse		1.5	
CRW-4	Crusher pit equipment		18.3	
CRW-5	Scrap dryer	<	0.22	U
CRW-6	Lunch room scale		0.53	J
FRW-1	Furnace #4	<	0.22	U
FRW-1 DUP	Furnace #4	<	0.22	U
FRW-2	Electric control box - south end		0.26	J

Qualifiers:

J - Estimated concentration above the adjusted detection limit and below the adjusted reporting limit.

U - Indicates the compound was analyzed for but not detected

Prepared by: N. Keller

Checked by: L. Bakken

Table 4
Summary of Waste Pile Analytical Results
May 20, 2010
Former Wabash Alloys Facility
Oak Creek, Wisconsin

PARAMETER	SCREENING VALUE	UNITS	WP-DR1	WP-DR2	WP-CR1	WP-CR2	WP-CR3	WP-CR4	WP-FR1	WP-FR2	WP-SS1	WP-SS2	WP-DUP	WP-COMP-1[1]
Arsenic	100	mg/kg	13.4 JD3	< 1.2 UD3	1.9 JD3	< 1.1 UD3	9.0 JD3	1.6 JD3	1.8 J	< 1.3 UD3	< 1.1 UD3	< 1.1 UD3	< 1 UD3	< 0.0028 U
Barium	2000	mg/kg	93.7	317	1970	254	859	**4090**	60.9	367	1150	51.4	9.0	9.6
Cadmium	20	mg/kg	3.8 JD3	35.9	18.9	**21.4**	**152**	**67.6**	2.5	4.7 JD3	5.0 JD3	6.1	4.5 JD3	0.10 J
Chromium	100	mg/kg	**1250**	**419**	**376**	**3350**	**325**	**426**	32.1	**275**	**466**	**246**	**975**	0.0062 J
Lead	100	mg/kg	**359**	**1310**	**2500**	**1550**	**1890**	**2970**	**206**	**485**	**1180**	**448**	**945**	0.37 J
Mercury	4	mg/kg	0.16	2.0	0.10	0.29	**12.9**	1.9	0.098	0.70	0.037	0.062	0.026	< 0.1 U
PCB, Total	50	mg/kg	0.55	12.8	0.67	11.20	**148**	26.70	8.27	0.279	0.069.2 J	0.720	0.232	7.12
Selenium	20	mg/kg	6.9 JB, D3	8.9 JB, D3	10.2 JB, D3	7.8 JB, D3	19.2 JB, D3	13.6 JB, D3	1.6 JB	7.1 JB, D3	6.8 JB, D3	5.7 JB, D3	5.9 JB, D3	< 0.011 U
Silver	100	mg/kg	3.3 JD3	7.7 JD3	18.0	6.9 JD3	9.2 JD3	14.9	0.42 J	7.5 JD3	12.7	3.0 JD3	3.4 JD3	< 0.0023 U

Qualifiers:

J - Estimated concentration above the adjusted detection limit and below the adjusted reporting limit.

D3 - Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

U - Indicates the compound was analyzed for but not detected

B- Analyte was detected in the associated method blank.

Notes:

1 - The Waste Pile Composite sample was analyzed for TCLP metals. Results for this analysis are in mg/L with the exception of total PCB, these results are in µg/kg.

Prepared by: N. Keller
Checked by: L. Bakken

Table 5
Summary of Liquids Sampling Analytical Results
Former Wabash Alloys Facility
Oak Creek, Wisconsin

PARAMETER	UNITS	HAZ. WASTE STANDARD	CRL-1	FRL-1	FRL-2	FRL-3	FRL-4	FRL-7	FRL-8	FRL-5	FRL-6	FRL-9	FRL-9 DUP	MRL-1	FRSL-1
3&4-Methylphenol(m&p Cresol)	ug/L		3.7 J	< 5670	< 92.1	< 0.77	< 0.89	< 0.77	< 0.78	< 0.78	< 0.79	< 0.78	< 0.79	< 0.78	
4-Chloro-3-methylphenol	ug/L		16.0	< 7450	< 121	< 1	< 1.2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Arsenic	ug/L	5000	< 0.55	< 2.8	47.4 J	2.9 J	21.0	1.1 J	< 0.55	< 0.55	2.5 J	< 0.55	0.62 J	5.0 J	1100J
Barium	ug/L	100000	24.2	148	2720	877	125	66.3	53.0	32.0	21.2	49.2	48.4	79.2	13800
Benzo(a)pyrene	ug/L		< 0.97	< 7150	< 116	< 0.97	1.1 J	< 0.97	< 0.99	< 0.99	< 1	< 0.99	< 1	< 0.99	
Benzo(g,h,i)perylene	ug/L		< 0.77	< 5690	< 92.4	< 0.77	2.6 J	0.94 J	< 0.79	< 0.79	< 0.79	< 0.79	< 0.79	< 0.79	
Benzene	ug/L	500	< 0.41	< 0.41	1.6	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	
bis(2-Ethylhexyl)phthalate	ug/L		5.0	< 19200	< 312	< 2.6	< 3	< 2.6	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7	
Cadmium	ug/L	1000	4.2 J	7.6 J	351	21.6	27.5	15.1	1.1 J	1.1 J	2.6 J	5.7	5.7	0.87 J	2500
Chloromethane	ug/L		< 0.24	< 0.24	< 0.24	0.24 J	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	
Chromium	ug/L	5000	0.62 J	5.5 JB	1140	72.0	53.3	11.2	1.8 J	9.0	0.91 J	1.6 J	1.6 J	0.73 J	5400
Dibenz(a,h)anthracene	ug/L		< 1.4	< 10200	< 166	< 1.4	2.2 J	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	
Indeno(1,2,3-cd)pyrene	ug/L		< 0.67	< 4940	< 80.2	< 0.67	2.0 J	< 0.67	< 0.68	< 0.68	< 0.69	< 0.68	< 0.69	< 0.68	
Lead	ug/L	5000	1.8 J	59.8	6200	556	53.6	55.2	1.8 J	17.4	6.5 J	4.8 J	5.1 J	<1.4	6000
Mercury	ug/L	200	1.6	< 0.2 D3	5.5	0.20	0.39	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	8.1J
Methylene Chloride	ug/L		< 0.43	0.79 JZ3	0.61 JZ3	0.92 JZ3	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	0.44 JZ3	< 0.43	0.93 JZ3	
PCB, Total	ug/L		4.7	211 J	30.5 J	0.70 J	8.5	< 0.32	< 0.32	< 0.3	< 0.3	< 0.32	< 0.32	<0.33	
PCB-1242 (Aroclor 1242)	ug/L		2.4	120 J											
PCB-1254 (Aroclor 1254)	ug/L		2.3	90.1 J	30.5 J	0.70 J	8.5								
Selenium	ug/L	1000	< 2.1	11.4 J	48.8 J	2.3 J	17.2 J	6.9 J	< 2.1	< 2.1	< 2.1	2.9 J	2.7 J	<2.1	300JB
Silver	ug/L	5000	<0.46	< 2.3	21.0 J	1.3 J	1.2 J	<0.46	<0.46	<0.46	<0.46	<0.46	<0.46	<0.46	<40

Qualifiers:

J - Estimated concentration above the adjusted detection limit and below the adjusted reporting limit.

B- Analyte was detected in the associated method blank.

Z3 - Methylene chloride is a common laboratory contaminant. Results of this analyte should be considered estimated unless the amount found in the sample is 3 to 5 times higher than that found in the blank.

D3 - Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Note:

FSRL sample results are in ug/kg.

Prepared by: N. Keller
Checked by: L. Bakken

Table 6
Paint Sample Analytical Results
Former Wabash Alloys Facility
Oak Creek, Wisconsin

SAMPLE ID	DESCRIPTION	LEAD CONCENTRATION (mg/kg)
SSPT-1	Safety yellow paint off bumper guards in scrap storage room	69200
CRPT-1	Grey paint and some yellow paint peeling off walls of lunch room in crusher room	516
FRPT-1	Grey paint that resembles above but taken in adjacent furnace room	35600

Prepared by: N. Keller
Checked by: L. Bakken

Table 7
Summary of Soil Analytical Results
Former Wabash Alloys Facility
Oak Creek, Wisconsin

PARAMETER	UNITS	STANDARDS[1]	B-1 2.5-5	B-2 2.5-5	B-2 7.5-10	B-3 1-3	B-3 5-7.5	B-4 2.5-5	B-4 10-12.5	B-5 7.5-10	B-5 12.5-15	B-6 2.5-5	B-6 7.5-10	B-7 2.5-5	B-8 2.5-10	B-8 15-18	B-9 2.5-5	B-9 5-7.5	B-10 5-7.5	B-11 2-2.5	B-12 7-8
1,2,4-Trimethylbenzene	ug/kg					126		109		51400	1420	116			90900						145000
1,3,5-Trimethylbenzene	ug/kg					126				45800	1100				68600						132000
2,4-Dimethylphenol	ug/kg									10400 J											
2-Methylnaphthalene	ug/kg	600000		55.1 J		3310 J				86900	469 J	237 J		23.2 J	674000	27.4 J		655	73.7 J		635000
2-Methylphenol(o-Cresol)	ug/kg									11100 J											
3&4-Methylphenol(m&p Cresol)	ug/kg									27400	3950							32.0 J			
Acenaphthene	ug/kg	900000				J				49600		604 J			280000			635			321000 J
Acenaphthylene	ug/kg	18000				2470 J									142000 J						173000 J
Anthracene	ug/kg	5000000				46900				35600		1590			179000			790			345000 J
Arsenic	mg/kg	1.6	4.0	6.3	2.2 J	4.1	3.0	5.3	6.1	6.7	3.5	5.6	9.1	3.5	5.1	5.3	2.4	6.3	5.3	7.5	7.1
Barium	mg/kg		67.4	63.3	54.8	65.7	66.1	66.7	67.0	62.2	52.7	66.6	74.7	52.6	10.9	35.4	37.2	64.2	45.9	58.6	45.7
Benzene	ug/kg	5.5				80.2					1910				49000						34100 J
Benzo(a)anthracene	ug/kg	88		36.5 J		82300	51.5 J	211	118 J	13300 J		7220	237	107 J	161000		254	234	32.2 J		176000 J
Benzo(a)pyrene	ug/kg	8.8				81600	56.9 J	250	152 J	6850 J		9910	292	120 J	136000 J		409	206 J			145000 J
Benzo(b)fluoranthene	ug/kg	88		24.2 J		62000	52.3 J	213	127 J	6250 J		9220	320	111 J	133000 J		356	223	26.1 J		120000 J
Benzo(g,h,i)perylene	ug/kg	1800				55900		147 J				7470	191 J				250				
Benzo(k)fluoranthene	ug/kg	880				86600	69.2 J	278	164 J	6610 J		9300	277	116 J	112000 J		342	235			193000 J
bis(2-Ethylhexyl)phthalate	ug/kg																				
Cadmium	mg/kg	510	0.27 J	0.41 J	0.19 J	0.27 J	0.19 J	0.44 J	0.30 J	0.22 J	0.31 J	0.30 J	0.21 J	0.22 J	0.10 J	0.20 J	0.12 J	0.21 J	0.20 J	0.28 J	0.32 J
Chromium	mg/kg	200	23.1	22.1	19.4	23.6	23.8	22.7	25.2	20.1	16.5	24.6	30.7	19.4	6.8	16.0	15.4	34.4	19.4	29.7	14.6
Chrysene	ug/kg	8800		35.7 J		85800	49.5 J	258	139 J	14500 J		9100	303	122 J	142000 J		334	302	48.8 J		278000 J
Cyanide	mg/kg					0.54 J												0.52			
Dibenz(a,h)anthracene	ug/kg	8.8				14200 J						1730	47.9 J					844			
Dibenzofuran	ug/kg									48900					318000						364000 J
Ethylbenzene	ug/kg	2900									833				43300						
Fluoranthene	ug/kg	600000		55.5 J		157000	85.5 J	407	240	72800		7900	287	169 J	544000		252	721	92.3 J		763000
Fluorene	ug/kg	600000				14500 J				50500		725 J		22.5 J	318000			824	42.3 J		419000 J
Indeno(1,2,3-cd)pyrene	ug/kg	88				56000		127 J				6990	153 J	47.5 J	57000 J		198 J	112 J			
Lead	mg/kg	500	10.5	22.3	9.2	16.2	5.8	14.0	12.8	7.8	6.7	10.6	11.5	5.7	3.3	7.3	9.0	10.4	7.1	12.4	7.0
m&p-Xylene	ug/kg	4100[2]									2650				180000						103000 J
Mercury	mg/kg		0.014	0.025	0.026	0.45	0.014	0.019	0.023	0.019	0.012	0.034	0.021	0.0090 J	0.036	0.0089 J	0.038 1q	0.035 1q	0.0075 J1q	0.047 1q	0.037 1q
Naphthalene[3]	ug/kg	20000		32.8 J		2210		33.6 J	131	444000	14600	4390	181	388	2930000	280	129	1570	453	42.4 J	8730000
Naphthalene[4]	ug/kg	20000				10900 J		133		1000000	48700	2760	83.3 J	119	2410000	157			444	179	6320000
o-Xylene	ug/kg	4100[2]									1010				63800						72300 J
Phenanthrene	ug/kg	18000		113 J		78800		190 J		144000		4420	163 J	111 J	952000			1690	148 J		1250000
Phenol	ug/kg									14200 J	1360 J										
Pyrene	ug/kg	500000		75.7 J		140000	72.0 J	320	197	54700		10700	286	130 J	411000		264	502	67.0 J		541000 J
Selenium	mg/kg		0.36 J	0.40 J		0.60 J	0.46 J	0.37 J	0.35 J		0.22 J	0.43 J			0.31 J	0.23 J	0.26 J	0.63 J	0.36 J	0.27 J	0.68 J
Silver	mg/kg		0.22 J	0.70 J	0.31 J	0.089 J	0.13 J	0.090 J	0.11 J	0.24 J	0.14 J	0.14 J	0.17 J	0.13 J	0.12 J	0.12 J		0.11 J	0.14 J	0.14 J	0.12 J
Styrene	ug/kg														48500						101000
Toluene	ug/kg	1500				61.0 J					2060				125000						83800

Qualifiers

J - Estimated concentration above the adjusted detection limit and below the adjusted reporting limit.

M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

R1 - RPD value was outside control limits.

1q - Analyte had a negative detect in the associated method blank at -0.0055 mg/Kg.

Notes

This table lists detections only. Blank cells mean the constituent was not detected.

1 - Soil standards are compiled from NR720 Table 1, and PAH standards are the suggested non-industrial generic soil cleanup levels provided in the 1997 WDNR Document, "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) Interim Guidance".

2 - Standard is for total xylenes.

3 - Analyzed using Method 8260

4 - Analyzed using Method 8270

Prepared by: N. Keller

Checked by: L. Bakken

Table 7 (continued)
Summary of Soil Analytical Results
Former Wabash Alloys Facility
Oak Creek, Wisconsin

PARAMETER	UNITS	STANDARDS[1]	B-12 13-15	B-13 7.5-10	B-13 12.5-15	B-14 2.5-5	B-14 7.5-10	B-15 15-17	B-15 19-20	B-16 7-8	B-16 15-16	B-17 6-8	B-17 14-15	B-18 2-4	B-18 10-12	B-18 10-12.5	B-18 18-20	B-19 4-5	B-20 10-12
1,2,4-Trimethylbenzene	ug/kg			907	1670			65000	4280		3540	509000	105	114	10900	64900	110		
1,3,5-Trimethylbenzene	ug/kg			753	1540			42600	2900		2900	409000			8650	49000			
2,4-Dimethylphenol	ug/kg			1020 J									103 J						
2-Methylnaphthalene	ug/kg	600000	103 J	2900	61.0 J		157 J	88700	5750	876000 J	31000	12900000 J	58.0 J	849 J	209000	1060000	149 J		160 J
2-Methylphenol(o-Cresol)	ug/kg																		
3&4-Methylphenol(m&p Cresol)	ug/kg			172 J															
Acenaphthene	ug/kg	900000		1430 J			98.8 J	35700	1820	1520000	31900			2570 J	509000	332000 J			
Acenaphthylene	ug/kg	18000							178 J							90100 J			
Anthracene	ug/kg	5000000		784 J		61900	104 J	28000		3590000	9550			12000	160000	285000 J		169 J	
Arsenic	mg/kg	1.6	3.8	3.6	3.9	4.0	8.1	11.5	4.5	8.3	3.4	17.3	4.5	6.9	2.0 J	3.7	3.8	3.7	3.6
Barium	mg/kg		68.8	20.5	37.2	85.2	49.8	44.8	30.5	61.7	34.6	117	54.2	72.4	18.3	86.3	43.7	55.8	38.3
Benzene	ug/kg	5.5		212 J	442 J							286000	598			40400			
Benzo(a)anthracene	ug/kg	88		870 J		129000	56.4 J	12600 J	105 J	1240000	8540	2330000 J		17700	101000	153000 J		865 R1	129 J
Benzo(a)pyrene	ug/kg	8.8		921 J		89100	29.5 J	6950 J		905000 J	4280 J			21500	60100 J	107000 J		1140 M0, R1	69.2 J
Benzo(b)fluoranthene	ug/kg	88		984 J		70600	30.6 J	7300 J		846000 J	3400 J			18900	59800 J	96700 J		1010 R1	60.7 J
Benzo(g,h,i)perylene	ug/kg	1800				41100 J								16000				816 M0, R1	
Benzo(k)fluoranthene	ug/kg	880		1110 J		102000	36.3 J	6110 J		714000 J	5520 J			19400	63800 J	110000 J		991 R1	70.2 J
bis(2-Ethylhexyl)phthalate	ug/kg			7050															
Cadmium	mg/kg	510	0.23 J	0.21 J	0.25 J	0.33 J	0.25 J	0.19 J	0.19 J	0.62	0.28 J	3.1	0.17 J	0.33 J	0.17 J	0.17 J	0.18 J	0.24 J	0.22 J
Chromium	mg/kg	200	20.4	13.4	18.8	31.0	16.4	14.6	13.2	22.9	21.8	33.4	20.5	27.5	8.1	35.0	14.4	18.5	14.6
Chrysene	ug/kg	8800		1100 J		108000	87.0 J	19700		1320000	7590			20900	103000	227000 J		1080 M0, R1	93.5 J
Cyanide	mg/kg									0.41 J		84.2							
Dibenz(a,h)anthracene	ug/kg	8.8				11600 J								3340 J				189 J	
Dibenzofuran	ug/kg			1030 J				29400	1560	1570000	24600				376000	339000 J			
Ethylbenzene	ug/kg	2900		340 J	1130			10900	643		1290 J	297000				32200			
Fluoranthene	ug/kg	600000	36.8 J	2450		270000	165 J	41600	355 J	3640000	32600	7000000 J	57.9 J	31400	476000	502000 J	75.8 J	1240 M0, R1	506
Fluorene	ug/kg	600000	31.8 J	917 J		30400 J	100 J	32100	1280	2280000	27600	4150000 J	28.9 J	2980 J	448000	343000 J	55.3 J	74.5 J	234 J
Indeno(1,2,3-cd)pyrene	ug/kg	88		631 J		48000				443000 J	1880 J			14700	23900 J			753 R1	
Lead	mg/kg	500	6.3	6.5	6.1	14.1	8.8	7.8	6.2	24.7	8.1	155	6.5	12.2	3.5	11.1	5.6	7.2	6.1
m&p-Xylene	ug/kg	4100[2]		1150	961 J			45600	3330			834000				140000			
Mercury	mg/kg		0.0090 J1q	0.0083 J1q	0.0053 J1q	0.048	0.0083 J	0.010 J	0.0097 J	0.44	0.0096 J	84.4	0.012	0.11	0.010 J	0.077	0.010 J	0.032	0.045
Naphthalene[3]	ug/kg	20000	905	28300	36400	173	201	128000	7520	782000	176000	17200000	1210	3550	423000	2650000	558	71.3 J	2880
Naphthalene[4]	ug/kg	20000	187	11400	721 M0			812000	47800	1810000	84500	231000000	668	2870 J	557000	4060000	865	139	245
o-Xylene	ug/kg	4100[2]		515	1140			18100	1100		1330 J	349000		49.5 J		43700			
Phenanthrene	ug/kg	18000		2970		199000	287	77600	1530	7190000	69800	13000000 J	110 J	22400	1100000	928000	147 J	559 M0, R1	827
Phenol	ug/kg																		
Pyrene	ug/kg	500000		1540		260000	112 J	27700	230 J	2650000	19300	4800000 J		29200	324000	352000 J	49.3 J	1370 M0, R1	303 J
Selenium	mg/kg		0.20 J	0.21 J	0.33 J	0.54 J	0.42 J	0.56 J		1.3 J	0.18 J	3.7	0.40 J		0.17 J	0.49 J	0.24 J	0.19 J	0.38 J
Silver	mg/kg		0.13 J	0.10 J	0.092 J	0.25 J	0.18 J	0.15 J		0.13 J	0.12 J	0.55 J	0.17 J	0.16 J		0.31 J	0.083 J	0.067 J	0.098 J
Styrene	ug/kg								768			283000							
Toluene	ug/kg	1500			533 J				458 J			775000				85600			

Qualifiers

J - Estimated concentration above the adjusted detection limit and below the adjusted reporting limit.

M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

1q - Analyte had a negative detect in the associated method blank at -0.0055 mg/Kg.

Notes

This table lists detections only. Blank cells mean the constituent was not detected.

1 - Soil standards are compiled from NR720 Table 1, and PAH standards are the suggested non-industrial generic soil cleanup levels provided in the 1997 WDNR Document, "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) Interim Guidance".

2 - Standard is for total xylenes.

3 - Analyzed using Method 8260

4 - Analyzed using Method 8270

Prepared by: N. Keller
Checked by: L. Bakken

Table 8
Summary of Groundwater Analytical Results
Former Wabash Alloys Facility
Oak Creek, Wisconsin

PARAMETER	UNITS	NR 140 ES	NR 140 PAL	MW-1	MW-2	MW-5	MW-8	GW-DUP-01[1]	MW-9	MW-14	MW-15	MW-16	MW-18	MW-20
1,2,4-Trimethylbenzene	ug/L	480[2]	96[2]			10.5	*289*	*296*			66.7		19.4	
1,3,5-Trimethylbenzene	ug/L	480[2]	96[2]				*163*	*163*			29.1			
2,4-Dimethylphenol	ug/L			18.8		69.2 J	19200	19800				157 J		
2-Methylnaphthalene	ug/L			1.8 J		71.3 J	2020 J	1350 J			57.0 J	732	274	6.6 J
2-Methylphenol(o-Cresol)	ug/L			13.3		70.1 J	13900	16400						
3&4-Methylphenol(m&p Cresol)	ug/L			29.0	0.92 J	147 J	28300	32100			33.9 J			
Acenaphthene	ug/L										36.3 J	376 J	609	6.0 J
Anthracene	ug/L	3000	600								13.8 J		136	8.9 J
Arsenic, Dissolved	ug/L	10	1		*3.2 J*	*4.6 JB*	**24.4**	**24.7**	*3.9 JB*	*3.6 JB*	*7.7 JB*	*5.3 JB*	3.2 JB	*4.6 JB*
Barium, Dissolved	ug/L	2000	400	41.8	64.3	293	109	106	44.4	142	120	97.2	98.8	178
Benzene	ug/L	5	0.5			**49.2**	**13500**	**13600**			**24.6** J	**71.7**		
Benzo(a)anthracene	ug/L												102	2.0 J
Benzo(a)pyrene	ug/L	0.2	0.02										**52.5 J**	
Benzo(b)fluoranthene	ug/L	0.2	0.02										**47.6 J**	
Benzo(k)fluoranthene	ug/L												55.1 J	
Cadmium, Dissolved	ug/L	5	0.5		0.29 J	*1.5 J*	0.34 J	0.29 J	0.48 J				0.32 J	
Carbazole	ug/L										31.6 J	245 J	22.8 J	13.6
Chromium, Dissolved	ug/L	100	10	0.79 JB	0.56 J	0.73 JB	0.86 J	0.71 JB	23.8	0.64 JB	0.98 JB	0.74 JB	0.63 J	0.73 JB
Chrysene	ug/L	0.2	0.02										**88.3**	**4.0 J**
Cyanide	ug/L	200	40				0.0075 J							
Dibenzofuran	ug/L										28.2 J	198 J	458	4.3 J
Ethylbenzene	ug/L	700	140			10.8	*644*	*651*			42.4	109	16.7	
Fluoranthene	ug/L	400	80	1.1 J									**503**	8.8 J
Fluorene	ug/L	400	80								33.8 J	179 J	**514**	6.3 J
Indeno(1,2,3-cd)pyrene	ug/L												21.2 J	
Isopropylbenzene (Cumene)	ug/L												9.5 J	
Lead, Dissolved	ug/L	15	1.5		*1.5 J*		1.4 J	*2.6 J*	*2.8 J*	*1.7 J*		2.6 J		
m&p-Xylene	ug/L	10000	1000			44.4	*2620*	*2700*			121			
Naphthalene	ug/L	100	10	*11.7*		**1660**	**16400**	**16000**			**1220**	**9640**	**2520**	**109**
Naphthalene	ug/L	100	10			**943**	**19700**	**18000**			**551**	**8140**	**859**	**298**
o-Xylene	ug/L	10000	1000			15.4	*879*	*894*			51.6			
Phenanthrene	ug/L			1.5 J			1440 J	628 J			47.0 J	104 J	1130	16.1
Phenol	ug/L	6000	1200	8.2		48.9 J	**8370**	**9970**						
Pyrene	ug/L	250	50			< 70.6							299	5.0 J
Selenium, Dissolved	ug/L	50	10	3.1 J		2.4 J	2.8 J	3.7 J		3.2 J		3.1 J	3.9 JB	4.6 J
Styrene	ug/L	100	10				**468**	**479**						
Toluene	ug/L	1000	200			64.2	**7290**	**7240**			29.1	34.5 J		

Qualifiers

J - Estimated concentration above the adjusted detection limit and below the adjusted reporting limit.

B- Analyte was detected in the associated method blank.

Prepared by: N. Keller
Checked by: L. Bakken

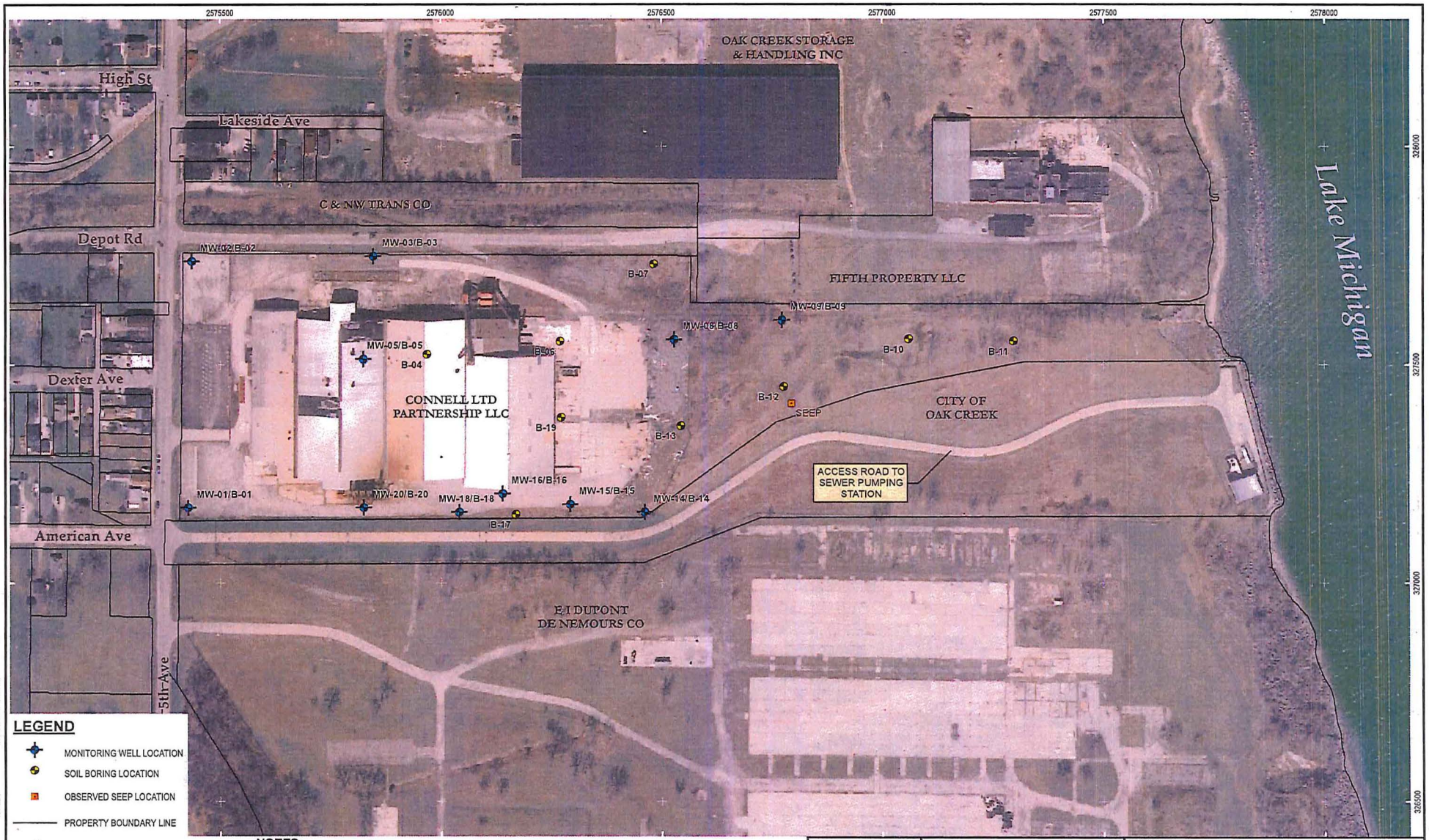
Notes

1 - GW-DUP01 was collected from the MW-8 location

2 - Standards for 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene are for total trimethylbenzenes

Italic values indicate exceedences of NR140 Preventative Action Limits (PALs)

Bold values indicate exceedences of NR 140 Enforcement Standards (ES)



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Cartographer: PAPEZ J
Data Printed: 1/1/2007

NOTES

1. BASE MAP IMAGERY AND PARCEL LINES FROM MILWAUKEE COUNTY ARCGIS WEB MAP SERVICE, 2007.
2. MAP PROJECTION AND GRID COORDINATES ARE NAD27 STATE PLANE WISCONSIN SOUTH, US SURVEY FEET.

DRAWN BY:	PAPEZ J
CHECKED BY:	KELLER N
APPROVED BY:	WEDEKIND J
DATE:	AUGUST 2010

RMT

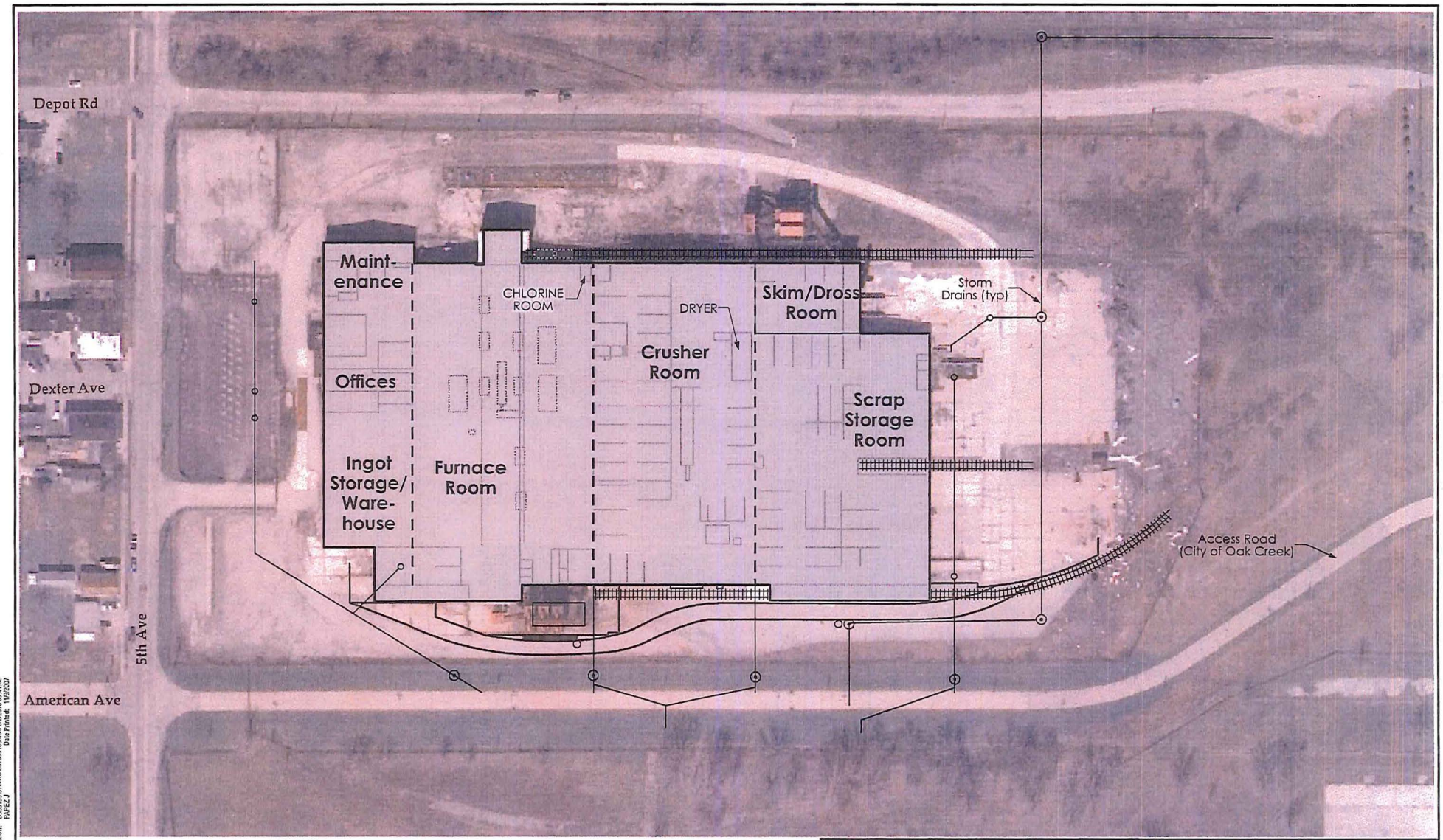
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

CONNELL LP — OAK CREEK, WISCONSIN

SITE LAYOUT AND
MONITORING WELL AND BORING LOCATIONS

8/2/2010

SCALE:	PROJ. NO.	DWG. NAME	SHT. NO.
AS NOTED	06139.01.002	061390101.mxd	FIGURE 1



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Cartographer: PAPEZ J
Date Printed: 11/9/2007

1" = 100'
1:1,200
0 100 200
SCALE IN FEET

NOTES

1. BASE MAP IMAGERY FROM MILWAUKEE COUNTY ACRGIS WEB MAP SERVICE, 2007.

DRAWN BY:	PAPEZ J
CHECKED BY:	KELLER N
APPROVED BY:	WEDEKIND J
DATE:	AUGUST 2010

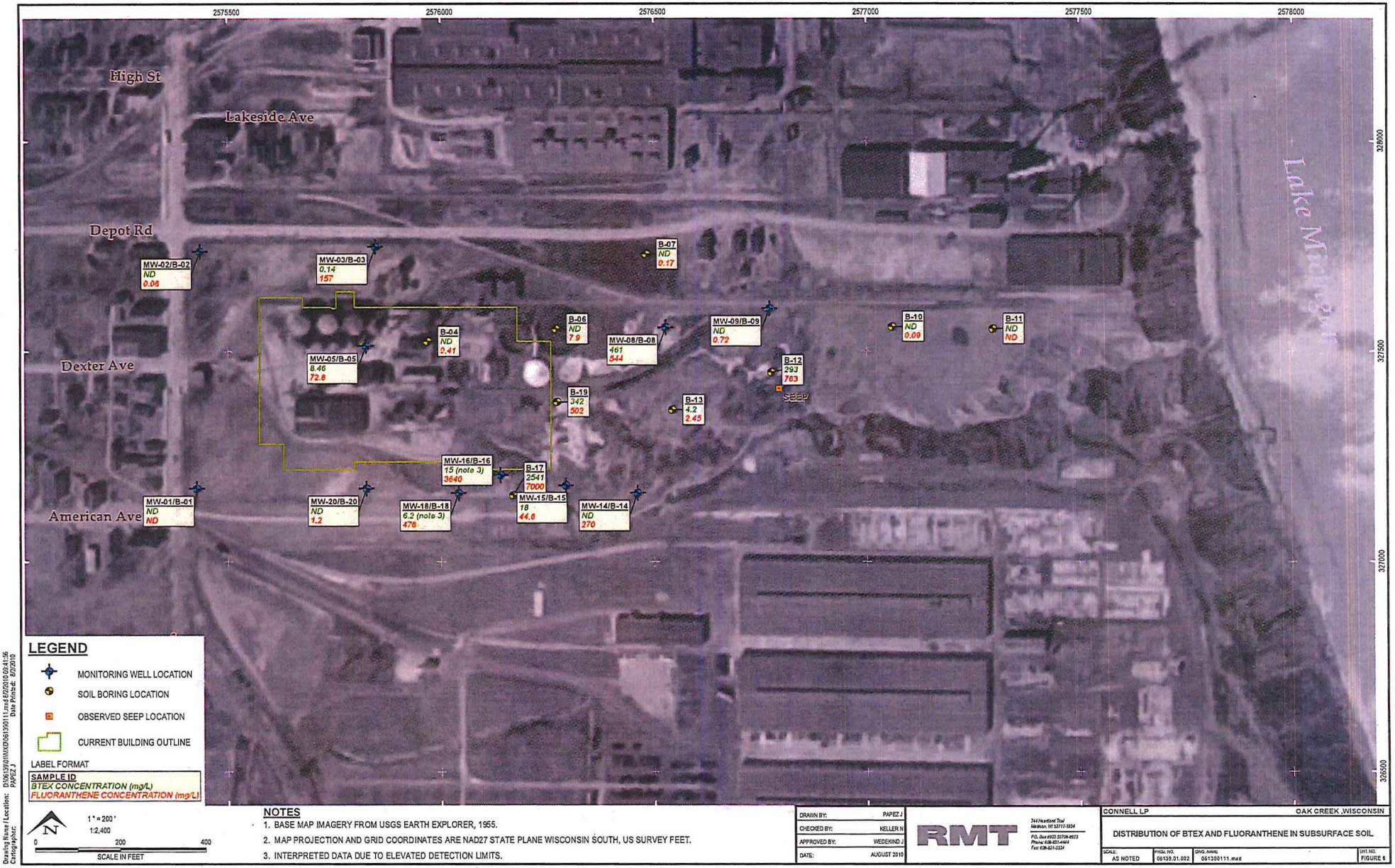
RMT
744 Headland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-821-4444
Fax: 608-831-3334

CONNELL LP — OAK CREEK, WISCONSIN

INTERIOR BUILDING LAYOUT

8/2/2010

SCALE:	PROJ. NO.	DWG. NAME	SHT. NO.
AS NOTED	06139.01.002	06139108.mxd	FIGURE 2



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Cartographer: PAPEZ J
Date Printed: 8/2/2010

NOTES

1. BASE MAP IMAGERY FROM USGS EARTH EXPLORER, 1955.
2. MAP PROJECTION AND GRID COORDINATES ARE NAD27 STATE PLANE WISCONSIN SOUTH, US SURVEY FEET.
3. INTERPRETED DATA DUE TO ELEVATED DETECTION LIMITS.

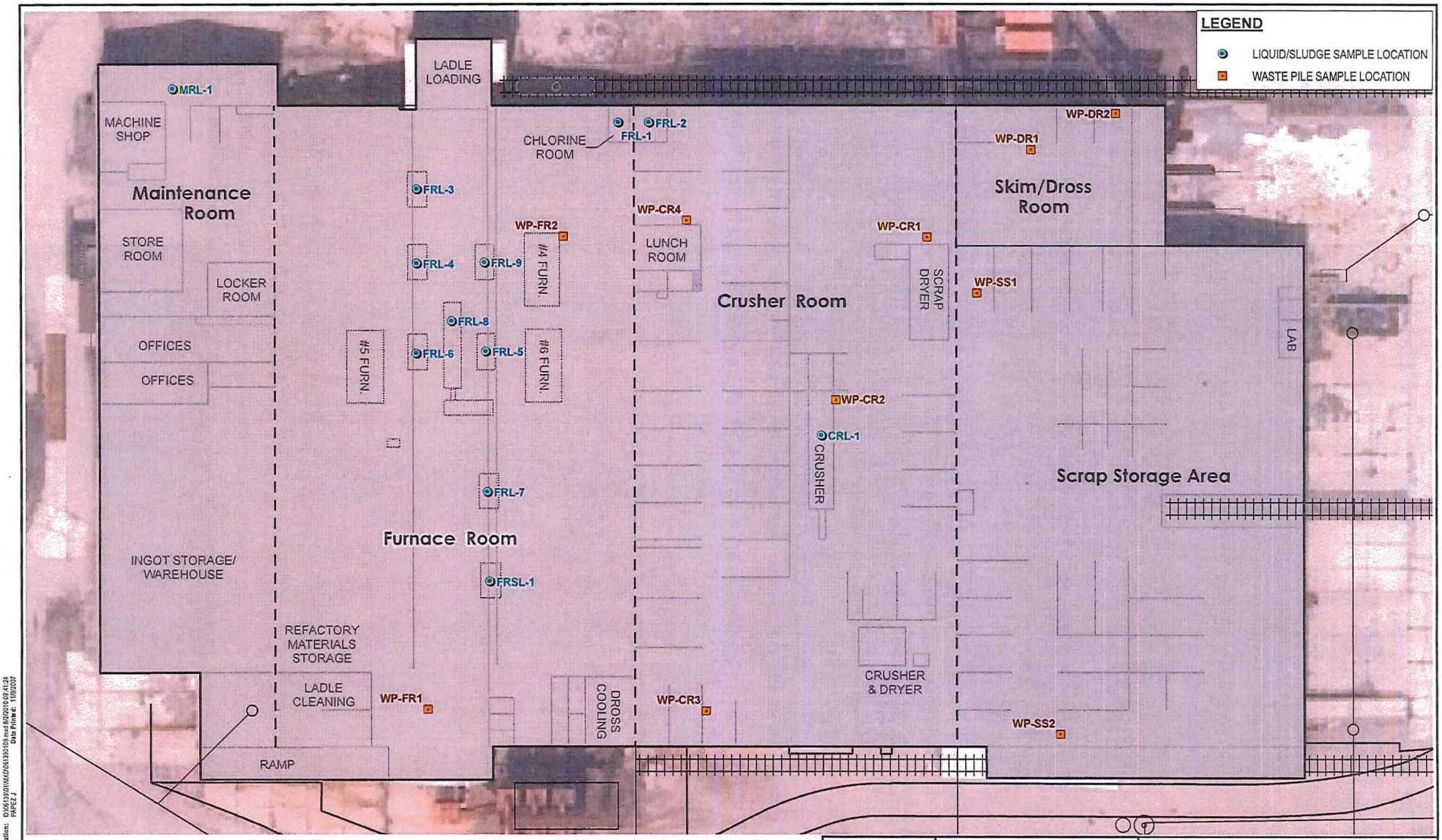
DRAWN BY:	PAPEZ J
CHECKED BY:	KELLER N
APPROVED BY:	WEDEKIND J
DATE:	AUGUST 2010

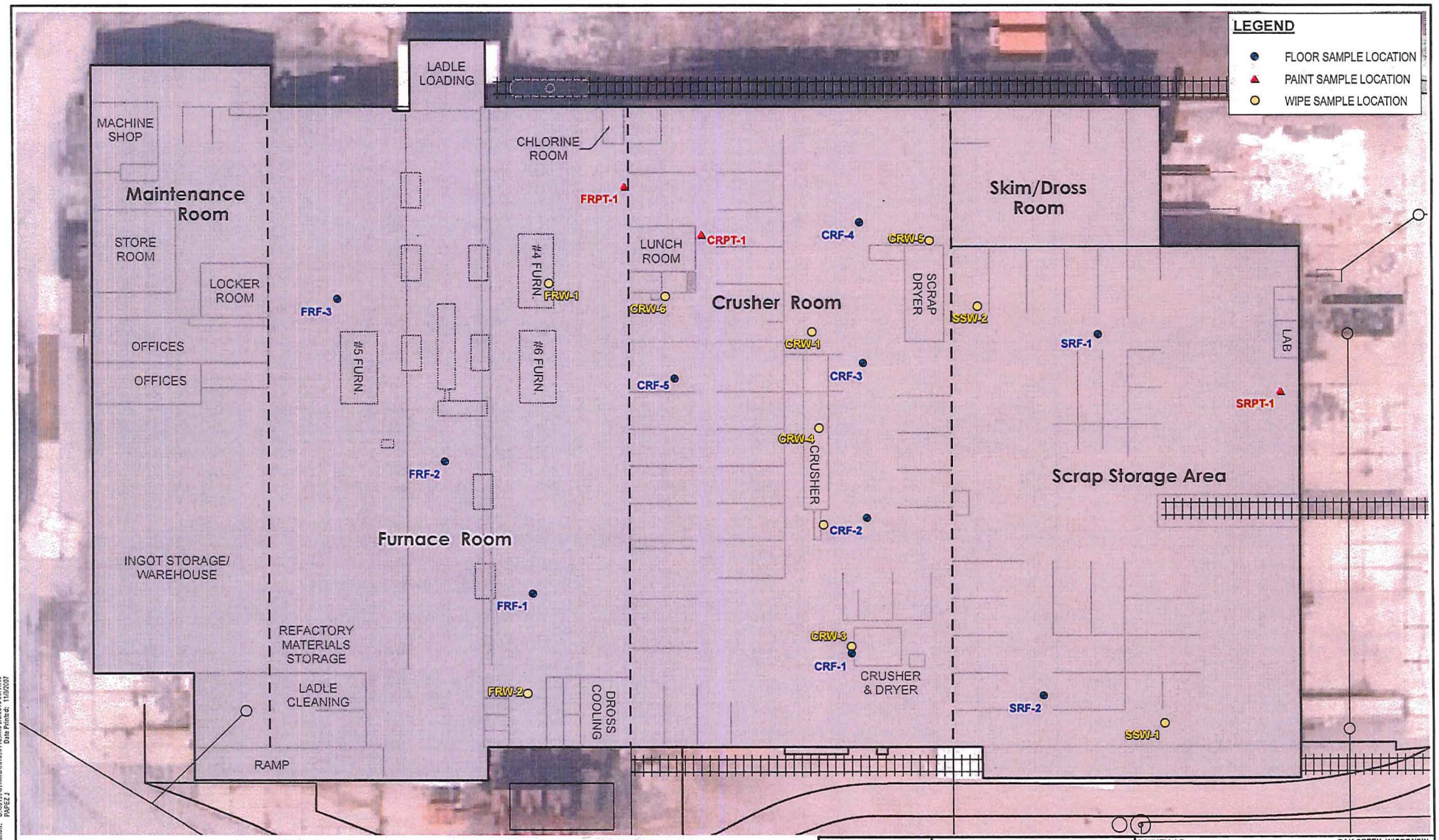
RMT
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

CONNELL LP — OAK CREEK, WISCONSIN

DISTRIBUTION OF BTEX AND FLUORANTHENE IN SUBSURFACE SOIL

SCALE:	PROJ. NO.	DWG. NAME:	DWT. NO.
AS NOTED	06139.01.002	061300111.mxd	FIGURE 6


LEGEND
LIQUID/SLUDGE SAMPLE LOCATION
WASTE PILE SAMPLE LOCATION
LADLE LOADING
MRL-1
MACHINE SHOP
Maintenance Room
STORE ROOM
LOCKER ROOM
OFFICES
OFFICES
INGOT STORAGE/ WAREHOUSE
REFACTORY MATERIALS STORAGE
LADLE CLEANING
RAMP
WP-FR1
CHLORINE ROOM
FRL-1
FRL-2
FRL-3
FRL-4
FRL-9
#4 FURN.
WP-FR2
FRL-8
FRL-6
FRL-5
#5 FURN.
#6 FURN.
FRL-7
Furnace Room
FRSL-1
DROSS COOLING
WP-CR4
LUNCH ROOM
Crusher Room
WP-CR1
SCRAP DRYER
WP-CR2
CRL-1
CRUSHER
WP-CR3
CRUSHER & DRYER
WP-DR2
WP-DR1
Skim/Dross Room
WP-SS1
LAB
Scrap Storage Area
WP-SS2
1" = 50'
1:600
0
50
100
SCALE IN FEET
NOTES
1. BASE MAP IMAGERY FROM MILWAUKEE COUNTY ACRGIS WEB MAP SERVICE, 2007.
DRAWN BY: PAPEZ J
CHECKED BY: KELLER N
APPROVED BY: WEDEKIND J
DATE: AUGUST 2010
RMT
CONNELL LP
OAK CREEK ,WISCONSIN
INTERIOR LIQUID AND WASTE PILE SAMPLING
8/2/2010
SCALE: AS NOTED
PROJ. NO. 06130.01.002
DWG. NAME 061300109.mxd
SHT. NO. FIGURE 5



Drawing Name / Location: D:\06139\01\MXD\061393110.mxd 8/20/2010 03:41:15
Cartographer: PAPEZ J
Date Printed: 11/9/2007

LEGEND

- CURRENT BUILDING OUTLINE
- CURRENT PROPERTY BOUNDARY LINE

N

1 " = 200 '
1:2,400

0 200 400
SCALE IN FEET

NOTES

1. BASE MAP IMAGERY FROM USGS EARTH EXPLORER, 1955.
2. PARCEL LINES FROM MILWAUKEE COUNTY ARCGIS WEB MAP SERVICE.
3. MAP PROJECTION AND GRID COORDINATES ARE NAD27 STATE PLANE WISCONSIN SOUTH, US SURVEY FEET.

DRAWN BY:	PAPEZ J
CHECKED BY:	KELLER N
APPROVED BY:	WEDEKIND J
DATE:	AUGUST 2010

RMT
744 Heartland Trail
Madison, WI 53717-1934
PO. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

CONNELL LP — OAK CREEK ,WISCONSIN

HISTORICAL SITE LAYOUT 1955

SCALE:	PROJ. NO.	DWG. NAME	SHT NO.
AS NOTED	06139.01.002	061390112.mxd	FIGURE 3

Drawing Name/Location: D:\06139\01\MXD\06139011 2.mxd 8/9/2010 09:41:40
Cartographer: PAPEZ J
Date Printed: 9/2/2010

Appendix B
Boring Logs

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/3/10	6/3/10	B-1

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-1	0.88'	—	2 Inches

Boring Location State Plane Easting 2575426.2 Northing 327173.9 Local Grid Location (If applicable)

1/4 of 1/4 of Section T N,R ☐ N Feet ☐ S ☐ E Feet ☐ W

County	State	DNR County Code	Civil Town/City or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
	5'		0	0-8" gravel — red brown lean clay, plastic, tr. gravel, no odor mbi st		0.2			
			2	8"-3" sandy gravel (Farmer / Parking lot wet lots of water in hole ??)					
			4	As Above from 8" - 2.5 ft		0.5			
	5'		6	As Above, no gravel, more silt wet		0.2			
			8			0.1			
	4'		10	As Above, v. stiff		0.3			
			12						
			15	EOB @ 15ft					

Logged By: Nathaniel L Keller Checked By: Ted Mueller

F-204A (R 12-94)

Well set ~ 5-15
Sample 2.5-5 @ 1015

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 2

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/3/10	6/3/10	B-2

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-2	4.12'	—	2 Inches

Boring Location — State Plane — Easting 2575434.8 Northing 327737.5 — 1/4 of — 1/4 of Section — T — N,R

Local Grid Location (If applicable): ☐ N ☐ E Feet ☐ S Feet ☐ W

County	State	DNR County Code	Civil Town/City or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	ROD/ Comments
			0	~8"-1' asphalt Sand & gravel below		0.5			
	3.5		2	clay/silt, w/ sand cinders & brick, fill, dk gray/brown w/ yellowish zones, no odor, moist med stiff, low plasticity		0.7			
			4						
	3.5		6	Black clay w/ tr. gravel, plastic grades to gray clay, no odor moist, stiff		0.3			
			8	gray clay w/ tr. sand & gravel, no odor, moist, med stiff to soft		0.5			
				Some wet yellow brown gravel @ 9 ft					
	3'		10	As above ~~from~~ NK@ 8ft bgs Color to red brown					
						0.3			
			12	@ 12 4" fine silty sand, non plastic yellow/orange odor, wet					

Logged By: Jathan R Keller

Checked By: Ted Cree

F-206A (R 12-94)

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 2 of 2

Project Name	Start Date	End Date	Boring Number
Cousnell Ltd. Partnership - Oak Creek	6/3/10	6/3/10	B-2

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-2	4.12'	—	2 Inches

Boring Location State Plane Easting 2575434.8 Northing 327737.5 1/4 of 1/4 of Section T N,R

Local Grid Location (If applicable) ☐ N ☐ E Feet ☐ S Feet ☐ W

County	State	DNR County Code	Civil Town/City or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	ROD/ Comments
			12						
	41			lean grey clay w/ silt & f. sand, plastic, greyish brown, no odor wet		0.1			
			14						
			15	EOB @ 15 ft					

Logged By: Nathaniel R Stelz Checked By: Rob Mauer

F-204A (R 12-94)

Well S-15
Sample 2.5-5 @ 935 2.5-10 941

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 2

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/3/10	6/3/10	B-3

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-3	Dry	—	2 Inches

Boring Location	Local Grid Location (If applicable)
State Plane Easting 2575847.4 Northing 327748.5	☐ N ☐ E
1/4 of 1/4 of Section T N,R	Feet ☐ S Feet ☐ W

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
	3.5		0	Sand & gravel, fill, non plastic brown to grey, no odor, dry					
				Black/dk grey clay/silt, asphalt		1.8			
			2	odor, moist med stiff, (fill)					
				Lean clay/silt, plastic, red					
			4	brown, no odor, moist, stiff to v. stiff		1.6			
	4.0			As Above, tr. gravel					
			6						
				2" wet silt @ 7.5		1.3			
			8						
						1.4			
	4.5		10	As Above no gravel					
						1.2			
			12	color grades to dk brown/grey					

Logged By: Nathaniel R Kehn Checked By:

F-204A (R 12-94)

Well set 5-20

Sample 900 @ 1-3 5-7.5 905

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 2 of 2

Project Name	Start Date	End Date	Boring Number
Cornwell Ltd. Partnership - Oak Creek	6/3/10	6/3/10	B-3

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-3	Dry	—	2 Inches

Boring Location: State Plane; 1/4 of; 1/4 of Section; T; N,R; Easting 2575847.4 Northing 327748.5

Local Grid Location (If applicable): ☐ N ☐ S Feet; ☐ E ☐ W Feet

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			12	As Above		1.2			
			14						
	3.5ft			As Above		0.5			
			16						
			18			0.9			
			20	EOB @ 20ft					

Logged By: Nathaniel R Kelly

Checked By:

F-204A (R 12-94)

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/3/10	6/3/10	B-4

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	—	—	—	2 Inches

Boring Location — State Plane — Easting 2575968.8 Northing 327523.7 — 1/4 of — 1/4 of Section — T — N,R

Local Grid Location (If applicable): ☐ N Feet ☐ S ☐ E Feet ☐ W

County	State	DNR County Code	Civil Town/City or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	ROD/ Comments
	4"			4-6" Concrete Clay/Silt, some rust mottling, low plasticity, no odor, moist, stiff		1.6			
			2			0.7			
			4						
	3.5		6	Lean clay w/ tr - gravel, plastic, no odor dk brownish grey, no odor moist, stiff - med stiff		20			
			8			1.8			
	4'		10	As Above, med stiff		5.2			
			12						
			15	EOB @ 15 ft		1.6			

Logged By: Nathaniel R Keller

Checked By:

F-204A (R 12-94)

Sample 10-12.5 @ 1355
2.5-5 @ 1400

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/3/10	6/3/10	B-5

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730DT	MW-5	6.87	—	2 Inches

Boring Location: State Plane — Easting 2575824.2 Northing 327513.1 — 1/4 of — 1/4 of Section — T — N,R

Local Grid Location (If applicable): ☐ N ☐ E Feet ☐ S Feet ☐ W

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			0	4-6" Concrete,					
	4'		2	6" sand, red brown, no odor, moist					
				Lean clay, plastic, fr. gravel, red brown, no odor, moist, soft, wet zone @ 3'		0.7			
			4						
	3'			Brownish grey lean clay, low plasticity, no odor, moist v. hard		0.3			
			6						
			8			38.8			
	4		10	As above visible tar/oil in fractures until about 13ft bgs stiff to v. stiff		25			
			12						
			15	EOB @ 15ft		42			

Logged By: Nathaniel Kellen Checked By:

F-204A (R 12-94)

Well set - 5-15 Sample 7.5-10 @ 1340
12.5-15 1345

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/2/10	6/2/10	B-6

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	—	—	—	~2 Inches

Boring Location: State Plane; Easting 2576269.9 Northing 327553.2; 1/4 of; 1/4 of Section; T; N,R

Local Grid Location (If applicable): ☐ N Feet ☐ S ☐ E Feet ☐ W

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			0	4-6" Concrete 6" gravel w/ Sand		0.5			
	4.5'		2	Lean gray/green clay/silt, some rust yellow brown mottling, no odor, moist		0.7			
			4	At 4.25 black ground up asphalt/ grease		0.9			
			6	Black clay, med. stiff, plastic, no odor moist, some organic (roots)		0.7			
				As Above from 2 - 4.25					
	4'		8	grades into		0.7			
			10	lean silty clay, plastic, red brown no odor, moist, stiff to v. stiff		0.5			
	4.25'		12			0.5			
			15	EOB @ 15 ft					

Logged By: Nathaniel R Kelly

Checked By:

F-204A (R/12-94)

Sample 2.5 - ~~7.5~~ 5 NK 1510

~~7.5 - 10~~ 7.5 - 10 NK 1515

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/2/10	6/2/10	B-7

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	—	—	—	2 Inches

Boring Location: State Plane — Easting 2576481.7 Northing 327730.8 — 1/4 of — 1/4 of Section — T — N,R

Local Grid Location (If applicable): ☐ N ☐ E Feet ☐ S Feet ☐ W

County	State	DNR County Code	Civil Town/City or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			0	4" Wood chips		1.4			
				Lean Clay / Silt w/ roots, some rust fractures, no odor, brown moist					
	5		2			1.2			
				As Above but Silt @ 3-5, some greyish fractures/root traces					
			4						
	4			As Above Lean clay, plastic, brown tr. gravel, moist, no odor stiff		1.2			
			6						
			8			0.7			
			10			0.9			
	4'			As Above					
			12	grades to brownish grey					
						1.2			
			15	EOB @ 15ft					

Logged By: Nathaniel R Kelly Checked By:

F-204A (R 12-94)

Sample 2.5-5 @ 1400

~~1400~~ NK

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 2

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/2/10	6/2/10	B-3

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-8	4.85	—	2 Inches

Boring Location: State Plane; 1/4 of; 1/4 of Section; T; N,R; Easting 2576527.9; Northing 327556.9

Local Grid Location (If applicable): ☐ N Feet ☐ S; ☐ E Feet ☐ W

County	State	DNR County Code	Civil Town/City or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			0	2-3" wood chips clay sand gravel, fill, rust colored & black, tar/oil odor,		0.9			
	4.25		2	becomes blacker, more tar, not sticky some coal fragments, strong odor		1.7			
			4	lean clay w/ tr. gravel, tar/oil in fractures, plastic, strong odor, moist dk grey/black					
				As Above, silt in @ 5-6		2.6			
	3.75		6	same as 4-5, color to dk grey/brown					
			8			355			
				@ 9ft 4" sand w/ significant tar/oil					
			10	lean clay, plastic, tr. gravel, strong odor, brown, tar/oil in fractures		133			
	4.5'		12			154			
			15	less tar/oil					

Logged By: Nathan R Hall

Checked By:

F-204A (R 12-94)

Sample @ 7.5-10 1315
15-18 1320

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 2 of 2

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/2/10	6/2/10	B-9

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-8	4.85'	—	2 Inches

Boring Location	Local Grid Location (If applicable)
State Plane Easting ~~327~~ 2576527.9 Northing 327556.9	☐ N ☐ E
1/4 of 1/4 of Section ~~TWO~~ T N,R	Feet ☐ S Feet ☐ W

County	State	DNR County Code	Civil Town/City or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			15	Lean Clay w/ fr. gravel, plastic dk brownish gray, no odor wet		1.9			
	5'		17	no visible tar in fractures left 16ft					
			19						
			20	EOB @ 20ft bgs					
				Set well 5-15					

Logged By: Nathaniel R Fella

Checked By:

F-204A (R 12-94)

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cornwell Ltd. Partnership - Oak Creek	6/2/10	6/2/10	B-9

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-9	4.38	—	2 Inches

Boring Location State Plane 1/4 of	1/4 of Section	Easting	Northing	T N,R	Local Grid Location (If applicable) Feet ☐ N ☐ S Feet ☐ E ☐ W
		2576771.6	327601.8		

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			0	Silt/clay brown w/roots & tarry sandy material		1.2			
			2	Lean clay, plastic, brown w/ black staining & rust colors, slt odor moist some glass & ceramic, fill		0.7			
	3.75'								
			4			0.5			
				Brown Lean clay w/ tr. gravel, plastic, no odor, moist, stiff					
			6			0.7			
	4.0'								
			8	Silty fine Sand, non plastic, brown no odor, wet		0.5			
				Lean Brown clay, no odor, tr. gravel		0.7			
			10	moist, plastic, stiff					
	4.5'					0.5			
			12	As Above color change to dk brownish grey					
			14						
				ECBC@15					

Logged By: Nathaniel A Hall

Checked By: Ted Cross

F-204A (R 12-94)

Well set 5-15

Sample 2.5-5 @ 1140
5-7.5 @ 1145

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cowell Ltd. Partnership - Oak Creek	6/2/10	6/2/10	B-10

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	—	—	—	2 Inches

Boring Location
State Plane Easting 2577059.4 Northing 327558.6
1/4 of 1/4 of Section T N,R

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	State	DNR County Code	Civil Town/City or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			0	Clay silt, dk brownish gray, plastic no odor, moist, some root traces and stiff		2.5			
	3.5		2						
			4	More Silt @ 3-4 ft		2.0			
			6	As above from 0-3, gravel (frm.) present, plastic to very plastic, stiff		2.0			
	4.0		8			1.8			
			10	4" f-m sand, no odor, wet, dk gray As above from 5-9.5 ft bgs		1.4			
	3.75		12						
			14	EOB @ 15 ft		1.2			

Logged By: Nathaniel R Kelly Checked By: [signature]

F-204A (R 12-94)

B10-5-7.5 @940

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/2/10	6/2/10	B-11

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	—	—	—	2 Inches

Boring Location State Plane	1/4 of	1/4 of Section	T	N,R	Easting	Northing	Local Grid Location (If applicable)
					2577296.0	327553.9	Feet ☐ N ☐ S ☐ E ☐ W

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			0	Clay/silt, tr. gravel & organic roots, dk brown/brown no odor, wet		2.0			
	4.5		2	As Above, some dust, grey fractures no odor, tr. gravel					
				grades into silty clay l/w/gravel plastic dk brownish grey, no odor moist, stiff to v. stiff		1.4			
			4						
	4'			As Above		1.6			
			6						
						1.4			
			8						
						1.2			
	5'		10	Lean Clay, w/gravel, plastic, dk brownish grey no odor, moist stiff to v. stiff					
			12			1.2			
			15	EOB @ 15ft		1.0			

Logged By: Nathaniel R Keller

Checked By:

F-204A (R 12-94)

Sample 0-2.5 @ 1025 ~~1030~~

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/2/10	6/2/10	B-12

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730DT	—	—	—	2 Inches

Boring Location State Plane	1/4 of	1/4 of Section	T	N,R	Easting	Northing	Local Grid Location (If applicable)
					2576775.8	327449.8	☐ N ☐ E Feet ☐ S Feet ☐ W

County	State	DNR County Code	Civil Town/City or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	ROD/ Comments
			0	Lean clay / silt, w/ organic material roots, plastic, brown, no odor, moist		1.2			
	4		2						
				Black clay fr. gravel & sand, plastic, black, strong odor (creosote) some oily fractures, moist		225			
			4						
	4.5		6	As above, less strongly still oily fractures		124			
			8			247			
				— 2-3" sand w/ oil & tar, strong odor black, wet					
			10	Lean clay dk brownish grey, plastic slt odor, moist, stiff tar not visible @ 10 ft		97.5			
			12	Lean Clay, plastic, dk gray brown no odor, moist, stiff					
	3					10.9			
			15	EOB @ 15					

Logged By: Nathaniel R Keller Checked By: [signature]

F-204A (R 12-94)

B-12-7-9 915
B-12-13-15 920

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/2/10	6/2/10	B-13

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	—	—	—	2 Inches

Boring Location: State Plane; 1/4 of; 1/4 of Section; T; N,R; Easting 2576543.5; Northing 327361.2

Local Grid Location (If applicable): ☐ N ☐ S Feet; ☐ E ☐ W Feet

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
	3.5		0	4" gravel w/ clay, glass, fill, Lean Clay, plastic, brown, no odor, moist, v. stiff		1.3			
			2			2.8			
			4	~4" tarry sand/ground up coal, strong odor, moist					
	2.5		6	pushed a rock, very soft, possibly tarry sediment??		6.9			
			8			13.4			
			10	Lean Clay, plastic, grey, wet, no odor, gravel and clay (sloughed), sheen on water surrounding core, mostly clay w/ fracture to ~12 ft bgs		8.9			
	4'					10.9			
			12	Lean Clay w/ tr. gravel, plastic, brown, no odor, moist, v. stiff		6.4			
			15	EOB @ 15 FT					

Logged By: Nathaniel R Klein

Checked By:

F-204A (R 12-94)

Sample 7.5-10 @ 1215
12.5-15 @ 1220

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/2/10	6/2/10	B-14

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-14	8.58'	—	~2 Inches

Boring Location: State Plane; 1/4 of; 1/4 of Section; T; N,R; Easting 2576461.3; Northing 327162.9

Local Grid Location (If applicable): ☐ N ☐ S Feet; ☐ E ☐ W Feet

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			0	Clay w/ gravel, roots, some hardened tar, bricks/ shutters, slight odor		0.9			
	3.5		2	4" of concentrated black stain @ 3.5 ft strong creosote odor		0.5			
			4	Clay/silt + tr gravel + f. sand slight odor, plastic, moist, gray brown		0.3			
	4.5		6	As above 2" f-m sand seams @ 7, 7.75, & 8.5, silty sand, wet		0.3			
			8	Clay as from 4-6		0.7			
			10	~6 silty sand w/ gravel, non plastic brown, no odor, wet		0.5			
	4.0		12	Silty Clay w/ gravel, plastic, dk brown/gray, no odor, moist, stiff to V. stiff		0.3			
			15	EOB @ 15 ft					

Logged By: [signature] Checked By: [signature]

F-204A (R/12-94)

Set Well 5-15

2.5-5 @ 1415

7.5-10 1420

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/1/10	6/1/10	B-15

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	—	—	—	2 Inches

Boring Location
State Plane Easting 2576292.6 Northing 327181.5
1/4 of 1/4 of Section T N,R

Local Grid Location (If applicable)
Feet ☐ N ☐ S Feet ☐ E ☐ W

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			0	2" Asphalt 6-8" sand, gravel fill					
			2	brown clay w/ gravel, plastic, gray brown, no odor, moist, stiff to v stiff		2.3			
	4								
			4			1.8			
				As above		4.2			
			6						
				dk gray green clay/sand, w/ black staining, may be coal, or hardened tar		8.0			
			8	Refusal on concrete slide over & drill again					
	3					5.2			
			10	see B-15A					
			12						

Logged By: Nathaniel C Rich Checked By: Ted Cross

F-204A (R 12-94)

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Connell Ltd. Partnership - Oak Creek	6/1/10	6/1/10	B-15(A)

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-15	12.24	—	2 Inches

Boring Location: State Plane; 1/4 of; 1/4 of Section; T; N,R; Easting 2576292.6; Northing 227101.5

Local Grid Location (If applicable): ☐ N ☐ S Feet; ☐ E ☐ W Feet

County	State	DNR County Code	Civil Town/City or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	ROD/ Comments
			5	As Above					
			7						
	4.5			3" Tarry interval dry (Silt, non plastic, red brown, odor, 9 - moist, med stiff					
				@9.5 tarry + greasy interval, 2 3/4" thick strong odor		52			
	4		11	~~As above~~ Silty clay w/ trace of gravel, tar in the fractures, grayish brown		8.7			
			13	odor, wet, stiff to v. stiff		4.9			
			15	A.S Above		20.1			
	3.5								
			17	18-19 silt & fine sand, oil/~~tar~~ NAPL in fractures		115.3			
			19	silty clay w/ tr f. gravel, plastic, brown/gray, slt odor, No visible tar		18.4			
			20						

Logged By: Nathaniel C Kelly

Checked By:

F-204A (R 12-94)

B-15 19-20 1455
B-15 16-18 1500

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 2

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/1/10	6/1/10	B-16

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-16			2 Inches

Boring Location: State Plane; 1/4 of; 1/4 of Section; T; N,R; Easting 2576139.2; Northing 327205.8

Local Grid Location (If applicable): Feet ☐ N ☐ S; Feet ☐ E ☐ W

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			0	2-3" Asphalt sand & gravel		<1			945
	2.5			Lean clay w/ trace gravel, plastic					
			2	brown, faint creosote odor, moist					
				at 2.5, black sandy creosote material					
				strong odor, moist		11			
			4						
				sand w/ gravel, wet, brown w/		14.4			
	4		6	black staining, creosote odor					
				Tarry sand w/ wood pieces & gravel, v.		10.9			
			8	plastic & goopy, black, strong odor					
				creosote		8			
				gray green clay w/ tar in fractures					
			10	strong odor, moist					
				med stiff clay, plastic, brown gray		16.6			
	3.75			w/ tar in fractures, strong odor					
			12	moist					
						6.2			

Logged By: Nathaniel R Keller

Checked By: Ted

F-204A (R 12-94)

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 2 of 2

Project Name	Start Date	End Date	Boring Number
Cornwell Ltd. Partnership - Oak Creek	6/1/10	6/1/10	B-16

Boring Drilled By	Drilling Method
OnSite Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-16		—	2 Inches

Boring Location State Plane	1/4 of	1/4 of Section	T	N,R	Easting	Northing	Local Grid Location (If applicable)
					2576139.2	327205.8	☐ N ☐ E Feet ☐ S Feet ☐ W

County	State	DNR County Code	Civil Town/City or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			12	grades into					
				Clayey silt, brown, less tar in					
			14	fractures, strong odor, moist					
				V. stiff to hard		6.9			
	40			Asphalt more tar in fractures, strong					
			16	odors					
						15.5			
			18	Clayey silt, plastic, brown/gray,		24.1			
				slt odor, moist, V. stiff					
			20			5.1			
				EOB @ 20ft					
				Set 2" well @ 9-19					
			22	1100 16-18 Pea					
				B-16 7-8 Pea/Mett					
				1015					

Logged By: Nathaniel R Keller

Checked By:

F-204A (R 12-94)

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 2

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/1/10	6/1/10	B-17

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT		—	—	2 Inches

Boring Location State Plane 1/4 of	1/4 of Section	T	Easting	N,R	Northing	Local Grid Location (If applicable)
			2576169.1		327157.9	Feet ☐ N ☐ S Feet ☐ E ☐ W

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			0	Topsoil w organic matter		0.0	2		
				Sandy clay w/ gravel, low plasticity, brown w/ grey mottling, no odor, moist					
	4'		2	Dk grey clay w/ gravel, tr. of oily material		11.5			
			4			269			
	1			Tarry, oily, soft, silty sand/silt, blk		641			
	4.1		6	Sig. odor, moist		334			
				grey clay w/ brown mottling + tar in fractures, tr gravel, sig. odor, moist					
			8			404			
				Sand/silt layers 1-3" thick w/ concentrated staining + tar					
			10	Clay w/ trace gravel + tar in fractures, mod odor, red brown w/ rust staining		389			faron outside
			12						

Logged By: Nathaniel R Ker Checked By: Ted Cross

F-204A (R 12-94)

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 2 of 2

Project Name	Start Date	End Date	Boring Number
Cornwell Ltd. Partnership - Oak Creek	6/1/10	6/1/10	B-17

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	—	—	—	2 Inches

Boring Location State Plane 1/4 of	1/4 of Section	T	N,R	Easting	Northing	Local Grid Location (If applicable)
				2576169.1	327157.9	☐ N ☐ S Feet ☐ E ☐ W Feet

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			12	@ 12.5 4" f-m terry/oily Sand strong odor, black		707			
	3.75		14	silt w/ fine sandy clay, low plasticity no visible tar, slight odor, stiff		56			
				EOB @ 15 ft					
			16						

Sample 5-6 Metal/Paco 1320

Sample 14-15 Paco 1325

Logged By: Matthew Keller

Checked By: Ted Green

F-204A (R 12-94)

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cowell Ltd. Partnership - Oak Creek	6/1/10	6/1/10	B-18

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-18	9.47'	—	2 Inches

Boring Location State Plane 1/4 of	1/4 of Section	T	Easting	N,R	Northing	Local Grid Location (If applicable)
			2576041.4		327162.9	Feet ☐ N ☐ S ☐ E ☐ W

County	State	DNR County Code	Civil Town/City or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	ROD/ Comments
			0	3" Asphalt 4-5" gravel sand w/ clay / fill		2.1			
	4.5		2	Lean clay w/ gravel, + tarry fractures str. odor, dk greyish brown, moist, plastic, stiff to v. stiff		2.6			
			4	grades to lean red brown clay w/ tr. gravel, v. stiff to hard		2.7			
			6	As above, no tar, rust colored mottling		2.7			
	4.0'		8						
			10	4" f-m. gravel, clean, w/ trc phase oil, wet stiff clay w/ trace gravel, oil around outside of core, red brown mottling, odor wet		33.1			
	4.0'		12						
				@ 14 ft silty sand, f-m. sand, non plastic red brown, slt odor		9.1			

Logged By: Nathaniel Kelly EOB @ 15 ft

Checked By:

F-204A (R 12-94)

well set 5-15

B-18 2-4 1355 10-12 1400

B-18 product Meta Outside 1355 core

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 2

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/1/10	6/1/10	B-19

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT				2 Inches

Boring Location State Plane 1/4 of	Easting 1/4 of Section 2576272.8 T	Northing 327380.1 N,R	Local Grid Location (If applicable) Feet ☐ N ☐ S Feet ☐ E ☐ W

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			0	Clay & gravel, fill		1.2			
	3'			Lean Clay w/ tr gravel, plastic					
			2	red brown, some dk grey mottling, no odor, moist, ~~tar~~ NF					
						2.5			
			4						
				Sand w/ gravel, silt, non plastic,					
	3'		6	wet.					
				red to brown clay, plastic, no odor wet v. stiff to hard, some		2.7			
			8	grey mottling					
				color dk grey @ 8-9 ft, and tar/ oil in fractures		26.3			
			10						
	4'			As Above, significant oil in		56.2			
				fractures, soft, oil flows, strong					
			12	odor.					
						37.1			

Logged By: Nathaniel P. Rider

Checked By:

F-204A (R 12-94)

B-19 10-12.5 1535 sample

B-19 18-20 1540 MW18 @ 1650

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 2 of 2

Project Name	Start Date	End Date	Boring Number
Cowell Ltd. Partnership - Oak Creek	6/1/10	6/1/10	B-19

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT				2 Inches

Boring Location
State Plane Easting 2576272.8 Northing 327380.1
1/4 of 1/4 of Section T N,R
Local Grid Location (If applicable) ☐ N ☐ E Feet ☐ S Feet ☐ W

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			12			37*			* possible from outside of core
			14	more compact clay, less oil, only on outside of core					
	5								
			16	grey brown clay, no oil, plastic wet, odor, V. stiff					
			18						
			20	EOB 20 ft					

Logged By: Nathaniel R Fellin
Checked By:

F-204A (R 12-94)

RMT Field Soil Boring Log Information

RMT Project No: 06139.01.002 Page 1 of 1

Project Name	Start Date	End Date	Boring Number
Cornell Ltd. Partnership - Oak Creek	6/1/10	6/1/10	B-20

Boring Drilled By	Drilling Method
On Site Environmental (Tony)	Direct Push Technology

Drill Rig	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter
7730 DT	MW-20	13.21	—	2 Inches

Boring Location — State Plane — 1/4 of — 1/4 of Section — T — N,R — Easting 2575825.4 — Northing 327173.7

Local Grid Location (If applicable) ☐ N ☐ S Feet ☐ E ☐ W Feet

County	State	DNR County Code	Civil Town/City/ or Village
Milwaukee	WI		Oak Creek

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	ROD/ Comments
			0	3" Asphalt 6" Sand & gravel fill		6.0			
	4.5		2	Lean clay, plastic, red brown, no odor, moist stiff to v. stiff w/ gravel		5.8			
			4	grades to greish brown					
				As Above		5.6			
	4		6			6.0			
				As Above w/ some dk grey mottle					
			8						
				2" red brown f-med. sand, no odor,		6.0			
			10	moist/wet Lean clay red brown clay, plastic, no odor		6.0			
	4.5			As Above, wet		4.9			
			12						
				EOBE 15ft Well 5-15ft		5.3			

Logged By: Nathaniel R Ellis

Checked By:

F-204A (R 12-94)

4-5 1335

10-12 1340