

Mike Schmoller
Project Manager
Wisconsin Department of Natural Resources
South Central Region
3911 Fish Hatchery Rd
Fitchburg WI 53711

Subject:

Polychlorinated biphenyls (PCB) Building Subsurface Investigation Summary,
Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin. Facility ID No.
113125320, BRRTS No. 02-13-001569

Dear Mr. Schmoller:

On behalf of Madison-Kipp Corporation, a *Site Investigation Work Plan* (Work Plan) was submitted to the Wisconsin Department of Natural Resources (WDNR) on May 31, 2012, for approval to complete site investigation activities at the Madison-Kipp facility located at 201 Waubesa Street (Site). The WDNR provided a *Conditional Approval* letter dated June 25, 2012, for this Work Plan. On September 28, 2012, a *Site Investigation Work Plan Addendum, Building Subsurface Investigation* (Addendum) was submitted to the WDNR to present the proposed investigation activities to fill data gaps concerning potential source areas beneath the on-Site building floor. The Addendum was approved by WDNR in a letter dated October 17, 2012. A summary letter, *Building Subsurface Investigation Summary*, dated February 14, 2013, was submitted to the WDNR to document the Addendum activities.

As requested, this letter provides a summary of the investigation activities completed pursuant to the Addendum and results as documented in the *Building Subsurface Investigation Summary*, focusing on the PCB-related soil and groundwater. In addition, this letter includes additional groundwater sampling activities and results from March and April 2013 related to PCBs and as such supplements prior reporting.

Investigation Activities – January 2013

The following site investigation activities were completed in accordance with the approved Addendum and the results were documented in the *Building Subsurface Investigation Summary*:

- Prepared a site-specific health and safety plan (HSP).

Imagine the result

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ENVIRONMENT

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Our ref:
WI001283.0007

- Conducted utility clearing activities.
- Advanced 41 soil borings using a hand cart direct push rig.
- Collected and submitted a total of 68 soil samples for laboratory analysis of volatile organic compounds (VOCs), PCBs, polycyclic aromatic hydrocarbons (PAHs), Resource Conservation Recovery Act (RCRA) metals, and total cyanide. This summary will focus only on PCBs.
- Advanced and sampled two additional soil borings using a mini-sonic drill rig for installation of two water table monitoring wells and two piezometers.
- Collected and submitted groundwater samples from the four new wells (two water table monitoring wells and two piezometers) for laboratory analysis of VOCs, PCBs, PAHs, and dissolved RCRA metals. This summary will focus only on PCBs.
- Surveyed soil boring and monitoring well locations.
- Managed the investigative-derived waste.

Health and Safety

Prior to beginning the investigation, the Site HSP was updated to address the planned field activities. Utility marking arrangements were made through Digger's Hotline (the State of Wisconsin Public Utility clearance service), a private utility locator, and discussions with property owners.

Soil Boring Advancement

Advancement and sampling of the soil borings was initiated on October 15, 2012. The boring locations were selected following a site walk and based on employee knowledge of historic Site operations and were approved by WDNR in its October 17, 2012 letter approval. The soil boring locations are presented on Figure 1.

Forty one of the soil borings were advanced using a direct-push hand-cart Geoprobe unit. Soil samples were collected by driving a steel sampling rod (sampler) with acetate liners to the desired sampling depth using the hydraulic ram and hammer on the Geoprobe rig. Once the sampler reached the desired depth, the sampler was opened

by removing a stop pin in the sampler. The sampler was driven an additional 4 feet to push a soil sample into the sampler, preserving the sample in a 1.5-inch by 4-foot acetate liner inside the sampler. The acetate sleeves allowed for continuous collection of soil samples from each boring.

Companion sampling was completed at the soil boring locations by collecting two aliquots of soil from each sampling interval and placing each aliquot into a separate re-sealable plastic bag. One of the companion samples from each interval was used for field screening for the presence of total ionizable VOC vapors with a calibrated photoionization detector (PID). The screening samples were warmed and the headspace PID reading of the soil was taken by inserting the probe end of the PID into the plastic bag through the seal. The screened samples were appropriately discarded; the unscreened companion samples were used for preparing samples for analytical testing.

An ARCADIS scientist was on Site to oversee the drilling activities and visually screen and describe the condition and engineering properties of the soil. Soil descriptions and field screening PID results were recorded on Soil Boring Logs (WDNR Form 4400-122) and Borehole Abandonment Forms (WDNR Form 3300-005) were submitted as part of the Site Investigation Report.

A total of 41 soil borings were completed with 22 soil borings advanced to approximately 8 feet below ground surface (ft bgs) and 19 soil borings advanced to approximately 16 ft bgs. The soil boring locations are shown on Figure 1. Below is a summary of the sampling plan.

- Two soil samples were collected per boring advanced to 16 ft bgs. Soil samples were collected from the 2-foot interval with highest PID reading from 0 to 4 ft bgs and the 2-foot interval with the highest PID from greater than 4 ft bgs or the 2 foot interval at the bottom of the borehole if PID readings were below background.
- One soil sample was collected per boring advanced to 8 ft bgs. The sample was collected at the 2 foot interval with the highest PID reading.
- 60 soil samples were submitted for laboratory analysis of VOCs, PCBs, PAHs, RCRA metals, and total cyanide. As noted above, this summary focuses only on PCBs.

Well Installation and Sampling

Two water table monitoring wells and two piezometers were installed inside the building to evaluate groundwater quality. The locations of the wells were determined based on the soil analytical results from the 41 interior soil borings completed as part of the Addendum. Approval for the location and design of the monitoring wells was provided via email correspondence from WDNR on December 11, 2012.

Two boreholes were advanced to 50 ft bgs using a mini-sonic drill rig due to the physical constraints within the building. A water table monitoring well and piezometer were installed in each borehole. The location of the monitoring wells and piezometers are shown on Figure 1. Below is a summary of the installation and sampling activities.

- Soil samples were collected at 5- to 10-foot intervals from below concrete to the top of bedrock. The soils were field screened for the presence of volatile compounds and the characteristics were logged. Once bedrock was encountered, the borehole was blind drilled to the target end depth of 50 ft bgs.
- Soil sampling included the collection of two soil samples per boring for laboratory analysis. Soil samples were collected from the 2 foot interval with highest PID reading from 0 to 4 ft bgs and the 2 foot interval with the highest PID from greater than 4 ft bgs and above the water table or the 2 foot interval above the water table if PID readings were below background. The soil samples were submitted for laboratory analysis of VOCs, PAHs, PCBs, RCRA metals, and total cyanide.
- The monitoring wells and piezometers were installed on January 3 and 4, 2013. Each well consists of a single screen and was constructed and developed in accordance with NR141 Wis. Adm. Code. Ten foot, 0.010-inch, Schedule 80 polyvinyl chloride (PVC) screens and risers were used for the two monitoring wells. The monitoring wells are screened from approximately 25 to 35 ft bgs (MW-22S and MW-23S). Five foot, 0.010-inch Schedule 80 PVC screens and risers were used for the two piezometers. The piezometers are screened from approximately 45 to 50 ft bgs (MW-22D and MW-23D). Wells MW-22S and MW-22D are installed in the same borehole. Wells MW-23S and MW-23D are installed in the same borehole. The wells were completed at the surface with a flushmount well compartment set in concrete.
- The new wells were developed using air lifting techniques.

- Groundwater samples were collected on January 15, 2013 from the new wells using a combination of bailer and low-flow sampling techniques. Low-flow sampling techniques are used to collect representative water samples in the formation adjacent to the well screen while 1) reducing water turbulence which may unnecessarily volatilize contaminants; 2) reduce turbidity levels that may bias analytical results high; and 3) reduce the volume of water requiring management.
 - Low-flow sampling was attempted at shallow Monitoring Wells MW-22S and MW-23S; however, the wells went dry. Therefore, these wells were purged using a bailer, allowed to recharge, and then sampled with a new, dedicated bailer.
 - Piezometers MW-22D and MW-23D were sampled by low-flow sampling techniques using a submersible pump with dedicated polyethylene tubing. Low-flow sampling consists of purging the groundwater at a low-flow rate (less than 150 milliliters per minute) until a set of field parameters (dissolved oxygen, temperature, pH, conductivity, oxidation-reduction potential, and turbidity) stabilize to within 10 percent for three consecutive readings. Nitrile gloves were worn by the sampling personnel and discarded between each sampling location and following any activity that may have produce cross-contamination.
 - The groundwater samples were collected and submitted for laboratory analysis of VOCs, PAHs, PCBs, and dissolved RCRA metals. All containers and preservatives were obtained directly from the analytical laboratories. Immediately after collection, the sample containers were placed in a cooler with ice until shipment to the laboratory was arranged. Standard chain-of-custody procedures were followed throughout sample collection, storage, and shipment.

Surveying

A Wisconsin-licensed surveyor located the horizontal location of each boring to Wisconsin state plane coordinates and vertical elevation. Ground elevations were surveyed to an accuracy of +/-1 foot.

Investigative-Derived Waste

Soil cuttings and decontamination water from cleaning down-hole equipment generated during the investigation was containerized in appropriate steel 55-gallon

drums or roll-off containers. Arrangements were made with a licensed disposal facility for the transportation and disposal of the wastes.

Evaluation of Results

The following sections present a summary of the geology/hydrogeology, soil and groundwater regulatory criteria, and analytical results.

Surface Soil Geologic and Hydrogeologic Conditions

The geology under the building consisted of 6 to 8 inches of concrete overlaying 4 to 8 feet of dark yellowish brown (10YR 4/4/ 10YR 4/6) clay with little to some silt, trace fine sand or gravel. The clay was generally stiff with low to moderate plasticity. Underlying the clay is brownish yellow (10YR 6/6), very fine to fine sand with trace to little gravel. Sandstone bedrock was encountered at approximately 36 feet. Groundwater was encountered at approximately 29.5 feet.

Soil Regulatory Criteria

The WDNR Remediation and Redevelopment Program has prepared a spreadsheet with soil to groundwater residual contaminant level (RCL), non-industrial and industrial direct contact RCLs for chemicals, calculated using the United States Environmental Protection Agency (U.S. EPA) Regional Screening Table web calculator. The RCLs for PCBs are summarized in Table 1.

In addition to the WDNR RCLs, Title 40 Code of Federal Regulations §761.61 provides cleanup and disposal options for PCB remediation waste. Soil PCB analytical results were compared to the bulk remediation waste cleanup level for high occupancy cleanup level of less than or equal to 1 milligram per kilograms (mg/kg) and a total PCB concentration greater than or equal to 50 mg/kg to determine soil disposal options. These criteria are summarized in Table 1.

Soil Analytical Results

A total of 45 soil borings were advanced and sampled beneath the building floor (41 using the direct-push rig and 4 using the mini-sonic rig). A total of 64 soil samples were collected and submitted for laboratory analysis of VOCs, PAHs, PCBs, RCRA metals, and total cyanide. Four soil samples (from the well installation activities) were submitted for analysis for VOCs and PCBs. A summary of the soil analytical results for PCBs is presented in Table 1.

PCBs were detected in 48 of the 64 soil samples analyzed for PCBs. Seventeen of the samples collected were above the industrial direct contact RCL of 0.744 mg/kg, and 15 samples were detected above the U.S. EPA high occupancy cleanup level of 1 mg/kg. The highest concentrations of PCBs were detected from samples collected from Soil Borings B-148 (20,000 mg/kg – 5.8 to 7.8 ft bgs), B-149 (10,000 mg/kg – 0.7 to 2.7 ft bgs and 12,000 mg/kg – 5.7 to 7.7 ft bgs), B-150 (2,800 mg/kg – 1 to 3 ft bgs), B-158 (1,900 mg/kg – 4 to 6 ft bgs), and B-160 (200 mg/kg – 0.9 to 2.9 ft bgs).

Based on the concentrations of PCBs at Soil Borings B-148 through B-150, one monitoring well (MW-22S) and one piezometer (MW-22D) were installed as referenced above. Additionally, based on the concentrations of PCBs at Soil Borings B-158 and B-160, one monitoring well (MW-23S) and one piezometer (MW-23D) were installed as referenced above. As part of this installation, additional soil sampling was completed to vertically define the presence of PCBs. A total of four soil samples were collected from the soil borings at MW-22 and MW-23; two samples were collected from a depth of 27 to 29 ft bgs and two samples were collected from a depth of 34 to 36 ft bgs (saturated samples). The two soil samples collected from MW-22 contained PCBs; however, none of the results were above the industrial direct contact RCL. The soils samples collected from MW-23 did not contain PCBs.

Groundwater Analytical Results

Two monitoring wells and two piezometers were installed beneath the building to evaluate groundwater quality. Each of the wells and piezometers was sampled initially in January 2013. The groundwater samples were collected and submitted for laboratory analysis of VOCs, PAHs, PCBs, and dissolved RCRA metals. A summary of the groundwater results for PCBs is presented in Table 2.

PCBs were detected in Monitoring Well MW-22S (12 microgram per liter [$\mu\text{g/L}$]), MW-22D (2.4 $\mu\text{g/L}$) and MW-23S (0.24 $\mu\text{g/L}$) above the NR 140 Enforcement Standard (ES) of 0.03 $\mu\text{g/L}$ in the initial January 2013 sampling event.

Additional Groundwater Sampling

Based on the results of the January 2013 initial sampling event, additional groundwater sampling was completed in March 2013. In addition, groundwater sampling was completed in April 2013 as part of the recommended groundwater sampling plan presented in the *Site Investigation and Interim Actions Report, February 2012 through January 2013* (Site Investigation Report), dated March 15, 2013.

- Wells MW-22S/D and MW-23D were sampled using low-flow sampling techniques as described above.
- The groundwater samples were collected and submitted for laboratory analysis of both filtered and unfiltered PCBs. All containers and preservatives were obtained directly from the analytical laboratories. Immediately after collection, the sample containers were placed in a cooler with ice until shipment to the laboratory was arranged. Standard chain-of-custody procedures were followed throughout sample collection, storage, and shipment.
- As presented in Table 2, Monitoring Well MW-22S contained detections of PCBs in only the unfiltered samples in March and April 2013. Monitoring Well MW-22D contained detections of PCBs in the unfiltered groundwater sample collected in March 2013. However, there were no detections of PCBs in the filtered March sample and no detections in the filtered and unfiltered samples collected in April 2013. Monitoring Well MW-23D did not contain PCBs above laboratory detection limits in either the filtered or unfiltered samples from March and April 2013.

Detectable concentrations of PCBs at the site appear to be limited to the soils beneath the building and have not migrated to or dissolved in groundwater. A total of 58 well depths/locations were sampled as part of a site-wide sampling event in January 2013. Each of the wells was sampled for PCBs as part of the WDNR-approved scope of work. With the exception of MW-22S, MW-22D, and MW-23S (and only in unfiltered samples), none of the other wells contained detections of PCBs above laboratory reporting limits. This indicates that PCBs are not impacting groundwater.

Transport beneath the Building

Based on the results presented herein, additional evaluation was completed to determine the potential routes for transport of contaminants beneath the building. This evaluation included information obtained from interviews of former MKC employees. The highest concentrations of PCBs appeared in soil samples from B-148 through B-150, and MW-22. Historically there was a central piping trench that ran from south to north through the center of the facility. These soil borings are located adjacent to the former trench. This concrete-lined trench was reportedly constructed to house piping for natural gas, vacuum, hydraulic oil, and cooling water for the die-casting machines. The trench was approximately 4 feet wide, 2 to 4 feet deep, and was covered with steel plates. The trench reportedly did not connect to any sewer or drain systems in the facility.

Wastes that could have entered the piping trench included spilled hydraulic oils, PCE, water, and other liquid wastes. These hydraulic oils may have contained PCBs. Wastes from the piping trench were periodically removed and transferred to a waste container in the facility prior to removal by a waste hauler for off-site disposal. At some point prior to 1990, liquid wastes were collected and removed from the base of the trench and the trench was backfilled with clean sand and capped with concrete, abandoning the trench and former piping in place.

There were no floor drains in the area of the die-casting machines. Beneath some machines, there was a self-contained, concrete, shallow spill containment and collection feature. These features were not connected to the piping trench. Wastes from the spill containment and collection features were periodically removed and transferred to a waste container in the facility prior to removal by a waste hauler for off-site disposal.

A review of the utilities near the site identified that sanitary sewers along South Marquette Street and Waubesa Street are oriented north-south and do not provide a pathway from the Madison-Kipp facility.

Studies by the U.S. EPA¹ have demonstrated that PCBs are “insoluble in water,” strongly adsorb to soils, and generally will not leach significantly in aqueous soil systems. As a result, PCBs are not expected to dissolve or migrate in groundwater. Based on the results of this investigation, the presence of elevated PCB concentrations in soil beneath the building is defined, and there does not appear to be a mechanism for potential transport from beneath the building.

Summary of Findings

The following is a summary of the investigation results.

- Beneath the building 41 soil borings were advanced and two monitoring wells and two piezometers were installed and sampled.

¹ U.S. EPA 2012. Technical Fact Sheet on Polychlorinated Biphenyls (PCBs). National Primary Drinking Water Regulations. Available online at:
<http://www.epa.gov/safewater/pdfs/factsheets/soc/tech/pcbs.pdf>

- PCBs were detected beneath the building above the industrial direct contact RCL and the extent of soils exceeding the industrial direct contact RCL has been defined.
- PCBs were initially detected at one or more of the new monitoring wells installed beneath the building above the respective ES in unfiltered groundwater samples. Monitoring Wells 22 S/D and 23D were sampled in March and April 2013 and the filtered samples did not contain PCBs. In April 2013, only the sample collected from Monitoring Well 22S contained PCBs and only in the unfiltered sample. These results indicate that PCBs are not present in groundwater in the dissolved-phase and are instead adhered to sediment particles in the unfiltered samples which were likely dragged down during drilling and well installation.
- The soil exceeding the industrial direct contact RCL is located beneath 6 to 8 inches of concrete and therefore, there is no complete pathway for direct contact. The data collected also support that there is no complete pathway for migration to groundwater.

Closing

If you have any questions regarding this letter, please contact me at (414) 276-7742.

Sincerely,

ARCADIS U.S., Inc.



Chris Kubacki, PE
Senior Engineer



Jennine Trask, PE
Project Manager

Copies:

David Crass – Michael Best

Mark Meunier – Madison Kipp

Robert J. Nauta – RJN Environmental Services LLC (electronic)

Steve Tinker – Wisconsin Department of Justice (electronic)

Kenneth Zolnierczyk – United States Environmental Protection Agency (electronic)

Table 1. Summary of PCB Soil Analytical Results, PCB Building Subsurface Investigation Summary, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.

Well/Boring Sample Depth Sample Date	Non-Industrial	Industrial	EPA High	TSCA	B-134	B-135		B-136
	Direct Contact RCL	Direct Contact RCL	Occupancy Cleanup Level	Disposal Limit	0-2' 10/25/12	0-1.8' 10/15/12	8-9.4' 10/15/12	2-4' 10/25/12
PCBs								
Aroclor-1242	0.222	0.744	NE	NE	0.11	<0.0059	<0.006	56
Aroclor-1248	0.222	0.744	NE	NE	<0.0079	<0.0071	<0.0072	<1.6
Aroclor-1254	0.222	0.744	NE	NE	<0.0043	<0.0039	<0.0039	<0.89
Total Detected PCBs	NE	NE	1	50	0.11	ND	ND	56

Only detected constituents are noted. Constituent concentrations are reported as milligrams per kilogram (mg/kg).

- 100** Exceeds the WDNR's non-industrial direct contact residual contaminant level.
- 100** Exceeds the WDNR's industrial direct contact residual contaminant level.
- 100** Exceeds the Toxic Substance Control Act disposal limit.
- 100** Exceeds the EPA's self-implementing high-occupancy cleanup level with no site restrictions.
- 0-2' Soil sample collection depth in feet below ground surface.
- * Soil samples were collected from beneath the water table.
- < Constituent not detected above noted laboratory detection limit.
- B Compound was found in the blank and sample.
- J Constituent concentration is an approximate value.
- ND Total PCBs less than the laboratory detection limit.
- NE Criteria not established.
- PCBs Polychlorinated biphenyls.
- RCL Residual contaminant level.
- TSCA Toxic Substance Control Act.
- U.S. EPA United States Environmental Protection Agency

Table 1. Summary of PCB Soil Analytical Results, PCB Building Subsurface Investigation Summary, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.

Well/Boring	B-137		B-138	B-139		B-140	B-141	B-142		B-143
	2-4'	4-6'	1.8-3.1'	0.9-2.1'	8-9.7'	2-4'	5.8-7.8'	0.6-2.6'	13.3-15.3'	0.5-1.9'
Sample Depth	2-4'	4-6'	1.8-3.1'	0.9-2.1'	8-9.7'	2-4'	5.8-7.8'	0.6-2.6'	13.3-15.3'	0.5-1.9'
Sample Date	10/16/12	10/16/12	10/16/12	10/16/12	10/16/12	10/16/12	10/16/12	10/16/12	10/16/12	10/17/12
PCBs										
Aroclor-1242	0.011 J	<0.0063	<0.0067	<0.0068	0.019	<0.0064	0.017 J	0.063	<0.0058	33 B
Aroclor-1248	<0.0076	<0.0075	<0.0081	<0.0082	<0.0069	<0.0076	<0.0078	<0.0078	<0.007	<0.76
Aroclor-1254	<0.0042	<0.0041	<0.0044	0.16	0.013 J	<0.0042	<0.0043	0.041	<0.0038	<0.42
Total Detected PCBs	0.011	ND	ND	0.16	0.032	ND	0.017	0.104	ND	33

Only detected constituents are noted. Constituent concentrations are reported as milligrams per kilogram (mg/kg).

- 100** Exceeds the WDNR's non-industrial direct contact residual contaminant level.
- 100** Exceeds the WDNR's industrial direct contact residual contaminant level.
- 100** Exceeds the Toxic Substance Control Act disposal limit.
- 100** Exceeds the EPA's self-implementing high-occupancy cleanup level with no site restrictions.
- 0-2' Soil sample collection depth in feet below ground surface.
- ** Soil samples were collected from beneath the water table.
- < Constituent not detected above noted laboratory detection limit.
- B Compound was found in the blank and sample.
- J Constituent concentration is an approximate value.
- ND Total PCBs less than the laboratory detection limit.
- NE Criteria not established.
- PCBs Polychlorinated biphenyls.
- RCL Residual contaminant level.
- TSCA Toxic Substance Control Act.
- U.S. EPA United States Environmental Protection Agency

Table 1. Summary of PCB Soil Analytical Results, PCB Building Subsurface Investigation Summary, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.

Well/Boring	B-144		B-145		B-146		B-147		B-148
	2-4'	5.7-7.7'	0.6-2.6'	5.6-7.6'	2-4'	4-6'	1.9-3.9'	6-8'	5.8-7.8'
Sample Depth	2-4'	5.7-7.7'	0.6-2.6'	5.6-7.6'	2-4'	4-6'	1.9-3.9'	6-8'	5.8-7.8'
Sample Date	10/17/12	10/17/12	10/15/12	10/15/12	10/25/12	10/25/12	10/16/12	10/25/12	10/19/12
PCBs									
Aroclor-1242	12 B	0.012 J	0.44	0.021	<5.7	<0.063	0.58	<0.0062	20,000
Aroclor-1248	<0.31	<0.0076	<0.016	<0.0076	46	1.3	<0.015	<0.0075	<380
Aroclor-1254	<0.17	<0.0042	<0.0088	<0.0041	<3.8	<0.042	<0.0083	<0.0041	<210
Total Detected PCBs	12	0.012	0.44	0.021	46	1.3	0.58	ND	20,000

Only detected constituents are noted. Constituent concentrations are reported as milligrams per kilogram (mg/kg).

- 100** Exceeds the WDNR's non-industrial direct contact residual contaminant level.
- 100** Exceeds the WDNR's industrial direct contact residual contaminant level.
- 100** Exceeds the Toxic Substance Control Act disposal limit.
- 100** Exceeds the EPA's self-implementing high-occupancy cleanup level with no site restrictions.
- 0-2' Soil sample collection depth in feet below ground surface.
- ** Soil samples were collected from beneath the water table.
- < Constituent not detected above noted laboratory detection limit.
- B Compound was found in the blank and sample.
- J Constituent concentration is an approximate value.
- ND Total PCBs less than the laboratory detection limit.
- NE Criteria not established.
- PCBs Polychlorinated biphenyls.
- RCL Residual contaminant level.
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Table 1. Summary of PCB Soil Analytical Results, PCB Building Subsurface Investigation Summary, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.

Well/Boring	B-149		B-150	B-151		B-152	B-153		B-154
	0.7-2.7'	5.7-7.7'	1.0-3.0'	2-4'	9.1-11.1'	1.5-3.5'	0.7-2.7'	13.8-15.8'	5.2-7.2'
Sample Depth	0.7-2.7'	5.7-7.7'	1.0-3.0'	2-4'	9.1-11.1'	1.5-3.5'	0.7-2.7'	13.8-15.8'	5.2-7.2'
Sample Date	10/19/12	10/19/12	10/19/12	10/19/12	10/19/12	10/19/12	10/19/12	10/19/12	10/19/12
PCBs									
Aroclor-1242	10,000	12,000	2,800	25	1	0.57	0.015 J	<0.0057	<0.0054
Aroclor-1248	<190	<370	<79	<0.78	<0.032	<0.036	<0.0077	<0.0068	<0.0065
Aroclor-1254	<100	<200	<43	<0.43	<0.018	<0.019	<0.0042	<0.0037	<0.0036
Total Detected PCBs	10,000	12,000	2,800	25	1	0.57	0.015	ND	ND

Only detected constituents are noted. Constituent concentrations are reported as milligrams per kilogram (mg/kg).

- 100** Exceeds the WDNR's non-industrial direct contact residual contaminant level.
- 100** Exceeds the WDNR's industrial direct contact residual contaminant level.
- 100** Exceeds the Toxic Substance Control Act disposal limit.
- 100** Exceeds the EPA's self-implementing high-occupancy cleanup level with no site restrictions.
- 0-2' Soil sample collection depth in feet below ground surface.
- ** Soil samples were collected from beneath the water table.
- < Constituent not detected above noted laboratory detection limit.
- B Compound was found in the blank and sample.
- J Constituent concentration is an approximate value.
- ND Total PCBs less than the laboratory detection limit.
- NE Criteria not established.
- PCBs Polychlorinated biphenyls.
- RCL Residual contaminant level.
- TSCA Toxic Substance Control Act.
- U.S. EPA United States Environmental Protection Agency

Table 1. Summary of PCB Soil Analytical Results, PCB Building Subsurface Investigation Summary, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.

Well/Boring	B-155		B-156	B-157	B-158	B-159		B-160	B-161	
Sample Depth	1.9-3.9'	5.0-7.0'	1.8-3.8'	1.8-3.8'	4-6'	2-4'	4.8-6.8'	0.9-2.9'	2-4'	13.2-15.2'
Sample Date	10/19/12	10/19/12	10/20/12	10/19/12	10/17/12	10/17/12	10/18/12	10/17/12	10/18/12	10/18/12
PCBs										
Aroclor-1242	<0.0063	0.0096 J	0.35	0.013 J	1,900 B	4.2 B	0.046	200 B	0.19	0.0092 J
Aroclor-1248	<0.0076	<0.0065	<0.0075	<0.0074	<73	<0.15	<0.0068	<7.7	<0.0078	<0.0069
Aroclor-1254	<0.0041	<0.0036	<0.0041	<0.004	<40	<0.084	<0.0037	<4.2	<0.0043	<0.0038
Total Detected PCBs	ND	0.0096	0.35	0.013	1,900	4.2	0.046	200	0.19	0.0092

Only detected constituents are noted. Constituent concentrations are reported as milligrams per kilogram (mg/kg).

- 100** Exceeds the WDNR's non-industrial direct contact residual contaminant level.
- 100** Exceeds the WDNR's industrial direct contact residual contaminant level.
- 100** Exceeds the Toxic Substance Control Act disposal limit.
- 100** Exceeds the EPA's self-implementing high-occupancy cleanup level with no site restrictions.
- 0-2' Soil sample collection depth in feet below ground surface.
- ** Soil samples were collected from beneath the water table.
- < Constituent not detected above noted laboratory detection limit.
- B Compound was found in the blank and sample.
- J Constituent concentration is an approximate value.
- ND Total PCBs less than the laboratory detection limit.
- NE Criteria not established.
- PCBs Polychlorinated biphenyls.
- RCL Residual contaminant level.
- TSCA Toxic Substance Control Act.
- U.S. EPA United States Environmental Protection Agency

Table 1. Summary of PCB Soil Analytical Results, PCB Building Subsurface Investigation Summary, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.

Well/Boring	B-162	B-163	B-164		B-165	B-166		B-167	B-168
Sample Depth	1.3-3.3'	5-7'	2-4'	4-6'	0.6-2.6'	1.3-3.3'	9.1-11.1'	0.9-2.8	4-6'
Sample Date	10/18/12	10/18/12	10/18/12	10/18/12	10/18/12	10/18/12	10/18/12	10/18/12	10/20/12
PCBs									
Aroclor-1242	0.013 J	<0.0057	<0.0066	0.062	0.025	2.3 B	0.02	<0.0063	0.99
Aroclor-1248	<0.0077	<0.0068	<0.0079	<0.0078	<0.0079	<0.071	<0.0068	<0.0076	<0.035
Aroclor-1254	<0.0042	<0.0037	<0.0043	<0.0043	<0.0043	<0.039	<0.0038	0.036	<0.019
Total Detected PCBs	0.013	ND	ND	0.062	0.025	2.3	0.02	0.036	0.99

Only detected constituents are noted. Constituent concentrations are reported as milligrams per kilogram (mg/kg).

- 100** Exceeds the WDNR's non-industrial direct contact residual contaminant level.
- 100** Exceeds the WDNR's industrial direct contact residual contaminant level.
- 100** Exceeds the Toxic Substance Control Act disposal limit.
- 100** Exceeds the EPA's self-implementing high-occupancy cleanup level with no site restrictions.
- 0-2' Soil sample collection depth in feet below ground surface.
- ** Soil samples were collected from beneath the water table.
- < Constituent not detected above noted laboratory detection limit.
- B Compound was found in the blank and sample.
- J Constituent concentration is an approximate value.
- ND Total PCBs less than the laboratory detection limit.
- NE Criteria not established.
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Table 1. Summary of PCB Soil Analytical Results, PCB Building Subsurface Investigation Summary, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.

Well/Boring	B-169		B-170	B-171		B-172	B-173		B-174
	0.9-2.9'	6-8'	4-6'	0.7-2.7'	8.8-10.8'	5-7'	1.6-3.6'	8-10'	0-2'
Sample Depth	10/20/12	10/20/12	10/21/12	10/21/12	10/21/12	10/21/12	10/21/12	10/21/12	10/25/12
PCBs									
Aroclor-1242	0.31	1.3	0.067	0.076	<0.0058	<0.0065	0.033	0.023	<0.29
Aroclor-1248	<0.0065	<0.036	<0.007	<0.0079	<0.007	<0.0078	<0.0079	<0.0071	<0.35
Aroclor-1254	<0.0036	<0.02	<0.0039	<0.0043	<0.0038	0.018 J	<0.0043	<0.0039	<0.19
Total Detected PCBs	0.31	1.3	0.067	0.076	ND	0.018	0.033	0.023	ND

Only detected constituents are noted. Constituent concentrations are reported as milligrams per kilogram (mg/kg).

- 100** Exceeds the WDNR's non-industrial direct contact residual contaminant level.
- 100** Exceeds the WDNR's industrial direct contact residual contaminant level.
- 100** Exceeds the Toxic Substance Control Act disposal limit.
- 100** Exceeds the EPA's self-implementing high-occupancy cleanup level with no site restrictions.
- 0-2' Soil sample collection depth in feet below ground surface.
- ** Soil samples were collected from beneath the water table.
- < Constituent not detected above noted laboratory detection limit.
- B Compound was found in the blank and sample.
- J Constituent concentration is an approximate value.
- ND Total PCBs less than the laboratory detection limit.
- NE Criteria not established.
- PCBs Polychlorinated biphenyls.
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Table 1. Summary of PCB Soil Analytical Results, PCB Building Subsurface Investigation Summary, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.

Well/Boring	MW-22S		MW-23S	
	27-29'	34-36**	27-29'	34-36**
Sample Depth				
Sample Date	01/04/13	01/04/13	01/03/13	01/03/13
PCBs				
Aroclor-1242	0.028	0.72	<0.0055	<0.0058
Aroclor-1248	<0.0068	<0.014	<0.0066	<0.007
Aroclor-1254	<0.0037	<0.0078	<0.0036	<0.0038
Total Detected PCBs	0.028	0.72	ND	ND

Only detected constituents are noted. Constituent concentrations are reported as milligrams per kilogram (mg/kg).

- 100** Exceeds the WDNR's non-industrial direct contact residual contaminant level.
- 100** Exceeds the WDNR's industrial direct contact residual contaminant level.
- 100** Exceeds the Toxic Substance Control Act disposal limit.
- 100** Exceeds the EPA's self-implementing high-occupancy cleanup level with no site restrictions.
- 0-2' Soil sample collection depth in feet below ground surface.
- ** Soil samples were collected from beneath the water table.
- < Constituent not detected above noted laboratory detection limit.
- B Compound was found in the blank and sample.
- J Constituent concentration is an approximate value.
- ND Total PCBs less than the laboratory detection limit.
- NE Criteria not established.
- PCBs Polychlorinated biphenyls.
- RCL Residual contaminant level.
- TSCA Toxic Substance Control Act.
- U.S. EPA United States Environmental Protection Agency

Table 2. Summary of PCB Groundwater Analytical Results, PCB Building Subsurface Investigation Summary, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.

Well ID				MW-22S			MW-22D			MW-23S
Sample Interval (feet bls)	Preventive	Enforcement	25-35	25-35	25-35	45-50	45-50	45-50	25-35	
Sample Date	Action Limit	Standard	01/15/13	03/07/13	04/19/13	01/15/13	03/08/13	04/19/13	01/15/13	
PCBs (µg/L)										
Aroclor-1016	0.003	0.03	12	<0.033	4	2.4	<0.033	<0.064	<0.19	
Aroclor-1232	0.003	0.03	<0.49	13	<0.19	<0.092	2.6	<0.19	<0.11	
Aroclor-1242	0.003	0.03	<0.69	<0.099	<0.19	<0.13	<0.10	<0.19	<0.15	
Total Detected PCBs	NE	NE	12	13	4	2.4	2.6	ND	ND	
Dissolved PCBs (µg/L)										
Aroclor-1016	0.003	0.03	NA	<0.037	<0.068	NA	<0.033	<0.064	NA	
Aroclor-1232	0.003	0.03	NA	<0.11	<0.2	NA	<0.10	<0.19	NA	
Aroclor-1242	0.003	0.03	NA	<0.11	<0.2	NA	<0.10	<0.19	NA	
Total Detected PCBs	NE	NE	NA	ND	ND	NA	ND	ND	NA	

Only PCBs detected in one or more water samples are listed on the table. Refer to laboratory analytical reports for a complete list of constituents analyzed.

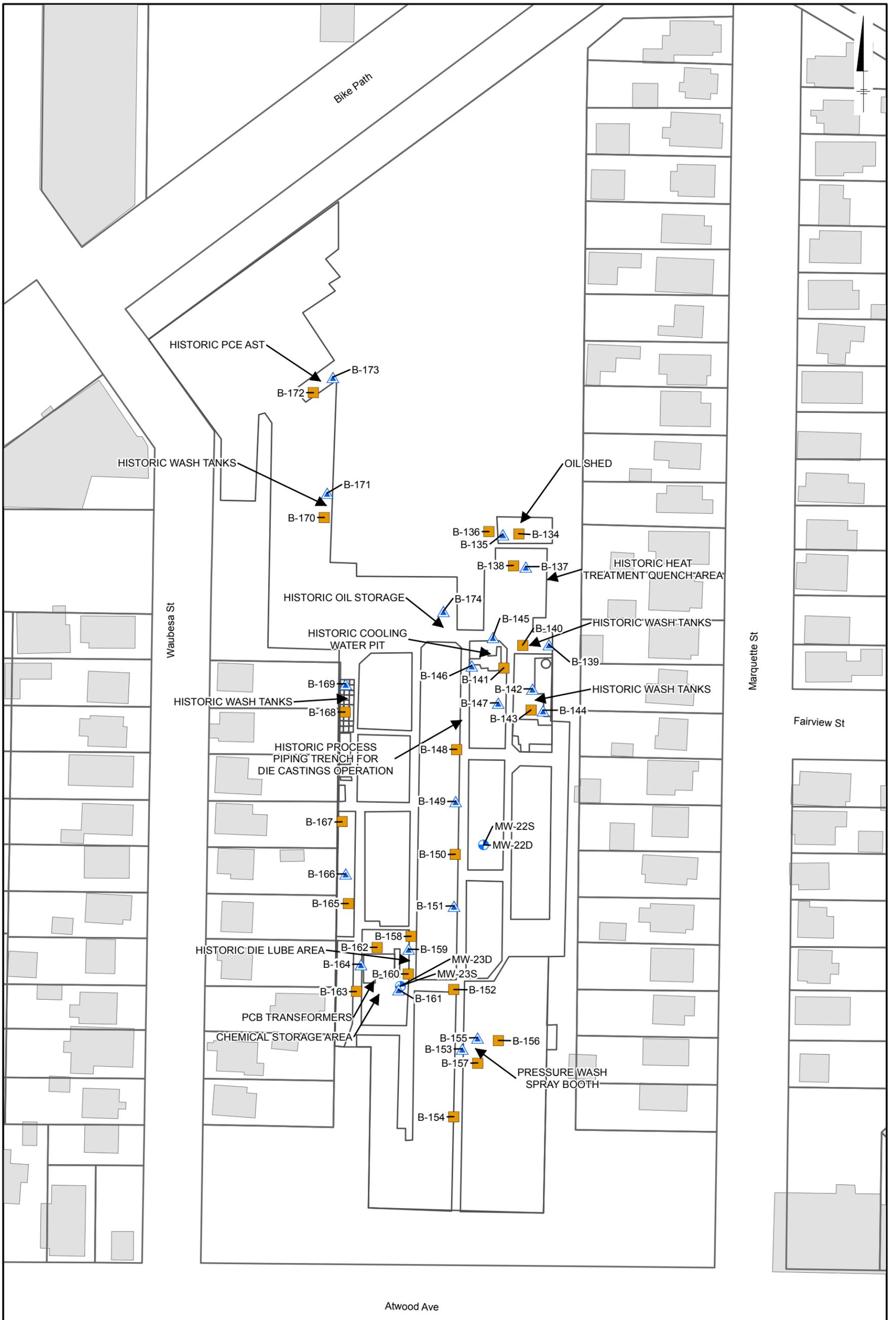
- 100** Concentration exceeds the NR 140 Wis. adm. code Preventive Action Limit.
- 100** Concentration exceeds the NR 140 Wis. adm. code Enforcement Standard.
- < Constituent not detected above noted laboratory detection limit.
- bls Below land surface.
- J Result is between the method detection limit and the limit of quantitation.
- µg/L Micrograms per liter.
- NA Not analyzed.
- NE Not established.
- ND Total detected PCBs were reported less than the laboratory detection limit.
- PCBs Polychlorinated Biphenyls.

Table 2. Summary of PCB Groundwater Analytical Results, PCB Building Subsurface Investigation Summary, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.

Well ID	MW-23D		
	45-50	45-50	45-50
Sample Interval (feet bls)	45-50	45-50	45-50
Sample Date	01/14/13	03/08/13	04/20/13
PCBs (µg/L)			
Aroclor-1016	<0.16	<0.034	<0.065
Aroclor-1232	<0.089	<0.10	<0.19
Aroclor-1242	0.24 J	<0.10	<0.19
Total Detected PCBs	0.24	ND	ND
Dissolved PCBs (µg/L)			
Aroclor-1016	NA	<0.034	<0.066
Aroclor-1232	NA	<0.10	<0.20
Aroclor-1242	NA	<0.10	<0.20
Total Detected PCBs	NA	ND	ND

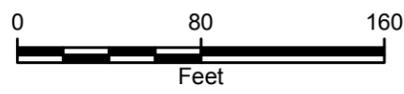
Only PCBs detected in one or more water samples are listed on the table. Refer to laboratory analytical reports for a complete list of constituents analyzed.

- 100** Concentration exceeds the NR 140 Wis. adm. code Preventive Action Limit.
- 100** Concentration exceeds the NR 140 Wis. adm. code Enforcement Standard.
- < Constituent not detected above noted laboratory detection limit.
- bls Below land surface.
- J Result is between the method detection limit and the limit of quantitation.
- µg/L Micrograms per liter.
- NA Not analyzed.
- NE Not established.
- ND Total detected PCBs were reported less than the laboratory detection limit.
- PCBs Polychlorinated Biphenyls.



CITY: MKE DIV/GRUOP: IM_DB_GM_LD: CK MADISON-KIPP
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- LEGEND**
- SHALLOW SOIL BORING
 - DEEP SOIL BORING
 - MONITORING WELLS
 - PARCELS
 - BUILDING FOOTPRINTS
 - BUILDING FEATURE



MADISON-KIPP CORPORATION
201 WAUBESA STREET
MADISON, WISCONSIN

**SOIL BORING AND WELL LOCATIONS
BUILDING INVESTIGATION**

FIGURE
1