

TRANSMITTAL LETTER

TRC
708 Heartland Trail Suite 3000
Madison, WI 53717
Telephone 608-826-3600
Fax 608-826-3941

To: Michael Schmoller Project Manager Wisconsin Department of Natural Resources South Central Region 3911 Fish Hatchery Road Fitchburg, WI 53711	Date: November 29, 2017 Project No: 268304 Project Name: Madison-Kipp Corporation Rain Garden – Interim Investigation Report and Proposed Excavation Work Plan BRRTS No. 02-13-562649
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We are enclosing the following:

- Shop Drawings Prints Plans Specifications
 Copy of Letter Change Order Permits Report

COPIES	DATE	DESCRIPTION
1	11/29/2017	Rain Garden – Interim Investigation Report and Proposed Excavation Work Plan

- For your approval For your review and comment Returned for corrections
 For your use Approved as submitted Resubmit ___ copies for approval
 As requested Approved as noted Return ___ corrected prints

Enclosed is a hard copy of the Rain Garden – Interim Investigation Report and Proposed Excavation Work Plan for the Madison-Kipp Corporation.

Please contact me at 608-826-3665 if you have any questions.

Sincerely,



Andrew M. Stehn, P.E.
Project Engineer

cc: Alina Satkoski – Madison-Kipp Corporation (electronic)



Rain Garden – Interim Investigation Report and Proposed Excavation Work Plan

November 2017

*Prepared For
Madison-Kipp Corporation
Madison, Wisconsin*

A handwritten signature in black ink that reads 'Andrew M. Stehn'.

Andrew M. Stehn, P.E.
Project Engineer

A handwritten signature in black ink that reads 'Katherine Vater'.

Katherine Vater, P.E.
Project Manager

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Section 1

Introduction

TRC Environmental Corp. (TRC), on behalf of Madison-Kipp Corp. (MKC), is reporting on the status of continued monitoring of sediments within MKC's storm sewer infrastructure located at 201 Waubesa Street, Madison, Wisconsin (Site). Specifically, this report discusses discharges into the City of Madison's (the City's) rain garden immediately north of the Site. The Wisconsin Department of Natural Resources (WDNR) Bureau for Remediation and Redevelopment Tracking System (BRRTS) Site case number is #02-13-562649.

1.1 Site Background

In October 2016 the City collected three soil samples from within the rain garden which indicated that polychlorinated biphenyls (PCB)-impacted material above the WDNR industrial direct contact RCL was present. Based on these results, between December 2016 and June 2017, TRC on behalf of MKC completed further investigative and remedial action work to evaluate and eliminate sources potentially causing PCB-impacts to the rain garden. A detailed summary of the site investigative work and remedial actions completed through June 30, 2017 are included in the Polychlorinated Biphenyls (PCBs) in Rain Garden – Investigative Actions Summary Letter submitted in March 2017 (TRC 2017a) and in the Remedial Action Documentation Report – Storm Sewer Investigation and Rain Garden Restoration Report submitted in July 2017 (TRC 2017b). The investigation completed between December 2016 and June 2017, identified four potential sources causing PCB-impacts to the rain garden and a conceptual model was described in the reports.

The potential sources included: (1) historical buildup of sediment in the storm sewer system from former site activities; (2) impacted material migrating from a breach/breaches in the storm sewer network; (3) material present on the roof of the facility; and/or (4) material present and migrating through runoff from a surface/surfaces of the facility.

Based on the investigation results through June, the most likely sources were identified as (1) historical buildup of sediment in the storm sewer system from former site activities and (2) impacted material migrating from a breach/breaches in the storm sewer network. In particular, the corrugated steel pipe between MH-3W and MH-1A may have corroded and caused material to enter the storm sewer. During May 2017, the historical buildup of material was removed from the majority of the storm sewer network through flushing, although small pockets of material may remain based on the cleaning technique. In addition, the known points of separation in the network were repaired as of June 2017 or proposed to be repaired. A

detailed summary of the investigation and remedial actions completed through June 30, 2017 were included in the Remedial Action Documentation Report – Storm Sewer Investigation and Rain Garden Restoration Report submitted July 2017 (TRC 2017b).

Following the submittal of the July 2017 report, MKC, TRC, and the WDNR further discussed the project and MKC submitted a letter on July 21, 2017 to request to reopen the previously closed BRRTS Site Case# 02-13-562649. This was completed, and MKC and TRC have completed further investigation and repair work as described herein.

1.2 Purpose and Scope

Further investigation and repair work was completed between June and November 2017. This report documents the work completed through November 10, 2017 and recommends further monitoring and remediation.

Section 2

Storm Sewer and Site Repairs

Between July and October 2017, additional repair work to the onsite storm sewer infrastructure was completed to eliminate further potential sources of sediment. The following section provides a summary of the additional repairs completed through October 2017.

2.1 Storm Sewer Repair Work – Manhole MH-3W to MH-1A

In July 2017, MKC contracted with McCann's Underground to complete the relining of the corrugated metal pipe between manholes MH-3W and MH-1A. The relining process used a trenchless repair known as cured in place piping (CIPP). The process required no disturbance of the subgrade. A sock-like felt liner was installed into the section of corrugated pipe, and the liner was tightly bonded to the interior walls of the existing pipe through use of air, water and heat. This method of relining increases the structural integrity of the pipe and is effective for sealing offset joints, sags in the pipe, and pipe deterioration. Before and following the installation McCann's video recorded the pipe to ensure the relining successfully repaired the pipe. The repair process eliminated the potential for further deterioration of the steel pipe and sealed any joints or separations.

Within manhole MH-3W a terminus of a metal pipe was observed. This section of pipe was previously abandoned upstream, however, in July, MKC installed a concrete plug at the manhole to ensure the abandoned pipe was not a potential source.

The joints between the concrete walls and the base of manhole MH-1A were sealed. No indication of breaches were identified, but this task was completed to further strengthen the integrity of the manhole.

McCann's completed further video work between MH-1A and the outfall area in August 2017. The video indicated that some gaskets between the pipes joints were displaced and some minor cracking/pitting was observed but no significant breaches were noted. Some residual solids/sediment accumulation was observed within this section of concrete pipe.

2.2 Storm Sewer Repair Work – Manhole MH-5A

Based on the previous installation of MH-5B to properly drain storm water along the southwest portion of the facility, MH-5A was no longer required for an effective storm sewer network. Previous inspections indicated that a black corrugated plastic pipe was entering MH-5A. In August 2017, McCann's video recorded the black plastic pipe and concluded that the pipe was

damaged approximately 20 feet in and therefore was not a part of the active storm sewer network. Based on these conclusions, MH-5A was abandoned by filling in with concrete.

2.3 Storm Sewer Repair Work – Catch Basin MH-2W

The area surrounding the previously abandoned MH-2W was resurfaced. This was completed to seal any cracked concrete and/or joints where underlying soils could have previously been washed from and into the storm sewer system.

2.4 Permanent Fence Construction

A permanent steel fence structure was installed to the north northeast of the rain garden along a portion of the City's bike path. A four foot high fence was attached to the eight foot fence that borders the parking lot for MKC. The fence was installed approximately 70 feet along the bike path and crosses over the rain garden encompassing the approximate area of the May 2017 excavation. A sign was installed on the fence indicating a possible chemical hazard.

Section 3

Sediment Monitoring

TRC, on behalf of MKC, completed sediment monitoring from September 12 to November 10, 2017 within manhole structure MH-1A and at the outfall following the major repairs to the storm sewer system. Rainfall events were monitored and samples were collected when sediment of sufficient quantity was present. The following section describes the monitoring results between September and November 2017. Table 1 includes an analytical summary table of the samples from December 2016 to October 2017 and laboratory results for samples collected in September and October 2017 are included in Attachment 1.

3.1 Sediment Monitoring – Event 1

Following the completion of the storm sewer repairs, McCann’s flushed the pipe section between MH-1A and the outfall area to further remove any sediment potentially in the pipe as multiple rain events had occurred between the May 2017 cleaning and the final system repairs. The storm sewer pipe section entering the garden is negatively sloped slightly away from the rain garden. This causes minor ponding at the outfall area during large rain events. On September 12, 2017, TRC inspected the condition of the outfall area after the flushing and repair work was complete. During the inspection, sediment was observed upgradient in the outfall pipe which likely was a result of the pipe not being fully flushed due to the negative slope. TRC attempted to remove the sediment but material remained where it was inaccessible by hand, approximately 15 feet into the pipe.

On September 12, 2017, a temporary sediment trap was installed at the outfall area to monitor sediments discharging from the sewer. The trap consisted of two layers: plastic and coconut erosion control blanket. The plastic barrier separated the existing rain garden soil from the erosion control blanket. An erosion control sox was installed around the blanket creating a temporary sediment trap at the outfall area. Following the installation, this area and manhole MH-1A were monitored.

Between September 12 and 22, 2017 (monitoring Event 1), four rain events occurred. Three of the events resulted in an accumulation of 0.02 inches or less and one resulted in 0.39 inches (according to the National Oceanic and Atmospheric Administration for Madison, WI). TRC inspected the outfall area and manhole MH-1A following these rain events. Sediment materials were observed at the edge of the outfall pipe and approximately 10 feet into the pipe. Sufficient material for sampling was obtained from the edge of the outfall pipe. Since material was observed further into the storm sewer pipe on September 12, 2017, TRC and MKC were

concerned that the sample at the edge of the outfall pipe would be residual material from the last flushing event and not representative of the new sediment passing through the system following the relining process. An attempt to sample further in the pipe was desired as it may be more representative of new material passing through the system and not residual. However, sufficient quantity was not present for sampling. The material within manhole MH-1A was also sampled to determine if material from upstream of MH-1A contained PCB-impacted material.

Results from the September 22, 2017 monitoring event indicated that the material discharging into MH-1A contained low-level concentrations of total PCBs (Sample ID: MH-1A 9/22/2017 - 0.11 mg/kg) below the WDNR industrial direct contact standard of 0.967 mg/kg. The sample collected from the edge of the outfall pipe (Sample ID – Outfall 9/22/2017) contained total PCBs at a concentration of 4.0 mg/kg. However, the detection was comparable to the June 30, 2017 sample (5.0 mg/kg), therefore it is reasonable to conclude that the sample was not representative of new sediments discharging from the storm sewer (i.e., passing through manhole MH-1A) but was residual from before the repair work was completed. This conclusion is further supported by the subsequent lack of sediment accumulation at the outfall described in the following sections.

3.2 Sediment Monitoring – Event 2

Based on the results of monitoring Event 1, further monitoring was completed. On September 28, 2017, the previously installed temporary sediment trap at the outfall area was replaced and a sediment collection pipe was installed approximately six feet into the storm sewer outfall pipe. The purpose of the pipe was to capture newly deposited sediments flowing through the pipe and to reduce the potential for soil from the rain garden to wash into the outfall pipe. In addition, a silt fence was installed around the rain garden where overland flow enters the outfall area.

Between September 28, and October 4, 2017 (monitoring Event 2) two rain events occurred. The events resulted in an accumulation of approximately 0.32 and 0.35 inches of rainfall, respectively. TRC inspected the sediment collection pipe, outfall area, and manhole MH-1A on October 4. No sediment was observed in the collection pipe and only organics (e.g., leaves) were present in the immediate outfall area. MH-1A contained a minor amount of sediment but sufficient quantity for sampling was not present.

3.3 Sediment Monitoring – Event 3

Between October 4 and October 6, 2017 (monitoring Event 3), two additional rain events each resulting in approximately 0.32 and 0.39 inches of accumulation, respectively, occurred. TRC inspected the sediment collection pipe, outfall area, and manhole MH-1A. No sediment was

observed in the collection pipe and only organics (e.g., leaves) were present in the immediate outfall area. MH-1A contained minimal sediment and one sample was collected.

During this event a wood form board along the side wall of the manhole was removed revealing the manhole's concrete side wall and some entrapped residual sediment. However, the sampled sediment did not appear to be from the residual entrapped sediment based on the type of material in each. Based on this observation and the intent of continued monitoring to be of newly deposited sediment, the historic sediment from behind the board was removed from the manhole and containerized.

Results from the sample collected on October 6, 2017 from MH-1A (Sample ID MH-1A (10/6/2017) - 0.23 mg/kg) indicate that low-level PCB-impacted material was present in the manhole below the WDNR industrial direct contact RCL for total PCBs (0.967 mg/kg)

3.4 Sediment Monitoring – Event 4

Between October 6 and 9, 2017 (monitoring Event 4), one rain event occurred of approximately 0.32 inches of rainfall accumulation. TRC inspected the sediment collection pipe, outfall area, and manhole MH-1A. No sediment was observed in the collection pipe or within MH-1A and only organics (e.g., leaves) were present in the immediate outfall area.

3.5 Sediment Monitoring – Event 5

Between October 9 and 13, 2017 (monitoring Event 5), four additional rain events occurred. Two of the events resulted in an accumulation of less than 0.1 inches of rainfall, the other two resulted in 0.21 inches and 0.42 inches, respectively. TRC inspected the sediment collection pipe, outfall area, and manhole MH-1A. No sediment was observed in the collection pipe or within MH-1A and only organics (e.g., leaves) were present in the immediate outfall area.

3.6 Sediment Monitoring – Event 6

Between October 13 and 17, 2017 (monitoring Event 6) two additional rain events occurred. One resulted in an accumulation of 0.32 inches of rainfall and the other was 0.01 inches. TRC inspected the sediment collection pipe, outfall area, and manhole MH-1A. No sediment was observed in the collection pipe and only organics (e.g., leaves) were present in the immediate outfall area. Sufficient sample quantity was present in MH-1A and a sample was collected.

Results from the sample collected on October 17, 2017 from MH-1A (Sample ID MH-1A (10/17/2017) - 0.71 mg/kg) indicate that low-level PCB-impacted material was present in the manhole below the WDNR industrial direct contact RCL for total PCBs (0.967 mg/kg).

Following the sampling of MH-1A, on October 23, 2017, TRC removed and containerized the water and remaining sediment from MH-1A. Although no breaches were present in the manhole, concrete was installed along the sidewall and base of the manhole to reduce the potential for future issues since no water was present.

3.7 Sediment Monitoring – Event 7

Between October 23 and November 10, 2017 (monitoring Event 7) eleven rain events occurred. Of the eleven events, nine were reported as trace amounts or below 0.1 inches of accumulation. The other two events recorded 0.26 and 0.34 inches of rainfall, respectively. TRC inspected the sediment collection pipe, outfall area, and manhole MH-1A. No sediment was observed in the collection pipe and only organics (e.g., leaves) were present in the immediate outfall area. MH-1A contained a minor amount of sediment and some organic material, but sufficient sample quantity was not present. No samples were collected from the monitoring points.

Section 4

Conclusions and Recommendations

4.1 Conclusion

The continued monitoring between September and November 2017, following the storm sewer infrastructure repairs, has shown that minor accumulation of sediment (expected to be newly deposited material based on previous cleaning and system repair efforts) has washed through the storm sewer system. As part of the continued investigation, rainfall intensity, accumulation, and frequency have been monitored as well. Monitoring events were scheduled based on observed rain events. Recent investigative results indicate the amount of sediment accumulation appears to be less than previously observed during the first half of the 2017 calendar year which could be an indication of one or a combination of the following:

- sediment accumulation has been reduced due to repairs being made to the below grade infrastructure;
- sediment accumulation has been reduced due to historical accumulation being removed during sewer cleaning processes; and
- sediment accumulation has been reduced as a factor of storm intensity, as larger volumes of water in short periods of time (high energy) may generate more accumulation of sediment.

The outfall area along with manhole MH-1A have been monitored following a variety of minor to moderate storms equating in rainfall accumulation between trace amounts and 0.39 inches per event. In comparison, during 2017 spring events, more than 1 inch of rainfall was recorded during one single event.

Results from the monitoring completed at MH-1A between September and November 2017 indicate that minor amounts of newly deposited sediment have passed through the storm sewer system and concentrations of PCBs remain below the WDNR industrial direct contact RCL for total PCBs. TRC evacuated the accumulated sediment in the manhole following monitoring events to determine the concentrations of PCBs within the sediment passing through on an event basis and not an overall accumulation from multiple events.

Results from the monitoring completed at the outfall area indicate that no new accumulation of sediment has washed through the system from MH-1A to the outfall. Based on subsequent monitoring events and results from MH-1A, results from the September 22, 2017 monitoring event near the outfall area appear to be related to historical residual sediment from before repair work was completed and are not representative of concentrations observed in sediment passing

through MH-1A since July 2017 repairs. In fact, following the September 22, 2017 monitoring event, no sediments have been observed at the outfall area. This is indicative that there are no significant breaches present between MH-1A and the outfall, and that material observed in MH-1A should be representative of the highest potential concentration at the outfall area.

4.2 Recommendations

Based on the results from recent monitoring and previous investigative work, TRC, on behalf of MKC, recommends that monitoring be continued at manhole MH-1A and at the outfall area through spring of 2018. Results to date based on remedial action (i.e., storm sewer cleaning, excavation, and infrastructure repairs) completed indicate that currently sediments being deposited into and through the storm sewer contain low-level concentrations of PCBs below the WDNR industrial direct contact RCL. This conclusion is based on the occurrence of minor to moderate intensity rain events, and no sediment accumulation at the outfall. To further investigate the potential for a release of sediment from the storm sewer system additional monitoring of the sewer should be completed after large rain events similar to spring 2017 (i.e., greater than 1 inch). In addition, any sediments that accumulate in MH-1A will not be removed to allow for the system to operate as intended and allow for the potential for sediment to move from MH-1A to the outfall sampling point.

TRC recommends that the outfall and manhole MH-1A continue to be monitored during upcoming snow melt and rainfall events during the 2017-2018 winter and spring seasons. The focus will be to monitor sediment accumulation and if possible collect samples after heavy snow melts and high intensity rainfalls. The results of these monitoring events will be provided to the WDNR.

Based on the construction of a permanent fence along the bike path encompassing the area of concern and the reopening of the BRRS case, MKC requests that the excavation work of the PCB-impacted soil currently in the garden continue to be postponed until further monitoring events through spring of 2018 are completed. Assuming that only concentrations below the WDNR industrial direct contact RCL for PCBs are detected in the upcoming sampling, the rain garden will be excavated and restored to remove PCB-impacts currently present near the outfall area. A work plan outlining the excavation and restoration is included in Attachment 2. In the event that concentrations of PCBs in exceedance of the WDNR industrial direct contact RCL are detected passing through the storm sewer, MKC and TRC will discuss the results with WDNR prior to proceeding with the excavation work plan.

A report documenting the additional samples collected from the storm sewer system through spring of 2018 and the excavation and restoration of the rain garden will be provided following the completion of all work. The documentation report will include the results of the storm sewer monitoring events, confirmation samples following excavation work, and a summary of the soil excavation activity.

Section 5 References

TRC. 2017a. Polychlorinated Biphenyls (PCBs) in Rain Garden – Investigative Actions Summary. March 27, 2017.

TRC. 2017b. Remedial Action Documentation Report – Storm Sewer Investigation and Rain Garden Restoration Report. July 11, 2017.

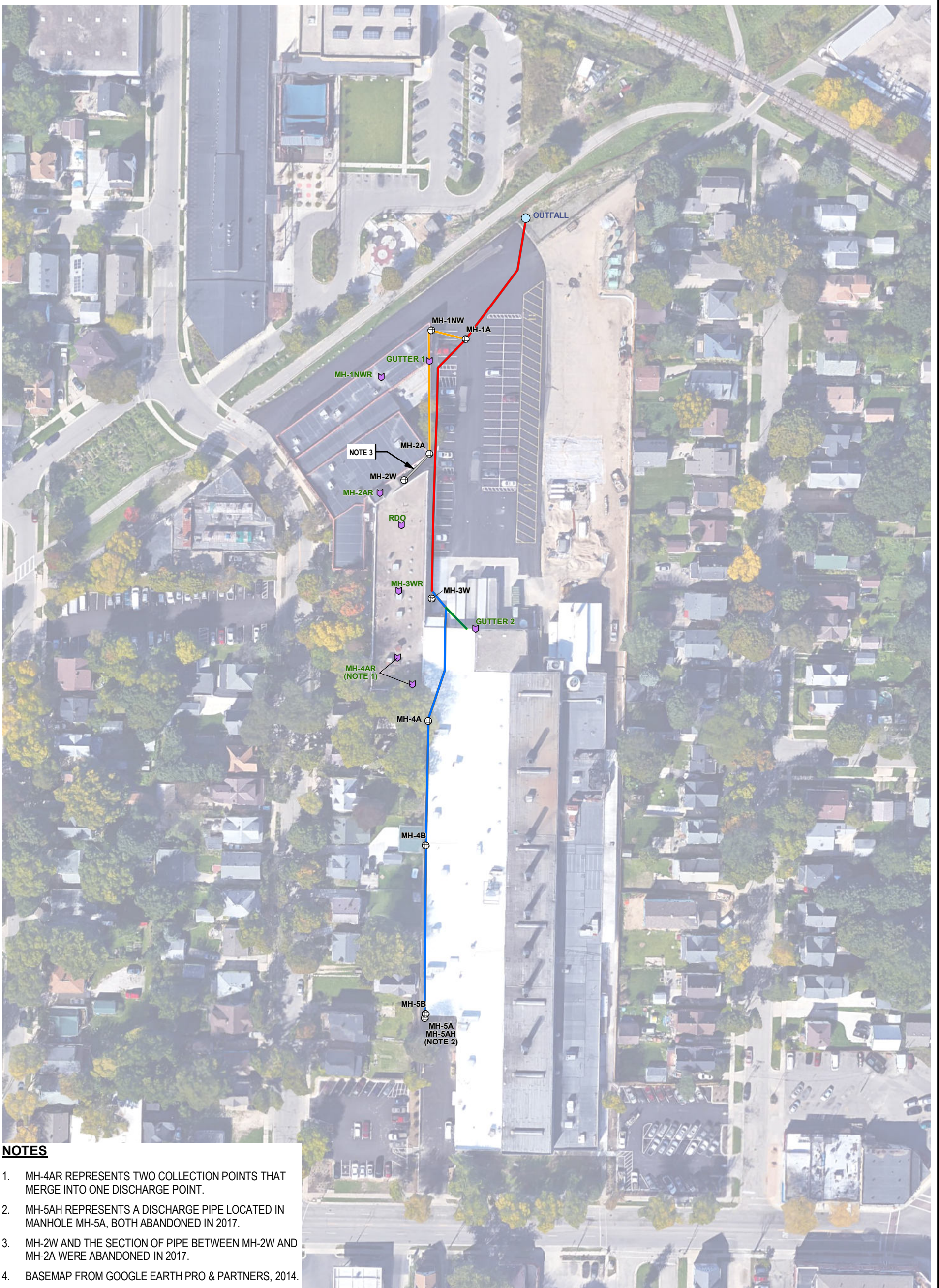
Table 1
Storm Sewer System Sediment Sampling Analytical Results Summary
Madison-Kipp Corporation
201 Waubesa Street, Madison, Wisconsin

PARAMETER	UNIT	NR 720 RCL		SAMPLE LOCATION AND SAMPLE ID																									
		INDUSTRIAL DIRECT CONTACT ⁽²⁾	HISTORICAL INDUSTRIAL DIRECT CONTACT ⁽³⁾	ROOF DRAIN SAMPLE						PAVED SURFACE SAMPLE ⁽⁴⁾						MANHOLE BOTTOM SAMPLE										OUTFALL SAMPLE			
				MH-3WR	MH-4AR	GUTTER 1	GUTTER 2	MH-2AR	RDO	MH-1A (2)	MH4-TOP	MH-4A	MH-5B	MH-3W	MH-5A	PS-1	MH-1NW-BOTTOM	MH-1NW-BASIN	STORM SEWER	MH-1A(3)-BASIN	MH-1A 9/22/17	MH-1A (10/6/17)	MH-1A (10/17/17)	MH-2W	MH-3W	MH5-PIPE	PIPE	OUTFALL (6/30)	OUTFALL 9/22/17
				Other	Other	Other	Other	Other	Other	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Date	--	--	--	5/22/2017	5/22/2017	5/31/2017	5/31/2017	6/14/2017	6/14/2017	5/31/2017	3/9/2017	5/31/2017	5/31/2017	6/14/2017	6/29/2017	6/30/2017	2/15/2017	6/14/2017	12/28/2016	6/30/2017	9/22/2017	10/6/2017	10/17/2017	2/15/2017	2/15/2017	3/9/2017	12/19/2016	6/30/2017	9/22/2017
Matrix ⁽¹⁾	--	--	--	Other	Other	Other	Other	Other	Other	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PCB-1016	mg/kg	28	21.2	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0081	<0.0078	<0.0088	<0.010	<0.018	<0.0078	<0.0077	<0.0086	<0.010	<0.011	<0.0092	<0.0089	<0.0097	<0.010	<0.014	<0.0086	<0.010	<0.0095	<0.0086	<0.011
PCB-1221	mg/kg	0.883	0.589	<0.0041	<0.0041	<0.0041	<0.0041	<0.0041	<0.0041	<0.0045	<0.0043	<0.0049	<0.0058	<0.0098	<0.0043	<0.0043	<0.0048	<0.0057	<0.0059	<0.0051	<0.0049	<0.0054	<0.0057	<0.0078	<0.0047	<0.0058	<0.0053	<0.0048	<0.0061
PCB-1232	mg/kg	0.792	0.589	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0031	<0.0030	<0.0033	<0.0039	<0.0067	<0.0029	<0.0029	<0.0033	<0.0039	<0.0040	<0.0035	<0.0034	<0.0037	<0.0039	<0.0053	<0.0032	<0.0039	<0.0036	<0.0032	<0.0042
PCB-1242	mg/kg	0.972	0.744	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0048	<0.0046	<0.0052	<0.0062	<0.011	<0.0046	<0.0046	<0.0051	<0.0061	<0.0063	<0.0055	<0.0053	<0.0058	<0.0061	<0.0083	<0.0051	<0.0062	<0.0057	<0.0051	<0.0066
PCB-1248	mg/kg	0.975	0.744	0.20	<0.0053	<0.0053	0.049 J	<0.0053	0.050 J	0.023 J	0.028 J	0.096 J	0.12 J	0.32	<0.0056	<0.0055	0.28	0.10 J	3.6	2.2	0.11	0.23	0.71	120	<0.0061	0.93	9.2	5.0	4.0
PCB-1254	mg/kg	0.988	0.744	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	0.013 J	<0.0048	<0.0046	<0.0052	<0.0062	0.099 J	0.071 J	0.034 J	0.41	0.086 J	<0.0063	<0.0055	<0.0053	<0.0058	<0.0061	<0.0083	1.6	<0.0062	<0.0057	<0.0051	<0.0066
PCB-1260	mg/kg	1	0.744	<0.0024	<0.0024	<0.0024	<0.0024	<0.0024	<0.0024	<0.0026	<0.0025	<0.0028	<0.0034	<0.0058	<0.0025	<0.0025	<0.0028	<0.0033	<0.0034	<0.003	<0.0029	<0.0031	<0.0033	<0.0045	<0.0028	<0.0034	0.37	<0.0028	<0.0036
Total PCBs	mg/kg	0.967	0.744	0.20	<0.0074	<0.0074	0.049 J	<0.0074	0.063 J	0.023 J	0.028 J	0.096 J	0.12 J	0.42	0.071 J	0.034 J	0.69	0.19	3.6	2.2	0.11	0.23	0.71	120	1.6	0.93	9.6	5.0	4.0

Notes:
 < = Less than
 mg/kg = Milligrams per kilogram
 J = Estimated value. Analyte detected at a level less than the reporting limit and greater than or equal to the detection limit.
 RCL = residual contaminant level
 PCBs = Polychlorinated Biphenyls
 Bold and Italics = WDNR Industrial Direct Contact Limit Exceedance
 Sample ID ending in "R" indicates the sample is from roof drain adjacent the manhole location (e.g., MH-4AR is the roof drain adjacent MH-4A).

Updated by: A. Stehn 10/23/2017
 Checked by: L. Auner 11/16/2017

Footnotes:
⁽¹⁾ PCB results for samples with a matrix of "Other" are reported on an as is (wet weight) basis.
⁽²⁾ As of March 2017, the WDNR updated the industrial direct contact residual contaminant levels for total PCBs and specific Aroclors.
⁽³⁾ Historical WDNR industrial direct contact RCLs applied at the MKC site.
⁽⁴⁾ Paved surface samples collected at the ground surface inlet to the referenced manhole, with the exception of sample PS-1 which was collected from the paved parking lot area just upstream of the rain garden.

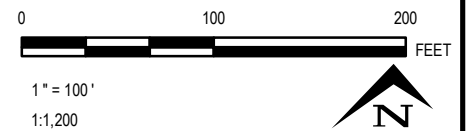


NOTES

1. MH-4AR REPRESENTS TWO COLLECTION POINTS THAT MERGE INTO ONE DISCHARGE POINT.
2. MH-5AH REPRESENTS A DISCHARGE PIPE LOCATED IN MANHOLE MH-5A, BOTH ABANDONED IN 2017.
3. MH-2W AND THE SECTION OF PIPE BETWEEN MH-2W AND MH-2A WERE ABANDONED IN 2017.
4. BASEMAP FROM GOOGLE EARTH PRO & PARTNERS, 2014.

LEGEND

- | | | | | | |
|--|------------------------|--|------------------|--|------------------------|
| | SITE PROPERTY BOUNDARY | | S-1 PIPE SECTION | | S-3-ABANDONED (NOTE 3) |
| | ROOF DRAIN INLET | | S-2 PIPE SECTION | | S-4 PIPE SECTION |
| | MANHOLE/CATCH BASIN | | S-3 PIPE SECTION | | |
| | OUTFALL | | | | |



708 Heartland Trail
 Suite 3000
 Madison, WI 53717
 Phone: 608.826.3600

PROJECT:

MADISON-KIPP CORPORATION
 201 WAUBESA STREET
 MADISON, WISCONSIN

TITLE:

**SITE MAP AND
 STORM SEWER INFRASTRUCTURE**

DRAWN BY: J. PAPEZ

CHECKED BY: A. STEHN

APPROVED BY: K. VATER

DATE: NOVEMBER 2017

PROJ. NO.: 268304

FILE: 268304-015.mxd

FIGURE 1

Attachment 1 Laboratory Analytical Reports



2525 Advance Road
Madison, WI 53718
608.221.8700 Phone
608.221.4889 Fax

September 27, 2017

Andrew Stehn
TRC Environmental Corporation, Inc.
708 Heartland Trail, Ste 3000
Madison, WI 53717
RE: MKC Storm Sewer/Raingarden - Madison, WI

Enclosed are the analytical results for the samples received by the laboratory on 09/22/2017.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. These results are in compliance with the 2009 NELAC Standards and the appropriate agencies listed below, unless otherwise noted in the case narrative. This analytical report should be reproduced in its entirety.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jessica Esser
Project Manager

Certification List

Certification List			Expires
ADEQ	Arkansas Department of Environmental Quality	17-065-0	09/26/2018
DODELAP	DOD ELAP Accreditation (A2LA)	3269.01	03/31/2018
ILEPA	Illinois Secondary NELAP Accreditation	003174	04/30/2018
KDHE	Kansas Secondary NELAP Accreditation	E-10384	04/30/2018
LELAP	Louisiana Primary NELAP Accreditation	04165	06/30/2018
NCDEQ	North Carolina Dept. of Environmental Quality Accreditation	688	12/31/2017
NJDEP	New Jersey Secondary NELAP Accreditation	WI004	06/30/2018
ODEQ	Oklahoma Department of Environmental Quality Accreditation	2017-154	08/31/2018
TCEQ	Texas Secondary NELAP Accreditation	T104704504-16-7	11/30/2017
WDNR	Wisconsin Certification under NR 149	113289110	08/31/2018



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608.221.4889 Fax

TRC Environmental Corporation, Inc.
708 Heartland Trail, Ste 3000
Madison WI, 53717

Project: MKC Storm Sewer/Raingarden - Madison, WI
Project Number: 268304
Project Manager: Andrew Stehn

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Outfall 9/22/17	A173816-01	Soil	09/22/2017	09/22/2017
MH-1A 9/22/17	A173816-03	Soil	09/22/2017	09/22/2017

CASE NARRATIVE

Sample Receipt Information:

3 samples were received on 09/22/2017. Samples were received on ice. Samples were received in acceptable condition.

Due to insufficient sample volume, the analysis was cancelled for sample A173816-02 by the client.

Please see the chain of custody (COC) document at the end of this report for additional information.



2525 Advance Road
 Madison, WI 53718
 608.221.8700 Phone
 608.221.4889 Fax

TRC Environmental Corporation, Inc.
 708 Heartland Trail, Ste 3000
 Madison WI, 53717

Project: MKC Storm Sewer/Raingarden - Madison, WI
 Project Number: 268304
 Project Manager: Andrew Stehn

Outfall 9/22/17

Date Sampled

A173816-01 (Soil)

09/22/2017 08:04

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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Pace Analytical - Madison

Polychlorinated Biphenyls by EPA Method 8082

Preparation Batch: A709052

PCB-1016	ND	0.011	0.15	mg/kg dry	1	09/22/2017	09/22/2017 14:17	EPA 8082A	
PCB-1221	ND	0.0061	0.15	mg/kg dry	1	09/22/2017	09/22/2017 14:17	EPA 8082A	
PCB-1232	ND	0.0042	0.15	mg/kg dry	1	09/22/2017	09/22/2017 14:17	EPA 8082A	
PCB-1242	ND	0.0066	0.15	mg/kg dry	1	09/22/2017	09/22/2017 14:17	EPA 8082A	
PCB-1248	4.0	0.0079	0.15	mg/kg dry	1	09/22/2017	09/22/2017 14:17	EPA 8082A	
PCB-1254	ND	0.0066	0.15	mg/kg dry	1	09/22/2017	09/22/2017 14:17	EPA 8082A	
PCB-1260	ND	0.0036	0.15	mg/kg dry	1	09/22/2017	09/22/2017 14:17	EPA 8082A	
Total PCBs	4.0	0.011	0.15	mg/kg dry	1	09/22/2017	09/22/2017 14:17	EPA 8082A	

Surrogate: Decachlorobiphenyl

91.6 % 56.6-128

09/22/2017 09/22/2017 14:17

EPA 8082A

Surrogate: Tetrachloro-meta-xylene

96.1 % 69.6-121

09/22/2017 09/22/2017 14:17

EPA 8082A

Classical Chemistry Parameters

Preparation Batch: A709054

% Solids	67.1		0.00	% by Weight	1	09/22/2017	09/25/2017 10:55	SM 2540B	
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 608.221.4889 Fax

TRC Environmental Corporation, Inc.
 708 Heartland Trail, Ste 3000
 Madison WI, 53717

Project: MKC Storm Sewer/Raingarden - Madison, WI
 Project Number: 268304
 Project Manager: Andrew Stehn

MH-1A 9/22/17

Date Sampled

A173816-03 (Soil)

09/22/2017 08:47

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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Pace Analytical - Madison

Polychlorinated Biphenyls by EPA Method 8082

Preparation Batch: A709052

PCB-1016	ND	0.0089	0.12	mg/kg dry	1	09/22/2017	09/22/2017 14:42	EPA 8082A	
PCB-1221	ND	0.0049	0.12	mg/kg dry	1	09/22/2017	09/22/2017 14:42	EPA 8082A	
PCB-1232	ND	0.0034	0.12	mg/kg dry	1	09/22/2017	09/22/2017 14:42	EPA 8082A	
PCB-1242	ND	0.0053	0.12	mg/kg dry	1	09/22/2017	09/22/2017 14:42	EPA 8082A	
PCB-1248	0.11	0.0064	0.12	mg/kg dry	1	09/22/2017	09/22/2017 14:42	EPA 8082A	J
PCB-1254	ND	0.0053	0.12	mg/kg dry	1	09/22/2017	09/22/2017 14:42	EPA 8082A	
PCB-1260	ND	0.0029	0.12	mg/kg dry	1	09/22/2017	09/22/2017 14:42	EPA 8082A	
Total PCBs	0.11	0.0089	0.12	mg/kg dry	1	09/22/2017	09/22/2017 14:42	EPA 8082A	J
<i>Surrogate: Decachlorobiphenyl</i>			83.9 %	56.6-128		09/22/2017	09/22/2017 14:42	EPA 8082A	
<i>Surrogate: Tetrachloro-meta-xylene</i>			87.8 %	69.6-121		09/22/2017	09/22/2017 14:42	EPA 8082A	

Classical Chemistry Parameters

Preparation Batch: A709054

% Solids	82.8		0.00	% by Weight	1	09/22/2017	09/25/2017 10:55	SM 2540B	
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TRC Environmental Corporation, Inc.
 708 Heartland Trail, Ste 3000
 Madison WI, 53717

Project: MKC Storm Sewer/Raingarden - Madison, WI
 Project Number: 268304
 Project Manager: Andrew Stehn

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control
Pace Analytical - Madison

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch A709052 - EPA 3570

Blank (A709052-BLK1)

Prepared: 09/22/2017 Analyzed: 09/22/2017 13:52

PCB-1016	ND	0.10	mg/kg wet							
PCB-1221	ND	0.10	mg/kg wet							
PCB-1232	ND	0.10	mg/kg wet							
PCB-1242	ND	0.10	mg/kg wet							
PCB-1248	ND	0.10	mg/kg wet							
PCB-1254	ND	0.10	mg/kg wet							
PCB-1260	ND	0.10	mg/kg wet							
Total PCBs	ND	0.10	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.206		mg/kg wet	0.2400		85.7	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.198		mg/kg wet	0.2400		82.5	69.6-121			

LCS (A709052-BS1)

Prepared: 09/22/2017 Analyzed: 09/22/2017 13:27

PCB-1254	1.64	0.10	mg/kg wet	2.000		82.2	79.1-109			
Surrogate: Decachlorobiphenyl	0.206		mg/kg wet	0.2400		85.8	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.202		mg/kg wet	0.2400		84.1	69.6-121			

Matrix Spike (A709052-MS1)

Source: A173816-03

Prepared: 09/22/2017 Analyzed: 09/22/2017 16:24

PCB-1254	2.09	0.12	mg/kg dry	2.414	ND	86.4	66.7-124			
Surrogate: Decachlorobiphenyl	0.235		mg/kg dry	0.2897		81.2	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.277		mg/kg dry	0.2897		95.6	69.6-121			

Matrix Spike Dup (A709052-MSD1)

Source: A173816-03

Prepared: 09/22/2017 Analyzed: 09/22/2017 16:49

PCB-1254	2.40	0.12	mg/kg dry	2.414	ND	99.4	66.7-124	14.0	20	
Surrogate: Decachlorobiphenyl	0.245		mg/kg dry	0.2897		84.5	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.290		mg/kg dry	0.2897		100	69.6-121			



2525 Advance Road
 Madison, WI 53718
 608.221.8700 Phone
 608.221.4889 Fax

TRC Environmental Corporation, Inc.
 708 Heartland Trail, Ste 3000
 Madison WI, 53717

Project: MKC Storm Sewer/Raingarden - Madison, WI
 Project Number: 268304
 Project Manager: Andrew Stehn

Classical Chemistry Parameters - Quality Control

Pace Analytical - Madison

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch A709054 - % Solids

Duplicate (A709054-DUP1)	Source: A173816-01		Prepared: 09/22/2017 Analyzed: 09/25/2017 10:55							
% Solids	65.7	0.00	% by Weight		67.1			2.17	20	



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608.221.4889 Fax

TRC Environmental Corporation, Inc.
708 Heartland Trail, Ste 3000
Madison WI, 53717

Project: MKC Storm Sewer/Raingarden - Madison, WI
Project Number: 268304
Project Manager: Andrew Stehn

Notes and Definitions

- J Analyte was detected but is below the reporting limit. The concentration is estimated.
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. If the word 'dry' does not appear after the units, results are reported on an as-is basis.
- RPD Relative Percent Difference



Pace Analytical - ECCS Division
 2525 Advance Road
 Madison, WI 53718
 608-221-8700 (phone)
 608-221-4889 (fax)

CHAIN OF CUSTODY

No. 8307

Page: 1 of 1

Project Number: 268304		PO Number:		Lab Work Order #: A173816				Report To: ANDREW STEW			
Project Name: MUC Rain Garden		Preservation Codes				Company: TRC					
Project Location (City, State): Madison, WI		Analyses Requested: A				Address 1: 703 HEARTLAND TRL SUITE 3000					
Turn Around (check one): <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush		Matrix: PCBS Total # of Containers: 3				E-mail Address: astehn@trcsolutions.com					
If Rush, Report Due Date:						Invoice To:					
Sampled By (Print): Andrew Stehn						Company: Gene as Abuse					
Sample Description		Collection						Address 1:			
	Date	Time	Matrix					Total # of Containers	Address 2:		
OUTFALL	9/22/17	0804	S					1			
PIPE	↓	0815	S					1			
MH-1A	↓	0847	S	1				Comments		Lab ID	Lab Receipt Time
Preservation Codes A=None B=HCL C=H ₂ SO ₄ D=HNO ₃ E=EnCore F=Methanol G=NaOH O=Other (Indicate)		Other Comments:		Relinquished By: <i>[Signature]</i>		Date: 09/22/17	Time: 0937	Received By: <i>[Signature]</i>		Date: 09-22-17	Time: 0937
Matrix Codes A=Air S=Soil W=Water O=Other				Relinquished By:		Date: 09/22/17	Time: 0937 AM	Received By:		Date:	Time:
Custody Seal: <input checked="" type="checkbox"/> NA <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact				Shipped Via: Walk-In		Receipt Temp: On-ice		Thermometer #/ Exp. Date:		Temp Blank: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	



2525 Advance Road
Madison, WI 53718
608.221.8700 Phone
608.221.4889 Fax

October 24, 2017

Andrew Stehn
TRC Environmental Corporation, Inc.
708 Heartland Trail, Ste 3000
Madison, WI 53717
RE: Madison Kipp - Rain Garden Excavation

Enclosed are the analytical results for the samples received by the laboratory on 10/10/2017.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. These results are in compliance with the 2009 NELAP Standards and the appropriate agencies listed below, unless otherwise noted in the case narrative. This analytical report should be reproduced in its entirety.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jessica Esser
Project Manager

Certification List

Certification List			Expires
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DODELAP	DOD ELAP Accreditation (A2LA)	3269.01	03/31/2018
ILEPA	Illinois Secondary NELAP Accreditation	003174	04/30/2018
KDHE	Kansas Secondary NELAP Accreditation	E-10384	04/30/2018
LELAP	Louisiana Primary NELAP Accreditation	04165	06/30/2018
NCDEQ	North Carolina Dept. of Environmental Quality Accreditation	688	12/31/2017
NJDEP	New Jersey Secondary NELAP Accreditation	WI004	06/30/2018
ODEQ	Oklahoma Department of Environmental Quality Accreditation	2017-154	08/31/2018
TCEQ	Texas Secondary NELAP Accreditation	T104704504-16-7	11/30/2017
WDNR	Wisconsin Certification under NR 149	113289110	08/31/2018



2525 Advance Road
Madison, WI 53718
608.221.8700 Phone
608.221.4889 Fax

TRC Environmental Corporation, Inc.
708 Heartland Trail, Ste 3000
Madison WI, 53717

Project: Madison Kipp - Rain Garden Excavation
Project Number: 268304
Project Manager: Andrew Stehn

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MH-1A (10/6/17)	A174111-01	Soil	10/06/2017	10/10/2017

CASE NARRATIVE

Sample Receipt Information:

1 sample was received on 10/10/2017. Sample was received at 2.1 degrees Celsius. Sample was received in acceptable condition.

Please see the chain of custody (COC) document at the end of this report for additional information.



2525 Advance Road
 Madison, WI 53718
 608.221.8700 Phone
 608.221.4889 Fax

TRC Environmental Corporation, Inc.
 708 Heartland Trail, Ste 3000
 Madison WI, 53717

Project: Madison Kipp - Rain Garden Excavation
 Project Number: 268304
 Project Manager: Andrew Stehn

MH-1A (10/6/17)

Date Sampled

A174111-01 (Soil)

10/06/2017 11:50

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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Pace Analytical - Madison

Polychlorinated Biphenyls by EPA Method 8082

Preparation Batch: A710064

PCB-1016	ND	0.0097	0.13	mg/kg dry	1	10/18/2017	10/19/2017 02:44	EPA 8082A	
PCB-1221	ND	0.0054	0.13	mg/kg dry	1	10/18/2017	10/19/2017 02:44	EPA 8082A	
PCB-1232	ND	0.0037	0.13	mg/kg dry	1	10/18/2017	10/19/2017 02:44	EPA 8082A	
PCB-1242	ND	0.0058	0.13	mg/kg dry	1	10/18/2017	10/19/2017 02:44	EPA 8082A	
PCB-1248	0.23	0.0069	0.13	mg/kg dry	1	10/18/2017	10/19/2017 02:44	EPA 8082A	
PCB-1254	ND	0.0058	0.13	mg/kg dry	1	10/18/2017	10/19/2017 02:44	EPA 8082A	
PCB-1260	ND	0.0031	0.13	mg/kg dry	1	10/18/2017	10/19/2017 02:44	EPA 8082A	
Total PCBs	0.23	0.0097	0.13	mg/kg dry	1	10/18/2017	10/19/2017 02:44	EPA 8082A	

Surrogate: Decachlorobiphenyl

83.6 % 56.6-128

10/18/2017 10/19/2017 02:44

EPA 8082A

Surrogate: Tetrachloro-meta-xylene

89.0 % 69.6-121

10/18/2017 10/19/2017 02:44

EPA 8082A

Classical Chemistry Parameters

Preparation Batch: A710065

% Solids	76.3		0.00	% by Weight	1	10/18/2017	10/19/2017 12:27	SM 2540B	
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2525 Advance Road
 Madison, WI 53718
 608.221.8700 Phone
 608.221.4889 Fax

TRC Environmental Corporation, Inc.
 708 Heartland Trail, Ste 3000
 Madison WI, 53717

Project: Madison Kipp - Rain Garden Excavation
 Project Number: 268304
 Project Manager: Andrew Stehn

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control
Pace Analytical - Madison

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch A710064 - EPA 3570

Blank (A710064-BLK1)

Prepared: 10/18/2017 Analyzed: 10/19/2017 02:19

PCB-1016	ND	0.10	mg/kg wet							
PCB-1221	ND	0.10	mg/kg wet							
PCB-1232	ND	0.10	mg/kg wet							
PCB-1242	ND	0.10	mg/kg wet							
PCB-1248	ND	0.10	mg/kg wet							
PCB-1254	ND	0.10	mg/kg wet							
PCB-1260	ND	0.10	mg/kg wet							
Total PCBs	ND	0.10	mg/kg wet							

Surrogate: Decachlorobiphenyl

0.227 mg/kg wet 0.2400 94.5 56.6-128

Surrogate: Tetrachloro-meta-xylene

0.215 mg/kg wet 0.2400 89.6 69.6-121

LCS (A710064-BS1)

Prepared: 10/18/2017 Analyzed: 10/19/2017 01:54

PCB-1254	1.82	0.10	mg/kg wet	2.000		91.2	79.1-109			
Surrogate: Decachlorobiphenyl	0.229		mg/kg wet	0.2400		95.3	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.226		mg/kg wet	0.2400		94.1	69.6-121			

Matrix Spike (A710064-MS1)

Source: A174206-01

Prepared: 10/18/2017 Analyzed: 10/19/2017 03:34

PCB-1254	2.23	0.14	mg/kg dry	2.778	ND	80.3	66.7-124			
Surrogate: Decachlorobiphenyl	0.262		mg/kg dry	0.3333		78.7	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.306		mg/kg dry	0.3333		91.8	69.6-121			

Matrix Spike Dup (A710064-MSD1)

Source: A174206-01

Prepared: 10/18/2017 Analyzed: 10/19/2017 03:59

PCB-1254	2.16	0.14	mg/kg dry	2.778	ND	77.8	66.7-124	3.24	20	
Surrogate: Decachlorobiphenyl	0.258		mg/kg dry	0.3333		77.4	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.299		mg/kg dry	0.3333		89.8	69.6-121			



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 Madison, WI 53718
 608.221.8700 Phone
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TRC Environmental Corporation, Inc.
 708 Heartland Trail, Ste 3000
 Madison WI, 53717

Project: Madison Kipp - Rain Garden Excavation
 Project Number: 268304
 Project Manager: Andrew Stehn

Classical Chemistry Parameters - Quality Control

Pace Analytical - Madison

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch A710065 - % Solids

Duplicate (A710065-DUP1)	Source: A174206-01	Prepared: 10/18/2017	Analyzed: 10/19/2017 12:27
% Solids	73.1	0.00 % by Weight	72.0
			1.55
			20



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Madison, WI 53718
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TRC Environmental Corporation, Inc.
708 Heartland Trail, Ste 3000
Madison WI, 53717

Project: Madison Kipp - Rain Garden Excavation
Project Number: 268304
Project Manager: Andrew Stehn

Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. If the word 'dry' does not appear after the units, results are reported on an as-is basis.
- RPD Relative Percent Difference



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October 24, 2017

Andrew Stehn
TRC Environmental Corporation, Inc.
708 Heartland Trail, Ste 3000
Madison, WI 53717
RE: MKC Storm Sewer/Raingarden - Madison, WI

Enclosed are the analytical results for the samples received by the laboratory on 10/17/2017.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. These results are in compliance with the 2009 NELAC Standards and the appropriate agencies listed below, unless otherwise noted in the case narrative. This analytical report should be reproduced in its entirety.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jessica Esser
Project Manager

Certification List

Expires

Certification List	Expires
ADEQ Arkansas Department of Environmental Quality 17-065-0	09/26/2018
DODELAP DOD ELAP Accreditation (A2LA) 3269.01	03/31/2018
ILEPA Illinois Secondary NELAP Accreditation 003174	04/30/2018
KDHE Kansas Secondary NELAP Accreditation E-10384	04/30/2018
LELAP Louisiana Primary NELAP Accreditation 04165	06/30/2018
NCDEQ North Carolina Dept. of Environmental Quality Accreditation 688	12/31/2017
NJDEP New Jersey Secondary NELAP Accreditation WI004	06/30/2018
ODEQ Oklahoma Department of Environmental Quality Accreditation 2017-154	08/31/2018
TCEQ Texas Secondary NELAP Accreditation T104704504-16-7	11/30/2017
WDNR Wisconsin Certification under NR 149 113289110	08/31/2018



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TRC Environmental Corporation, Inc.
708 Heartland Trail, Ste 3000
Madison WI, 53717

Project: MKC Storm Sewer/Raingarden - Madison, WI
Project Number: 268304
Project Manager: Andrew Stehn

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MH-1A (10/17/17)	A174206-01	Soil	10/17/2017	10/17/2017

CASE NARRATIVE

Sample Receipt Information:

1 sample was received on 10/17/2017. Sample was received on ice. Sample was received in acceptable condition.

Please see the chain of custody (COC) document at the end of this report for additional information.



2525 Advance Road
 Madison, WI 53718
 608.221.8700 Phone
 608.221.4889 Fax

TRC Environmental Corporation, Inc.
 708 Heartland Trail, Ste 3000
 Madison WI, 53717

Project: MKC Storm Sewer/Raingarden - Madison, WI
 Project Number: 268304
 Project Manager: Andrew Stehn

MH-1A (10/17/17)

Date Sampled

A174206-01 (Soil)

10/17/2017 13:20

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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Pace Analytical - Madison

Polychlorinated Biphenyls by EPA Method 8082

Preparation Batch: A710064

PCB-1016	ND	0.010	0.14	mg/kg dry	1	10/18/2017	10/19/2017 03:09	EPA 8082A	
PCB-1221	ND	0.0057	0.14	mg/kg dry	1	10/18/2017	10/19/2017 03:09	EPA 8082A	
PCB-1232	ND	0.0039	0.14	mg/kg dry	1	10/18/2017	10/19/2017 03:09	EPA 8082A	
PCB-1242	ND	0.0061	0.14	mg/kg dry	1	10/18/2017	10/19/2017 03:09	EPA 8082A	
PCB-1248	0.71	0.0074	0.14	mg/kg dry	1	10/18/2017	10/19/2017 03:09	EPA 8082A	
PCB-1254	ND	0.0061	0.14	mg/kg dry	1	10/18/2017	10/19/2017 03:09	EPA 8082A	
PCB-1260	ND	0.0033	0.14	mg/kg dry	1	10/18/2017	10/19/2017 03:09	EPA 8082A	
Total PCBs	0.71	0.010	0.14	mg/kg dry	1	10/18/2017	10/19/2017 03:09	EPA 8082A	

Surrogate: Decachlorobiphenyl

80.1 % 56.6-128

10/18/2017 10/19/2017 03:09

EPA 8082A

Surrogate: Tetrachloro-meta-xylene

93.5 % 69.6-121

10/18/2017 10/19/2017 03:09

EPA 8082A

Classical Chemistry Parameters

Preparation Batch: A710065

% Solids	72.0		0.00	% by Weight	1	10/18/2017	10/19/2017 12:27	SM 2540B	
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2525 Advance Road
 Madison, WI 53718
 608.221.8700 Phone
 608.221.4889 Fax

TRC Environmental Corporation, Inc.
 708 Heartland Trail, Ste 3000
 Madison WI, 53717

Project: MKC Storm Sewer/Raingarden - Madison, WI
 Project Number: 268304
 Project Manager: Andrew Stehn

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control
Pace Analytical - Madison

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch A710064 - EPA 3570

Blank (A710064-BLK1)

Prepared: 10/18/2017 Analyzed: 10/19/2017 02:19

PCB-1016	ND	0.10	mg/kg wet							
PCB-1221	ND	0.10	mg/kg wet							
PCB-1232	ND	0.10	mg/kg wet							
PCB-1242	ND	0.10	mg/kg wet							
PCB-1248	ND	0.10	mg/kg wet							
PCB-1254	ND	0.10	mg/kg wet							
PCB-1260	ND	0.10	mg/kg wet							
Total PCBs	ND	0.10	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.227		mg/kg wet	0.2400		94.5	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.215		mg/kg wet	0.2400		89.6	69.6-121			

LCS (A710064-BS1)

Prepared: 10/18/2017 Analyzed: 10/19/2017 01:54

PCB-1254	1.82	0.10	mg/kg wet	2.000		91.2	79.1-109			
Surrogate: Decachlorobiphenyl	0.229		mg/kg wet	0.2400		95.3	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.226		mg/kg wet	0.2400		94.1	69.6-121			

Matrix Spike (A710064-MS1)

Source: A174206-01

Prepared: 10/18/2017 Analyzed: 10/19/2017 03:34

PCB-1254	2.23	0.14	mg/kg dry	2.778	ND	80.3	66.7-124			
Surrogate: Decachlorobiphenyl	0.262		mg/kg dry	0.3333		78.7	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.306		mg/kg dry	0.3333		91.8	69.6-121			

Matrix Spike Dup (A710064-MSD1)

Source: A174206-01

Prepared: 10/18/2017 Analyzed: 10/19/2017 03:59

PCB-1254	2.16	0.14	mg/kg dry	2.778	ND	77.8	66.7-124	3.24	20	
Surrogate: Decachlorobiphenyl	0.258		mg/kg dry	0.3333		77.4	56.6-128			
Surrogate: Tetrachloro-meta-xylene	0.299		mg/kg dry	0.3333		89.8	69.6-121			



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 Project Number: 268304
 Project Manager: Andrew Stehn

Classical Chemistry Parameters - Quality Control
Pace Analytical - Madison

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch A710065 - % Solids

Duplicate (A710065-DUP1)	Source: A174206-01	Prepared: 10/18/2017	Analyzed: 10/19/2017 12:27		
% Solids	73.1	0.00 % by Weight	72.0	1.55	20



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608.221.4889 Fax

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Project Manager: Andrew Stehn

Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. If the word 'dry' does not appear after the units, results are reported on an as-is basis.
- RPD Relative Percent Difference

Attachment 2 Rain Garden Excavation and Restoration Work Plan

Soil Excavation and Restoration Work Plan

Based on PCB-impacted soil remaining in the rain garden from the June 2017 monitoring results, and pending continued monitoring of the outfall and manhole MH-1A, TRC on behalf of MKC will subcontract an environmental contractor to complete excavation and removal of PCB-impacted soil above the WDNR's industrial direct contact RCL of 0.967 mg/kg for total PCBs. The timing of the excavation will be dependent on continued monitoring of MH-1A and the outfall area which is discussed in Section 4 of the Rain Garden – Interim Investigation Report and Proposed Excavation Work Plan (November 2017). The excavation will be completed immediately adjacent to the outfall area into the rain garden and based on visual observations of coarse-grained sand previously discharged from the storm sewer and observed in the June 2017 sample. This soil excavation is anticipated to be entirely within the previously backfilled areas and is not anticipated to include any native material. Confirmation samples will be collected following the excavation to confirm impacted soil above the WDNR's industrial direct contact RCL has been removed. Once the excavation is complete, the rain garden will be regarded as need to promote drainage and restored in kind.

1.1 Pre-excavation Activities

The previous completed health and safety plan will be updated and discussed with each onsite person prior to each work day. TRC will work with the environmental contractor to identify potential risks that may be encountered.

Multiple below ground and above ground utilities are present near the anticipated excavation area. Digger's Hotline (Wisconsin's Public Utility Clearance) will be notified of the planned excavation to identify utilities of concern within the excavation area. The potential for private utilities will be discussed with the property owner and/or MKC. Based on these discussions, a private utility locate service may be required and contacted if necessary. If above ground utilities are found to be a concern (i.e., excavation work to be within 10 feet of an electric pole or tension line) based on the proximity of the excavation, appropriate utility companies will be notified to ensure necessary personnel are onsite during excavation work.

Based on discussions with MKC and the City of Madison, no permit will be required due to the planned soil removal being less than 400 cubic yards.

1.2 Excavation Requirements

Excavation of impacted soil within the rain garden will be completed by an environmental contractor under the supervision of TRC. The excavation will remove impacted soil with PCB concentrations above 0.967 mg/kg. The initial excavation will be completed near the immediate

outfall area into the rain garden. The limits will extend to the northwest, north, and east of the storm sewer discharge pipe into the rain garden. An approximate excavation area of twenty feet by twenty feet will be completed to an approximate depth of one foot below ground surface (bgs). The approximate extents of the excavation are shown on Figure 1. The planned extents of the excavation are beyond the limits of the known PCB-impacts. Following the removal of PCB-impacted soil, based on the slightly negative slope within the storm sewer pipe and immediate outfall area, the rain garden will be regraded to promote positive drainage. Based on the current grade, portions of the garden from the outfall area to the east-most discharge (approximately 225 feet in length by 2 feet in width) may require regrading to allow for proper drainage. Due to this activity, excavation work greater than one foot may be required in portions of the garden.

Temporary safety fence will be installed as needed around the excavation limit in combination with the permanent fence. In addition, silt fence and/or erosion sock will also be utilized as needed during the excavation process. It is anticipated that preparation work and the initial excavation will be completed within one workday. Potentially impacted soil removed will be managed as noted below in Section 1.3.

The volume of soil removed and the limits of the excavation will be documented by TRC and a GPS will be utilized as needed.

1.3 Potentially Impacted Soil Management

Soil excavated from the rain garden will be removed and stored in roll off containers provided by the waste disposal facility. Soil may require stockpiling based on the location of the excavation and utility constraints. In the event that soil requires stockpiling, soil will be placed on plastic sheeting and a plastic cover will be placed over the pile at the end of each work day.

TRC will coordinate with the disposal facility and provide necessary analytical results for proper disposal of any impacted soil. The disposal facility will depend upon the concentrations of PCBs detected in the sample results.

1.4 Confirmation Sampling

Confirmation samples along the side walls and base of the excavation following excavation activities will be completed. Based on the minimal foot print of the excavation, TRC assumes that a total of six samples will be collected from the sidewall of the excavation area. Each side wall sample will be collected from between ground surface and one foot below ground surface (bgs). In addition, two samples from the base (approximately one foot bgs) of the excavation will be collected. The depth may be deeper depending the necessary grading to promote

positive drainage. The samples will be analyzed for PCBs using the United States Environmental Protection Agency (U.S. EPA) SW-846 Method 8082.

If analytical results indicate that the remaining soil is below the WDNR's industrial direct contact RCL of 0.967 mg/kg for total PCBs, the garden will be restored. If further excavation is required, TRC and/or MKC will discuss the additional work with the WDNR and confirmation sampling will be completed following any additional excavation required based on these discussions.

Table 1 includes a summary of the samples to be collected and analyzed and Figure 1 includes the proposed extent of the excavation and the approximate location of the confirmation samples.

1.5 Excavation Backfill and Site Restoration

The excavation area will be backfilled with Purple Cow® top soil following the removal of impacted soil, per the requirements provided by the City of Madison during the previous excavation activity. One sample from the imported top soil will be collected and analyzed for PCBs using the U.S. EPA SW-846 Method 8082. This sample will be used for documentation purposes. Based on the anticipated excavation depth of 1 foot bgs, top soil will be used as backfill from approximately one foot bgs to ground surface.

The rain garden will be restored to its pre-excavation grade by the environmental contractor (with the exception areas require regrading to promote positive drainage) and re-planted by MKC when appropriate based on weather conditions.

1.6 Documentation Report

A report documenting the impacted soil removal and restoration of the rain garden will be provided following the completion of all work. The documentation report will include the results of the confirmation samples and a summary of the soil excavation activity.

Table 1
Proposed Rain Garden Soil Excavation Confirmation Soil Sampling Summary Table
Madison-Kipp Corporation Site
201 Waubesa Street, Madison, Wisconsin

SAMPLE LOCATION ⁽¹⁾	SAMPLE ID	DEPTH ⁽²⁾ (ft-bgs)	SOIL SAMPLE ⁽³⁾	METHOD ⁽⁴⁾
Southern Side Wall	S1-18	Surface	X	8082
Southeast Side Wall	S2-18	0-1	X	8082
Southeast Side Wall	S3-18	0-1	X	8082
Eastern Side Wall	S4-18	0-1	X	8082
Northern Side Wall	S5-18	0-1	X	8082
Western Side Wall	S6-18	0-1	X	8082
Base Near Outfall	S7-18	0-1	X	8082
Base Central	S8-18	0-1	X	8082
Top Soil Backfill	TS-2018	NA	NA	8082

Notes:

ft-bgs = foot/feet below ground surface

PCBs = polychlorinated biphenyls









NA – Not Applicable

Footnotes:

- (1) The approximate sample locations are included on Figure 1 of the Rain Garden Excavation and Restoration Work Plan.
- (2) The base samples may be collected between 0 and 2 feet below ground surface based on regarding work for the garden to promote positive drainage.
- (3) A soil sample will be collected over a 1 foot interval.
- (4) Samples will be analyzed for PCBs using U.S. EPA SW-846 Method 8082




LEGEND

-  RAINGARDEN EXCAVATION AREA - MAY 2017
 -  STORM SEWER S-2
 -  COMMUNICATION (FIBER OPTIC)
 -  GAS LINE
 -  RIGHT-OF-WAY LINE
 -  PROPOSED EXCAVATION EXTENT
- PROPOSED CONFIRMATION SAMPLES
-  BASE SAMPLE
 -  SIDEWALL SAMPLE

NOTES

1. BASE MAP IMAGERY FROM NEARMAP, 4/24/2017.

PROJECT:		MADISON-KIPP CORPORATION 201 WAUBESA STREET MADISON, WISCONSIN	
TITLE:		PROPOSED RAIN GARDEN EXCAVATION AND RESTORATION MAP	
DRAWN BY:	J. PAPEZ	PROJ NO.:	268304
CHECKED BY:	A. STEHN	FIGURE 1	
APPROVED BY:	K. VATER		
DATE:	NOVEMBER 2017		
		708 Heartland Trail Suite 3000 Madison, WI 53717 Phone: 608.826.3600	
FILE NO.:	268304-014.mxd		