



June 1, 2017

Mr. Tim Detzer, Environmental Engineer
Department of Administrative Services
Milwaukee County
633 W. Wisconsin Ave., Suite 1003
Milwaukee, WI 53203

KEEP THIS DOCUMENT WITH YOUR PROPERTY RECORDS

SUBJECT: Final Case Closure with Continuing Obligations
Milwaukee County Zoo/Bliffert Lumber Site, 10733 W. Bluemound Rd., Milwaukee
DNR BRRTS # 02-41-000655 and # 03-41-005150 PECFA # 53226-4282-33-A
FID #: 241494110

Dear Mr. Detzer:

The Wisconsin Department of Natural Resources (DNR) considers the Milwaukee County Zoo/Bliffert Lumber site closed with continuing obligations. No further investigation or remediation is required at this time. However, you, future property owners, and occupants of the property must comply with the continuing obligations as explained in the conditions of closure in this letter. Please read over this letter closely to ensure that you comply with all conditions and other on-going requirements. Provide this letter and any attachments listed at the end of this letter to anyone who purchases, rents or leases this property from you.

This final closure decision is based on the correspondence and data provided, and is issued under chs. NR 726 and 727, Wis. Adm. Code. The Southeast Region Closure Committee reviewed the request for closure on April 6, 2017. The DNR Closure Committee reviewed this environmental remediation case for compliance with state laws and standards to maintain consistency in the closure of these cases. Revisions to the closure documents were requested and received on May 10, 2017.

Soil and groundwater contamination resulted during operations at the former lumber yard and fuel distribution facility. Fuel oil aboveground and underground storage tanks (ASTs and USTs) and a gasoline UST were sources of petroleum contamination. Historic fill materials that include foundry sand, gravel, asphalt, cinders and wood pieces are likely a contributing contaminant source. In the 1990s, soil and groundwater were actively remediated using an interceptor trench, groundwater extraction and treatment, followed by dual-phase extraction. In 2015, the property was capped with 10 to 20 feet of clean soil during redevelopment as a parking lot and park entrance, which removed the direct contact risk. The conditions of closure and continuing obligations required were based on the property being used for commercial purposes.

Continuing Obligations

The continuing obligations for this site are summarized below. Further details on actions required are found in the section Closure Conditions.

- Groundwater contamination is present at or above ch. NR 140, Wis. Adm. Code enforcement standards.
- Residual soil contamination exists that must be properly managed should it be excavated or removed.
- One or more monitoring wells were not located and must be properly filled and sealed if found.

The DNR fact sheet "Continuing Obligations for Environmental Protection," RR-819, helps to explain a property owner's responsibility for continuing obligations on their property. The fact sheet may be obtained at <http://dnr.wi.gov/files/PDF/pubs/rr/RR819.pdf>.

GIS Registry

This site will be included on the Bureau for Remediation and Redevelopment Tracking System (BRRTS on the Web) at <http://dnr.wi.gov/topic/Brownfields/rasm.html>, to provide public notice of residual contamination and of any continuing obligations. The site can also be viewed on the Remediation and Redevelopment Sites Map (RRSM), a map view, under the Geographic Information System (GIS) Registry layer, at the same web address.

DNR approval prior to well construction or reconstruction is required for all sites shown on the GIS Registry, in accordance with s. NR 812.09 (4) (w), Wis. Adm. Code. This requirement applies to private drinking water wells and high capacity wells. To obtain approval, complete and submit Form 3300-254 to the DNR Drinking and Groundwater program's regional water supply specialist. This form can be obtained on-line at <http://dnr.wi.gov/topic/wells/documents/3300254.pdf>.

All site information is on file at the Southeast Region DNR office, at 2300 N. Dr. Martin Luther King, Jr. Drive, Milwaukee. This letter and information that was submitted with your closure request application, including any maps, can be found as a Portable Document Format (PDF) in BRRTS on the Web.

Closure Conditions

Compliance with the requirements of this letter is a responsibility to which you and any subsequent property owners must adhere. If these requirements are not followed, the DNR may take enforcement action under s. 292.11, Wis. Stats., to ensure compliance with the specified requirements, limitations or other conditions related to the property.

Please send written notifications in accordance with the following requirements to:

Wisconsin Department of Natural Resources
Attn: Remediation and Redevelopment Program Environmental Program Associate
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee, WI 53212

Residual Groundwater Contamination (chs. NR 140 and NR 812, Wis. Adm. Code)

Groundwater contamination greater than enforcement standards is present on this contaminated property, as shown on the attached map, Groundwater Isoconcentration, Figure B.3.b.1, dated July 3, 2013. If you intend to construct a new well, or reconstruct an existing well, you'll need prior DNR approval.

Residual Soil Contamination (ch. NR 718, chs. 500 to 536, Wis. Adm. Code or ch. 289, Wis. Stats.)

Soil contamination remains at depth across the northern portion of this parcel as indicated on the attached map, Residual Soil Contamination, Figure B.2.b., dated July 3, 2013. If soil in the specific location described above is excavated in the future, the property owner or right-of-way holder at the time of excavation must sample and analyze the excavated soil to determine if contamination remains. If sampling confirms that contamination is present, the property owner or right-of-way holder at the time of excavation will need to determine whether the material is considered solid or hazardous waste and ensure that any storage, treatment or disposal is in compliance with applicable standards and rules. Contaminated soil may be managed in accordance with ch. NR 718, Wis. Adm. Code, with prior DNR approval.

In addition, all current and future owners and occupants of the property and right-of-way holders need to be aware that excavation of the contaminated soil may pose an inhalation or other direct contact hazard and as a result special precautions may need to be taken to prevent a direct contact health threat to humans.

Depending on site-specific conditions, construction over contaminated soil or groundwater may result in vapor migration of contaminants into enclosed structures or migration along newly placed underground utility lines. The potential for vapor inhalation and means of mitigation should be evaluated when planning any future redevelopment, and measures should be taken to ensure the continued protection of public health, safety, welfare and the environment at the site.

Monitoring Wells that could not be Properly Filled and Sealed (ch. NR 141, Wis. Adm. Code)

Monitoring wells MW-1, -2R, -4, -5, -9, -10, -12, and temporary wells GP-13-5 and GP-13-6, located across the property, as shown on the attached map, Monitoring Well, Figure E.1.1., dated July 3, 2013, could not be properly

filled and sealed because they were paved over, covered or removed during site development activities. Your consultant made a reasonable effort to locate the wells and to determine whether they were properly filled and sealed, but was unsuccessful. You may be held liable for any problems associated with the monitoring wells if they create a conduit for contaminants to enter groundwater. If any of the groundwater monitoring wells are found, the then current owner of the property on which the well is located is required to notify the DNR, to properly fill and seal the wells and to submit the required documentation to the DNR. This continuing obligation applies to the owners of 10733 West Bluemound Road.

Other Closure Information

Sites with an Exemption for Development at a Historic Fill Site

Information presented in the site investigation report indicates that subsurface materials consist of historic fill material. An approval for development at a Historic Fill Site was approved by the DNR on April 10, 2013, for the construction of a parking lot and park entrance with related ticket booths and concessions. Any redevelopment of this property will require compliance with the approved exemption. Any changes from the April 10, 2013 exemption will require prior DNR approval in writing. Please refer to the Development at Historic Fill Site or Licensed Landfill guidances for further information at <http://dnr.wi.gov/topic/landfills/development.html>.

PECFA Reimbursement

Section 101.143, Wis. Stats., requires that Petroleum Environmental Cleanup Fund Award (PECFA) claimants seeking reimbursement of interest costs, for sites with petroleum contamination, submit a final reimbursement claim within 120 days after they receive a closure letter on their site. For claims not received within 120 days of the date of this letter, interest costs after 60 days of the date of this letter will not be eligible for PECFA reimbursement.

Per Wisconsin Act 55 (2015 State budget), a claim for PECFA reimbursement must be submitted within 180 days of incurring costs (i.e., completing a task). If your final PECFA claim is not submitted within 180 days of incurring the costs, the costs will not be eligible for PECFA reimbursement.

In Closing

Please be aware that the case may be reopened pursuant to s. NR 727.13, Wis. Adm. Code, for any of the following situations:

- if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety, or welfare or to the environment,
- if the property owner does not comply with the conditions of closure, with any deed restrictions applied to the property, or with a certificate of completion issued under s. 292.15, Wis. Stats., or
- a property owner fails to maintain or comply with a continuing obligation (imposed under this closure approval letter).

The DNR appreciates your efforts to restore the environment at this site. If you have any questions regarding this closure decision or anything outlined in this letter, please contact the DNR Project Manager, Linda Michalets, at (414) 263-8757, or at linda.michalets@wisconsin.gov.

Sincerely,







Michele R. Norman
Southeast Region Team Supervisor
Remediation and Redevelopment Program

Attachments: Groundwater Isoconcentration, Figure B.3.b.1., dated July 3, 2013
Residual Soil Contamination, Figure B.2.b., dated July 3, 2013
Monitoring Well, Figure E.1.1., dated July 3, 2013



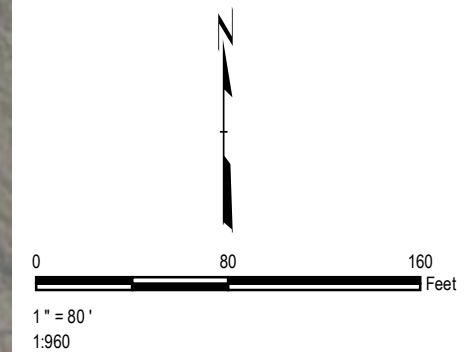
B.3.b.1 Groundwater Isoconcentration

LEGEND

-  GROUNDWATER MONITORING WELL
-  SOIL PROBE BORING (5/2013)
-  SOIL PROBE BORING & TEMPORARLY WELL (5/2013)
-  APPROXIMATE EXTENT OF GROUNDWATER EXCEEDING NR 140 ES - JUNE 2013

NOTES

1. BASEMAP IMAGERY FROM ESRI/BING, "WORLD IMAGERY", WEB BASEMAP SERVICE LAYER, 2011.



PROJECT: MILWAUKEE COUNTY - BLIFFERT SITE		
WDNR BRRTS NO. 02-41-000655		
PECFA NO. 53226-4282-33-A		
SHEET TITLE: GROUNDWATER CONTAMINANT DISTRIBUTION MAP		
JUNE 2013		
DRAWN BY: PAPEZ J	SCALE: 1:960	PROJ. NO. 202083
CHECKED BY:		FILE NO. 202083-003.mxd
APPROVED BY:	DATE PRINTED:	FIGURE 2
DATE: JULY 2013		







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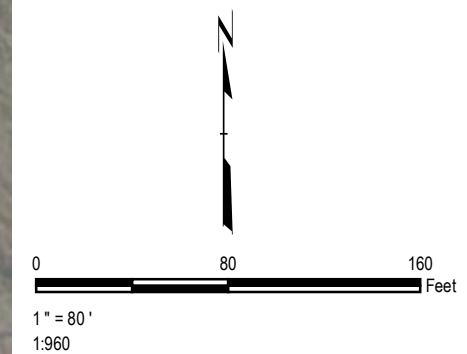
B.2.b Residual Soil Contamination

LEGEND

-  GROUNDWATER MONITORING WELL
-  SOIL PROBE BORING (5/2013)
-  SOIL PROBE BORING & TEMPORARLY WELL (5/2013)
-  APPROXIMATE EXTENT OF SOIL EXCEEDING NR 720 RCLS - MAY 2013

NOTES

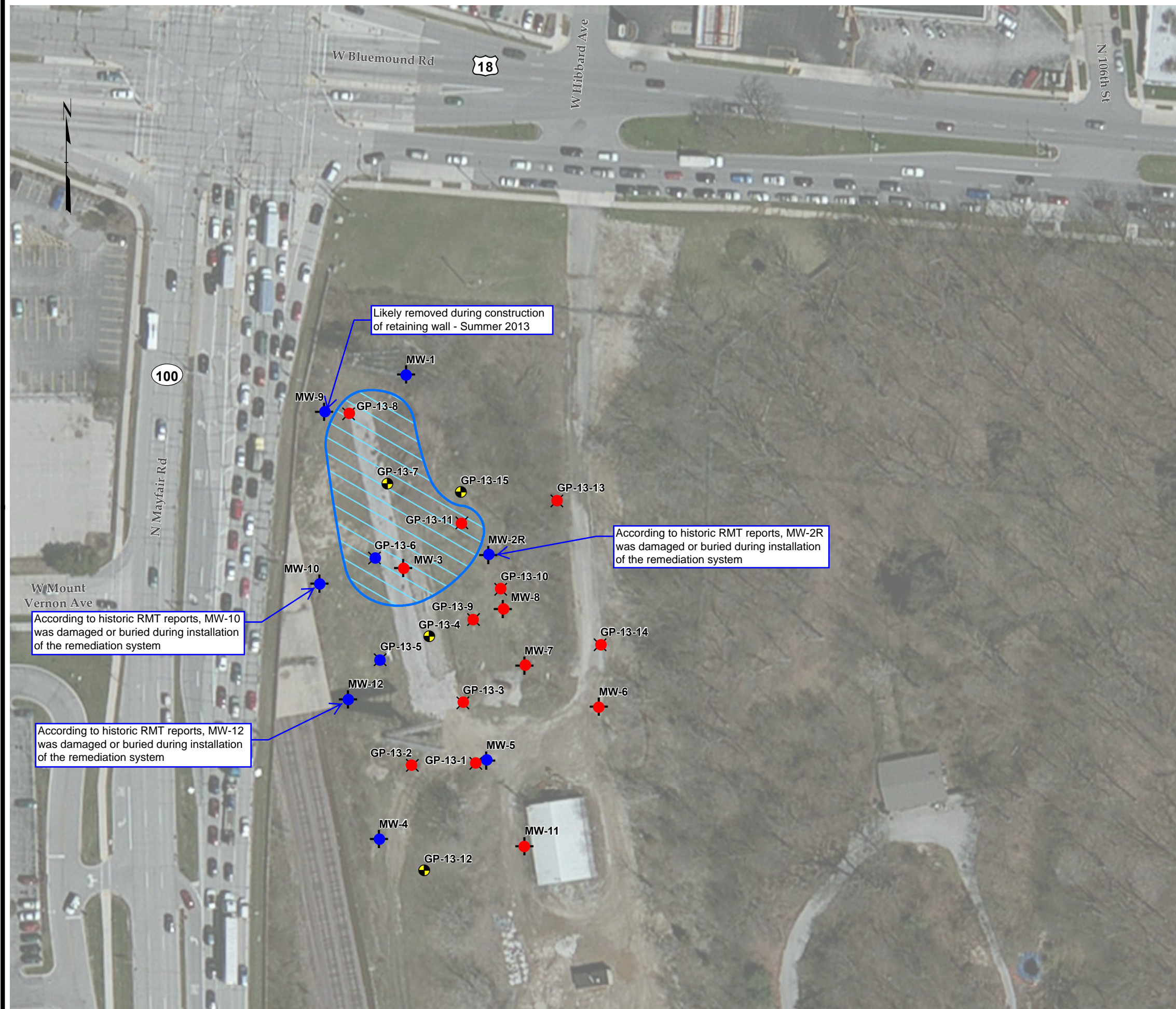
1. BASEMAP IMAGERY FROM ESRI/BING, "WORLD IMAGERY", WEB BASEMAP SERVICE LAYER, 2011.



PROJECT: MILWAUKEE COUNTY - BLIFFERT SITE		
WDNR BRRTS NO. 02-41-000655		
PECFA NO. 53226-4282-33-A		
SHEET TITLE: SOIL CONTAMINANT DISTRIBUTION MAP		
MAY 2013		
DRAWN BY: PAPEZ J	SCALE: 1:960	PROJ. NO. 202083
CHECKED BY:		FILE NO. 202083-002.mxd
APPROVED BY:	DATE PRINTED:	FIGURE 1
DATE: JULY 2013		



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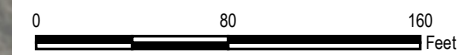


LEGEND

- GROUNDWATER MONITORING WELL
- SOIL PROBE BORING (5/2013)
- SOIL PROBE BORING & TEMPORARLY WELL (5/2013)
- APPROXIMATE EXTENT OF GROUNDWATER EXCEEDING NR 140 ES - JUNE 2013
- Wells that have been located and abandoned
- Wells that could not be found. If any of these wells are found in the future, they should be properly abandoned in accordance with NR 141.

NOTES

1. BASEMAP IMAGERY FROM ESRI/BING, "WORLD IMAGERY", WEB BASEMAP SERVICE LAYER, 2011.



1" = 80'
1:960

PROJECT: MILWAUKEE COUNTY - BLIFFERT SITE		
WDNR BRRTS NO. 02-41-000655		
PECFA NO. 53226-4282-33-A		
SHEET TITLE: GROUNDWATER CONTAMINANT DISTRIBUTION MAP		
JUNE 2013		
DRAWN BY: PAPEZ J	SCALE: 1:960	PROJ. NO. 202083
CHECKED BY:		FILE NO. 202083-003.mxd
APPROVED BY:	DATE PRINTED:	FIGURE 2
DATE: JULY 2013		



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SUBMIT AS UNBOUND PACKAGE IN THE ORDER SHOWN

Notice: Pursuant to ch. 292, Wis. Stats., and chs. NR 726 and 746, Wis. Adm. Code, this form is required to be completed for case closure requests. The closure of a case means that the Department of Natural Resources (DNR) has determined that no further response is required at that time based on the information that has been submitted to the DNR. All sections of this form must be completed unless otherwise directed by the Department. DNR will consider your request administratively complete when the form and all sections are completed, all attachments are included, and the applicable fees required under ch. NR 749, Wis. Adm. Code, are included, and sent to the proper destinations. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.). Incomplete forms will be considered "administratively incomplete" and processing of the request will stop until required information is provided.

Site Information			
BRRTS No. 03-41-005150	VPLE No.		
Parcel ID No. 41-09-999111			
FID No. 241494110	WTM Coordinates		
	X 679,141	Y 286474	
BRRTS Activity (Site) Name BLIFFERT LUMBER CO PROPERTY #2-FORMER	WTM Coordinates Represent: <input checked="" type="checkbox"/> Source Area <input type="checkbox"/> Parcel Center		
Site Address 10733 West Bluemound Road	City Milwaukee	State WI	ZIP Code 53226
Acres Ready For Use 100			

Responsible Party (RP) Name Milwaukee County			
Company Name Milwaukee County			
Mailing Address 633 W. Wisconsin Ave, Suite 1003	City Milwaukee	State WI	ZIP Code 53203
Phone Number (414) 278-2988	Email timothy.detzer@milwaukeecountywi.gov		
<input checked="" type="checkbox"/> Check here if the RP is the owner of the source property.			
Environmental Consultant Name NA			
Consulting Firm NA			
Mailing Address NA	City NA	State	ZIP Code
Phone Number	Email		

Fees and Mailing of Closure Request

- Send a copy of page one of this form and the applicable ch. NR 749, Wis. Adm. Code, fee(s) to the DNR Regional EPA (Environmental Program Associate) at <http://dnr.wi.gov/topic/Brownfields/Contact.html>. Check all fees that apply:

<input type="checkbox"/> \$1,050 Closure Fee	<input checked="" type="checkbox"/> \$300 Database Fee for Soil
<input checked="" type="checkbox"/> \$350 Database Fee for Groundwater or Monitoring Wells (Not Abandoned)	Total Amount of Payment \$ <u>650.00</u>
	<input checked="" type="checkbox"/> Resubmittal, Fees Previously Paid
- Send one paper copy and one e-copy on compact disk of the entire closure package to the Regional Project Manager assigned to your site. Submit as unbound, separate documents in the order and with the titles prescribed by this form. For electronic document submittal requirements, see <http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf>.

Site Summary

If any portion of the Site Summary Section is not relevant to the case closure request, you must fully explain the reasons why in the relevant section of the form. All information submitted shall be legible. Providing illegible information will result in a submittal being considered incomplete until corrected.

1. General Site Information and Site History

- A. Site Location: Describe the physical location of the site, both generally and specific to its immediate surroundings.
The Zoo/Bliffert Site (the site) is located at 10733 W. Bluemound Road in the City of Milwaukee. It is bound to the north by West Bluemound Road, to the west by Mayfair Road (Wisconsin Highway 100), and to the East and South by the Milwaukee County Zoo.
- B. Prior and current site usage: Specifically describe the current and historic occupancy and types of use.
The site was occupied by Bliffert Lumber Company from 1927 through 1992 and was developed and used as a lumber yard and fuel distribution facility. Milwaukee County obtained the property through condemnation in 1988 and purchased the property in 1990. Bliffert Lumber vacated the site in 1992. The site remained largely vacant from 1992 through 2015 although was used sporadically by the Milwaukee County Zoo for the temporary storage of materials (brush piles, etc). The site is the current location of the Milwaukee County Zoo's western entrance (under construction) and overflow parking area (completed). The parking area and western entrance (when complete) will be utilized for overflow parking on days when the regular parking lots on the east side of the zoo reach capacity.
- C. Current zoning (e.g., industrial, commercial, residential) for the site and for neighboring properties, and how verified (Provide documentation in Attachment G).
The site is zoned by the City of Milwaukee as institutional (TL). All adjacent parcels are also zoned institutional. Zoning information was obtained from the City of Milwaukee's zoning and zoning overlay maps available at: <http://city.milwaukee.gov/mapmilwaukee/applications>
- D. Describe how and when site contamination was discovered.
Phase I&II ESA were completed by STS Consultants under contract with Milwaukee County in 1988. Site Investigation completed by Law Engineering under contract with Milwaukee County in 1993 revealed soil and groundwater contamination.
- E. Describe the type(s) and source(s) or suspected source(s) of contamination.
The Phase I identified six 23,000-gallon above ground storage tanks (heating oil), one 1,000-gallon underground storage tank and various drum storage areas as suspected sources of contamination. Soil and groundwater contamination is petroleum based.
- F. Other relevant site description information (or enter Not Applicable).
The property is being redeveloped as the Zoo's new western entrance and overflow parking. To be able to create a parking lot with an acceptable slope, a large quantity of fill was imported. Filling operations occurred from the north end of the property for approximately 500 feet to the south to approximately the previous location of the metal shed (the northernmost building); almost half of the property. The entire contaminated area was filled with several feet of imported soil. As shown in B. 3. a. 4, Geologic Cross-Section Figure, the north end was filled with approximately 24 feet, while the southern end of the site area had 11 feet of fill. A retaining wall was built adjacent to the railroad property to the west to maintain the grade of the railroad tracks. An asphalt parking lot was built at the new grade. A shallow detention pond was built at the southernmost end of the property.
- G. List BRRTS activity/site name and number for BRRTS activities at this source property, including closed cases.
02-41-000655 MILWAUKEE ZOO/BLIFFERT LUMBER
03-41-005150 BLIFFERT LUMBER CO PROPERTY #2 - FORMER
07-41-368901 BLIFFERT LUMBER CO PROPERTY #2 (FORMER)
- H. List BRRTS activity/site name(s) and number(s) for all properties immediately adjacent to (abutting) this source property.
03-41-001556 MILWAUKEE CNTY - ZOO SERVICE YARD (This site is mapped incorrectly on RR sites map.)
02-41-321432 MILWAUKEE CNTY ZOO
03-41-001688 AMOCO STATION #18803
03-41-000760 MOBIL OIL

2. General Site Conditions

- A. Soil/Geology
- i. Describe soil type(s) and relevant physical properties, thickness of soil column across the site, vertical and lateral variations in soil types.
Shallow geology at the site has been defined by a series of soil borings, groundwater monitoring well installations, and geoprobe locations (STS, 1988 and Law, 1993a). Findings indicate that a gravelly fill from 1.5 to 4.5 feet thick is present beneath most of the site. This gravel is underlain throughout much of the site by a moist to wet silty clay material with some silty sand, extending to as much as 12.5 feet below land surface. Native soils are composed of a clayey and silty till extending to a depth of at least 20 feet. Some sandy zones are present within the till material. Native soils belong to the Ozaukee series of the Ozaukee-Morley-Mequon association (USCS, 1971). Total depth of penetration beneath the site has been 20 feet.

- ii. Describe the composition, location and lateral extent, and depth of fill or waste deposits on the site.
Possible foundry sands were identified on the the north end of the property between 10 to 24 feet below ground surface. The fill material contains foundry sand, gravel, asphalt, cinder and wood pieces. It is estimated that the depth of fill is 8 feet to 12 feet thick with an area of approximately 350 feet by 150 feet. See B. 3. a. 4. Geologic Cross-Section. As described above, the property was redeveloped. The grade was raised up to 24 feet on the north end while the center of the property (end of contamination) had 11 feet of fill.
- iii. Describe the depth to bedrock, bedrock type, competency and whether or not it was encountered during the investigation.
Bedrock was not encountered during the investigation.
- iv. Describe the nature and locations of current surface cover(s) across the site (e.g., natural vegetation, landscaped areas, gravel, hard surfaces, and buildings).
The site has been developed into an asphalt parking lot. There are no buildings on site. The grade has been raised several feet and a retaining wall has been built to maintain the railroad tracks at original grade.

B. Groundwater

- i. Discuss depth to groundwater and piezometric elevations. Describe and explain depth variations, including high and low water table elevation and whether free product affects measurement of water table elevation. Describe the stratigraphic unit(s) where water table was found or which were measured for piezometric levels.
Groundwater elevation varies between approximately 0.5 to 10 feet below the original ground surface elevation (prior to raising the grade), and is seasonally variable. Currently, groundwater elevation varies between twenty four to eleven feet below ground surface elevation (as shown in Figure B. 3. a. 4. Groundwater Cross-Section Figures), based on the amount of fill added to the site. Depth to groundwater has not been measured since redevelopment. No free product was found in the 2013 investigation.
- ii. Discuss groundwater flow direction(s), shallow and deep. Describe and explain flow variations, including fracture flow if present.
Groundwater flows to the southwest through the property. The hydraulic gradients indicate that groundwater flows from the west and northeast into the foundry sand fill. Also, an apparent slight gradient exists to the south although the head measured in the clay are less reliable. However, the sand is bounded by the low permeability native clay on the south. This native clay tends to act as a barrier to off-site migration of groundwater.
- iii. Discuss groundwater flow characteristics: hydraulic conductivity, flow rate and permeability, or state why this information was not obtained.
Shallow groundwater flows toward the center of the site, where the sandy fill occurs, from the west and northeast under a moderately high horizontal gradient in the clay till of 0.03 ft./ft. The horizontal flow gradient within the foundry sand is extremely low (within measurement error), which suggests that groundwater does not flow off-site through the foundry sand./ft. The differences in horizontal gradient are due to permeability differences between the clay till and the foundry sand. Hydraulic conductivity of the clay till at MW-5 was estimated by a permeability test conducted by Law at 2×10^{-5} cm/sec. Hydraulic conductivity of the foundry sand fill at MW-10 was estimated 1×10^{-3} cm/sec (Law, 1993).

The hydraulic gradients indicate that groundwater flows from the west and northeast into the foundry sand fill. Also, an apparent slight gradient exists to the south although the head measured in the clay are less reliable. However, the sand is bounded by the low permeability native clay on the south. This native clay tends to act as a barrier to off-site migration of groundwater.
- iv. Identify and describe locations/distance of potable and/or municipal wells within 1200 feet of the site. Include general summary of well construction (geology, depth of casing, depth of screened or open interval).
A groundwater receptor survey performed for this site indicates that no potable wells were identified in a 1/4-mile radius of the site. Furthermore, the entire City of Milwaukee is supplying drinking water by Lake Michigan. (RMT Inc., 2000, PECFA)

3. Site Investigation Summary

A. General

- i. Provide a brief summary of the site investigation history. Reference previous submittals by name and date. Describe site investigation activities undertaken since the last submittal for this project and attach the appropriate documentation in Attachment C, if not previously provided.
Phase I and II environmental site assessments, which began in 1988 (STS Consultants, previously submitted), revealed soil and groundwater petroleum contamination. Phase II investigations included 12 soil brings indicated that soils had been impacted beneath an area with above ground storage tanks and in an area where an underground storage tank was located.

Site Investigations in 1993 (Law Engineering, previously submitted) further defined site contamination with 21 additional borings. Twelve borings were completed as monitoring wells. Free product was initially discovered at this time.

A dual phase extraction system (described in Section 4, Remedial Actions Implemented . . .) was installed and operated from 1996-1999.

In 2000, WDNR denied case closure based on the the lack of current soil data.

Additional site investigation occurred in 2001 by RMT (2002, previously submitted) under contract with Milwaukee County. Twenty additional soil borings were advanced throughout the site.

Additional site investigation occurred in 2012-2013 by TRC under contract with Milwaukee County (submitted previously as a letter report dated July 3, 2013). TRC advanced an additional 15 soil probes, converting 12 to temporary monitoring wells to evaluate the site for free product.

- ii. Identify whether contamination extends beyond the source property boundary, and if so describe the media affected (e.g., soil, groundwater, vapors and/or sediment, etc.), and the vertical and horizontal extent of impacts. It is possible that petroleum contamination from the Bliffert property migrated onto the Union Pacific right of way. Structural impediments, including railroad tracks and a railroad tunnel under State Highway 100, prohibit investigation.

In 2013, the Wisconsin Department of Transportation, as part of the Zoo Interchange reconstruction project, widened Highway 100 and the railroad tunnel that runs beneath it. To expand the railroad tunnel, the Wisconsin DOT removed 6,866 tons of soil. The soil was removed to a depth of 8 feet up to the property boundary adjacent to the Bliffert site, and presumably removed any residually contaminated soil that had migrated from the Bliffert site.

It should be noted that both properties contain foundry sand fill materials presumably placed at the same time, and contamination associated with these foundry sands should be similar. The DOT found PVOC contamination during a Phase 2.5 investigation prior to construction of the railroad tunnel, but those materials have been excavated and disposed of in a landfill. Please see Figure C. 6. 2. Other.

- iii. Identify any structural impediments to the completion of site investigation and/or remediation and whether these impediments are on the source property or off the source property. Identify the type and location of any structural impediment (e.g., structure) that also serves as the performance standard barrier for protection of the direct contact or the groundwater pathway.

Off site structural impediments exist to the west of the Bliffert property. Union Pacific railroad tracks, a railroad tunnel under State Highway 100, prohibit investigation there, but also serve as performance standard barrier for direct contact and the groundwater pathway. As noted above, the DOT's contractor excavated materials adjacent to the railroad tunnel to enable the tunnels expansion.

B. Soil

- i. Describe degree and extent of soil contamination. Relate this to known or suspected sources and known or potential receptors/migration pathways.

Known sources of contamination were identified a six 23,000-gallon above ground storage tanks (heating oil) and one 1,000-gallon underground storage tank. Soil and groundwater contamination is petroleum based. Prior to remedial action DRO contamination ranged from <10mg/kg to 39,000 mg/kg; TRPHC ranged from <5 mg/kg to 30,000 mg/kg; and GRO ranged from <5 mg/kg to 10,000 mg/kg. Benzene concentrations ranged from below detection limit to 24.5 mg/kg. Toluene concentrations ranged from below detection limit to 61 mg/kg.

There are no known utilities, receptors or migration pathways on the site.

- ii. Describe the concentration(s) and types of soil contaminants found in the upper four feet of the soil column. There is no known soil contamination in the upper four feet of soil since the grade was raised to build the new parking lot in 2015.
- iii. Identify the ch. NR 720, Wis. Adm. Code, method used to establish the soil cleanup standards for this site. This includes a soil performance standard established in accordance with s. NR 720.08, a Residual Contaminant Level (RCL) established in accordance with s. NR 720.10 that is protective of groundwater quality, or an RCL established in accordance with s. NR 720.12 that is protective of human health from direct contact with contaminated soil. Identify the land use classification that was used to establish cleanup standards. Provide a copy of the supporting calculations/information in Attachment C. Milwaukee county is requesting site closure with RCL exceedances, based on an industrial land use.

C. Groundwater

- i. Describe degree and extent of groundwater contamination. Relate this to known or suspected sources and known or potential receptors/migration pathways. Specifically address any potential or existing impacts to water supply wells or interception with building foundation drain systems.

In the 1993 site investigation, DRO ranged from 0.25 ppm to 38 ppm; GRO ranged from non-detect to 4.4mg/L. No VOCs of PAHs were detected. During site investigative activities in 1993, Law Engineering observed trace amounts of

free product in monitoring well MW-3. Absorbent material was placed into the wells to remove the product. During the subsequent groundwater sampling event in June 1993, free product was not observed in either well, and groundwater samples were collected for laboratory analysis. The groundwater sample from MW-3 had a diesel range organics (DRO) concentration of 380 milligrams per liter (mg/L) and a total recoverable petroleum hydrocarbons (TRPH) concentration of 200 mg/L. Post remedial groundwater testing revealed the presence of PAHs in certain wells and Enforcement Standard exceedances for benzene and methyl tertiary butyl ether. This is further discussed in Section 4. There are no building foundations. There are no water supply wells or building foundation drain systems on site.

- ii. Describe the presence of free product at the site, including the thickness, depth, and locations. Identify the depth and location of the smear zone.

In the 2013 report TRC found no free product, however historically there had been. From November 1996 to June 1997, approximately 500 gallons of free product was removed from the recovery sump during operation of the dual phase extraction system. Free product has been identified in eight on-site wells (MW-3, EW-2, EW-3, EW-4, EW-5, EW-7, EW-8, and MH-1). These wells are located south of the former bulk fuel oil AST area. On August 14, 2002, RMT observed free product in two extraction wells, EW-3 and EW-4, at thickness of 1.97 and 0.14 feet, respectively. Both wells are located in the middle of the site where free product has never been observed in either of these wells with the exception of 1-inch of product measured in EW-3 in 1997. In 2013, however, there was no free product present in any location.

D. Vapor

- i. Describe how the vapor migration pathway was assessed, including locations where vapor, soil gas, or indoor air samples were collected. If the vapor pathway was not assessed, explain reasons why.
There are no buildings or structures on the site, thus vapor pathways were not assessed.
- ii. Identify the applicable DNR action levels and the land use classification used to establish them. Describe where the DNR action levels were reached or exceeded (e.g., sub slab, indoor air or both).
There are no structures on the site, thus, vapor pathways were not assessed.

E. Surface Water and Sediment

- i. Identify whether surface water and/or sediment was assessed and describe the impacts found. If this pathway was not assessed, explain why.
There is no sediment or surface water present on site.
- ii. Identify any surface water and/or sediment action levels used to assess the impacts for this pathway and how these were derived. Describe where the DNR action levels were reached or exceeded.
There is no sediment or surface water present on site.

4. Remedial Actions Implemented and Residual Levels at Closure

- A. General: Provide a brief summary of the remedial action history. List previous remedial action report submittals by name and date. Identify remedial actions undertaken since the last submittal for this project and provide the appropriate documentation in Attachment C.

Based on the impacts detected in the soil and groundwater during the investigative activities, Law Engineering recommended a remediation system combining bioremediation piles, a groundwater interceptor trench, and passive monitoring to remediate the soil and groundwater impacts. Law Engineering presented the remediation system to the WDNR in November 1993 in the report entitled, "Conceptual Remedial Action Plan (RAP)." As part of the remediation, the tanks, miscellaneous drums, two septic fields, and the private water supply well were removed from the site by the end of 1993.

RMT was retained in May 1995 to continue the soil and groundwater remediation design and to implement the RAP at the site. Utilizing an interceptor trench, a groundwater extraction and treatment system was installed in the spring of 1995. The groundwater recovery and treatment system was started in the summer of 1995. In the fall of 1995, significant amounts of free phase petroleum product were found in the interceptor trench.

Subsequently, a dual-phase extraction system was installed at the site. The system was described in detail in RMT's Revised Remedial Action Plan (December 1995) and Construction Documentation Report (November 1996) and consisted of two pumps that extracted vapors, free product, and groundwater from a recovery sump and nine extraction wells. Recovered vapors were discharged to the atmosphere, recovered free product was drummed for off-site disposal, and recovered groundwater was transferred to the existing treatment system. The groundwater treatment system consisted of an oil/water separator, air stripper, bag filters, and high-pressure activated carbon canisters. The dual-phase extraction system also incorporated a regenerative air injection blower for bioventing the extraction wells.

The dual phase extraction system began drawing free product in November 1996. From November 1996 to June 1997, approximately 500 gallons of free product were removed from the site. The remediation system continued to operate until groundwater results stabilized or decreased and the cumulative petroleum hydrocarbon removal and the vapor recovery rates

from the extraction system reached asymptotic trends. Following approval by the WDNR, the system was shut down in April 1999.

In 2013, the Wisconsin Department of Transportation, as part of the Zoo Interchange reconstruction project, widened Highway 100 and the railroad tunnel that runs beneath it. To expand the railroad tunnel, the Wisconsin DOT removed 6,866 tons of soil. The soil was removed to a depth of 8 feet up to the property boundary adjacent to the Bliffert site. To facilitate construction of the tunnel, the DOT's contractor also pumped 225,800 gallons of groundwater to the sanitary sewer.

In 2015, Milwaukee County began building the and overflow parking lot on what will be the Zoo's new western entrance. In order to build the parking lot, it was required to raise the grade of the majority of the site, including the area with petroleum and foundry sand impacts. The entire contaminated area was filled with 11 to 24 feet of fill material, topped with an asphalt parking lot.

The most recent investigations in 2013 reveal a small area of residual soil contamination remains including soils impacted with GRO (GP13-6, 210 mg/kg; GP13-11 860 mg/kg), benzene (GP13-3, 29 ug/kg; GP13-6 64 ug/kg; GP13-11, 22J ug/kg), and PAHs (ex. Benzo(a)pyrene ranged from 47 ug/kg to 1300 ug/kg in 10 detected samples) above RCLs. See Figure B. 2. b. Residual Soil.

Residual groundwater contamination exists in a small area with Benzene and PAH Enforcement Standard Exceedances in GP-13-6 (benzene = 17ug/l), GP13-8 and GP13-11. Benzo(b)fluorathene exceedances occurred in GP-13-6 (0.83 ug/l) and GP-13-8 (0.37 ug/l). Benzo(a)pyrene exceedances occurred in GP-13-6 (0.47 ppb) and GP-13-8 (0.78 ppb). Chrysene exceedances occurred in GP-13-6 (1.1 ug/l), GP-13-8 (0.3 ug/l), GP-13-11 (0.5 ug/l). See Figure B. 3. b. Groundwater Isoconcentration and Table A. A. 1. Groundwater Analytical Table(s).

- B. Describe any immediate or interim actions taken at the site under ch NR 708, Wis. Adm. Code.
No actions were taken under ch NR 708.
- C. Describe the *active* remedial actions taken at the source property, including: type of remedial system(s) used for each media affected; the size and location of any excavation or in-situ treatment; the effectiveness of the systems to address the contaminated media and substances; operational history of the systems; and summarize the performance of the active remedial actions. Provide any system performance documentation in Attachment A.7.
See response to to item 4.a, above.
- D. Describe the alternatives considered during the Green and Sustainable Remediation evaluation in accordance with NR 722.09 and any practices implemented as a result of the evaluation.
The remedial alternatives are described fully in RMT's report "Revised Remedial Action Plan for the Milwaukee County Zoo Bliffert Site," December 1995. Alternatives considered were intrinsic soil and groundwater remediation, enhanced in situ soil bioremediation, soil vapor extraction, soil excavation with treatment or disposal, groundwater recovery and treatment, air sparging, free product recovery, passive free product recovery, and dual phase extraction or a combined approach. As described above, the selected approach was to utilize a dual phase extraction system (with bioventing) including a groundwater extraction and treatment system from an interceptor trench.
- E. Describe the nature, degree and extent of residual contamination that will remain at the source property or on other affected properties after case closure.
The most recent investigations in 2013 reveal a small area of residual soil contamination remains including soils impacted with GRO (GP13-6, 210 mg/kg; GP13-11, 860 mg/kg), benzene (GP13-3, 29 ug/kg; GP13-6, 64 ug/kg; GP13-11, 22J ug/kg), and PAHs (ex. Benzo(a)pyrene ranged from 47 ug/kg to 1300 ug/kg in 10 detected samples) above RCLs. See Figure B. 2. b. Residual Soil Contamination and A. 3. Residual Soil contamination Table(s).
Residual groundwater contamination exists in a small area with Benzene and PAH Enforcement Standard Exceedances in GP-13-6 (benzene = 17ug/l), GP13-8, and GP13-11. Benzo(b)fluorathene exceedances occurred in GP-13-6 (0.83 ug/l) and GP-13-8 (0.37 ug/l). Benzo(a)pyrene exceedances occurred in GP-13-6 (0.47 ppb) and GP-13-8 (0.78 ppb). Chrysene exceedances occurred in GP-13-6 (1.1 ug/l), GP-13-8 (0.3 ug/l), GP-13-11 (0.5 ug/l). See Figure B. 3. b. Groundwater Isoconcentration and Table A. 1. I. Groundwater Analytical Table(s).
- F. Describe the residual soil contamination within four feet of ground surface (direct contact zone) that attains or exceeds RCLs established under s. NR 720.12, Wis. Adm. Code, for protection of human health from direct contact.
There is no residual soil contamination in the upper four feet of soil.
- G. Describe the residual soil contamination that is above the observed low water table that attains or exceeds the soil standard(s) for the groundwater pathway.
Benzene exceeded RCLs at GP-13-3 (29 ppb), GP-13-6 (64 ppb), and GP-13-11 (22 ppb). Benz(a)anthracene exceeded RCLs at GP-13-4 (750 ppb), GP-13-5 (1000 ppb), GP-13-6 (1200 ppb), GP-13-7 (750 ppb), GP-13-8 (220 ppb), and GP-13-12 (160 ppb). Benz(a)pyrene exceeded RCLs at GP-13-1 (47 ppb), GP-13-2 (82 ppb), GP-13-3 (46 ppb), GP-13-4 (710 ppb), GP-13-5 (1200 ppb), GP-13-6 (1300 ppb), GP-13-7 (670 ppb), GP-13-8 (250 ppb), GP-13-11(130 ppb),

GP-13-12 (170 ppb), and GP-13-13 (21 ppb). Benz(o)fluoranthene exceeded RCLs at GP-13-2 (160 ppb), GP-13-4 (940 ppb), GP-13-5 (2,400 ppb), GP-13-6 (2,200 ppb), GP-13-7 (900 ppb), GP-13-8 (330 ppb), GP-13-11(200 ppb), and GP-13-12 (240 ppb). Benzo(k)fluoranthene exceeded RCLs at GP-13-4 (300 ppb), GP-13-5 (780 ppb), GP-13-6 (780 ppb) and, GP-13-7 (330 ppb). Chrysene exceeded RCLs at GP-13-4 (640 ppb), GP-13-5 (1,700 ppb), GP-13-6 (1,800 ppb), GP-13-7 (620 ppb), GP-13-8 (200 ppb), GP-13-11(180 ppb), and GP-13-12 (160 ppb). Dibenz(a,h)anthracene exceeded RCLs at GP-13-1 (15 ppb), GP-13-2 (55 ppb), GP-13-3 (17 ppb), GP-13-4 (250 ppb), GP-13-5 (690 ppb), GP-13-6 (790 ppb), GP-13-7 (210 ppb), GP-13-8 (82 ppb), and GP-13-12 (54 ppb). Indeno(123-cd)pyrene exceeded RCLs at GP-13-4 (560 ppb), GP-13-5 (1,500 ppb), GP-13-6 (1,900 ppb), GP-13-7 (460 ppb), GP-13-8 (190 ppb), and GP-13-11(160 ppb). 1-Methylnaphthalene exceeded RCLs at GP-13-11 (43,000 ppb). Naphthalene exceeded RCLs at GP-13-11 (1,600 ppb).

- H. Describe how the residual contamination will be addressed, including but not limited to details concerning: covers, engineering controls or other barrier features; use of natural attenuation of groundwater; and vapor mitigation systems or measures.

Residual contamination will be addressed through natural attenuation. Residual contamination has been covered with 11 feet to 24 feet of fill material installed to create an asphalt parking lot.

There are no structures on the site, thus, vapor pathways were not assessed.

- I. If using natural attenuation as a groundwater remedy, describe how the data collected supports the conclusion that natural attenuation is effective in reducing contaminant mass and concentration (e.g., stable or receding groundwater plume). Groundwater data collected shows stable or receding concentrations. Although most of the older wells could not be sampled, due to well failure, in 2013 when groundwater was re-analyzed, new wells were installed throughout the area and can be compared to past results. GP-13-6 very near MW-3 shows a decrease in benzene concentration from 59 ug/l in 2002 to 17 ug/l in 2013. Low level PAH concentrations in GP-13-6 and GP-13-8 and GP-13-11, the only well with Enforcement Standard Exceedances are also similar or lower in 2013 than in 2002. For example, in 2002 Benzo(a)pyrene concentrations in EW-8 and MW-3 were 2.2 ug/L and 0.55 ug/L, respectively. In 2013 concentrations in GP-13-5 (in the location of EW-8) and GP-13-6 (in the location of MW-3) were <0.12 ug/l and 0.83 ug/l, respectively.
- J. Identify how all exposure pathways (soil, groundwater, vapor) were removed and/or adequately addressed by immediate, interim and/or remedial action(s). Exposure pathways and migration potential have been greatly reduced by additional soil cover and asphalt parking lot installed over remaining contamination.
- K. Identify any system hardware anticipated to be left in place after site closure, and explain the reasons why it will remain. No system hardware is to be left in place. Several monitoring wells were not found. Some may have been removed previously and not documented, or were not found.
- L. Identify the need for a ch. NR 140, Wis. Adm. Code, groundwater Preventive Action Limit (PAL) or Enforcement Standard (ES) exemption, and identify the affected monitoring points and applicable substances. Currently the groundwater for benzene, benzo(a)pyrene, benzo(b) fluorathene, and chrysene is above both the ES and PAL limits. In GP-13-6 (17 ppb) there was an exceedance of benzene. Benzo(b)fluorathene exceedances occurred in GP-13-6 (0.83 ppb) and GP-13-8 (0.37 ppb). Benzo(a)pyrene exceedances occurred in GP-13-6 (0.47 ppb) and GP-13-8 (0.78 ppb). Chrysene exceedances occurred in GP-13-6 (1.1 ppb), GP-13-8 (0.3 ppb), and GP-13-11 (0.5 ppb).
- M. If a DNR action level for vapor intrusion was exceeded (for indoor air, sub slab, or both) describe where it was exceeded and how the pathway was addressed. There are no structures on the site, thus, vapor pathways were not assessed.
- N. Describe the surface water and/or sediment contaminant concentrations and areas after remediation. If a DNR action level was exceeded, describe where it was exceeded and how the pathway was addressed. Neither sediment nor surface water nor other media was of concern.

5. Continuing Obligations: Situations where sites, including all affected properties and rights-of-way (ROWs), are included on the DNR's GIS Registry. In certain situations, maintenance plans are also required, and must be included in Attachment D.

Directions: For each of the 3 property types below, check all situations that apply to this closure request.

(NOTE: Monitoring wells to be transferred to another site are addressed in Attachment E.)

This situation applies to the following property or Right of Way (ROW):			Case Closure Situation - Continuing Obligation Inclusion on the GIS Registry is Required (ii. - xiv.)	Maintenance Plan Required	
Property Type:					
Source Property	Affected Property (Off-Source)	ROW			
i.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None of the following situations apply to this case closure request.	NA
ii.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residual groundwater contamination exceeds ch. NR 140 ESs.	NA
iii.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residual soil contamination exceeds ch. NR 720 RCLs.	NA
iv.				Monitoring Wells Remain:	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• Not Abandoned (filled and sealed)	NA
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• Continued Monitoring (requested or required)	Yes
v.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cover/Barrier/Engineered Cover or Control for (soil) direct contact pathways (includes vapor barriers)	Yes
vi.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cover/Barrier/Engineered Cover or Control for (soil) groundwater infiltration pathway	Yes
vii.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Structural Impediment: impedes completion of investigation or remedial action (not as a performance standard cover)	NA
viii.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residual soil contamination meets NR 720 industrial soil RCLs, land use is classified as industrial	NA
ix.	<input type="checkbox"/>	<input type="checkbox"/>	NA	Vapor Mitigation System (VMS) required due to exceedances of vapor risk screening levels or other health based concern	Yes
x.	<input type="checkbox"/>	<input type="checkbox"/>	NA	Vapor: Dewatering System needed for VMS to work effectively	Yes
xi.	<input type="checkbox"/>	<input type="checkbox"/>	NA	Vapor: Compounds of Concern in use: full vapor assessment could not be completed	NA
xii.	<input type="checkbox"/>	<input type="checkbox"/>	NA	Vapor: Commercial/Industrial exposure assumptions used.	NA
xiii.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vapor: Residual volatile contamination poses future risk of vapor intrusion	NA
xiv.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Site-specific situation: (e. g., fencing, methane monitoring, other) (<i>discuss with project manager before submitting the closure request</i>)	Site specific

6. Underground Storage Tanks

- A. Were any tanks, piping or other associated tank system components removed as part of the investigation or remedial action? Yes No
- B. Do any upgraded tanks meeting the requirements of ch. ATCP 93, Wis. Adm. Code, exist on the property? Yes No
- C. If the answer to question 6.B. is yes, is the leak detection system currently being monitored? Yes No

General Instructions

All information shall be legible. Providing illegible information will result in a submittal being considered incomplete until corrected. For each attachment (A-G), provide a Table of Contents page, listing all 'applicable' and 'not applicable' items by Closure Form titles (e.g., A.1. Groundwater Analytical Table, A.2. Soil Analytical Results Table, etc.). If any item is 'not applicable' to the case closure request, you must fully explain the reasons why.

Data Tables (Attachment A)

Directions for Data Tables:

- Use **bold** and italics font for information of importance on tables and figures. Use **bold** font for ch. NR 140, Wis. Adm. Code ES attainments or exceedances, and *italicized font* for ch. NR 140, Wis. Adm. Code, PAL attainments or exceedances.
- Use **bold** font to identify individual ch. NR 720 Wis. Adm. Code RCL exceedances. Tables should also include the corresponding groundwater pathway and direct contact pathway RCLs for comparison purposes. Cumulative hazard index and cumulative cancer risk exceedances should also be tabulated and identified on Tables A.2 and A.3.
- Do not use shading or highlighting on the analytical tables.
- Include on Data Tables the level of detection for results which are below the detection level (i.e., do not just list as no detect (ND)).
- Include the units on data tables.
- Summaries of all data must include information collected by previous consultants.
- Do not submit lab data sheets unless these have not been submitted in a previous report. Tabulate all data required in s. NR 716.15 (3)(c), Wis. Adm. Code, in the format required in s. NR 716.15(4)(e), Wis. Adm. Code.
- Include in Attachment A all of the following tables, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: A.1. Groundwater Analytical Table; A.2. Soil Analytical Results Table, etc.).
- For required documents, each table (e.g., A.1., A.2., etc.) should be a separate Portable Document Format (PDF).

A. Data Tables

- Groundwater Analytical Table(s):** Table(s) showing the analytical results and collection dates for all groundwater sampling points (e.g., monitoring wells, temporary wells, sumps, extraction wells, potable wells) for which samples have been collected.
- Soil Analytical Results Table(s):** Table(s) showing **all** soil analytical results and collection dates. Indicate if sample was collected above or below the observed low water table (unsaturated versus saturated).
- Residual Soil Contamination Table(s):** Table(s) showing the analytical results of only the residual soil contamination at the time of closure. This table shall be a subset of table A.2 and should include only the soil sample locations that exceed an RCL. Indicate if sample was collected above or below the observed low water table (unsaturated versus saturated). Table A.3 is optional only if a total of fewer than 15 soil samples have been collected at the site.
- Vapor Analytical Table(s):** Table(s) showing type(s) of samples, sample collection methods, analytical method, sample results, date of sample collection, time period for sample collection, method and results of leak detection, and date, method and results of communication testing.
- Other Media of Concern (e.g., sediment or surface water):** Table(s) showing type(s) of sample, sample collection method, analytical method, sample results, date of sample collection, and time period for sample collection.
- Water Level Elevations:** Table(s) showing all water level elevation measurements and dates from all monitoring wells. If present, free product should be noted on the table.
- Other:** This attachment should include: 1) any available tabulated natural attenuation data; 2) data tables pertaining to engineered remedial systems that document operational history, demonstrate system performance and effectiveness, and display emissions data; and (3) any other data tables relevant to case closure not otherwise noted above. If this section is not applicable, please explain the reasons why.

Maps, Figures and Photos (Attachment B)

Directions for Maps, Figures and Photos:

- Provide on paper no larger than 11 x 17 inches, unless otherwise directed by the Department. Maps and figures may be submitted in a larger electronic size than 11 x 17 inches, in a PDF readable by the Adobe Acrobat Reader. However, those larger-size documents must be legible when printed.
- Prepare visual aids, including maps, plans, drawings, fence diagrams, tables and photographs according to the applicable portions of ss. NR 716.15(4), 726.09(2) and 726.11(3), (5) and (6), Wis. Adm. Code.
- Include all sample locations.
- Contour lines should be clearly labeled and defined.
- Include in Attachment B all of the following maps and figures, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: B.1. Location Map; B.2. Detailed Site Map, etc).
- For the electronic copies that are required, each map (e.g., B.1.a., B.2.a, etc.,) should be a separate PDF.
- Maps, figures and photos should be dated to reflect the most recent revision.

B.1. Location Maps

- B.1.a. Location Map:** A map outlining all properties within the contaminated site boundaries on a United States Geological Survey (U.S.G.S.) topographic map or plat map in sufficient detail to permit easy location of all affected and/or adjacent parcels. If groundwater standards are exceeded, include the location of all potable wells, including municipal wells, within 1200 feet of the area of contamination.
- B.1.b. Detailed Site Map:** A map that shows all relevant features (buildings, roads, current ground surface cover, individual property boundaries for all affected properties, contaminant sources, utility lines, monitoring wells and potable wells) within the contaminated area. This map is to show the location of all contaminated public streets, and highway and railroad rights-of-way in relation to the source property and in relation to the boundaries of groundwater contamination attaining or exceeding a ch. NR 140 ES, and/or in relation to the boundaries of soil contamination attaining or exceeding a RCL. Provide parcel identification numbers for all affected properties.
- B.1.c. RR Sites Map:** From RR Sites Map ([http://dnrmaps.wi.gov/sl/?Viewer=RR Sites](http://dnrmaps.wi.gov/sl/?Viewer=RR%20Sites)) attach a map depicting the source property, and all open and closed BRRTS sites within a half-mile radius or less of the property.

B.2. Soil Figures

- B.2.a. **Soil Contamination:** Figure(s) showing the location of **all** identified unsaturated soil contamination. Use a single contour to show the horizontal extent of each area of contiguous soil contamination that exceeds a soil to groundwater pathway RCL as determined under ch. NR 720.Wis. Adm. Code. A separate contour line should be used to indicate the horizontal extent of each area of contiguous soil contamination that exceeds a direct contact RCL exceedances (0-4 foot depth).
- B.2.b. **Residual Soil Contamination:** Figure(s) showing only the locations of soil samples where unsaturated soil contamination remains at the time of closure (locations represented in Table A.3). Use a single contour to show the horizontal extent of each area of contiguous soil contamination that exceeds a soil to groundwater pathway RCL as determined under ch. NR 720 Wis. Adm. Code. A separate contour line should be used to indicate the horizontal extent of each area of contiguous soil contamination that exceeds a direct contact RCL exceedance (0-4 foot depth).

B.3. Groundwater Figures

- B.3.a. **Geologic Cross-Section Figure(s):** One or more cross-section diagrams showing soil types and correlations across the site, water table and piezometric elevations, and locations and elevations of geologic rock units, if encountered. Display on one or more figures all of the following:
- Source location(s) and vertical extent of residual soil contamination exceeding an RCL. Distinguish between direct contact and the groundwater pathway RCLs.
 - Source location(s) and lateral and vertical extent if groundwater contamination exceeds ch. NR 140 ES.
 - Surface features, including buildings and basements, and show surface elevation changes.
 - Any areas of active remediation within the cross section path, such as excavations or treatment zones.
 - Include a map displaying the cross-section location(s), if they are not displayed on the Detailed Site Map (Map B.1.b.)
- B.3.b. **Groundwater Isoconcentration:** Figure(s) showing the horizontal extent of the post-remedial groundwater contamination exceeding a ch. NR 140, Wis. Adm. Code, PAL and/or an ES. Indicate the date and direction of groundwater flow based on the most recent sampling data.
- B.3.c. **Groundwater Flow Direction:** Figure(s) representing groundwater movement at the site. If the flow direction varies by more than 20° over the history of the site, submit two groundwater flow maps showing the maximum variation in flow direction.
- B.3.d. **Monitoring Wells:** Figure(s) showing all monitoring wells, with well identification number. Clearly designate any wells that: (1) are proposed to be abandoned; (2) cannot be located; (3) are being transferred; (4) will be retained for further sampling, or (5) have been abandoned.

B.4. Vapor Maps and Other Media

- B.4.a. **Vapor Intrusion Map:** Map(s) showing all locations and results for samples taken to investigate the vapor intrusion pathway in relation to residual soil and groundwater contamination, including sub-slab, indoor air, soil vapor, soil gas, ambient air, and communication testing. Show locations and footprints of affected structures and utility corridors, and/or where residual contamination poses a future risk of vapor intrusion.
- B.4.b. **Other media of concern (e.g., sediment or surface water):** Map(s) showing all sampling locations and results for other media investigation. Include the date of sample collection and identify where any standards are exceeded.
- B.4.c. **Other:** Include any other relevant maps and figures not otherwise noted above. (This section may remain blank).

- B.5. Structural Impediment Photos:** One or more photographs documenting the structural impediment feature(s) which precluded a complete site investigation or remediation at the time of the closure request. The photographs should document the area that could not be investigated or remediated due to a structural impediment. The structural impediment should be indicated on Figures B.2.a and B.2.b.

Documentation of Remedial Action (Attachment C)**Directions for Documentation of Remedial Action:**

- Include in Attachment C all of the following documentation, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: C.1. Site Investigation Documentation; C.2. Investigative Waste, etc.).
- If the documentation requested below has already been submitted to the DNR, please note the title and date of the report for that particular document requested.
 - C.1. **Site investigation documentation**, that has not otherwise been submitted with the Site Investigation Report.
 - C.2. **Investigative waste** disposal documentation.
 - C.3. Provide a **description of the methodology** used along with all supporting documentation if the RCLs are different than those contained in the Department's RCL Spreadsheet available at: <http://dnr.wi.gov/topic/Brownfields/Professionals.html>.
 - C.4. **Construction documentation** or as-built report for any constructed remedial action or portion of, or interim action specified in s. NR 724.02(1), Wis. Adm. Code.
 - C.5. **Decommissioning of Remedial Systems.** Include plans to properly abandon any systems or equipment.
 - C.6. **Other.** Include any other relevant documentation not otherwise noted above (This section may remain blank).

Maintenance Plan(s) and Photographs (Attachment D)**Directions for Maintenance Plans and Photographs:**

Attach a maintenance plan for each affected property (source property, each off-source affected property) with continuing obligations requiring future maintenance (e.g., direct contact, groundwater protection, vapor intrusion). See Site Summary section 5 for all affected property(s) requiring a maintenance plan. Maintenance plan guidance and/or templates for: 1) Cover/barrier systems; 2) Vapor intrusion; and 3) Monitoring wells, can be found at: <http://dnr.wi.gov/topic/Brownfields/Professionals.html#tabx3>

- D.1. **Descriptions of maintenance action(s) required for maximizing effectiveness of the engineered control, vapor mitigation system, feature or other action for which maintenance is required:**
- Provide brief descriptions of the type, depth and location of residual contamination.

- Provide a description of the system/cover/barrier/monitoring well(s) to be maintained.
 - Provide a description of the maintenance actions required for maximizing effectiveness of the engineered control, vapor mitigation system, feature or other action for which maintenance is required.
 - Provide contact information, including the name, address and phone number of the individual or facility who will be conducting the maintenance.
- D.2. **Location map(s) which show(s):** (1) the feature that requires maintenance; (2) the location of the feature(s) that require(s) maintenance - on and off the source property; (3) the extent of the structure or feature(s) to be maintained, in relation to other structures or features on the site; (4) the extent and type of residual contamination; and (5) all property boundaries.
- D.3. **Photographs** for site or facilities with a cover or other performance standard, a structural impediment or a vapor mitigation system, include one or more photographs documenting the condition and extent of the feature at the time of the closure request. Pertinent features shall be visible and discernible. Photographs shall be submitted with a title related to the site name and location, and the date on which it was taken.
- D.4. **Inspection log**, to be maintained on site, or at a location specified in the maintenance plan or approval letter. The inspection and maintenance log is found at: <http://dnr.wi.gov/files/PDF/forms/4400/4400-305.pdf>.

Monitoring Well Information (Attachment E)

Directions for Monitoring Well Information:

For all wells that will remain in use, be transferred to another party, or that could not be located; attach monitoring well construction and development forms (DNR Form 4400-113 A and B: http://dnr.wi.gov/topic/groundwater/documents/forms/4400_113_1_2.pdf)

Select One:

- No monitoring wells were installed as part of this response action.
- All monitoring wells have been located and will be properly abandoned upon the DNR granting conditional closure to the site
- Select One or More:**
 - Not all monitoring wells can be located, despite good faith efforts. Attachment E must include a description of efforts made to locate the wells.
 - One or more wells will remain in use at the site after this closure. Attachment E must include documentation as to the reason (s) the well(s) will remain in use. When one or more monitoring wells will remain in use this is considered a continuing obligation and a maintenance plan will be required and must be included in Attachment D.
 - One or more monitoring wells will be transferred to another owner upon case closure being granted. Attachment E should include documentation identifying the name, address and email for the new owner(s). Provide documentation from the party accepting future responsibility for monitoring well(s).

Source Legal Documents (Attachment F)

Directions for Source Legal Documents:

Label documents with the specific closure form titles (e.g., F.1. Deed, F.2. Certified Survey Map, etc.). Include all of the following documents, in the order listed:

- F.1. **Deed:** The most recent deed with legal description clearly listed.
Note: If a property has been purchased with a land contract and the purchaser has not yet received a deed, a copy of the land contract which includes the legal description shall be submitted instead of the most recent deed. If the property has been inherited, written documentation of the property transfer should be submitted along with the most recent deed.
- F.2. **Certified Survey Map:** A copy of the certified survey map or the relevant section of the recorded plat map for those properties where the legal description in the most recent deed refers to a certified survey map or a recorded plat map. In cases where the certified survey map or recorded plat map are not legible or are unavailable, a copy of a parcel map from a county land information office may be substituted. A copy of a parcel map from a county land information office shall be legible, and the parcels identified in the legal description shall be clearly identified and labeled with the applicable parcel identification number.
- F.3. **Verification of Zoning:** Documentation (e.g., official zoning map or letter from municipality) of the property's or properties' current zoning status.
- F.4. **Signed Statement:** A statement signed by the Responsible Party (RP), which states that he or she believes that the attached legal description(s) accurately describe(s) the correct contaminated property or properties. This section applies to the source property only. Signed statements for Other Affected Properties should be included in Attachment G.

Notifications to Owners of Affected Properties (Attachment G)

Directions for Notifications to Owners of Affected Properties:

Complete the table on the following page for sites which require notification to owners of affected properties pursuant to ch. 292, Wis. Stats. and ch. NR 725 and 726, Wis. Adm. Code. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31- 19.39, Wis. Stats.]. The DNR's "Guidance on Case Closure and the Requirements for Managing Continuing Obligations" (PUB-RR-606) lists specific notification requirements <http://dnr.wi.gov/files/PDF/pubs/rr/RR606.pdf>.

State law requires that the responsible party provide a 30-day, written advance notification to certain persons prior to applying for case closure. This requirement applies if: (1) the person conducting the response action does not own the source property; (2) the contamination has migrated onto another property; and/or (3) one or more monitoring wells will not be abandoned. Use form 4400-286, Notification of Continuing Obligations and Residual Contamination, at <http://dnr.wi.gov/files/PDF/forms/4400/4400-286.pdf>

Include a copy of each notification sent and accompanying proof of delivery, i.e., return receipt or signature confirmation. (These items will not be placed on the GIS Registry.)

Include the following documents for each property, keeping each property's documents grouped together and labeled with the letter G and the corresponding ID number from the table on the following page. (Source Property documents should only be included in Attachment F):

- **Deed:** The most recent deed with legal descriptions clearly listed for all affected properties.
Note: If a property has been purchased with a land contract and the purchaser has not yet received a deed, a copy of the land contract which includes the legal description shall be submitted instead of the most recent deed. If the property has been inherited, written documentation of the property transfer should be submitted along with the most recent deed.
- **Certified Survey Map:** A copy of the certified survey map or the relevant section of the recorded plat map for those properties where the legal description in the most recent deed refers to a certified survey map or a recorded plat map. In cases where the certified survey map or recorded plat map are not legible or are unavailable, a copy of a parcel map from a county land information office may be substituted. A copy of a parcel map from a county land information office shall be legible, and the parcels identified in the legal description shall be clearly identified and labeled with the applicable parcel identification number.
- **Verification of Zoning:** Documentation (e.g., official zoning map or letter from municipality) of the property's or properties' current zoning status.
- **Signed Statement:** A statement signed by the Responsible Party (RP), which states that he or she believes the attached legal description(s) accurately describe(s) the correct contaminated property or properties.

Signatures and Findings for Closure Determination

Check the correct box for this case closure request, and have either a professional engineer or a hydrogeologist, as defined in ch. NR 712, Wis. Adm. Code, sign this document.

[X] A response action(s) for this site addresses groundwater contamination (including natural attenuation remedies).

[] The response action(s) for this site addresses media other than groundwater.

Engineering Certification

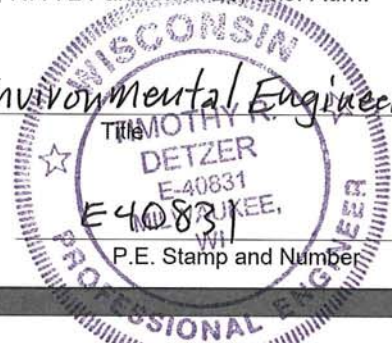
I, Timothy Detzer hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this case closure request has been prepared by me or prepared under my supervision in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this case closure request is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code. Specifically, with respect to compliance with the rules, in my professional opinion a site investigation has been conducted in accordance with ch. NR 716, Wis. Adm. Code, and all necessary remedial actions have been completed in accordance with chs. NR 140, NR 718, NR 720, NR 722, NR 724 and NR 726, Wis. Adm. Codes."

Timothy Detzer
Printed Name

Senior Environmental Engineer
Title

Signature

May 4, 2017
Date



Hydrogeologist Certification

I hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this case closure request is correct and the document was prepared by me or prepared by me or prepared under my supervision and, in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code. Specifically, with respect to compliance with the rules, in my professional opinion a site investigation has been conducted in accordance with ch. NR 716, Wis. Adm. Code, and all necessary remedial actions have been completed in accordance with chs. NR 140, NR 718, NR 720, NR 722, NR 724 and NR 726, Wis. Adm. Codes."

Printed Name

Title

Signature

Date

Table of Contents A. Data Tables
Zoo-Bliffert Case Closure – GIS Registry

A. 1. Groundwater Analytical Table

A. 1. 1. Table from TRC 2013

A. 1. 2. - A. 1. 13. Tables from RMT 1996-2000

A. 1. 14. - A. 1. 15. Tables from Law Engineering 1993

A. 2. Soil Analytical Results Table

A. 2. 1. Table from TRC 2013, RCLs were updated to match 1/4/17 conditions

A. 2. 2. - A. 2. 3. Tables from RMT 2001

A. 2. 4. - A. 2. 8. Tables from Law Engineering 1993

A. 3. Residual Soil Contamination Table

A. 3. 1. Table from TRC 2013, RCLs were updated to match 1/4/17 conditions

A. 4. Vapor Analytical Table was not applicable. There are no structures on the site, thus, vapor analytics were not assessed.

A. 5. Other Media of Concern was not applicable. There were no other media present.

A. 6. Water Level Elevations

A. 6. 1. Table from TRC 2013

A. 6. 2. - A. 6. 3. Tables from RMT 1993-2002

A. 7. Other Natural Attenuation from RMT 1999-2000

Table 2
Groundwater Sampling Results Summary - Phase 2.5 Investigation
Milwaukee County - Bliffert Lumber, Milwaukee
TRC Project ID 202083.0000.0000

	NR 140 STANDARD		WELL ID																								
	ES	PAL	MW-1	MW-2R**	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8**	MW-9	MW-10	MW-11	MW-12	GP-13-1	GP-13-2	GP-13-3	GP-13-5	GP-13-6	GP-13-8	GP-13-9	GP-13-10	GP-13-11	GP-13-13	GP-13-14	Trip Blank	
			SAMPLES COLLECTED JUNE 3, 2013																								
PVOCs (µg/l)																											
Benzene	5	0.5	Not Sampled	Not Sampled	Not Sampled	<0.36	Not Sampled	Not Sampled	Not Sampled	<0.36	Not Sampled	Not Sampled	Not Sampled	Not Sampled	<0.36	<0.36	<0.36	0.46 J	17	<0.36	<0.36	<0.36	2.0	<0.36	<0.36	<0.36	<0.36
Ethylbenzene	700	140				<0.37				<0.37					<0.37	<0.37	1.4	<0.37	<0.37	<0.37	15	<0.37	<0.37	<0.37			
MTBE	60	12				<0.24				<0.24					<0.24	0.37 J	0.53	<0.24	<0.24	<0.24	0.37 J	<0.24	<0.24	<0.24			
Toluene	800	160				<0.33				<0.33					<0.33	<0.33	0.95	<0.33	<0.33	<0.33	<0.33	0.40 J	<0.33	<0.33			
Trimethylbenzenes	480	96				<0.60 *				<0.60 *					<0.60 *	0.62 *	13.6 *	<0.60 *	<0.60 *	<0.60 *	16.9 *	37.4 B*	<0.60 *	<0.60 *			
Xylenes, total	2,000	400	<0.58	<0.58	<0.58	0.64 J	7.7	<0.58	<0.58	<0.58	12 B	<0.58	<0.58	<0.58													
PAH's (µg/l)																											
1-Methylnaphthalene	-	-	Well could not be found. According to old RMT reports, the well was damaged or buried during installation of the remediation system in 1996. Replaced by GP-13-8.	Well could not be found. According to old RMT reports, the well was damaged or buried during installation of the remediation system in 1996.	Well could not be sampled. Well was found but it was half filled with dirt/gravel above the water table	<0.77	Well could not be found. Replaced by GP-13-1.	Well could not be sampled. Well was found but it was filled with dirt/gravel to the ground surface.	Well could not be sampled due to construction equipment for railroad tunnel over the well.	Well could not be found. Buried under soil. Well not planned to be sampled during this phase of work.	Well could not be found. According to old RMT reports, the well was damaged or buried during installation of the remediation system in 1996. Well not planned to be sampled during this phase of work.	Well could not be sampled due to a truck for construction of the railroad tunnel being parked over the well.	Well could not be found. According to old RMT reports, the well was damaged or buried during installation of the remediation system in 1996. Well not planned to be sampled during this phase of work.	<0.77	4.4	<0.76	36	140	<0.77	<1.0	290	470	<0.77	<0.78	--		
2-Methylnaphthalene	-	-				<0.13								<0.13	<0.13	8.1	56	<0.13	<0.17	5.7	230	<0.13	<0.13	--			
Acenaphthene	-	-				<0.19								<0.19	<0.19	4.1	9.1	<0.19	<0.26	12	19	<0.19	<0.19	--			
Acenaphthylene	-	-				<0.21								<0.21	<0.21	1.3 J	<0.21	<0.28	3.1	2.6	<0.21	<0.21	--				
Anthracene	3,000	600				<0.28								<0.28	<0.28	<0.28	1.3 J	<0.28	<0.38	2.8	1.3 J	<0.29	<0.29	--			
Benzo (a) anthracene	-	-				<0.10								<0.10	<0.10	0.98	0.24 J	<0.14	<0.10	0.39	<0.10	<0.10	--				
Benzo (a) pyrene	0.2	0.02				<0.12								<0.12	<0.12	0.83	0.37	<0.16	<0.12	<0.12	<0.12	<0.12	--				
Benzo (b) fluoranthene	0.2	0.02				<0.13 *								<0.13 *	<0.13 *	0.47 *	0.78 *	<0.17 *	<0.13 *	<0.13 *	<0.13 *	<0.13 *	--				
Benzo (g,h,i) perylene	-	-				<0.74								<0.74	<0.74	<0.74	<0.74	<1.0	<0.74	<0.75	<0.75	<0.76	--				
Benzo (k) fluoranthene	-	-				<0.26								<0.26	<0.26	1.2	<0.26	<0.35	<0.26	<0.26	<0.26	<0.26	--				
Chrysene	0.2	0.02				<0.14								<0.14	<0.14	1.1	0.30 J	<0.19	<0.14	0.50 J	<0.14	<0.15	--				
Dibenz (a,h) anthracene	-	-				<0.17								<0.17	<0.17	<0.17	<0.17	<0.23	<0.17	<0.18	<0.18	<0.18	--				
Fluoranthene	400	80				<0.31								<0.31	<0.31	2.2	<0.31	<0.42	<0.31	0.61 J	<0.31	<0.32	--				
Fluorene	400	80				<0.26								<0.26	<0.26	9.2	<0.26	<0.35	15	32	<0.26	<0.26	--				
Indeno (1,2,3-cd) pyrene	-	-				<0.12								<0.12	<0.12	0.29 J	<0.12	<0.16	<0.12	<0.12	<0.12	<0.12	--				
Naphthalene	100	10				<0.24								<0.24	<0.24	21	<0.24	<0.32	4.5	32	<0.24	<0.24	--				
Phenanthrene	-	-	<0.32	<0.32	<0.32	3.0	18	<0.33	<0.44	34	40	<0.33	<0.33	--													
Pyrene	250	50	<0.35	<0.35	<0.35	2.2	0.38 J	<0.47	1.2 J	3.5	<0.35	<0.36	--														

- Notes:
- PVOCs = Petroleum Volatile Organic Compounds analyzed using EPA Method 8260; only the VOCs detected are listed above.
 - µg/l = micrograms per liter (ppb).
 - NR 140 ES = Wisconsin Administrative Code Chapter NR 140 Enforcement Standard.
 - NR 140 PAL = Wisconsin Administrative Code Chapter NR 140 Preventive Action Limit.
 - ND = not detected.
 - PAHs = Polycyclic Aromatic Hydrocarbons
 - J = result is reported between Method Detection Limit and Limit of Quantitation (LOQ) and are therefore less certain than results detected at or above the LOQ.
 - B = Compound was found in the blank and sample.
 - ** - Sample MW-8 was incorrectly labeled as MW-2R. The results for the sample labeled MW-2R are actually for MW-8.
 - * - Laboratory Control Spike or Laboratory Control Spike Duplicate exceeds the control limits.
 - = Not Analyzed
 - = No Standard
 - Results in **BOLD** indicate an exceedence of the NR 140, WAC ES.
 - Results in *Italics* indicate an exceedence of the NR 140, WAC PAL.

Created by: B. Bergmann 6/19/13
Checked by: T. Stapel 6/20/13

TABLE 1
MONITORING WELL 1
QUARTERLY GROUNDWATER SAMPLING RESULTS
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Analyte	ES NR140.10	PAL NR140.10	Units	MW-1													
				Base (3)	11/14/96	02/26/97	05/14/97	08/26/97	11/18/97	02/26/98	05/11/98	08/20/98	11/18/98	02/24/99	07/26/99*	11/16/99*	2/08/00†
Volatile Organic Compounds																	
- Benzene	5	0.5	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- n- Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- sec- Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- tert- Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- 1,2- Dichloroethane	5	0.5	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Ethylbenzene	700	140	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Isopropylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- p-Isopropyltoluene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Methylene chloride (1)	5	0.5	ug/L	44	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Methyl-tert-butyl-ether/MTBE	60	12	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- n-Propylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Toluene	343	68.6	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 1,2,4-Trimethylbenzene	480	96	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 1,3,5-Trimethylbenzene			ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Xylene, (total)	620	124	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
Total VOCs Detected (2)			ug/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	--	0.0	0	0.0	0.0	0.0
Gasoline Range Organics																	
			ug/L	N.D.	N.D.	--	--	--	--	--	--	--	--	--	--	--	--
Polynuclear Aromatic Hydrocarbons																	
- Acenaphthene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Acenaphthylene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Anthracene	3,000	600	ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(a) anthracene			ug/L	N.D.	--	S.D.	N.D.	N.D.	0.032	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(a) pyrene	0.2	0.02	ug/L	N.D.	--	S.D.	N.D.	N.D.	0.034	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(b) fluoranthene	0.2	0.02	ug/L	N.D.	--	S.D.	N.D.	N.D.	0.062	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(g,h,i) perylene			ug/L	--	--	--	N.D.	0.089	0.14	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(k) fluoranthene			ug/L	--	--	--	N.D.	N.D.	0.024	N.D.	--	--	0.085	N.S.	0.073	N.D.	N.D.
- Chrysene	0.2	0.02	ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Dibenzo(a,h) anthracene			ug/L	--	--	--	N.D.	N.D.	0.026	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Fluoranthene	400	80	ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Fluorene	400	80	ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 1-Methylnaphthalene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 2-Methylnaphthalene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Naphthalene	40	8	ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	0.72
- Phenanthrene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Pyrene	250	50	ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Indeno (1,2,3-cd) pyrene			ug/L	--	--	--	--	--	--	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
Total PAHs Detected			ug/L	0.0	0.0	0.0	0.0	0.1	0.3	0.0	--	--	0.3	0.0	0.1	0.0	0.72

KEY:
(1) The methylene chloride detections have been attributed to background laboratory contamination.
(2) Methylene chloride is not included in the VOC totals.
(3) Base data was collected on May 11, 1994.
N.D. Not Detected
S.D. Sample Dropped In Laboratory
N.S. Well Not Sampled
* MW-5 was relocated on May 14, 1997.
+ Natural Attenuation Sampling
-- Not Analyzed For
Shaded areas indicate levels above the Enforcement Standard (ES)

TABLE 1 (Continued)
MONITORING WELLS 2R (EW-5)
QUARTERLY GROUNDWATER SAMPLING RESULTS
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Analyte	ES NR140.10	PAL NR140.10	Units	MW-2R (EW-5)															
				Base (3)	11/14/96	02/26/97	05/14/97	08/26/97	11/18/97	02/27/98	05/11/98	08/20/98	11/18/98	02/24/99	07/28/99	11/15/99	02/08/00		
Volatile Organic Compounds																			
- Benzene	5	0.5	ug/L	4.4	--	3.9	3.1	N.D.	N.D.	N.D.	2.8	3.6	1.8	0.9	2.5	2.6			
- n- Butylbenzene			ug/L	81	--	7.0	8.8	150.0	--	N.D.	45	--	--	0.74	N.D.	--			
- sec- Butylbenzene			ug/L	67	--	4.3	26	N.D.	--	120	25	--	--	0.93	3.3	--			
- tert- Butylbenzene			ug/L	24	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	N.D.	N.D.	--			
- 1,2- Dichloroethane	5	0.5	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	N.D.	N.D.	--			
- Ethylbenzene	700	140	ug/L	56	--	21	28	60	52	64	7	6.6	10	11	2.6	7.9	11		
- Isopropylbenzene			ug/L	19	--	5.3	N.D.	N.D.	--	12	3	--	--	N.D.	2.7	--			
- p-Isopropyltoluene			ug/L	56	--	4.7	N.D.	N.D.	--	49	5	--	--	1.2	2.8	--			
- Methylene chloride (1)	5	0.5	ug/L	4.9	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	N.D.	N.D.	--			
- Methyl-tert-butyl-ether/MTBE	60	12	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
- Naphthalene	40	8	ug/L	120	--	N.D.	N.D.	520	--	N.D.	23	--	--	12	7.2	--			
- n-Propylbenzene			ug/L	44	--	8.6	30	53	--	140	17	--	--	1.5	5.9	--			
- Toluene	343	68.6	ug/L	N.D.	--	N.D.	N.D.	N.D.	13	N.D.	2	11	13	3.3	6.3	4.1	2.8		
- 1,2,4-Trimethylbenzene	480	96	ug/L	240	--	110	81	200	170	200	49	25	20	24	6.9	16	10		
- 1,3,5-Trimethylbenzene			ug/L	16	--	N.D.	N.D.	110	N.D.	33	5	1.3	N.D.	N.D.	N.D.	1.4	6.7		
- Xylene, (total)	620	124	ug/L	53	--	19	9.4	26	26	34	7	5.6	7	7.8	2.2	14	9		
Total VOCs Detected (2)			ug/L	780.4	0.0	183.8	186.3	1119.0	261.0	652.0	188.0	52.3	53.6	47.9	35.3	67.8	42.1		
Gasoline Range Organics				ug/L	N.D.	--	--	--	--	--	--	--	--	--	--	--	--	--	
Polynuclear Aromatic Hydrocarbons																			
- Acenaphthene			ug/L	N.D.	--	5.1	1900	15	430	N.D.	260	17	5.9	3.9	1.1	4.3	7.7		
- Acenaphthylene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.		
- Anthracene	3,000	600	ug/L	N.D.	--	0.52	47	3.9	120	N.D.	N.D.	4.9	1.3	0.53	N.D.	0.63	1.6		
- Benzo(a) anthracene			ug/L	N.D.	--	0.31	26	N.D.	20	160	140	N.D.	4	N.D.	N.D.	N.D.	N.D.		
- Benzo(a) pyrene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1	N.D.	N.D.	N.D.	N.D.	N.D.		
- Benzo(b) fluoranthene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
- Benzo(g,h,i) perylene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	0.31	N.D.	N.D.	N.D.	N.D.	N.D.		
- Benzo(k) fluoranthene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	0.11	0.089	0.079	N.D.	N.D.		
- Chrysene	0.2	0.02	ug/L	--	--	--	58	N.D.	38	N.D.	49	330	N.D.	N.D.	N.D.	N.D.	N.D.	2.8	
- Dibenzo(a,h) anthracene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
- Fluoranthene	400	80	ug/L	N.D.	--	19	4700	250	6400	160	350	500	N.D.	24	N.D.	N.D.	220		
- Fluorene	400	80	ug/L	63	--	5.2	N.D.	N.D.	560	97	74	7.8	3.3	1.5	N.D.	2.3	4.8		
- 1-Methylnaphthalene			ug/L	211	--	N.D.	1200	170	3300	N.D.	290	110	39	N.D.	1.1	43	32		
- 2-Methylnaphthalene			ug/L	177	--	N.D.	N.D.	210	3600	N.D.	110	N.D.	2.5	2	N.D.	2.5	3.2		
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	12	1.4	N.D.	N.D.	N.D.		
- Phenanthrene			ug/L	N.D.	--	2.9	N.D.	51	1500	N.D.	120	62	13	6.7	0.65	8.8	14		
- Pyrene	250	50	ug/L	--	--	N.D.	N.D.	3.9	170	100	500	N.D.	6.4	0.92	0.29	N.D.	3		
- Indeno (1,2,3-cd) pyrene			ug/L	--	--	--	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
Total PAHs Detected			ug/L	451.0	0.0	33.0	7931.0	703.8	16,138.0	517.0	1893.0	1033.1	87.5	41.0	3.2	61.5	289.1		

KEY:

- (1) The methylene chloride detections have been attributed to background laboratory contamination.
- (2) Methylene chloride is not included in the VOC totals.
- (3) Base data was collected on May 11, 1994.
- N.D. Not Detected
- S.D. Sample Dropped In Laboratory
- N.S. Well Not Sampled
- * MW-5 was relocated on May 14, 1997.
- + Natural Attenuation Sampling
- Not Analyzed For
- Shaded areas indicate levels above the Enforcement Standard (ES)

TABLE 1 (Continued)
MONITORING WELL 3
QUARTERLY GROUNDWATER SAMPLING RESULTS
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Analyte	ES NR140.10	PAL NR140.10	Units	MW-3														
				Base (3)	11/14/96	02/26/97	05/14/97	08/26/97	11/18/97	02/26/98	05/11/98	08/20/98	11/18/98	02/24/99	07/28/99*	11/16/99*	02/08/00*	
Volatile Organic Compounds																		
- Benzene	5	0.5	ug/L	23	15	N.D.	12	N.D.	4.2	N.D.	15	14	10	20	44	69	59	
- n- Butylbenzene			ug/L	34	--	N.D.	32	37	--	N.D.	21	--	--	--	4.5	N.D.	--	
- sec- Butylbenzene			ug/L	20	--	N.D.	N.D.	N.D.	--	19	11	--	--	--	2.7	N.D.	--	
- tert- Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--	
- 1,2- Dichloroethane	5	0.5	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--	
- Ethylbenzene	700	140	ug/L	42	N.D.	N.D.	36	N.D.	25	N.D.	35	20	11	2.5	35	35	52	
- Isopropylbenzene			ug/L	8.7	--	N.D.	8.7	N.D.	--	1	8	--	--	--	3.5	N.D.	--	
- p-Isopropyltoluene			ug/L	19	--	N.D.	N.D.	N.D.	--	5	3	--	--	--	2.2	N.D.	--	
- Methylene chloride (1)	5	0.5	ug/L	15	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--	
- Methyl-tert-butyl-ether/MTBE	60	12	ug/L	N.D.	N.D.	N.D.	5.6	N.D.	--	3	3	N.D.	N.D.	N.D.	1.8	N.D.	N.D.	
- Naphthalene	40	8	ug/L	89	--	N.D.	68	450	N.D.	3	1	--	--	--	2.9	N.D.	--	
- n-Propylbenzene			ug/L	19	--	12	24	N.D.	--	14	18	--	--	--	6.7	13	--	
- Toluene	343	68.6	ug/L	N.D.	44	N.D.	N.D.	N.D.	--	N.D.	N.D.	N.D.	0.7	11	5.5	N.D.	1.2	
- 1,2,4-Trimethylbenzene	480	96	ug/L	140	N.D.	76	93	73	120	39	61	46	31	11	45	43	60	
- 1,3,5-Trimethylbenzene			ug/L	12	N.D.	N.D.	30	N.D.	N.D.	4	N.D.	1.2	1.4	2.3	3.4	N.D.	2.2	
- Xylene, (total)	620	124	ug/L	27	6.9	15	11	26	8.5	2	7	3.1	4.7	13	17.6	N.D.	5.7	
Total VOCs Detected (2)			ug/L	433.7	65.9	103.0	320.3	586.0	157.7	90.0	183.0	84.3	58.8	59.8	174.8	160.0	180.1	
Gasoline Range Organics																		
			ug/L	2,500	3,900	--	--	--	--	--	--	--	--	--	--	--	--	
Polynuclear Aromatic Hydrocarbons																		
- Acenaphthene			ug/L	N.D.	--	15	N.D.	21	540	N.D.	N.D.	16	7.8	8.5	9.5	11	15	
- Acenaphthylene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	29	
- Anthracene	3,000	600	ug/L	N.D.	--	1.7	N.D.	4.9	140	N.D.	N.D.	3	0.89	1.7	1.9	1.6	2.9	
- Benzo(a) anthracene			ug/L	N.D.	--	N.D.	N.D.	1.0	18.0	11	18	N.D.	1.3	0.52	N.D.	0.2	1.5	
- Benzo(a) pyrene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.66	1	N.D.	0.55	
- Benzo(b) fluoranthene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.4	0.27	N.D.	0.46	
- Benzo(g,h,i) perylene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
- Benzo(k) fluoranthene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	0.078	N.D.	0.046	
- Chrysene	0.2	0.02	ug/L	--	--	--	12	N.D.	44	N.D.	7.8	180	N.D.	N.D.	N.D.	N.D.	N.D.	
- Dibenzo(a,h) anthracene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
- Fluoranthene	400	80	ug/L	N.D.	--	72	1100	300	7000	200	94	250	N.D.	27	77	N.D.	130	
- Fluorene	400	80	ug/L	341	--	16	N.D.	27	670	50	50	5.1	3.4	2.6	N.D.	4.1	8.3	
- 1-Methylnaphthalene			ug/L	1480	--	N.D.	300	220	4600	120	280	130	56	24	79	160	150	
- 2-Methylnaphthalene			ug/L	1590	--	N.D.	N.D.	130	3200	N.D.	75	39	13	9.2	27	8.5	8.5	
- Naphthalene	40	8	ug/L	137	--	22	N.D.	7.3	N.D.	N.D.	N.D.	2.1	0.44	3.7	1.2	2.1	6.2	
- Phenanthrene			ug/L	457	--	22	N.D.	55	2000	94	49	39	13	15	14	21	40	
- Pyrene	250	50	ug/L	--	--	N.D.	N.D.	4.4	200	210	100	N.D.	2.4	2.5	N.D.	N.D.	3.8	
- Indeno(1,2,3-cd) pyrene			ug/L	--	--	--	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Total PAHs Detected			ug/L	4005.0	0.0	148.7	1412.0	770.6	18412.0	685.0	673.8	664.2	98.2	95.9	210.9	208.5	396.3	

KEY:
(1) The methylene chloride detections have been attributed to background laboratory contamination.
(2) Methylene chloride is not included in the VOC totals.
(3) Base data was collected on May 11, 1994.
N.D. Not Detected
S.D. Sample Dropped in Laboratory
N.S. Well Not Sampled
* MW-5 was relocated on May 14, 1997.
+ Natural Attenuation Sampling
-- Not Analyzed For
Shaded areas indicate levels above the Enforcement Standard (ES)

TABLE 1 (Continued)																	
MONITORING WELL 4																	
QUARTERLY GROUNDWATER SAMPLING RESULTS																	
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE																	
Analyte	ES NR140.10	PAL NR140.10	Units	MW-4													
				Base (3)	11/14/96	02/26/97	05/14/97	08/26/97	11/18/97	02/26/98	05/11/98	08/20/98	11/17/98	02/24/99	07/27/99*	11/16/99	02/08/00'
Volatile Organic Compounds																	
- Benzene	5	0.5	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- n- Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	2	--	--	--	--	N.D.	N.D.	--
- sec- Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- tert- Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- 1,2- Dichloroethane	5	0.5	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Ethylbenzene	700	140	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Isopropylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- p-Isopropyltoluene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Methylene chloride (1)	5	0.5	ug/L	40	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Methyl-tert-butyl-ether/MTBE	60	12	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- n-Propylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Toluene	343	68.6	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 1,2,4-Trimethylbenzene			ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 1,3,5-Trimethylbenzene	480	96	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Xylene, (total)	620	124	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
Total VOCs Detected (2)			ug/L	0.0	0.0	0.0	0.0	0.0	0.0	2.0	--	--	0.0	0	0.0	0.0	0.0
Gasoline Range Organics																	
			ug/L	N.D.	N.D.	--	--	--	--	--	--	--	--	--	--	--	--
Polynuclear Aromatic Hydrocarbons																	
- Acenaphthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Acenaphthylene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Anthracene	3,000	600	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(a) anthracene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(a) pyrene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(b) fluoranthene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(g,h,i) perylene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(k) fluoranthene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Chrysene	0.2	0.02	ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Dibenzo(a,h) anthracene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Fluoranthene	400	80	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Fluorene	400	80	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 1-Methylnaphthalene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 2-Methylnaphthalene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	0.36
- Phenanthrene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Pyrene	250	50	ug/L	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Indeno (1,2,3-cd) pyrene			ug/L	--	--	--	--	--	--	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
Total PAHs Detected			ug/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	--	0.0	0.0	0.0	0.0	0.36
KEY: (1) The methylene chloride detections have been attributed to background laboratory contamination. (2) Methylene chloride is not included in the VOC totals. (3) Base data was collected on May 11, 1994. N.D. Not Detected S.D. Sample Dropped In Laboratory N.S. Well Not Sampled * MW-5 was relocated on May 14, 1997. + Natural Attenuation Sampling -- Not Analyzed For Shaded areas indicate levels above the Enforcement Standard (ES)																	

TABLE 1 (Continued)
MONITORING WELL 5
QUARTERLY GROUNDWATER SAMPLING RESULTS
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Analyte	ES NR140.10	PAL NR140.10	Units	MW-5 (EW-1)														
				Base (3)	11/14/96	02/26/97	5/14/97	8/26/97	11/18/97	2/26/98*	5/11/98*	8/20/98*	11/18/98	02/24/99	07/27/99	11/16/99	02/08/00	
Volatile Organic Compounds																		
- Benzene	5	0.5	ug/L	N.D.	7100	1200	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- n- Butylbenzene			ug/L	N.D.	--	110	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--	
- sec- Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--	
- tert- Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--	
- 1,2- Dichloroethane	5	0.5	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--	
- Ethylbenzene	700	140	ug/L	N.D.	44	39	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Isopropylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--	
- p-Isopropyltoluene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--	
- Methylene chloride (1)	5	0.5	ug/L	38	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--	
- Methyl-tert-butyl-ether/MTBE	60	12	ug/L	N.D.	3000	660	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--	
- n-Propylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--	
- Toluene	343	68.6	ug/L	N.D.	67	210	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- 1,2,4-Trimethylbenzene			ug/L	N.D.	N.D.	540	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- 1,3,5-Trimethylbenzene	480	96	ug/L	N.D.	N.D.	220	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Xylene, (total)	620	124	ug/L	N.D.	45	1700	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
Total VOCs Detected (2)			ug/L	0.0	10256	4679	0.0	0.0	0.0	0.0	--	--	0	0	0	0	0.0	
Gasoline Range Organics				ug/L	N.D.	6,600	--	--	--	--	--	--	--	--	--	--	--	--
Polynuclear Aromatic Hydrocarbons																		
- Acenaphthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Acenaphthylene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Anthracene	3,000	600	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Benzo(a) anthracene			ug/L	N.D.	--	N.D.	N.D.	N.D.	0.029	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Benzo(a) pyrene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Benzo(b) fluoranthene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Benzo(g,h,i) perylene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Benzo(k) fluoranthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Chrysene	0.2	0.02	ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Dibenz(a,h) anthracene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Fluoranthene	400	80	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Fluorene	400	80	ug/L	N.D.	--	N.D.	N.D.	N.D.	3.7	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- 1-Methylnaphthalene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	0.2	N.S.	N.D.	N.D.	N.D.	
- 2-Methylnaphthalene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Phenanthrene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	0.202	N.S.	N.D.	N.D.	N.D.	
- Pyrene	250	50	ug/L	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
- Indeno (1,2,3-cd) pyrene			ug/L	--	--	--	--	--	--	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.	
Total PAHs Detected			ug/L	0.0	0.0	0.0	0.0	0.0	3.7	0.0	--	--	0.4	0.0	0.0	0.0	0.0	

KEY:
(1) The methylene chloride detections have been attributed to background laboratory contamination.
(2) Methylene chloride is not included in the VOC totals.
(3) Base data was collected on May 11, 1994.
N.D. Not Detected
S.D. Sample Dropped in Laboratory
N.S. Well Not Sampled
* MW-5 was relocated on May 14, 1997.
+ Natural Attenuation Sampling
-- Not Analyzed For
Shaded areas indicate levels above the Enforcement Standard (ES)

TABLE 1 (Continued)
MONITORING WELL 6
QUARTERLY GROUNDWATER SAMPLING RESULTS
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Analyte	ES NR140.10	PAL NR140.10	Units	MW-6													
				Base (3)	11/14/96	02/26/97	05/14/97	08/26/97	11/18/97	02/26/98	05/11/98	08/20/98	11/17/98	02/24/99	07/26/99*	11/16/99	02/08/00
Volatile Organic Compounds																	
- Benzene	5	0.5	ug/L	410	2.4	0.59	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- n-Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	10	--	--	--	N.D.	N.D.	--
- sec-Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- tert-Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- 1,2-Dichloroethane	5	0.5	ug/L	N.D.	--	0.65	N.D.	1.4	--	N.D.	N.D.	--	--	--	0.62	N.D.	--
- Ethylbenzene	700	140	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.	N.D.
- Isopropylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- p-Isopropyltoluene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Methylene chloride (1)	5	0.5	ug/L	29	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Methyl-tert-butyl-ether/MTBE	60	12	ug/L	N.D.	17	11	2.8	7.2	10	7	2	7.3	9.3	N.S.	4	8	7.2
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- n-Propylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Toluene	343	68.6	ug/L	N.D.	N.D.	0.66	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- 1,2,4-Trimethylbenzene	480	96	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	2	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- 1,3,5-Trimethylbenzene			ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Xylene, (total)	620	124	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
Total VOCs Detected (2)			ug/L	410	19.4	12.9	2.8	8.6	10.0	7.0	14.0	7.3	9.3	0.0	4.6	8.0	7.2
Gasoline Range Organics																	
			ug/L	490	N.D.	--	--	--	--	--	--	--	--	--	--	--	--
Polynuclear Aromatic Hydrocarbons																	
- Acenaphthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Acenaphthylene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Anthracene	3,000	600	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(a)anthracene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	0.38	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(a)pyrene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	0.24	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(b)fluoranthene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	0.28	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(g,h,i)perylene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(k)fluoranthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	0.36	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Chrysene	0.2	0.02	ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Dibenzo(a,h)anthracene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Fluoranthene	400	80	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Fluorene	400	80	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- 1-Methylnaphthalene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- 2-Methylnaphthalene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Phenanthrene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Pyrene	250	50	ug/L	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
- Indeno(1,2,3-cd)pyrene			ug/L	--	--	--	--	--	--	N.D.	N.D.	N.D.	N.D.	N.S.	N.D.	N.D.	N.D.
Total PAHs Detected			ug/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0

KEY:
(1) The methylene chloride detections have been attributed to background laboratory contamination.
(2) Methylene chloride is not included in the VOC totals.
(3) Base data was collected on May 11, 1994.
N.D. Not Detected
S.D. Sample Dropped In Laboratory
N.S. Well Not Sampled
* MW-5 was relocated on May 14, 1997.
+ Natural Attenuation Sampling
-- Not Analyzed For
Shaded areas indicate levels above the Enforcement Standard (ES)

TABLE 1 (Continued)
MONITORING WELL 7
QUARTERLY GROUNDWATER SAMPLING RESULTS
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Analyte	ES NR140.10	PA1 NR140.10	Units	MW-7													
				Base (3)	11/14/96	02/26/97	05/14/97	08/26/97	11/18/97	02/26/98	05/11/98	08/20/98	11/18/98	02/24/99	07/27/99	11/16/99	02/08/00
Volatile Organic Compounds																	
- Benzene	5	0.5	ug/L	1500	1.3	N.D.	N.D.	60	N.D.	10	19	240	1100	150	15	8.2	0.57
- n- Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	8	--	--	--	N.D.	N.D.	--
- sec- Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	1	--	--	--	N.D.	N.D.	--
- tert- Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- 1,2- Dichloroethane	5	0.5	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	0.79	--
- Ethylbenzene	700	140	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	10	18	53	9.2	0.39	N.D.	N.D.
- Isopropylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	1	--	--	--	N.D.	N.D.	--
- p-Isopropyltoluene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Methylene chloride (1)	5	0.5	ug/L	170	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Methyl-tert-butyl-ether/MTBE	60	12	ug/L	1500	70	26	280	1,300	940	6	5	180	260	19	35	230	140
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	2	--	--	--	N.D.	N.D.	--
- n-Propylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	5	--	--	--	0.85	N.D.	--
- Toluene	343	68.6	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	6.6	20	0.86	N.D.	N.D.	N.D.
- 1,2,4-Trimethylbenzene	480	96	ug/L	N.D.	N.D.	1.2	N.D.	N.D.	N.D.	N.D.	15	12	5.3	6.4	N.D.	N.D.	N.D.
- 1,3,5-Trimethylbenzene			ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Xylene, (total)	620	124	ug/L	N.D.	N.D.	0.98	N.D.	N.D.	N.D.	N.D.	22	7.9	N.D.	1.3	N.D.	N.D.	N.D.
Total VOCs Detected (2)			ug/L	3000	71.3	28.2	280.0	1360.0	940.0	16.0	93.0	464.5	1438.3	186.8	51.2	239.0	140.6
Gasoline Range Organics			ug/L	3,600	51	--	--	--	--	--	--	--	--	--	--	--	--
Polynuclear Aromatic Hydrocarbons																	
- Acenaphthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.19	N.D.	N.D.	N.D.	N.D.
- Acenaphthylene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Anthracene	3,000	600	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Benzo(a) anthracene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Benzo(a) pyrene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Benzo(b) fluoranthene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Benzo(f,h,i) perylene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Benzo(k) fluoranthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.078	N.D.	N.D.	N.D.	N.D.	N.D.
- Chrysene	0.2	0.02	ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Dibenzo(a,h) anthracene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Fluoranthene	400	80	ug/L	N.D.	--	N.D.	1.2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Fluorene	400	80	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- 1-Methylnaphthalene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.094	0.34	1	N.D.	N.D.	N.D.
- 2-Methylnaphthalene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.34	N.D.	N.D.	N.D.	N.D.
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	0.48	0.69	0.74	N.D.	N.D.	N.D.	3.1
- Phenanthrene			ug/L	N.D.	--	N.D.	1.4	N.D.	N.D.	N.D.	N.D.	N.D.	0.19	N.D.	N.D.	N.D.	0.3
- Pyrene	250	50	ug/L	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Indeno (1,2,3-cd) pyrene			ug/L	--	--	--	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total PAHs Detected			ug/L	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.7	1.8	1.7	0.0	0.3	3.1

KEY:
(1) The methylene chloride detections have been attributed to background laboratory contamination.
(2) Methylene chloride is not included in the VOC totals.
(3) Base data was collected on May 11, 1994.
N.D. Not Detected
S.D. Sample Dropped In Laboratory
N.S. Well Not Sampled
* MW-5 was relocated on May 14, 1997.
+ Natural Attenuation Sampling
-- Not Analyzed For
Shaded areas indicate levels above the Enforcement Standard (ES)

TABLE 1 (Continued)
MONITORING WELL 8
QUARTERLY GROUNDWATER SAMPLING RESULTS
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Analyte	ES NR140.10	PAL NR140.10	Units	MW-8														
				Base (3)	11/14/96	02/26/97	05/14/97	08/26/97	11/18/97	02/26/98	05/11/98	08/20/98	11/18/98	02/24/99	07/27/99	11/16/99	02/08/00	
Volatile Organic Compounds																		
- Benzene	5	0.5	ug/L	N.D.	0.58	N.D.	N.D.	N.D.	N.D.	0.95	N.D.	N.D.	0.6	0.69	N.D.	N.D.	N.D.	0.53
- n-Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- sec-Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- tert-Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- 1,2-Dichloroethane	5	0.5	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Ethylbenzene	700	140	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Isopropylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- p-Isopropyltoluene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Methylene chloride (1)	5	0.5	ug/L	50	--	N.D.	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Methyl-tert-butyl-ether/MTBE	60	12	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- n-Propylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Toluene	343	68.6	ug/L	N.D.	N.D.	N.D.	0.61	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- 1,2,4-Trimethylbenzene	480	96	ug/L	N.D.	4.3	4.8	4.4	1.4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- 1,3,5-Trimethylbenzene			ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Xylene, (total)	620	124	ug/L	N.D.	2.4	0.72	0.53	0.51	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total VOCs Detected (2)			ug/L	0.0	7.3	5.5	5.5	1.9	1.0	0.0	0.0	0.6	0.7	0.0	0.0	0.0	0.0	0.53
Gasoline Range Organics				ug/L	N.D.	53	--	--	--	--	--	--	--	--	--	--	--	--
Polynuclear Aromatic Hydrocarbons																		
- Acenaphthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Acenaphthylene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Anthracene	3,000	600	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Benzo(a)anthracene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Benzo(a)pyrene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Benzo(b)fluoranthene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Benzo(g,h,i)perylene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Benzo(k)fluoranthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Chrysene	0.2	0.02	ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Dibenzo(a,h)anthracene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Fluoranthene	400	80	ug/L	N.D.	--	N.D.	1.9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Fluorene	400	80	ug/L	N.D.	--	N.D.	1.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- 1-Methylnaphthalene			ug/L	N.D.	--	N.D.	4.7	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.1	N.D.	N.D.	N.D.
- 2-Methylnaphthalene			ug/L	N.D.	--	N.D.	3.6	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Phenanthrene			ug/L	N.D.	--	N.D.	2.7	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.22	N.D.	N.D.	N.D.	N.D.
- Pyrene	250	50	ug/L	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Indeno (1,2,3-cd) pyrene			ug/L	--	--	--	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total PAHs Detected			ug/L	0.0	0.0	0.0	14.2	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0

KEY:
(1) The methylene chloride detections have been attributed to background laboratory contamination.
(2) Methylene chloride is not included in the VOC totals.
(3) Base data was collected on May 11, 1994.
N.D. Not Detected
S.D. Sample Dropped In Laboratory
N.S. Well Not Sampled
* MW-5 was relocated on May 14, 1997.
+ Natural Attenuation Sampling
-- Not Analyzed For
Shaded areas indicate levels above the Enforcement Standard (ES)

TABLE 1 (Continued)
MONITORING WELL 9
QUARTERLY GROUNDWATER SAMPLING RESULTS
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Analyte	ES NR140.10	PAL NR140.10	Units	MW-9													
				Base (3)	11/14/96	02/26/97	05/14/97	08/26/97	11/18/97	02/26/98	05/11/98	08/20/98	11/18/98	02/24/99	07/26/99*	11/16/99*	02/08/00*
Volatile Organic Compounds																	
- Benzene	5	0.5	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- n- Butylbenzene			ug/L	N.D.	N.D.	--	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- sec- Butylbenzene			ug/L	N.D.	N.D.	--	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- tert- Butylbenzene			ug/L	N.D.	N.D.	--	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- 1,2- Dichloroethane	5	0.5	ug/L	N.D.	N.D.	--	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Ethylbenzene	700	140	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Isopropylbenzene			ug/L	N.D.	N.D.	--	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- p-Isopropyltoluene			ug/L	N.D.	N.D.	--	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Methylene chloride (1)	5	0.5	ug/L	N.D.	40	--	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Methyl-tert-butyl-ether/MTBE	60	12	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Naphthalene	40	8	ug/L	N.D.	N.D.	--	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- n-Propylbenzene			ug/L	N.D.	N.D.	--	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Toluene	343	68.6	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 1,2,4-Trimethylbenzene			ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 1,3,5-Trimethylbenzene	480	96	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Xylene, (total)	620	124	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
Total VOCs Detected (2)			ug/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	--	0.0	0.0	0.0	0.0	0.0
Gasoline Range Organics																	
			ug/L	--	N.D.	N.D.	--	--	--	--	--	--	--	--	--	--	--
Polynuclear Aromatic Hydrocarbons																	
- Acenaphthene			ug/L	N.D.	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Acenaphthylene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Anthracene	3,000	600	ug/L	N.D.	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(a) anthracene			ug/L	N.D.	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(a) pyrene	0.2	0.02	ug/L	N.D.	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(b) fluoranthene	0.2	0.02	ug/L	N.D.	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(g,h,i) perylene			ug/L	N.D.	--	--	--	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(k) fluoranthene			ug/L	N.D.	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Chrysene	0.2	0.02	ug/L	N.D.	--	--	--	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Dibenz(a,h) anthracene			ug/L	N.D.	--	--	--	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Fluoranthene	400	80	ug/L	N.D.	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Fluorene	400	80	ug/L	N.D.	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 1-Methylnaphthalene			ug/L	N.D.	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	--	0.2	N.S.	N.D.	N.D.	0.34
- 2-Methylnaphthalene			ug/L	N.D.	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	0.47
- Naphthalene	40	8	ug/L	N.D.	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Phenanthrene			ug/L	N.D.	N.D.	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	0.27
- Pyrene	250	50	ug/L	N.D.	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Indeno (1,2,3-cd) pyrene			ug/L	--	--	--	--	--	--	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
Total PAHs Detected			ug/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	--	0.2	0.0	0.0	0.0	1.1

KEY:

- (1) The methylene chloride detections have been attributed to background laboratory contamination.
- (2) Methylene chloride is not included in the VOC totals.
- (3) Base data was collected on May 11, 1994.

N.D. Not Detected
S.D. Sample Dropped In Laboratory
N.S. Well Not Sampled
* MW-5 was relocated on May 14, 1997.

+ Natural Attenuation Sampling

-- Not Analyzed For

Shaded areas indicate levels above the Enforcement Standard (ES)

TABLE 1 (Continued)
MONITORING WELL 10 (EW-7)
QUARTERLY GROUNDWATER SAMPLING RESULTS
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Analyte	ES NR140.10	PAL NR140.10	Units	MW-10 (EW-7)													
				Base (3)	11/14/96	02/26/97	05/14/97	08/26/97	11/18/97	02/27/98	05/11/98	08/20/98	11/18/98	02/24/99	07/28/99	11/15/99	02/04/00
Volatile Organic Compounds																	
- Benzene	5	0.5	ug/L	4.5	N.D.	0.64	1.3	1.9	N.D.	N.D.	2	1.7	2	1.7	2	2.5	1.8
- n- Butylbenzene			ug/L	15	--	1.8	4.0	N.D.	--	6	71	--	--	--	0.51	1.6	--
- sec- Butylbenzene			ug/L	9.7	--	0.54	1.4	N.D.	--	2	33	--	--	--	0.42	1.1	--
- tert- Butylbenzene			ug/L	3.7	--	N.D.	0.8	1.2	--	1	N.D.	--	--	--	N.D.	1	--
- 1,2- Dichloroethane	5	0.5	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Ethylbenzene	700	140	ug/L	1.9	N.D.	N.D.	1.2	N.D.	12,000	N.D.	N.D.	0.63	0.51	0.53	N.D.	N.D.	0.69
- Isopropylbenzene			ug/L	12	--	1.4	1.6	0.95	--	1	3	--	--	--	N.D.	N.D.	--
- p-Isopropyltoluene			ug/L	6.3	--	0.51	N.D.	N.D.	--	2	5	--	--	--	N.D.	N.D.	--
- Methylene chloride (1)	5	0.5	ug/L	48	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Methyl-tert-butyl-ether/MTBE	60	12	ug/L	N.D.	N.D.	0.62	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.66	N.D.	N.D.	N.D.	N.D.
- Naphthalene	40	8	ug/L	27	--	N.D.	N.D.	N.D.	--	N.D.	24	--	--	--	N.D.	5.4	--
- n-Propylbenzene			ug/L	19	--	0.89	2.9	0.57	--	1	28	--	--	--	0.48	0.92	--
- Toluene	343	68.6	ug/L	N.D.	N.D.	N.D.	N.D.	0.62	N.D.	1	N.D.	1.5	1.3	0.5	1.4	2.9	1.7
- 1,2,4-Trimethylbenzene			ug/L	11	180	2.4	2.8	N.D.	N.D.	2	35	1.6	1	1.4	N.D.	N.D.	1.3
- 1,3,5-Trimethylbenzene	480	96	ug/L	N.D.	200	N.D.	N.D.	N.D.	4,400	N.D.	9	1.2	N.D.	0.65	N.D.	N.D.	1.2
- Xylene, (total)	620	124	ug/L	3.29	62	1.8	N.D.	N.D.	6,000	N.D.	6	1.5	N.D.	1.2	N.D.	N.D.	2.3
Total VOCs Detected (2)			ug/L	113.4	442.0	10.6	16.0	5.2	22400.0	16.0	216.0	8.1	5.5	6.0	4.8	15.4	9.0
Gasoline Range Organics																	
			ug/L	1,000	94,000	--	--	--	--	--	--	--	--	--	--	--	--
Polynuclear Aromatic Hydrocarbons																	
- Acenaphthene			ug/L	N.D.	--	N.D.	N.D.	5.2	N.D.	9.4	150	7.6	2.1	3.5	N.D.	1.7	2.8
- Acenaphthylene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Anthracene	3,000	600	ug/L	N.D.	--	N.D.	0.31	0.36	52	N.D.	N.D.	1.4	0.23	0.52	0.45	0.2	0.21
- Benzo(a) anthracene			ug/L	N.D.	--	N.D.	N.D.	N.D.	33	4.2	39	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Benzo(a) pyrene	0.2	0.02	ug/L	2.4	--	N.D.	N.D.	N.D.	16	1.5	14	0.71	N.D.	0.65	N.D.	N.D.	N.D.
- Benzo(b) fluoranthene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	25	1.1	12	0.15	0.36	0.48	0.42	N.D.	0.19
- Benzo(g,h,i) perylene			ug/L	--	--	--	N.D.	N.D.	29	N.D.	N.D.	0.63	N.D.	0.62	2.9	N.D.	N.D.
- Benzo(k) fluoranthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	10	N.D.	N.D.	0.22	0.1	0.14	0.13	N.D.	N.D.
- Chrysene	0.2	0.02	ug/L	--	--	--	N.D.	N.D.	47	4.4	21	24	N.D.	N.D.	N.D.	N.D.	N.D.
- Dibenzo(a,h) anthracene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Fluoranthene	400	80	ug/L	N.D.	--	N.D.	N.D.	12	1500	65	150	91	N.D.	20	19	N.D.	28
- Fluorene	400	80	ug/L	N.D.	--	N.D.	3.7	5.4	280	14	48	1.9	0.99	1.5	N.D.	N.D.	1.3
- 1-Methylnaphthalene			ug/L	174	--	N.D.	12	47	1100	63	150	43	8	11	10	5.9	10
- 2-Methylnaphthalene			ug/L	178	--	N.D.	N.D.	8.8	350	15	52	N.D.	5	2	N.D.	N.D.	0.93
- Naphthalene	40	8	ug/L	23	--	N.D.	N.D.	3.9	N.D.	N.D.	N.D.	0.42	N.D.	N.D.	N.D.	N.D.	N.D.
- Phenanthrene			ug/L	N.D.	--	N.D.	3.0	4.3	640	16	60	18	1.8	3.6	1.4	0.34	0.55
- Pyrene	250	50	ug/L	--	--	N.D.	N.D.	N.D.	110	62	190	N.D.	0.87	1	0.54	N.D.	0.4
- Indeno (1,2,3-cd) pyrene			ug/L	--	--	--	--	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	0.54	N.D.	N.D.
Total PAHs Detected			ug/L	377.4	0.0	0.0	19.0	87.0	4192.0	255.6	886.0	189.0	19.5	45.0	35.4	8.1	44.4

KEY:
(1) The methylene chloride detections have been attributed to background laboratory contamination.
(2) Methylene chloride is not included in the VOC totals.
(3) Base data was collected on May 11, 1994.
N.D. Not Detected
S.D. Sample Dropped In Laboratory
N.S. Well Not Sampled
* MW-5 was relocated on May 14, 1997.
+ Natural Attenuation Sampling
-- Not Analyzed For
Shaded areas indicate levels above the Enforcement Standard (ES)

TABLE 1 (Continued)
MONITORING WELL 11
QUARTERLY GROUNDWATER SAMPLING RESULTS
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Analyte	ES NR140.10	PAL NR140.10	Units	MW-11													
				Base (3)	11/14/96	02/26/97	05/14/97	08/26/97	11/18/97	02/26/98	05/11/98	08/20/98	11/17/98	02/24/99	07/27/99*	11/16/99*	02/08/00
Volatile Organic Compounds																	
- Benzene	5	0.5	ug/L	N.D.	1.7	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.
- n-Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- sec-Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- tert-Butylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- 1,2-Dichloroethane	5	0.5	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Ethylbenzene	700	140	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Isopropylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- p-Isopropyltoluene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Methylene chloride (1)	5	0.5	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Methyl-tert-butyl-ether/MTBE	60	12	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- n-Propylbenzene			ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	--	--	--	--	N.D.	N.D.	--
- Toluene	343	68.6	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	0.45
- 1,2,4-Trimethylbenzene			ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 1,3,5-Trimethylbenzene	480	96	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Xylene, (total)	620	124	ug/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
Total VOCs Detected (2)			ug/L	0.0	1.7	0.0	0.0	0.0	0.0	0.0	--	--	0.0	0.0	0.0	0.0	0.45
Gasoline Range Organics																	
			ug/L	N.D.	100.0	--	--	--	--	--	--	--	--	--	--	--	--
Polynuclear Aromatic Hydrocarbons																	
- Acenaphthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Acenaphthylene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Anthracene	3,000	600	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(a)anthracene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(a)pyrene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(b)fluoranthene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(g,h,i)perylene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Benzo(k)fluoranthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Chrysene	0.2	0.02	ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Dibenzo(a,h)anthracene			ug/L	--	--	--	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Fluoranthene	400	80	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Fluorene	400	80	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 1-Methylnaphthalene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- 2-Methylnaphthalene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Phenanthrene			ug/L	N.D.	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	0.41
- Pyrene	250	50	ug/L	--	--	N.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Indeno (1,2,3-cd) pyrene			ug/L	--	--	--	--	--	--	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
Total PAHs Detected			ug/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	--	0.0	0.0	0.0	0.0	0.41

KEY:

- (1) The methylene chloride detections have been attributed to background laboratory contamination.
- (2) Methylene chloride is not included in the VOC totals.
- (3) Base data was collected on May 11, 1994.

- N.D. Not Detected
- S.D. Sample Dropped In Laboratory
- N.S. Well Not Sampled
- * MW-5 was relocated on May 14, 1997.
- + Natural Attenuation Sampling

-- Not Analyzed For

Shaded areas indicate levels above the Enforcement Standard (ES)

TABLE 1 (Continued)
MONITORING WELL 12 (EW-8)
QUARTERLY GROUNDWATER SAMPLING RESULTS
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Analyte	ES NR140.10	PAL NR140.10	Units	MW-12 (EW-8)													
				Base (3)	11/14/96	02/26/97	05/14/97	08/26/97	11/18/97	02/27/98	05/11/98	08/20/98	11/18/98	02/24/99	07/28/99	11/15/99	02/08/00
Volatile Organic Compounds																	
- Benzene	5	0.5	ug/L	32	3.7	0.6	N.D.	0.8	N.D.	N.D.	1	1.1	0.88	0.69	1.7	1.8	1.4
- n- Butylbenzene			ug/L	49	--	2.9	2.9	N.D.	--	5	25	--	--	--	0.83	0.81	--
- sec- Butylbenzene			ug/L	N.D.	--	N.D.	0.84	N.D.	--	2	9	--	--	--	0.63	1	--
- tert- Butylbenzene			ug/L	36	--	N.D.	N.D.	1.3	--	2	3	--	--	--	N.D.	N.D.	--
- 1,2- Dichloroethane	5	0.5	ug/L	N.D.	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Ethylbenzene	700	140	ug/L	2.2	N.D.	N.D.	0.61	N.D.	72	N.D.	1	0.59	N.D.	N.D.	3.7	N.D.	0.5
- Isopropylbenzene			ug/L	22	--	1.6	1.8	1.5	--	2	3	--	--	--	N.D.	N.D.	--
- p-Isopropyltoluene			ug/L	45	--	0.55	N.D.	N.D.	--	N.D.	3	--	--	--	N.D.	0.61	--
- Methylene chloride (1)	5	0.5	ug/L	24	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	N.D.	N.D.	--
- Methyl-tert-butyl-ether/MTBE	60	12	ug/L	N.D.	N.D.	0.88	0.86	N.D.	N.D.	N.D.	7	5.4	6.2	N.D.	3.7	1.6	1
- Naphthalene	40	8	ug/L	44	--	N.D.	N.D.	N.D.	--	N.D.	N.D.	--	--	--	1.4	3.6	--
- n-Propylbenzene			ug/L	31	--	2.8	2.0	7.0	--	2	7	--	--	--	0.77	0.53	--
- Toluene	343	68.6	ug/L	N.D.	1.0	N.D.	N.D.	0.81	N.D.	N.D.	N.D.	0.77	0.86	N.D.	0.35	N.D.	1
- 1,2,4-Trimethylbenzene			ug/L	11	2.7	2.6	1.7	N.D.	94	N.D.	8	1.2	1.2	1.2	N.D.	N.D.	1.1
- 1,3,5-Trimethylbenzene	480	96	ug/L	8.7	2.5	N.D.	N.D.	N.D.	29	N.D.	N.D.	1.7	N.D.	0.81	N.D.	N.D.	0.72
- Xylene, (total)	620	124	ug/L	10.8	1.8	0.71	N.D.	N.D.	33	N.D.	4	1.7	N.D.	1	N.D.	N.D.	2
Total VOCs Detected (2)			ug/L	291.7	11.7	12.6	10.7	11.41	228.0	13.0	71.0	12.5	9.1	3.7	13.1	10.0	7.7
Gasoline Range Organics																	
			ug/L	10000.0	560.0	--	--	--	--	--	--	--	--	--	--	--	--
Polynuclear Aromatic Hydrocarbons																	
- Acenaphthene			ug/L	N.D.	--	N.D.	N.D.	4.5	340	22	74	3.5	3.3	3.1	1.4	1.4	11
- Acenaphthylene			ug/L	N.D.	--	S.D.	N.D.	N.D.	N.D.	N.D.	--	--	N.D.	N.S.	N.D.	N.D.	N.D.
- Anthracene	3,000	600	ug/L	N.D.	--	N.D.	N.D.	N.D.	88	N.D.	N.D.	0.44	0.24	0.32	0.48	0.17	2.3
- Benzo(a) anthracene			ug/L	N.D.	--	N.D.	0.11	N.D.	50	6.6	11	0.26	0.34	0.43	N.D.	N.D.	N.D.
- Benzo(a) pyrene	0.2	0.02	ug/L	N.D.	--	N.D.	0.08	N.D.	24	1.0	12	N.D.	N.D.	N.D.	N.D.	N.D.	2.8
- Benzo(b) fluoranthene	0.2	0.02	ug/L	N.D.	--	N.D.	N.D.	N.D.	31	0.88	5.4	N.D.	0.37	0.38	0.36	N.D.	2.2
- Benzo(g,h,i) perylene			ug/L	--	--	--	0.06	N.D.	25	N.D.	9.6	N.D.	N.D.	0.46	N.D.	N.D.	2.1
- Benzo(k) fluoranthene			ug/L	N.D.	--	N.D.	N.D.	N.D.	12	N.D.	6.5	0.11	0.11	0.12	0.11	N.D.	0.64
- Chrysene	0.2	0.02	ug/L	--	--	--	0.23	N.D.	68	5.4	7.6	27	N.D.	N.D.	N.D.	N.D.	7.9
- Dibenzo(a,h) anthracene			ug/L	--	--	--	0.07	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
- Fluoranthene	400	80	ug/L	N.D.	--	N.D.	N.D.	N.D.	2000	25	47	24	N.D.	13	7.6	N.D.	220
- Fluorene	400	80	ug/L	N.D.	--	N.D.	N.D.	4.6	450	14	16	1.1	1.6	1.2	N.D.	0.76	6.8
- 1-Methylnaphthalene			ug/L	172	--	N.D.	5.4	44	2700	33	73	29	18	12	3.7	4.6	16
- 2-Methylnaphthalene			ug/L	61	--	N.D.	N.D.	8.0	930	13	N.D.	N.D.	12	1.6	N.D.	N.D.	4
- Naphthalene	40	8	ug/L	N.D.	--	N.D.	N.D.	3.8	N.D.	N.D.	N.D.	0.25	0.41	0.77	N.D.	N.D.	0.37
- Phenanthrene			ug/L	N.D.	--	N.D.	1.2	4.0	1200	17	13	7	5	2.9	0.54	0.88	4.8
- Pyrene	250	50	ug/L	--	--	N.D.	N.D.	N.D.	160	24	42	N.D.	0.64	0.68	N.D.	N.D.	6.4
- Indeno (1,2,3-cd) pyrene			ug/L	--	--	--	--	--	N.D.	4.4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total PAHs Detected			ug/L	233.0	0.0	0.0	7.2	68.9	8078.0	161.9	321.5	92.7	42.0	37.0	14.2	7.8	287.3

KEY:
(1) The methylene chloride detections have been attributed to background laboratory contamination.
(2) Methylene chloride is not included in the VOC totals.
(3) Base data was collected on May 11, 1994.
N.D. Not Detected
S.D. Sample Dropped In Laboratory
N.S. Well Not Sampled
* MW-5 was relocated on May 14, 1997.
+ Natural Attenuation Sampling
-- Not Analyzed For
Shaded areas indicate levels above the Enforcement Standard (ES)



TABLE 10

SUMMARY OF GROUND-WATER LABORATORY ANALYSIS
January 29, 1993

MILWAUKEE COUNTY ZOO
BLIFFERT SITE REMEDIATION
WAUWATOSA, WISCONSIN

Law Engineering, Inc. Project No. 279-2258

Sample Source	DRO (mg/l)	TRPH (mg/l)
MW-1	0.11	BDL
MW-2	16	1.1
MW-3	380	200

Notes:

MW: Monitoring Well

DRO: Diesel Range Organics by Wisconsin Analytical Protocol

TRPH: Total Recoverable Petroleum Hydrocarbons by Wisconsin Analytical Protocol

mg/l: milligrams per liter

BDL: Below Laboratory Detection Limits as specified in the laboratory data sheet (Appendix C)

Analysis performed by Precision Analytical Laboratory of Milwaukee Wisconsin.

E:\PROJECTS\279\2258\TABLE 10

Checked By: UIC

TABLE 11

SUMMARY OF GROUND-WATER LABORATORY ANALYSIS
(GRO, LEAD AND DRO)
June 8, 1993

MILWAUKEE COUNTY ZOO
BLIFFERT SITE REMEDIATION
WAUWATOSA, WISCONSIN

Law Engineering, Inc. Project No. 279-2258

Sample Source	GRO (mg/l)	Lead (mg/l)	DRO (mg/l)	VOCs (mg/l)	PAHs (mg/l)
MW-4	NA	BDL	0.87	BDL	BDL
MW-5	BDL	0.041	NA	NA	NA
MW-6	0.23	0.009	NA	NA	NA
MW-7	4.4	BDL	NA	NA	NA
MW-8	NA	NA	6.9	NA	NA
MW-9	NA	NA	0.25	NA	NA
MW-10	NA	NA	29	NA	NA
MW-11	BDL	BDL	NA	BDL	BDL
MW-12	NA	NA	38	NA	NA
Trip Blank	NA	NA	NA	BDL	NA
Field Rinsate	NA	NA	NA	BDL	NA

Notes:

- MW: Monitoring Well
- GRO: Gasoline Range Organics by Wisconsin Analytical Protocol
- DRO: Diesel Range Organics by Wisconsin Analytical Protocol
- VOC: Volatile Organic Compounds using EPA Method 8021
- PAH: Polynuclear Aromatic Hydrocarbons using EPA Method 8310
- mg/l: milligrams per liter
- NA: Not Analyzed
- BDL: Below Laboratory Detection Limits as specified in the laboratory data sheet (Appendix C)

Analysis performed by Precision Analytical Laboratory in Milwaukee Wisconsin.

Table 1
Soil Sampling Results Summary - Phase 2.5 Investigation
Milwaukee County - Bliffert Lumber, Milwaukee
TRC Project ID 202083.0000.0000

	Groundwater Pathway ^A	Direct Contact Pathway		Soil Sample ID and Depth (feet bgs)															TYPICAL LANDFILL ACCEPTANCE CRITERIA	
				Non-Industrial ^B	Industrial ^C	GP-13-1	GP-13-2	GP-13-3	GP-13-4	GP-13-5	GP-13-6	GP-13-7	GP-13-8	GP-13-9	GP-13-10	GP-13-11	GP-13-12	GP-13-13		GP-13-14
		(2'-4')	(0'-2')			(2'-4')	(0'-2')	(2'-4')	(4'-6')	(4'-6')	(2'-4')	(4'-6')	(4'-6')	(2'-4')	(4'-6')	(4'-6')	(6'-8')	(6'-8')		(4'-6')
		SAMPLES COLLECTED MAY 29-30, 2013																		
PID Readings	-	-	-	13.9	0.5	5.3	10.4	90.3	155.6	1.3	1.4	3.0	1.9	323.6	1.4	1.4	1.0	59.2	--	-
GRO (mg/kg)	-	-	-	7.7	<2.7	12.0	47.0	9.5	210	<2.3	<2.8	11.0	5.3	860	<2.2	<2.1	6.6	57.0	<2.5	2,000
PVOCs (µg/kg)																				
Benzene	5.12	1,490	7,410	<17	<20	29^A	<23	<20	64^A	<16	<20	<14	<17	22 J^A	<16	<15	<18	<19	<18	10,000
Ethylbenzene	1,570	7,470	37,000	18 J	<21	99	<24	50	92	<17	<22	<14	<18	35	<17	<16	<19	<20	<19	-
Methyl tert-butyl ether	27	59,400	293,000	<11	<13	15 J	<15	<13	<14	<11	<14	<9.1	<11	<13	<11	<10	<12	<13	<12	-
Toluene	1,107	818,000	818,000	160	<18	190	<21	<19	66	<15	<19	<13	<16	<18	<15	<14	<17	<18	<17	-
1,2,4-Trimethylbenzene	1,382	89,800	219,000	<14	<16	73	80	110	380	<14	<17	<11	<14	1700	<13	<13	<15	70	<15	-
1,3,5-Trimethylbenzene	1,382	182,000	182,000	47	<16	55	70	63	620	<14	<17	<11	26	<16	<13	<13	25	160	<15	-
Xylenes, Total	3,960	260,000	260,000	36 J	<33	270	57 J	34 J	120	<27	<34	<23	<28	250	<27	<26	<30	<32	<30	-
PAHs (µg/kg)																				
Acenaphthene	-	3,440,000	33,000,000	12 J	<11	<11	26 J	<11	<11	19 J	<12	<11	69	3,200	<11	<11	<11	<12	--	-
Acenaphthylene	-	-	-	<8.0	<8.6	<8.5	16 J	<8.8	<8.1	8.8 J	<9.2	<8.4	<8.3	1,500	<8.7	<8.5	<8.5	<9.0	--	-
Anthracene	196,949	17,200,000	100,000,000	37	<8.9	29 J	180	<9.0	<8.3	160	27 J	<8.6	45	<90	39	<8.7	<8.7	25 J	--	-
Benz(a)anthracene	-	147	2,100	52	59	56	750^B	1,000^B	1,200^B	750^B	220^B	<7.7	<7.6	120 J	160^B	<7.8	<7.8	<8.2	--	-
Benzo(a)pyrene	470	14.8	211	47^B	82^B	46^{BC}	710^{BC}	1,200^{BC}	1,300^{ABC}	670^{BC}	250^{BC}	<6.7	<6.6	130 J^B	170^B	<6.8	21 J^B	<7.2	--	-
Benzo(b)fluoranthene	479	148	2,100	60	160^B	75	940^{AB}	2,400^{ABC}	2,200^{ABC}	900^{AB}	330^B	<7.1	12 J	200 J^B	240^B	<7.2	16 J	<7.6	--	-
Benzo(ghi)perylene	-	-	-	34 J	160	40	700	2,200	2,800	560	230	<12	<12	170 J	160	<12	17 J	<13	--	-
Benzo(k)fluoranthene	-	148	21,100	22 J	81	24 J	300^B	780^B	780^B	330^B	140	<8.7	<8.6	<91	110	<8.8	12 J	<9.4	--	-
Chrysene	144.6	14,800	211,000	52	86	63	640^B	1,700^A	1,800^A	620^A	200^A	9.3 J	16 J	180^A	160^A	<8.4	16 J	13 J	--	-
Dibenz(a,h)anthracene	-	14.8	211	15 J^B	55^B	17 J^B	250^{BC}	690^{BC}	790^{BC}	210^B	82^B	<10	<10	<110	54^B	<10	<10	<11	--	-
Fluoranthene	88,877	2,290,000	22,000,000	79	73	96	1,200	910	1,400	1,300	460	<15	15 J	370 J	300	<15	<15	<16	--	-
Fluorene	14,829	2,290,000	22,000,000	8.7 J	<8.6	10 J	22 J	<8.7	660	23 J	<9.1	<8.3	130	6,100	12 J	<8.4	<8.4	<8.9	--	-
Indeno(123-cd)pyrene	-	148	2,110	25 J	110	35 J	560^B	1,500^B	1,900^B	460^B	190^B	<12	<12	160 J^B	140	<12	24 J	<13	--	-
1-Methylnaphthalene	-	15,600	53,100	79	70	130	34 J	380	2,600	<17	<20	<18	63	43,000^B	23 J	<18	<18	61	--	-
2-Methylnaphthalene	-	229,000	2,200,000	65 J	94 J	110 J	<49	290	2,300	<45	<52	<47	<47	11,000	<49	<48	<48	60 J	--	-
Naphthalene	658	5,150	26,000	32 J	23 J	57	38	210	470	9.4 J	<7.7	<7.0	<7.0	1,600^A	21 J	<7.1	<7.1	18 J	--	-
Phenanthrene	-	-	-	230	49	320	650	200	2,000	480	100	<15	150	7,900	150	<16	19 J	49	--	-
Pyrene	8,700,000	1,720,000	16,500,000	110	71	110	990	1,100	1,300	1,100	400	<13	16 J	640	270	<13	<13	47	--	-

Notes:

- PID = Photoionization Detector
- GRO = Gasoline Range Organics analyzed using the Wisconsin Modified Method
- PVOCs = Petroleum Volatile Organic Compounds analyzed using the Wisconsin GRO Method
- µg/kg = micrograms per kilogram (ppb)
- = Standard not established.
- = not analyzed
- PAHs = Polycyclic Aromatic Hydrocarbons analyzed using EPA Method 8270D
- Samples were collected by TRC and analyzed by TestAmerica (WDNR Cert. #999580010)
- NR 720 RCL = Residual Contaminant Level from NR 720, WAC. RCL listed for DRO and GRO are the more stringent of the two NR 720.09 values.
- PAH results were compared to Table 1 Suggested generic residual contaminant levels for PAH compounds in soil in the Wisconsin Department of Natural Resources Soil Residual Contaminant Levels-RCL spreadsheet for use with macro-enabled Excel program [XLSM] (recommended) - Updated June 2016
- J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
- BOLD** indicates an exceedence (or potential exceedence if J-flagged) of the NR 720 RCL
- ^A = Result exceeds the Groundwater Pathway RCL
- ^B = Result exceeds the Non-Industrial Direct Contact RCL
- ^C = Result exceeds the Industrial Direct Contact RCL

Created by: B. Bergmann 6/18/13
Checked by: T. Stapel 6/20/13
Updated by: M. Brill 1/4/2017

TABLE 1

SUMMARY OF RECENT SOIL ANALYTICAL DATA (VOCS)
MILWAUKEE COUNTY ZOO/FORMER BLIFFERT SITE - MILWAUKEE, WISCONSIN

Boring	Depth	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Naphthalene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	MTBE	GFO	DFO
RCL		5.5	1,500	2,900	4,100	NE	NE	NE	NE	250	250
C-1	0-4	37.5 ^X	117	783	2,320	65,400 ^{*^X}	4,910 ^X	1,550 ^X	<25.0	1,600	15,600
C-2	0-4	248 ^X	117	205	466	1,390 ^X	1,470 ^X	205 ^X	<50.0	130	102
C-3	0-4	<25.0	<25.0	<25.0	<25.0	502	<25.0	<25.0	<25.0	7.67	1,320
	4-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	5,010
C-4	0-4	59,500 ^{*^X}	202,000 ^X	63,400 ^{*^X}	313,000 ^{*^X}	16,900 ^{^X}	104,000 ^X	39,800 ^X	3,540 ^X	3,430	7.50
	4-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	316
C-5	0-4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<5.64	9.81
C-6	0-4	<25.0	<25.0	<25.0	<25.0	81.0	94.1	51.3	<25.0	13.0	29.6
C-7	0-4	47.4 ^X	53.1	35.7	119	27.1	47.1	<25.0	<25.0	<6.33	70.0
C-8	0-4	44.9 ^X	134	421	1,130	37,200 ^{*^X}	2,680 ^X	793 ^X	<25.0	949	125
C-9	0-4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<6.04	24.9
C-10	0-4	<25.0	<25.0	<25.0	<25.0	26.9	<25.0	<25.0	<25.0	<6.02	15.3
	4-8	NA	NA	NA	NA	NA	NA	NA	NA	9.14	14.3
C-11	0-4	<25.0	<25.0	<25.0	31.8	35.0	<25.0	<25.0	<25.0	25.4	67.4
C-12	0-4	<25.0	58.2	<25.0	<25.0	26.5	<25.0	<25.0	<25.0	<6.14	7.63
C-13	0-4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<5.44	13.8
C-14	4-8	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	NA	5.57
C-15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-16		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-17		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-18		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-19	0-4	<25.0	<25.0	<25.0	<25.0	61.6	<25.0	<25.0	<25.0	<5.85	27.4
C-20	0-4	<25.0	45.8	206	640	5,660 ^{X^}	1,630 ^X	602 ^X	<25.0	813	2,210

Notes: NA = Not analysed
All values in micrograms per kilogram
Concentrations in bold exceed RCL
Table includes only compounds detected

April 23, 2001

Direct Contact RCL Industrial (mg/kg)	7.07	818	35.4	260	24.1	219	182	282	-	-
RCL Non Industrial (mg/kg)	1.6	818	1.57	260	5.52	219	182	63.8	-	-
Groundwater Pathway (mg/kg)	.0051	1.11	1.57	3.96	.66	1.38 (Combined)	.027	-	-	-

*= indicates an exceedence of Direct Contact RCL Industrial

^= indicates an exceedence of Non Industrial

x= indicates an exceedence of Groundwater Pathway

Updated 5/2/17 by M. Brill
A. 2. 2. Soil Analytical Results Table(s)

TABLE 1
SUMMARY OF RECENT SOIL ANALYTICAL DATA (PAHs)
MILWAUKEE COUNTY ZOO/FORMER BLIFFERT SITE - MILWAUKEE, WISCONSIN

Boring	Depth	Acenaphthylene	Benzo (a) pyrene	1-Methyl Naphthalene	2-Methyl Naphthalene	Naphthalene
RCL		700	48,000	23,000	20,000	2,700
C-1	0-4	NA	NA	NA	NA	NA
C-2	0-4	NA	NA	NA	NA	NA
C-3	0-4	<229	<5.73	<115	<115	<115
	4-8	NA	NA	NA	NA	NA
C-4	0-4	288	<5.67	312	1,030	1,280
	4-8	NA	NA	NA	NA	NA
C-5	0-4	<225	<5.64	<113	<113	<113
C-6	0-4	NA	NA	NA	NA	NA
C-7	0-4	NA	NA	NA	NA	NA
C-8	0-4	NA	NA	NA	NA	NA
C-9	0-4	<242	6.58	<121	<121	<121
C-10	0-4	NA	NA	NA	NA	NA
	4-8	NA	NA	NA	NA	NA
C-11	0-4	NA	NA	NA	NA	NA
C-12	0-4	NA	NA	NA	NA	NA
C-13	0-4	NA	NA	NA	NA	NA
C-14	4-8	NA	NA	NA	NA	NA
C-15		NA	NA	NA	NA	NA
C-16		NA	NA	NA	NA	NA
C-17		NA	NA	NA	NA	NA
C-18		NA	NA	NA	NA	NA
C-19	0-4	NA	NA	NA	NA	NA
C-20	0-4	NA	NA	NA	NA	NA

Notes.

All values in micrograms per kilogram

Table includes only compounds detected

RCL = WDNR's "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) Interim Guidance"

NA = Not Analyzed

April 23, 2001

Direct Contact RCL Industrial (mg/kg)	45,200	.115	72.7	3010.0	24.1
RCL Non Industrial (mg/kg)	3,590	2.11	17.6	239	5.52
Groundwater Pathway (mg/kg)	-	.47	-	-	.66



TABLE 4

SUMMARY OF SOIL LABORATORY ANALYSIS
(GRO, LEAD and DRO)
June 3 and 4, 1993

MILWAUKEE COUNTY ZOO
BLIFFERT SITE REMEDIATION
WAUWATOSA, WISCONSIN

Law Engineering, Inc. Project No. 279-2258

Sample Source	Sampling Interval (Feet BGL)	GRO (mg/kg)	Lead (mg/kg)	DRO (mg/kg)
MW-4	1.0 to 2.5	NA	NA	140
MW-5	3.5 to 5.0	9.8	6.6	NA
MW-6	7/- to 9/-	6.1	2.8	NA
MW-7	6.0 to 8.0	560	8.0	NA
MW-8	3.5 to 5.5	NA	NA	570
MW-9	3.5 to 5.0	NA	NA	10
MW-10	3.5 to 5.0	NA	NA	15,000
MW-11	3.5 to 5.5	BDL	4.2	NA
MW-12	3.5 to 5.0	NA	NA	30,000
MW-12 (Duplicate)	3.5 to 5.0	NA	NA	39,000

Notes:

Direct Contact RCL Industrial (mg/kg)	-	800	-
RCL Non Industrial (mg/kg)	-	400	-
Groundwater Pathway (mg/kg)	-	27	-

Analytical results reflected in milligrams per kilogram
GRO: Gasoline Range Organics by Wisconsin Analytical Protocol
DRO: Diesel Range Organics by Wisconsin Analytical Protocol
NA: Not Analyzed
mg/kg: milligrams/kilogram
BGL: Below Ground Level
BDL: Below laboratory detection limits as specified in the Laboratory Data Sheet (Appendix C).
Analysis performed by Precision Analytical Laboratory in Milwaukee Wisconsin.

E:\PROJECTS\279\2258\TABLE 4

Checked By: MGC

Updated 5/1/17 by M. Brill

TABLE 5

**SUMMARY OF SOIL LABORATORY ANALYSIS
(VOCs AND PAHs)
June 3 and 4, 1993**

**MILWAUKEE COUNTY ZOO
BLIFFERT SITE REMEDIATION
WAUWATOSA, WISCONSIN**

Law Engineering, Inc. Project No. 279-2258

Parameter Detected	Groundwater Pathway (mg/kg)	(ug/kg)				
		MW-10 (mg/kg)	MW-4 (mg/kg)	MW-11 (mg/kg)	Direct Contact Industrial	RCLs (mg/kg) Non-Industrial
PNAs						
Acenaphthene	-	BDL	BDL	BDL	45,200	3,590
Acenaphthylene	-	BDL	BDL	BDL	-	-
Anthracene	197	20,000	BDL	BDL	100,000	17,900
Benzo(a)anthracene	-	J 1,700	J 280	BDL	20.8	-
Benzo(b)fluoranthene	.48	J 1,600*	J 320	BDL	1.76	1.15
Benzo(k)fluoranthene	-	J 700	J 140	BDL	211	11.5
Benzo(g,h,i)perylene	-	BDL	J 170	BDL	-	-
Benzo(a)pyrene	.47	BDL	J 260*	BDL	2.11	.115
Chrysene	.145	J 1,600*	J 270*	BDL	2,110	115
Dibenz(a,h)anthracene	-	BDL	BDL	BDL	2.11	.115
Fluoranthene	88.9	6,500	J 490	BDL	30,100	2,390
Fluorene	14.9	BDL	BDL	BDL	30,100	2,390
Indeno(1,2,3-cd)pyrene	-	BDL	J 180	BDL	21.1	1.15
Naphthalene	.66	14,000*	BDL	BDL	24.1	5.52
Phenanthrene	-	18,000	J 270	BDL	-	-
Pyrene	54.55	J 3,500	J 480	BDL	22,600	1,790
VOCs						
n-Butylbenzene	-	1,400	BDL	BDL	108	108
sec-Butylbenzene	-	1,700	BDL	BDL	145	145
Ethylbenzene	1.57	940	BDL	BDL	35.4	8.02
Isopropylbenzene	-	940	BDL	BDL	-	-
p-Isopropyltoluene	-	2,600	BDL	BDL	162	162
Naphthalene	.66	8,300*	BDL	BDL	24.1	5.52
n-Propylbenzene	-	2,100	BDL	BDL	264	264
1,2,4-Trimethylbenzene	.408	8,400	BDL	BDL	219	219
1,3,5-Trimethylbenzene	-	940	BDL	BDL	182	182
m/p-xylene	3.96	J 550	BDL	BDL	m 388 p 390	388 390
Methylene chloride	.0026	BDL	(14)19	(19)42	1,150	61.8

Notes:

Analytical results reflected in micrograms per kilogram (~~mg/kg~~) ug/kg)

VOCs: Volatile Organic Compounds using Method 8260

PAHs: Polynuclear Aromatic Hydrocarbons using Method 8310

BDL: Below Laboratory Detection Limits as specified in the laboratory data sheet (Appendix C)

J: Analyte positively identified below the quantification limit

(): Analyte found in the associated method blank. The value in parentheses is the blank value with the dilution factor taken into account.

* = indicates an exceedence (or potential exceedence if J-flagged) of the NR 720 RCL [could not bold data as it is already]

Analysis performed by Precision Analytical Laboratory of Milwaukee, Wisconsin

1 microgram (ug) = .001 milligram (mg)

TABLE 7

**SUMMARY OF SOIL LABORATORY ANALYSIS
(B-13 AND B-14 — TRPH AND VOCs)
June 16, 1993**

**MILWAUKEE COUNTY ZOO
BLIFFERT SITE REMEDIATION
WAUWTOSA, WISCONSIN**

Law Engineering, Inc. Project No. 279-2258

Sample Source	TRPH (mg/kg)	VOCs-Parameter detected Methylene Chloride (mg/kg)
B-13	BDL	33*
B-14	BDL	11*
Direct Contact RCL Industrial (mg/kg)	-	1150
RCL Non Industrial (mg/kg)	-	61.8
Groundwater Pathway (mg/kg)	-	.0026

Notes:

TRPH: Total Recoverable Petroleum Hydrocarbons

VOCs: Volatile Organic Compounds

mg/kg: micrograms per kilogram

BDL: Below Laboratory Detection Limits as specified in the laboratory data sheet (Appendix C)

Analysis performed by Precision Analytical Laboratory of Milwaukee, Wisconsin

* = indicates an exceedence (or potential exceedence if J-flagged) of the NR 720 RCL [could not bold data as it is already]

Checked By: UGC

TABLE 8

ANALYTICAL RESULTS OF GEOPROBE INVESTIGATION — SOIL SAMPLING
April 13 and 14, 1993

MILWAUKEE COUNTY ZOO
BLIFFERT SITE REMEDIATION
WAUWTOSA, WISCONSIN

Law Engineering, Inc. Project No. 279-2258

Sample Source	Sample Depth (Feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVH (mg/kg)
GP-1	7 to 9	4.194 *	12.382 *	3.871*	16.058*	207.914
GP-2	7 to 9	BDL	BDL	BDL	BDL	0.039
GP-3	5 to 7	18.041 *	61.086 *	14.103 *	67.378 *	556.295
GP-4	5 to 7	24.541 *	BDL	0.024	BDL	24.993
GP-5	5 to 7	BDL	BDL	BDL	BDL	<0.015
GP-6	5 to 7	BDL	BDL	BDL	BDL	<0.015
GP-7	6 to 8	BDL	BDL	BDL	BDL	0.024
GP-8	6 to 8	BDL	0.057	0.684	1.834	34.291
GP-9	6 to 8	BDL	BDL	0.043	0.284	3.947
GP-10	6 to 8	BDL	BDL	BDL	BDL	0.026
GP-11	6 to 8	BDL	BDL	BDL	BDL	<0.015
GP-12	6 to 8	BDL	BDL	BDL	BDL	<0.015
GP-13	6 to 8	BDL	BDL	0.063	0.386	5.699

Direct Contact RCL Industrial (mg/kg)	7.07	818	35.4	260	-
RCL Non Industrial (mg/kg)	1.6	818	1.57	260	-
Notes: Groundwater Pathway (mg/kg)	.0051	1.11	1.57	3.96	-

GP: Geoprobe location
mg/kg: milligrams per kilogram
BDL: Below Detection Limits
TVH: Total Volatile Hydrocarbons

Analysis performed on-site by Geo Trace Inc. of Mt. Vernon, Illinois.

* = indicates an exceedence (or potential exceedence if J-flagged) of the NR 720 RCL [could not bold data as it is already]

Checked By: MGU

TABLE 3

SUMMARY OF SOIL LABORATORY ANALYSIS
January 25, 26 and February 1, 1993

MILWAUKEE COUNTY ZOO
BLIFFERT SITE REMEDIATION
WAUWATOSA, WISCONSIN

Law Engineering, Inc. Project No. 279-2258

Sample Location	Sample Interval (Feet BGL)	DRO (mg/kg)	TRPH (mg/kg)	GRO (mg/kg)
B-1 (MW-1)	6.0 to 7.5	BDL	BDL	NA
B-2	7.0 to 8.5	6,100	350	NA
B-3 (MW-3)	6.0 to 7.5	9,000	15,000	NA
B-4	11.0 to 12.5	15	41	NA
B-5 (MW-2)	6.0 to 10.0	25,000	14,000	NA
B-6	6.0 to 7.5	NA	NA	10,000
B-7	6.0 to 7.5	NA	NA	4,200
B-8	6.0 to 7.5	NA	NA	1,500
B-9	6.0 to 7.5	36,000	30,000	NA
B-10	6.0 to 7.5	27,000	13,000	NA
B-11	2.5 to 5.0	11,000	3,500	NA
B-12	3.5 to 5.0	4,400	5,700	NA

Notes:

Analytical results reflected in milligrams per kilogram (equivalent to parts per million)
 GRO: Gasoline Range Organics by Wisconsin Analytical Protocol
 DRO: Diesel Range Organics by Wisconsin Analytical Protocol
 TRPH: Total Recoverable Petroleum Hydrocarbons by Wisconsin Analytical Protocol
 NA: Not Analyzed
 BDL: Below Detection Limit as specified in the attached Laboratory Data Sheet (Appendix C).
 B: Soil Boring
 MW: Monitoring Well
 BGL: Below Ground Level
 Analysis performed by Precision Analytical Laboratory of Milwaukee Wisconsin.

K:\PROJECTS\279\2258\TABLE3

Checked By: MLG/c

Table 1
Soil Sampling Results Summary - Phase 2.5 Investigation
Milwaukee County - Bliffert Lumber, Milwaukee
TRC Project ID 202083.0000.0000

	Groundwater Pathway ^A	Direct Contact Pathway		Soil Sample ID and Depth (feet bgs)															TYPICAL LANDFILL ACCEPTANCE CRITERIA	
				Non-industrial ^B	Industrial ^C	GP-13-1	GP-13-2	GP-13-3	GP-13-4	GP-13-5	GP-13-6	GP-13-7	GP-13-8	GP-13-9	GP-13-10	GP-13-11	GP-13-12	GP-13-13		GP-13-14
		(2'-4')	(0'-2')			(2'-4')	(0'-2')	(2'-4')	(4'-6')	(4'-6')	(2'-4')	(4'-6')	(4'-6')	(2'-4')	(4'-6')	(4'-6')	(6'-8')	(6'-8')		(4'-6')
		SAMPLES COLLECTED MAY 29-30, 2013																		
PID Readings	-	-	-	13.9	0.5	5.3	10.4	90.3	155.6	1.3	1.4	3.0	1.9	323.6	1.4	1.4	1.0	59.2	--	-
GRO (mg/kg)	-	-	-	7.7	<2.7	12.0	47.0	9.5	210	<2.3	<2.8	11.0	5.3	860	<2.2	<2.1	6.6	57.0	<2.5	2,000
PVOCs (µg/kg)																				
Benzene	5.12	1,490	7,410	<17	<20	29^A	<23	<20	64^A	<16	<20	<14	<17	22 J^A	<16	<15	<18	<19	<18	10,000
Ethylbenzene	1,570	7,470	37,000	18 J	<21	99	<24	50	92	<17	<22	<14	<18	35	<17	<16	<19	<20	<19	-
Methyl tert-butyl ether	27	59,400	260,000	<11	<13	15 J	<15	<13	<14	<11	<14	<9.1	<11	<13	<11	<10	<12	<13	<12	-
Toluene	1,107	818,000	818,000	160	<18	190	<21	<19	66	<15	<19	<13	<16	<18	<15	<14	<17	<18	<17	-
1,2,4-Trimethylbenzene	1,382	89,800	219,000	<14	<16	73	80	110	380	<14	<17	<11	<14	1700	<13	<13	<15	70	<15	-
1,3,5-Trimethylbenzene	1,382	182,000	182,000	47	<16	55	70	63	620	<14	<17	<11	26	<16	<13	<13	25	160	<15	-
Xylenes, Total	3,960	260,000	260,000	36 J	<33	270	57 J	34 J	120	<27	<34	<23	<28	250	<27	<26	<30	<32	<30	-
PAHs (µg/kg)																				
Acenaphthene	-	3,440,000	33,000,000	12 J	<11	<11	26 J	<11	<11	19 J	<12	<11	69	3,200	<11	<11	<11	<12	--	-
Acenaphthylene	-	-	-	<8.0	<8.6	<8.5	16 J	<8.8	<8.1	8.8 J	<9.2	<8.4	<8.3	1,500	<8.7	<8.5	<8.5	<9.0	--	-
Anthracene	196,949	17,200,000	100,000,000	37	<8.9	29 J	180	<9.0	<8.3	160	27 J	<8.6	45	<90	39	<8.7	<8.7	25 J	--	-
Benz(a)anthracene	-	147	2,100	52	59	56	750^B	1,000^B	1,200^B	750^B	220^B	<7.7	<7.6	120 J	160^B	<7.8	<7.8	<8.2	--	-
Benzo(a)pyrene	470	15	211	47^B	82^B	46^{BC}	710^{BC}	1,200^{BC}	1,300^{ABC}	670^{BC}	250^{BC}	<6.7	<6.6	130 J^B	170^B	<6.8	21 J^B	<7.2	--	-
Benzo(b)fluoranthene	479	148	2,110	60	160^B	75	940^{AB}	2,400^{ABC}	2,200^{ABC}	900^{AB}	330^B	<7.1	12 J	200 J^B	240^B	<7.2	16 J	<7.6	--	-
Benzo(ghi)perylene	-	-	-	34 J	160	40	700	2,200	2,800	560	230	<12	<12	170 J	160	<12	17 J	<13	--	-
Benzo(k)fluoranthene	-	1,480	21,100	22 J	81	24 J	300^B	780^B	780^B	330^B	140	<8.7	<8.6	<91	110	<8.8	12 J	<9.4	--	-
Chrysene	144.6	14,800	211,000	52	86	63	640^B	1,700^A	1,800^A	620^A	200^A	9.3 J	16 J	180^A	160^A	<8.4	16 J	13 J	--	-
Dibenz(a,h)anthracene	-	15	211	15 J^B	55^B	17 J^B	250^{BC}	690^{BC}	790^{BC}	210^B	82^B	<10	<10	<110	54^B	<10	<10	<11	--	-
Fluoranthene	88,877	2,290,000	22,000,000	79	73	96	1,200	910	1,400	1,300	460	<15	15 J	370 J	300	<15	<15	<16	--	-
Fluorene	14,829	2,290,000	22,000,000	8.7 J	<8.6	10 J	22 J	<8.7	660	23 J	<9.1	<8.3	130	6,100	12 J	<8.4	<8.4	<8.9	--	-
Indeno(123-cd)pyrene	-	148	2,110	25 J	110	35 J	560^B	1,500^B	1,900^B	460^B	190^B	<12	<12	160 J^B	140	<12	24 J	<13	--	-
1-Methylnaphthalene	-	15,600	53,100	79	70	130	34 J	380	2,600	<17	<20	<18	63	43,000^B	23 J	<18	<18	61	--	-
2-Methylnaphthalene	-	229,000	2,200,000	65 J	94 J	110 J	<49	290	2,300	<45	<52	<47	<47	11,000	<49	<48	<48	60 J	--	-
Naphthalene	658	5,150	26,000	32 J	23 J	57	38	210	470	9.4 J	<7.7	<7.0	<7.0	1,600^A	21 J	<7.1	<7.1	18 J	--	-
Phenanthrene	-	-	-	230	49	320	650	200	2,000	480	100	<15	150	7,900	150	<16	19 J	49	--	-
Pyrene	54,545	1,720,000	16,500,000	110	71	110	990	1,100	1,300	1,100	400	<13	16 J	640	270	<13	<13	47	--	-

Notes:

- PID = Photoionization Detector
- GRO = Gasoline Range Organics analyzed using the Wisconsin Modified Method
- PVOCs = Petroleum Volatile Organic Compounds analyzed using the Wisconsin GRO Method
- µg/kg = micrograms per kilogram (ppb)
- = Standard not established.
- = not analyzed
- PAHs = Polycyclic Aromatic Hydrocarbons analyzed using EPA Method 8270D
- Samples were collected by TRC and analyzed by TestAmerica (WDNR Cert. #999580010)
- NR 720 RCL = Residual Contaminant Level from NR 720, WAC. RCL listed for DRO and GRO are the more stringent of the two NR 720.09 values.
- PAH results were compared to Table 1 Suggested generic residual contaminant levels for PAH compounds in soil in the Wisconsin Department of Natural Resources Soil Residual Contaminant Levels-RCL spreadsheet for use with macro-enabled Excel program [XLSM] (recommended) - Updated June 2016
- J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
- BOLD** indicates an exceedence (or potential exceedence if J-flagged) of the NR 720 RCL
- ^A = Result exceeds the Groundwater Pathway RCL
- ^B = Result exceeds the Non-Industrial Direct Contact RCL
- ^C = Result exceeds the Industrial Direct Contact RCL

Created by: B. Bergmann 6/18/13
Checked by: T. Stapel 6/20/13
Updated by: M. Brill 1/4/2017

A. 3. Residual Soil Contamination Table(s)

A.4. Vapor Analytical Table(s): Table(s) showing type(s) of samples, sample collection methods, analytical method, sample results, date of sample collection, time period for sample collection, method and results of leak detection, and date, method and results of communication testing.

Zoo-Bliffert Case Closure – GIS Registry

There are no structures on the site, thus, vapor analytics were not assessed.

A.5. Other Media of Concern (e.g., sediment or surface water): Table(s) showing type(s) of sample, sample collection method, analytical method, sample results, date of sample collection, and time period for sample collection.

Zoo-Bliffert Case Closure – GIS Registry

Other Media of Concern is/are not needed for Zoo-Bliffert Case Closure – GIS Registry. Neither sediment nor surface water nor other media was present.

Table 3
Groundwater Elevations - Phase 2.5 Investigation
Milwaukee County - Bliffert Lumber, Milwaukee
TRC Project ID 202083.0000.0000

Well I.D.	Ground Surface Elevation	Top of PVC Elevation	Top of PVC to Water	June 27, 2013 Groundwater Elevation
MW-1	Well could not be found. Buried under soil and brush pile. Replaced by GP-13-8.			
MW-2R	Well could not be found. According to old RMT reports, the well was damaged or buried during installation of the remediation system in 1996. No abandonment form was found.			
MW-3	773.16	773.15	3.52	769.63
MW-4	Well could not be found. Buried during construction of RR tunnel in June 2013.			
MW-5	Well could not be found. Buried under soil. Replaced by GP-13-1.			
MW-6	775.50	Flush mount cover and well cap missing. Well is filled with dirt/gravel.		
MW-7	774.02	773.57	1.64	771.93
MW-8	774.10	773.51	0.65	772.86
MW-9	Well could not be found - buried under soil.			
MW-10	Well could not be found. According to old RMT reports, the well was damaged or buried during installation of the remediation system in 1996. No abandonment form was found.			
MW-11	771.03	770.83	0.77	770.06
MW-12	Well could not be found. According to old RMT reports, the well was damaged or buried during installation of the remediation system in 1996. No abandonment form was found.			
GP-13-1	771.75	773.61	3.78	769.83
GP-13-2	770.89	772.19	2.70	769.49
GP-13-3	773.05	774.90	5.19	769.71
GP-13-5	Temporary well could not be found. Buried during construction of RR tunnel in June 2013.			
GP-13-6	772.60	772.60	2.96	769.64
GP-13-8	773.33	774.10	NM*	NM*
GP-13-9	774.51	775.67	5.37	770.30
GP-13-10	773.75	773.89	NM*	NM*
GP-13-11	774.82	776.12	4.41	771.71
GP-13-13	784.36	785.71	14.11	771.60
GP-13-14	778.20	780.32	5.46	774.86

Notes:

1. All elevations are referenced to a benchmark (772.05 feet above mean sea level) at the base of the billboard pole near GP-13-2.
2. NM = Not measured. See notes below.
3. MW-3 was half filled with dirt/gravel. It was not sampled on June 3, 2013 due to lack of water; however, on June 27, 2013 it was possible to obtain a water level.
4. * - For GP-13-8 and GP-13-10, the temporary well PVC was damaged (kinked) during construction of the RR tunnel in June 2013. The water level indicator could not get past the kinks on June 27, 2013.

TABLE 2

GROUNDWATER LEVEL DATA
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Monitoring Well Water Level Data

Date	MW-1			MW-2R (EW-5)			MW-3			MW-4			MW-5 (EW-1)			MW-6		
	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet)	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet)	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet)	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet)	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet)	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet)
Reference Elevation, TPVC		102.78			104.12			101.90			98.42			99.62			104.05	
6/8/1993	1.59	101.19	--	--	--	--	3.82	98.08	--	2.49	95.93	--	0.66	98.96	--	5.92	98.13	--
5/11/1994	3.87	98.91	--	--	--	--	5.39	96.51	--	3.32	95.10	--	1.09	98.53	--	6.98	97.07	--
5/31/1994	4.71	98.07	11.71	7.32	96.80	13.62	5.74	96.16	12.75	4.23	94.19	12.79	4.38	95.24	12.68	7.68	96.37	15.17
6/20/1996	2.07	100.71	11.72	--	--	--	3.91 (film)	97.99	12.40	2.29	96.13	12.81	--	--	--	8.15	95.90	15.19
7/26/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/14/1996	7.78	95.00	--	--	--	--	7.98 (film)	93.92	--	5.26	93.16	--	--	--	--	11.04	93.01	--
2/26/1997	3.15	99.63	11.46	--	--	--	7.02	94.88	12.17	4.09	94.33	12.52	--	--	--	9.66	94.39	14.91
4/24/1997	3.76	99.02	--	--	--	--	6.99 (0.20)	94.91	--	3.66	94.76	--	4.28	95.34	--	9.78	94.27	--
5/14/1997	3.17	99.61	11.46	6.52	97.60	14.11	6.69	95.21	12.18	2.88	95.54	12.54	--	--	--	7.33	96.72	14.90
8/26/1997	5.58	97.20	11.45	--	--	--	5.39	96.51	12.21	3.05	95.37	12.54	3.30	96.32	12.45	8.59	95.46	14.92
11/17/1997	8.31	94.47	11.60	--	--	--	8.80 (film)	93.10	--	5.65	92.77	12.40	6.98	92.64	12.69	11.15	92.90	15.10
2/26/1998	2.24	100.54	--	--	--	--	4.67 (film)	97.23	--	2.06	96.36	--	2.43	97.19	--	9.81	94.24	--
5/11/1998	--	--	--	--	--	--	5.61 (film)	96.29	--	--	--	--	--	--	--	7.84	96.21	--
7/16/1998	6.40	96.38	--	--	--	--	6.71	95.19	--	4.30	94.12	--	5.18	94.44	--	8.98	95.07	--
8/20/1998	5.42	97.36	11.67	--	--	--	5.49 (film)	96.41	12.41	2.82	95.60	12.76	3.43	96.19	12.66	8.04	96.01	15.04
11/18/1998	6.39	96.39	11.67	--	--	--	5.59	96.31	12.41	3.77	94.65	12.76	4.39	95.23	12.66	8.56	95.49	15.04
2/24/1999	3.02	99.76	11.67	--	--	--	4.75	97.15	12.41	1.93	96.49	12.76	2.60	97.02	12.66	7.02	97.03	15.04
7/26/1999	3.78	99.00	11.67	--	--	--	4.32	97.58	12.41	1.70	96.72	12.76	1.83	97.79	12.66	6.95	97.10	15.04
11/16/1999	7.55	95.23	11.67	--	--	--	6.15 (film)	95.75	12.41	4.21	94.21	12.76	4.30	95.32	12.66	9.21	94.84	15.04
2/8/2000	8.00	94.78	11.58	--	--	--	7.11	94.79	12.03	5.12	93.30	12.67	5.28	94.34	12.60	10.15	93.90	15.05
8/14/2002	5.69	97.09	11.58	--	--	--	5.11	96.79	12.03	2.32	96.10	12.67	--	--	--	8.60	95.45	15.05

Date	MW-7			MW-8			MW-9			MW-10 (EW-7)			MW-11			MW-12 (EW-8)		
	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet)	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet)	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet)	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet)	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet)	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet)
Reference Elevation, TPVC		102.51			102.32			101.24			100.74			99.50			99.70	
6/8/1993	7.64	94.87	--	3.08	99.24	--	2.46	98.78	--	2.65	98.09	--	1.35	98.15	--	1.67	98.03	--
5/11/1994	7.55	94.96	--	5.72	96.60	--	4.72	96.52	--	4.27	96.47	--	3.83	95.67	--	3.23	96.47	--
5/31/1994	8.12	94.39	12.59	6.49	95.83	12.81	5.05	96.19	12.21	4.58	96.16	11.14	5.14	94.36	12.60	3.52	96.18	11.77
6/20/1996	4.40	98.11	12.72	5.43	96.89	12.81	2.47	98.77	12.21	--	--	--	1.48	98.02	12.67	--	--	--
7/26/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/14/1996	10.76	91.75	--	9.04	93.28	--	8.44	92.80	--	--	--	--	6.56	92.94	--	--	--	--
2/26/1997	9.31	93.20	12.42	8.47	93.85	12.54	--	--	--	--	--	--	5.02	94.48	12.53	--	--	--
4/24/1997	9.13	93.38	--	9.38	92.94	--	5.88	95.36	--	--	--	--	4.81	94.69	--	--	--	--
5/14/1997	8.61	93.90	12.43	7.82	94.50	12.55	5.15	96.09	11.92	4.10	96.64	14.11	3.96	95.54	12.55	3.72	95.98	14.21
8/26/1997	8.31	94.20	12.45	5.33	96.99	12.54	4.51	96.73	11.93	--	--	--	3.44	96.06	12.55	--	--	--
11/17/1997	11.56	90.95	12.65	9.55	92.77	12.80	8.96	92.28	12.25	--	--	--	6.85	92.65	12.81	--	--	--
2/26/1998	2.46	100.05	--	6.00	96.32	--	3.86	97.38	--	--	--	--	2.32	97.18	--	--	--	--
5/11/1998	2.75	99.76	--	4.83	97.49	--	--	--	--	--	--	--	--	--	--	--	--	--
7/16/1998	8.68	93.83	--	6.96	95.36	--	7.23	94.01	--	--	--	--	4.88	94.62	--	--	--	--
8/20/1998	7.69	94.82	12.67	6.35	95.97	12.77	4.76	96.48	12.16	--	--	--	4.02	95.48	12.75	--	--	--
11/18/1998	6.19	96.32	12.67	7.26	95.06	12.77	5.99	95.25	12.16	--	--	--	3.41	96.09	12.75	--	--	--
2/24/1999	2.60	99.91	12.67	5.84	96.48	12.77	3.97	97.27	12.16	--	--	--	2.94	96.56	12.75	--	--	--
7/26/1999	5.71	96.80	12.67	4.40	97.92	12.77	3.66	97.58	12.16	--	--	--	2.47	97.03	12.75	--	--	--
11/16/1999	8.78	93.73	12.67	7.27	95.05	12.77	5.64	95.60	12.16	--	--	--	5.34	94.16	12.75	--	--	--
2/8/2000	9.85	92.66	12.58	8.24	94.08	12.68	7.11	94.13	12.10	--	--	--	6.62	92.88	12.70	--	--	--
8/14/2002	4.31	98.20	12.58	4.92	97.40	12.68	3.68	97.56	12.10	--	--	--	--	--	--	--	--	--

The treatment system began operation on 8/20/96.
 Bolded values indicate depth to bottom of spear.
 Well not present at time of water level measurements.
 Indicates product detected in well and thickness in feet, if product level measurement was made while collecting water level information.
 Data not collected

A.6.2. Water Level Elevations

TABLE 2

GROUNDWATER LEVEL DATA
MILWAUKEE COUNTY ZOO - FORMER BLIFFERT LUMBER CO. SITE

Monitoring Well Water Level Data¹

Date	EW-1			EW-2			EW-3			EW-4			EW-5			EW-6		
	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet) ^{1,2}	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet) ^{1,2}	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet) ^{1,2}	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet) ^{1,2}	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet) ^{1,2}	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet) ^{1,2}
Reference Elevation, TPVC		100.81			101.39			101.72			101.96			102.02				100.42
6/8/1993	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
5/11/1994	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
5/31/1994	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
6/20/1996	2.75	98.06	14.34	3.45 (film)	97.94	14.36	4.44	97.28	14.35	4.11	97.85	14.36	4.09 (0.22)	97.93	14.37	2.41	98.01	13.06
7/26/1996	6.62	94.19	7.00	6.24	95.15	6.74	6.19	95.53	6.69	4.85	97.11	5.35	5.49	96.53	5.99	4.69	95.73	5.19
11/14/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/26/1997	7.53	93.28	12.02	--	--	--	--	--	--	--	--	--	7.10	94.92	14.14	--	--	--
4/24/1997	6.14	94.67	11.00	6.19	95.20	3.54	7.52 (0.09)	94.20	8.00	7.19	94.77	3.58	7.09 (0.13)	94.93	3.54	5.23	95.19	3.58
5/14/1997	--	--	--	--	--	--	--	--	--	--	--	--	6.52	95.50	14.11	--	--	--
8/26/1997	--	--	--	--	--	--	--	--	--	--	--	--	6.10	95.92	14.09	--	--	--
11/17/1997	--	--	--	--	--	--	--	--	--	--	--	--	6.94 (film)	95.08	--	--	--	--
2/27/1998	--	--	--	--	--	--	--	--	--	--	--	--	5.80 (film)	96.22	--	--	--	--
5/11/1998	--	--	--	--	--	--	--	--	--	--	--	--	4.02	98.00	--	--	--	--
7/16/1998	--	--	--	--	--	--	--	--	--	--	--	--	5.42	96.60	--	5.70	94.72	--
8/20/1998	5.48	95.33	17.09	5.56	95.83	10.85	5.71	96.01	8.80	6.05	95.91	7.93	5.31	96.71	14.36	3.98	96.44	13.09
11/18/1998	5.89	94.92	17.09	5.50	95.89	10.85	7.40	94.32	8.80	5.69	96.27	7.93	7.19	94.83	14.36	5.99	94.43	13.09
2/24/1999	3.93	96.88	17.09	4.23	97.16	10.85	5.38	96.34	8.80	4.08	97.88	7.93	4.64	97.38	14.36	3.27	97.15	13.09
7/26/1999	3.88	96.93	17.09	4.01	97.38	10.85	4.49	97.23	8.80	3.56	98.40	7.93	3.40	98.62	14.36	3.03	97.39	13.09
11/15/1999	6.80	94.01	17.09	5.85	95.54	10.85	5.63	96.09	8.80	6.00	95.96	7.93	5.54 (film)	96.48	14.36	4.88	95.54	13.09
2/8/2000	--	--	--	--	--	--	--	--	--	--	--	--	6.86	95.16	14.22	--	--	--
8/14/2002	6.08	94.73	17.09	4.60	96.79	10.85	7.30 (1.97)	94.42	8.80	4.94 (0.14)	97.02	7.93	4.66	97.36	14.22	3.54	96.88	13.09

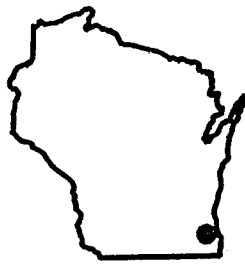
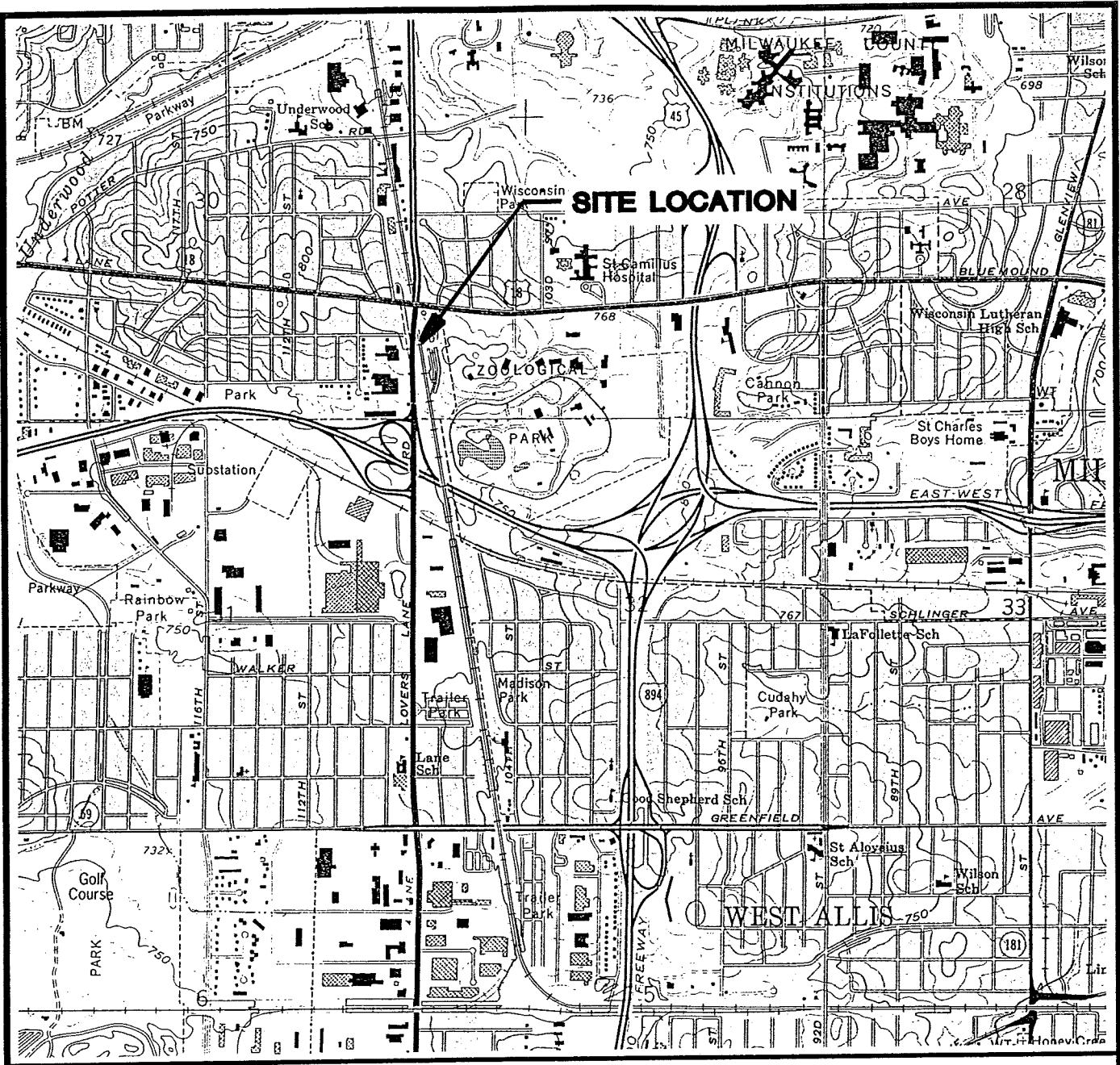
Date	EW-7			EW-8			EW-9			MH-1		
	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet) ^{1,2}	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet) ^{1,2}	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet) ^{1,2}	Depth to Water (feet)	Groundwater Elevation	Depth to Bottom (feet) ^{1,2}
Reference Elevation, TPVC		99.98			99.61			99.57			101.25	
6/8/1993	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
5/11/1994	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
5/31/1994	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
6/20/1996	2.01	97.97	14.36	1.66	97.95	14.46	1.64	97.93	14.36	--	--	--
7/26/1996	4.28	95.70	4.78	3.90	95.71	4.40	3.89	95.68	4.39	9.65	91.60	13.50
11/14/1996	--	--	--	6.36	93.25	--	--	--	--	--	--	--
2/26/1997	5.30	94.68	14.10	4.92	94.69	14.20	--	--	--	--	--	--
4/24/1997	4.79 (film)	95.19	3.54	4.44	95.17	3.54	4.39	95.18	3.58	6.04 (0.03)	95.21	13.50
5/14/1997	4.10	95.88	14.11	3.72	95.89	14.21	--	--	--	--	--	--
8/26/1997	3.44	96.54	14.10	3.09	99.23	14.19	--	--	--	--	--	--
11/17/1997	6.90	93.08	--	6.5 (0.50)	93.11	--	--	--	--	--	--	--
2/27/1998	2.80 (film)	97.18	--	2.42 (film)	97.19	--	--	--	--	--	--	--
5/11/1998	4.02	95.96	--	3.67 (film)	98.65	--	--	--	--	--	--	--
7/16/1998	--	--	--	4.90	97.42	--	--	--	--	--	--	--
8/20/1998	3.56	96.42	14.34	3.20	99.12	14.45	3.20	96.37	14.34	--	--	--
11/18/1998	3.79	96.19	14.34	3.79	98.53	14.45	3.79	95.78	14.34	--	--	--
2/24/1999	2.84	97.14	14.34	2.97	99.35	14.45	2.46	97.11	14.34	--	--	--
7/26/1999	2.62	97.36	14.34	2.25	100.07	14.45	2.21	97.36	14.34	--	--	--
11/15/1999	4.44	95.54	14.34	4.07	98.25	14.45	4.45	95.12	14.34	--	--	--
2/8/2000	5.32	94.66	14.25	4.95	97.37	13.33	--	--	--	--	--	--
8/14/2002	3.12	96.86	14.25	2.80	99.52	13.33	2.79	96.78	14.34	--	--	--

The treatment system began operation on 8/20/96.
 Bolded values indicate depth to bottom of spear.
 Well not present at time of water level measurements.
 Indicates product detected in well and thickness in feet, if product level measurement was made while collecting water level information.
 Data not collected

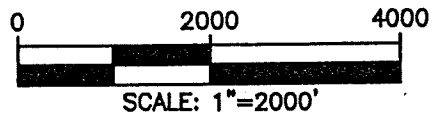
A.6.3. Water Level Elevations

Table of Contents B. Maps, Figures and Photos
Zoo-Bliffert Case Closure – GIS Registry

- B. 1. Location Maps
 - B. 1. a. Location Map
 - B. 1. b. Detailed Site Map
 - B. 1. c. RR Sites Map
- B. 2. Soil Figures
 - B. 2. a. Soil Contamination
 - B. 2. b. Residual Soil Contamination
- B. 3. Groundwater Figures
 - B. 3. a. Geological Cross-Section Figures
 - B. 3. a. 1. Figure created from ArcMap based on boreholes used
 - B. 3. a. 2. Figure created from AutoCAD
 - B. 3. b. Groundwater Isoconcentration - map from TRC 2013
 - B. 3. c. Groundwater Flow Direction - map from TRC 2013
 - B. 3. d. Monitoring Wells- map from TRC 2013
- B. 4. Vapor Maps and Other Media - is/are not needed for Zoo-Bliffert Case Closure – GIS Registry. The site was capped and a parking lot for the west of the zoo was created. There are no structures.
 - B. 4. a. Vapor Intrusion Map
 - B. 4. b. Other media of concern
 - B. 4. c. Other
- B. 5. Structural Impediment Photos- not needed, no structural impediments



STATE LOCATION



**SITE LOCATOR MAP
BLIFFERT LUMBER SITE
MILWAUKEE COUNTY
WAUWATOSA, WISCONSIN**

SOURCE: BASE MAP FROM WAUWATOSA, WI.,
7.5 MINUTE USGS QUADRANGLE.



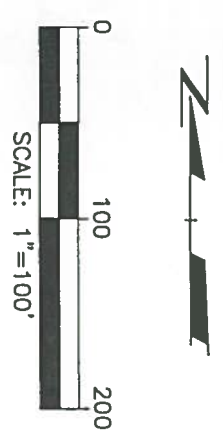
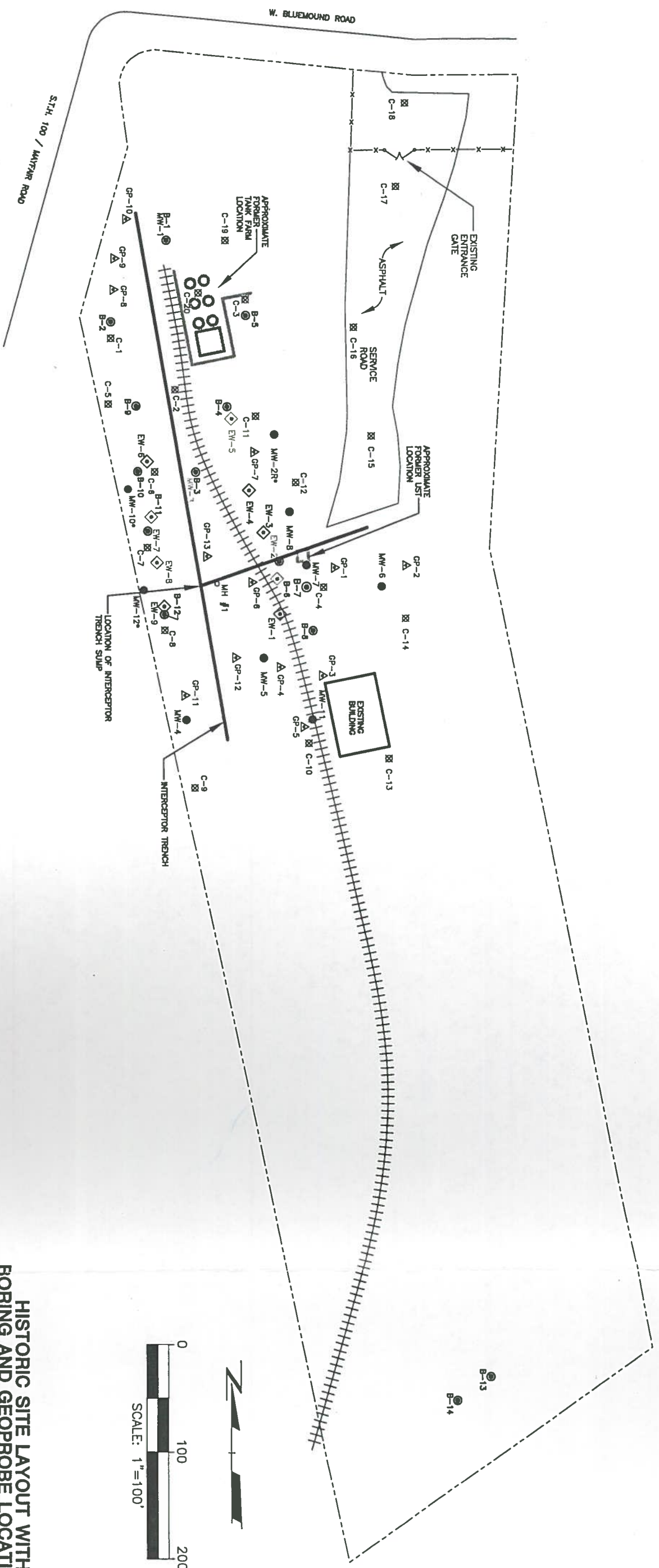
OWN. BY:	PETRICKT
APPROVED BY:	
DATE:	JANUARY 2000
PROJ. #	3044.06
FILE #	30440801

B.1.a Location Map

FIGURE 1

1

- LEGEND**
- △ GP-1 APPROXIMATE GEOPROBE LOCATION, LAW 1993
 - B-1 APPROXIMATE BORING LOCATION, LAW 1993
 - + + + + + RAILROAD TRACKS
 - ⊠ C-7 APPROXIMATE SOIL BORING LOCATION, RMT 2001
 - - - - - APPROXIMATE PROPERTY LINE



**HISTORIC SITE LAYOUT WITH
BORING AND GEOPROBE LOCATIONS
BLIFFERT SITE
MILWAUKEE COUNTY**

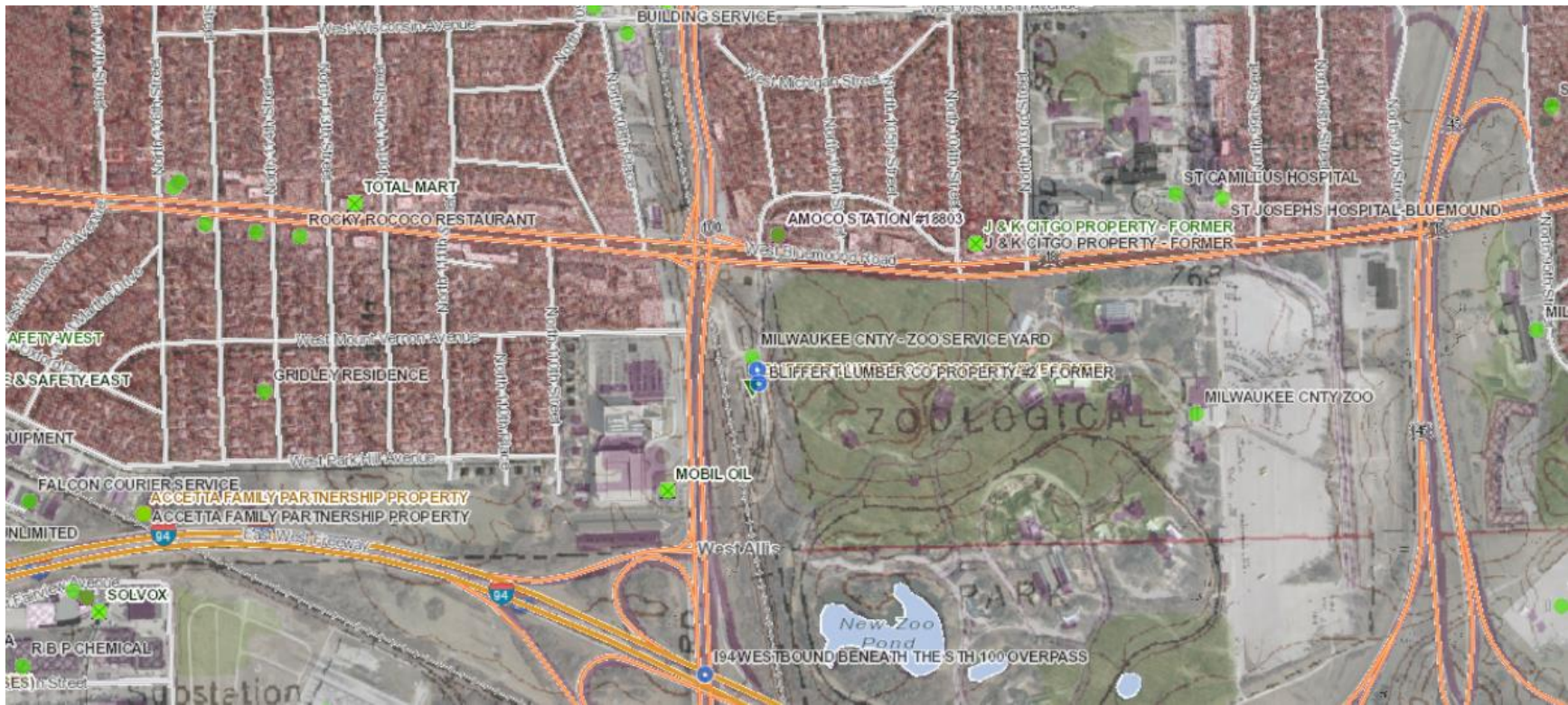
SOURCE:
LAW ENGINEERING INC.
PROJECT NO. 279-2258
FIGURE 2
DATE: 4-26-93



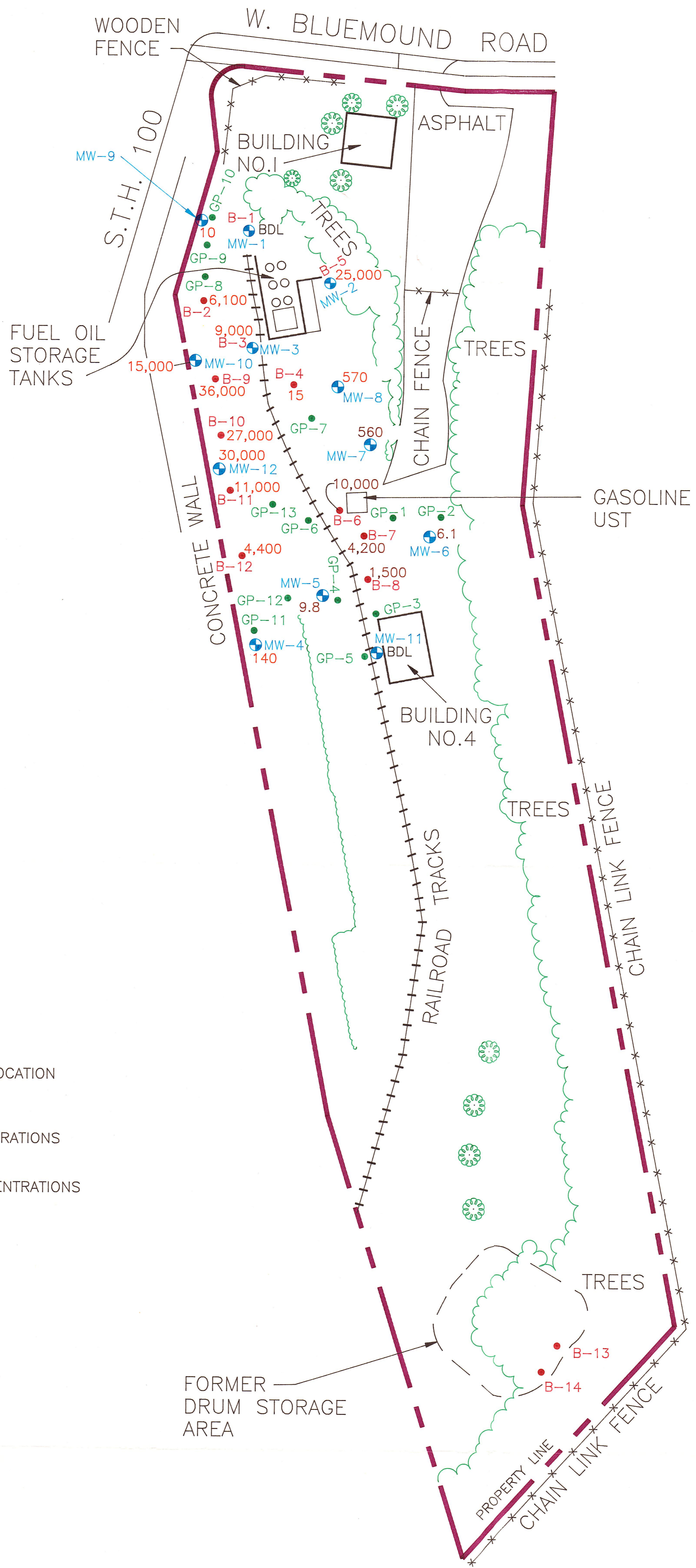
DMN. BY: MHS
APPROVED BY:
DATE: OCT 2002
PROJ. # 00-03044.07
FILE # 30440711.DWG

B.1.b Detailed Site Map

FIGURE 2

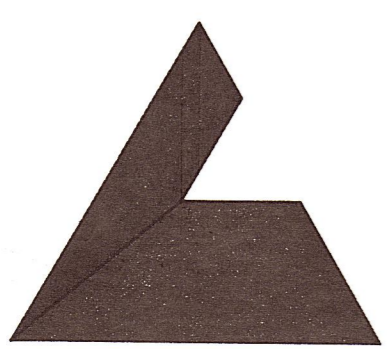


B. 1. c. RR Sites Map



LEGEND

- - APPROXIMATE BORING LOCATION
- ⊕ - APPROXIMATE MONITORING WELL LOCATION
- - GEOPROBE EXPLORATION POINTS
- 15,000 - DIESEL RANGE ORGANICS CONCENTRATIONS IN SOIL (MG/KG)
- 1,500 - GASOLINE RANGE ORGANICS CONCENTRATIONS IN SOIL (MG/KG)
- BDL - BELOW DETECTION LIMIT



LAW ENGINEERING
1011 EAST TOUHY AVE.
SUITE 395
DES PLAINES, IL. 60018

TITLE	SOIL ANALYTICAL DATA MAP (DIESEL RANGE ORGANICS & GASOLINE RANGE ORGANICS) JANUARY 1993 AND JUNE 1993
PROJECT	MILWAUKEE COUNTY ZOO BLIFFERT SITE 10733 W. BLUEMOUND ROAD WAUWATOSA, WISCONSIN

PROJECT NUMBER	279-2258
CHECKED BY	<i>egy</i>
DRAWN BY	NORMAN REED
DATE	4-26-1993

FIGURE
4

B.2.a Soil Contamination Figure



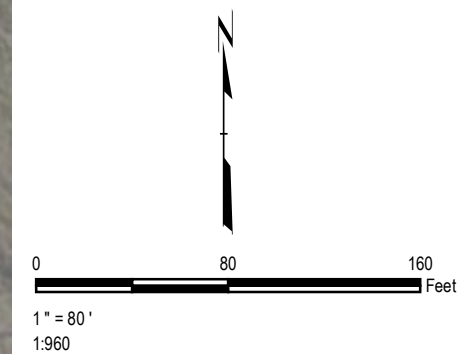
B.2.b Residual Soil Contamination

LEGEND

- GROUNDWATER MONITORING WELL
- SOIL PROBE BORING (5/2013)
- SOIL PROBE BORING & TEMPORARLY WELL (5/2013)
- APPROXIMATE EXTENT OF SOIL EXCEEDING NR 720 RCLS - MAY 2013

NOTES

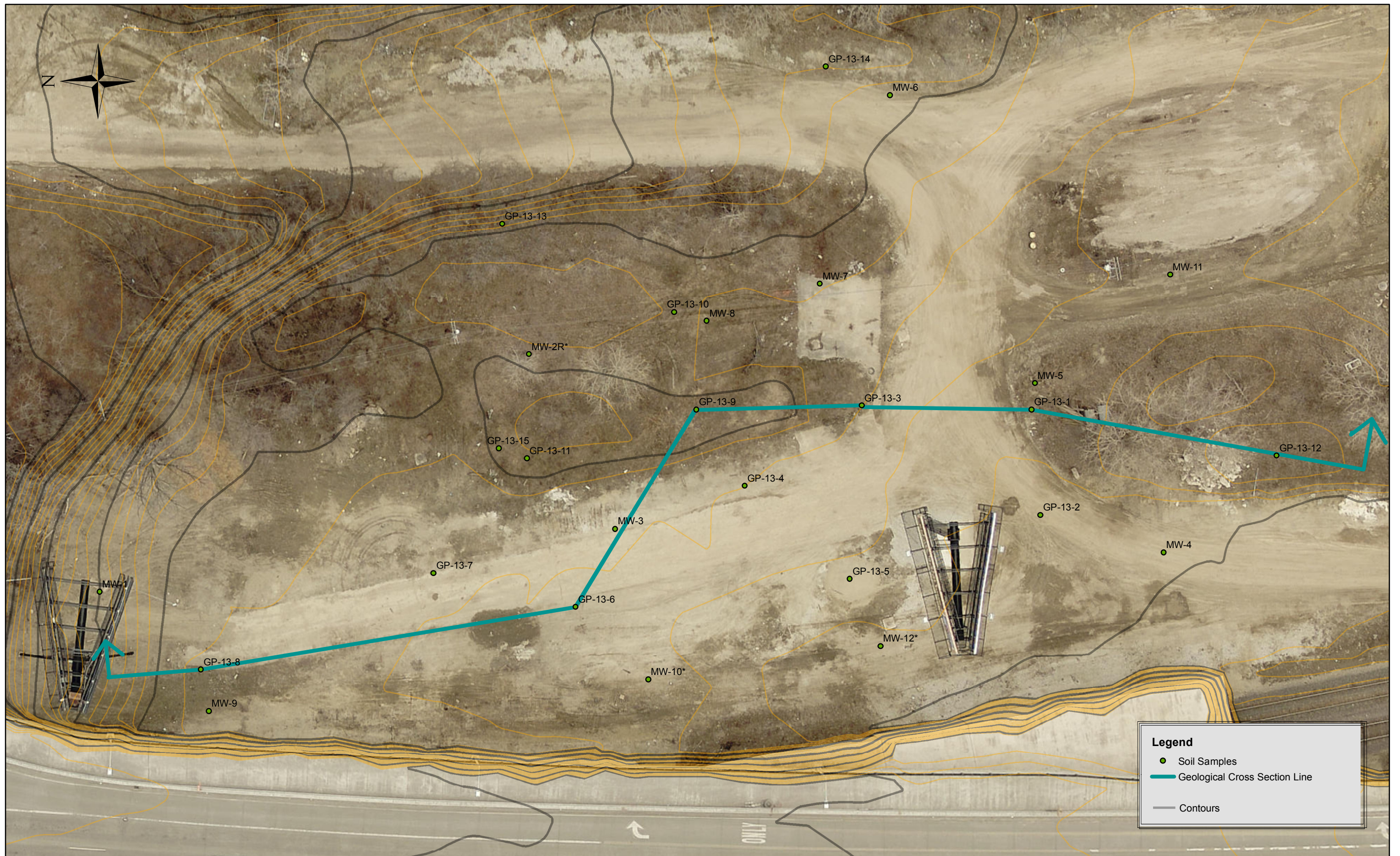
1. BASEMAP IMAGERY FROM ESRI/BING, "WORLD IMAGERY", WEB BASEMAP SERVICE LAYER, 2011.



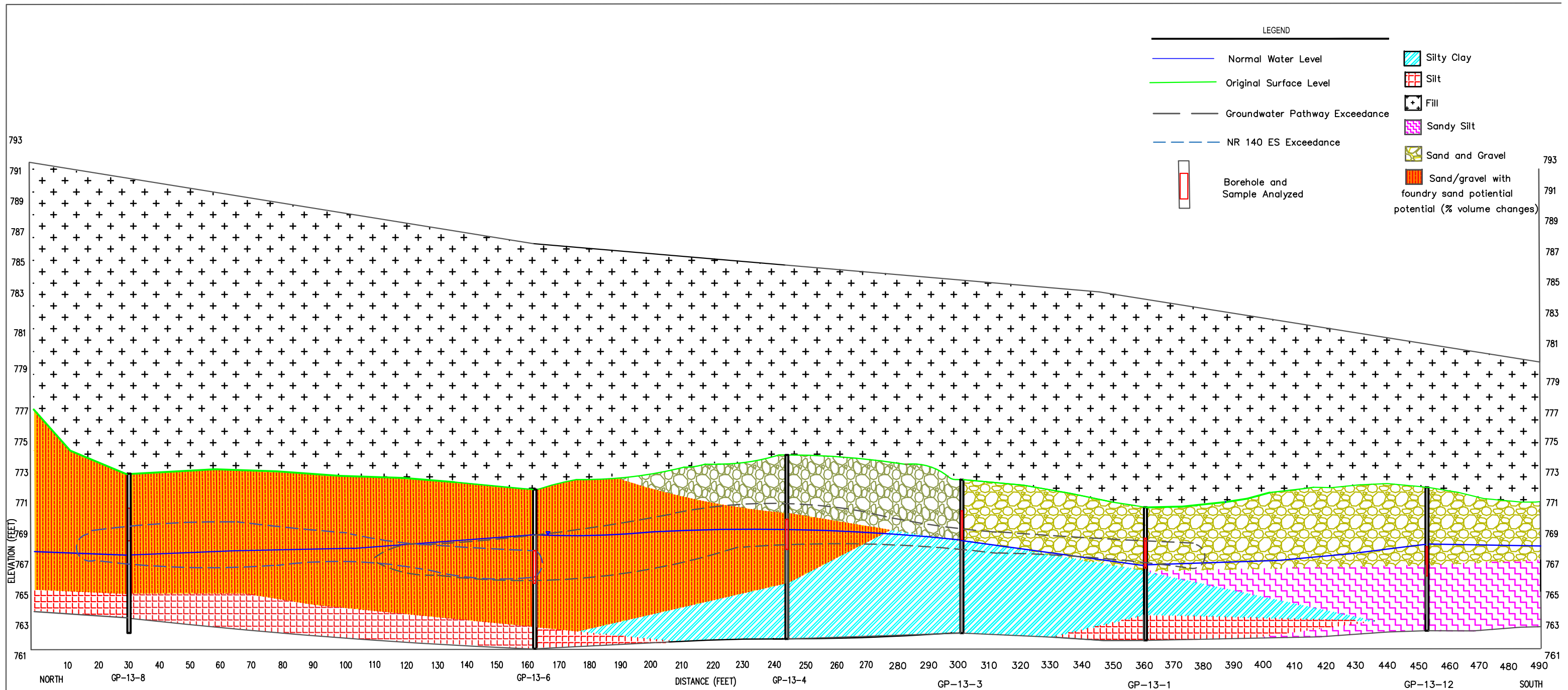
PROJECT: MILWAUKEE COUNTY - BLIFFERT SITE		
WDNR BRRTS NO. 02-41-000655		
PECFA NO. 53226-4282-33-A		
SHEET TITLE: SOIL CONTAMINANT DISTRIBUTION MAP		
MAY 2013		
DRAWN BY: PAPEZ J	SCALE: 1:960	PROJ. NO. 202083
CHECKED BY:		FILE NO. 202083-002.mxd
APPROVED BY:	DATE PRINTED:	FIGURE 1
DATE: JULY 2013		

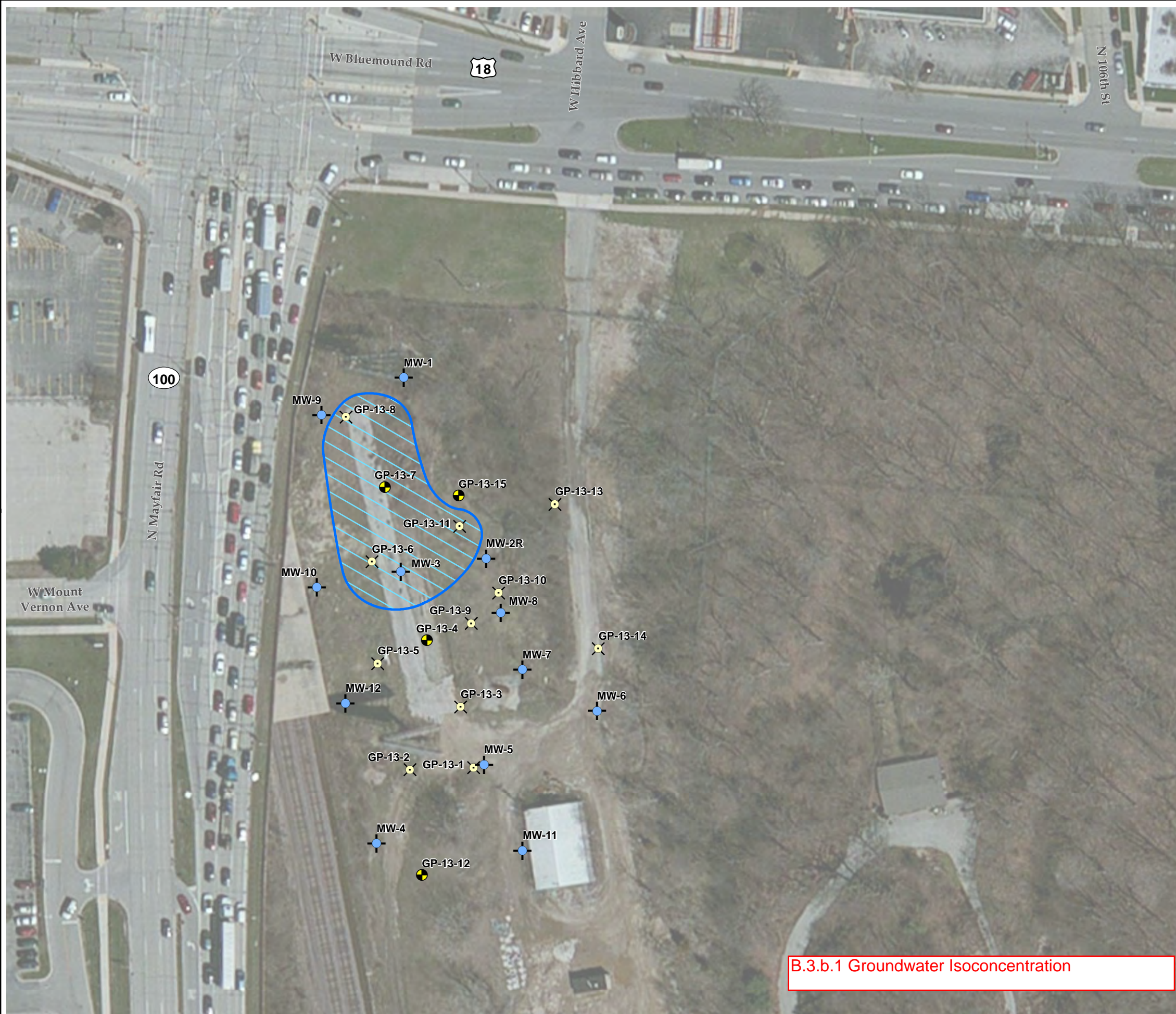


708 Heartland Trail, Suite 3000
Madison, WI 53717
Phone: 608.826.3600
www.trcsolutions.com







B. 3. a. 1. Geologic Cross-Section





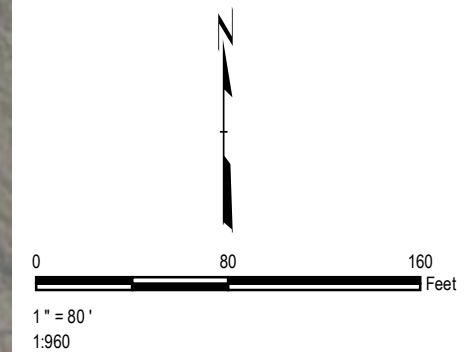
B.3.b.1 Groundwater Isoconcentration

LEGEND

-  GROUNDWATER MONITORING WELL
-  SOIL PROBE BORING (5/2013)
-  SOIL PROBE BORING & TEMPORARLY WELL (5/2013)
-  APPROXIMATE EXTENT OF GROUNDWATER EXCEEDING NR 140 ES - JUNE 2013

NOTES

1. BASEMAP IMAGERY FROM ESRI/BING, "WORLD IMAGERY", WEB BASEMAP SERVICE LAYER, 2011.



PROJECT: MILWAUKEE COUNTY - BLIFFERT SITE		
WDNR BRRTS NO. 02-41-000655		
PECFA NO. 53226-4282-33-A		
SHEET TITLE: GROUNDWATER CONTAMINANT DISTRIBUTION MAP		
JUNE 2013		
DRAWN BY: PAPEZ J	SCALE: 1:960	PROJ. NO. 202083
CHECKED BY:		FILE NO. 202083-003.mxd
APPROVED BY:	DATE PRINTED:	FIGURE 2
DATE: JULY 2013		



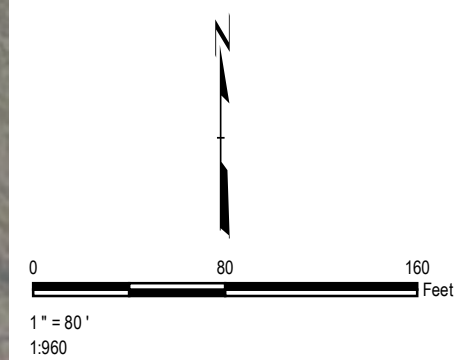
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LEGEND

- GROUNDWATER MONITORING WELL
- SOIL PROBE BORING (5/2013)
- SOIL PROBE BORING & TEMPORARLY WELL (5/2013)
- GROUNDWATER ELEVATION CONTOUR
- (771.00)** GROUNDWATER ELEVATION (FEET, MSL)
- (NM)** NOT MEASURED
- DIRECTION OF GROUNDWATER FLOW
- APPROXIMATE EXTENT OF SOIL EXCEEDING NR 720 RCLS - MAY 2013
- APPROXIMATE EXTENT OF GROUNDWATER EXCEEDING NR 140 ES - JUNE 2013

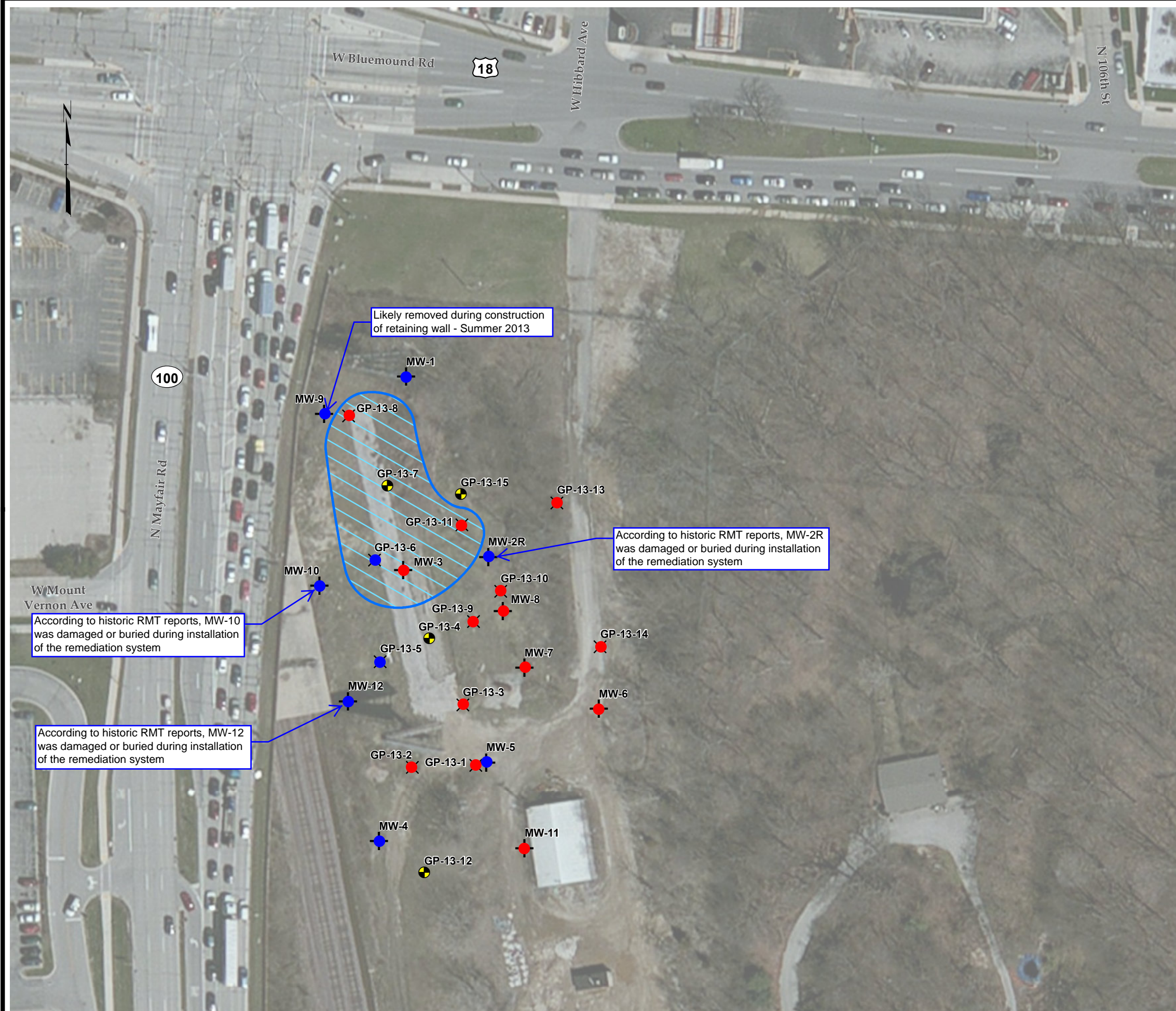
- NOTES**
- BASEMAP IMAGERY FROM ESRI/BING, "WORLD IMAGERY", WEB BASEMAP SERVICE LAYER, 2011.



PROJECT: MILWAUKEE COUNTY - BLIFFERT SITE		
WDNR BRRTS NO. 02-41-000655		
PECFA NO. 53226-4282-33-A		
SHEET TITLE: GROUNDWATER FLOW MAP		
JUNE 27, 2013		
DRAWN BY: PAPEZ J	SCALE: 1:960	PROJ. NO. 202083
CHECKED BY:		FILE NO. 202083-004.mxd
APPROVED BY:	DATE PRINTED:	FIGURE 3
DATE: JULY 2013		



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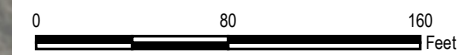


LEGEND

- GROUNDWATER MONITORING WELL
- SOIL PROBE BORING (5/2013)
- SOIL PROBE BORING & TEMPORARLY WELL (5/2013)
- APPROXIMATE EXTENT OF GROUNDWATER EXCEEDING NR 140 ES - JUNE 2013
- Wells that have been located and abandoned
- Wells that could not be found. If any of these wells are found in the future, they should be properly abandoned in accordance with NR 141.

NOTES

1. BASEMAP IMAGERY FROM ESRI/BING, "WORLD IMAGERY", WEB BASEMAP SERVICE LAYER, 2011.



1" = 80'
1:960

PROJECT: MILWAUKEE COUNTY - BLIFFERT SITE		
WDNR BRRTS NO. 02-41-000655		
PECFA NO. 53226-4282-33-A		
SHEET TITLE: GROUNDWATER CONTAMINANT DISTRIBUTION MAP		
JUNE 2013		
DRAWN BY: PAPEZ J	SCALE: 1:960	PROJ. NO. 202083
CHECKED BY:		FILE NO. 202083-003.mxd
APPROVED BY:	DATE PRINTED:	FIGURE 2
DATE: JULY 2013		



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B.4. Vapor Maps and Other Media

B.4.a. Vapor Intrusion Map: Map(s) showing all locations and results for samples taken to investigate the vapor intrusion pathway in relation to residual soil and groundwater contamination, including sub-slab, indoor air, soil vapor, soil gas, ambient air, and communication testing. Show locations and footprints of affected structures and utility corridors, and/or where residual contamination poses a future risk of vapor intrusion.

B.4.b. Other media of concern (e.g., sediment or surface water): Map(s) showing all sampling locations and results for other media investigation. Include the date of sample collection and identify where any standards are exceeded.

B.4.c. Other: Include any other relevant maps and figures not otherwise noted above. (This section may remain blank).

Zoo-Bliffert Case Closure – GIS Registry

Vapor Maps and Other Media is/are not needed for Zoo-Bliffert Case Closure – GIS Registry. The site was capped and a parking lot for the west of the zoo was created. There are no structures.

B.5. Structural Impediment Photos: One or more photographs documenting the structural impediment feature(s) which precluded a complete site investigation or remediation at the time of the closure request. The photographs should document the area that could not be investigated or remediated due to a structural impediment. The structural impediment should be indicated on Figures B.2.a and B.2.b.

Zoo-Bliffert Case Closure – GIS Registry

Not applicable. There are no structural impediments.

Table of Contents C. Documentation of Remedial Action
Zoo-Bliffert Case Closure – GIS Registry

- C. 1. Site Investigation- Figure created from documents found related to case closure
- C. 2. Investigative Waste- Figure is not applicable. All applicable documents were previously submitted
- C. 3. Description of Methodology- Figure is not applicable. The WDNR's RCC spreadsheet was used
- C. 4. Construction Documentation- Figure from Sigma 2015
- C. 5. Decommissioning of Remedial Systems- Figure is not applicable. All applicable documents were previously submitted
- C. 6. Other - Figures from TRC DOT Zoo Interchange 2013

C.1. Site investigation documentation that has not otherwise been submitted with the Site Investigation Report.

Zoo-Bliffert Case Closure – GIS Registry

Site investigation documentation is not needed for Zoo-Bliffert Case Closure – GIS Registry. All site investigation documentation is believed to be previously turned in, including:

Description	Firm	Date
Data Package	TRC	July 3, 2013
Scope of Work	Milwaukee County	February 26, 2013
Phase 2.5 Investigation.	TRC	April 2012
U&C Scope of Work Approval	Milwaukee County	April 2012
Clarification of LGU Liability Exemption for Acquiring Contaminated Property	WDNR	December 13, 2002
Closure Denial	WDNR	November 15, 2000
Closure Request	RMT	May 11, 2000
Progress Report #9 (Jan 99 -Dec 99)	RMT	January 24, 2000
Hwy 100 Well Installation attempt	RMT	July 7, 1999
Approval system Shut down	WDNR	April 29, 1999
Progress Report #9 (Oct 98-Dec 98)	RMT	February 12, 1999
Progress Report #8 (Jul 98 -Sept 98)	RMT	November 18, 1998
Progress Report #7 (Apr 98-Jun 98)	RMT	July 10, 1998
Progress Report #6 (Jan 98-Mar 98)	RMT	April 17, 1998
Progress Report #5 (Oct 97-Dec 97)	RMT	February 11, 1998
Progress Report #4 (Jul 97 - Oct 97)	RMT	November 4, 1997
Progress Report #3 (Mar 97-Jun 97)	RMT	July 3, 1997
Progress Report #2 (Dec 96-Feb 97)	RMT	April 11, 1997
Approval Construction activities	WDNR	January 9, 1997
Progress Report #1 (Aug 96 - Nov 96)	RMT	January 6, 1997
Bliffert Environmental Claim	Weiss Berzowski	June 27, 1996
Documentation Report of Groundwater Treatment System Installation	RMT	May, 1996
Revised Remedial Action Plan	RMT	December, 1995
Baseline Groundwater Sampling Results	RMT	August, 1994

Baseline Groundwater Sampling Results	RMT	July, 1994
Report of UST and AST Removal	Law Engineering	April 11, 1994
Form 4-DNR SI and RAP review	WDNR	March 7, 1994
Well borehole abandonment form	Aqua Well & Pump	December 8, 1993
AST Removal Report	Ganos Company	December 7, 1993
Checklist for AST and UST closure (12 tanks)	Milwaukee County	December 2, 1993
Conceptual Remedial Action Plan	Law Engineering	November 4, 1993
DNR Notification Letter	WDNR	September 13, 1993
Report of Site Characterization	Law Engineering	August 11, 1993
Phase II Environmental Reconnaissance	STS Consultants	November 30, 1988
Phase I Environmental Reconnaissance	STS Consultants	October 13, 1988

C. 2. Investigative waste disposal documentation.

Zoo-Bliffert Case Closure – GIS Registry

Investigative waste disposal documentation, where applicable were previously submitted with the documentation listed in C. 1.

C. 3. Provide a description of the methodology used along with all supporting documentation if the RCLs are different than those contained in the Department's RCL Spreadsheet available at: <http://dnr.wi.gov/topic/Brownfields/Professionals.html>.

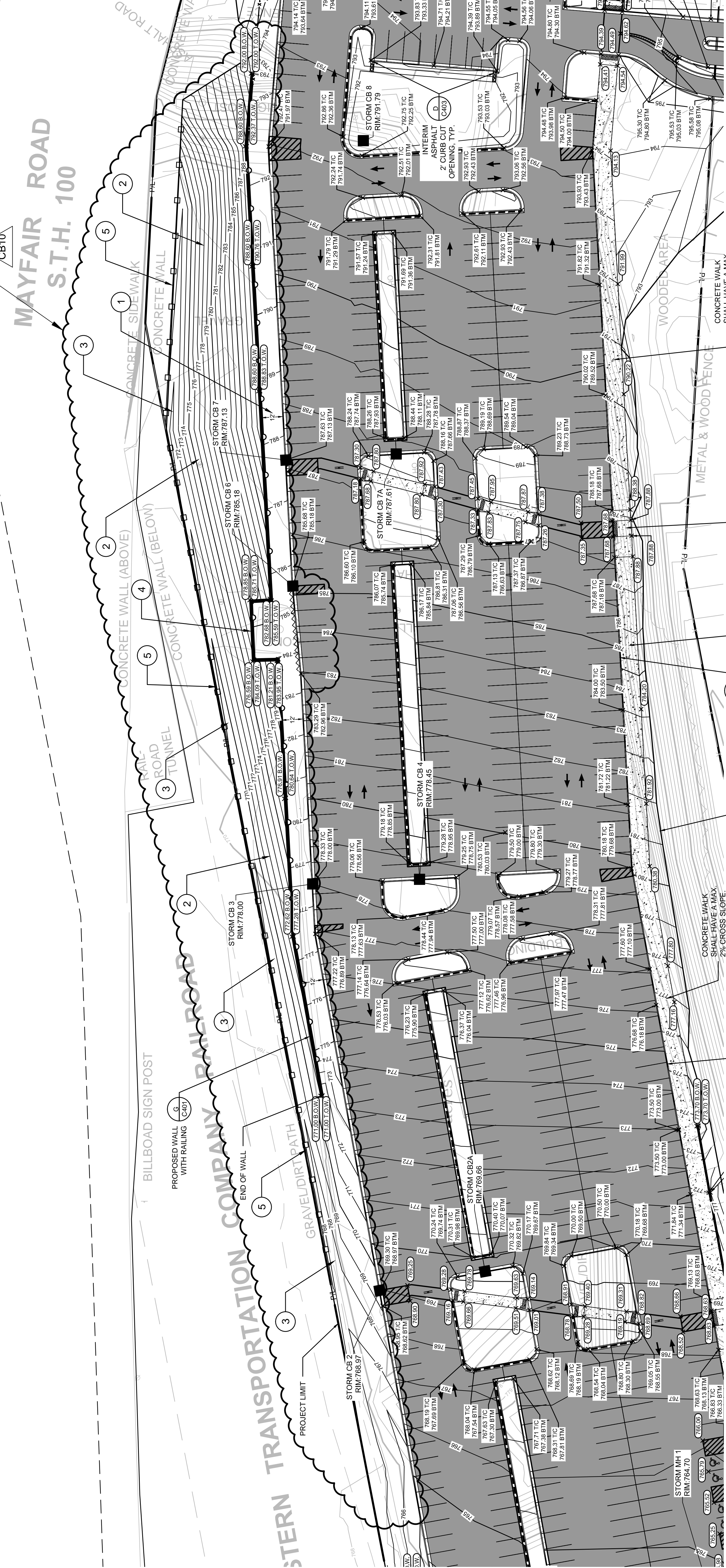
Zoo-Bliffert Case Closure – GIS Registry

Methodology description is not applicable for Zoo-Bliffert Case Closure. The WDNR's RCC spreadsheet was used.



LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED CURB & GUTTER
- SPOT GRADE
- TOP OF CURB GRADE
- BOTTOM OF CURB GRADE
- PROPOSED ASPHALT
- PROPOSED TOP OF WALL GRADE
- PROPOSED BOTTOM OF WALL GRADE
- 5" THICK CONCRETE WALK
- ASPHALT SURFACE
- CURB & GUTTER (ACCEPT)
- CURB & GUTTER (REJECT)
- RETAINING WALL, TYP.
- STORM INLET & INTERIM CURB
- GUTTER INLET, TYP.
- PROPERTY LINE
- PROJECT LIMIT
- 3.5" HIGH PREFINISHED ALUMINUM FENCE
- 6" HIGH PREFINISHED ALUMINUM FENCE



GENERAL NOTES:

- THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS DRAWING IS BASED ON FIELD LOCATIONS AND COMPANY RECORDS. THE LOCATION AND ACCURACY OF WHICH CANNOT BE GUARANTEED. THERE MAY BE ADDITIONAL UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- VERIFY ACTUAL LOCATIONS AND INVERTS IN THE FIELD. ANY POTENTIAL ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE CORRECTED BY THE DESIGNER PRIOR TO PROCEEDING WITH CONSTRUCTION.
- WORK TO BE COMPLETED IS INDICATED BY LIGHT LINES AND EXISTING CONDITIONS ARE INDICATED BY LIGHT TYPE LINES.
- ELECTRONIC CIVIL FILES ARE AVAILABLE UPON WRITTEN REQUEST. DO NOT USE ELECTRONIC CIVIL FILES TO LAYOUT FOUNDATIONS, COLUMN LINES, LIGHT POLES, OR OTHER NON-CIVIL SITE WORK. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDING AND ARCHITECTURAL FEATURES.
- DIMENSIONS ARE FROM FACE OF CURB OR EDGE OF PAVEMENT.
- WORK WITHIN THE PUBLIC RIGHT OF WAY, INCLUDING BUT NOT LIMITED TO DRIVEWAY OPENINGS, SIDEWALK AND DRIVEWAY OPENINGS, SHALL BE COMPLETED PER MUNICIPAL AND/OR COUNTY REQUIREMENTS AND STANDARDS. CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS FOR WORK IN THE RIGHT-OF-WAY.
- EARTHWORK SHALL BE IN ACCORDANCE WITH GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

NOTE:

- ASPHALT GRADES SHOWN REPRESENT FINAL FINISHED ASPHALT GRADES. ONLY FIRST LIFT (2") OF ASPHALT SHALL BE PLACED AS PART OF THIS PARKING LOT PACKAGE. SECOND ASPHALT LIFT IS NOT INCLUDED IN THIS PACKAGE.
- INTERIM CURB AND GUTTER SHALL BE INSTALLED AT ALL CURB INLETS. REFER TO SHEET C403 DETAIL A.
- STORM MANHOLE AND INLET RIM ELEVATIONS ARE FINAL. ELEVATIONS TO CONTRACTOR TO ADJUST RIMS TO MATCH THE FIRST LIFT OF ASPHALT GRADES. FINAL ASPHALT LIFT AND ADJUSTMENT OF RIMS TO MATCH FINAL LIFT NOT INCLUDED IN THIS PACKAGE.
- PROVIDE 3" SMOOTH TRANSITION TO FEATHER THE TOP OF THE BINDER COURSE (BOTTOM ASPHALT LIFT) TO MEET THE TOP OF CONCRETE SIDEWALK, RAMPS AND CURB AND GUTTER FLANGE, WHICH WILL BE 2" HIGHER THAN THE ASPHALT BINDER COURSE. REFER TO SHEET C403 DETAIL G.

CB10 GRADING REVISIONS:

- SHIFT RETAINING WALL TO EAST SUCH THAT WALL IS 12' OFF OF BACK OF CURB.
- INSTALL EROSION CONTROL MATTING ON SLOPE BEHIND WALL.
- CREATE DIVERSION SWALE.
- OFFSET RETAINING WALL BEHIND POLE FOUNDATION TO PROVIDE 12' CLEARANCE FROM POLE. COORDINATE WITH BILLBOARD OWNER TO RELOCATE EXISTING ELECTRICAL BOX ABOVE FINISHED GRADE PRIOR TO CONSTRUCTION. PROVIDE 12" MINIMUM CLEARANCE COATS OF COAL TAR EPOXY TO 1' FOOT ABOVE PROPOSED FILL HEIGHT PRIOR TO FILLING AROUND POLE.
- INSTALL SILT FENCE.

CALL DIGGERS HOTLINE
1-800-242-8511
OR 414-224-8511
IF YOU ARE WORKING IN THE MILWAUKEE AREA, 299-1181



REVISIONS:
DATE: 01/20/2015
PROJECT: Z190-14452
SITE NO: 355
BUILDING NO: 116

PGA DESTINATIONS
ARCHITECTURAL, ENGINEERING & ENVIRONMENTAL SERVICES
1000 W. WISCONSIN AVENUE, SUITE 200
MILWAUKEE, WI 53233
PHONE: 414.224.8511

SIGMA GROUP
1000 W. WISCONSIN AVENUE, SUITE 200
MILWAUKEE, WI 53233
PHONE: 414.224.8511

THESE SERVICES ARE PROVIDED BY THE CONSULTANTS LISTED ABOVE. THE CONSULTANTS ARE NOT RESPONSIBLE FOR THE DESIGN OR CONSTRUCTION OF ANY STRUCTURES OR EQUIPMENT NOT SHOWN ON THESE PLANS. THE CONSULTANTS ARE NOT RESPONSIBLE FOR THE DESIGN OR CONSTRUCTION OF ANY STRUCTURES OR EQUIPMENT NOT SHOWN ON THESE PLANS.

THESE SERVICES ARE PROVIDED BY THE CONSULTANTS LISTED ABOVE. THE CONSULTANTS ARE NOT RESPONSIBLE FOR THE DESIGN OR CONSTRUCTION OF ANY STRUCTURES OR EQUIPMENT NOT SHOWN ON THESE PLANS. THE CONSULTANTS ARE NOT RESPONSIBLE FOR THE DESIGN OR CONSTRUCTION OF ANY STRUCTURES OR EQUIPMENT NOT SHOWN ON THESE PLANS.

DATE:	01/20/2015
PROJECT:	Z190-14452
SITE NO:	355
BUILDING NO:	116

PARKING LOT PACKAGE	
DATE:	01/20/2015
PROJECT:	Z190-14452
SITE NO:	355
BUILDING NO:	116

DATE:	01/20/2015
PROJECT:	Z190-14452
SITE NO:	355
BUILDING NO:	116

C. 4. Construction Documentation
(for parking lot construction)

C. 5. Decommissioning of Remedial Systems. Include plans to properly abandon any systems or equipment.

Zoo-Bliffert Case Closure – GIS Registry

Decommissioning of Remedial Systems is not applicable for Zoo-Bliffert Case Closure. Remedial systems decommissioning was previously submitted.



150 North Patrick Blvd.
Suite 180
Brookfield, WI 53045

262.879.1212 PHONE
262.879.1220 FAX

www.TRCSolutions.com

October 17, 2013

Mr. Michael Cape, P.G.
Senior Hydrogeologist
Wisconsin Department of Transportation
141 NW Barstow Street
P.O. Box 798
Waukesha, WI 53187-0798

Subject: Contaminated Soil and Groundwater Managed During Construction
Mayfair Road from I-94 to Watertown Plank Road, Milwaukee County
Part of Zoo Interchange Project
WisDOT Project ID No. 1060-33-70
TRC Project No. 199874.0000.0000

Dear Mike:

TRC Environmental Corporation (TRC) has prepared this report to document the management of contaminated soil and groundwater during construction at the above-referenced project. No further work is recommended to be completed by the WisDOT.

Background and Scope

Mayfair Road is being reconstructed as part of the early stages of the overall Zoo Interchange reconstruction Mega Project (see Figure 1 for the Mayfair Road project location and limits). In preparation for this work, Forward 45 completed a Phase 1 Hazardous Materials Assessment in 2011, and TRC completed Phase 2.5 investigations in 2012. Summary information (i.e. tabulated data and site figures showing areas of contamination) from this work is included in Attachment 1. TRC prepared the hazardous materials special provisions, a copy is included in Attachment 1. The hazardous materials special provisions were submitted to the WDNR. The WDNR responded by issuing the concurrence letters included at the end of Attachment 1. Note that the WDNR concurred that the CVOC contamination at one of the sites was non-hazardous (see WDNR letter dated May 29, 2012 for Site 33 in Attachment 1). An overview of the areas where contamination has been identified by the Phase 2.5 investigation within the project limits is presented as Figure 2.

Mr. Michael Cape, P.G.
Wisconsin Department of Transportation
October 17, 2013
Page 2

TRC attended the pre-construction meeting on February 18, 2013 to discuss with the project team the known hazardous material locations; that TRC was to be on-site during excavations in these areas; and to discuss which WDNR-licensed landfill would be used for this project. Super Western, the prime and excavation contractor for the project, selected Advanced Disposal's Emerald Park Landfill in Muskego, Wisconsin for bioremediation of the petroleum-contaminated soil and disposal of the CVOC-contaminated soil excavated during the project. TRC prepared waste profiles and coordinated the pre-approval of the soils for bioremediation and disposal at Emerald Park landfill. Copies of the waste profiles are included in Attachment 2.

Mr. Chris Pulvermacher of Super Western was TRC's primary contact for coordinating our field time for this project.

Construction Management

TRC made site visits to document excavations within or near the known contaminated areas on April 4, 5, 8, 22, 23, 24, 25, 26, 27, 30, May 3, 6, 7, 8, 10, 11, 13, June 27, July 26, 29, 30, 31, and August 1, 2, 3, 5, 6, 7, 2013.

As planned, the majority of contaminated soil managed for this project was in the southeast quadrant of Mayfair Road and Bluemound Road for retaining walls R-40-477 (see Figure 3). A majority of TRC's time on-site was also spent at this location, with excavations continuing from early April through mid-May, 2013. A total of 366 truckloads (6,866 tons) of contaminated soil was excavated from this location, which is more than the estimated quantity of 4,650 tons due to the following conditions, as discussed with the WisDOT at several times during construction:

- The vertical extent of contaminated soil was greater than previously identified within the area of planned contaminated soil excavation,
- The Project Engineer determined that soil excavated near the contaminated area was in contact with groundwater and therefore contaminated (even when TRC's field screening did not indicate the presence of contamination), and,
- TRC's field screening indicated that contaminated soil extended further south along the railroad tracks than originally documented by the Phase 2.5 investigation, for which borings were 25' east of the tracks or more (due to railroad restrictions).

Mr. Michael Cape, P.G.
Wisconsin Department of Transportation
October 17, 2013
Page 3

Contaminated groundwater was also encountered in the southeast quadrant of Mayfair Road and Bluemound Road. Groundwater that prohibited construction was pumped into tanker trucks and/or pumped directly into manhole #09516 and discharged into the local sanitary sewer, per the MMSD permit found in Attachment 3. A total of 225,800 gallons of contaminated water was treated by MMSD as a result of the project activities, as also documented in Attachment 3.

Excavations in two other areas of petroleum contamination were less than originally estimated (e.g., shallower) which resulted in less petroleum-contaminated soil being excavated here than originally estimated.

Excavations in the area of CVOC-contaminated soil did not go deeper than 6' bgs (CVOC-contaminated soil was present from approximately 6' to 10' bgs here), therefore no contaminated soil was excavated at this location.

A total of 375 truck-loads (7,002.19 tons) of petroleum-contaminated soil were excavated by the project (most, 6,866 tons, was excavated from the southeast quadrant at Bluemound Road) and bioremediated at Advanced Disposal's Emerald Park landfill. See Attachment 4 for disposal documentation.

Photographs for this project are included in Attachment 5.

Findings and Conclusions

Petroleum-contaminated soil was excavated and managed by the project as planned. More petroleum-contaminated soil was managed in the southeast quadrant of Mayfair Road and Bluemound Road than originally estimated for the reasons stated above. Less soil was excavated from the other two areas of petroleum-contaminated soil than originally estimated, and excavations were shallower than anticipated in the area of CVOC impacts and so CVOC-contaminated soil was not encountered during construction.

A total of 375 truckloads (7,002.19 tons) of petroleum-contaminated soil were excavated by the project (most, 6,866 tons, was excavated from the southeast quadrant at Bluemound Road) and transported to Advanced Disposal's Emerald Park landfill for bioremediation.

No additional investigations or remediation by the WisDOT is recommended.

Mr. Michael Cape, P.G.
Wisconsin Department of Transportation
October 17, 2013
Page 4

TRC appreciates the opportunity to be of service to the WisDOT on this project. If you have any questions regarding this project or report, please contact us at 262-879-1212.

Sincerely,

TRC Environmental Corporation

W. Stapel

Tyler Stapel, E.I.T.
Project Engineer

Ken Yass

Ken W. Yass, P.E., CHMM
Project Manager

Attachments: Figure 1 – Project Location and Limits
Figure 2 – Overview of Contaminated Soil Managed During Construction
Figure 3 – Location of Contaminated Soil Managed During Construction in Southeast Quadrant at Bluemound Road
Figure 4 – Location of Contaminated Soil Managed During Construction South of Watertown Plank Road
Attachment 1 – Phase 2.5 Summary Information, Hazardous Materials Special Provisions and WDNR Concurrence Letters
Attachment 2 – Waste Profiles
Attachment 3 – MMSD Permit and Water Treatment Quantity Documentation
Attachment 4 – Soil Disposal Documentation
Attachment 5 – Photographs

cc: Jason Zembroski – WCP-Zoo Project Leader (hard copy and pdf on CD)
Tim Detzer – Milwaukee County (hard copy and pdf on CD)
Shar TeBeest – WisDOT (hard copy and pdf on CD)
Jim Morse – TRC

JAN 13

ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plat
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 1438



FIG. 1

Attached Xrefs:
 Layout: _____
 Plot Date: October 11, 2013
 Plot Time: 4:38 PM
 Dwg Size: 0.43 Mb
 Operator Name: KONIAR, JOHN
 Drawing Name: J:\MSDOT\199874\199874-01.dwg
 Drawing Plot Scale: 0.386863

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

ZOO IC - MAYFAIR ROAD
 IH 94 TO WATERTOWN PLANK ROAD

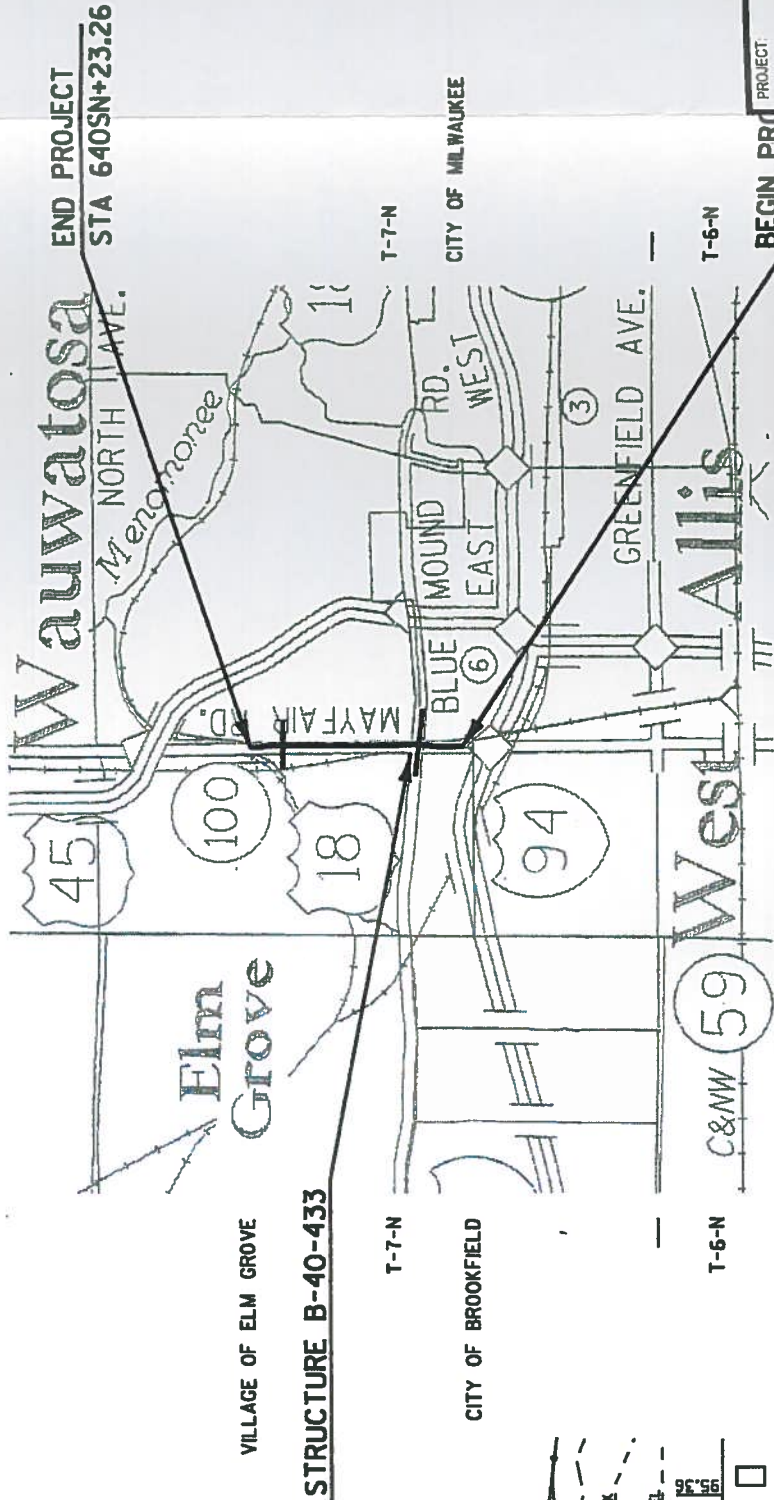
STH 100

MILWAUKEE COUNTY

STATE PROJECT NUMBER
1060-33-70

RETAINING WALLS
 R-40-475
 R-40-476
 R-40-477

SIGN STRUCTURES
 S-40-445
 S-40-446
 S-40-634
 S-40-943
 S-40-944
 S-40-945
 S-40-946
 S-40-947
 S-40-948
 S-40-949
 S-40-951
 S-40-952



DESIGN DESIGNATION	STH 100	BLUEMOUND ROAD	WATERTOWN PLANK ROAD
A.A.D.T. 2013	= 33,430	28,580	19,080
A.A.D.T. 2035	= 43,050	39,310	24,330
D.H.V. 2035	= 5,420	4,760	2,660
D.J.	= 362 NB/622 SB	60% EB/40% WB	362 EB/622 WB
T.	= 2.70%	3.50%	3.50%
DESIGN SPEED	= 45 MPH	40 MPH	40 MPH
ESALS	= 2,387,100	2,102,400	2,430,900

CONVENTIONAL SYMBOLS	PROFILE
PLAN	GRADE LINE
CORPORATE LIMITS	ORIGINAL GROUND
PROPERTY LINE	MARSH OR ROCK PROFILE (To be noted as such)
LOT LINE	SPECIAL DITCH
LIMITED HIGHWAY EASEMENT	GRADE ELEVATION
EXISTING RIGHT OF WAY	CULVERT (Profile View)
PROPOSED OR NEW R/W LINE	UTILITIES
SLOPE INTERCEPT	ELECTRIC
REFERENCE LINE	FIBER OPTIC
EXISTING CULVERT	GAS
PROPOSED CULVERT (Box or Pipe)	SANITARY SEWER
COMBUSTIBLE FLUIDS	STORM SEWER
MARSH AREA	TELEPHONE
WOODED OR SHRUB AREA	WATER
	OVERHEAD ELECTRIC
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE
	TRANSMISSION TOWER

LAYOUT SCALE 0 0.5 ML

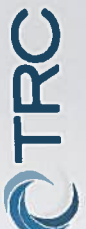
TOTAL NET LENGTH OF CENTERLINE = 1.141 ML

Base Map Provided by WisDOT

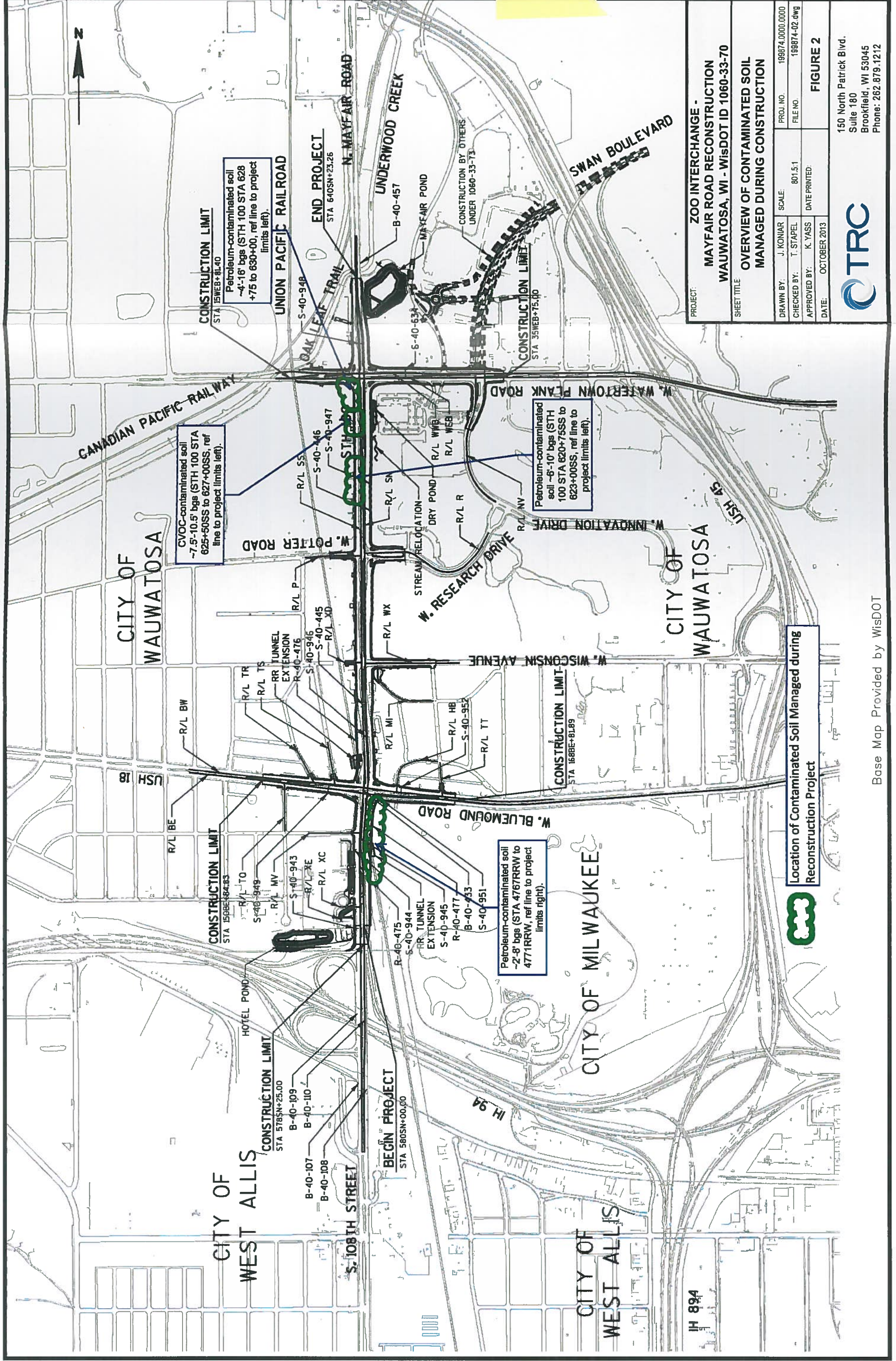
COORDINATES ON THIS PLAN ARE REFERRED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83. ELEVATIONS SHOWN ON THIS PLAN ARE REFERRED TO THE NORTH AMERICAN VERTICAL DATUM 1988.

STATE PROJECT	FEDERAL PROJECT
1060-33-70	PROJECT
	WISC 2013001
	CONTRACT
	1

PROJECT	ZOO INTERCHANGE - MAYFAIR ROAD RECONSTRUCTION
SHEET TITLE	WAWATOSA, WI - WISDOT ID 1060-33-70
PROJECT LOCATION AND LIMITS	
DRAWN BY:	J. KONIAR
CHECKED BY:	T. STAPEL
APPROVED BY:	K. YASS
DATE:	OCTOBER 2013
PROJ. NO.	199874.0000.0000
FILE NO.	199874-01.dwg
AS NOTED	DATE PRINTED:
FIGURE 1	
150 North Patrick Blvd. Suite 180 Brookfield, WI 53045 Phone: 262.879.1212	



C. 6. 5. Other



Location of Contaminated Soil Managed during Reconstruction Project

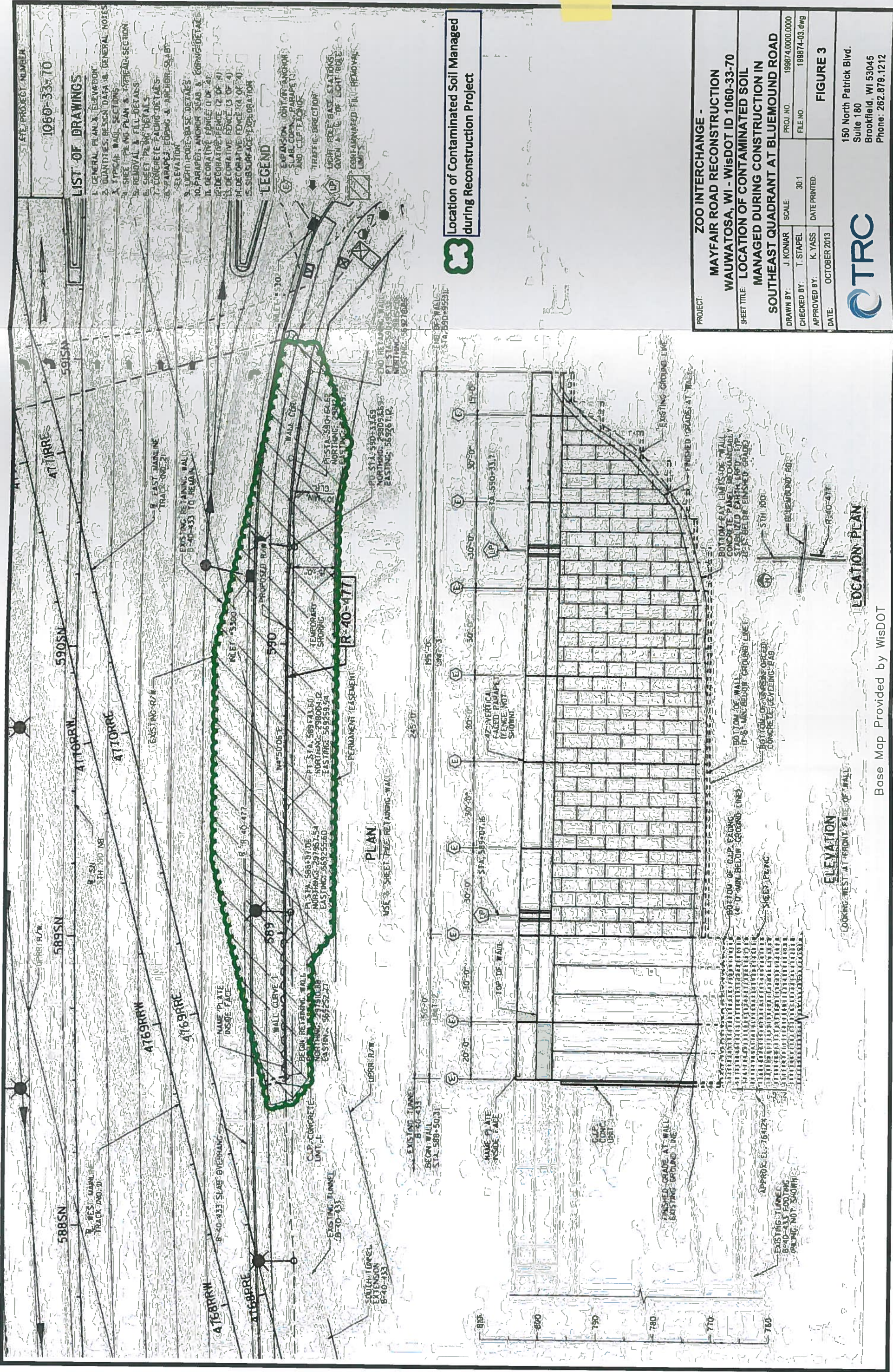


PROJECT: ZOO INTERCHANGE - MAYFAIR ROAD RECONSTRUCTION WAUWATOSA, WI - WisDOT ID 1060-33-70	
SHEET TITLE: OVERVIEW OF CONTAMINATED SOIL MANAGED DURING CONSTRUCTION	
DRAWN BY: J. KONIAR	SCALE: 801:5.1
CHECKED BY: T. STAPEL	FILE NO.: 199874-02.dwg
APPROVED BY: K. YASS	DATE PRINTED:
DATE: OCTOBER 2013	FIGURE 2



150 North Patrick Blvd.
Suite 180
Brookfield, WI 53045
Phone: 262.879.1212

Base Map Provided by WisDOT



LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. QUANTITIES, DESIGN DATA & GENERAL NOTES
3. TYPICAL WALL SECTIONS
4. SHEET PLANS PLAN & TYPICAL SECTION
5. REMOVAL & FILL DETAILS
6. SHEET PILING DETAILS
7. CONCRETE PAVING DETAILS
8. PARAPETS, EDGING & ARCHES, SLAB ELEVATION
9. LIGHT POLE BASE DETAILS
10. PARAPET, ANCHOR SLAB & CORNICE DETAIL
11. DECORATIVE FENCE (2 OF 4)
12. DECORATIVE FENCE (3 OF 4)
13. DECORATIVE FENCE (4 OF 4)
14. DECORATIVE FENCE (5 OF 4)
15. SUBSURFACE EXPLORATION

LEGEND

- (E) EXISTING OR TYPICAL PARAPET AND CLIP PILING
- (P) TRAFFIC DIRECTOR
- (UP) CLIP FACE BASE STATIONING GIVEN AT THE CLIP FACE
- (UM) CONTAMINATED FILL REMOVAL LIMIT

Location of Contaminated Soil Managed during Reconstruction Project

PROJECT:		ZOO INTERCHANGE - MAYFAIR ROAD RECONSTRUCTION	
		WAUWATOSA, WI - WisDOT ID 1060-33-70	
SHEET TITLE:		LOCATION OF CONTAMINATED SOIL MANAGED DURING CONSTRUCTION IN SOUTHEAST QUADRANT AT BLUEMOUND ROAD	
DRAWN BY:	J. KONAR	SCALE:	198874.0000.0000
CHECKED BY:	T. STAPEL	FILE NO:	198874-03.dwg
APPROVED BY:	K. YASS	DATE PRINTED:	
DATE:	OCTOBER 2013	FIGURE	3



150 North Patrick Blvd.
 Suite 180
 Brookfield, WI 53045
 Phone: 262.879.1212

Super Western BIOEPL2013-026

Date	Scale Ticket #	Customer	Truck #	Material	Tons	Loads
04/04/2013	1109771	001065 - SUPER WESTERN, INC	712STONECOA	EX-33@ C- SOIL-PETRO USTs	20.41 TN	1
04/04/2013	1109782	001065 - SUPER WESTERN, INC	73LINGFORD	EX-33@ C- SOIL-PETRO USTs	20.59 TN	2
04/04/2013	1109788	001065 - SUPER WESTERN, INC	21SJSTANLEY	EX-33@ C- SOIL-PETRO USTs	22.77 TN	3
04/04/2013	1109794	001065 - SUPER WESTERN, INC	87LINGFORD	EX-33@ C- SOIL-PETRO USTs	23.67 TN	4
04/04/2013	1109801	001065 - SUPER WESTERN, INC	712STONECOA	EX-33@ C- SOIL-PETRO USTs	23.27 TN	5
04/04/2013	1109812	001065 - SUPER WESTERN, INC	21SJSTANLEY	EX-33@ C- SOIL-PETRO USTs	17.86 TN	6
04/04/2013	1109823	001065 - SUPER WESTERN, INC	87LINGFORD	EX-33@ C- SOIL-PETRO USTs	20.54 TN	7
04/04/2013	1109833	001065 - SUPER WESTERN, INC	32FLEET	EX-33@ C- SOIL-PETRO USTs	22.80 TN	8
04/04/2013	1109849	001065 - SUPER WESTERN, INC	73LINGFORD	EX-33@ C- SOIL-PETRO USTs	20.59 TN	9
04/04/2013	1109851	001065 - SUPER WESTERN, INC	21SJSTANLEY	EX-33@ C- SOIL-PETRO USTs	18.85 TN	10
04/04/2013	1109855	001065 - SUPER WESTERN, INC	32FLEET	EX-33@ C- SOIL-PETRO USTs	19.16 TN	11
04/05/2013	1109903	001065 - SUPER WESTERN, INC	21SJSTANLEY	EX-33@ C- SOIL-PETRO USTs	19.02 TN	12
04/05/2013	1109932	001065 - SUPER WESTERN, INC	87LINGFORD	EX-33@ C- SOIL-PETRO USTs	19.23 TN	13
04/05/2013	1109935	001065 - SUPER WESTERN, INC	21SJSTANLEY	EX-33@ C- SOIL-PETRO USTs	18.09 TN	14
04/05/2013	1109940	001065 - SUPER WESTERN, INC	73LINGFORD	EX-33@ C- SOIL-PETRO USTs	19.88 TN	15
04/05/2013	1109943	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	19.35 TN	16
04/05/2013	1109957	001065 - SUPER WESTERN, INC	M72PETERS	EX-33@ C- SOIL-PETRO USTs	18.08 TN	17
04/08/2013	1110066	001065 - SUPER WESTERN, INC	87LINGFORD	EX-33@ C- SOIL-PETRO USTs	19.45 TN	18
04/22/2013	1111570	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	20.37 TN	19
04/22/2013	1111573	001065 - SUPER WESTERN, INC	M73PETERS	EX-33@ C- SOIL-PETRO USTs	20.90 TN	20
04/22/2013	1111574	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	26.27 TN	21
04/22/2013	1111584	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	18.44 TN	22
04/22/2013	1111597	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	20.21 TN	23
04/22/2013	1111598	001065 - SUPER WESTERN, INC	23TNG	EX-33@ C- SOIL-PETRO USTs	20.40 TN	24
04/24/2013	1111864	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	24.61 TN	25
04/24/2013	1111868	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	26.34 TN	26
04/24/2013	1111872	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	24.93 TN	27
04/24/2013	1111879	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	24.76 TN	28
04/24/2013	1111880	001065 - SUPER WESTERN, INC	M72PETERS	EX-33@ C- SOIL-PETRO USTs	22.99 TN	29
04/24/2013	1111882	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	20.08 TN	30
04/24/2013	1111896	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	24.12 TN	31
04/24/2013	1111905	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	18.62 TN	32
04/24/2013	1111917	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	13.51 TN	33
04/24/2013	1111921	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	22.24 TN	34
04/24/2013	1111923	001065 - SUPER WESTERN, INC	M72PETERS	EX-33@ C- SOIL-PETRO USTs	18.44 TN	35
04/24/2013	1111924	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	20.27 TN	36
04/24/2013	1111929	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	19.92 TN	37
04/24/2013	1111930	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	22.52 TN	38
04/24/2013	1111932	001065 - SUPER WESTERN, INC	45TST	EX-33@ C- SOIL-PETRO USTs	17.94 TN	39
04/24/2013	1111942	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	20.07 TN	40
04/24/2013	1111944	001065 - SUPER WESTERN, INC	M72PETERS	EX-33@ C- SOIL-PETRO USTs	18.82 TN	41
04/24/2013	1111946	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	16.54 TN	42

C. 6. 8. Other

Date	Scale Ticket #	Customer	Truck #	Material	Tons	Loads
04/24/2013	1111953	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	22.68 TN	43
04/24/2013	1111954	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	20.45 TN	44
04/24/2013	1111955	001065 - SUPER WESTERN, INC	45TST	EX-33@ C- SOIL-PETRO USTs	20.11 TN	45
04/24/2013	1111962	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	23.65 TN	46
04/24/2013	1111965	001065 - SUPER WESTERN, INC	M72PETERS	EX-33@ C- SOIL-PETRO USTs	20.97 TN	47
04/24/2013	1111966	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	21.79 TN	48
04/24/2013	1111979	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	22.76 TN	49
04/24/2013	1111983	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	22.59 TN	50
04/24/2013	1111990	001065 - SUPER WESTERN, INC	45TST	EX-33@ C- SOIL-PETRO USTs	23.07 TN	51
04/24/2013	1111999	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	22.29 TN	52
04/24/2013	1112000	001065 - SUPER WESTERN, INC	M72PETERS	EX-33@ C- SOIL-PETRO USTs	18.96 TN	53
04/24/2013	1112006	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	19.23 TN	54
04/24/2013	1112016	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	20.23 TN	55
04/24/2013	1112018	001065 - SUPER WESTERN, INC	45TST	EX-33@ C- SOIL-PETRO USTs	21.91 TN	56
04/24/2013	1112034	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	23.68 TN	57
04/24/2013	1112035	001065 - SUPER WESTERN, INC	M72PETERS	EX-33@ C- SOIL-PETRO USTs	22.22 TN	58
04/24/2013	1112037	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	19.38 TN	59
04/25/2013	1112050	001065 - SUPER WESTERN, INC	45TST	EX-33@ C- SOIL-PETRO USTs	19.64 TN	60
04/25/2013	1112051	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	19.85 TN	61
04/25/2013	1112052	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	21.95 TN	62
04/25/2013	1112054	001065 - SUPER WESTERN, INC	M73PETERS	EX-33@ C- SOIL-PETRO USTs	18.46 TN	63
04/25/2013	1112060	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	19.34 TN	64
04/25/2013	1112071	001065 - SUPER WESTERN, INC	23TNG	EX-33@ C- SOIL-PETRO USTs	18.34 TN	65
04/25/2013	1112072	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	20.22 TN	66
04/25/2013	1112074	001065 - SUPER WESTERN, INC	58LJB	EX-33@ C- SOIL-PETRO USTs	20.02 TN	67
04/25/2013	1112078	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	19.87 TN	68
04/25/2013	1112080	001065 - SUPER WESTERN, INC	1827S&S	EX-33@ C- SOIL-PETRO USTs	19.05 TN	69
04/25/2013	1112087	001065 - SUPER WESTERN, INC	45TST	EX-33@ C- SOIL-PETRO USTs	19.05 TN	70
04/25/2013	1112088	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	18.56 TN	71
04/25/2013	1112089	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	19.06 TN	72
04/25/2013	1112091	001065 - SUPER WESTERN, INC	M73PETERS	EX-33@ C- SOIL-PETRO USTs	21.21 TN	73
04/25/2013	1112094	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	20.50 TN	74
04/25/2013	1112107	001065 - SUPER WESTERN, INC	58LJB	EX-33@ C- SOIL-PETRO USTs	18.86 TN	75
04/25/2013	1112108	001065 - SUPER WESTERN, INC	23TNG	EX-33@ C- SOIL-PETRO USTs	18.94 TN	76
04/25/2013	1112111	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	17.87 TN	77
04/25/2013	1112112	001065 - SUPER WESTERN, INC	1827S&S	EX-33@ C- SOIL-PETRO USTs	18.19 TN	78
04/25/2013	1112114	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	18.11 TN	79
04/25/2013	1112127	001065 - SUPER WESTERN, INC	45TST	EX-33@ C- SOIL-PETRO USTs	20.92 TN	80
04/25/2013	1112128	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	20.73 TN	81
04/25/2013	1112129	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	19.94 TN	82
04/25/2013	1112131	001065 - SUPER WESTERN, INC	M73PETERS	EX-33@ C- SOIL-PETRO USTs	19.14 TN	83
04/25/2013	1112132	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	17.87 TN	84
04/25/2013	1112143	001065 - SUPER WESTERN, INC	58LJB	EX-33@ C- SOIL-PETRO USTs	19.99 TN	85
04/25/2013	1112146	001065 - SUPER WESTERN, INC	23TNG	EX-33@ C- SOIL-PETRO USTs	19.59 TN	86

Date	Scale Ticket #	Customer	Truck #	Material	Tons	Loads
04/25/2013	1112150	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	19.90 TN	87
04/25/2013	1112151	001065 - SUPER WESTERN, INC	1827S&S	EX-33@ C- SOIL-PETRO USTs	20.42 TN	88
04/25/2013	1112155	001065 - SUPER WESTERN, INC	24HARPER	EX-33@ C- SOIL-PETRO USTs	23.87 TN	89
04/25/2013	1112158	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	20.26 TN	90
04/25/2013	1112159	001065 - SUPER WESTERN, INC	M73PETERS	EX-33@ C- SOIL-PETRO USTs	22.02 TN	91
04/25/2013	1112161	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	19.56 TN	92
04/25/2013	1112165	001065 - SUPER WESTERN, INC	45TST	EX-33@ C- SOIL-PETRO USTs	20.80 TN	93
04/25/2013	1112168	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	19.60 TN	94
04/25/2013	1112180	001065 - SUPER WESTERN, INC	58LJB	EX-33@ C- SOIL-PETRO USTs	20.93 TN	95
04/25/2013	1112184	001065 - SUPER WESTERN, INC	23TNG	EX-33@ C- SOIL-PETRO USTs	20.24 TN	96
04/25/2013	1112185	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	20.19 TN	97
04/25/2013	1112186	001065 - SUPER WESTERN, INC	24HARPER	EX-33@ C- SOIL-PETRO USTs	21.45 TN	98
04/25/2013	1112189	001065 - SUPER WESTERN, INC	1827S&S	EX-33@ C- SOIL-PETRO USTs	19.66 TN	99
04/25/2013	1112194	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	21.37 TN	100
04/25/2013	1112197	001065 - SUPER WESTERN, INC	M73PETERS	EX-33@ C- SOIL-PETRO USTs	21.18 TN	101
04/25/2013	1112198	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	22.52 TN	102
04/25/2013	1112200	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	20.57 TN	103
04/25/2013	1112202	001065 - SUPER WESTERN, INC	45TST	EX-33@ C- SOIL-PETRO USTs	25.98 TN	104
04/25/2013	1112211	001065 - SUPER WESTERN, INC	58LJB	EX-33@ C- SOIL-PETRO USTs	21.62 TN	105
04/25/2013	1112220	001065 - SUPER WESTERN, INC	24HARPER	EX-33@ C- SOIL-PETRO USTs	23.80 TN	106
04/25/2013	1112226	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	21.94 TN	107
04/25/2013	1112228	001065 - SUPER WESTERN, INC	23TNG	EX-33@ C- SOIL-PETRO USTs	23.72 TN	108
04/25/2013	1112233	001065 - SUPER WESTERN, INC	1827S&S	EX-33@ C- SOIL-PETRO USTs	21.50 TN	109
04/25/2013	1112234	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	20.92 TN	110
04/25/2013	1112238	001065 - SUPER WESTERN, INC	M73PETERS	EX-33@ C- SOIL-PETRO USTs	23.37 TN	111
04/25/2013	1112239	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	17.16 TN	112
04/25/2013	1112244	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	18.72 TN	113
04/25/2013	1112245	001065 - SUPER WESTERN, INC	45TST	EX-33@ C- SOIL-PETRO USTs	23.76 TN	114
04/25/2013	1112260	001065 - SUPER WESTERN, INC	58LJB	EX-33@ C- SOIL-PETRO USTs	19.65 TN	115
04/25/2013	1112262	001065 - SUPER WESTERN, INC	24HARPER	EX-33@ C- SOIL-PETRO USTs	23.92 TN	116
04/25/2013	1112271	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	18.45 TN	117
04/25/2013	1112274	001065 - SUPER WESTERN, INC	23TNG	EX-33@ C- SOIL-PETRO USTs	21.60 TN	118
04/25/2013	1112279	001065 - SUPER WESTERN, INC	1827S&S	EX-33@ C- SOIL-PETRO USTs	17.43 TN	119
04/25/2013	1112281	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	20.06 TN	120
04/25/2013	1112284	001065 - SUPER WESTERN, INC	M73PETERS	EX-33@ C- SOIL-PETRO USTs	23.36 TN	121
04/25/2013	1112288	001065 - SUPER WESTERN, INC	ET1	EX-33@ C- SOIL-PETRO USTs	19.92 TN	122
04/25/2013	1112291	001065 - SUPER WESTERN, INC	M70PETERS	EX-33@ C- SOIL-PETRO USTs	20.83 TN	123
04/25/2013	1112295	001065 - SUPER WESTERN, INC	45TST	EX-33@ C- SOIL-PETRO USTs	19.35 TN	124
04/26/2013	1112395	001065 - SUPER WESTERN, INC	29JT	EX-33@ C- SOIL-PETRO USTs	17.91 TN	125
04/26/2013	1112425	001065 - SUPER WESTERN, INC	58LJB	EX-33@ C- SOIL-PETRO USTs	22.37 TN	126
04/26/2013	1112463	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	23.81 TN	127
04/26/2013	1112468	001065 - SUPER WESTERN, INC	29JT	EX-33@ C- SOIL-PETRO USTs	17.53 TN	128
04/26/2013	1112480	001065 - SUPER WESTERN, INC	58LJB	EX-33@ C- SOIL-PETRO USTs	23.30 TN	129
04/26/2013	1112495	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	23.73 TN	130

C. 6. 10. Other

Date	Scale Ticket #	Customer	Truck #	Material	Tons	Loads
04/26/2013	1112496	001065 - SUPER WESTERN, INC	29JT	EX-33@ C- SOIL-PETRO USTs	19.89 TN	131
04/27/2013	1112500	001065 - SUPER WESTERN, INC	29JT	EX-33@ C- SOIL-PETRO USTs	20.80 TN	132
04/27/2013	1112501	001065 - SUPER WESTERN, INC	M73PETERS	EX-33@ C- SOIL-PETRO USTs	16.45 TN	133
04/27/2013	1112504	001065 - SUPER WESTERN, INC	58LJB	EX-33@ C- SOIL-PETRO USTs	17.05 TN	134
04/27/2013	1112514	001065 - SUPER WESTERN, INC	40RJ	EX-33@ C- SOIL-PETRO USTs	18.81 TN	135
04/27/2013	1112515	001065 - SUPER WESTERN, INC	61LUEDER	EX-33@ C- SOIL-PETRO USTs	24.05 TN	136
04/27/2013	1112518	001065 - SUPER WESTERN, INC	M75	EX-33@ C- SOIL-PETRO USTs	21.24 TN	137
04/27/2013	1112519	001065 - SUPER WESTERN, INC	M76	EX-33@ C- SOIL-PETRO USTs	16.98 TN	138
04/27/2013	1112521	001065 - SUPER WESTERN, INC	29JT	EX-33@ C- SOIL-PETRO USTs	15.56 TN	139
04/27/2013	1112523	001065 - SUPER WESTERN, INC	M73PETERS	EX-33@ C- SOIL-PETRO USTs	27.57 TN	140
04/27/2013	1112526	001065 - SUPER WESTERN, INC	58LJB	EX-33@ C- SOIL-PETRO USTs	18.52 TN	141
04/27/2013	1112531	001065 - SUPER WESTERN, INC	40RJ	EX-33@ C- SOIL-PETRO USTs	17.35 TN	142
04/27/2013	1112534	001065 - SUPER WESTERN, INC	61LUEDER	EX-33@ C- SOIL-PETRO USTs	23.29 TN	143
04/27/2013	1112535	001065 - SUPER WESTERN, INC	M76	EX-33@ C- SOIL-PETRO USTs	16.34 TN	144
04/27/2013	1112536	001065 - SUPER WESTERN, INC	M75	EX-33@ C- SOIL-PETRO USTs	26.00 TN	145
04/27/2013	1112542	001065 - SUPER WESTERN, INC	29JT	EX-33@ C- SOIL-PETRO USTs	21.01 TN	146
04/27/2013	1112549	001065 - SUPER WESTERN, INC	M73PETERS	EX-33@ C- SOIL-PETRO USTs	24.52 TN	147
04/27/2013	1112551	001065 - SUPER WESTERN, INC	58LJB	EX-33@ C- SOIL-PETRO USTs	24.76 TN	148
04/27/2013	1112555	001065 - SUPER WESTERN, INC	40RJ	EX-33@ C- SOIL-PETRO USTs	21.98 TN	149
04/30/2013	1112972	001065 - SUPER WESTERN, INC	M73PETERS	EX-33@ C- SOIL-PETRO USTs	26.23 TN	150
05/06/2013	1113577	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	17.47 TN	151
05/06/2013	1113578	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	18.55 TN	152
05/06/2013	1113579	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	21.12 TN	153
05/06/2013	1113580	001065 - SUPER WESTERN, INC	48MALDONADO	EX-33@ C- SOIL-PETRO USTs	17.50 TN	154
05/06/2013	1113582	001065 - SUPER WESTERN, INC	12230PJS	EX-33@ C- SOIL-PETRO USTs	20.18 TN	155
05/06/2013	1113585	001065 - SUPER WESTERN, INC	TG3	EX-33@ C- SOIL-PETRO USTs	20.46 TN	156
05/06/2013	1113586	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	20.55 TN	157
05/06/2013	1113592	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	18.12 TN	158
05/06/2013	1113593	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	19.92 TN	159
05/06/2013	1113595	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	20.08 TN	160
05/06/2013	1113608	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	20.26 TN	161
05/06/2013	1113609	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	21.07 TN	162
05/06/2013	1113610	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	20.81 TN	163
05/06/2013	1113611	001065 - SUPER WESTERN, INC	12230PJS	EX-33@ C- SOIL-PETRO USTs	22.21 TN	164
05/06/2013	1113612	001065 - SUPER WESTERN, INC	TG3	EX-33@ C- SOIL-PETRO USTs	19.37 TN	165
05/06/2013	1113614	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	20.53 TN	166
05/06/2013	1113619	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	18.04 TN	167
05/06/2013	1113620	001065 - SUPER WESTERN, INC	48MALDONADO	EX-33@ C- SOIL-PETRO USTs	22.03 TN	168
05/06/2013	1113621	001065 - SUPER WESTERN, INC	23SZADA	EX-33@ C- SOIL-PETRO USTs	16.59 TN	169
05/06/2013	1113622	001065 - SUPER WESTERN, INC	43SZADA	EX-33@ C- SOIL-PETRO USTs	21.28 TN	170
05/06/2013	1113638	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	23.00 TN	171
05/06/2013	1113639	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	20.17 TN	172
05/06/2013	1113642	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	17.88 TN	173
05/06/2013	1113644	001065 - SUPER WESTERN, INC	12230PJS	EX-33@ C- SOIL-PETRO USTs	21.95 TN	174

C. 6. 11. Other

Date	Scale Ticket #	Customer	Truck #	Material	Tons	Loads
05/06/2013	1113645	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	18.85 TN	175
05/06/2013	1113646	001065 - SUPER WESTERN, INC	TG3	EX-33@ C- SOIL-PETRO USTs	19.83 TN	176
05/06/2013	1113652	001065 - SUPER WESTERN, INC	02OUTDOOR	EX-33@ C- SOIL-PETRO USTs	21.55 TN	177
05/06/2013	1113655	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	18.29 TN	178
05/06/2013	1113656	001065 - SUPER WESTERN, INC	48MALDONADO	EX-33@ C- SOIL-PETRO USTs	17.28 TN	179
05/06/2013	1113659	001065 - SUPER WESTERN, INC	43SZADA	EX-33@ C- SOIL-PETRO USTs	15.95 TN	180
05/06/2013	1113660	001065 - SUPER WESTERN, INC	23SZADA	EX-33@ C- SOIL-PETRO USTs	16.92 TN	181
05/06/2013	1113667	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	17.30 TN	182
05/06/2013	1113670	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	18.55 TN	183
05/06/2013	1113673	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	17.39 TN	184
05/06/2013	1113678	001065 - SUPER WESTERN, INC	40RJ	EX-33@ C- SOIL-PETRO USTs	20.40 TN	185
05/06/2013	1113684	001065 - SUPER WESTERN, INC	502MORALES	EX-33@ C- SOIL-PETRO USTs	17.72 TN	186
05/06/2013	1113685	001065 - SUPER WESTERN, INC	02OUTDOOR	EX-33@ C- SOIL-PETRO USTs	15.12 TN	187
05/06/2013	1113697	001065 - SUPER WESTERN, INC	19BJP	EX-33@ C- SOIL-PETRO USTs	17.83 TN	188
05/06/2013	1113701	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	16.85 TN	189
05/06/2013	1113703	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	19.69 TN	190
05/06/2013	1113707	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	18.84 TN	191
05/06/2013	1113713	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	16.85 TN	192
05/06/2013	1113723	001065 - SUPER WESTERN, INC	502MORALES	EX-33@ C- SOIL-PETRO USTs	17.93 TN	193
05/06/2013	1113724	001065 - SUPER WESTERN, INC	40RJ	EX-33@ C- SOIL-PETRO USTs	18.91 TN	194
05/06/2013	1113726	001065 - SUPER WESTERN, INC	02OUTDOOR	EX-33@ C- SOIL-PETRO USTs	19.91 TN	195
05/06/2013	1113727	001065 - SUPER WESTERN, INC	12230PJS	EX-33@ C- SOIL-PETRO USTs	19.89 TN	196
05/06/2013	1113730	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	21.40 TN	197
05/06/2013	1113733	001065 - SUPER WESTERN, INC	19BJP	EX-33@ C- SOIL-PETRO USTs	21.66 TN	198
05/06/2013	1113734	001065 - SUPER WESTERN, INC	TG3	EX-33@ C- SOIL-PETRO USTs	18.86 TN	199
05/06/2013	1113736	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	19.83 TN	200
05/06/2013	1113737	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	18.22 TN	201
05/06/2013	1113742	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	20.81 TN	202
05/06/2013	1113746	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	18.24 TN	203
05/06/2013	1113767	001065 - SUPER WESTERN, INC	502MORALES	EX-33@ C- SOIL-PETRO USTs	18.73 TN	204
05/06/2013	1113769	001065 - SUPER WESTERN, INC	40RJ	EX-33@ C- SOIL-PETRO USTs	20.78 TN	205
05/06/2013	1113773	001065 - SUPER WESTERN, INC	02OUTDOOR	EX-33@ C- SOIL-PETRO USTs	20.59 TN	206
05/07/2013	1113784	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	23.62 TN	207
05/07/2013	1113792	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	26.97 TN	208
05/07/2013	1113793	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	22.39 TN	209
05/07/2013	1113798	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	17.10 TN	210
05/07/2013	1113801	001065 - SUPER WESTERN, INC	99CBE	EX-33@ C- SOIL-PETRO USTs	19.92 TN	211
05/07/2013	1113802	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	16.67 TN	212
05/07/2013	1113804	001065 - SUPER WESTERN, INC	48MALDONADO	EX-33@ C- SOIL-PETRO USTs	16.06 TN	213
05/07/2013	1113805	001065 - SUPER WESTERN, INC	12230PJS	EX-33@ C- SOIL-PETRO USTs	19.92 TN	214
05/07/2013	1113813	001065 - SUPER WESTERN, INC	23SZADA	EX-33@ C- SOIL-PETRO USTs	17.22 TN	215
05/07/2013	1113821	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	16.35 TN	216
05/07/2013	1113823	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	21.70 TN	217
05/07/2013	1113827	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	18.15 TN	218

C. 6. 12. Other

Date	Scale Ticket #	Customer	Truck #	Material	Tons	Loads
05/07/2013	1113830	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	17.71 TN	219
05/07/2013	1113831	001065 - SUPER WESTERN, INC	40FRANKLIN	EX-33@ C- SOIL-PETRO USTs	22.77 TN	220
05/07/2013	1113832	001065 - SUPER WESTERN, INC	99CBE	EX-33@ C- SOIL-PETRO USTs	19.51 TN	221
05/07/2013	1113833	001065 - SUPER WESTERN, INC	241DJT	EX-33@ C- SOIL-PETRO USTs	18.84 TN	222
05/07/2013	1113835	001065 - SUPER WESTERN, INC	48MALDONADO	EX-33@ C- SOIL-PETRO USTs	15.09 TN	223
05/07/2013	1113838	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	18.65 TN	224
05/07/2013	1113839	001065 - SUPER WESTERN, INC	12230PJS	EX-33@ C- SOIL-PETRO USTs	18.61 TN	225
05/07/2013	1113848	001065 - SUPER WESTERN, INC	23SZADA	EX-33@ C- SOIL-PETRO USTs	18.22 TN	226
05/07/2013	1113853	001065 - SUPER WESTERN, INC	04SZADA	EX-33@ C- SOIL-PETRO USTs	16.58 TN	227
05/07/2013	1113856	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	18.11 TN	228
05/07/2013	1113858	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	15.51 TN	229
05/07/2013	1113865	001065 - SUPER WESTERN, INC	241DJT	EX-33@ C- SOIL-PETRO USTs	16.47 TN	230
05/07/2013	1113870	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	17.65 TN	231
05/07/2013	1113871	001065 - SUPER WESTERN, INC	40FRANKLIN	EX-33@ C- SOIL-PETRO USTs	20.75 TN	232
05/07/2013	1113873	001065 - SUPER WESTERN, INC	99CBE	EX-33@ C- SOIL-PETRO USTs	16.95 TN	233
05/07/2013	1113879	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	18.90 TN	234
05/07/2013	1113881	001065 - SUPER WESTERN, INC	48MALDONADO	EX-33@ C- SOIL-PETRO USTs	17.51 TN	235
05/07/2013	1113885	001065 - SUPER WESTERN, INC	12230PJS	EX-33@ C- SOIL-PETRO USTs	18.89 TN	236
05/07/2013	1113887	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	19.84 TN	237
05/07/2013	1113890	001065 - SUPER WESTERN, INC	23SZADA	EX-33@ C- SOIL-PETRO USTs	16.31 TN	238
05/07/2013	1113894	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	18.82 TN	239
05/07/2013	1113896	001065 - SUPER WESTERN, INC	04SZADA	EX-33@ C- SOIL-PETRO USTs	18.58 TN	240
05/07/2013	1113898	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	15.19 TN	241
05/07/2013	1113899	001065 - SUPER WESTERN, INC	38FRANKLIN	EX-33@ C- SOIL-PETRO USTs	18.46 TN	242
05/07/2013	1113903	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	16.28 TN	243
05/07/2013	1113906	001065 - SUPER WESTERN, INC	241DJT	EX-33@ C- SOIL-PETRO USTs	17.96 TN	244
05/07/2013	1113907	001065 - SUPER WESTERN, INC	40FRANKLIN	EX-33@ C- SOIL-PETRO USTs	17.72 TN	245
05/07/2013	1113913	001065 - SUPER WESTERN, INC	99CBE	EX-33@ C- SOIL-PETRO USTs	16.94 TN	246
05/07/2013	1113914	001065 - SUPER WESTERN, INC	48MALDONADO	EX-33@ C- SOIL-PETRO USTs	15.92 TN	247
05/07/2013	1113917	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	15.07 TN	248
05/07/2013	1113918	001065 - SUPER WESTERN, INC	12230PJS	EX-33@ C- SOIL-PETRO USTs	18.33 TN	249
05/07/2013	1113922	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	17.42 TN	250
05/07/2013	1113923	001065 - SUPER WESTERN, INC	23SZADA	EX-33@ C- SOIL-PETRO USTs	19.08 TN	251
05/07/2013	1113927	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	18.99 TN	252
05/07/2013	1113929	001065 - SUPER WESTERN, INC	38FRANKLIN	EX-33@ C- SOIL-PETRO USTs	17.08 TN	253
05/07/2013	1113933	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	18.02 TN	254
05/07/2013	1113935	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	15.80 TN	255
05/07/2013	1113937	001065 - SUPER WESTERN, INC	04SZADA	EX-33@ C- SOIL-PETRO USTs	18.18 TN	256
05/07/2013	1113941	001065 - SUPER WESTERN, INC	99CBE	EX-33@ C- SOIL-PETRO USTs	20.25 TN	257
05/07/2013	1113944	001065 - SUPER WESTERN, INC	40FRANKLIN	EX-33@ C- SOIL-PETRO USTs	15.62 TN	258
05/07/2013	1113951	001065 - SUPER WESTERN, INC	241DJT	EX-33@ C- SOIL-PETRO USTs	15.03 TN	259
05/07/2013	1113954	001065 - SUPER WESTERN, INC	48MALDONADO	EX-33@ C- SOIL-PETRO USTs	17.19 TN	260
05/07/2013	1113957	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	18.49 TN	261
05/07/2013	1113958	001065 - SUPER WESTERN, INC	12230PJS	EX-33@ C- SOIL-PETRO USTs	16.06 TN	262

C. 6. 13. Other

Date	Scale Ticket #	Customer	Truck #	Material	Tons	Loads
05/07/2013	1113959	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	16.37 TN	263
05/07/2013	1113962	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	16.91 TN	264
05/07/2013	1113963	001065 - SUPER WESTERN, INC	23SZADA	EX-33@ C- SOIL-PETRO USTs	18.75 TN	265
05/07/2013	1113967	001065 - SUPER WESTERN, INC	38FRANKLIN	EX-33@ C- SOIL-PETRO USTs	17.09 TN	266
05/07/2013	1113976	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	19.60 TN	267
05/07/2013	1113977	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	12.90 TN	268
05/07/2013	1113980	001065 - SUPER WESTERN, INC	04SZADA	EX-33@ C- SOIL-PETRO USTs	14.91 TN	269
05/07/2013	1113986	001065 - SUPER WESTERN, INC	99CBE	EX-33@ C- SOIL-PETRO USTs	17.89 TN	270
05/07/2013	1113987	001065 - SUPER WESTERN, INC	40FRANKLIN	EX-33@ C- SOIL-PETRO USTs	18.18 TN	271
05/07/2013	1113991	001065 - SUPER WESTERN, INC	48MALDONADO	EX-33@ C- SOIL-PETRO USTs	19.01 TN	272
05/07/2013	1113996	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	18.03 TN	273
05/07/2013	1114001	001065 - SUPER WESTERN, INC	241DJT	EX-33@ C- SOIL-PETRO USTs	16.91 TN	274
05/07/2013	1114002	001065 - SUPER WESTERN, INC	12230PJS	EX-33@ C- SOIL-PETRO USTs	20.01 TN	275
05/07/2013	1114007	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	20.33 TN	276
05/07/2013	1114008	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	21.53 TN	277
05/07/2013	1114010	001065 - SUPER WESTERN, INC	23SZADA	EX-33@ C- SOIL-PETRO USTs	21.69 TN	278
05/07/2013	1114013	001065 - SUPER WESTERN, INC	38FRANKLIN	EX-33@ C- SOIL-PETRO USTs	17.98 TN	279
05/08/2013	1114021	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	17.50 TN	280
05/08/2013	1114023	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	19.40 TN	281
05/08/2013	1114028	001065 - SUPER WESTERN, INC	99CBE	EX-33@ C- SOIL-PETRO USTs	17.93 TN	282
05/08/2013	1114031	001065 - SUPER WESTERN, INC	23SZADA	EX-33@ C- SOIL-PETRO USTs	19.13 TN	283
05/08/2013	1114032	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	17.56 TN	284
05/08/2013	1114033	001065 - SUPER WESTERN, INC	48MALDONADO	EX-33@ C- SOIL-PETRO USTs	18.82 TN	285
05/08/2013	1114047	001065 - SUPER WESTERN, INC	120BRADLEY	EX-33@ C- SOIL-PETRO USTs	19.07 TN	286
05/08/2013	1114048	001065 - SUPER WESTERN, INC	202AUNTIDIS	EX-33@ C- SOIL-PETRO USTs	19.13 TN	287
05/08/2013	1114053	001065 - SUPER WESTERN, INC	2SZADA	EX-33@ C- SOIL-PETRO USTs	17.90 TN	288
05/08/2013	1114054	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	17.28 TN	289
05/08/2013	1114056	001065 - SUPER WESTERN, INC	99CBE	EX-33@ C- SOIL-PETRO USTs	20.61 TN	290
05/08/2013	1114061	001065 - SUPER WESTERN, INC	23SZADA	EX-33@ C- SOIL-PETRO USTs	15.43 TN	291
05/08/2013	1114063	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	16.61 TN	292
05/08/2013	1114104	001065 - SUPER WESTERN, INC	202AUNTIDIS	EX-33@ C- SOIL-PETRO USTs	23.13 TN	293
05/08/2013	1114106	001065 - SUPER WESTERN, INC	12230PJS	EX-33@ C- SOIL-PETRO USTs	20.23 TN	294
05/08/2013	1114111	001065 - SUPER WESTERN, INC	TG3	EX-33@ C- SOIL-PETRO USTs	18.21 TN	295
05/08/2013	1114114	001065 - SUPER WESTERN, INC	10674PJS	EX-33@ C- SOIL-PETRO USTs	18.69 TN	296
05/10/2013	1114424	001065 - SUPER WESTERN, INC	241DJT	EX-33@ C- SOIL-PETRO USTs	17.26 TN	297
05/10/2013	1114429	001065 - SUPER WESTERN, INC	40FRANKLIN	EX-33@ C- SOIL-PETRO USTs	18.82 TN	298
05/10/2013	1114434	001065 - SUPER WESTERN, INC	13SZADA	EX-33@ C- SOIL-PETRO USTs	16.19 TN	299
05/10/2013	1114435	001065 - SUPER WESTERN, INC	12230PJS	EX-33@ C- SOIL-PETRO USTs	16.93 TN	300
05/10/2013	1114436	001065 - SUPER WESTERN, INC	34BABS	EX-33@ C- SOIL-PETRO USTs	17.77 TN	301
05/10/2013	1114437	001065 - SUPER WESTERN, INC	00SZADA	EX-33@ C- SOIL-PETRO USTs	16.27 TN	302
05/10/2013	1114438	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	17.74 TN	303
05/10/2013	1114440	001065 - SUPER WESTERN, INC	9533CELTIC	EX-33@ C- SOIL-PETRO USTs	16.91 TN	304
05/10/2013	1114441	001065 - SUPER WESTERN, INC	TG3	EX-33@ C- SOIL-PETRO USTs	16.34 TN	305
05/10/2013	1114442	001065 - SUPER WESTERN, INC	35FRANKLIN	EX-33@ C- SOIL-PETRO USTs	16.29 TN	306

C. 6. 14. Other

Date	Scale Ticket #	Customer	Truck #	Material	Tons	Loads
05/10/2013	1114443	001065 - SUPER WESTERN, INC	36FRANKLIN	EX-33@ C- SOIL-PETRO USTs	16.81 TN	307
05/10/2013	1114448	001065 - SUPER WESTERN, INC	41STS	EX-33@ C- SOIL-PETRO USTs	16.69 TN	308
05/10/2013	1114449	001065 - SUPER WESTERN, INC	10674PJS	EX-33@ C- SOIL-PETRO USTs	13.68 TN	309
05/10/2013	1114451	001065 - SUPER WESTERN, INC	166JCL	EX-33@ C- SOIL-PETRO USTs	17.48 TN	310
05/10/2013	1114453	001065 - SUPER WESTERN, INC	03OUTDOOR	EX-33@ C- SOIL-PETRO USTs	15.86 TN	311
05/10/2013	1114454	001065 - SUPER WESTERN, INC	39FRANKLIN	EX-33@ C- SOIL-PETRO USTs	16.07 TN	312
05/10/2013	1114459	001065 - SUPER WESTERN, INC	31STS	EX-33@ C- SOIL-PETRO USTs	14.64 TN	313
05/10/2013	1114461	001065 - SUPER WESTERN, INC	37FRANKLIN	EX-33@ C- SOIL-PETRO USTs	15.91 TN	314
05/10/2013	1114463	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	15.68 TN	315
05/10/2013	1114466	001065 - SUPER WESTERN, INC	418STS	EX-33@ C- SOIL-PETRO USTs	16.21 TN	316
05/10/2013	1114469	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	15.62 TN	317
05/10/2013	1114488	001065 - SUPER WESTERN, INC	120BRADLEY	EX-33@ C- SOIL-PETRO USTs	16.64 TN	318
05/10/2013	1114499	001065 - SUPER WESTERN, INC	241DJT	EX-33@ C- SOIL-PETRO USTs	17.33 TN	319
05/10/2013	1114501	001065 - SUPER WESTERN, INC	39FRANKLIN	EX-33@ C- SOIL-PETRO USTs	14.22 TN	320
05/10/2013	1114505	001065 - SUPER WESTERN, INC	37FRANKLIN	EX-33@ C- SOIL-PETRO USTs	14.83 TN	321
05/10/2013	1114509	001065 - SUPER WESTERN, INC	34BABS	EX-33@ C- SOIL-PETRO USTs	10.20 TN	322
05/10/2013	1114513	001065 - SUPER WESTERN, INC	40FRANKLIN	EX-33@ C- SOIL-PETRO USTs	15.99 TN	323
05/10/2013	1114514	001065 - SUPER WESTERN, INC	36FRANKLIN	EX-33@ C- SOIL-PETRO USTs	14.50 TN	324
05/10/2013	1114522	001065 - SUPER WESTERN, INC	17ZECHZER	EX-33@ C- SOIL-PETRO USTs	15.29 TN	325
05/10/2013	1114524	001065 - SUPER WESTERN, INC	120BRADLEY	EX-33@ C- SOIL-PETRO USTs	16.14 TN	326
05/10/2013	1114532	001065 - SUPER WESTERN, INC	39FRANKLIN	EX-33@ C- SOIL-PETRO USTs	12.43 TN	327
05/10/2013	1114534	001065 - SUPER WESTERN, INC	241DJT	EX-33@ C- SOIL-PETRO USTs	13.48 TN	328
05/10/2013	1114541	001065 - SUPER WESTERN, INC	37FRANKLIN	EX-33@ C- SOIL-PETRO USTs	16.70 TN	329
05/10/2013	1114549	001065 - SUPER WESTERN, INC	40FRANKLIN	EX-33@ C- SOIL-PETRO USTs	13.53 TN	330
05/10/2013	1114550	001065 - SUPER WESTERN, INC	34BABS	EX-33@ C- SOIL-PETRO USTs	12.42 TN	331
05/10/2013	1114551	001065 - SUPER WESTERN, INC	36FRANKLIN	EX-33@ C- SOIL-PETRO USTs	14.69 TN	332
05/10/2013	1114557	001065 - SUPER WESTERN, INC	17ZECHZER	EX-33@ C- SOIL-PETRO USTs	13.90 TN	333
05/10/2013	1114560	001065 - SUPER WESTERN, INC	120BRADLEY	EX-33@ C- SOIL-PETRO USTs	13.15 TN	334
05/10/2013	1114574	001065 - SUPER WESTERN, INC	39FRANKLIN	EX-33@ C- SOIL-PETRO USTs	13.05 TN	335
05/10/2013	1114582	001065 - SUPER WESTERN, INC	241DJT	EX-33@ C- SOIL-PETRO USTs	11.57 TN	336
05/10/2013	1114583	001065 - SUPER WESTERN, INC	37FRANKLIN	EX-33@ C- SOIL-PETRO USTs	19.03 TN	337
05/10/2013	1114586	001065 - SUPER WESTERN, INC	40FRANKLIN	EX-33@ C- SOIL-PETRO USTs	14.48 TN	338
05/10/2013	1114590	001065 - SUPER WESTERN, INC	34BABS	EX-33@ C- SOIL-PETRO USTs	13.26 TN	339
05/10/2013	1114593	001065 - SUPER WESTERN, INC	36FRANKLIN	EX-33@ C- SOIL-PETRO USTs	12.71 TN	340
05/10/2013	1114596	001065 - SUPER WESTERN, INC	17ZECHZER	EX-33@ C- SOIL-PETRO USTs	13.06 TN	341
05/10/2013	1114597	001065 - SUPER WESTERN, INC	120BRADLEY	EX-33@ C- SOIL-PETRO USTs	13.85 TN	342
05/11/2013	1114601	001065 - SUPER WESTERN, INC	41STS	EX-33@ C- SOIL-PETRO USTs	15.86 TN	343
05/11/2013	1114606	001065 - SUPER WESTERN, INC	34BABS	EX-33@ C- SOIL-PETRO USTs	11.92 TN	344
05/11/2013	1114607	001065 - SUPER WESTERN, INC	166JCL	EX-33@ C- SOIL-PETRO USTs	15.15 TN	345
05/11/2013	1114610	001065 - SUPER WESTERN, INC	31YAKO	EX-33@ C- SOIL-PETRO USTs	16.01 TN	346
05/11/2013	1114611	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	18.21 TN	347
05/11/2013	1114612	001065 - SUPER WESTERN, INC	23SZADA	EX-33@ C- SOIL-PETRO USTs	13.61 TN	348
05/11/2013	1114618	001065 - SUPER WESTERN, INC	413SZADA	EX-33@ C- SOIL-PETRO USTs	13.14 TN	349
05/11/2013	1114624	001065 - SUPER WESTERN, INC	40SZADA	EX-33@ C- SOIL-PETRO USTs	17.27 TN	350

C. 6. 15. Other

Date	Scale Ticket #	Customer	Truck #	Material	Tons	Loads
05/11/2013	1114627	001065 - SUPER WESTERN, INC	44SZADA	EX-33@ C- SOIL-PETRO USTs	19.92 TN	351
05/11/2013	1114635	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	8.81 TN	352
05/11/2013	1114639	001065 - SUPER WESTERN, INC	241SZADA	EX-33@ C- SOIL-PETRO USTs	12.54 TN	353
05/13/2013	1114645	001065 - SUPER WESTERN, INC	40FRANKLIN	EX-33@ C- SOIL-PETRO USTs	15.30 TN	354
05/13/2013	1114647	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	13.63 TN	355
05/13/2013	1114652	001065 - SUPER WESTERN, INC	707JIMMYD	EX-33@ C- SOIL-PETRO USTs	12.62 TN	356
05/13/2013	1114653	001065 - SUPER WESTERN, INC	21STS	EX-33@ C- SOIL-PETRO USTs	15.20 TN	357
05/13/2013	1114668	001065 - SUPER WESTERN, INC	40FRANKLIN	EX-33@ C- SOIL-PETRO USTs	13.25 TN	358
05/13/2013	1114669	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	15.91 TN	359
05/13/2013	1114671	001065 - SUPER WESTERN, INC	707JIMMYD	EX-33@ C- SOIL-PETRO USTs	15.33 TN	360
05/13/2013	1114672	001065 - SUPER WESTERN, INC	21STS	EX-33@ C- SOIL-PETRO USTs	13.86 TN	361
05/13/2013	1114677	001065 - SUPER WESTERN, INC	SANCHEZ	EX-33@ C- SOIL-PETRO USTs	15.00 TN	362
05/13/2013	1114699	001065 - SUPER WESTERN, INC	M1MORA	EX-33@ C- SOIL-PETRO USTs	10.11 TN	363
05/13/2013	1114700	001065 - SUPER WESTERN, INC	40FRANKLIN	EX-33@ C- SOIL-PETRO USTs	11.38 TN	364
05/13/2013	1114702	001065 - SUPER WESTERN, INC	SANCHEZ	EX-33@ C- SOIL-PETRO USTs	19.24 TN	365
05/13/2013	1114707	001065 - SUPER WESTERN, INC	39MJM	EX-33@ C- SOIL-PETRO USTs	4.00 TN	366
08/02/2013	1125369	001065 - SUPER WESTERN, INC	135LEDENS	EX-33@ C- SOIL-PETRO USTs	14.89 TN	367
08/02/2013	1125370	001065 - SUPER WESTERN, INC	01J&J	EX-33@ C- SOIL-PETRO USTs	13.42 TN	368
08/02/2013	1125376	001065 - SUPER WESTERN, INC	57LIRA	EX-33@ C- SOIL-PETRO USTs	15.98 TN	369
08/02/2013	1125377	001065 - SUPER WESTERN, INC	8BEAR	EX-33@ C- SOIL-PETRO USTs	13.29 TN	370
08/02/2013	1125387	001065 - SUPER WESTERN, INC	10HSE	EX-33@ C- SOIL-PETRO USTs	15.98 TN	371
08/02/2013	1125389	001065 - SUPER WESTERN, INC	M76	EX-33@ C- SOIL-PETRO USTs	13.43 TN	372
08/02/2013	1125395	001065 - SUPER WESTERN, INC	55JNC	EX-33@ C- SOIL-PETRO USTs	17.30 TN	373
08/02/2013	1125401	001065 - SUPER WESTERN, INC	999	EX-33@ C- SOIL-PETRO USTs	15.75 TN	374
08/02/2013	1125402	001065 - SUPER WESTERN, INC	964KAROW	EX-33@ C- SOIL-PETRO USTs	16.20 TN	375
					7,002.19	

Table of Contents D. Maintenance Plan and Photographs
Zoo-Bliffert Case Closure – GIS Registry

- D. 1. Descriptions of maintenance action(s)
- D. 2. Location map
- D. 3. Photographs
- D. 4. Inspection log

A maintenance plan and photographs is/are not applicable or needed for Zoo-Bliffert Case Closure - GIS Registry.

D. Directions for Maintenance Plans and Photographs:

Attach a maintenance plan for each affected property (source property, each off-source affected property) with continuing obligations requiring future maintenance (e.g., direct contact, groundwater protection, vapor intrusion). See Site Summary section 5 for all affected property(s) requiring a maintenance plan. Maintenance plan guidance and/or templates for: 1) Cover/barrier systems; 2) Vapor intrusion; and 3) Monitoring wells, can be found at: <http://dnr.wi.gov/topic/Brownfields/Professionals.html#tabx3>

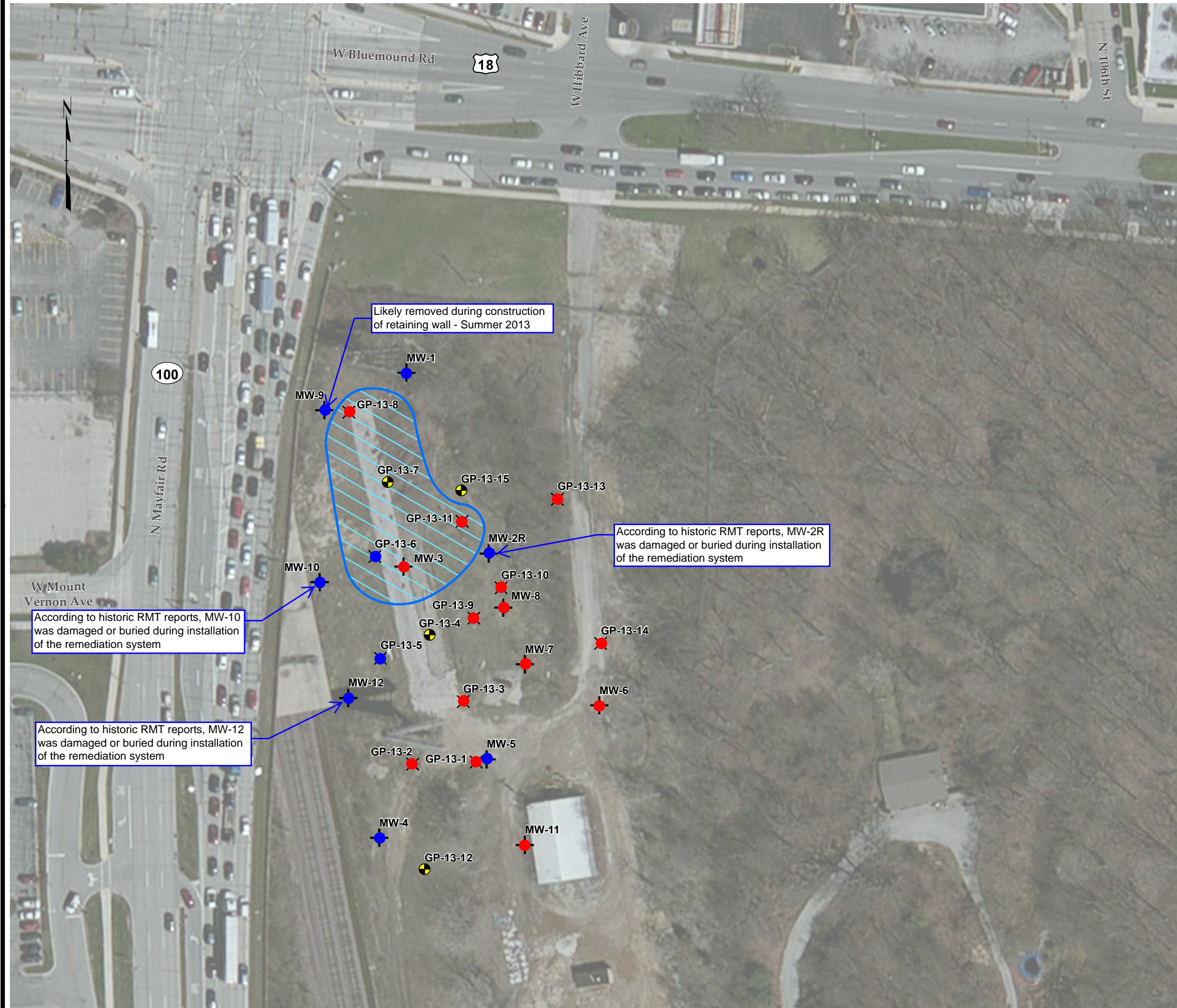
A maintenance plan and photographs is/are not applicable or needed for Zoo-Bliffert Case Closure - GIS Registry.

Table of Contents E. Monitoring Well Information
Zoo-Bliffert Case Closure – GIS Registry

E. 1. Monitoring Well Information

E. 1. 1. Monitoring Well Information- Figure from TRC 2013

E. 1. 2. - E. 1. 11. Monitoring Well Not Abandoned (Missing) -Law Engineering

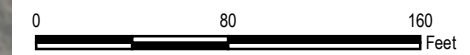


LEGEND

- GROUNDWATER MONITORING WELL
- SOIL PROBE BORING (5/2013)
- SOIL PROBE BORING & TEMPORARLY WELL (5/2013)
- APPROXIMATE EXTENT OF GROUNDWATER EXCEEDING NR 140 ES - JUNE 2013
- Wells that have been located and abandoned
- Wells that could not be found. If any of these wells are found in the future, they should be properly abandoned in accordance with NR 141.

NOTES

1. BASEMAP IMAGERY FROM ESRI/BING, "WORLD IMAGERY", WEB BASEMAP SERVICE LAYER, 2011.



1" = 80'
1:960

PROJECT: MILWAUKEE COUNTY - BLIFFERT SITE		
WDNR BRRTS NO. 02-41-000655		
PECFA NO. 53226-4282-33-A		
SHEET TITLE: GROUNDWATER CONTAMINANT DISTRIBUTION MAP		
JUNE 2013		
DRAWN BY: PAPEZ J	SCALE: 1:960	PROJ. NO. 202083
CHECKED BY:		FILE NO. 202083-003.mxd
APPROVED BY:	DATE PRINTED:	FIGURE 2
DATE: JULY 2013		



708 Heartland Trail, Suite 3000
Madison, WI 53717
Phone: 608.826.3600
www.trcsolutions.com

Facility/Project Name ZOO - BUFFERT SITE	Local Grid Location of Well _____ ft. <input type="checkbox"/> N. _____ ft. <input type="checkbox"/> E. _____ ft. <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> W.	Well Name B1-MW1
Facility License, Permit or Monitoring Number _____	Grid Origin Location Lat. 43° 2' 07" Long. 88° 2' 18" or _____	Wis. Unique Well Number _____ DNR Well Number _____
Type of Well Water Table Observation Well <input checked="" type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	St. Plane _____ ft. N. _____ ft. E.	Date Well Installed <u>11</u> / <u>25</u> / <u>93</u> m / d / y
Distance Well Is From Waste/Source Boundary 50 ft.	Section Location of Waste/Source <u>1/4 of SW 1/4 of Sec 29, T. 7 N, R. 21 E, W.</u>	Well Installed By: (Person's Name and Firm) SAUTER DRILLING
Is Well A Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input type="checkbox"/> No	Location of Well Relative to Waste/Source u <input checked="" type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Rick KRIOFSKE

A. Protective pipe, top elevation _____ ft. MSL	1. Cap and lock? <input type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation _____ ft. MSL	2. Protective cover pipe: a. Inside diameter: _____ in. b. Length: _____ ft. c. Material: Steel <input type="checkbox"/> 04 <u>FLUSH MOUNT</u> Other <input checked="" type="checkbox"/>
C. Land surface elevation _____ ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Annular space seal: a. Granular Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite ... Bentonite-cement grout <input type="checkbox"/> 50 e. _____ Ft ³ volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 c. _____ Other <input type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7. Fine sand material: Manufacturer, product name & mesh size: a. _____ b. Volume added _____ ft ³
Describe _____	8. Filter pack material: Manufacturer, product name and mesh size: a. <u>BADGER MINING CO.</u> b. Volume added <u>8 BABS</u> ft ³
17. Source of water (attach analysis): _____	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
E. Bentonite seal, top <u>0.5</u> ft. MSL or _____ ft.	10. Screen material: <u>SCH 40 PVC</u> a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
F. Fine sand, top _____ ft. MSL or _____ ft.	b. Manufacturer <u>JOHNSON</u> c. Slot size: 0. <u>1.0</u> in. d. Slotted length: <u>10.0</u> ft.
G. Filter pack, top <u>1.0</u> ft. MSL or _____ ft.	11. Backfill material (below filter pack): None <input type="checkbox"/> 14 Other <input type="checkbox"/>
H. Screen joint, top <u>2.0</u> ft. MSL or _____ ft.	
I. Well bottom <u>12.0</u> ft. MSL or _____ ft.	
J. Filter pack, bottom <u>12.0</u> ft. MSL or _____ ft.	
K. Borehole, bottom <u>12.0</u> ft. MSL or _____ ft.	
L. Borehole, diameter <u>8.0</u> in.	
M. O.D. well casing <u>2.375</u> in.	
N. I.D. well casing <u>2.067</u> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Carmen Jung Firm LAW ENGINEERING

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation.

E.1.2 Monitoring Well Not Abandoned (Missing)

Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other

Facility/Project Name <u>MILWAUKEE COUNTY ZOO BLIFFERT</u>	County Name <u>MILWAUKEE</u>	Well Name <u>MW-1</u>
Facility License, Permit or Monitoring Number _____	County Code <u>41</u>	Wis. Unique Well Number _____
		DNR Well Number _____

1. Can this well be purged dry? Yes No
2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other _____
3. Time spent developing well _____ 10 min.
4. Depth of well (from top of well casing) _____ ft.
5. Inside diameter of well _____ 2.20 in.
6. Volume of water in filter pack and well casing _____ 4.97 gal.
7. Volume of water removed from well _____ 4 gal.
8. Volume of water added (if any) _____ 0 gal.
9. Source of water added _____
10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>4.05</u> ft.	<u>3.63</u> ft.
Date	b. <u>1/27/93</u> m m d d y y	<u>1/29/93</u> m m d d y y
Time	c. <u>13:45</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	<u>11:25</u> <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe)	Clear <input type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: MICHAEL OLSEN

Firm: LAW ENGINEERING, INC

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Initials: _____

Firm: _____

E.1.3 Monitoring Well Not Abandoned (Missing)

Facility/Project Name <u>ZOO/BLIFFERT SITES</u>	Local Grid Location of Well _____ ft. <input type="checkbox"/> N. _____ ft. <input type="checkbox"/> E. _____ ft. <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> W.	Well Name <u>B5-MW2</u>
Facility License, Permit or Monitoring Number _____	Grid Origin Location Lat. <u>43° 2' 07"</u> Long. <u>88° 2' 18"</u> or _____	Wis. Unique Well Number _____ DNR Well Number _____
Type of Well Water Table Observation Well <input checked="" type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	St. Plane _____ ft. N. _____ ft. E.	Date Well Installed <u>11/25/93</u> m m d d y y
Distance Well Is From Waste/Source Boundary <u>50</u> ft.	Section Location of Waste/Source <u>1/4 of SW 1/4 of Sec 29, T. 7 N, R. 21</u> <input checked="" type="checkbox"/> E. <input type="checkbox"/> W.	Well Installed By: (Person's Name and Firm) <u>SAUTER DRILLING INC</u>
Is Well A Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input type="checkbox"/> No	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input checked="" type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	<u>RIK KAIFSIK</u>

A. Protective pipe, top elevation _____ ft. MSL	1. Cap and lock? <input type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation _____ ft. MSL	2. Protective cover pipe: a. Inside diameter: _____ in. b. Length: _____ ft. c. Material: Steel <input type="checkbox"/> 04 <u>FLUSH MOUNT</u> Other <input checked="" type="checkbox"/>
C. Land surface elevation _____ ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/> Other <input type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Annular space seal: a. Granular Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite Bentonite-cement grout <input type="checkbox"/> 50 e. _____ Ft ³ volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 c. _____ Other <input type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7. Fine sand material: Manufacturer, product name & mesh size a. <u>BADGER MINING SAND .40-.60</u> b. Volume added <u>N/A</u> ft ³
Describe _____	8. Filter pack material: Manufacturer, product name and mesh size a. <u>BADGER MINING SAND</u> b. Volume added <u>6 BAGS</u> ft ³
17. Source of water (attach analysis): _____	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 <u>JOHNSON</u> Other <input type="checkbox"/>
E. Bentonite seal, top <u>2.5</u> ft. MSL or _____ ft.	10. Screen material: <u>SCH 40 PVC</u> a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
F. Fine sand, top <u>NA</u> ft. MSL or _____ ft.	b. Manufacturer <u>JOHNSON</u> c. Slot size: 0. <u>10</u> in. d. Slotted length: <u>10.3</u> ft.
G. Filter pack, top <u>1.5</u> ft. MSL or _____ ft.	11. Backfill material (below filter pack): None <input type="checkbox"/> 14 Other <input type="checkbox"/>
H. Screen joint, top <u>2.0</u> ft. MSL or _____ ft.	
I. Well bottom <u>12.0</u> ft. MSL or _____ ft.	
J. Filter pack, bottom <u>12.0</u> ft. MSL or _____ ft.	
K. Borehole, bottom <u>13.5</u> ft. MSL or _____ ft.	
L. Borehole, diameter <u>8.0</u> in.	
M. O.D. well casing <u>2.275</u> in.	
N. I.D. well casing <u>2.067</u> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Carmen Young Firm LAW ENGINEERING

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of

E.1.4 Monitoring Well Not Abandoned (Missing)

Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other

Facility/Project Name <u>MILWAUKEE COUNTY ZOD/BLIFFERT</u>	County Name <u>MILWAUKEE</u>	Well Name <u>MW-2</u>
Facility License, Permit or Monitoring Number	County Code <u>41</u>	Wis. Unique Well Number
		DNR Well Number

1. Can this well be purged dry? Yes No
2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other
3. Time spent developing well 10 min.
4. Depth of well (from top of well casing) 11.65 ft.
5. Inside diameter of well 2.00 in.
6. Volume of water in filter pack and well casing 3.2 gal.
7. Volume of water removed from well 5.0 gal.
8. Volume of water added (if any) _____ gal.
9. Source of water added _____
10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>6.72</u> ft.	<u>6.63</u> ft.
Date	b. <u>11/27/92</u> m m d d y y	<u>11/29/93</u> m m d d y y
Time	c. <u>14:10</u> <input checked="" type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	<u>11:37</u> <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe)	Clear <input type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: MICHAEL OLSEN

Firm: LAW ENGINEERING, INC

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Initials: _____

Firm: _____

NO **E.1.5 Monitoring Well Not Abandoned (Missing)**

Facility/Project Name ZOO - BLIFFERT	Local Grid Location of Well _____ ft. <input type="checkbox"/> N. _____ ft. <input type="checkbox"/> E. _____ ft. <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> W.	Well Name MW 9
Facility License, Permit or Monitoring Number _____	Grid Origin Location Lat. 43° 2' 07" Long. 88° 2' 18" or _____	Wis. Unique Well Number _____ DNR Well Number _____
Type of Well Water Table Observation Well <input checked="" type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	St. Plane _____ ft. N. _____ ft. E.	Date Well Installed 06/03/93 m m d d y y
Distance Well Is From Waste/Source Boundary 100 ft.	Section Location of Waste/Source 1/4 of SW 1/4 of Sec. 29, T. 7 N, R. 21 E. W.	Well Installed By: (Person's Name and Firm) RIK KROFSLER
Is Well A Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input type="checkbox"/> No	Location of Well Relative to Waste/Source u <input checked="" type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	

A. Protective pipe, top elevation _____ ft. MSL	1. Cap and lock? <input type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation _____ ft. MSL	2. Protective cover pipe: a. Inside diameter: 9.0 in. b. Length: 12.0 ft. c. Material: Steel <input checked="" type="checkbox"/> 04 FLUSH MOUNT Other <input type="checkbox"/>
C. Land surface elevation _____ ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/> SAND Other <input checked="" type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Annular space seal: a. Granular Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite Bentonite-cement grout <input type="checkbox"/> 50 e. _____ Ft ³ volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 c. NONE Other <input checked="" type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe _____	7. Fine sand material: Manufacturer, product name & mesh size a. NONE b. Volume added _____ ft ³
17. Source of water (attach analysis): _____	8. Filter pack material: Manufacturer, product name and mesh size a. BADGER MINING SAND .85-.95 b. Volume added _____ ft ³
E. Bentonite seal, top 1.3 ft. MSL or _____ ft.	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
F. Fine sand, top NA ft. MSL or _____ ft.	10. Screen material: 54 40 PVC a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
G. Filter pack, top 2.0 ft. MSL or _____ ft.	b. Manufacturer JOHNSON c. Slot size: 0. 1.0 in. d. Slotted length: 10.0 ft.
H. Screen joint, top 2.5 ft. MSL or _____ ft.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>
I. Well bottom 12.5 ft. MSL or _____ ft.	
J. Filter pack, bottom 13.0 ft. MSL or _____ ft.	
K. Borehole, bottom 13.0 ft. MSL or _____ ft.	
L. Borehole, diameter 8.0 in.	
M. O.D. well casing 2.37 in.	
N. I.D. well casing 2.06 in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Carmen Young Firm: LAW ENGINEERING

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other

Facility/Project Name <u>MILWAUKEE COUNTY ZOO</u>	County Name <u>MILWAUKEE</u>	Well Name <u>MW-9</u>
Facility License, Permit or Monitoring Number	County Code <u>41</u>	Wis. Unique Well Number
		DNR Well Number

- Can this well be purged dry? Yes No
- Well development method
 - surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other
- Time spent developing well 10 min.
- Depth of well (from top of well casing) 12.18 ft.
- Inside diameter of well 2.00 in.
- Volume of water in filter pack and well casing 6.0 gal.
- Volume of water removed from well 10.0 gal.
- Volume of water added (if any) _____ gal.
- Source of water added _____
- Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>3.00</u> ft.	<u>2.46</u> ft.
Date	b. <u>6/7/93</u> m m d d y y	<u>6/8/93</u> m m d d y y
Time	c. <u>17:40</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	<u>16:10</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input type="checkbox"/> 15 (Describe)	Clear <input type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Russ Kotrba

Firm: LAW ENGINEERING INC

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Initials: _____

Firm: _____

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.
E. 1. 7. Monitoring Well Not Abandoned (Missing)

Facility/Project Name <u>MILWAUKEE COUNTY ZOO</u>	Local Grid Location of Well _____ ft. <input type="checkbox"/> N. _____ ft. <input type="checkbox"/> E. _____ ft. <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> W.	Well Name <u>MW-10</u>
Facility License, Permit or Monitoring Number _____	Grid Origin Location Lat. <u>43° 2' 07"</u> Long. <u>88° 2' 18"</u> or _____	Wis. Unique Well Number _____ DNR Well Number _____
Type of Well Water Table Observation Well <input type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	St. Plane _____ ft. N. _____ ft. E.	Date Well Installed <u>6/10/93</u> m m d d y y
Distance Well Is From Waste/Source Boundary <u>100</u> ft.	Section Location of Waste/Source <u>1/4 of SW 1/4 of Sec. 29, T. 7 N, R. 21 E.</u>	Well Installed By: (Person's Name and Firm) <u>SAUTER DRILLING</u>
Is Well A Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input type="checkbox"/> No	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	<u>RIEK KRIOFSKE</u>

A. Protective pipe, top elevation _____ ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation _____ ft. MSL	2. Protective cover pipe: a. Inside diameter: <u>9.0</u> in. b. Length: <u>12.0</u> ft. c. Material: <u>FLUSH MOUNT</u> Steel <input checked="" type="checkbox"/> 04 Other <input checked="" type="checkbox"/>
C. Land surface elevation _____ ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	
13. Sieve analysis attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 Other <input type="checkbox"/>	
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	
16. Drilling additives used? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Describe _____	
17. Source of water (attach analysis): _____	
E. Bentonite seal, top <u>0.8</u> ft. MSL or _____ ft.	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/> <u>SAND</u> Other <input type="checkbox"/>
F. Fine sand, top _____ ft. MSL or _____ ft.	5. Annular space seal: a. Granular Bentonite <input type="checkbox"/> 33 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite Bentonite-cement grout <input type="checkbox"/> 50 e. <u>1 # 50 BAG</u> Ft ³ volume added for any of the above f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
G. Filter pack, top <u>1.6</u> ft. MSL or _____ ft.	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 c. <u>NONE</u> Other <input type="checkbox"/>
H. Screen joint, top <u>2.0</u> ft. MSL or _____ ft.	7. Fine sand material: Manufacturer, product name & mesh size a. <u>NONE</u> b. Volume added _____ ft ³
I. Well bottom <u>12.0</u> ft. MSL or _____ ft.	8. Filter pack material: Manufacturer, product name and mesh size a. <u>BADGER MINING SAND .85 - .95</u> b. Volume added _____ ft ³
J. Filter pack, bottom <u>12.5</u> ft. MSL or _____ ft.	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
K. Borehole, bottom <u>12.5</u> ft. MSL or _____ ft.	10. Screen material: <u>SCH 40 PVC</u> a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
L. Borehole, diameter <u>8.0</u> in.	b. Manufacturer <u>JOHNSON</u> c. Slot size: _____ in. d. Slotted length: <u>10.0</u> ft.
M. O.D. well casing <u>2.37</u> in.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>
N. I.D. well casing <u>2.06</u> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature Carmen Y. Law Firm LAW ENGINEERING

Please and ch \$5000 day of **E.1.8 Monitoring Well Not Abandoned (Missing)** Stats. than each

Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other _____

Facility/Project Name <u>MILWAUKEE COUNTY ZOO</u>	County Name <u>MILWAUKEE</u>	Well Name <u>MW-10</u>
Facility License, Permit or Monitoring Number _____	County Code <u>41</u>	Wis. Unique Well Number _____
		DNR Well Number _____

1. Can this well be purged dry? Yes No
2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other _____ _____
3. Time spent developing well 10 min.
4. Depth of well (from top of well casing) 10.2 ft.
5. Inside diameter of well 2.00 in.
6. Volume of water in filter pack and well casing 4.7 gal.
7. Volume of water removed from well 2.0 gal.
8. Volume of water added (if any) _____ gal.
9. Source of water added _____
10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>3.00</u> ft.	<u>2.65</u> ft.
Date	b. <u>6/7/93</u> m m d d y y	<u>6/8/93</u> m m d d y y
Time	c. <u>17:25</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	<u>16:40</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input type="checkbox"/> 15 (Describe) _____	Clear <input type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe) _____

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Russ Kotrba

Firm: LAW ENGINEERING INC.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Initials: _____

Firm: _____

E.1.9 Monitoring Well Not Abandoned (Missing)

Facility/Project Name <u>200 - BLIFFERT</u>	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. ft. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name <u>MW 12</u>
Facility License, Permit or Monitoring Number	Grid Origin Location Lat. <u>43° 2' 07"</u> Long. <u>88° 2' 18"</u> or	Wis. Unique Well Number DNR Well Number
Type of Well Water Table Observation Well <input checked="" type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	St. Plane _____ ft. N. _____ ft. E.	Date Well Installed <u>06/03/93</u> m m d d y y
Distance Well Is From Waste/Source Boundary <u>150</u> ft.	Section Location of Waste/Source <u>1/4 of SW 1/4 of Sec. 29, T. 7 N, R. 21 E. W.</u>	Well Installed By: (Person's Name and Firm) <u>RIK KRIOFKE</u>
Is Well A Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input type="checkbox"/> No	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	

A. Protective pipe, top elevation _____ ft. MSL	1. Cap and lock? <input type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation _____ ft. MSL	2. Protective cover pipe: a. Inside diameter: <u>2.0</u> in. b. Length: <u>12.0</u> ft. c. Material: Steel <input checked="" type="checkbox"/> 04 <u>FLUSH MOUNT</u> Other <input checked="" type="checkbox"/>
C. Land surface elevation _____ ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/> <u>SAND</u> Other <input checked="" type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Annular space seal: a. Granular Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite Bentonite-cement grout <input type="checkbox"/> 50 e. <u>1-50# BAGS</u> Ft ³ volume added for any of the above f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 c. <u>NONE</u> Other <input checked="" type="checkbox"/>
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	7. Fine sand material: Manufacturer, product name & mesh size a. <u>NONE</u> b. Volume added _____ ft ³
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	8. Filter pack material: Manufacturer, product name and mesh size a. <u>BADGER MINING SAND #85-95</u> b. Volume added <u>10-50# BAGS</u> ft ³
Describe _____	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
17. Source of water (attach analysis): _____	10. Screen material: <u>SCH 40 PVC</u> a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
E. Bentonite seal, top <u>1.0</u> ft. MSL or _____ ft.	b. Manufacturer <u>JOHNSON</u> c. Slot size: <u>0.10</u> in. d. Slotted length: <u>10.0</u> ft.
F. Fine sand, top <u>NA</u> ft. MSL or _____ ft.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>
G. Filter pack, top <u>2.0</u> ft. MSL or _____ ft.	
H. Screen joint, top <u>3.0</u> ft. MSL or _____ ft.	
I. Well bottom <u>13.0</u> ft. MSL or _____ ft.	
J. Filter pack, bottom <u>13.5</u> ft. MSL or _____ ft.	
K. Borehole, bottom <u>13.5</u> ft. MSL or _____ ft.	
L. Borehole, diameter <u>8.0</u> in.	
M. O.D. well casing <u>2.37</u> in.	
N. I.D. well casing <u>2.06</u> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature Carman Yung Firm LAW ENGINEERING

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 55000 for day of **E.1.10 Monitoring Well Not Abandoned (Missing)**

Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other

Facility/Project Name <u>MILWAUKEE COUNTY ZOO</u>	County Name <u>MILWAUKEE</u>	Well Name <u>MW-12</u>
Facility License, Permit or Monitoring Number	County Code <u>41</u>	Wis. Unique Well Number
		DNR Well Number

1. Can this well be purged dry? Yes No
2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other
3. Time spent developing well 20 min.
4. Depth of well (from top of well casing) 11.44 ft.
5. Inside diameter of well 2.00 in.
6. Volume of water in filter pack and well casing 6.2 gal.
7. Volume of water removed from well 30.0 gal.
8. Volume of water added (if any) _____ gal.
9. Source of water added _____
10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>2.02</u> ft.	<u>1.67</u> ft.
Date	b. <u>6/7/93</u> m m d d y y	<u>6/8/93</u> m m d d y y
Time	c. <u>17:00</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	<u>16:55</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe)	Clear <input type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: RUSS KOTRBA

Firm: LAW ENGINEERING INC

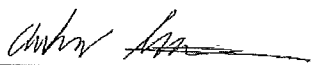
I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

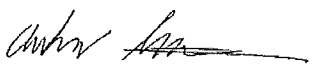
Print Initials: _____

Firm: _____

E.1.11 Monitoring Well Not Abandoned (Missing)

TRC Project No: 202083.0000.0000		Route To: Remediation/Redevelopment		Page 1 of 1										
Facility/Project Name Milwaukee County - Former Bliffert Lumber			License/Permit/Monitoring Number		Boring Number GP-13-5									
Boring Drilled By: Name of crew chief (first, Last) and Firm First Name: Greg Last Name: Kitson Firm: Kitson Environmental Services, Inc.			Date Started 5/29/2013	Date Completed 5/29/2013	Drilling Method Direct Push									
WI Unique Well No.		Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter 2"									
Local Grid Origin (Estimated:) or Boring Location State Plane: N, W SW 1/4 of SW 1/4 of Section 29, T 7 N, R 21 E			Local Grid Location Lat: o ' " E Long: o ' " W Feet N Feet E Feet S Feet W											
Facility ID		County Milwaukee	County Code		Civil Town/City/ or Village Wauwatosa									
Sample Number	Length (In) Recovered	Blow Counts	Depth in Feet (Below Ground Surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID Reading	Soil Properties					RQD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1	20		2	Fill: Foundry Sand (~70% by volume) with some sand and gravel, dark brown with some black staining, strong odor Wet @ ~3.5'				3.1						
	20		4						90.3					Soil Sampled for Laboratory Analysis
2	24		6					219.1						
	24		8						451.2					
3	24		10	Clayey Silt, semi-cohesive, semi-plastic, slight odor, no stains, moist, light gray				362.8						
	24		12						98.0					
EOB @ 12' bgs Temporary well installed, screened from 3'-8' bgs Groundwater samples were collected on 6-3-2013														
I hereby certify that the information on this form is true and correct to the best of my knowledge.														
Signature 					Firm TRC Environmental Corporation Brookfield, WI									

E.1.12 Monitoring Well Not Abandoned (Missing)

TRC Project No: 202083.0000.0000		Route To: Remediation/Redevelopment		Page 1 of 1										
Facility/Project Name Milwaukee County - Former Bliffert Lumber			License/Permit/Monitoring Number		Boring Number GP-13-6									
Boring Drilled By: Name of crew chief (first, Last) and Firm First Name: Greg Last Name: Kitson Firm: Kitson Environmental Services, Inc.			Date Started 5/29/2013	Date Completed 5/29/2013	Drilling Method Direct Push									
WI Unique Well No.		Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter 2"									
Local Grid Origin (Estimated:) or Boring Location State Plane: _____ N, _____ W SW 1/4 of SW 1/4 of Section 29, T 7 N, R 21 E			Local Grid Location _____ Feet N _____ Feet E _____ Feet S _____ Feet W											
Facility ID		County Milwaukee	County Code	Civil Town/City/ or Village Wauwatosa										
Sample Number	Length (In) Recovered	Blow Counts	Depth in Feet [Below Ground Surface]	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID Reading	Soil Properties					RQD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1	24		2	Fill: Foundry Sand (~70% by volume) with some sand and gravel, black and orange color, dry, slight odor				6.3						
	24		4						21.8					
2	20		6	Strong Petroleum Odor @ ~4' Wet @ ~6', Black staining from ~6' to 11'				155.6					Soil Sampled for Laboratory Analysis	
	20		8						221.7					
3	20		10	Silt, moist, no stains, petroleum odor, non-cohesive, light gray				171.3						
	20		12						337.1					
EOB @ 12' bgs Temporary well installed, screened from 3'-8' bgs Groundwater samples were collected 6-3-2013														
I hereby certify that the information on this form is true and correct to the best of my knowledge.														
Signature 					Firm TRC Environmental Corporation Brookfield, WI									

E.1.13 Monitoring Well Not Abandoned (Missing)

Facility/Project Name ZOO BLIFFERT	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name MW4
Facility License, Permit or Monitoring Number	Grid Origin Location Lat. 43° 2' 07" Long. 88° 2' 18" or	Wis. Unique Well Number DNR Well Number
Type of Well Water Table Observation Well <input checked="" type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed 06/03/93 m m d d y y
Distance Well Is From Waste/Source Boundary 300 ft.	Section Location of Waste/Source 1/4 of SW 1/4 of Sec. 29, T. 7 N, R. 21 E. W.	Well Installed By: (Person's Name and Firm) Rick KRIOFSKE
Is Well A Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input type="checkbox"/> No	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	

A. Protective pipe, top elevation _____ ft. MSL	1. Cap and lock? <input type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation _____ ft. MSL	2. Protective cover pipe: a. Inside diameter: 2.0 in. b. Length: 12.0 ft. c. Material: Steel <input checked="" type="checkbox"/> 04 FLUSH MOUNT Other <input checked="" type="checkbox"/>
C. Land surface elevation _____ ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/> SAND Other <input checked="" type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Annular space seal: a. Granular Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite Bentonite-cement grout <input type="checkbox"/> 50 e. 1-50# BAG Ft ³ volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 c. NONE Other <input checked="" type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7. Fine sand material: Manufacturer, product name & mesh size a. NONE b. Volume added _____ ft ³
Describe _____	8. Filter pack material: Manufacturer, product name and mesh size a. RADGER MINING SAND .85-.95 b. Volume added 9-50# BAGS ft ³
17. Source of water (attach analysis): _____	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
E. Bentonite seal, top 1.0 ft. MSL or _____ ft.	10. Screen material: SCH 40 PVC a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
F. Fine sand, top NA ft. MSL or _____ ft.	b. Manufacturer JOHNSON c. Slot size: 0.10 in. d. Slotted length: 10.0 ft.
G. Filter pack, top 2.0 ft. MSL or _____ ft.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>
H. Screen joint, top 3.0 ft. MSL or _____ ft.	
I. Well bottom 13.0 ft. MSL or _____ ft.	
J. Filter pack, bottom 13.5 ft. MSL or _____ ft.	
K. Borehole, bottom 13.5 ft. MSL or _____ ft.	
L. Borehole, diameter 8.0 in.	
M. O.D. well casing 2.37 in.	
N. I.D. well casing 2.06 in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Carmen Young Firm: LAW ENGINEERING

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of v

E.1.14 Monitoring Well Not Abandoned (Missing)

Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other

Facility/Project Name <u>MILWAUKEE COUNTY ZOO</u>	County Name <u>MILWAUKEE</u>	Well Name <u>MW-4</u>
Facility License, Permit or Monitoring Number _____	County Code <u>41</u>	Wis. Unique Well Number _____
		DNR Well Number _____

		Before Development	After Development
1. Can this well be purged dry?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
2. Well development method			
surged with bailer and bailed	<input type="checkbox"/> 41		
surged with bailer and pumped	<input type="checkbox"/> 61		
surged with block and bailed	<input type="checkbox"/> 42		
surged with block and pumped	<input type="checkbox"/> 62		
surged with block, bailed and pumped	<input type="checkbox"/> 70		
compressed air	<input type="checkbox"/> 20		
bailed only	<input checked="" type="checkbox"/> 10		
pumped only	<input type="checkbox"/> 51		
pumped slowly	<input type="checkbox"/> 50		
Other _____	<input type="checkbox"/>		
3. Time spent developing well	_____ <u>0</u> min.		
4. Depth of well (from top of well casing)	_____ <u>12.7</u> ft.		
5. Inside diameter of well	_____ <u>2.0</u> in.		
6. Volume of water in filter pack and well casing	_____ <u>7.1</u> gal.		
7. Volume of water removed from well	_____ <u>10</u> gal.		
8. Volume of water added (if any)	_____ gal.		
9. Source of water added	_____		
10. Analysis performed on water added? (If yes, attach results)	<input type="checkbox"/> Yes <input type="checkbox"/> No		
11. Depth to Water (from top of well casing)		a. _____ <u>1.83</u> ft.	_____ <u>2.49</u> ft.
Date		b. _____ <u>6/7/93</u>	_____ <u>6/8/93</u>
		m m d d y y	m m d d y y
Time		c. _____ <u>16:45</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	_____ <u>14:25</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches	_____ inches
13. Water clarity		Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe) _____	Clear <input type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe) _____
Fill in if drilling fluids were used and well is at solid waste facility:			
14. Total suspended solids	_____ mg/l	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l	_____ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Russ Kotrba

Firm: LAW ENGINEERING, INC

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Initials: _____

Firm: _____

E.1.15 Monitoring Well Not Abandoned (Missing)

Facility/Project Name <u>ZOO BLIFFERT</u>	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name <u>MW 5</u>
Facility License, Permit or Monitoring Number	Grid Origin Location Lat. <u>43° 2' 07" N</u> Long. <u>88° 2' 18" W</u> or	Wis. Unique Well Number _____ DNR Well Number _____
Type of Well: Water Table Observation Well <input checked="" type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed <u>0 6 / 0 4 / 9 3</u> m m d d y y
Distance Well Is From Waste/Source Boundary <u>150</u> ft.	Section Location of Waste/Source <u>1/4 of SW 1/4 of Sec. 29, T. 7 N, R. 21 E, W.</u>	Well Installed By: (Person's Name and Firm) <u>RICK KRIOFSKE</u>
Is Well A Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input type="checkbox"/> No	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	

A. Protective pipe, top elevation _____ ft. MSL	1. Cap and lock? <input type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation _____ ft. MSL	2. Protective cover pipe: a. Inside diameter: <u>2.0</u> in. b. Length: <u>12.0</u> ft. c. Material: Steel <input checked="" type="checkbox"/> 04 <u>FLUSH MOUNT</u> Other <input checked="" type="checkbox"/>
C. Land surface elevation _____ ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/> <u>SAND</u> Other <input checked="" type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Annular space seal: a. Granular Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite Bentonite-cement grout <input type="checkbox"/> 50 e. <u>1-50# BAG</u> Ft ³ volume added for any of the above f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 c. <u>NONE</u> Other <input checked="" type="checkbox"/>
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	7. Fine sand material: Manufacturer, product name & mesh size a. <u>NONE</u> b. Volume added _____ ft ³
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	8. Filter pack material: Manufacturer, product name and mesh size a. <u>KADGER MINING SAND .85-.95</u> b. Volume added <u>9-50# BAGS</u> ft ³
Describe _____	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
17. Source of water (attach analysis): _____	10. Screen material: <u>SCH 40 PVC</u> a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
E. Bentonite seal, top <u>1.0</u> ft. MSL or _____ ft.	b. Manufacturer <u>JOHNSON</u>
F. Fine sand, top <u>NA</u> ft. MSL or _____ ft.	c. Slot size: <u>0.10</u> in.
G. Filter pack, top <u>2.0</u> ft. MSL or _____ ft.	d. Slotted length: <u>10.0</u> ft.
H. Screen joint, top <u>3.0</u> ft. MSL or _____ ft.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>
I. Well bottom <u>13.0</u> ft. MSL or _____ ft.	
J. Filter pack, bottom <u>13.5</u> ft. MSL or _____ ft.	
K. Borehole, bottom <u>13.5</u> ft. MSL or _____ ft.	
L. Borehole, diameter <u>8.0</u> in.	
M. O.D. well casing <u>2.37</u> in.	
N. I.D. well casing <u>2.06</u> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Carmen Young Firm LAW ENGINEERING

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of

E.1.16 Monitoring Well Not Abandoned (Missing)

Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other _____

Facility/Project Name <u>MILWAUKEE COUNTY ZOO</u>	County Name <u>MILWAUKEE</u>	Well Name <u>MW-5</u>
Facility License, Permit or Monitoring Number _____	County Code <u>41</u>	Wis. Unique Well Number _____
		DNR Well Number _____

- Can this well be purged dry? Yes No
- Well development method
 - surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other _____ _____
- Time spent developing well 10 min.
- Depth of well (from top of well casing) 12.6 ft.
- Inside diameter of well 2 in.
- Volume of water in filter pack and well casing 8 gal.
- Volume of water removed from well 9.0 gal.
- Volume of water added (if any) _____ gal.
- Source of water added _____
- Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>0.38</u> ft.	<u>0.66</u> ft.
Date	b. <u>61-7-93</u> m m d d y y	<u>61-8-93</u> m m d d y y
Time	c. <u>16:30</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	<u>17:30</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe) _____	Clear <input type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe) _____
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Russ Kotrba

Firm: LAW ENGINEERING

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Initials: _____

Firm: _____

E.1.17 Monitoring Well Not Abandoned (Missing)

Table of Contents F. Source Legal Documents
Zoo-Bliffert Case Closure – GIS Registry

F. 1. Deed -

F. 1. 1.- F. 1. 2. Figures from Register of Deeds

F. 2. Certified Survey Map - Figures from Register of Deeds

F. 3. Verification of Zoning

F. 3. 1. - F. 3. 2. Figures from City of Milwaukee

F. 4. Signed Statement- Figure created with information from deed

Exhibit A

Legal Description

That part of the Southwest 1/4 of Section 29, Town 7 North, Range 21 East, City of Milwaukee, Milwaukee County, Wisconsin, described as follows:

Commencing at a concrete monument with a brass cap marking the Southwest corner of the Southwest one-quarter of said section 29, thence North 88°28'19" East along the South line of said Quarter Section, 339.54 feet to the East right of way line of the Chicago Northwestern Transportation Company Railroad; Thence North 17°30'30" West along the East right of way line of said railroad, 49.84 feet to a found iron pipe and the Point of Beginning of the following described parcel;

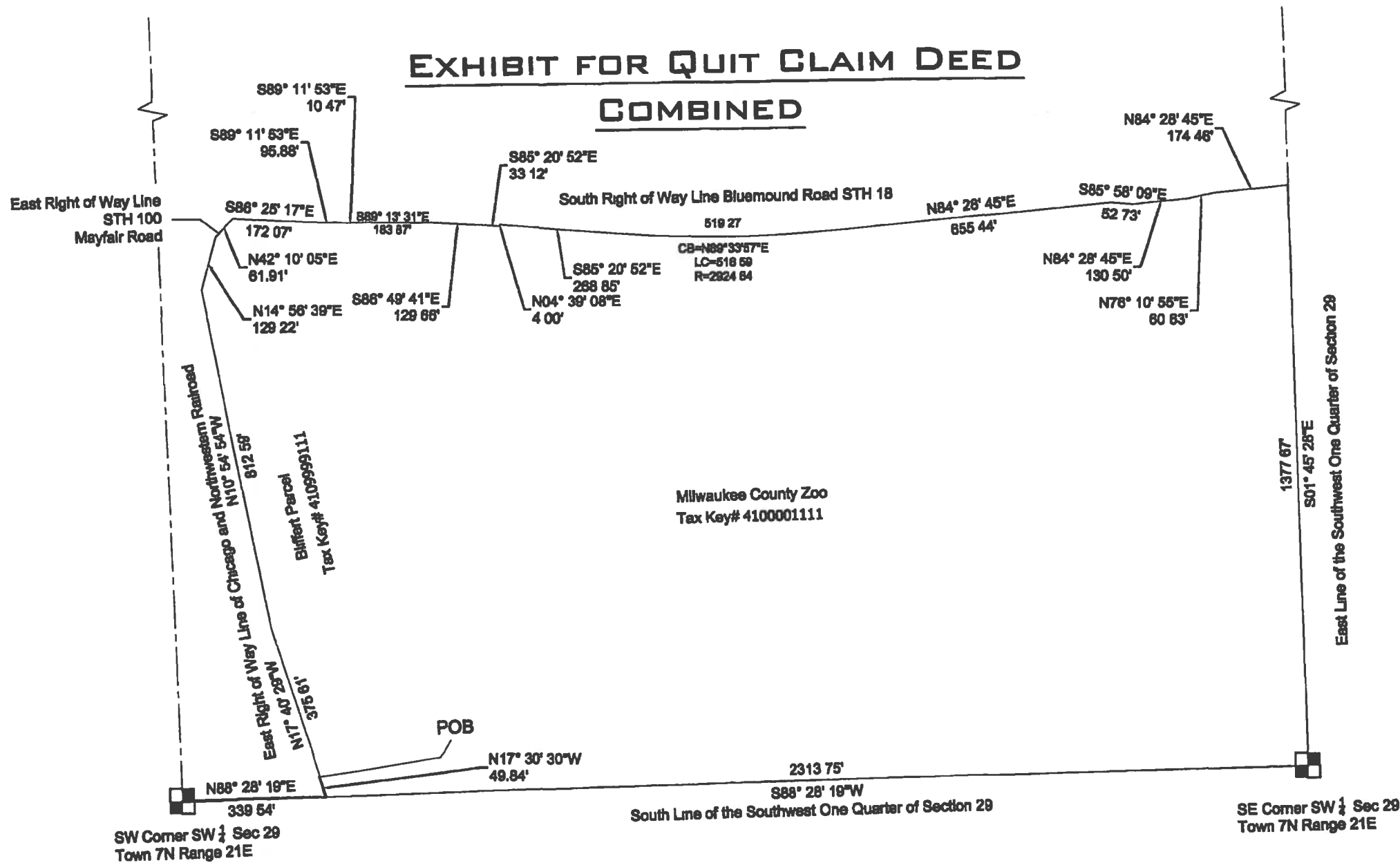
Thence North 17°40'29" West along the East right of way line of said railroad, 375.61 feet to a found iron pipe; Thence continue along said East right of way line, North 10°54'54" West 812.59 feet to a found iron pipe on the East right of way line of North Mayfair Road also known as State Trunk Highway 100; Thence continuing along said S.T.H. 100 right of way North 14°56'39" East a distance of 129.22 feet to a found iron pipe; Thence North 42°10'05" East a distance of 61.91 feet to a point on the South right of way line of West Bluemound Road, also known as State Trunk Highway 18; Thence continuing along said South right of way line of Bluemound Road South 86°25'17" East a distance of 172.07 feet to a point; Thence South 89°11'53" East a distance of 95.88 feet to a point; Thence South 89°11'53" East a distance of 10.47 feet to a point; Thence South 89°13'31" East a distance of 183.87 feet to a point; Thence South 86°49'41" East a distance of 129.66 feet to a point; Thence South 85°20'52" East a distance of 33.12 feet to a point; Thence North 04°39'08" East a distance of 4.00 feet to a point; Thence South 85°20'52" East a distance of 268.85 feet to a Point; Thence 519.27 feet along a curve to the left having a radius of 2924.64 feet said curve having a chord direction of North 89°33'57" East and a chord length of 518.59 feet; Thence North 84°28'45" East a distance of 655.44 feet to a point; Thence South 85°58'09" East a distance of 52.73 feet to a point; Thence North 84°28'45" East a distance of 130.50 feet to a point; Thence North 76°10'55" East a distance of 60.63 feet to a point; Thence North 84°28'45" East a distance of 174.46 feet to a point; Thence South 01°45'28" East, along the East line of said Section 29, a distance of 1377.67 feet to the SE corner of the SW 1/4 of said Section 29; Thence South 88°28'19" West, along the South line of said section 29, a distance of 2313.75 feet to a point. Thence N 17°30'30" W along the East right of way line of said railroad, 49.84 feet to the Point of Beginning.


For informational purposes only:
Tax ID: 410-0001-111
Address: 10001 W Bluemound Road, Milwaukee, WI

APPROVED
FOR
DESCRIPTION

COUNTY DTPM
2/12/15

EXHIBIT FOR QUIT CLAIM DEED COMBINED

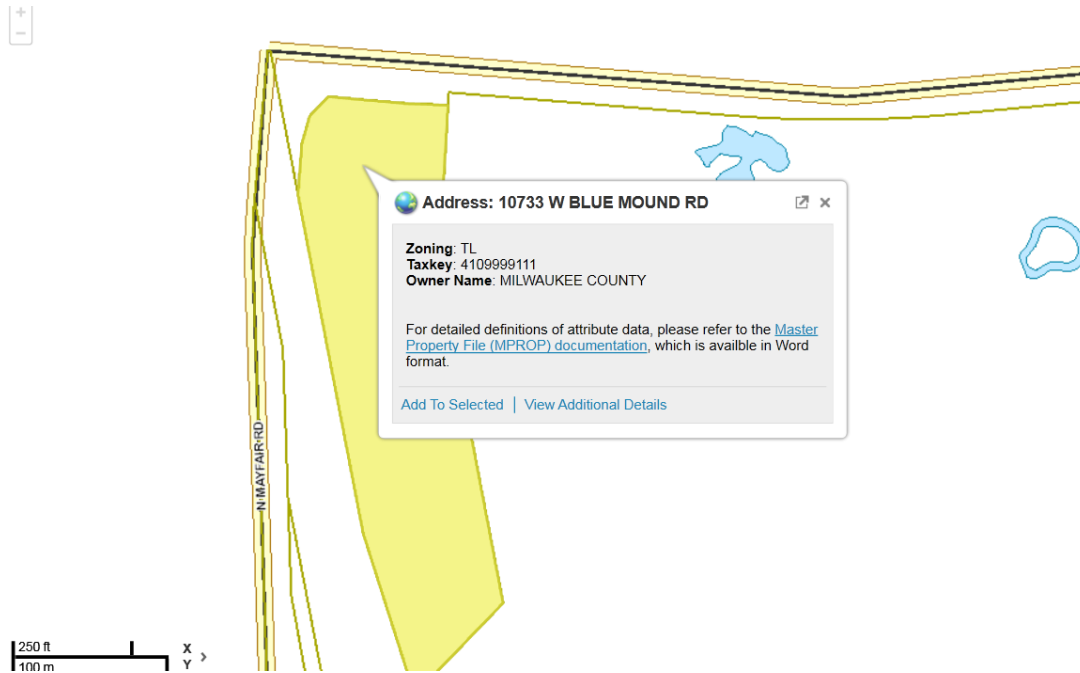


MILWAUKEE COUNTY DEPARTMENT OF ADMINISTRATIVE SERVICES Architecture, Engineering & Environmental Services Section	
	
QUIT CLAIM DEED COMBINED	1-2007 1/28/18
3 OF 3	MJB JCR

Date View: 2018 Dec 10 10:49:54 Document: 3 of 3

F. 2. Certified Survey Map

F.3. Verification of Zoning: Documentation (e.g., official zoning map or letter from municipality) of the property's or properties' current zoning status.
Zoo-Bliffert Case Closure – GIS Registry



Parks	PK	none	9
Institutional	IL	all T districts	9
Planned Development	PD and DPD	GPD and DPD	9
Redevelopment	RED	Non	9
Neighborhood Conservation	NC	none	10
Interim Study	IS	none	10
Development Incentive	DIZ	DIZ	10
Site Plan Review	SP	SPROD	10
Flood Plain	FW, FF and FSD	FP1 and FP2	10
Shoreland-Wetland	WL	Shoreland-Wetland	10
Lakefront	LF	LF/C/60	10
Master Sign Program	MSP	none	10

There are two new categories to the ZONING field in MPROP. These categories are not legal zoning codes, but rather flags for special situations

- **X** = A problem has been identified with the zoning assigned to this parcel. Check with the City of Milwaukee's Department of City Development for details (planadmin@milwaukee.gov).
- **PENDING** = New zoning has been applied to this parcel. This zoning change divides the existing parcel into multiple zoning codes, and has been approved by the City of Milwaukee Common Council based on an approved certified survey map (CSM). The new zoning will correspond to new parcel boundaries defined in the associated CSM. The new parcel boundaries will be applied to the zoning map upon completion of legal boundary changes by the City of Milwaukee Assessor's office. At that time, the new zoning will be applied to the new parcels.

STATEMENT BY RESPONSIBLE PARTY

The responsible party, Milwaukee County, for the contamination in the former Bliffert Lumber property located at 10733 W. Bluemound Rd in Wauwatosa Wisconsin, states that the legal description for the impacted property to be listed in the GIS Registry provided to the Wisconsin Department of Natural Resources (WDNR) in this case closure request is complete and accurate to the best of our knowledge. Legal Description for Tax Key #: 4109999111

LANDS IN THE SW 1/4 SEC 29-7-21 THAT PART SD 1/4 SEC LYING BETWEEN WLY LI MILW COUNTY ZOO - ELY LI OF C&NW RR- THE 2012 ELY LI OF STH 100 & SLY LI OF W BLUE MOUND RD

Signature of Responsible Party

Date

F. 4. Signed Statement

Table of Contents G. Notification to Owners of Impacted Properties
Zoo-Bliffert Case Closure – GIS Registry

Notification to Owners of Impacted Properties is not needed for Zoo-Bliffert Case Closure Registry.
No other properties have been affected by the impacts on the source property.