GIS REGISTRY
Cover Sheet

March, 2010
(RR 5367)

Source Property Information

CLOSURE DATE: Aug 30, 2010

BRRTS #: **02-41-257209, 02-41-000260, 02-41-000967**

FID #: 241012860

ACTIVITY NAME: BUTLER RAILROAD YARD/ NW RR BUTLER YARD SITE 1/ YARD SITE 2

DATCP #:

PROPERTY ADDRESS: 4823 N 119th St

COMM #: 53225369623

MUNICIPALITY: Milwaukee

PARCEL ID #: 218-9991-118 (2189991124, 2189991211)

***WTM COORDINATES:**

X: **677585** Y: **294478**

** Coordinates are in WTM83, NAD83 (1991)*

WTM COORDINATES REPRESENT:

- (•) Approximate Center Of Contaminant Source
- ( ) Approximate Source Parcel Center

Please check as appropriate: (BRRTS Action Code)

Contaminated Media:

- [X] Groundwater Contamination > ES *(236)*
  - [ ] Contamination in ROW
  - [ ] Off-Source Contamination

  (***note:*** *for list of off-source properties see "Impacted Off-Source Property" form)*
- [X] Soil Contamination > *RCL or **SSRCL *(232)*
  - [ ] Contamination in ROW
  - [ ] Off-Source Contamination

  (***note:*** *for list of off-source properties see "Impacted Off-Source Property" form)*

Land Use Controls:

- [ ] N/A (*Not Applicable*)
- [X] Soil: maintain industrial zoning *(220)*

  (***note:*** *soil contamination concentrations between non-industrial and industrial levels)*
- [ ] Structural Impediment *(224)*
- [ ] Site Specific Condition *(228)*
- [ ] Cover or Barrier *(222)*

  (***note:*** *maintenance plan for groundwater or direct contact)*
- [ ] Vapor Mitigation *(226)*
- [ ] Maintain Liability Exemption *(230)*

  (***note:*** *local government unit or economic development corporation was directed to take a response action)*

Monitoring Wells:

Are all monitoring wells properly abandoned per NR 141? *(234)*

(•) Yes ( ) No ( ) N/A

** Residual Contaminant Level*
***Site Specific Residual Contaminant Level*

State of Wisconsin
Department of Natural Resources
http://dnr.wi.gov

GIS Registry Checklist

Form 4400-245 (R 4/08)

This Adobe Fillable form is intended to provide a list of information that is required for evaluation for case closure. It is to be used in conjunction with Form 4400-202, Case Closure Request. The closure of a case means that the Department has determined that no further response is required at that time based on the information that has been submitted to the Department.

NOTICE: Completion of this form is mandatory for applications for case closure pursuant to ch. 292, Wis. Stats. and ch. NR 726, Wis. Adm. Code, including cases closed under ch. NR 746 and ch. NR 726. The Department will not consider, or act upon your application, unless all applicable sections are completed on this form and the closure fee and any other applicable fees, required under ch. NR 749, Wis. Adm. Code, Table 1 are included. It is not the Department's intention to use any personally identifiable information from this form for any purpose other than reviewing closure requests and determining the need for additional response action. The Department may provide this information to requesters as required by Wisconsin's Open Records law [ss. 19.31 - 19.39, Wis. Stats.].

BRRTS #: 02-41-257209, 02-41-000967, 02-41-000260

ACTIVITY NAME: UNION PACIFIC BUTLER YARD FACILITY

WTM COORDINATES: X: 677585 Y: 294478

CLOSURE DOCUMENTS (the Department adds these items to the final GIS packet for posting on the Registry)

☒ **Closure Letter**

☐ **Maintenance Plan** *(if activity is closed with a land use limitation or condition (land use control) under s. 292.12, Wis. Stats.)*

☒ **Conditional Closure Letter**

☐ **Certificate of Completion (COC)** for VPLE sites

SOURCE LEGAL DOCUMENTS

☒ **Deed:** The most recent deed as well as legal descriptions, for the **Source Property** (where the contamination originated). Deeds for other, off-source (off-site) properties are located in the **Notification** section.
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.* (lots on subdivided or platted property (e.g. lot 2 of xyz subdivision)).

Figure #: **Title: Donahue Certified Survey Map No. 1957**

☒ **Signed Statement:** A statement signed by the Responsible Party (RP), which states that he or she believes that the attached legal description accurately describes the correct contaminated property.

MAPS (meeting the visual aid requirements of s. NR 716.15(2)(h))

Maps must be no larger than 8.5 x 14 inches unless the map is submitted electronically.

☒ **Location Map:** A map outlining all properties within the contaminated site boundaries on a U.S.G.S. topographic map or plat map in sufficient detail to permit easy location of all parcels. If groundwater standards are exceeded, include the location of all potable wells within 1200 feet of the site.
Note: *Due to security reasons municipal wells are not identified on GIS Packet maps. However, the locations of these municipal wells must be identified on Case Closure Request maps.*

Figure #: 1 **Title: Property and Site Location Map**

☒ **Detailed Site Map:** A map that shows all relevant features (buildings, roads, individual property boundaries, 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 exceeding a ch. NR 140 Enforcement Standard (ES), and/or in relation to the boundaries of soil contamination exceeding a Residual Contaminant Level (RCL) or a Site Specific Residual Contaminant Levels (SSRCL) as determined under s. NR 720.09, 720.11 and 720.19.

Figure #: 2 **Title: Site Layout Map**

☒ **Soil Contamination Contour Map:** For sites closing with residual soil contamination, this map is to show the location of all contaminated soil and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeds a Residual Contaminant Level (RCL) or a Site Specific Residual Contaminant Level (SSRCL)as determined under s. NR 720.09, 720.11 and 720.19.

Figure #: 8 thru 12 **Title: Soil Figures**

BRRTS #: 02-41-257209, 02-41-000967, 02-41-000260 ACTIVITY NAME: UNION PACIFIC BUTLER YARD FACILITY

MAPS (continued)

☒ **Geologic Cross-Section Map:** A map showing the source location and vertical extent of residual soil contamination exceeding a Residual Contaminant Level (RCL) or a Site Specific Residual Contaminant Level (SSRCL). If groundwater contamination exceeds a ch. NR 140 Enforcement Standard (ES) when closure is requested, show the source location and vertical extent, water table and piezometric elevations, and locations and elevations of geologic units, bedrock and confining units, if any.

Figure #: 4 **Title: Geologic Cross-Section A-A'**

Figure #: 5 **Title: Geologic Cross-Section B-B'**

☒ **Groundwater Isoconcentration Map:** For sites closing with residual groundwater contamination, this map shows the horizontal extent of all groundwater contamination exceeding a ch. NR140 Preventive Action Limit (PAL) and an Enforcement Standard (ES). Indicate the direction and date of groundwater flow, based on the most recent sampling data.
Note: *This is intended to show the total area of contaminated groundwater.*

Figure #: 15 **Title: Summary of Groundwater VOC and PAH Analytical Results**

☒ **Groundwater Flow Direction Map:** A map that represents groundwater movement at the site. If the flow direction varies by more then 20° over the history of the site, submit 2 groundwater flow maps showing the maximum variation in flow direction.

Figure #: 6 **Title: Estimated Groundwater Elevation Map January 3, 2007**

Figure #: **Title:**

TABLES (meeting the requirements of s. NR 716.15(2)(h)(3))

Tables must be no larger than 8.5 x 14 inches unless the table is submitted electronically. Tables must not contain shading and/or cross-hatching. The use of **BOLD** or *ITALICS* is acceptable.

☒ **Soil Analytical Table:** A table showing remaining soil contamination with analytical results and collection dates.
Note: This is one table of results for the contaminants of concern. Contaminants of concern are those that were found during the site investigation, that remain after remediation. It may be necessary to create a new table to meet this requirement.

Table #: 1, 2, 3 **Title: Summary of Soil Analytical Results**

☒ **Groundwater Analytical Table:** Table(s) that show the most recent analytical results and collection dates, for all monitoring wells and any potable wells for which samples have been collected.

Table #: 4, 5 **Title: Summary of Groundwater Analytical Results**

☒ **Water Level Elevations:** Table(s) that show the previous four (at minimum) water level elevation measurements/dates from all monitoring wells. If present, free product is to be noted on the table.

Table #: 6 **Title: Groundwater Elevation Data**

IMPROPERLY ABANDONED MONITORING WELLS

For each monitoring well not properly abandoned according to requirements of s. NR 141.25 include the following documents.
Note: *If the site is being listed on the GIS Registry for only an improperly abandoned monitoring well you will only need to submit the documents in this section for the GIS Registry Packet.*

☒ **Not Applicable**

☐ **Site Location Map:** A map showing all surveyed monitoring wells with specific identification of the monitoring wells which have not been properly abandoned.
Note: *If the applicable monitoring wells are distinctly identified on the Detailed Site Map this Site Location Map is not needed.*

Figure #: **Title:**

☐ **Well Construction Report:** Form 4440-113A for the applicable monitoring wells.

☐ **Deed:** The most recent deed as well as legal descriptions for each property where a monitoring well was not properly abandoned.

☐ **Notification Letter:** Copy of the notification letter to the affected property owner(s).

BRRTS #: 02-41-257209, 02-41-000967, 02-41-000260

ACTIVITY NAME: UNION PACIFIC BUTLER YARD FACILITY

NOTIFICATIONS

Source Property

☐ **Letter To Current Source Property Owner:** If the source property is owned by someone other than the person who is applying for case closure, include a copy of the letter notifying the current owner of the source property that case closure has been requested.

☐ **Return Receipt/Signature Confirmation:** Written proof of date on which confirmation was received for notifying current source property owner.

Off-Source Property

Group the following information per individual property and label each group according to alphabetic listing on the "Impacted Off-Source Property" attachment.

☐ **Letter To "Off-Source" Property Owners:** Copies of all letters sent by the Responsible Party (RP) to owners of properties with groundwater exceeding an Enforcement Standard (ES), and to owners of properties that will be affected by a land use control under s. 292.12, Wis. Stats.
Note: *Letters sent to off-source properties regarding residual contamination must contain standard provisions in Appendix A of ch. NR 726.*

Number of "Off-Source" Letters:

☐ **Return Receipt/Signature Confirmation:** Written proof of date on which confirmation was received for notifying any off-source property owner. .

☐ **Deed of "Off-Source" Property:** The most recent deed(s) as well as legal descriptions, for all affected deeded **off-source property(ies).** This does not apply to right-of-ways.
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.*

☐ **Letter To "Governmental Unit/Right-Of-Way" Owners:** Copies of all letters sent by the Responsible Party (RP) to a city, village, municipality, state agency or any other entity responsible for maintenance of a public street, highway, or railroad right-of-way, within or partially within the contaminated area, for contamination exceeding a groundwater Enforcement Standard (ES) and/or soil exceeding a Residual Contaminant Level (RCL) or a Site Specific Residual Contaminant Level (SSRCL).

Number of "Governmental Unit/Right-Of-Way Owner" Letters:

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Gloria L. McCutcheon, Regional Director

Southeast Region Headquarters
2300 N. Dr. Martin Luther King, Jr. Drive
PO Box 12436
Milwaukee, Wisconsin 53212-0436
Telephone 414-263-8500
FAX 414-263-8716
TTY 414-263-8713

August 30, 2010

Mr. Geoffrey B. Reeder
Manager Environmental Site Remediation Safety
24125 Aldine Westfield Road,
Spring, TX 77379

SUBJECT: Final Case Closure with Continuing Obligations, Union Pacific Rail Road, North half, Butler Yard Fueling Facility, 4823 North 119th Street, Milwaukee, Wisconsin, BRRTs #s 02-41-257209, 02-41000967, 02-41-000260, FID # 241012860

Dear Mr. Reeder:

On August 30, 2010 the Department of Natural Resources reviewed the above referenced case for closure. The Department reviews environmental remediation cases for compliance with state laws and standards to maintain consistency in the closure of these cases.

On September 28, 2009 you were notified that the Closure Committee had granted conditional closure to this case. On May 13, 2010 the Department received information or documentation indicating that you have complied with the requirements for final closure. The condition of closure was to abandon the monitoring wells on-site and submit the well abandonment forms to the Department.

The Department reviewed the case closure request regarding the VOCs, PVOCs, and PAHs contamination in the soil and groundwater at this site. Based on the correspondence and data provided, it appears that your case meets the closure requirements in ch. NR 726, Wisconsin Administrative Code. The Department considers this case closed and no further investigation or remediation is required at this time. However, you and future property owners must comply with certain continuing obligations as explained in this letter.

GIS Registry

This site will be listed on the Remediation and Redevelopment Program's GIS Registry. The specific reasons are summarized below:

- Residual soil contamination exists that must be properly managed should it be excavated or removed
- Before the land use may be changed from industrial to non-industrial, additional environmental work must be completed
- Groundwater contamination is present above Chapter NR 140 enforcement standards

This letter and information that was submitted with your closure request application will be included on the GIS Registry. To review the sites on the GIS Registry web page, visit the RR Sites Map page at http://dnr.wi.gov/org/aw/rr/gis/index.htm. If the property is listed on the GIS Registry because of remaining contamination and you intend to construct or reconstruct a well, you will need prior Department approval in accordance with s. NR 812.09(4)(w), Wis. Adm. Code. To obtain approval, Form 3300-254 needs to be completed and submitted to the DNR Drinking and Groundwater program's regional water supply specialist. This form can be obtained on-line http://dnr.wi.gov/org/water/dwg/3300254.pdf or at the web address listed above for the GIS Registry.

Closure Conditions

Please be aware that pursuant to s. 292.12 Wisconsin Statutes, compliance with the requirements of this letter is a responsibility to which you the current property owner and any subsequent property owners must adhere. You must pass on the information about these continuing obligations to the next property owner or owners. If these requirements are not followed or if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety, welfare, or the environment, the Department may take enforcement action under s. 292.11 Wisconsin Statutes to ensure compliance with the specified requirements, limitations or other conditions related to the property or this case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code. The Department intends to conduct inspections in the future to ensure that the conditions included in this letter

Residual Soil Contamination

Residual VOCs and PVOCs soil contamination remains at the following locations: GP-2, 17, 20, 27, 33, 42, 46, 56, 57, 70, 90, 98, 115 and PAHs at GP-89, 90, 96, 97,102,106-108, 109, 121-124, 126-128 132, 135-137, 139, 141-144, 146-149, 151, 154, 156, 157, 161, 164-167, 169-173, 175, 176, 178-183, 185, 200, 202, 204, 207, 208, 210 and GP-212 as indicated on the attached maps Figure 8, 9,10 12, 13, 20 and in the information submitted to the Department of Natural Resources. If soil in the specific locations described above is excavated in the future, then pursuant to ch. NR 718 or, if applicable, ch. 289, Stats., and chs.500 to 536, the property owner at the time of excavation must sample and analyze the excavated soil to determine if residual contamination remains. If sampling confirms that contamination is present the property owner 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. In addition, all current and future owners and occupants of the property 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.

Industrial Residual Soil Standards

Soil Meeting NR 720.11, Table 2 Industrial Standards

Soil samples that are representative of remaining residual soil contamination on this property were collected on 10/18/2005, contained 1-Methylnaphthalene, 2-Methlnaphthalene, Acenaphthalene, Anthracene, Benzo(a)anthracene, Chrysene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene Phenanthrene, in concentrations that exceeded NR 720.11, Table 2, Wis. Adm. Code, non-industrial soil standards and met NR 720.11, Table 2, Wis. Adm. Code, industrial soil standards.

Soil Meeting Site-Specific Industrial Standards for this Site

Soil samples that are representative of remaining soil contamination on this property were collected on 01/10/2007. These samples contained various PAHs in concentrations that meet the site-specific industrial soil standards developed for this site.

Therefore, pursuant to s. NR 726.05(8)(b)1., Wis. Adm. Code, this property may not be used or developed for a residential, commercial, agricultural or other non-industrial use, unless (at the time that the non-industrial use is proposed) the property owner provides notification to the Department of Natural Resources of the change in land use and an investigation is conducted, to determine the degree and extent of various PAHs contamination that remains on the property, and remedial action is taken as necessary to meet all applicable non-industrial soil cleanup standards. If soil in the specific locations shown on the attached map Figure 13 described above is excavated in the future, the property owner at the time of excavation must sample and analyze the excavated soil to determine if residual contamination remains. If sampling confirms that contamination is present the property owner 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 statutes and rules. In addition, all current and future owners and occupants of the property 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 during excavation activities to prevent a health threat to humans.

Residual Groundwater Contamination

Groundwater impacted by Methylene Chloride (GP-7), Benzo(a)pyrene, Benzo(b)fluoranthene, Chrysene (GP-27, RT-1, RT-2), contamination greater than enforcement standards set forth in ch. NR140, Wis. Adm. Code, is present on this contaminated property shown in Figure 15. For more detailed information regarding the locations where groundwater samples have been collected (i.e., monitoring well locations) and the associated contaminant concentrations, refer to the Remediation and Redevelopment Program's GIS Registry at the RR Sites Map page at http://dnr.wi.gov/org/aw/rr/gis/index.htm.

Dewatering Permits

The Department's Watershed Management Program regulates point source discharges of contaminated water, including discharges to surface waters, storm sewers, pits or to the ground surface. This includes discharges from construction related dewatering activities, including utility and building construction.

Based on the concentrations of contaminants remaining in groundwater at this location, it appears likely that dewatering activities would require a permit from the Watershed Management Program. If you or any other person plan to conduct such activities, you or that person must contact that program, and if necessary, apply for the necessary discharge permit. Additional information regarding discharge permits is available at http://www.dnr.state.wi.us/org/water/wm/ww/

Post-Closure Notification Requirements

In accordance with ss, 292.12 and 292.13, Wis. Stats., you must notify the Department before making changes that affect or relate to the conditions of closure in this letter. For this case, an example of changed conditions requiring prior notification include, but are not limited to:

- Development, construction or other changes, including zoning changes, that change the land use from industrial to non-industrial

Please send written notifications in accordance with the above requirements to the Southeast Region RR Program, Milwaukee Service Center to the attention of the Southeast Region RR Program Associate.

The following DNR fact sheet, RR-819, "Continuing Obligations for Environmental Protection" has been included with this letter, to help explain a property owner's responsibility for continuing obligations on their property. If the fact sheet is lost, you may obtain a copy at http://dnr.wi.gov/org/aw/rr/archives/pubs/RR819.pdf.

The Department 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 Binyoti Amungwafor at 414-263-8607.

Sincerely,

James A. Schmidt, Team Supervisor
SER Remediation & Redevelopment Program

Attachments: Remaining Soil contamination Maps, Figure 8,9,10, 12, 13, 15 and 20
RR-819

cc: Mr. Ben Verburg/Ms. Toni Schoen, ARCADIS, Infrastructure, Environment, Facilities
Case File

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Gloria L. McCutcheon, Regional Director

Southeast Region Headquarters
2300 N. Dr. Martin Luther King, Jr. Drive
PO Box 12436
Milwaukee, Wisconsin 53212-0436
Telephone 414-263-8500
FAX 414-263-8716
TTY 414-263-8713

September 28, 2009

Mr. Geoffrey B. Reeder
Manager Environmental Site Remediation Safety
24125 Aldine Westfield Road,
Spring, TX 77379

Subject: Conditional Closure and off-site Liability exemption, Union Pacific Railroad, North-half, Butler Yard Fueling Facility, 4823 North 119th Street, Milwaukee, Wisconsin, BRRTs #s 02-41-257209, 02-41-000967, 07-41553682, FID # 241012860

Dear Mr. Reeder:

On September 2, 2009 the Department of Natural Resources reviewed your request for closure of the case described above. The Department of natural Resources reviews environmental remediation cases for compliance with state rules and statutes to maintain consistency in the closure of these cases. After careful review of the closure request, the Department of Natural Resources has determined that the volatile organic compounds and chlorinated solvents contamination on the site appears to have been investigated and remediated to the extent practicable under site conditions. However, there appears to be chlorinated solvent contamination of: trichloroethene (TCE), cis-1, 2 dichloethene (cis-1,2 DCE) and vinyl chloride (VC) that might be migrating from adjacent properties to the Union Pacific Railroad Property. The Union Pacific Railroad property is granted an off-site liability exemption to the chemical constituents listed above. Your case has been remediated to Department standards in accordance with s. NR 726.05, Wis. Adm. Code and will be closed if the following condition is satisfied:

MONITORING WELL ABANDONMENT

The monitoring wells at the site cannot be properly abandoned in compliance with ch. NR 141, Wis. Adm. Code at this time due to any opened case on -site. Documentation of well abandonment in future must be submitted to Binyoti F. Amungwafor on Form 3300-5B found at www.dnr.state.wi.us/org/water/dwg/gw/ or provided by the Department of Natural Resources.

When the above condition has been satisfied, please submit the well abandonment forms to verify that applicable conditions have been met, and your case will be closed. Your site will be listed on the DNR Remediation and Redevelopment GIS Registry of Closed Remediation Sites. Information that was submitted with your closure request application will be included on the GIS Registry. To review the site on the GIS Registry web page, visit http://maps.dnr.state.wi.us/brrts.

Please be aware that the case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code, 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.

We appreciate your efforts to restore the environment at this site. If you have any questions regarding this letter, please contact me at 414-263-8607.

Sincerely,
Binyoti F. Amungwafor
Hydrogeologist

cc: Mr. Ben Verburg, ARCADIS G. & M.
Case File

County in the State aforesaid, do hereby certify that Emilie [illegible] and August [illegible] her husband personally known to me to be the identical persons named and described in, and whose names are subscribed to the foregoing instrument as grantors, and who executed the same appeared before me this day in person and acknowledged to me that they signed, sealed and delivered said instrument as, and that the same is their free and voluntary act and deed for the uses and purposes therein set forth, including the release and waiver of the right of homestead. Given under my hand and notarial seal this Seventh day of October A.D. 1909.

Recorded Oct 19 – 1909
at 10:30 O'Clock A.M.
[illegible] Register
[illegible] Deputy
648-578

(Notary Seal)

John M. Clarke
Notary Public
Mil. Co. Wis.
My Commission expires Oct 3-7, 1909

J. M. Grosse & wf — to — Mil. Sparta & N.W. Ry. Co.
W.D.

This Indenture, Made this First day of October in the year of our Lord one thousand nine hundred and nine between Jacob Martin Grosse and Sabina Grosse his wife of the town of Granville in the County of Milwaukee and State of Wisconsin parties of the first part, and the Milwaukee Sparta and Northwestern Railway Company party of the second part. Witnesseth That the said parties of the first part, for and in consideration of the sum of Ten Thousand Two Hundred Eighty one and 75/100 Dollars, in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged and the said party of the second part forever released and discharged therefrom, have granted, bargained, sold, remised, released, conveyed, aliened and confirmed and by these presents do grant, bargain, sell, remise, release, convey, alien and confirm unto the said party of the second part, and to its successors and assigns forever, all the following described lot piece or parcel of land situate in the County of Milwaukee and State of Wisconsin and known and described as follows to-wit: The South West quarter of the South West quarter of Section Thirty one (31) in Township number Eight (8) North Range number Twenty one (21) East containing Forty one and one eighth (41 1/8) acres more or less. Reserving however the buildings thereon, with right to remove same, on or before March 1st 1910. Together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents issues and profits thereof; and all the estate, right, title, interest, claim and demand whatsoever, of the said parties of the first part, either in law or equity, of, in and to the above bar-

gained premises with the hereditaments and appurtenances. To Have and to Hold the said premises above bargained and described with the appurtenances, unto the said party of the second part its successors and assigns forever. And the said Jacob Martin Grose and Sabina Grose his wife parties of the first part, for themselves their heirs, executors and administrators, do covenant, grant, bargain and agree, to and with the said party of the second part, its successors and assigns that at the time of the ensealing and delivery of these presents, they are well seized of the premises above conveyed, as of a good, sure, perfect, absolute and indefeasible estate of inheritance in law, in fee simple, and have good right, full power, and lawful authority to grant, bargain, sell and convey the same in manner and form aforesaid, and that the same are free and clear from all former and other grants, bargains, sales, liens, taxes, assessments and incumbrances, of what kind or nature soever, and the above bargained premises in the quiet and peaceable possession of the said party of the second part, its successors and assigns, against all and every other person or persons lawfully claiming or to claim the whole or any part thereof, the said parties of the first part shall and will Warrant and Forever Defend. And the said parties of the first part hereby expressly waive and release any and all right of homestead in the premises hereinbefore described, and any and all benefits, privileges, advantages and exemptions, under and by virtue of the Statutes of the State of Wisconsin in reference to homesteads and all damages to the lands of said parties of the first part which have been or may hereafter be caused by reason of the construction, maintenance and operation of a railroad on said granted premises, or by reason of any lawful use whatever of said granted premises by said party of the second part, its successors or assigns.

In Witness Whereof, the said parties of the first part have hereunto set their hands and seals the day and year first above written.

Signed, Sealed and Delivered
in Presence of

J. M. Clarke — Jacob Martin Grose (seal)
G. W. Cleveland — Sabina Grose (seal)

State of Wisconsin
County of Milwaukee } ss.

I, John M. Clarke a Notary Public in and for said County in the State aforesaid Do Hereby Certify that Jacob Martin Grose and Sabina Grose his wife personally known to me to be the identical persons named and described in and whose names are subscribed to the foregoing instrument as grantors and who executed the same, appeared before me this day in person and acknowledged to me that they signed, sealed and delivered said instrument as, and that the same is their free and voluntary act and deed for the uses and purposes therein set forth, including the release and waiver of the right of homestead. Given under my hand and Notarial seal this first day of [illegible]

(Notarial Seal) John M. Clarke Notary Public
[illegible]

Recorded Oct 14 - 1919 at 10:30 o'clock A.M.
[illegible] Register
[illegible] Deputy
645530

RECORDED
CERTIFIED SURVEY MAP
COPIED FROM
RECORDING RECEIPT
DATE RECORDED 11/22/72
MAP NO. 1957
DOCUMENT NO. 4723029
REEL
IMAGE
DEPT. OF CITY DEVELOPMENT

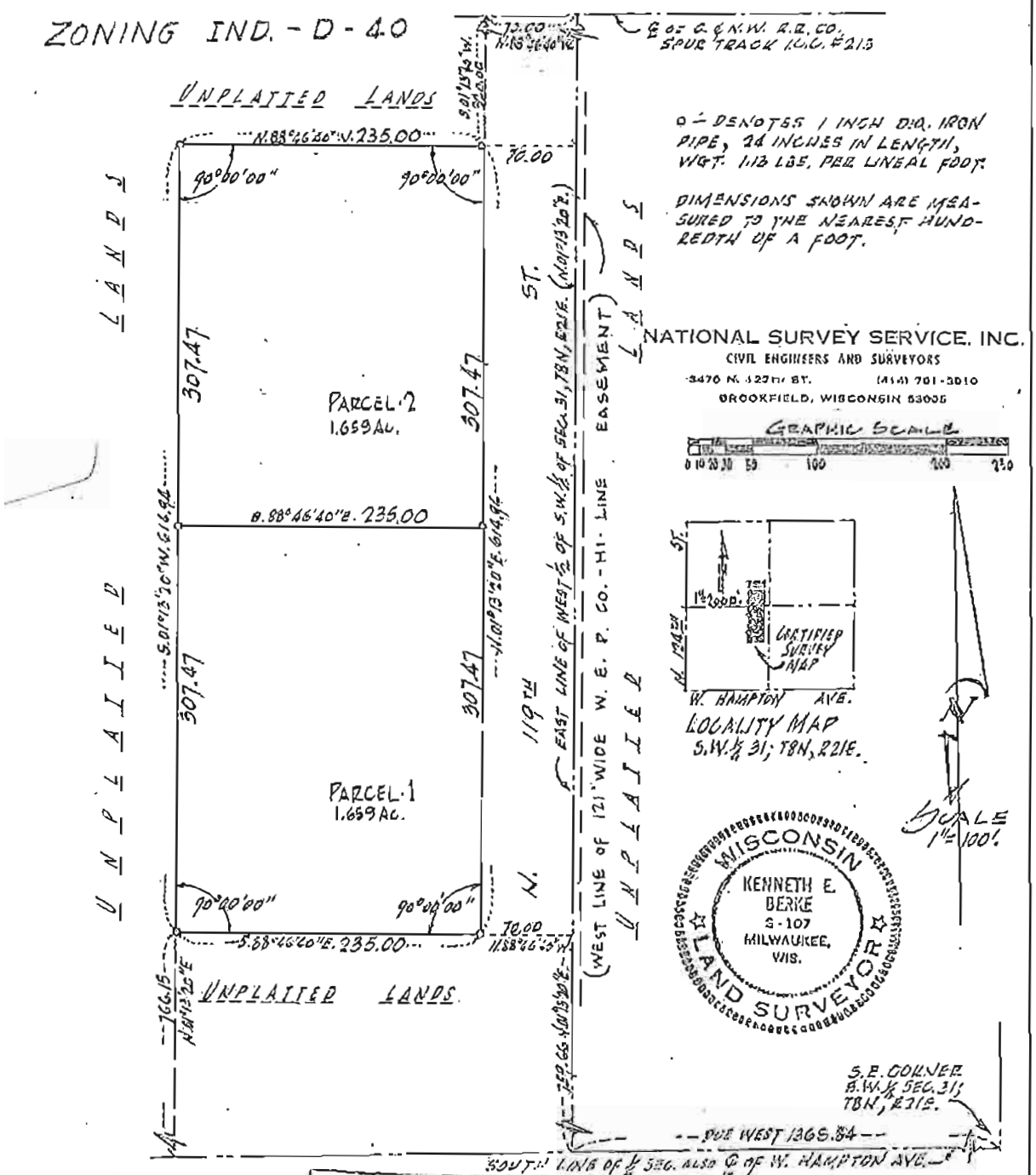
#44

1 OF 2

DONAHUE CERTIFIED SURVEY MAP NO. 1957

TAX KEY NO. 218-9991-118

BEING A DIVISION OF LANDS IN THE WEST 1/2 OF THE S W 1/4 OF SECTION 31, T 8 N, R 21 E, IN THE CITY OF MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN.



O - DENOTES 1 INCH DIA. IRON PIPE, 24 INCHES IN LENGTH, WGT. 1.13 LBS. PER LINEAL FOOT.

DIMENSIONS SHOWN ARE MEASURED TO THE NEAREST HUNDREDTH OF A FOOT.

NATIONAL SURVEY SERVICE, INC.
CIVIL ENGINEERS AND SURVEYORS
3470 N. 127TH ST. (414) 781-3010
BROOKFIELD, WISCONSIN 53005

GRAPHIC SCALE
0 10 20 30 50 100 200 300

LOCALITY MAP
S.W. 1/4 31; T8N, R21E.

SCALE 1" = 100'

WISCONSIN
KENNETH E. BERKE
S-107
MILWAUKEE, WIS.
LAND SURVEYOR

RECEIVED
OCT 4 1972
DEPT. OF CITY DEVELOPMENT

CITY FEE DEPOSITED
5.00 OCT 4 1972 GES

DEPT. OF CITY DEVELOPMENT OF MILWAUKEE
OCT 4 1972
STAFF APPROVED
Carl W. Kuest

BUREAU OF ENGINEERS
APPROVED
DRAFTSMAN 10-13-72
CHIEF IN CHARGE, SEWER ENGR. DIV.
CITY ENGINEER 10/11/72

DONAHUE CERTIFIED SURVEY MAP NO. _____

TAX KEY NO. 218-9991-118

BEING A DIVISION OF LANDS IN THE WEST 1/2 OF THE S W 1/4 OF SECTION 31, T 8 N, R 21 E, IN THE CITY OF MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN.

SURVEYOR'S CERTIFICATE
STATE OF WISCONSIN)
:SS
MILWAUKEE COUNTY)

I, KENNETH E BERKE, registered Wisconsin Land Surveyor, being first duly sworn, on oath do hereby depose and say:

THAT I have surveyed, divided and mapped a part of the West 1/2 of the S W 1/4 of Section 31, T 8 N, R 21 E, in the City of Milwaukee, Milwaukee County, Wisconsin, which is bounded and described as follows:

Commencing at a point on the center line of the Chicago and Northwestern Railway Company Spur Track ICC No. 213, as said spur track is now located distant 70.00 ft. North 88° 46' 40" West, measured at right angles from the East line of said West 1/2 of the S W 1/4 of Section 31; thence South 01° 13' 20" West and parallel with said East line a distance of 320.0 ft. to the point of beginning of the parcel of land herein described; thence North 88° 46' 40" West at right angles to the last described course a distance of 235.00 ft.; thence South 01° 13' 20" West 614.94 ft. and parallel with said East line to a point on a line drawn at right angles to said East line at a point thereon distant 766.15 ft. North 01°13'20" East from its intersection with the South line of said Section; thence South 88° 46' 40" East along said last described right angle a distance of 235.00 ft. to a point distant 70.00 ft. North 88° 46' 40" West, measured at right angles from the East line of the West 1/2 of the S W 1/4 of Section 31; thence North 01° 13' 20" East 614.94 ft. and parallel with said East line to the point of beginning.

THAT I have made such survey, land division and map by the direction of MARY A DONAHUE, owner of said land.

THAT such map is a correct representation of all the exterior boundaries of the land surveyed and the land-division thereof made.

THAT I have fully complied with the provisions of Chapter 236 of the Wisconsin Statutes and Chapter 9 of the Milwaukee Code of Ordinances in surveying, dividing and mapping the same.

Subscribed and sworn to before me this

2 day of October, 1972.

Irene M Metzger, Notary Public
My Commission Expires August 18, 1974.

Kenneth E Berke, Surveyor S 107

OWNER'S CERTIFICATE

AS OWNER, I hereby certify that I caused the land described on this map to be surveyed, divided and mapped as represented on this map in accordance with the requirements of Section 9-3.5 of the City of Milwaukee Code of Ordinances.

AG 4

3 of 4

DONAHUE CERTIFIED SURVEY MAP NO. _____

TAX KEY NO. 218-9991-118.

BEING A DIVISION OF LANDS IN THE WEST 1/2 OF THE S W 1/4 OF SECTION 31, T 8 N, R 21 E, IN THE CITY OF MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN.

In consideration of the approval of the map by the Common Council, the undersigned covenants and agrees to and with the City of Milwaukee that no lot or parcel as hereon set forth shall at any time subsequent to the recording of this map be in any manner divided, described, or conveyed so as to result in lots, parcels of building sites having dimensions, area or courses other than as herein set forth, unless said divisions, descriptions or conveyances are first approved by the Common Council of the City of Milwaukee, and that such restrictions are binding on the undersigned, his, her, or their heirs and assigns. Such approval, however, shall not be required for the taking of land for public purposes.

THAT all utility lines to provide electric power and telephone service to all lots in the Certified Survey Map shall be installed underground in easements provided therefore.

WITNESS the hand and seal of said owner this 2nd day of October, 1972.

In The Presence of:

Betty J. Blackwell

John C Bergmann

X Mary Donahue

STATE OF WISCONSIN)
:SS
MILWAUKEE COUNTY)

PERSONALLY came before me this 2nd day of October, 1972, the above named MARY DONAHUE, to me known to be the person who executed the foregoing instrument and acknowledged the same.

Louise Neustadter [SEAL]

Notary Public, State of Wisconsin
My Commission Expires 3-2-75

My Commission is Permanent.

CERTIFICATE OF CITY TREASURER

STATE OF WISCONSIN)
:SS
MILWAUKEE COUNTY)

I, JOSEPH J. KRUEGER, being the duly elected, qualified, and acting City Treasurer of the City of Milwaukee, do hereby certify that in accordance with the records in the office of the City Treasurer of the City of Milwaukee there are no unpaid taxes and that the method of payment on any special assessments relating to the land included in this Certified Survey Map has been agreed upon between the Owner and the City of Milwaukee.

October 23 1972
Date

Joseph J Krueger [SEAL]
Joseph J Krueger, City Treasurer

DONAHUE CERTIFIED SURVEY MAP NO. _____

TAX KEY NO. 218-9991-118

BEING A DIVISION OF LANDS IN THE WEST 1/2 OF THE S W 1/4 OF SECTION 31, T 8 N, R 21 E, IN THE CITY OF MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN.

COMMON COUNCIL RESOLUTION

Be it noted that this Certified Survey Map, submitted under File No. 72-493, being a division of lands in the West 1/2 of the S W 1/4 of Section 31 T 8 N, R 21 E, in the City of Milwaukee, Milwaukee County, Wisconsin, having been approved by the Department of City Development, has been approved by the Milwaukee Common Council.

I hereby certify that the foregoing Certified Survey Map was approved by Common Council Resolution on NOV 14 1972

Allen R. Callaway

City Clerk, City of Milwaukee

Henry W Maier

Henry Maier, Mayor

This instrument was drafted by Kenneth E Berke

May 14, 2009

Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
Southeast Region
2300 North Dr. Martin Luther King, Jr. Drive
Milwaukee, Wisconsin 53212

To the Bureau for Remediation and Redevelopment:

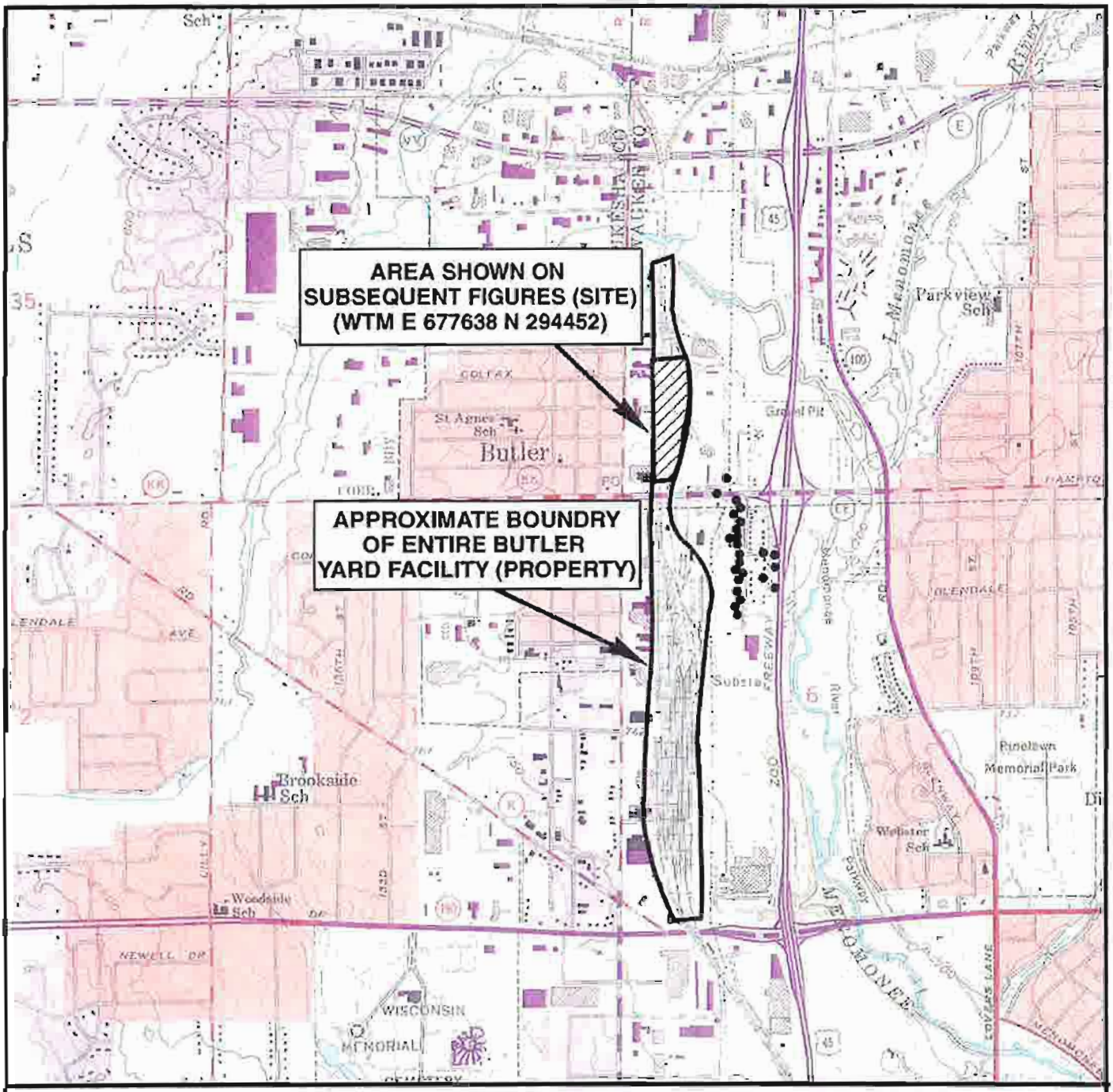
Union Pacific Railroad believes that legal descriptions for all of the properties within or partially within the contaminated site's boundaries that have soil contamination exceeding generic or site-specific residual contaminant levels as determined under ss. NR 720.09, 720.11 and 720.19, at the time that case closure is requested, other than public street or highway rights-of-way or railroad rights-of-way, have been submitted to the agency with administrative authority for the site as an attachment to this letter and part of the soil GIS registry to the case close out report.

If you have any questions about Union Pacific Railroad's position in this matter, please contact the undersigned at (281) 350-7197, at your earliest convenience.

Sincerely,

Geoffrey Reeder

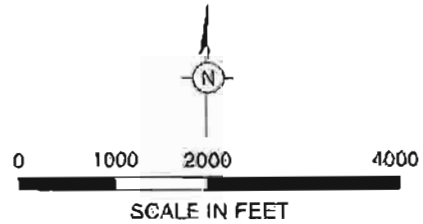
Geoffrey Reeder
Union Pacific Railroad



SOURCE: USGS 7.5 Minute Topographic Map, WAUWATOSA, WISCONSIN Quadrangle, 1976

WISCONSIN

• PRIVATE WELL LOCATIONS



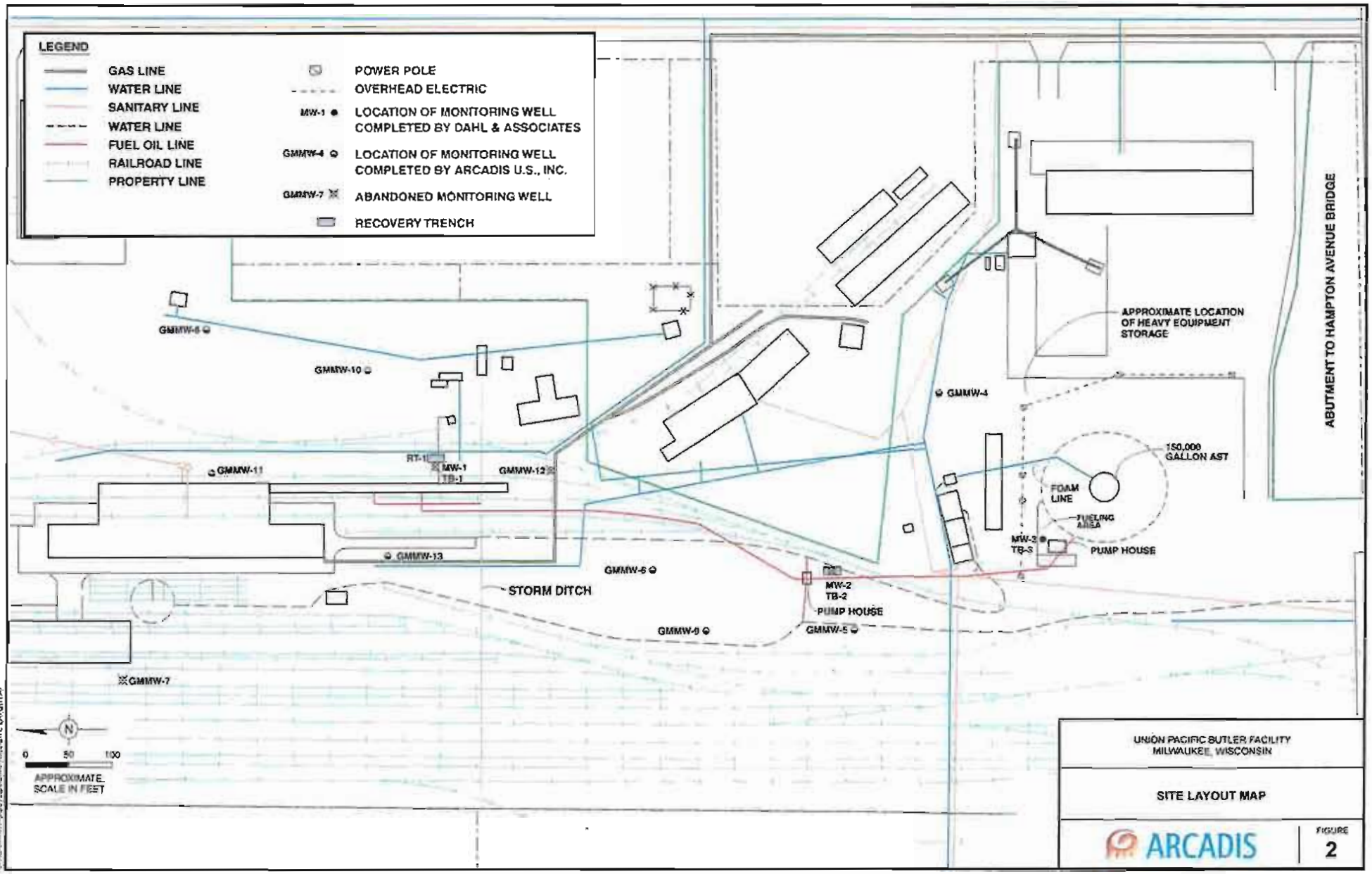
UNION PACIFIC BUTLER FACILITY
MILWAUKEE, WISCONSIN

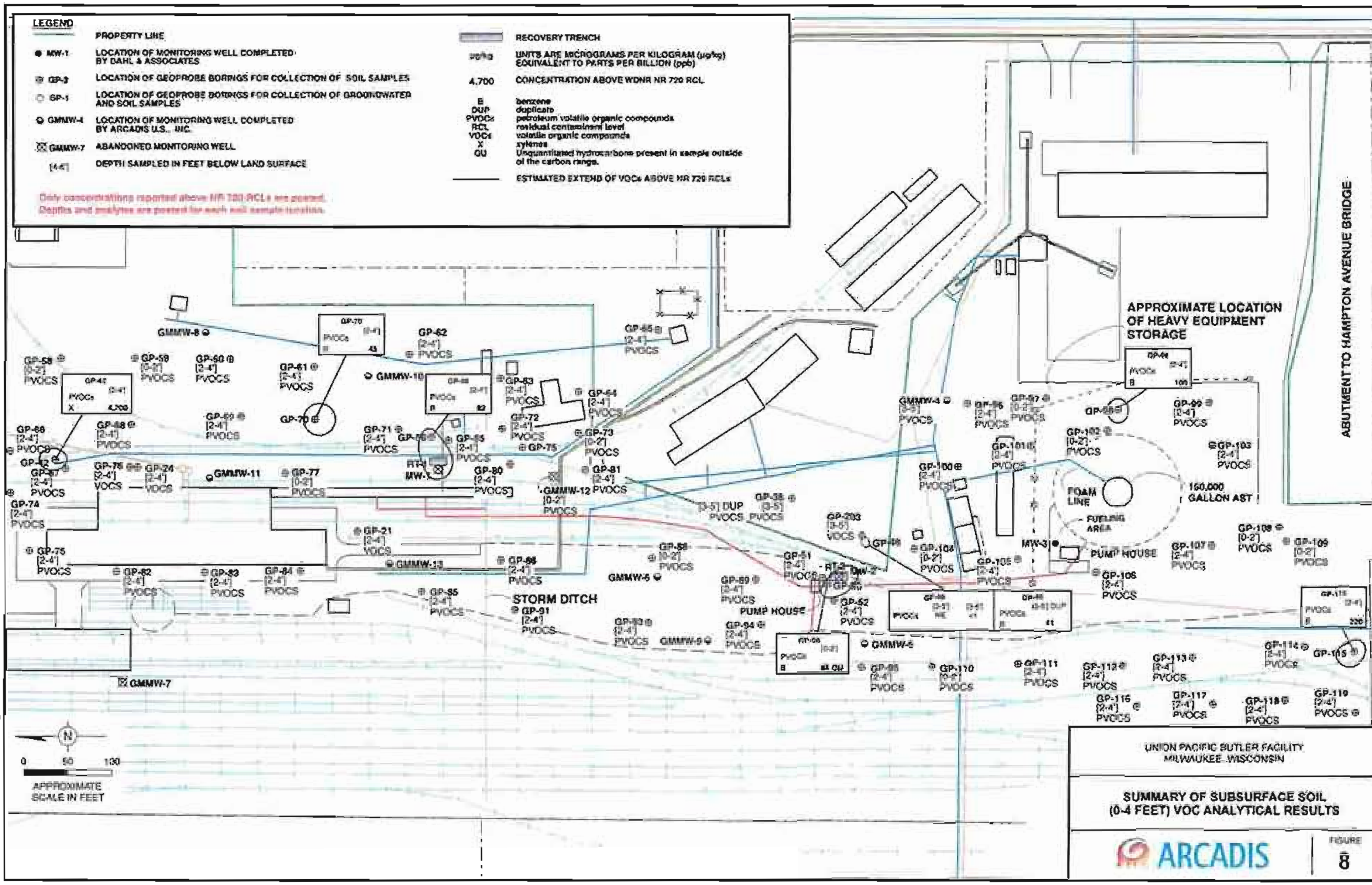
PROPERTY AND SITE LOCATION MAP

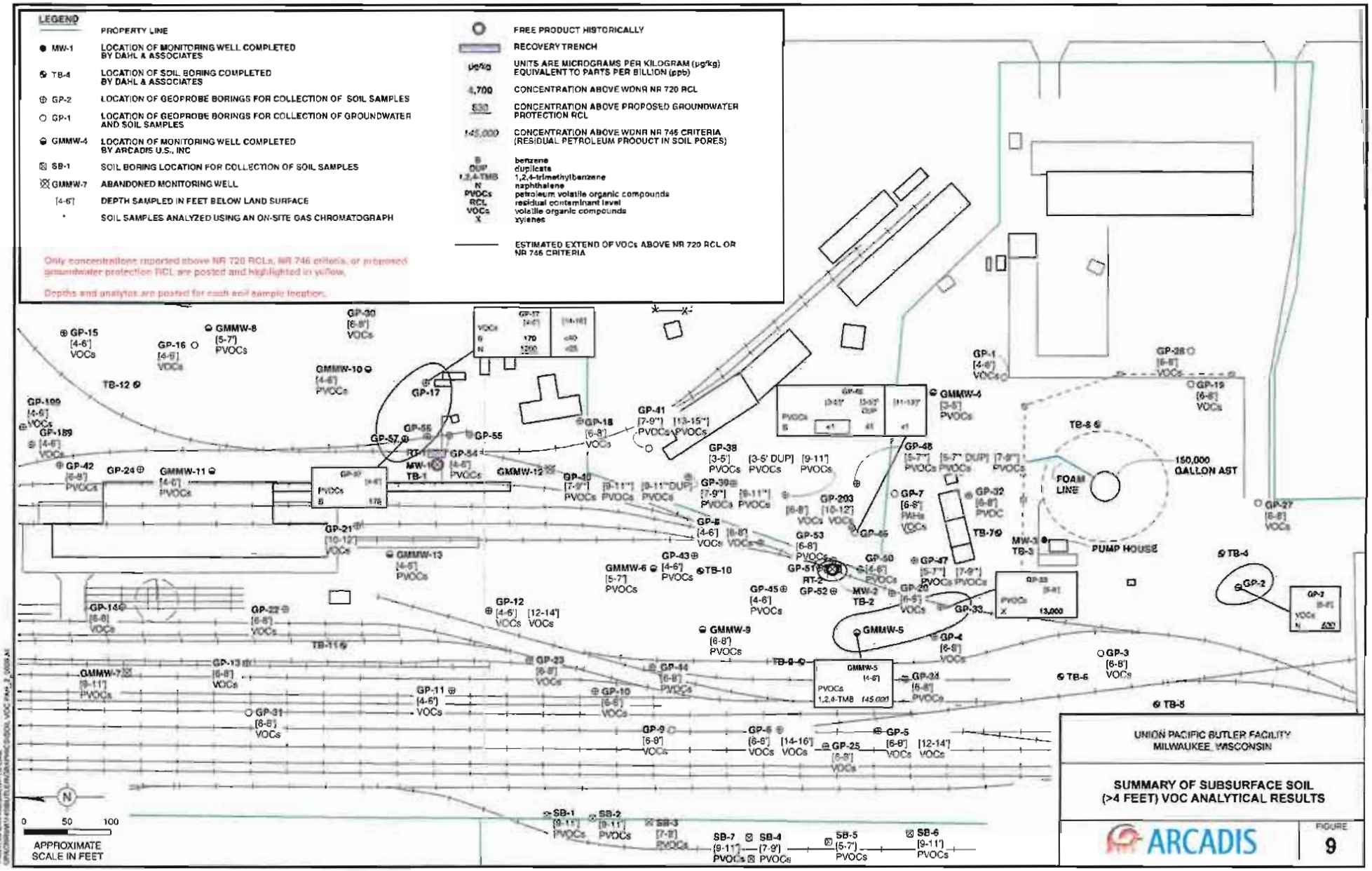
ARCADIS

FIGURE
1

13MAY09-ENVIRONMENT:TS-LMB
UPACRRWI0556\BUTLER\GRAPHICS\SITE_LOC_2.AI


LEGEND
GAS LINE
WATER LINE
SANITARY LINE
WATER LINE
FUEL OIL LINE
RAILROAD LINE
PROPERTY LINE
POWER POLE
OVERHEAD ELECTRIC
MW-1 LOCATION OF MONITORING WELL COMPLETED BY DAHL & ASSOCIATES
GMMW-4 LOCATION OF MONITORING WELL COMPLETED BY ARCADIS U.S., INC.
GMMW-7 ABANDONED MONITORING WELL
RECOVERY TRENCH
GMMW-8
GMMW-10
GMMW-11
RT-1
MW-1
TB-1
GMMW-12
GMMW-13
GMMW-6
STORM DITCH
GMMW-9
GMMW-7
MW-2
TB-2
PUMP HOUSE
GMMW-5
GMMW-4
APPROXIMATE LOCATION OF HEAVY EQUIPMENT STORAGE
ABUTMENT TO HAMPTON AVENUE BRIDGE
150,000 GALLON AST
FOAM LINE
FUELING AREA
MW-3
TB-3
PUMP HOUSE
N
0
50
100
APPROXIMATE SCALE IN FEET
UNION PACIFIC BUTLER FACILITY
MILWAUKEE, WISCONSIN
SITE LAYOUT MAP
ARCADIS
FIGURE
2


LEGEND
PROPERTY LINE
MW-1 LOCATION OF MONITORING WELL COMPLETED BY DAHL & ASSOCIATES
GP-3 LOCATION OF GEOPROBE BORINGS FOR COLLECTION OF SOIL SAMPLES
GP-1 LOCATION OF GEOPROBE BORINGS FOR COLLECTION OF GROUNDWATER AND SOIL SAMPLES
GMMW-4 LOCATION OF MONITORING WELL COMPLETED BY ARCADIS U.S., INC.
GMMW-7 ABANDONED MONITORING WELL
[4-6'] DEPTH SAMPLED IN FEET BELOW LAND SURFACE
Only concentrations reported above NR 720 RCLs are posted.
Depths and analytes are posted for each soil sample location.
RECOVERY TRENCH
µg/kg UNITS ARE MICROGRAMS PER KILOGRAM (µg/kg) EQUIVALENT TO PARTS PER BILLION (ppb)
4,700 CONCENTRATION ABOVE WDNR NR 720 RCL
B benzene
DUP duplicate
PVOCs petroleum volatile organic compounds
RCL residual contaminant level
VOCs volatile organic compounds
X xylenes
QU Unquantitated hydrocarbons present in sample outside of the carbon range.
ESTIMATED EXTEND OF VOCs ABOVE NR 720 RCLs
APPROXIMATE LOCATION OF HEAVY EQUIPMENT STORAGE
ABUTMENT TO HAMPTON AVENUE BRIDGE
STORM DITCH
PUMP HOUSE
FOAM LINE
FUELING AREA
150,000 GALLON AST
N
0 50 100
APPROXIMATE SCALE IN FEET
UNION PACIFIC BUTLER FACILITY
MILWAUKEE, WISCONSIN
SUMMARY OF SUBSURFACE SOIL (0-4 FEET) VOC ANALYTICAL RESULTS
ARCADIS
FIGURE
8

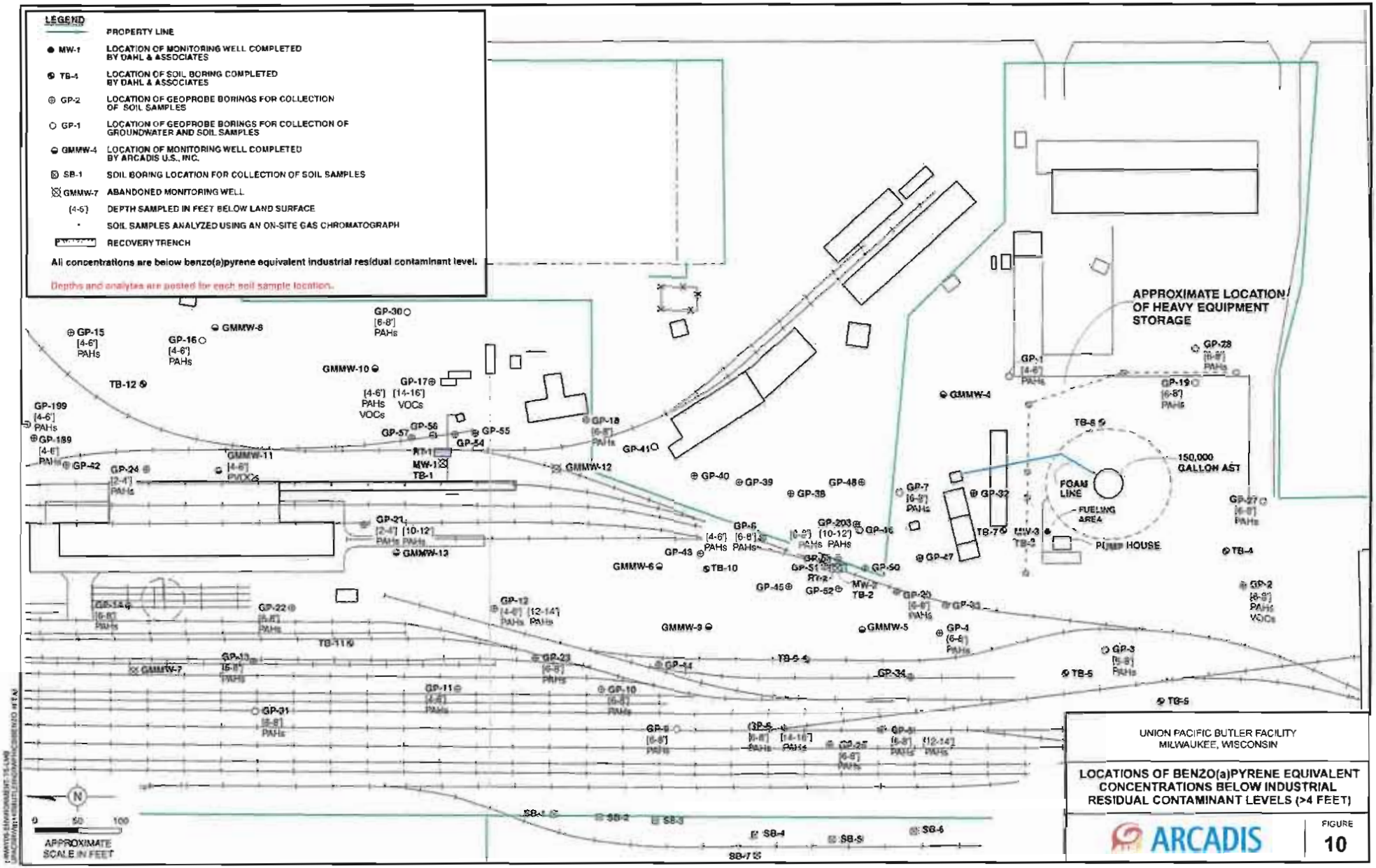


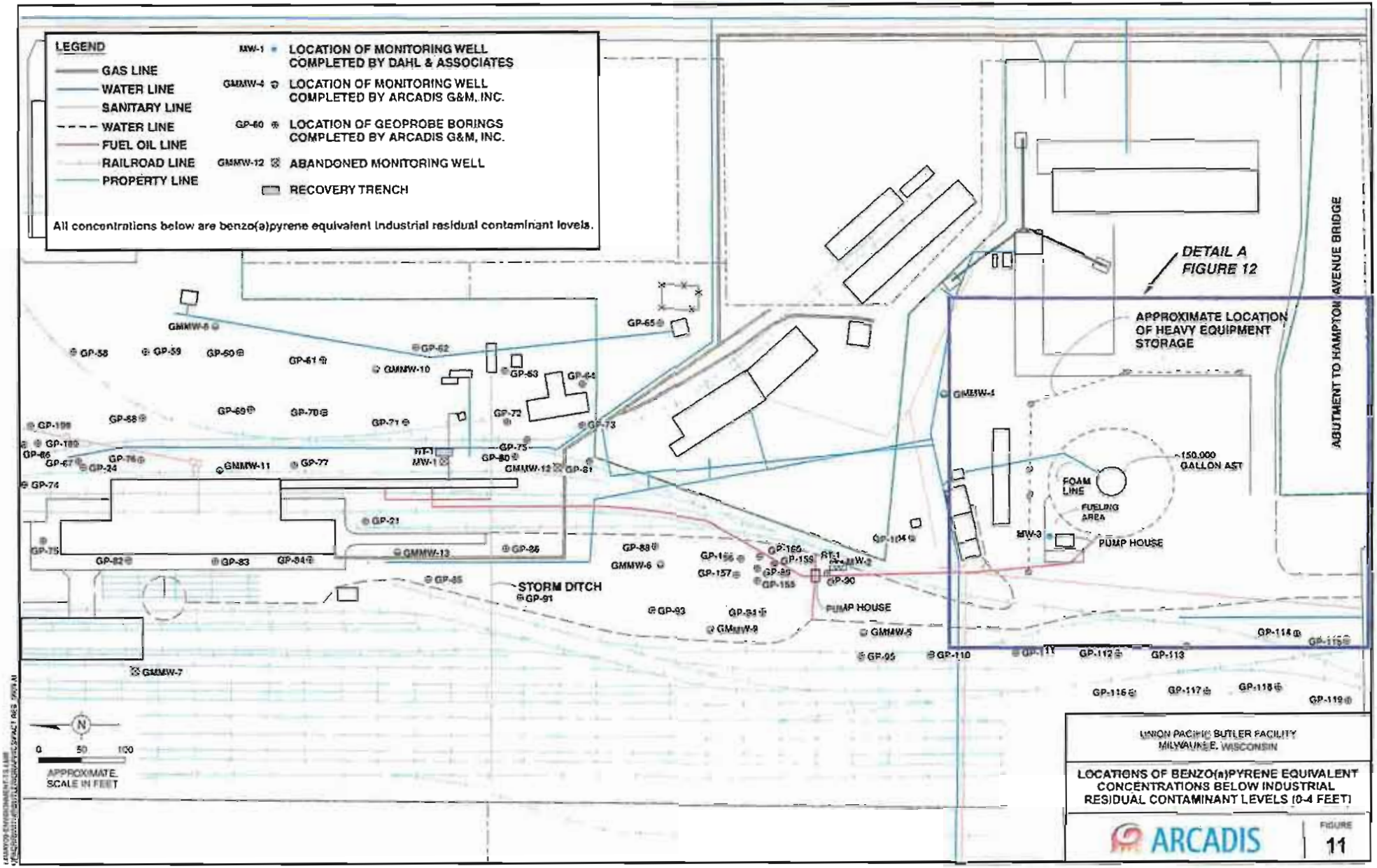
UNION PACIFIC BUTLER FACILITY
MILWAUKEE, WISCONSIN

SUMMARY OF SUBSURFACE SOIL (>4 FEET) VOC ANALYTICAL RESULTS

ARCADIS

FIGURE 9


LEGEND
PROPERTY LINE
MW-1 LOCATION OF MONITORING WELL COMPLETED BY DAHL & ASSOCIATES
TB-1 LOCATION OF SOIL BORING COMPLETED BY DAHL & ASSOCIATES
GP-2 LOCATION OF GEOPROBE BORINGS FOR COLLECTION OF SOIL SAMPLES
GP-1 LOCATION OF GEOPROBE BORINGS FOR COLLECTION OF GROUNDWATER AND SOIL SAMPLES
GMMW-4 LOCATION OF MONITORING WELL COMPLETED BY ARCADIS U.S., INC.
SB-1 SOIL BORING LOCATION FOR COLLECTION OF SOIL SAMPLES
GMMW-7 ABANDONED MONITORING WELL
[4-6] DEPTH SAMPLED IN FEET BELOW LAND SURFACE
SOIL SAMPLES ANALYZED USING AN ON-SITE GAS CHROMATOGRAPH
RECOVERY TRENCH
All concentrations are below benzo(a)pyrene equivalent industrial residual contaminant level.
Depths and analytes are posted for each soil sample location.
APPROXIMATE LOCATION OF HEAVY EQUIPMENT STORAGE
FOAM LINE
FUELING AREA
150,000 GALLON AST
PUMP HOUSE
GMMW-4
GMMW-5
GMMW-6
GMMW-7
GMMW-8
GMMW-9
GMMW-10
GMMW-11
GMMW-12
GMMW-13
TB-1
TB-2
TB-4
TB-5
TB-6
TB-7
TB-8
TB-10
TB-11
TB-12
RT-1
RT-2
N
0 50 100
APPROXIMATE SCALE IN FEET
UNION PACIFIC BUTLER FACILITY
MILWAUKEE, WISCONSIN
LOCATIONS OF BENZO(a)PYRENE EQUIVALENT CONCENTRATIONS BELOW INDUSTRIAL RESIDUAL CONTAMINANT LEVELS (>4 FEET)
ARCADIS
FIGURE
10


LEGEND
GAS LINE
WATER LINE
SANITARY LINE
WATER LINE
FUEL OIL LINE
RAILROAD LINE
PROPERTY LINE
MW-1 LOCATION OF MONITORING WELL COMPLETED BY DAHL & ASSOCIATES
GMMW-4 LOCATION OF MONITORING WELL COMPLETED BY ARCADIS G&M, INC.
GP-60 LOCATION OF GEOPROBE BORINGS COMPLETED BY ARCADIS G&M, INC.
GMMW-12 ABANDONED MONITORING WELL
RECOVERY TRENCH
All concentrations below are benzo(a)pyrene equivalent industrial residual contaminant levels.
DETAIL A FIGURE 12
APPROXIMATE LOCATION OF HEAVY EQUIPMENT STORAGE
ABUTMENT TO HAMPTON AVENUE BRIDGE
150,000 GALLON AST
FOAM LINE
FUELING AREA
PUMP HOUSE
STORM DITCH
PUMP HOUSE
RT-1
MW-1
MW-3
GMMW-1
GMMW-2
GMMW-3
GMMW-4
GMMW-5
GMMW-6
GMMW-7
GMMW-8
GMMW-9
GMMW-10
GMMW-11
GMMW-12
GMMW-13
GP-58
GP-59
GP-60
GP-61
GP-62
GP-63
GP-64
GP-65
GP-66
GP-67
GP-68
GP-69
GP-70
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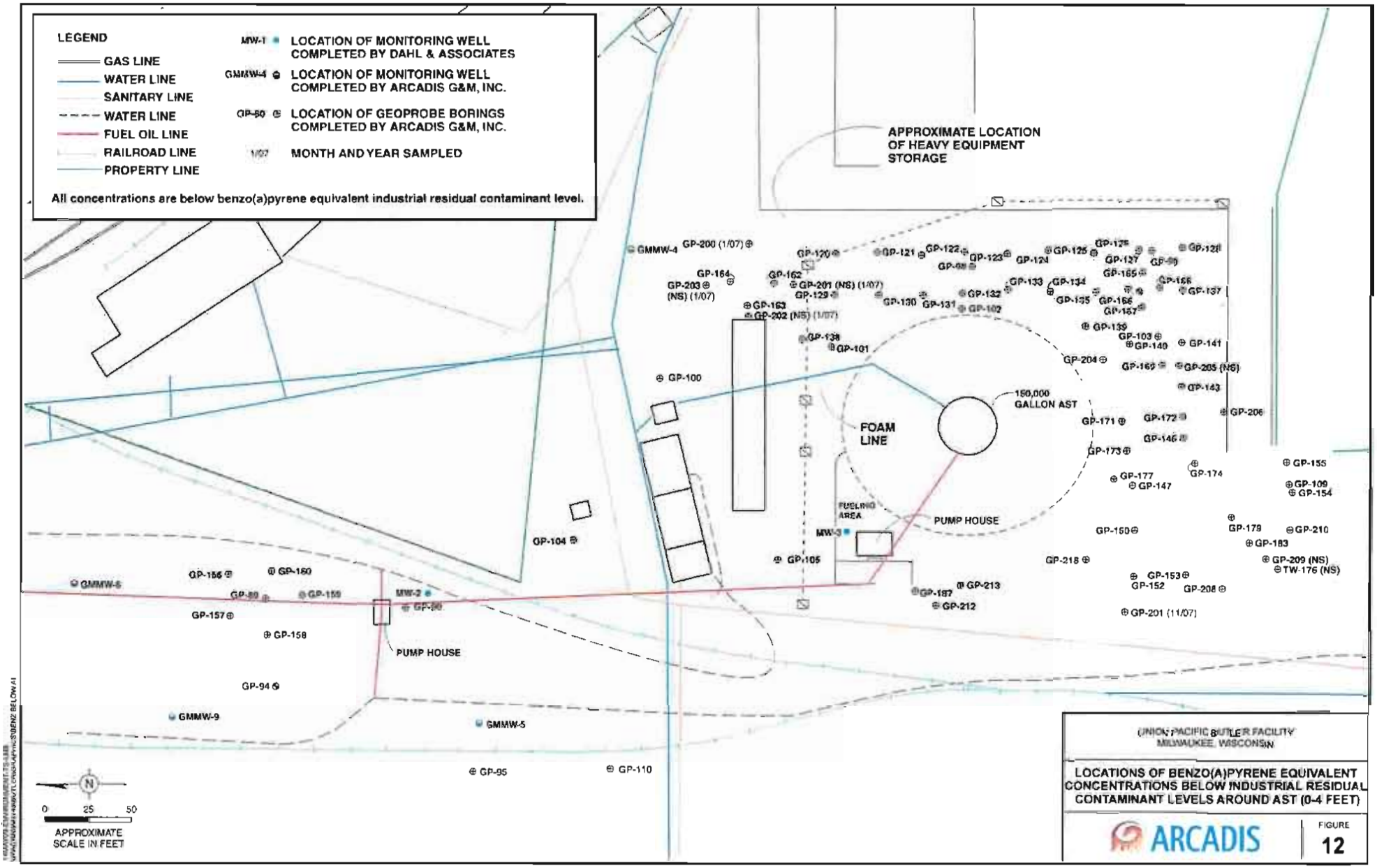
GP-113
GP-114
GP-115
GP-116
GP-117
GP-118
GP-119
GP-155
GP-156
GP-157
GP-158
GP-159
N
0 50 100
APPROXIMATE SCALE IN FEET
UNION PACIFIC BUTLER FACILITY
MILWAUKEE, WISCONSIN
LOCATIONS OF BENZO(a)PYRENE EQUIVALENT CONCENTRATIONS BELOW INDUSTRIAL RESIDUAL CONTAMINANT LEVELS (0-4 FEET)
ARCADIS
FIGURE 11

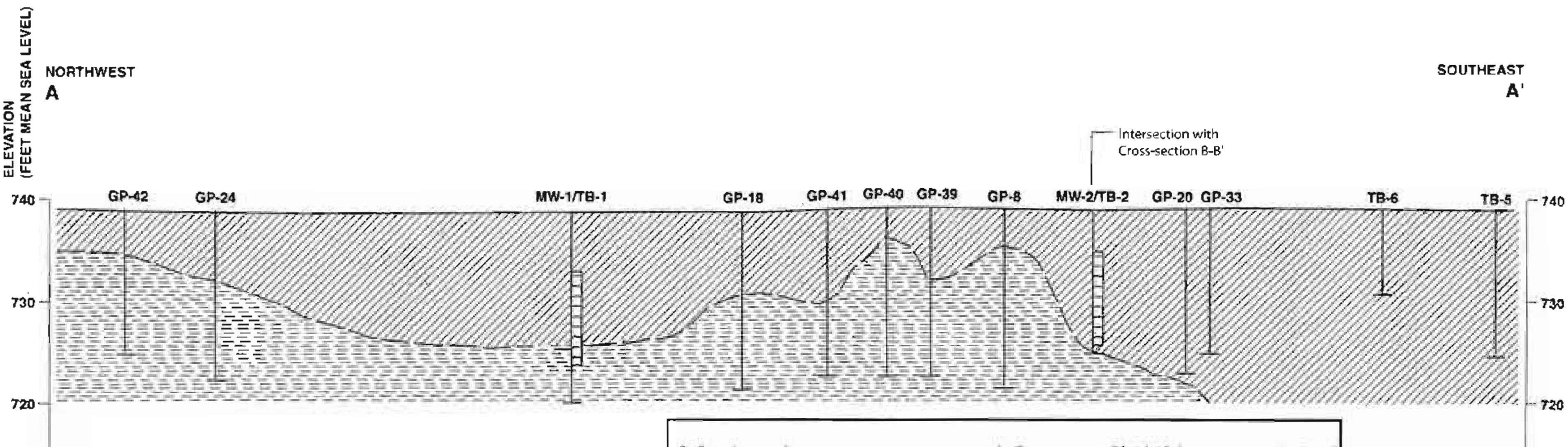


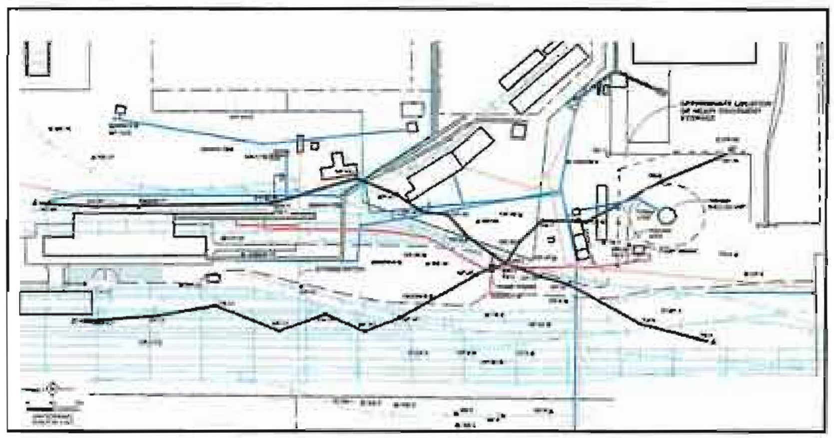
UNION PACIFIC BUTLER FACILITY
MILWAUKEE, WISCONSIN

LOCATIONS OF BENZO(A)PYRENE EQUIVALENT CONCENTRATIONS BELOW INDUSTRIAL RESIDUAL CONTAMINANT LEVELS AROUND AST (0-4 FEET)

ARCADIS

FIGURE 12





LEGEND

GP GEOPROBE BORING LOCATION

MW MONITORING WELL LOCATION

FILL MATERIAL: Sand and gravel with lesser amounts of silt and clay

SILT AND CLAY with trace sand and gravel

INFERRED GEOLOGIC CONTACT

BOREHOLE/MONITORING WELL

MONITORING WELL SCREENED INTERVAL

END OF BORING

Note: 1 GP/GMMW-1-Series holes drilled and logged by Geraghty & Miller, Inc (1996)
2 MW-1/TB Series Wells/Boreholes drilled and logged by Dahl & Associates (1994)

0 50 100 200
HORIZONTAL SCALE IN FEET
VERTICAL EXAGGERATION = 10X

UNION PACIFIC BUTLER FACILITY
MILWAUKEE, WISCONSIN

GEOLOGIC CROSS-SECION A-A'

ARCADIS

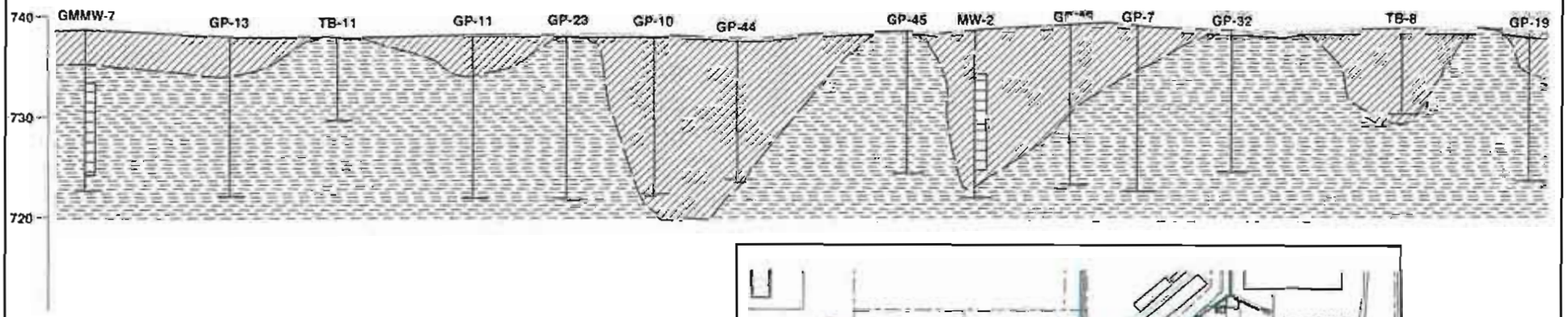
FIGURE
4

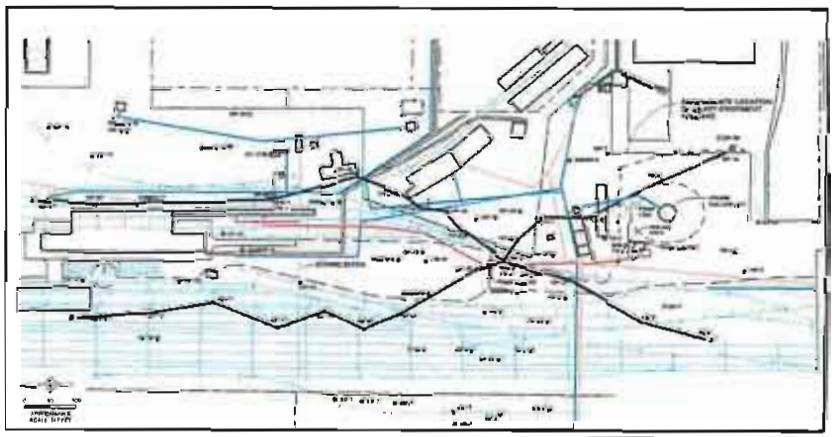
ELEVATION (FEET MEAN SEA LEVEL)

WEST
B

Intersection with Cross-section A-A'

EAST
B'





LEGEND

GP	GEOPROBE BORING LOCATION
MW	MONITORING WELL LOCATION
	FILL MATERIAL: Sand and gravel with lesser amounts of silt and clay
	SILT AND CLAY with trace sand and gravel
	INFERRED GEOLOGIC CONTACT
	BOREHOLE/MONITORING WELL
	MONITORING WELL SCREENED INTERVAL
	END OF BORING

Note: 1 GP/GMMW-1-Series holes drilled and logged by Geraghty & Miller, Inc. (1996)
2 MW-1/TB Series Wells/Boreholes drilled and logged by Dahl & Associates (1994)

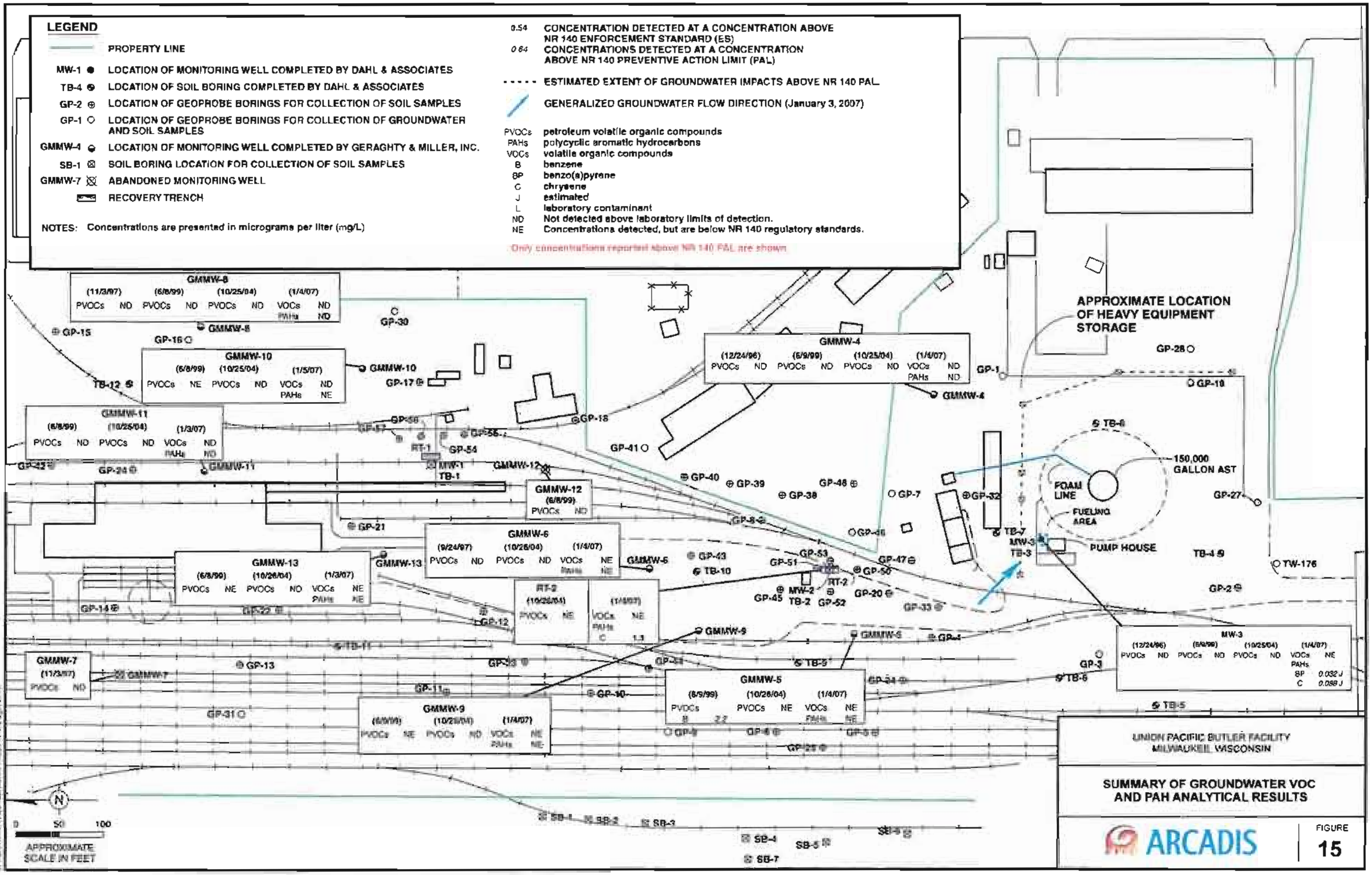
0 50 100 200
HORIZONTAL SCALE IN FEET
VERTICAL EXAGGERATION = 10X

UNION PACIFIC BUTLER FACILITY
MILWAUKEE, WISCONSIN

GEOLOGIC CROSS-SECION B-B'

ARCADIS

FIGURE
5


LEGEND
PROPERTY LINE
MW-1 LOCATION OF MONITORING WELL COMPLETED BY DAHL & ASSOCIATES
TB-4 LOCATION OF SOIL BORING COMPLETED BY DAHL & ASSOCIATES
GP-2 LOCATION OF GEOPROBE BORINGS FOR COLLECTION OF SOIL SAMPLES
GP-1 LOCATION OF GEOPROBE BORINGS FOR COLLECTION OF GROUNDWATER AND SOIL SAMPLES
GMMW-4 LOCATION OF MONITORING WELL COMPLETED BY GERAGHTY & MILLER, INC.
SB-1 SOIL BORING LOCATION FOR COLLECTION OF SOIL SAMPLES
GMMW-7 ABANDONED MONITORING WELL
RECOVERY TRENCH
NOTES: Concentrations are presented in micrograms per liter (mg/L)
0.54 CONCENTRATION DETECTED AT A CONCENTRATION ABOVE NR 140 ENFORCEMENT STANDARD (ES)
0.64 CONCENTRATIONS DETECTED AT A CONCENTRATION ABOVE NR 140 PREVENTIVE ACTION LIMIT (PAL)
ESTIMATED EXTENT OF GROUNDWATER IMPACTS ABOVE NR 140 PAL
GENERALIZED GROUNDWATER FLOW DIRECTION (January 3, 2007)
PVOCs petroleum volatile organic compounds
PAHs polycyclic aromatic hydrocarbons
VOCs volatile organic compounds
B benzene
BP benzo(a)pyrene
C chrysene
J estimated
L laboratory contaminant
ND Not detected above laboratory limits of detection.
NE Concentrations detected, but are below NR 140 regulatory standards.
GMMW-8 (11/3/97) PVOCs ND (6/8/99) PVOCs ND (10/25/04) PVOCs ND (1/4/07) VOCs ND PAHs ND
GMMW-10 (6/8/99) PVOCs NE (10/25/04) PVOCs ND (1/5/07) VOCs ND PAHs NE
GMMW-11 (6/8/99) PVOCs ND (10/25/04) PVOCs ND (1/3/07) VOCs ND PAHs ND
GMMW-4 (12/24/96) PVOCs ND (6/9/99) PVOCs ND (10/25/04) PVOCs ND (1/4/07) VOCs ND PAHs ND
GMMW-12 (6/8/99) PVOCs ND
GMMW-6 (9/24/97) PVOCs ND (10/26/04) PVOCs ND (1/4/07) VOCs NE PAHs NE
GMMW-13 (6/8/99) PVOCs NE (10/26/04) PVOCs ND (1/3/07) VOCs NE PAHs NE
RT-2 (10/26/04) PVOCs NE (1/4/07) VOCs NE PAHs C 1.3
GMMW-7 (11/3/97) PVOCs ND
GMMW-9 (6/9/99) PVOCs NE (10/26/04) PVOCs ND (1/4/07) VOCs NE PAHs NE
GMMW-5 (6/9/99) PVOCs B 2.2 (10/26/04) PVOCs NE (1/4/07) VOCs NE PAHs NE
MW-3 (12/24/96) PVOCs ND (6/9/99) PVOCs ND (10/25/04) PVOCs ND (1/4/07) VOCs NE PAHs BP 0.032 J C 0.058 J
APPROXIMATE LOCATION OF HEAVY EQUIPMENT STORAGE
150,000 GALLON AST
FOAM LINE
FUELING AREA
PUMP HOUSE
0 50 100
APPROXIMATE SCALE IN FEET
UNION PACIFIC BUTLER FACILITY
MILWAUKEE, WISCONSIN
SUMMARY OF GROUNDWATER VOC AND PAH ANALYTICAL RESULTS
ARCADIS
FIGURE 15

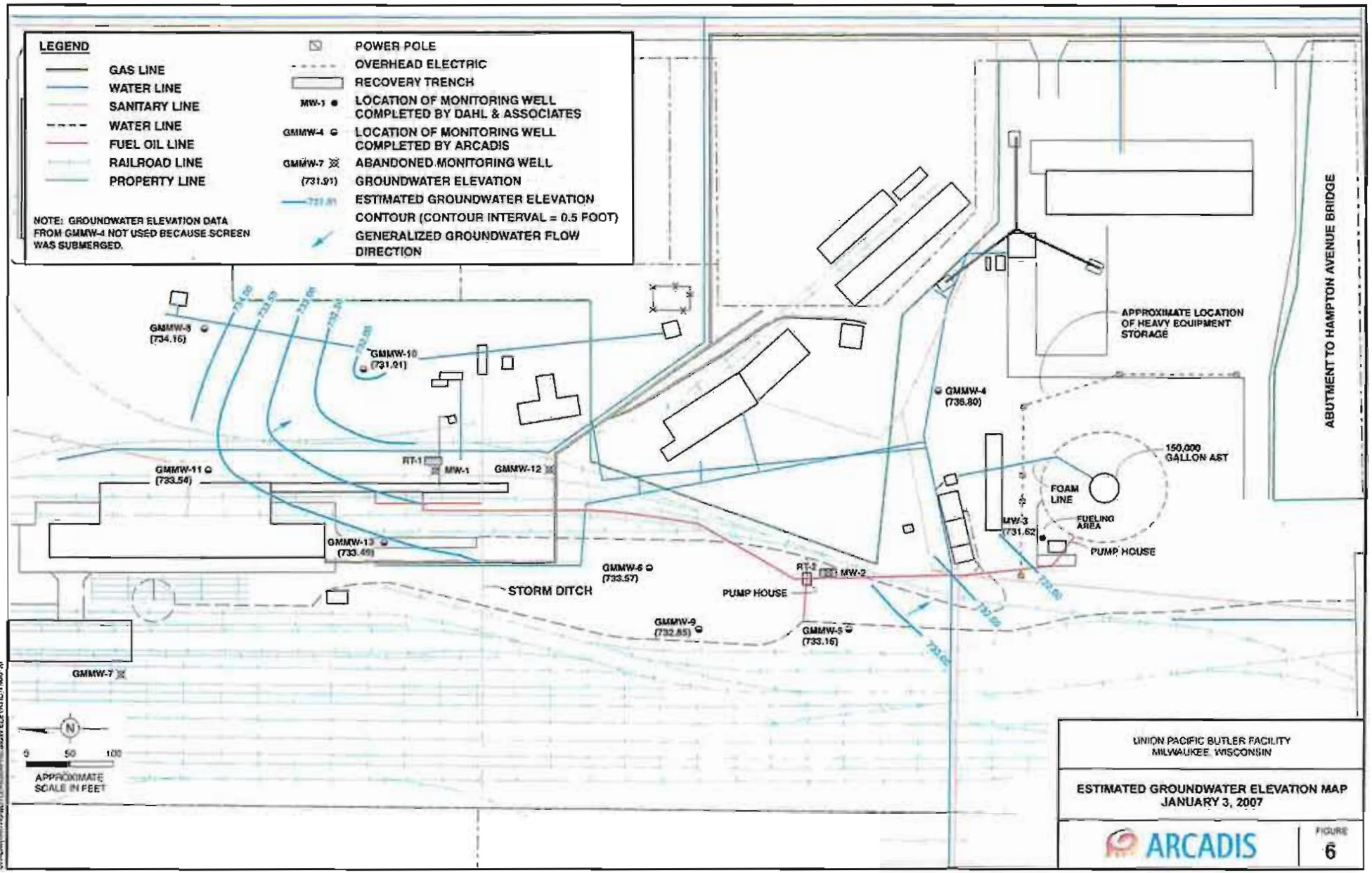

LEGEND
GAS LINE
WATER LINE
SANITARY LINE
WATER LINE
FUEL OIL LINE
RAILROAD LINE
PROPERTY LINE
POWER POLE
OVERHEAD ELECTRIC
RECOVERY TRENCH
MW-1 LOCATION OF MONITORING WELL COMPLETED BY DAHL & ASSOCIATES
GMMW-4 LOCATION OF MONITORING WELL COMPLETED BY ARCADIS
GMMW-7 ABANDONED MONITORING WELL
(731.91) GROUNDWATER ELEVATION
ESTIMATED GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL = 0.5 FOOT)
GENERALIZED GROUNDWATER FLOW DIRECTION
NOTE: GROUNDWATER ELEVATION DATA FROM GMMW-4 NOT USED BECAUSE SCREEN WAS SUBMERGED.
GMMW-8 (734.16)
GMMW-10 (731.91)
GMMW-11 (733.54)
GMMW-12
GMMW-13 (733.49)
GMMW-7
RT-1
MW-1
GMMW-6 (733.57)
STORM DITCH
PUMP HOUSE
GMMW-9 (732.85)
RT-2
MW-2
GMMW-5 (733.16)
GMMW-4 (736.80)
APPROXIMATE LOCATION OF HEAVY EQUIPMENT STORAGE
ABUTMENT TO HAMPTON AVENUE BRIDGE
150,000 GALLON AST
FOAM LINE
FUELING AREA
MW-3 (731.62)
PUMP HOUSE
N
0 50 100
APPROXIMATE SCALE IN FEET
UNION PACIFIC BUTLER FACILITY
MILWAUKEE, WISCONSIN
ESTIMATED GROUNDWATER ELEVATION MAP
JANUARY 3, 2007
ARCADIS
FIGURE 6

Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name Sample Depth (feet) Sample Date	NR 720 Table 1 RCL	NR 720 Table 1 Criteria	NR 746 Table 1 Criteria	Proposed Industrial Direct Contact	Proposed Non-Industrial Direct Contact	Proposed Groundwater Protection	GMMW-4 3-5' 12/9/96	GMMW-5 4-6' 6/1/96	GMMW-6 5-7' 12/11/96	GMMW-8 5-7' 12/9/96
DRO (mg/kg)	100	NE	NE	NE	NE	NE	<6.1	**3,030**	**2,110**	<5.4
GRO (mg/kg)	100	NE	NE	NE	NE	NE	<6.1	NA	**174 H**	<5.4
VOCs (µg/kg)										
Benzene	5.5	1,100	8,500	NE	NE	NE	<12	<303	<600	<11
Bromomethane	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA
Chloromethane	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA
cis-1,2-Dichloroethene	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA
Ethylbenzene	2,900	NE	4,600	NE	NE	NE	<30	497	<1,600	<27
Isopropylbenzene	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA
Methyl tert-Butyl Ether	NE	NE	NE	NE	NE	NE	<30	<303	<1,600	<27
Methylene Chloride	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA
Naphthalene	2,700	NE	NE	110,000	20,000	400	NA	NA	NA	NA
n-Butylbenzene	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA
n-Propylbenzene	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA
sec-Butylbenzene	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA
tert-Butylbenzene	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA
Tetrachloroethene	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA
Toluene	1,500	NE	38,000	NE	NE	NE	<30	<303	<1,600	<27
Trichloroethene	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NE	NE	83,000	NE	NE	NE	<30	*145,000*	3,720	<27
1,3,5-Trimethylbenzene	NE	NE	11,000	NE	NE	NE	<30	885	2,980	<27
Xylenes, total	4,100	NE	42,000	NE	NE	NE	<92	1,330	<4,600	<81

Footnotes on Page 15.

Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GMMW-9	GMMW-10	GMMW-11	GMMW-12	GMMW-13	GP-1	GP-2	GP-3	GP-6	
Sample Depth (feet)	6-8'	4-6'	4-6'	0-2'	4-6'	4-6'	6-8'	6-8'	14-16'	6-8'
Sample Date	6/1/99	6/1/99	6/2/99	6/2/99	6/2/99	5/23/96	5/23/96	5/23/96	5/24/96	5/24/96
DRO (mg/kg)	<5.9	13	<6.4	1,110	<5.5	<5	11	5.4	11	4,200 B
GRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)										
Benzene	<30	<29	<32	<139	<28	<25	<48	<30	<25	<38 I
Bromomethane	NA	NA	NA	NA	NA	<100	<48	<30	<100	<150 I
Chloromethane	NA	NA	NA	NA	NA	<30	<57	204	<30	<45 I
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	<25	<48	<30	<25	<38 I
Ethylbenzene	<30	37	<32	<139	<28	<25	<48	<30	<25	60 I
Isopropylbenzene	NA	NA	NA	NA	NA	<25	<48	<30	<25	100 I
Methyl tert-Butyl Ether	<30	<29	<32	<139	<28	<25	<48	<30	<25	<38 I
Methylene Chloride	NA	NA	NA	NA	NA	180 L	480 L	280 L	140 L	220 I,L
Naphthalene	NA	NA	NA	NA	NA	<25	630	<25	<25	<25
n-Butylbenzene	NA	NA	NA	NA	NA	<25	<48	<30	<25	910 I
n-Propylbenzene	NA	NA	NA	NA	NA	<25	<48	<30	<25	180 I
sec-Butylbenzene	NA	NA	NA	NA	NA	<25	<48	<30	<25	<38 I
tert-Butylbenzene	NA	NA	NA	NA	NA	<25	<48	<30	<25	440 I
Tetrachloroethene	NA	NA	NA	NA	NA	<25	<48	<30	<25	<38 I
Toluene	<30	<29	<32	<139	<28	<25	71 B	46 B	<25	<38 I
Trichloroethene	NA	NA	NA	NA	NA	<25	<48	<30	<25	<38 I
1,2,4-Trimethylbenzene	<30	42	<32	1,730	<28	<25	<48	<30	<25	<38 I
1,3,5-Trimethylbenzene	<30	<29	<32	1,040	<28	<25	<48	<30	<25	<38 I
Xylenes, total	<89	<88	<96	474	<83	<35	<66	<42	<35	<52 I

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Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-7	GP-8		GP-9	GP-10	GP-11	GP-12		GP-13	GP-14	GP-15	GP-16
Sample Depth (feet)	6-8'	4-6'	6-8'	6-8'	6-8'	4-6'	4-6'	12-14'	6-8'	6-8'	4-6'	4-6'
Sample Date	5/23/96	5/28/96	5/28/96	5/24/96	5/24/96	5/24/96	5/28/96	5/28/96	5/24/96	5/24/96	5/23/96	5/23/96
DRO (mg/kg)	<5	<5.0 B	46 B	<5.0 B	<5.0 B	8.3 B	**920 B**	12	12 B	8.2 B	<5.0	<5.0
GRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)												
Benzene	<28	<35 I	<42 I	<38 I	<42 I	<40 I	<42 I	<32 I	<45 I	<32	<32	<25
Bromomethane	98	<140 I	170 I	<150 I	<170 I	<160 I	<170 I	<130 I	<180 I	<130	120	90
Chloromethane	<33	<42 I	51 I	<45 I	<51 I	<48 I	<51 I	<39 I	<54 I	<39	<39	<30
cis-1,2-Dichloroethene	<28	<35 I	<42 I	<38 I	<42 I	<40 I	<42 I	<32 I	<45 I	<32	<32	<25
Ethylbenzene	<28	<35 I	<42 I	<38 I	<42 I	<40 I	<42 I	<32 I	<45 I	<32	<32	<25
Isopropylbenzene	<28	<35 I	<42 I	<38 I	<42 I	<40 I	<42 I	<32 I	<45 I	<32	<32	<25
Methyl tert-Butyl Ether	<28	<35 I	<42 I	<38 I	<42 I	<40 I	<42 I	<32 I	<45 I	<32	<32	<25
Methylene Chloride	320 L	200 I,L	230 I,L	220 I,L	230 I,L	210 I,L	190 I,L	160 I,L	230 I,L	140 L	540 L	330
Naphthalene	<25	<25	<25	<25	<25	<25	64	<25	<25	<25	<25	<25
n-Butylbenzene	<28	<35 I	<42 I	<38 I	<42 I	<40 I	240 I	<32 I	<45 I	<32	<32	<25
n-Propylbenzene	<28	<35 I	<42 I	<38 I	<42 I	<40 I	56 I	<32 I	<45 I	<32	<32	<25
sec-Butylbenzene	<28	<35 I	<42 I	<38 I	<42 I	<40 I	200 I	<32 I	<45 I	<32	<32	<25
tert-Butylbenzene	<28	<35 I	<42 I	<38 I	<42 I	<40 I	<42 I	<32 I	<45 I	<32	<32	<25
Tetrachloroethene	37	<35 I	<42 I	<38 I	<42 I	<40 I	<42 I	<32 I	<45 I	<32	<32	<25
Toluene	<28	<35 I	<42 I	<38 I	<42 I	<40 I	<42 I	<32 I	<45 I	<32	<32	<25
Trichloroethene	<28	<35 I	<42 I	<38 I	<42 I	<40 I	<42 I	<32 I	<45 I	<32	70	<25
1,2,4-Trimethylbenzene	<28	<35 I	<42 I	<38 I	<42 I	<40 I	<42 I	<32 I	<45 I	<32	<32	<25
1,3,5-Trimethylbenzene	<28	<35 I	<42 I	<38 I	<42 I	<40 I	<42 I	<32 I	<45 I	<32	<32	<25
Xylenes, total	<38	<49 I	<60 I	<52 I	<60 I	<56 I	<60 I	<46 I	<63 I	<46	<46	<35

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Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-17		GP-18	GP-19	GP-20	GP-21		GP-22	GP-23	GP-24	GP-25	GP-27
Sample Depth (feet)	14-16'	4-6'	6-8'	6-8'	6-8'	10-12'	2-4'	6-8'	6-8'	2-4'	6-8'	6-8'
Sample Date	5/23/96	5/23/96	5/28/96	5/23/96	5/28/96	5/28/96	5/28/96	5/28/96	5/29/96	5/28/96	5/29/96	5/29/96
DRO (mg/kg)	13	**910**	<5.0 B	5.6	**2,800 B**	42	**350**	19 B	15	37 B	**620**	9.4
GRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)												
Benzene	<40	**170**	<35 I	<30	<160 M	<40 I	<210 I,M	<40 I	<45 I	<48 I	<52 I,M	<55 I
Bromomethane	<40	95	<140 I	<30	<650 M	<160 I	<850 I,M	<160 I	<180 I	<190 I	<210 I,M	<220 I
Chloromethane	<48	<30	<42 I	<36	<200 M	<48 I	<260 I,M	<48 I	<54 I	<57 I	<63 I,M	<66 I
cis-1,2-Dichloroethene	<40	<25	<35 I	<30	<160 M	<40 I	<210 I,M	<40 I	<45 I	<48 I	<52 I,M	<55 I
Ethylbenzene	<40	440	<35 I	<30	<160 M	<40 I	<210 I,M	<40 I	<45 I	<48 I	<52 I,M	<55 I
Isopropylbenzene	<40	210	<35 I	<30	400	<40 I	<210 I,M	<40 I	<45 I	<48 I	<52 I,M	<55 I
Methyl tert-Butyl Ether	<40	<25	<35 I	<30	<160 M	<40 I	<210 I,M	<40 I	550 I,L	<48 I	<52 I,M	<55 I
Methylene Chloride	500	640 L	200 I,L	290 L	610 L	170 I,L	830 I,M	180 I,L	<90 I	200 I,L	930 I,L	830 I,L
Naphthalene	<25	**1,200**	<25	<25	<500 M	<25	<25	<25	<25	240	<25	160
n-Butylbenzene	<40	<25	<35 I	<30	1600	<40 I	<210 I,M	<40 I	<45 I	<48 I	422 I	<55 I
n-Propylbenzene	<40	310	<35 I	<30	810	<40 I	<210 I,M	<40 I	<45 I	<48 I	<52 I,M	<55 I
sec-Butylbenzene	<40	260	<35 I	43	730	<40 I	<210 I,M	<40 I	<45 I	<48 I	210 I	<55 I
tert-Butylbenzene	<40	<25	<35 I	<30	<160 M	<40 I	<210 I,M	<40 I	<45 I	<48 I	<52 I,M	<55 I
Tetrachloroethene	<40	<25	<35 I	<30	<160 M	<40 I	<210 I,M	<40 I	<45 I	<48 I	<52 I,M	<55 I
Toluene	<40	980	<35 I	<30	<160 M	<40 I	<210 I,M	<40 I	<45 I	48 I	<52 I,M	<55 I
Trichloroethene	<40	63	<35 I	<30	<160 M	<40 I	<210 I,M	<40 I	<45 I	<48 I	<52 I,M	<55 I
1,2,4-Trimethylbenzene	<40	2,100	<35 I	100	<160 M	<40 I	390 I	<40 I	<45 I	73 I	<52 I,M	<55 I
1,3,5-Trimethylbenzene	<40	830	<35 I	<30	<160 M	<40 I	<210 I,M	<40 I	<45 I	<48 I	<52 I,M	<55 I
Xylenes, total	160	2,600	<49 I	73	<230 M	<56 I	950 I	<56 I	<63 I	<66 I	<74 I,M	<77 I

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Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-28	GP-30	GP-31	GP-32	GP-33	GP-34	GP-38	GP-38	GP-38 D	GP-39	
Sample Depth (feet)	6-8'	6-8'	6-8'	6-8'	6-8'	6-8'	3-5'	9-11'	3-5'	7-9'	9-11'
Sample Date	5/29/96	5/29/96	5/29/96	10/3/96	10/3/96	10/3/96	12/2/96	12/2/96	12/2/96	12/2/96	12/2/96
DRO (mg/kg)	<5.0	<5.0	6.9	<5.0	7,500	1,000	<20	<20	366 H	<20	<20
GRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)											
Benzene	<50	<80 I	<38 I	<10	<500	<100	<1	<1	<12	<1	<1
Bromomethane	<200	<300 I	<150 I	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	60	390 I	<45 I	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	<50	<80 I	<38 I	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<50	<80 I	<38 I	<25	1,400	<250	<1	<1	<30	<1	<1
Isopropylbenzene	<50	<80 I	<38 I	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	<50	<80 I	<38 I	<25	<1,200	<250	<1	<1	<30	<1	<1
Methylene Chloride	750	1,100 I,L	490 I,L	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	<25	<25	<25	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	<50	<80 I	<38 I	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	<50	<80 I	<38 I	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	<50	<80 I	<38 I	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	<50	<80 I	<38 I	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	<50	<80 I	<38 I	NA	NA	NA	<1	<1	NA	NA	NA
Toluene	<50	<80 I	<38 I	<25	<1200	<250	<1	<1	<30	<1	<1
Trichloroethene	<50	<80 I	<38 I	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	<50	<80 I	<38 I	<25	13,000	2,700	<1	<1	97	<1	<1
1,3,5-Trimethylbenzene	<50	<80 I	<38 I	<25	7,400	1,200	<1	<1	70	<1	<1
Xylenes, total	<70	<100 I	<52 I	<75	13,000	1,200	<1	<1	<88	<1	<1

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Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-40		GP-40 D	GP-41		GP-42		GP-43	GP-44	GP-45	GP-46	
Sample Depth (feet)	7-9'	9-11'	9-11'	13-15'	7-9'	2-4'	6-8'	4-6'	6-8'	4-6'	11-13'	3-5'
Sample Date	12/2/96	12/2/96	12/2/96	12/2/96	12/2/96	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96	12/2/96	12/2/96
DRO (mg/kg)	<20	<20	<6.1	<20	<20	**6,900 H**	<5.0	**3,500**	<5	**530**	23.8	**1,234**
GRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)												
Benzene	<1	<1	<12	<1	<1	<500	<10	<100	<10	<100	<1	<1
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<1	<1	<30	<1	<1	<1,200	<25	280	<25	<250	<1	<1
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	<1	<1	<30	<1	<1	<1,200	<25	<250	<25	<250	<1	<1
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	<1	<1	<30	<1	1	1,200	<25	<250	<25	<250	<1	<1
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	<1	<1	<30	<1	<1	2,600	<25	1,700	<25	1,800	<1	55
1,3,5-Trimethylbenzene	<1	<1	<30	<1	<1	2,500	<25	1,200	<25	770	<1	<1
Xylenes, total	<1	<1	<91	<1	<1	**4,700**	<75	2,100	<75	1,500	<1	<1

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Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-46 D	GP-47		GP-48		GP-48 D	GP-50	GP-51	GP-52	GP-53	GP-54	GP-55
Sample Depth (feet)	3-5'	5-7'	7-9'	5-7'	7-9'	5-7'	4-6'	2-4'	2-4'	6-8'	4-6'	2-4'
Sample Date	12/2/96	12/2/96	12/2/96	12/2/96	12/2/96	12/2/96	6/2/99	6/2/99	6/2/99	6/2/99	6/2/99	6/2/99
DRO (mg/kg)	600 H	462	<20	<20	<20	NA	562	8,010	9,580	552	1,810	120
GRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)												
Benzene	41	<1	<1	<1	<1	<1	<31	<635	<631	<31	<30	<31
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	54	5.5	<1	<1	<1	<1	89	<635	<631	<31	<30	44
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	<36	<1	<1	<1	<1	<1	<31	<635	<631	<31	<30	<31
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	143	<1	<1	<1	<1	<1	<31	<635	<631	<31	<30	<31
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	300	35.5	<1	<1	<1	<1	904	3,680	2,650	294	290	391
1,3,5-Trimethylbenzene	60	60.5	<1	<1	<1	<1	183	991	706	86	50	87
Xylenes, total	243	6	<1	<1	<1	<1	159	<1,910	<1,890	94	93	183

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Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-56	GP-57	GP-58	GP-59	GP-60	GP-61	GP-62	GP-63	GP-64	GP-65	GP-66
Sample Depth (feet)	2-4'	4-6'	0-2'	0-2'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'
Sample Date	6/2/99	6/2/99	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/18/05
DRO (mg/kg)	258	445	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)											
Benzene	82	176	<30	<30	<30	<29	<31 ,QU	<30	<32	<31	<30
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	697	<352	<30	280	<30	<29	41 QU	<30	<32	<31	<30
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	27	<29	<30	<30	<30	<29	<31 ,QU	<30	<32	<31	<30
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	64	<50	<30	<30	<30	31	<31 ,QU	<30	<32	<31	<30
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	2,470	1,760	<30	190	<30	77	110 QU	53	<32	<31	<30
1,3,5-Trimethylbenzene	805	<621	<30	210	<30	<29	<31 ,QU	<30	<32	<31	<30
Xylenes, total	1,050	<903	<90	<89	<90	140	<92 ,QU	<90	<96	<94	<89

Footnotes on Page 15.

Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-67	GP-68	GP-69	GP-70	GP-71	GP-72	GP-73	GP-74	GP-75	GP-76
Sample Depth (feet)	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	0-2'	2-4'	2-4'	2-4'
Sample Date	10/18/05	10/18/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/18/05	10/18/05	10/18/05
DRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)										
Benzene	<320 ,QU	<33	<32 ,QU	45	<30	<27	<27	<29 ,QU	<31	<30
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<320 ,QU	75	<32 ,QU	<30	<400 RL1	<27	<190 RL1	<29 ,QU	<31	<30
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	<320 ,QU	<33	<32 ,QU	<30	<30	<27	<27	<29 ,QU	<31	<30
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	<320 ,QU	84	42 QU	33	<30	49	68	<29 ,QU	<31	<30
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	630 QU	56	68 QU	38	160	110	170	<29 ,QU	<31	52
1,3,5-Trimethylbenzene	<320 ,QU	<33	<32 ,QU	<30	85	30	32	<29 ,QU	<31	<30
Xylenes, total	<950 ,QU	160	110 QU	100	180	200	370	<86 ,QU	<93	<89

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Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-77	GP-80	GP-81	GP-82	GP-83	GP-84	GP-85	GP-86	GP-88
Sample Depth (feet)	0-2'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	0-2'
Sample Date	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05
DRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)									
Benzene	<28	<29	<31	<31	<28	<31	<31 ,QU	<32 ,QU	<28 ,QU
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<28	<370 RL1	<31	<31	<28	<31	<31 ,QU	<32 ,QU	110 QU
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	<28	<29	<31	<31	<28	<31	<31 ,QU	<32 ,QU	<28 ,QU
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	<28	<29	<31	<31	<28	<31	<31 ,QU	<32 ,QU	67 QU
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	98	840	<31	<31	40	<31	69 QU	<32 ,QU	63 QU
1,3,5-Trimethylbenzene	<28	180	<31	<31	<28	<31	<31 ,QU	<32 ,QU	<28 ,QU
Xylenes, total	150	400	<93	<92	<84	<93	150 QU	<96 ,QU	160 QU

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Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-89	GP-90	GP-91	GP-93	GP-94	GP-95	GP-98	GP-99	GP-100	GP-101
Sample Depth (feet)	2-4'	0-2'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'
Sample Date	10/18/05	10/19/05	10/18/05	10/18/05	10/19/05	10/19/05	10/20/05	10/20/05	10/20/05	10/20/05
DRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)										
Benzene	<630 ,QU	88 QU	<29	<29	<31	<26 ,QU	100	<31	<31 ,QU	<31
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<630 ,QU	<2800 ,QU,RL1	<29	<29	<31	<26 ,QU	130	260	<31 ,QU	<31
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	<630 ,QU	<31 ,QU	<29	<29	<31	<26 ,QU	<31	<31	<31 ,QU	<31
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	<630 ,QU	<31 ,QU	32	<29	<31	<26 ,QU	330	<31	<31 ,QU	<31
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	2200 QU	3400 QU	89	<29	<31	710 QU	230	120	<31 ,QU	<31
1,3,5-Trimethylbenzene	<630 ,QU	<31 ,QU	44	<29	<31	<26 ,QU	94	120	<31 ,QU	<31
Xylenes, total	<1900 ,QU	1300 QU	160	<88	<93	<78 ,QU	370	350	<93 ,QU	<94

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Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-102	GP-103	GP-104	GP-105	GP-107	GP-109	GP-110	GP-111	GP-112	GP-113
Sample Depth (feet)	0-2'	2-4'	0-2'	2-4'	2-4'	0-2'	0-2'	2-4'	2-4'	2-4'
Sample Date	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/19/05	10/19/05	10/19/05	10/19/05
DRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)										
Benzene	<33	<29	<31 ,QU	<30	<30 ,A-01	<29	<28	<29	<26	<27
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<33	<29	<700 ,QU,RL1	<30	<30 ,A-01	<29	51	<29	<26	<27
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	<33	<29	<31 ,QU	<30	<30 ,A-01	<29	<28	<29	<26	<27
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	<33	<29	64 QU	<30	<30 ,A-01	29	55	<29	<26	<27
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	<33	<29	530 QU	<30	130 A-01	<29	75	<29	<26	<27
1,3,5-Trimethylbenzene	<33	<29	<31 ,QU	<30	51 A-01	<29	<28	<29	<26	<27
Xylenes, total	<99	<87	370 QU	<91	<91 ,A-01	<86	170	<87	<79	<80

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Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-114	GP-115	GP-116	GP-117	GP-118	GP-119	GP-189	GP-199	GP-203		
Sample Depth (feet)	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	4-6'	4-6'	3-5'	6-8'	10-12'
Sample Date	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	1/10/07	1/10/07	11/08/07	11/09/07	11/08/07
DRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)											
Benzene	<31	220	<30	<29	<29	<26	<32	<31	<31	<30	<36
Bromomethane	NA	NA	NA	NA	NA	NA	<130	<120	<130	<120	<140
Chloromethane	NA	NA	NA	NA	NA	NA	<65	<62	<63	<61	<72
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	<32	<31	<31	<30	<36
Ethylbenzene	<31	120	<30	<29	<29	<26	<32	<31	<31	<30	<36
Isopropylbenzene	NA	NA	NA	NA	NA	NA	<32	<31	<31	<30	<36
Methyl tert-Butyl Ether	<31	<30	<30	<29	<29	<26	<32	<31	<31	<30	<36
Methylene Chloride	NA	NA	NA	NA	NA	NA	<65	<62	<63	<61	<72
Naphthalene	NA	NA	NA	NA	NA	NA	<65	<62	<63	<61	<72
n-Butylbenzene	NA	NA	NA	NA	NA	NA	<32	<31	<31	<30	<36
n-Propylbenzene	NA	NA	NA	NA	NA	NA	<32	<31	<31	<30	<36
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	<32	<31	<31	<30	<36
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	<32	<31	<31	<30	<36
Tetrachloroethene	NA	NA	NA	NA	NA	NA	<32	<31	<31	<30	<36
Toluene	<31	530	<30	<29	<29	<26	<32	<31	48	<30	<36
Trichloroethene	NA	NA	NA	NA	NA	NA	<32	<31	<31	<30	<36
1,2,4-Trimethylbenzene	<31	66	<30	<29	<29	<26	<32	<31	47	<30	<36
1,3,5-Trimethylbenzene	<31	39	<30	<29	<29	<26	<32	<31	<31	<30	<36
Xylenes, total	<92	480	<91	<86	<87	<79	<110	<110	<110	<100	<120

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Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7
Sample Depth (feet)	9-11'	9-11'	7-9'	7-9'	5-7'	9-11'	9-11'
Sample Date	12/10/96	12/10/96	12/10/96	12/10/96	12/10/96	12/10/96	12/10/96
DRO (mg/kg)	<5.5	<5.9	14 H	7.0 H	<6.2 H	<5.2	<6.0 H
GRO (mg/kg)	<5.5	<5.9	<6.1	<7.2	<6.2	<5.2	<6.0
VOCs (µg/kg)							
Benzene	<11	<12	<12	<14	<12	<10	<12
Bromomethane	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<28	<30	<30	<36	<31	<26	<30
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	<28	<30	<30	<36	<31	<26	<30
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA
Toluene	<28	<30	<30	<36	<31	<26	<30
Trichloroethene	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	<28	<30	<30	<36	<31	<26	<30
1,3,5-Trimethylbenzene	<28	<30	<30	<36	<31	<26	<30
Xylenes, total	<83	<89	<91	<110	<92	<78	<89

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Table 1. Summary of Soil DRO, GRO, and VOC Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Bold	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Italic	Concentration exceeds the NR 746 Soil Criteria (NR 746 criteria is the regulatory indicator of residual petroleum product in soil pores).
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
(1)	Soil samples analyzed using an onsite gas chromatograph.
<	Analyte detected below laboratory detection limits.
A-01	High concentrations of a non-target analyte present.
B	Method blank is contaminated.
DRO	Diesel Range Organics.
DUP	Duplicate sample.
GRO	Gasoline Range Organics.
H	Late eluting hydrocarbons present within sample.
I	Additional laboratory sample preparations were necessary before analysis.
L	Common laboratory solvent and contaminant.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram.
NA	Not analyzed.
NE	Not established.
QU	Unquantitated hydrocarbons were present in the sample outside of the reported carbon range.
RCL	WDNR established Residual Contaminant Level (RCL) from Table 1 of the Wisconsin Administrative Code Chapter NR 720.09.
RL1	Reporting limit raised due to sample matrix effects.
VOC	Volatile Organic Compound.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Sample Name	NR 720	Proposed	Proposed	Proposed	GP-1	GP-2	GP-3	GP-4	GP-5	
Sample Depth (feet)	Table 1	Groundwater	Non-Industrial	Industrial	4-6'	6-8'	6-8'	6-8'	6-8'	12-14'
Sample Date	RCL	Protection	Direct Contact	Direct Contact	05/23/96	05/23/96	05/23/96	05/23/96	05/24/96	05/24/96
PAHs (µg/kg)										
1-Methylnaphthalene	NE	23,000	1,100,000	70,000,000	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	NE	20,000	600,000	40,000,000	<25	<25	<25	<25	<25	<25
Acenaphthene	NE	38,000	900,000	60,000,000	NA	NA	NA	NA	NA	NA
Anthracene	NE	3,000,000	5,000,000	300,000,000	<8.0	33	<8.0	<8.0	<8.0	<8.0
Benzo (a) anthracene	NE	17,000	88	3,900	<2.0	*120*	<2.0	<2.0	<2.0	<2.0
Benzo (a) pyrene	NE	48,000	8.8	390	<4.0	*110*	<4.0	<4.0	<4.0	<4.0
Benzo (b) fluoranthene	NE	360,000	88	3,900	<2.0	41	<2.0	<2.0	<2.0	<2.0
Benzo (g,h,i) perylene	NE	6,800,000	1,800	39,000	<4.0	110	<4.0	<4.0	<4.0	<4.0
Benzo (k) fluoranthene	NE	870,000	880	39,000	<2.0	65	<2.0	<2.0	<2.0	<2.0
Chrysene	NE	37,000	8,800	390,000	<4.0	98	<4.0	<4.0	<4.0	<4.0
Dibenzo (a,h) anthracene	NE	38,000	8.8	390	NA	NA	NA	NA	NA	NA
Fluoranthene	NE	500,000	600,000	40,000,000	<8.0	230	<8.0	<8.0	<8.0	<8.0
Fluorene	NE	100,000	600,000	40,000,000	<16	<16	<16	<16	<16	<16
Indeno (1,2,3-cd) pyrene	NE	680,000	88	3,900	<4.0	60	<4.0	<4.0	<4.0	<4.0
Naphthalene	2,700	400	20,000	110,000	NA	NA	NA	NA	NA	NA
Phenanthrene	NE	1,800	18,000	390,000	<16	230	<16	<16	<16	<16
Pyrene	NE	8,700,000	500,000	30,000,000	<8.0	190	<8.0	<8.0	<8.0	<8.0

	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-6		GP-7	GP-8		GP-9	GP-10	GP-11	GP-12		GP-13
Sample Depth (feet)	6-8'	14-16'	6-8'	4-6'	6-8'	6-8'	6-8'	4-6'	4-6'	12-14'	6-8'
Sample Date	05/24/96	05/24/96	05/23/96	05/28/96	05/28/96	05/24/96	05/24/96	05/24/96	05/28/96	05/28/96	05/24/96
PAHs (µg/kg)											
1-Methylnaphthalene	<25	<25	NA	<25	<25	<25	<25	<25	490	<25	<25
2-Methylnaphthalene	1,200	<25	<25	<25	<25	<25	<25	<25	300	<25	<25
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Benzo (a) anthracene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Benzo (a) pyrene	<4.0	<4.0	NA	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzo (b) fluoranthene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Benzo (g,h,i) perylene	<4.0	<4.0	NA	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzo (k) fluoranthene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chrysene	<4.0	<4.0	NA	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Dibenzo (a,h) anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Fluorene	270	<16	<16	<16	<16	<16	<16	<16	38	<16	<16
Indeno (1,2,3-cd) pyrene	<4.0	<4.0	NA	<4.0	<4.0	<4.0	<4.0	<4.0	4.0	<4.0	<4.0
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1,600	<16	<16	<16	<16	<16	<16	<16	100	<16	<16
Pyrene	<8.0	<8.0	NA	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0

[shaded]	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-14	GP-15	GP-16	GP-17		GP-18	GP-19	GP-20	GP-21	
Sample Depth (feet)	6-8'	4-6'	4-6'	4-6'	14-16'	6-8'	6-8'	6-8'	2-4'	10-12'
Sample Date	05/24/96	05/23/96	05/23/96	05/23/96	05/23/96	05/28/96	05/23/96	05/28/96	05/28/96	05/28/96
PAHs (µg/kg)										
1-Methylnaphthalene	<25	<25	<25	3,700	<25	<25	<25	<500 M	<25	<25
2-Methylnaphthalene	<25	<25	<25	3,500	<25	<25	<25	<500 M	<25	<25
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	<8.0	<8.0	<8.0	<160 M	<8.0	<8.0	<8.0	<160 M	<8.0	<8.0
Benzo (a) anthracene	<2.0	<2.0	<2.0	<40 M	<2.0	<2.0	<2.0	<40 M	*130*	<2.0
Benzo (a) pyrene	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0
Benzo (b) fluoranthene	<2.0	<2.0	<2.0	<40 M	<2.0	<2.0	<2.0	<40 M	<2.0	<2.0
Benzo (g,h,i) perylene	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0
Benzo (k) fluoranthene	<2.0	<2.0	<2.0	<40 M	<2.0	<2.0	<2.0	<40 M	<2.0	<2.0
Chrysene	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0	<4.0	84	<4.0	<4.0
Dibenzo (a,h) anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	<8.0	<8.0	<8.0	<160 M	<8.0	<8.0	<8.0	2,400	120	<8.0
Fluorene	<16	<16	<16	<320 M	<16	<16	<16	530	<16	<16
Indeno (1,2,3-cd) pyrene	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	<16	<16	<16	1,300	<16	<16	<16	*2,900*	230	<16
Pyrene	<8.0	<8.0	<8.0	<160 M	<8.0	<8.0	<8.0	1300	82	<8.0

	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-22	GP-23	GP-24	GP-25	GP-27	GP-28	GP-30	GP-31	GP-58	GP-59
Sample Depth (feet)	6-8'	6-8'	2-4'	6-8'	6-8'	6-8'	6-8'	6-8'	0-2'	0-2'
Sample Date	05/28/96	05/29/96	05/28/96	05/29/96	05/29/96	05/29/96	05/29/96	05/29/96	10/19/05	10/19/05
PAHs (µg/kg)										
1-Methylnaphthalene	<25	<25	520	<25	68	<25	<25	<25	<36	270
2-Methylnaphthalene	<25	<25	480	<25	94	<25	<25	<25	<30	160
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	<60	<59
Anthracene	<8.0	<8.0	20	<8	68	<8.0	9.6	<8.0	<6.0	<5.9
Benzo (a) anthracene	<2.0	<2.0	*800*	*180*	*200*	<2.0	*89*	<2.0	11	<5.9
Benzo (a) pyrene	<4.0	<4.0	*170*	<4.0	*250*	<4.0	6.9	<4.0	*11*	<5.9
Benzo (b) fluoranthene	<2.0	<2.0	36	<2.0	*100*	<2.0	26	<2.0	9.1 L2	<5.9 L2
Benzo (g,h,i) perylene	<4.0	<4.0	130	<4.0	230	<4.0	64	<4.0	11	<5.9
Benzo (k) fluoranthene	<2.0	<2.0	64	<2.0	130	<2.0	14	<2.0	<6.0 L2	<5.9 L2
Chrysene	<4.0	<4.0	110	24	200	<4.0	86	<4.0	<6.0 L2	<5.9 L2
Dibenzo (a,h) anthracene	NA	NA	NA	NA	NA	NA	NA	NA	<9.0 L2	<8.9 L2
Fluoranthene	<8.0	<8.0	270	130	440	<8.0	100	<8.0	33	12
Fluorene	<16	<16	<16	150	19	<16	31	<16	<12	<12
Indeno (1,2,3-cd) pyrene	<4.0	<4.0	79	<4.0	*160*	<4.0	46	<4.0	9.5 L2	<5.9 L2
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	<36	120
Phenanthrene	<16	<16	110	67	250	<16	330	<16	18	11
Pyrene	<8.0	<8.0	210	1,100	370	<8.0	95	<8.0	62	59

	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-60	GP-61	GP-62	GP-63	GP-64	GP-65	GP-66	GP-67	GP-68	GP-69	GP-70
Sample Depth (feet)	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'
Sample Date	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/18/05	10/18/05	10/18/05	10/19/05	10/19/05
PAHs (µg/kg)											
1-Methylnaphthalene	<36	<35	290	<36	<38	<38	<36	820	<410	180	<36
2-Methylnaphthalene	<30	110	200	50	48	<31	<30	1,200	430	720	120
Acenaphthene	<60	<59	<61	<60	<64	<63	<59	<79	<680	<64	<60
Anthracene	<6.0	7.8	42	<6.0	20	<6.3	<5.9	11	<68	74	16
Benzo (a) anthracene	13	33	*220*	16	45	<6.3	<5.9	64	*400*	*640*	*110*
Benzo (a) pyrene	*9.5*	*17*	*14*	*9.3*	*37*	<6.3	<5.9	*33*	*200*	*370*	*140*
Benzo (b) fluoranthene	12 L2	20 L2	24 L2	8.7 L2	30 L2	<6.3 L2	<5.9 L2	33	*270 L2*	*360 L2*	*97 L2*
Benzo (g,h,i) perylene	14	16	19	9.2	33	<6.3	<5.9	28	110	530	140
Benzo (k) fluoranthene	6.5 L2	12 L2	8.7 L2	<6.0 L2	17 L2	<6.3 L2	<5.9	15	140	160 L2	45 L2
Chrysene	<6.0 L2	19 L2	140 L2	8.8 L2	7.9 L2	<6.3 L2	<5.9	14	250	91 L2	12
Dibenzo (a,h) anthracene	<9.0 L2	<8.8 L2	<9.2 L2	<9.0 L2	<9.6 L2	<9.4 L2	<8.9 L2	<12	<100 L2	*72 L2*	*21 L2*
Fluoranthene	30	110	590	62	110	<13	<12	270	650	950	240
Fluorene	<12	<12	120	<12	<13	<13	<12	68	<140	70	12
Indeno (1,2,3-cd) pyrene	7.9 L2	12 L2	12 L2	7.2 L2	35 L2	<6.3 L2	<5.9 L2	25	*99 L2*	*310 L2*	*100 L2*
Naphthalene	<36	<35	<37	<36	<38	<38	<36	<47	<410	49	<36
Phenanthrene	11	72	210	37	83	<6.3	<5.9	150	430	490	100
Pyrene	27	330	830	61	100	<6.3	<5.9	210	960	770	230

	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-71	GP-72	GP-73	GP-74	GP-75	GP-76	GP-77	GP-80	GP-81	GP-82
Sample Depth (feet)	2-4'	2-4'	0-2'	2-4'	2-4'	2-4'	0-2'	2-4'	2-4'	2-4'
Sample Date	10/19/05	10/19/05	10/19/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05
PAHs (µg/kg)										
1-Methylnaphthalene	<36	53	120	<35	<37	47	<170	1,300	<37	<280
2-Methylnaphthalene	<30	120	380	<29	<31	130	320	2,500	<31	420
Acenaphthene	<61	<54	<54	<58	<62	<60	<280	800	<62	<460
Anthracene	<6.1	10	33	<5.8	<6.2	13	<28	310	<6.2	<46
Benzo (a) anthracene	6.6	56	*200*	<5.8	<6.2	*91*	*120*	*870*	<6.2	*270*
Benzo (a) pyrene	<6.1	*42*	*200*	<5.8	<6.2	*64*	*84*	*71*	<6.2	*210*
Benzo (b) fluoranthene	<6.1 L2	42 L2	*150 L2*	<5.8 L2	<6.2 L2	54	86 L2	85 L2	<6.2 L2	*190 L2*
Benzo (g,h,i) perylene	<6.1	47	140	<5.8	<6.2	44	63	<58	<6.2	200
Benzo (k) fluoranthene	<6.1 L2	13 L2	82 L2	<5.8	<6.2	36	33	<58	<6.2	120
Chrysene	<6.1	11	25	<5.8	<6.2	15	73	250	<6.2	53
Dibenzo (a,h) anthracene	<9.1 L2	<8.1 L2	*26 L2*	<8.6 L2	<9.3 L2	<8.9	<41 L2	<86 L2	<9.3 L2	<69 L2
Fluoranthene	14	190	520	<12	<12	200	430	3,900	<12	540
Fluorene	<12	12	<11	<12	<12	13	<55	1,000	<12	<92
Indeno (1,2,3-cd) pyrene	<6.1 L2	33 L2	*130 L2*	<5.8 L2	<6.2 L2	40	56 L2	<58 L2	<6.2 L2	*160 L2*
Naphthalene	<36	<32	84	<35	<37	<36	<170	<350	<37	<280
Phenanthrene	7.3	88	240	<5.8	<6.2	94	270	2,400	<6.2	330
Pyrene	33	100	430	<5.8	<6.2	280	260	3,200	<6.2	570

	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-83	GP-84	GP-85	GP-86	GP-88	GP-89	GP-90	GP-91	GP-93	GP-94	GP-95
Sample Depth (feet)	2-4'	2-4'	2-4'	2-4'	0-2'	2-4'	0-2'	2-4'	2-4'	2-4'	2-4'
Sample Date	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/19/05	10/18/05	10/18/05	10/19/05	10/19/05
PAHs (µg/kg)											
1-Methylnaphthalene	<170	<47	37	100	280	70,000	6,000	<180	<35	<37	54
2-Methylnaphthalene	<140	<39	88	120	710	82,000	3,200	<150	<29	<31	49
Acenaphthene	<280	<78	<61	<64	<280	7,300	400	<290	<59	<62	<52
Anthracene	<28	<7.8	6.6	<6.4	93	7,900	260	<29	<5.9	<6.2	20
Benzo (a) anthracene	*100*	22	37	31	*460*	***13,000***	*650*	74	<5.9	<6.2	*190*
Benzo (a) pyrene	*37*	*14*	*31*	*22*	*350*	<120	*82*	*57*	<5.9	<6.2	*28*
Benzo (b) fluoranthene	56 L2	13	32	23	*330 L2*	<120 L2	63 L2	60 L2	<5.9 L2	<6.2 L2	37 L2
Benzo (g,h,i) perylene	<28	18	33	22	250	<120	40	63	<5.9	<6.2	32
Benzo (k) fluoranthene	69	<7.8	13	12	170	<120	30 L2	<29	<5.9	<6.2 L2	13 L2
Chrysene	63	9.1	<6.1	7.2	79	4,400	190	<29	<5.9	<6.2	250
Dibenzo (a,h) anthracene	<42 L2	<12	<9.2	<9.6	<42 L2	<180 L2	*10 L2*	<44 L2	<8.8 L2	<9.3 L2	<7.8 L2
Fluoranthene	240	61	140	31	1,300	110,000	3,900	170	<12	<12	330
Fluorene	<56	<16	<12	<13	160	21,000	1,200	<59	<12	<12	46
Indeno (1,2,3-cd) pyrene	<28 L2	9.7	34	21	*220 L2*	<120 L2	33 L2	44 L2	<5.9 L2	<6.2 L2	28 L2
Naphthalene	<170	<47	<37	<38	<170	2,900	370	<180	<35	<37	66
Phenanthrene	130	31	77	24	540	*50,000*	2,100	80	<5.9	<6.2	110
Pyrene	410	76	91	60	1,200	96,000	3,200	120	<5.9	<6.2	350

	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-98	GP-99	GP-100	GP-101	GP-102	GP-103	GP-104	GP-105	GP-109	GP-110
Sample Depth (feet)	2-4'	2-4'	2-4'	2-4'	0-2'	2-4'	0-2'	2-4'	0-2'	0-2'
Sample Date	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/19/05
PAHs (µg/kg)										
1-Methylnaphthalene	<37	150	<190	<38	<990	<260	430	<180	<170	150
2-Methylnaphthalene	91	310	170	<31	2,200	<220	370	<150	280	420
Acenaphthene	<62	<62	<310	<63	<1,700	<440	<310	<300	<290	<56
Anthracene	19	22	31	<6.3	720	<44	57	41	82	36
Benzo (a) anthracene	*94*	36	*620*	<6.3	*2,200*	70	*390*	*130*	*320*	*99*
Benzo (a) pyrene	*89*	*14*	<31	<6.3	***1,500***	<44	*100*	*96*	*230*	*320*
Benzo (b) fluoranthene	66	8.9	<31	<6.3	*1,300*	49	80	70	*230*	*320 L2*
Benzo (g,h,i) perylene	70	<6.2	<31	<6.3	1,100	<44	80	72	160	270
Benzo (k) fluoranthene	38	<6.2	<31	<6.3	860	<44	33	43	140	180 L2
Chrysene	200	36	670	<6.3	4,600	120	84	110	290	52
Dibenzo (a,h) anthracene	*12*	<9.3	<46	<9.4	<250	<65	<46	<45	**44**	*51 L2*
Fluoranthene	190	210	530	<13	5,100	180	1,200	320	680	610
Fluorene	<12	28	<62	<13	430	<87	200	<61	<57	31
Indeno (1,2,3-cd) pyrene	64	<6.2	<31	<6.3	*920*	44	67	62	**150**	*270 L2*
Naphthalene	<37	73	<190	<38	<990	<260	<180	<180	<170	82
Phenanthrene	97	150	130	<6.3	2,800	97	420	200	360	230
Pyrene	190	95	390	<6.3	5,000	200	1,200	330	610	580

	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-111	GP-112	GP-113	GP-114	GP-115	GP-116	GP-117	GP-118	GP-119	GP-120	GP-121
Sample Depth (feet)	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	0-2'	0-2'
Sample Date	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	11/10/06	11/10/06
PAHs (µg/kg)											
1-Methylnaphthalene	<35	<31	<32	<37	<37	<36	<35	<35	<32	360	<150
2-Methylnaphthalene	<29	<26	<27	<31	50	<30	<29	<29	<26	870	250
Acenaphthene	<58	<52	<53	<61	<61	<61	<58	<58	<53	<380	<240
Anthracene	<5.8	<5.2	<5.3	<6.1	10	<6.1	<5.8	<5.8	<5.3	150	67
Benzo (a) anthracene	<5.8	<5.2	<5.3	<6.1	36	<6.1	<5.8	<5.8	14	*1,000*	*330*
Benzo (a) pyrene	<5.8	<5.2	<5.3	<6.1	*26*	<6.1	<5.8	<5.8	*13*	***760***	*360*
Benzo (b) fluoranthene	<5.8 L2	<5.2 L2	<5.3 L2	<6.1 L2	20 L2	<6.1 L2	<5.8 L2	<5.8 L2	14 L2	*460*	*260*
Benzo (g,h,i) perylene	<5.8	<5.2	<5.3	<6.1	20	<6.1	<5.8	<5.8	13	450	250
Benzo (k) fluoranthene	<5.8 L2	<5.2 L2	<5.3 L2	<6.1 L2	12 L2	<6.1 L2	<5.8 L2	<5.8 L2	11 L2	350	180
Chrysene	<5.8	<5.2	<5.3	<6.1	43	<6.1	<5.8	<5.8	<5.3	530	280
Dibenzo (a,h) anthracene	<8.7 L2	<7.9 L2	<8.0 L2	<9.2 L2	<9.1 L2	<9.1 L2	<8.6 L2	<8.7 L2	<7.9 L2	*83*	*43*
Fluoranthene	<12	<10	<11	<12	89	<12	<12	<12	32	1,300	690
Fluorene	<12	<10	<11	<12	<12	<12	<12	<12	<11	160	<49
Indeno (1,2,3-cd) pyrene	<5.8 L2	<5.2 L2	<5.3 L2	<6.1 L2	17 L2	<6.1 L2	<5.8 L2	<5.8 L2	9.5 L2	*490*	*250*
Naphthalene	<35	<31	<32	<37	<37	<36	<35	<35	<32	<230	<150
Phenanthrene	<5.8	<5.2	<5.3	<6.1	47	<6.1	<5.8	<5.8	14	850	370
Pyrene	<5.8	<5.2	<5.3	<6.1	76	<6.1	<5.8	<5.8	28	620	500

	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-122	GP-123	GP-124	GP-125	GP-126	GP-127	GP-128	GP-129	GP-130	GP-131	GP-132
Sample Depth (feet)	0-2'	0-2'	2-4'	0-2'	0-2'	0-2'	0-2'	2-4'	0-2'	0-2'	2-4'
Sample Date	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06
PAHs (µg/kg)											
1-Methylnaphthalene	<610	<1,900	<210	<950	<140	<280	<210	<37	<93	<210	<320
2-Methylnaphthalene	570	<1,600	<170	<790	<110	<240	<170	<31	<78	<180	<270
Acenaphthene	<1,000	<3,200	<350	<1,600	<230	<470	<340	<62	<160	<350	<540
Anthracene	220	320	320	<160	92	240	290	<6.2	<16	<35	140
Benzo (a) anthracene	*630*	*900*	*550*	<160	*280*	*820*	*1,100*	11	45	<35	*500*
Benzo (a) pyrene	***620***	***800***	*380*	<160	*280*	***1,000***	***1,200***	*9.4*	*42*	*47*	***400***
Benzo (b) fluoranthene	*500*	*590*	*250*	<160	*200*	*730*	*950*	6.4	53	67	*340*
Benzo (g,h,i) perylene	470	540	280	290	180	670	770	<6.2	49	<35	350
Benzo (k) fluoranthene	370	450	210	220	160	440	600	<6.2	27	60	290
Chrysene	560	820	370	<160	230	700	870	8.7	43	44	390
Dibenzo (a,h) anthracene	<150	<480	*57*	<240	*39*	*110*	*130*	<9.2	<23	<53	*110*
Fluoranthene	1,300	2,100	1,000	<320	470	1800	1800	34	120	<70	750
Fluorene	<200	<640	<69	<320	<46	<95	<68	<12	<31	<70	<110
Indeno (1,2,3-cd) pyrene	*410*	*480*	*210*	<160	*160*	*690*	*710*	<6.2	29	<35	*330*
Naphthalene	<610	<1,900	<210	<950	<140	<280	<210	<37	<93	<210	<320
Phenanthrene	700	900	670	160	290	830	1,400	30	68	38	530
Pyrene	860	1,500	940	<160	510	1,800	2,000	15	71	<35	850

	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-133	GP-134	GP-135	GP-137	GP-138	GP-139	GP-140	GP-141	GP-143	GP-145	GP-152
Sample Depth (feet)	2-4'	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'	2-4'	2-4'
Sample Date	11/10/06	11/10/06	11/10/06	11/10/06	11/13/06	11/10/06	11/10/06	11/10/06	11/13/06	11/13/06	11/13/06
PAHs (µg/kg)											
1-Methylnaphthalene	<480	<460	<610	<280	<38	2,000	<320	<400	<980	<180	<36
2-Methylnaphthalene	<400	<380	<510	540	<32	7,200	<270	<330	1,200	420	<30
Acenaphthene	<790	<760	<1,000	<470	<63	1,300	<530	<660	<1,600	<300	<61
Anthracene	<79	<76	250	320	<6.3	640	87	690	380	250	<6.1
Benzo (a) anthracene	<79	*400*	*950*	*1,100*	<6.3	*430*	*270*	*1,900*	*1,500*	*900*	8.6
Benzo (a) pyrene	<79	*240*	***540***	***1,400***	<6.3	*200*	*240*	***1,900***	***790***	***650***	<6.1
Benzo (b) fluoranthene	<79	*250*	*850*	*750*	<6.3	*210*	*210*	*1,200*	*590*	*410*	<6.1
Benzo (g,h,i) perylene	<79	210	<100	860	7.0	<57	210	1,200	530	470	<6.1
Benzo (k) fluoranthene	<79	97	320	660	<6.3	210	<53	*1,100*	440	360	<6.1
Chrysene	<79	220	500	820	<6.3	230	210	1,500	880	650	6.2
Dibenzo (a,h) anthracene	<120	<110	<150	***180***	<9.5	<86	<80	*220*	<240	*90*	<9.1
Fluoranthene	<160	380	1,400	2,000	19	1,100	540	3,600	2,300	1,900	17
Fluorene	<160	<150	<200	120	<13	970	<110	<130	<330	170	<12
Indeno (1,2,3-cd) pyrene	<79	<76	*340*	***1,000***	<6.3	*180*	*190*	*1,300*	*510*	*480*	<6.1
Naphthalene	<480	<460	<610	<280	<38	1,500	<320	<400	<980	<180	<36
Phenanthrene	<79	250	300	1,100	11	2,200	340	3,000	1,700	1,400	15
Pyrene	<79	93	780	1,700	9.3	900	380	3,600	1,800	1,600	13

[redacted]	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-153	GP-154	GP-155	GP-156	GP-157	GP-158	GP-159	GP-160	GP-162	GP-163	GP-164
Sample Depth (feet)	2-4'	0-2'	2-4'	2-4'	0-2'	0-2'	0-2'	2-4'	2-4'	0-2'	2-4'
Sample Date	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	01/10/07	01/10/07	01/10/07
PAHs (µg/kg)											
1-Methylnaphthalene	<91	<37	<37	8,500	6,800	310	110	300	<48	<790	<290
2-Methylnaphthalene	490	<31	<31	5,900	7,900	520	130	450	<40	<660	260
Acenaphthene	<150	<61	<62	580	530	<110	<140	<320	<79	<1,300	<490
Anthracene	180	130	<6.2	870	900	57	<14	<32	<7.9	<130	55
Benzo (a) anthracene	*440*	*310*	9.9	*1,000*	*1,300*	*120*	<14	63	<7.9	<130	*280*
Benzo (a) pyrene	*340*	*290*	8.1	<13	<27	*29*	<14	<32	<7.9	<130	*350*
Benzo (b) fluoranthene	*250*	*190*	7.0	<13	77	19	<14	<32	<7.9	<130	*240*
Benzo (g,h,i) perylene	190	160	<6.2	<13	<27	13	<14	<32	<7.9	<130	380
Benzo (k) fluoranthene	190	140	6.8	<13	<27	<11	<14	<32	<7.9	<130	170
Chrysene	380	280	8.1	130	270	46	<14	<32	<7.9	<130	250
Dibenzo (a,h) anthracene	*39*	*33*	<9.2	<20	<40	<16	<21	<48	<12	<200	<73
Fluoranthene	1,200	440	19	5,400	4,000	430	51	250	<16	<260	440
Fluorene	130	<12	<12	2,100	1,700	110	<29	70	<16	<260	<98
Indeno (1,2,3-cd) pyrene	*210*	*180*	6.2	<13	<27	28	<14	<32	<7.9	<130	**280**
Naphthalene	130	<37	<37	660	670	75	<86	<190	<48	<790	<290
Phenanthrene	920	46	11	4,300	3,300	330	37	140	<7.9	<130	260
Pyrene	810	590	15	4,500	4,200	770	25	220	<7.9	<130	330

	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-165	GP-166	GP-167	GP-168	GP-169	GP-170	GP-171	GP-172	GP-173	GP-177
Sample Depth (feet)	0-2'	2-4'	0-2'	2-4'	2-4'	0-2'	2-4'	0-2'	0-2'	0-2'
Sample Date	01/10/07	01/09/07	01/10/07	01/10/07	01/09/07	01/09/07	01/09/07	01/09/07	01/09/07	01/09/07
PAHs (µg/kg)										
1-Methylnaphthalene	<240	<340	<290	<60	<120	960	200	<420	<1,000	<130
2-Methylnaphthalene	430	340	640	76	330	4,600	860	1,100	1,800	<110
Acenaphthene	<390	<570	<490	<100	<200	1,100	220	<700	<1,700	<220
Anthracene	100	120	230	12	54	1,900	290	430	450	52
Benzo (a) anthracene	*390*	*410*	*790*	39	*190*	***5,500***	*890*	*1,800*	*1,300*	*160*
Benzo (a) pyrene	*310*	*340*	***720***	*28*	*110*	***3,400***	***590***	***1,200***	***1,000***	*120*
Benzo (b) fluoranthene	*240*	*250*	*580*	20	83	*2,600*	*380*	*980*	*760*	*89*
Benzo (g,h,i) perylene	260	270	430	27	110	*2,300*	440	790	830	100
Benzo (k) fluoranthene	160	180	360	13	48	*1,600*	310	640	550	65
Chrysene	410	330	640	29	120	3,600	570	1,300	930	130
Dibenzo (a,h) anthracene	<59	<86	*75*	<15	<30	***450***	*86*	*140*	<250	<32
Fluoranthene	740	930	1,700	66	380	11,000	1,500	5,200	2,700	330
Fluorene	<79	<110	<98	<20	39	860	110	<140	390	<43
Indeno (1,2,3-cd) pyrene	*220*	*230*	*430*	<10	*110*	*1,900*	*360*	*640*	*690*	78
Naphthalene	<240	<340	<290	<60	<120	<270	320	<420	<1,000	<130
Phenanthrene	470	490	820	66	280	7,700	1,100	900	1,800	210
Pyrene	550	630	1,400	40	230	6,400	1,400	3,800	1,900	250

	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil P. Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	Sample Name	GP-183	GP-187	GP-189	GP-199	GP-200		GP-201	GP-202
Sample Depth (feet)	Sample Depth (feet)	2-4'	2-4'	4-6'	4-6'	0-2'	0-2'	0-2'	2-4'
Sample Date	Sample Date	01/09/07	01/10/07	01/10/07	01/10/07	01/10/07	11/08/07	11/08/07	11/08/07
PAHs (µg/kg)	PAHs (µg/kg)								
1-Methylnaphthalene	1-Methylnaphthalene	<290	<35	<290	<280	<1,200	<2,100	<390	27,000
2-Methylnaphthalene	2-Methylnaphthalene	<240	<29	<240	<230	2,200	<1,800	<330	170,000
Acenaphthene	Acenaphthene	<480	<58	<480	<460	<2,000	<3,500	<650	43,000
Anthracene	Anthracene	58	<5.8	<48	<46	650	2,000	75	61,000
Benzo (a) anthracene	Benzo (a) anthracene	*230*	6.1	*120*	61	*2,600*	***6,100***	*280*	***240,000***
Benzo (a) pyrene	Benzo (a) pyrene	*150*	<5.8	*88*	*55*	***2,100***	***5,200***	*260*	***190,000***
Benzo (b) fluoranthene	Benzo (b) fluoranthene	*110*	<5.8	74	49	*1,700*	*3,800*	*150*	***110,000***
Benzo (g,h,i) perylene	Benzo (g,h,i) perylene	120	<5.8	92	47	1,600	*3,100*	170	***95,000***
Benzo (k) fluoranthene	Benzo (k) fluoranthene	77	<5.8	<48	<46	320	*2,200*	110	***73,000***
Chrysene	Chrysene	130	<5.8	83	50	2,000	4,900	210	*160,000*
Dibenzo (a,h) anthracene	Dibenzo (a,h) anthracene	<71	<8.7	<73	<70	***340***	<530	<98	***17,000***
Fluoranthene	Fluoranthene	410	12	270	130	6,900	15,000	630	370,000
Fluorene	Fluorene	<95	<12	<97	<93	<400	1,000	<130	21,000
Indeno (1,2,3-cd) pyrene	Indeno (1,2,3-cd) pyrene	*99*	<5.8	81	<46	*1,400*	*3,200*	*140*	***100,000***
Naphthalene	Naphthalene	<290	<35	<290	<280	<1,200	<2,100	<390	13,000
Phenanthrene	Phenanthrene	220	9.3	140	57	2,100	9,500	300	*210,000*
Pyrene	Pyrene	270	<5.8	170	86	3,600	9,500	650	380,000

	Concentration exceeds the NR		Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exc	**Bold**	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exc	*Italic*	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exc	Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected b	<	Analyte detected below laboratory detection limits.
E	Concentration exc	E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control	L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference	M	Matrix interference.
NA	Not analyzed.	NA	Not analyzed.
NE	Not established.	NE	Not established.
PAH	Polycyclic aromati	PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contamin	RCL	Residual contaminant level.
µg/kg	Micrograms per kil	µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Departr	WDNR	Wisconsin Department of Natural Resources.

Table 2. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-203			GP-204	GP-206	GP-208	GP-210	GP-212	GP-213
Sample Depth (feet)	3-5'	6-8'	10-12'	2-4'	2-4'	2-4'	0-2'	0-2'	2-4'
Sample Date	11/08/07	11/09/07	11/08/07	01/10/07	01/09/07	01/09/07	01/09/07	01/10/07	01/10/07
PAHs (µg/kg)									
1-Methylnaphthalene	<86	<36	<36	<2,500	<37	<57	<960	<470	<36
2-Methylnaphthalene	<72	<30	<30	2,200	<31	220	1,900	<390	<30
Acenaphthene	<140	<61	<60	<4,200	<62	<95	<1,600	<780	<60
Anthracene	<14	<6.1	<6	1,500	<6.2	210	740	99	<6.0
Benzo (a) anthracene	33	<6.1	<6	*2,000*	<6.2	*560*	*2,700*	*380*	<6.0
Benzo (a) pyrene	*26*	<6.1	<6	***1,500***	<6.2	***400***	***2,300***	*360*	<6.0
Benzo (b) fluoranthene	18	<6.1	<6	*1,200*	<6.2	*270*	*1,600*	*270*	<6.0
Benzo (g,h,i) perylene	23	<6.1	<6	1,300	<6.2	300	1,700	290	<6.0
Benzo (k) fluoranthene	<14	<6.1	<6	870	<6.2	210	*1,100*	82	<6.0
Chrysene	18	<6.1	<6	1,800	<6.2	370	1,700	280	<6.0
Dibenzo (a,h) anthracene	<21	<9.1	<9	<620	<9.2	*56*	*290*	<120	<9.0
Fluoranthene	92	<12	<12	5,300	<12	1,100	4,600	660	<12
Fluorene	<29	<12	<12	<830	<12	42	<320	<160	<12
Indeno (1,2,3-cd) pyrene	20	<6.1	<6	*970*	<6.2	*250*	*1,800*	*270*	<6.0
Naphthalene	<86	<36	<36	<2,500	<37	<57	<960	<470	<36
Phenanthrene	69	<6.1	7.4	4,400	<6.2	720	2,600	450	<6.0
Pyrene	34	<6.1	11	3,500	<6.2	1,000	4,400	820	<6.0

[redacted]	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	NR 720	Proposed	Proposed	Proposed	GP-1	GP-2	GP-3	GP-4	GP-5	
Sample Depth (feet)	Table 1	Groundwater	Non-Industrial	Industrial	4-6'	6-8'	6-8'	6-8'	6-8'	12-14'
Sample Date	RCL	Protection	Direct Contact	Direct Contact	05/23/96	05/23/96	05/23/96	05/23/96	05/24/96	05/24/96
PAHs (µg/kg)										
1-Methylnaphthalene	NE	23,000	1,100,000	70,000,000	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	NE	20,000	600,000	40,000,000	<25	<25	<25	<25	<25	<25
Acenaphthene	NE	38,000	900,000	60,000,000	NA	NA	NA	NA	NA	NA
Anthracene	NE	3,000,000	5,000,000	300,000,000	<8.0	33	<8.0	<8.0	<8.0	<8.0
Benzo (a) anthracene	NE	17,000	88	3,900	<2.0	*120*	<2.0	<2.0	<2.0	<2.0
Benzo (a) pyrene	NE	48,000	8.8	390	<4.0	*110*	<4.0	<4.0	<4.0	<4.0
Benzo (b) fluoranthene	NE	360,000	88	3,900	<2.0	41	<2.0	<2.0	<2.0	<2.0
Benzo (g,h,i) perylene	NE	6,800,000	1,800	39,000	<4.0	110	<4.0	<4.0	<4.0	<4.0
Benzo (k) fluoranthene	NE	870,000	880	39,000	<2.0	65	<2.0	<2.0	<2.0	<2.0
Chrysene	NE	37,000	8,800	390,000	<4.0	98	<4.0	<4.0	<4.0	<4.0
Dibenzo (a,h) anthracene	NE	38,000	8.8	390	NA	NA	NA	NA	NA	NA
Fluoranthene	NE	500,000	600,000	40,000,000	<8.0	230	<8.0	<8.0	<8.0	<8.0
Fluorene	NE	100,000	600,000	40,000,000	<16	<16	<16	<16	<16	<16
Indeno (1,2,3-cd) pyrene	NE	680,000	88	3,900	<4.0	60	<4.0	<4.0	<4.0	<4.0
Naphthalene	2,700	400	20,000	110,000	NA	NA	NA	NA	NA	NA
Phenanthrene	NE	1,800	18,000	390,000	<16	230	<16	<16	<16	<16
Pyrene	NE	8,700,000	500,000	30,000,000	<8.0	190	<8.0	<8.0	<8.0	<8.0

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-6		GP-7	GP-8		GP-9	GP-10	GP-11	GP-12		GP-13
Sample Depth (feet)	6-8'	14-16'	6-8'	4-6'	6-8'	6-8'	6-8'	4-6'	4-6'	12-14'	6-8'
Sample Date	05/24/96	05/24/96	05/23/96	05/28/96	05/28/96	05/24/96	05/24/96	05/24/96	05/28/96	05/28/96	05/24/96
PAHs (µg/kg)											
1-Methylnaphthalene	<25	<25	NA	<25	<25	<25	<25	<25	490	<25	<25
2-Methylnaphthalene	1,200	<25	<25	<25	<25	<25	<25	<25	300	<25	<25
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Benzo (a) anthracene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Benzo (a) pyrene	<4.0	<4.0	NA	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzo (b) fluoranthene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Benzo (g,h,i) perylene	<4.0	<4.0	NA	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzo (k) fluoranthene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chrysene	<4.0	<4.0	NA	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Dibenzo (a,h) anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Fluorene	270	<16	<16	<16	<16	<16	<16	<16	38	<16	<16
Indeno (1,2,3-cd) pyrene	<4.0	<4.0	NA	<4.0	<4.0	<4.0	<4.0	<4.0	4.0	<4.0	<4.0
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1,600	<16	<16	<16	<16	<16	<16	<16	100	<16	<16
Pyrene	<8.0	<8.0	NA	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-14	GP-15	GP-16	GP-17		GP-18	GP-19	GP-20	GP-21	
Sample Depth (feet)	6-8'	4-6'	4-6'	4-6'	14-16'	6-8'	6-8'	6-8'	2-4'	10-12'
Sample Date	05/24/96	05/23/96	05/23/96	05/23/96	05/23/96	05/28/96	05/23/96	05/28/96	05/28/96	05/28/96
PAHs (µg/kg)										
1-Methylnaphthalene	<25	<25	<25	3,700	<25	<25	<25	<500 M	<25	<25
2-Methylnaphthalene	<25	<25	<25	3,500	<25	<25	<25	<500 M	<25	<25
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	<8.0	<8.0	<8.0	<160 M	<8.0	<8.0	<8.0	<160 M	<8.0	<8.0
Benzo (a) anthracene	<2.0	<2.0	<2.0	<40 M	<2.0	<2.0	<2.0	<40 M	*130*	<2.0
Benzo (a) pyrene	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0
Benzo (b) fluoranthene	<2.0	<2.0	<2.0	<40 M	<2.0	<2.0	<2.0	<40 M	<2.0	<2.0
Benzo (g,h,i) perylene	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0
Benzo (k) fluoranthene	<2.0	<2.0	<2.0	<40 M	<2.0	<2.0	<2.0	<40 M	<2.0	<2.0
Chrysene	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0	<4.0	84	<4.0	<4.0
Dibenzo (a,h) anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	<8.0	<8.0	<8.0	<160 M	<8.0	<8.0	<8.0	2,400	120	<8.0
Fluorene	<16	<16	<16	<320 M	<16	<16	<16	530	<16	<16
Indeno (1,2,3-cd) pyrene	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0	<4.0	<80 M	<4.0	<4.0
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	<16	<16	<16	1,300	<16	<16	<16	*2,900*	230	<16
Pyrene	<8.0	<8.0	<8.0	<160 M	<8.0	<8.0	<8.0	1300	82	<8.0

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-22	GP-23	GP-24	GP-25	GP-27	GP-28	GP-30	GP-31	GP-58	GP-59
Sample Depth (feet)	6-8'	6-8'	2-4'	6-8'	6-8'	6-8'	6-8'	6-8'	0-2'	0-2'
Sample Date	05/28/96	05/29/96	05/28/96	05/29/96	05/29/96	05/29/96	05/29/96	05/29/96	10/19/05	10/19/05
PAHs (µg/kg)										
1-Methylnaphthalene	<25	<25	520	<25	68	<25	<25	<25	<36	270
2-Methylnaphthalene	<25	<25	480	<25	94	<25	<25	<25	<30	160
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	<60	<59
Anthracene	<8.0	<8.0	20	<8	68	<8.0	9.6	<8.0	<6.0	<5.9
Benzo (a) anthracene	<2.0	<2.0	*800*	*180*	*200*	<2.0	*89*	<2.0	11	<5.9
Benzo (a) pyrene	<4.0	<4.0	*170*	<4.0	*250*	<4.0	6.9	<4.0	*11*	<5.9
Benzo (b) fluoranthene	<2.0	<2.0	36	<2.0	*100*	<2.0	26	<2.0	9.1 L2	<5.9 L2
Benzo (g,h,i) perylene	<4.0	<4.0	130	<4.0	230	<4.0	64	<4.0	11	<5.9
Benzo (k) fluoranthene	<2.0	<2.0	64	<2.0	130	<2.0	14	<2.0	<6.0 L2	<5.9 L2
Chrysene	<4.0	<4.0	110	24	200	<4.0	86	<4.0	<6.0 L2	<5.9 L2
Dibenzo (a,h) anthracene	NA	NA	NA	NA	NA	NA	NA	NA	<9.0 L2	<8.9 L2
Fluoranthene	<8.0	<8.0	270	130	440	<8.0	100	<8.0	33	12
Fluorene	<16	<16	<16	150	19	<16	31	<16	<12	<12
Indeno (1,2,3-cd) pyrene	<4.0	<4.0	79	<4.0	*160*	<4.0	46	<4.0	9.5 L2	<5.9 L2
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	<36	120
Phenanthrene	<16	<16	110	67	250	<16	330	<16	18	11
Pyrene	<8.0	<8.0	210	1,100	370	<8.0	95	<8.0	62	59

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-60	GP-61	GP-62	GP-63	GP-64	GP-65	GP-66	GP-67	GP-68	GP-69	GP-70
Sample Depth (feet)	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'
Sample Date	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/18/05	10/18/05	10/18/05	10/19/05	10/19/05
PAHs (µg/kg)											
1-Methylnaphthalene	<36	<35	290	<36	<38	<38	<36	820	<410	180	<36
2-Methylnaphthalene	<30	110	200	50	48	<31	<30	1,200	430	720	120
Acenaphthene	<60	<59	<61	<60	<64	<63	<59	<79	<680	<64	<60
Anthracene	<6.0	7.8	42	<6.0	20	<6.3	<5.9	11	<68	74	16
Benzo (a) anthracene	13	33	*220*	16	45	<6.3	<5.9	64	*400*	*640*	*110*
Benzo (a) pyrene	*9.5*	*17*	*14*	*9.3*	*37*	<6.3	<5.9	*33*	*200*	*370*	*140*
Benzo (b) fluoranthene	12 L2	20 L2	24 L2	8.7 L2	30 L2	<6.3 L2	<5.9 L2	33	*270 L2*	*360 L2*	*97 L2*
Benzo (g,h,i) perylene	14	16	19	9.2	33	<6.3	<5.9	28	110	530	140
Benzo (k) fluoranthene	6.5 L2	12 L2	8.7 L2	<6.0 L2	17 L2	<6.3 L2	<5.9	15	140	160 L2	45 L2
Chrysene	<6.0 L2	19 L2	140 L2	8.8 L2	7.9 L2	<6.3 L2	<5.9	14	250	91 L2	12
Dibenzo (a,h) anthracene	<9.0 L2	<8.8 L2	<9.2 L2	<9.0 L2	<9.6 L2	<9.4 L2	<8.9 L2	<12	<100 L2	*72 L2*	*21 L2*
Fluoranthene	30	110	590	62	110	<13	<12	270	650	950	240
Fluorene	<12	<12	120	<12	<13	<13	<12	68	<140	70	12
Indeno (1,2,3-cd) pyrene	7.9 L2	12 L2	12 L2	7.2 L2	35 L2	<6.3 L2	<5.9 L2	25	*99 L2*	*310 L2*	*100 L2*
Naphthalene	<36	<35	<37	<36	<38	<38	<36	<47	<410	49	<36
Phenanthrene	11	72	210	37	83	<6.3	<5.9	150	430	490	100
Pyrene	27	330	830	61	100	<6.3	<5.9	210	960	770	230

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-71	GP-72	GP-73	GP-74	GP-75	GP-76	GP-77	GP-80	GP-81	GP-82
Sample Depth (feet)	2-4'	2-4'	0-2'	2-4'	2-4'	2-4'	0-2'	2-4'	2-4'	2-4'
Sample Date	10/19/05	10/19/05	10/19/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05
PAHs (µg/kg)										
1-Methylnaphthalene	<36	53	120	<35	<37	47	<170	1,300	<37	<280
2-Methylnaphthalene	<30	120	380	<29	<31	130	320	2,500	<31	420
Acenaphthene	<61	<54	<54	<58	<62	<60	<280	800	<62	<460
Anthracene	<6.1	10	33	<5.8	<6.2	13	<28	310	<6.2	<46
Benzo (a) anthracene	6.6	56	*200*	<5.8	<6.2	*91*	*120*	*870*	<6.2	*270*
Benzo (a) pyrene	<6.1	*42*	*200*	<5.8	<6.2	*64*	*84*	*71*	<6.2	*210*
Benzo (b) fluoranthene	<6.1 L2	42 L2	*150 L2*	<5.8 L2	<6.2 L2	54	86 L2	85 L2	<6.2 L2	*190 L2*
Benzo (g,h,i) perylene	<6.1	47	140	<5.8	<6.2	44	63	<58	<6.2	200
Benzo (k) fluoranthene	<6.1 L2	13 L2	82 L2	<5.8	<6.2	36	33	<58	<6.2	120
Chrysene	<6.1	11	25	<5.8	<6.2	15	73	250	<6.2	53
Dibenzo (a,h) anthracene	<9.1 L2	<8.1 L2	*26 L2*	<8.6 L2	<9.3 L2	<8.9	<41 L2	<86 L2	<9.3 L2	<69 L2
Fluoranthene	14	190	520	<12	<12	200	430	3,900	<12	540
Fluorene	<12	12	<11	<12	<12	13	<55	1,000	<12	<92
Indeno (1,2,3-cd) pyrene	<6.1 L2	33 L2	*130 L2*	<5.8 L2	<6.2 L2	40	56 L2	<58 L2	<6.2 L2	*160 L2*
Naphthalene	<36	<32	84	<35	<37	<36	<170	<350	<37	<280
Phenanthrene	7.3	88	240	<5.8	<6.2	94	270	2,400	<6.2	330
Pyrene	33	100	430	<5.8	<6.2	280	260	3,200	<6.2	570

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-83	GP-84	GP-85	GP-86	GP-88	GP-89	GP-90	GP-91	GP-93	GP-94	GP-95
Sample Depth (feet)	**2-4'**	**2-4'**	**2-4'**	**2-4'**	**0-2'**	**2-4'**	**0-2'**	**2-4'**	**2-4'**	**2-4'**	**2-4'**
Sample Date	**10/18/05**	**10/18/05**	**10/18/05**	**10/18/05**	**10/18/05**	**10/18/05**	**10/19/05**	**10/18/05**	**10/18/05**	**10/19/05**	**10/19/05**
PAHs (µg/kg)											
1-Methylnaphthalene	<170	<47	37	100	280	70,000	6,000	<180	<35	<37	54
2-Methylnaphthalene	<140	<39	88	120	710	82,000	3,200	<150	<29	<31	49
Acenaphthene	<280	<78	<61	<64	<280	7,300	400	<290	<59	<62	<52
Anthracene	<28	<7.8	6.6	<6.4	93	7,900	260	<29	<5.9	<6.2	20
Benzo (a) anthracene	*100*	22	37	31	*460*	***13,000***	*650*	74	<5.9	<6.2	*190*
Benzo (a) pyrene	*37*	*14*	*31*	*22*	*350*	<120	*82*	*57*	<5.9	<6.2	*28*
Benzo (b) fluoranthene	56 L2	13	32	23	*330 L2*	<120 L2	63 L2	60 L2	<5.9 L2	<6.2 L2	37 L2
Benzo (g,h,i) perylene	<28	18	33	22	250	<120	40	63	<5.9	<6.2	32
Benzo (k) fluoranthene	69	<7.8	13	12	170	<120	30 L2	<29	<5.9	<6.2 L2	13 L2
Chrysene	63	9.1	<6.1	7.2	79	4,400	190	<29	<5.9	<6.2	250
Dibenzo (a,h) anthracene	<42 L2	<12	<9.2	<9.6	<42 L2	<180 L2	*10 L2*	<44 L2	<8.8 L2	<9.3 L2	<7.8 L2
Fluoranthene	240	61	140	31	1,300	110,000	3,900	170	<12	<12	330
Fluorene	<56	<16	<12	<13	160	21,000	1,200	<59	<12	<12	46
Indeno (1,2,3-cd) pyrene	<28 L2	9.7	34	21	*220 L2*	<120 L2	33 L2	44 L2	<5.9 L2	<6.2 L2	28 L2
Naphthalene	<170	<47	<37	<38	<170	2,900*	370	<180	<35	<37	66
Phenanthrene	130	31	77	24	540	*50,000*	2,100	80	<5.9	<6.2	110
Pyrene	410	76	91	60	1,200	96,000	3,200	120	<5.9	<6.2	350

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-96	GP-97	GP-98	GP-99	GP-100	GP-101	GP-102	GP-103	GP-104	GP-105
Sample Depth (feet)	2-4'	0-2'	2-4'	2-4'	2-4'	2-4'	0-2'	2-4'	0-2'	2-4'
Sample Date	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05
PAHs (µg/kg)										
1-Methylnaphthalene	59,000	710	<37	150	<190	<38	<990	<260	430	<180
2-Methylnaphthalene	480,000	3,500	91	310	170	<31	2,200	<220	370	<150
Acenaphthene	99,000	1,000	<62	<62	<310	<63	<1,700	<440	<310	<300
Anthracene	280,000	360	19	22	31	<6.3	720	<44	57	41
Benzo (a) anthracene	***280,000***	***4,200***	*94*	36	*620*	<6.3	*2,200*	70	*390*	*130*
Benzo (a) pyrene	***250,000***	***7,100***	*89*	*14*	<31	<6.3	***1,500***	<44	*100*	*96*
Benzo (b) fluoranthene	***130,000***	***6,100***	66	8.9	<31	<6.3	*1,300*	49	80	70
Benzo (g,h,i) perylene	***110,000***	*5,600*	70	<6.2	<31	<6.3	1,100	<44	80	72
Benzo (k) fluoranthene	***92,000***	*3,100*	38	<6.2	<31	<6.3	860	<44	33	43
Chrysene	*260,000*	3,500	200	36	670	<6.3	4,600	120	84	110
Dibenzo (a,h) anthracene	***21,000***	***940***	*12*	<9.3	<46	<9.4	<250	<65	<46	<45
Fluoranthene	*1,000,000*	3,700	190	210	530	<13	5,100	180	1,200	320
Fluorene	140,000	210	<12	28	<62	<13	430	<87	200	<61
Indeno (1,2,3-cd) pyrene	***110,000***	***5,000***	64	<6.2	<31	<6.3	*920*	44	67	62
Naphthalene	***130,000****	<290	<37	73	<190	<38	<990	<260	<180	<180
Phenanthrene	***1,000,000***	1,400	97	150	130	<6.3	2,800	97	420	200
Pyrene	*910,000*	4,000	190	95	390	<6.3	5,000	200	1,200	330

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-106	GP-107	GP-108	GP-109	GP-110	GP-111	GP-112	GP-113	GP-114	GP-115	GP-116
Sample Depth (feet)	2-4'	2-4'	0-2'	0-2'	0-2'	2-4'	2-4'	2-4'	2-4'	2-4'	2-4'
Sample Date	10/20/05	10/20/05	10/20/05	10/20/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05
PAHs (µg/kg)											
1-Methylnaphthalene	<330	2,600	2,600	<170	150	<35	<31	<32	<37	<37	<36
2-Methylnaphthalene	2,500	16,000	16,000	280	420	<29	<26	<27	<31	50	<30
Acenaphthene	<560	2,100	1,600	<290	<56	<58	<52	<53	<61	<61	<61
Anthracene	890	7,000	6,500	82	36	<5.8	<5.2	<5.3	<6.1	10	<6.1
Benzo (a) anthracene	***4,300***	***16,000***	***17,000***	*320*	*99*	<5.8	<5.2	<5.3	<6.1	36	<6.1
Benzo (a) pyrene	***3,100***	***11,000***	***11,000***	*230*	*320*	<5.8	<5.2	<5.3	<6.1	*26*	<6.1
Benzo (b) fluoranthene	*2,300*	***7,300***	***8,100***	*230*	*320 L2*	<5.8 L2	<5.2 L2	<5.3 L2	<6.1 L2	20 L2	<6.1 L2
Benzo (g,h,i) perylene	*2,000*	*6,100*	*6,300*	160	270	<5.8	<5.2	<5.3	<6.1	20	<6.1
Benzo (k) fluoranthene	*1,500*	*5,300*	*5,500*	140	180 L2	<5.8 L2	<5.2 L2	<5.3 L2	<6.1 L2	12 L2	<6.1 L2
Chrysene	3,000	*12,000*	*12,000*	290	52	<5.8	<5.2	<5.3	<6.1	43	<6.1
Dibenzo (a,h) anthracene	***460***	***1,300***	***1,400***	**44**	*51 L2*	<8.7 L2	<7.9 L2	<8.0 L2	<9.2 L2	<9.1 L2	<9.1 L2
Fluoranthene	8,300	38,000	40,000	680	610	<12	<10	<11	<12	89	<12
Fluorene	550	3,600	3,400	<57	31	<12	<10	<11	<12	<12	<12
Indeno (1,2,3-cd) pyrene	*1,800*	***5,900***	***5,800***	**150**	*270 L2*	<5.8 L2	<5.2 L2	<5.3 L2	<6.1 L2	17 L2	<6.1 L2
Naphthalene	<330	1,900	1,700	<170	82	<35	<31	<32	<37	<37	<36
Phenanthrene	3,500	*24,000*	*25,000*	360	230	<5.8	<5.2	<5.3	<6.1	47	<6.1
Pyrene	8,100	35,000	35,000	610	580	<5.8	<5.2	<5.3	<6.1	76	<6.1

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-117	GP-118	GP-119	GP-120	GP-121	GP-122	GP-123	GP-124	GP-125	GP-126	GP-127
Sample Depth (feet)	2-4'	2-4'	2-4'	0-2'	0-2'	0-2'	0-2'	2-4'	0-2'	0-2'	0-2'
Sample Date	10/19/05	10/19/05	10/19/05	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06
PAHs (µg/kg)											
1-Methylnaphthalene	<35	<35	<32	360	<150	<610	<1,900	<210	<950	<140	<280
2-Methylnaphthalene	<29	<29	<26	870	250	570	<1,600	<170	<790	<110	<240
Acenaphthene	<58	<58	<53	<380	<240	<1,000	<3,200	<350	<1,600	<230	<470
Anthracene	<5.8	<5.8	<5.3	150	67	220	320	320	<160	92	240
Benzo (a) anthracene	<5.8	<5.8	14	*1,000*	*330*	*630*	*900*	*550*	<160	*280*	*820*
Benzo (a) pyrene	<5.8	<5.8	*13*	***760***	*360*	***620***	***800***	*380*	<160	*280*	***1,000***
Benzo (b) fluoranthene	<5.8 L2	<5.8 L2	14 L2	*460*	*260*	*500*	*590*	*250*	<160	*200*	*730*
Benzo (g,h,i) perylene	<5.8	<5.8	13	450	250	470	540	280	290	180	670
Benzo (k) fluoranthene	<5.8 L2	<5.8 L2	11 L2	350	180	370	450	210	220	160	440
Chrysene	<5.8	<5.8	<5.3	530	280	560	820	370	<160	230	700
Dibenzo (a,h) anthracene	<8.6 L2	<8.7 L2	<7.9 L2	*83*	*43*	<150	<480	*57*	<240	*39*	*110*
Fluoranthene	<12	<12	32	1,300	690	1,300	2,100	1,000	<320	470	1800
Fluorene	<12	<12	<11	160	<49	<200	<640	<69	<320	<46	<95
Indeno (1,2,3-cd) pyrene	<5.8 L2	<5.8 L2	9.5 L2	*490*	*250*	*410*	*480*	*210*	<160	*160*	*690*
Naphthalene	<35	<35	<32	<230	<150	<610	<1,900	<210	<950	<140	<280
Phenanthrene	<5.8	<5.8	14	850	370	700	900	670	160	290	830
Pyrene	<5.8	<5.8	28	620	500	860	1,500	940	<160	510	1,800

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-128	GP-129	GP-130	GP-131	GP-132	GP-133	GP-134	GP-135	GP-136	GP-137	GP-138
Sample Depth (feet)	0-2'	2-4'	0-2'	0-2'	2-4'	2-4'	0-2'	0-2'	0-2'	0-2'	0-2'
Sample Date	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/10/06	11/13/06
PAHs (µg/kg)											
1-Methylnaphthalene	<210	<37	<93	<210	<320	<480	<460	<610	<1,000	<280	<38
2-Methylnaphthalene	<170	<31	<78	<180	<270	<400	<380	<510	8,800	540	<32
Acenaphthene	<340	<62	<160	<350	<540	<790	<760	<1,000	4,800	<470	<63
Anthracene	290	<6.2	<16	<35	140	<79	<76	250	11,000	320	<6.3
Benzo (a) anthracene	*1,100*	11	45	<35	*500*	<79	*400*	*950*	***9,300***	*1,100*	<6.3
Benzo (a) pyrene	***1,200***	*9.4*	*42*	*47*	***400***	<79	*240*	***540***	***3,300***	***1,400***	<6.3
Benzo (b) fluoranthene	*950*	6.4	53	67	*340*	<79	*250*	*850*	*2,900*	*750*	<6.3
Benzo (g,h,i) perylene	770	<6.2	49	<35	350	<79	210	<100	1,500	860	7.0
Benzo (k) fluoranthene	600	<6.2	27	60	290	<79	97	320	*2,400*	660	<6.3
Chrysene	870	8.7	43	44	390	<79	220	500	7,100	820	<6.3
Dibenzo (a,h) anthracene	*130*	<9.2	<23	<53	*110*	<120	<110	<150	*270*	***180***	<9.5
Fluoranthene	1800	34	120	<70	750	<160	380	1,400	30,000	2,000	19
Fluorene	<68	<12	<31	<70	<110	<160	<150	<200	4,100	120	<13
Indeno (1,2,3-cd) pyrene	*710*	<6.2	29	<35	*330*	<79	<76	*340*	***1,500***	***1,000***	<6.3
Naphthalene	<210	<37	<93	<210	<320	<480	<460	<610	<1000	<280	<38
Phenanthrene	1,400	30	68	38	530	<79	250	300	*19,000*	1,100	11
Pyrene	2,000	15	71	<35	850	<79	93	780	12,000	1,700	9.3

'	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-139	GP-140	GP-141	GP-142	GP-143	GP-144	GP-145	GP-146	GP-147	GP-148	GP-149
Sample Depth (feet)	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'	2-4'	0-2'	2-4'	0-2'	0-2'
Sample Date	11/10/06	11/10/06	11/10/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06
PAHs (µg/kg)											
1-Methylnaphthalene	2,000	<320	<400	2,600	<980	1,400	<180	<15,000	<1,300	5,000	*110,000*
2-Methylnaphthalene	7,200	<270	<330	25,000	1,200	7,200	420	28,000	<1,100	22,000	540,000
Acenaphthene	1,300	<530	<660	7,700	<1,600	1,900	<300	<25,000	<2,200	<4,000	110,000
Anthracene	640	87	690	7,500	380	1,600	250	16,000	450	10,000	240,000
Benzo (a) anthracene	*430*	*270*	*1,900*	***7,600***	*1,500*	***7,400***	*900*	***30,000***	*3,000*	***26,000***	***310,000***
Benzo (a) pyrene	*200*	*240*	***1,900***	***4,500***	***790***	***4,300***	***650***	***16,000***	***2,300***	***16,000***	***230,000***
Benzo (b) fluoranthene	*210*	*210*	*1,200*	***4,300***	*590*	*3,600*	*410*	***11,000***	*1,600*	***10,000***	***160,000***
Benzo (g,h,i) perylene	<57	210	1,200	*3,300*	530	*2,600*	470	*9,600*	*1,400*	*7,600*	***110,000***
Benzo (k) fluoranthene	210	<53	*1,100*	*2,700*	440	*2,400*	360	*8,400*	*1,200*	*7,400*	***110,000***
Chrysene	230	210	1,500	6,100	880	5,100	650	*20,000*	2,200	*16,000*	<7,500
Dibenzo (a,h) anthracene	<86	<80	*220*	***510***	<240	***500***	*90*	<3,700	<330	***1,400***	***22,000***
Fluoranthene	1,100	540	3,600	27,000	2,300	16,000	1,900	91,000	4,900	53,000	*870,000*
Fluorene	970	<110	<130	6,600	<330	1,900	170	7,800	<440	5,400	170,000
Indeno (1,2,3-cd) pyrene	*180*	*190*	*1,300*	*2,900*	*510*	*2,900*	*480*	***9,600***	*1,300*	***8,900***	***130,000***
Naphthalene	9500*	<320	<400	15000*	<980	2900*	<180	<15,000	<1,300	4200*	***220000****
Phenanthrene	2,200	340	3,000	*27,000*	1,700	13,000	1,400	*56,000*	770	*40,000*	***860,000***
Pyrene	900	380	3,600	17,000	1,800	9,900	1,600	42,000	6,000	36,000	*560,000*

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-150	GP-151	GP-152	GP-153	GP-154	GP-155	GP-156	GP-157	GP-158	GP-159	GP-160
Sample Depth (feet)	0-2'	0-2'	2-4'	2-4'	0-2'	2-4'	2-4'	0-2'	0-2'	0-2'	2-4'
Sample Date	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06	11/13/06
PAHs (µg/kg)											
1-Methylnaphthalene	140	4,800	<36	<91	<37	<37	8,500	6,800	310	110	300
2-Methylnaphthalene	590	25,000	<30	490	<31	<31	5,900	7,900	520	130	450
Acenaphthene	93	<5,600	<61	<150	<61	<62	580	530	<110	<140	<320
Anthracene	220	13,000	<6.1	180	130	<6.2	870	900	57	<14	<32
Benzo (a) anthracene	*590*	***45,000***	8.6	*440*	*310*	9.9	*1,000*	*1,300*	*120*	<14	63
Benzo (a) pyrene	*320*	***29,000***	<6.1	*340*	*290*	8.1	<13	<27	*29*	<14	<32
Benzo (b) fluoranthene	*230*	***17,000***	<6.1	*250*	*190*	7.0	<13	77	19	<14	<32
Benzo (g,h,i) perylene	200	*15,000*	<6.1	190	160	<6.2	<13	<27	13	<14	<32
Benzo (k) fluoranthene	160	*13,000*	<6.1	190	140	6.8	<13	<27	<11	<14	<32
Chrysene	370	*28,000*	6.2	380	280	8.1	130	270	46	<14	<32
Dibenzo (a,h) anthracene	*37*	***2,600***	<9.1	*39*	*33*	<9.2	<20	<40	<16	<21	<48
Fluoranthene	1,200	74,000	17	1,200	440	19	5,400	4,000	430	51	250
Fluorene	130	3,700	<12	130	<12	<12	2,100	1,700	110	<29	70
Indeno (1,2,3-cd) pyrene	*210*	***16,000***	<6.1	*210*	*180*	6.2	<13	<27	28	<14	<32
Naphthalene	180	<3,400	<36	130	<37	<37	660	670	75	<86	<190
Phenanthrene	1,000	*41,000*	15	920	46	11	4,300	3,300	330	37	140
Pyrene	800	57,000	13	810	590	15	4,500	4,200	770	25	220

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-161	GP-162	GP-163	GP-164	GP-165	GP-166	GP-167	GP-168	GP-169	GP-170	GP-171
Sample Depth (feet)	2-4'	2-4'	0-2'	2-4'	0-2'	2-4'	0-2'	2-4'	2-4'	0-2'	2-4'
Sample Date	01/10/07	01/10/07	01/10/07	01/10/07	01/10/07	01/09/07	01/10/07	01/10/07	01/09/07	01/09/07	01/09/07
PAHs (µg/kg)											
1-Methylnaphthalene	<4,900	<48	<790	<290	<240	<340	<290	<60	<120	960	200
2-Methylnaphthalene	29,000	<40	<660	260	430	340	640	76	330	4,600	860
Acenaphthene	<8,200	<79	<1,300	<490	<390	<570	<490	<100	<200	1,100	220
Anthracene	15,000	<7.9	<130	55	100	120	230	12	54	1,900	290
Benzo (a) anthracene	***38,000***	<7.9	<130	*280*	*390*	*410*	*790*	39	*190*	***5,500***	*890*
Benzo (a) pyrene	***25,000***	<7.9	<130	*350*	*310*	*340*	***720***	*28*	*110*	***3,400***	***590***
Benzo (b) fluoranthene	***20,000***	<7.9	<130	*240*	*240*	*250*	*580*	20	83	*2,600*	*380*
Benzo (g,h,i) perylene	*24,000*	<7.9	<130	380	260	270	430	27	110	*2,300*	440
Benzo (k) fluoranthene	*13,000*	<7.9	<130	170	160	180	360	13	48	*1,600*	310
Chrysene	*26,000*	<7.9	<130	250	410	330	640	29	120	3,600	570
Dibenzo (a,h) anthracene	***3,600***	<12	<200	<73	<59	<86	*75*	<15	<30	***450***	*86*
Fluoranthene	80,000	<16	<260	440	740	930	1,700	66	380	11,000	1,500
Fluorene	7,400	<16	<260	<98	<79	<110	<98	<20	39	860	110
Indeno (1,2,3-cd) pyrene	***19,000***	<7.9	<130	**280**	*220*	*230*	*430*	<10	*110*	*1,900*	*360*
Naphthalene	9000*	<48	<790	<290	<240	<340	<290	<60	<120	<270	320
Phenanthrene	*56,000*	<7.9	<130	260	470	490	820	66	280	7,700	1,100
Pyrene	51,000	<7.9	<130	330	550	630	1,400	40	230	6,400	1,400

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-172	GP-173	GP-174	GP-175	GP-176	GP-177	GP-178	GP-179	GP-180	GP-181
Sample Depth (feet)	0-2'	0-2'	0-2'	0-2'	2-4'	0-2'	2-4'	0-2'	0-2'	0-2'
Sample Date	01/09/07	01/09/07	01/09/07	01/09/07	01/09/07	01/09/07	01/10/07	01/09/07	01/09/07	01/09/07
PAHs (µg/kg)										
1-Methylnaphthalene	<420	<1,000	<1,400	<10,000	45,000	<130	3,500	<950	<1,200	<4,900
2-Methylnaphthalene	1,100	1,800	<1,200	9,100	290,000	<110	19,000	3,000	5,800	7,500
Acenaphthene	<700	<1,700	<2,400	<17,000	90,000	<220	2,700	<1600	<2,000	<8,100
Anthracene	430	450	<240	2,000	140,000	52	8,900	1,400	2,400	3,400
Benzo (a) anthracene	*1,800*	*1,300*	*730*	***13,000***	***290,000 E***	*160*	***22,000***	*3,300*	***6,000***	***12,000***
Benzo (a) pyrene	***1,200***	***1,000***	***630***	***10,000***	***200,000***	*120*	***13,000***	***2,300***	***4,500***	***7,000***
Benzo (b) fluoranthene	*980*	*760*	*700*	***7,000***	***130,000***	*89*	***8,300***	*1,600*	*3,400*	***5,900***
Benzo (g,h,i) perylene	790	830	920	*9,300*	***120,000***	100	*8,900*	1,600	*3,700*	*5,800*
Benzo (k) fluoranthene	640	550	420	*5,000*	***94,000***	65	*5,800*	*1,100*	*2,400*	*3,600*
Chrysene	1,300	930	530	8,800	*190,000 E*	130	*14,000*	2,300	4,200	7,300
Dibenzo (a,h) anthracene	*140*	<250	<360	<2600	***25,000***	<32	***1,800***	*320*	***610***	<1,200
Fluoranthene	5,200	2,700	1,300	16,000	590,000 E	330	43,000	7,000	14,000	20,000
Fluorene	<140	390	<470	<3400	79,000	<43	4,300	770	810	<1,600
Indeno (1,2,3-cd) pyrene	*640*	*690*	*720*	***6,900***	***100,000***	78	***7,400***	*1,300*	*2,800*	***4,400***
Naphthalene	<420	<1,000	<1,400	<10,000	*32000**	<130	3700*	<950	<1,200	<4,900
Phenanthrene	900	1,800	570	3,400	***410,000 E***	210	*32,000*	5,000	9,300	13,000
Pyrene	3,800	1,900	960	14,000	390,000	250	31,000	4,600	8,800	14,000

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-182	GP-183	GP-184	GP-185	GP-186	GP-187	GP-189	GP-199	GP-200	
Sample Depth (feet)	0-2'	2-4'	0-2'	0-2'	0-2'	2-4'	4-6'	4-6'	0-2'	0-2'
Sample Date	01/09/07	01/09/07	01/09/07	01/10/07	01/10/07	01/10/07	01/10/07	01/10/07	01/10/07	11/08/07
PAHs (µg/kg)										
1-Methylnaphthalene	12,000	<290	<3,300	48,000	<5,400	<35	<290	<280	<1,200	<2,100
2-Methylnaphthalene	65,000	<240	3,600	79,000	23,000	<29	<240	<230	2,200	<1,800
Acenaphthene	<7,300	<480	<5,500	6,700	<8,900	<58	<480	<460	<2,000	<3,500
Anthracene	29,000	58	1,300	8,800	10,000	<5.8	<48	<46	650	2,000
Benzo (a) anthracene	***93,000***	*230*	***5,500***	***41,000 E***	***38,000***	6.1	*120*	61	*2,600*	***6,100***
Benzo (a) pyrene	***59,000***	*150*	***3,300***	***8,300***	***21,000***	<5.8	*88*	*55*	***2,100***	***5,200***
Benzo (b) fluoranthene	***42,000***	*110*	*2,600*	***5,200***	***17,000***	<5.8	74	49	*1,700*	*3,800*
Benzo (g,h,i) perylene	***40,000***	120	*3,200*	*6,200*	*11,000*	<5.8	92	47	1,600	*3,100*
Benzo (k) fluoranthene	*27,000*	77	*2,000*	*2,900*	*10,000*	<5.8	<48	<46	320	*2,200*
Chrysene	*55,000*	130	3,200	*14,000*	*20,000*	<5.8	83	50	2,000	4,900
Dibenzo (a,h) anthracene	***8,300***	<71	<830	***1,000***	***2,300***	<8.7	<73	<70	*340*	<530
Fluoranthene	160,000	410	8,100	120,000 E	62,000	12	270	130	6,900	15,000
Fluorene	15,000	<95	<1,100	25,000	6,700	<12	<97	<93	<400	1,000
Indeno (1,2,3-cd) pyrene	***33,000***	*99*	*2,600*	***4,800***	***13,000***	<5.8	81	<46	*1,400*	*3,200*
Naphthalene	12000*	<290	<3,300	14000*	8400*	<35	<290	<280	<1,200	<2,100
Phenanthrene	*98,000*	220	4,200	*68,000 E*	*39,000*	9.3	140	57	2,100	9,500
Pyrene	120,000	270	5,900	9,100	38,000	<5.8	170	86	3,600	9,500

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-201	GP-202	GP-203			GP-204	GP-206	GP-207	GP-208	GP-210
Sample Depth (feet)	0-2'	2-4'	3-5'	6-8'	10-12'	2-4'	2-4'	0-2'	2-4'	0-2'
Sample Date	11/08/07	11/08/07	11/08/07	11/09/07	11/08/07	01/10/07	01/09/07	01/09/07	01/09/07	01/09/07
PAHs (µg/kg)										
1-Methylnaphthalene	<390	27,000	<86	<36	<36	<2,500	<37	<2,000	<57	<960
2-Methylnaphthalene	<330	170,000	<72	<30	<30	2,200	<31	6,700	220	1,900
Acenaphthene	<650	43,000	<140	<61	<60	<4,200	<62	<3,300	<95	<1,600
Anthracene	75	61,000	<14	<6.1	<6	1,500	<6.2	3,400	210	740
Benzo (a) anthracene	*280*	***240,000***	33	<6.1	<6	*2,000*	<6.2	***12,000***	*560*	*2,700*
Benzo (a) pyrene	*260*	***190,000***	*26*	<6.1	<6	***1,500***	<6.2	***8,700***	***400***	***2,300***
Benzo (b) fluoranthene	*150*	***110,000***	18	<6.1	<6	*1,200*	<6.2	***6,000***	*270*	*1,600*
Benzo (g,h,i) perylene	170	***95,000***	23	<6.1	<6	1,300	<6.2	*6,500*	300	1,700
Benzo (k) fluoranthene	110	***73,000***	<14	<6.1	<6	870	<6.2	*4,100*	210	*1,100*
Chrysene	210	*160,000*	18	<6.1	<6	1,800	<6.2	8,100	370	1,700
Dibenzo (a,h) anthracene	<98	***17,000***	<21	<9.1	<9	<620	<9.2	***1,100***	*56*	*290*
Fluoranthene	630	370,000	92	<12	<12	5,300	<12	21,000	1,100	4,600
Fluorene	<130	21,000	<29	<12	<12	<830	<12	940	42	<320
Indeno (1,2,3-cd) pyrene	*140*	***100,000***	20	<6.1	<6	*970*	<6.2	***5,600***	*250*	*1,800*
Naphthalene	<390	13000*	<86	<36	<36	<2,500	<37	<2,000	<57	<960
Phenanthrene	300	*210,000*	69	<6.1	7.4	4,400	<6.2	11,000	720	2,600
Pyrene	650	380,000	34	<6.1	11	3,500	<6.2	15,000	1,000	4,400

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 3. Summary of Soil PAH Analytical Results, Union Pacific Bulter Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-212	GP-213	GP-214	GP-215	GP-216	GP-217	GP-218	GP-219
Sample Depth (feet)	0-2'	2-4'	2-4'	2-4'	0-2'	0-2'	2-4'	0-2'
Sample Date	01/10/07	01/10/07	01/10/07	01/10/07	01/10/07	01/10/07	01/09/07	01/10/07
PAHs (µg/kg)								
1-Methylnaphthalene	<470	<36	19,000	8,100	3,600	1,400	<2,100	<1,600
2-Methylnaphthalene	<390	<30	91,000	47,000	23,000	8,800	<1,700	4,000
Acenaphthene	<780	<60	17,000	13,000	6,400	<2,200	<3,500	<2,700
Anthracene	99	<6.0	48,000	22,000	13,000	3,600	630	1,400
Benzo (a) anthracene	*380*	<6.0	***79,000***	***54,000***	***34,000***	***13,000***	*2,800*	***4,400***
Benzo (a) pyrene	*360*	<6.0	***50,000***	***34,000***	***20,000***	***8,400***	***1,600***	***3,500***
Benzo (b) fluoranthene	*270*	<6.0	***28,000***	***21,000***	***13,000***	***6,300***	*1,300*	*2,500*
Benzo (g,h,i) perylene	290	<6.0	*33,000*	*23,000*	*14,000*	*6,300*	1,400	*3,000*
Benzo (k) fluoranthene	82	<6.0	*22,000*	*16,000*	*9,600*	*3,900*	840	*1,800*
Chrysene	280	<6.0	*53,000*	*35,000*	*22,000*	8,300	1,700	3,100
Dibenzo (a,h) anthracene	<120	<9.0	***5,800***	***4,800***	***2,600***	***1,300***	<520	***490***
Fluoranthene	660	<12	180,000	100,000	64,000	22,000	4,400	12,000
Fluorene	<160	<12	25,000	12,000	4,700	1,800	<690	920
Indeno (1,2,3-cd) pyrene	*270*	<6.0	***28,000***	***20,000***	***11,000***	***5,200***	*1,000*	*2,300*
Naphthalene	<470	<36	*28000**	<5,400	8100*	1,500	<2,100	<1,600
Phenanthrene	450	<6.0	*170,000*	*86,000*	*42,000*	13,000	2,200	4,900
Pyrene	820	<6.0	110,000	70,000	45,000	16,000	3,300	6,100

*	Concentration exceeds the NR 720 RCL (NR 720 Table 1 RCL is based on protection of groundwater pathway).
Bold	Concentration exceeds the WDNR Proposed Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Italic	Concentration exceeds the WDNR Proposed Non-Industrial Direct Contact RCL for Polycyclic Aromatic Hydrocarbons.
Underline	Concentration exceeds the WDNR Proposed Groundwater Protection RCL for Polycyclic Aromatic Hydrocarbons.
<	Analyte detected below laboratory detection limits.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
L2	Laboratory control sample recovery was below acceptance limits.
M	Matrix interference.
NA	Not analyzed.
NE	Not established.
PAH	Polycyclic aromatic hydrocarbons.
RCL	Residual contaminant level.
µg/kg	Micrograms per kilogram.
WDNR	Wisconsin Department of Natural Resources.

Table 4. Summary of Groundwater DRO and VOC Analytical Results, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Sample Name	Enforcement	Preventive	GP-1		GP-3	GP-7		GP-9	GP-19	GP-27
Sample Date	Standard	Action Limit	06/06/96	06/07/96	06/06/96	06/06/96	06/07/96	06/07/96	06/06/96	06/06/96
Diesel Range Organics (mg/L)	NE	NE	NA	0.12 B	<0.10 B	NA	0.31 B	<0.10 B	<0.10 B	0.10 BH
VOCs (µg/L)										
Acetone	1,000	200	5.1 L	NA	5.3 L	<5.0	NA	<5.0	6.6 L	<5.0
Benzene	5	0.5	<0.50	NA	<0.50	<0.50	NA	<0.50	<0.50	<0.50
cis-1,2-Dichloroethene	70	7	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	140	<1.0	NA	<1.0	<1.0	NA	<1.0	<1.0	<1.0
Isopropylbenzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	60	12	<1.0	NA	<1.0	<1.0	NA	<1.0	<1.0	1.4
Methylene Chloride	5	0.5	<10	NA	<10	**38**	NA	<10	<10	<10
4-Methyl-2-Pentanone	500	50	<1.0	NA	<1.0	2.3	NA	<1.0	<1.0	<1.0
Naphthalene	100	10	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	200	<1.0	NA	<1.0	<1.0	NA	<1.0	<1.0	1.5
1,2,4-Trimethylbenzene	480 (a)	96 (a)	<1.0	NA	<1.0	<1.0	NA	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	480 (a)	96 (a)	<1.0	NA	<1.0	<1.0	NA	<1.0	<1.0	<1.0
Xylenes, Total	10,000	1,000	<3.0	NA	<3.0	<3.0	NA	<3.0	<3.0	<3.0

Bold	Concentration exceeds the WDNR NR 140 Enforcement Standard.
Italic	Concentration exceeds the WDNR NR 140 Preventive Action Limit.
(a)	Add isomers together before comparing to criteria.
<	Analyte detected below laboratory detection limits.
B	Method blank is contaminated.
H	Late eluting hydrocarbons present.
J	Results reported between the Method Detection Limit (MDL) and Limit of Quantitation (LOQ) are less certain than results at or above the LOQ.
L	Common laboratory solvent and contaminant.
mg/L	Milligrams per liter, equivalent to parts per million (ppm).
NA	Not analyzed.
NE	Not established.
µg/kg	Micrograms per liter, equivalent to parts per billion (ppb).
VOC	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 4. Summary of Groundwater DRO and VOC Analytical Results, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Sample Name	GP-28	GP-30	GP-31	GP-41	GP-46	MW-3				GMMW-4	
Sample Date	**06/06/96**	**06/06/96**	**06/07/96**	**12/02/96**	**12/02/96**	**12/24/96**	**06/09/99**	**10/25/04**	**01/04/07**	**12/24/96**	**06/09/99**
Diesel Range Organics (mg/L)	<0.10 B	1.1	0.22 B	<20	12.8	650	2.4	NA	NA	<0.10	<0.10
VOCs (µg/L)											
Acetone	11 L	30 L	32	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<0.50	<2.5	<0.50	<1	<1	<1.0	<0.13	<0.25	<0.2	<1.0	<0.13
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	NA	NA
Ethylbenzene	<1.0	<5.0	<1.0	<1	<1	<1.0	<0.22	<0.22	<0.5	<1.0	<0.22
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	0.66 J	NA	NA
Methyl tert-Butyl Ether	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<0.16	<0.23	<0.5	<1.0	<0.16
Methylene Chloride	<10	<50	<10	NA	NA	NA	NA	NA	<1	NA	NA
4-Methyl-2-Pentanone	1.3	<5.0	4.6	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	0.29 J	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	0.52 J	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	0.82 J	NA	NA
p-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	<0.2	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	1.2	NA	NA
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	<0.2	NA	NA
Toluene	43	36	43	1.7	1.2	<1.0	<0.20	<0.11	<0.2	<1.0	<0.20
1,2,4-Trimethylbenzene	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<0.22	<0.25	<0.2	<1.0	<0.22
1,3,5-Trimethylbenzene	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<0.29	<0.19	<0.2	<1.0	<0.29
Xylenes, Total	<3.0	<15	<3.0	<1.0	<1.0	<1.0	<0.23	<0.39	<0.5	<1.0	<0.23

Bold	Concentration exceeds the WDNR NR 140 Enforcement Standard.
Italic	Concentration exceeds the WDNR NR 140 Preventive Action Limit.
(a)	Add isomers together before comparing to criteria.
<	Analyte detected below laboratory detection limits.
B	Method blank is contaminated.
H	Late eluting hydrocarbons present.
J	Results reported between the Method Detection Limit (MDL) and Limit of Quantitation (LOQ) are less certain than results at or above the LOQ.
L	Common laboratory solvent and contaminant.
mg/L	Milligrams per liter, equivalent to parts per million (ppm).
NA	Not analyzed.
NE	Not established.
µg/kg	Micrograms per liter, equivalent to parts per billion (ppb).
VOC	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 4. Summary of Groundwater DRO and VOC Analytical Results, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Sample Name	GMMW-4 (continued)		GMMW-5			GMMW-6				GMMW-7	
Sample Date	10/25/04	01/04/07	06/09/99	10/26/04	01/04/07	12/24/96	09/24/97	10/26/04	01/04/07	12/24/96	11/03/97
Diesel Range Organics (mg/L)	NA	NA	2.8	NA	NA	2.8	2.8	NA	NA	<0.10	<0.10
VOCs (µg/L)											
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<0.25	<0.2	2.2	0.41	0.32 J	NA	<1.0	<0.25	<0.2	NA	<1.0
cis-1,2-Dichloroethene	NA	<0.5	NA	NA	<0.5	NA	NA	NA	<0.5	NA	NA
Ethylbenzene	<0.22	<0.5	6.6	<0.22	<0.5	NA	<1.0	<0.22	<0.5	NA	<1.0
Isopropylbenzene	NA	<0.2	NA	NA	5.9	NA	NA	NA	0.25 J	NA	NA
Methyl tert-Butyl Ether	<0.23	<0.5	<1.6	<0.23	<0.5	NA	<1.0	<0.23	<0.5	NA	<1.0
Methylene Chloride	NA	<1	NA	NA	<1	NA	NA	NA	<1	NA	NA
4-Methyl-2-Pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	<0.25	NA	NA	0.53 J	NA	NA	NA	<0.25	NA	NA
n-Butylbenzene	NA	<0.2	NA	NA	1.3	NA	NA	NA	<0.2	NA	NA
n-Propylbenzene	NA	<0.5	NA	NA	3.8	NA	NA	NA	<0.5	NA	NA
p-Isopropyltoluene	NA	<0.2	NA	NA	<0.2	NA	NA	NA	<0.2	NA	NA
sec-Butylbenzene	NA	<0.25	NA	NA	2.7	NA	NA	NA	<0.25	NA	NA
tert-Butylbenzene	NA	<0.2	NA	NA	0.36 J	NA	NA	NA	<0.2	NA	NA
Toluene	<0.11	<0.2	<2.0	0.12	<0.2	NA	<1.0	<0.11	<0.2	NA	<1.0
1,2,4-Trimethylbenzene	<0.25	<0.2	11	<0.25	1.2	NA	<1.0	<0.25	<0.2	NA	<1.0
1,3,5-Trimethylbenzene	<0.19	<0.2	<2.9	<0.19	<0.2	NA	<1.0	<0.19	<0.2	NA	<1.0
Xylenes, Total	<0.39	<0.5	7.8	0.83	0.61 J	NA	<1.0	<0.39	<0.5	NA	<1.0

Bold	Concentration exceeds the WDNR NR 140 Enforcement Standard.
Italic	Concentration exceeds the WDNR NR 140 Preventive Action Limit.
(a)	Add isomers together before comparing to criteria.
<	Analyte detected below laboratory detection limits.
B	Method blank is contaminated.
H	Late eluting hydrocarbons present.
J	Results reported between the Method Detection Limit (MDL) and Limit of Quantitation (LOQ) are less certain than results at or above the LOQ.
L	Common laboratory solvent and contaminant.
mg/L	Milligrams per liter, equivalent to parts per million (ppm).
NA	Not analyzed.
NE	Not established.
µg/kg	Micrograms per liter, equivalent to parts per billion (ppb).
VOC	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 4. Summary of Groundwater DRO and VOC Analytical Results, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Sample Name	GMMW-8					GMMW-9			GMMW-10		
Sample Date	**12/24/96**	**11/03/97**	**06/08/99**	**10/25/04**	**01/05/07**	**06/09/99**	**10/26/04**	**01/04/07**	**06/08/99**	**10/25/04**	**01/05/07**
Diesel Range Organics (mg/L)	<0.10	<0.10	0.22	NA	NA	0.82	NA	NA	1.3	NA	NA
VOCs (µg/L)											
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	<1.0	<0.13	<0.25	<0.2	<0.13	<0.25	<0.2	<0.13	<0.25	<0.2
cis-1,2-Dichloroethene	NA	NA	NA	NA	<0.5	NA	NA	<0.5	NA	NA	<0.5
Ethylbenzene	NA	<1.0	<0.22	<0.22	<0.5	<0.22	<0.22	<0.5	0.24	<0.22	<0.5
Isopropylbenzene	NA	NA	NA	NA	<0.2	NA	NA	<0.2	NA	NA	<0.2
Methyl tert-Butyl Ether	NA	<1.0	<0.16	<0.23	<0.5	<0.16	<0.23	<0.5	<0.16	<0.23	<0.5
Methylene Chloride	NA	NA	NA	NA	<1	NA	NA	<1	NA	NA	<1
4-Methyl-2-Pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	<0.25	NA	NA	0.95	NA	NA	<0.25
n-Butylbenzene	NA	NA	NA	NA	<0.2	NA	NA	<0.2	NA	NA	<0.2
n-Propylbenzene	NA	NA	NA	NA	<0.5	NA	NA	<0.5	NA	NA	<0.5
p-Isopropyltoluene	NA	NA	NA	NA	<0.2	NA	NA	<0.2	NA	NA	<0.2
sec-Butylbenzene	NA	NA	NA	NA	<0.25	NA	NA	<0.25	NA	NA	<0.25
tert-Butylbenzene	NA	NA	NA	NA	<0.2	NA	NA	<0.2	NA	NA	<0.2
Toluene	NA	<1.0	<0.20	<0.11	<0.2	<0.20	<0.11	<0.2	<0.20	<0.11	<0.2
1,2,4-Trimethylbenzene	NA	<1.0	<0.22	<0.25	<0.2	0.24	<0.25	<0.2	3.4	<0.25	<0.2
1,3,5-Trimethylbenzene	NA	<1.0	<0.29	<0.19	<0.2	<0.29	<0.19	<0.2	<0.29	<0.19	<0.2
Xylenes, Total	NA	<1.0	<0.23	<0.39	<0.5	0.8	<0.39	<0.5	0.58	<0.39	<0.5

Bold	Concentration exceeds the WDNR NR 140 Enforcement Standard.
Italic	Concentration exceeds the WDNR NR 140 Preventive Action Limit.
(a)	Add isomers together before comparing to criteria.
<	Analyte detected below laboratory detection limits.
B	Method blank is contaminated.
H	Late eluting hydrocarbons present.
J	Results reported between the Method Detection Limit (MDL) and Limit of Quantitation (LOQ) are less certain than results at or above the LOQ.
L	Common laboratory solvent and contaminant.
mg/L	Milligrams per liter, equivalent to parts per million (ppm).
NA	Not analyzed.
NE	Not established.
µg/kg	Micrograms per liter, equivalent to parts per billion (ppb).
VOC	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 4. Summary of Groundwater DRO and VOC Analytical Results, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Sample Name	GMMW-11			GMMW-12	GMMW-13			RT-1		RT-2	
Sample Date	**06/08/99**	**10/25/04**	**01/03/07**	**06/08/99**	**06/08/99**	**10/26/04**	**01/03/07**	**10/26/04**	**01/05/07**	**10/26/04**	**01/04/07**
Diesel Range Organics (mg/L)	0.6	NA	NA	1.6	1.4	NA	NA	NA	NA	NA	NA
VOCs (µg/L)											
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<0.13	<0.25	<0.2	<0.13	<0.13	<0.25	<0.2	0.64	0.30 J	<0.25	0.50 J
cis-1,2-Dichloroethene	NA	NA	<0.5	NA	NA	NA	1.3 J	NA	<0.5	NA	<0.5
Ethylbenzene	<0.22	<0.22	<0.5	<0.22	0.32	<0.22	<0.5	12	1.4 J	<0.22	<0.5
Isopropylbenzene	NA	NA	<0.2	NA	NA	NA	1.5	NA	1.1	NA	0.95
Methyl tert-Butyl Ether	<0.16	<0.23	<0.5	<0.16	<0.16	<0.23	<0.5	0.6	<0.5	<0.23	<0.5
Methylene Chloride	NA	NA	<1	NA	NA	NA	<1	NA	<1	NA	<1
4-Methyl-2-Pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	<0.25	NA	NA	NA	<0.25	NA	1.5	NA	0.69 J
n-Butylbenzene	NA	NA	<0.2	NA	NA	NA	0.35 J	NA	<0.2	NA	0.30 J
n-Propylbenzene	NA	NA	<0.5	NA	NA	NA	<0.5	NA	1.3 J	NA	1.0 J
p-Isopropyltoluene	NA	NA	<0.2	NA	NA	NA	<0.2	NA	1.4	NA	<0.2
sec-Butylbenzene	NA	NA	<0.25	NA	NA	NA	1.4	NA	1.7	NA	0.82 J
tert-Butylbenzene	NA	NA	<0.2	NA	NA	NA	<0.2	NA	<0.2	NA	<0.2
Toluene	<0.20	<0.11	<0.2	<0.20	<0.20	<0.11	<0.2	1.5	<0.2	0.29	<0.2
1,2,4-Trimethylbenzene	<0.22	<0.25	<0.2	<0.22	2.7	<0.25	<0.2	46	13	<0.25	<0.2
1,3,5-Trimethylbenzene	<0.29	<0.19	<0.2	<0.29	<0.29	<0.19	<0.2	<0.19	<0.2	<0.19	<0.2
Xylenes, Total	<0.23	<0.39	<0.5	<0.23	0.27	<0.39	<0.5	4.6	1.1 J	0.59	<0.5

Bold	Concentration exceeds the WDNR NR 140 Enforcement Standard.
Italic	Concentration exceeds the WDNR NR 140 Preventive Action Limit.
(a)	Add isomers together before comparing to criteria.
<	Analyte detected below laboratory detection limits.
B	Method blank is contaminated.
H	Late eluting hydrocarbons present.
J	Results reported between the Method Detection Limit (MDL) and Limit of Quantitation (LOQ) are less certain than results at or above the LOQ.
L	Common laboratory solvent and contaminant.
mg/L	Milligrams per liter, equivalent to parts per million (ppm).
NA	Not analyzed.
NE	Not established.
µg/kg	Micrograms per liter, equivalent to parts per billion (ppb).
VOC	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 5. Summary of Groundwater PAH Analytical Results, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Sample Name	Enforcement	Preventive	GP-3	GP-9	GP-19	GP-27	GP-28	GP-30	GP-31	MW-3
Sample Date	Standard	Action Limit	06/06/96	06/07/96	06/06/96	06/06/96	06/06/96	06/06/96	06/07/96	01/04/07
PAHs										
1-Methylnaphthalene	NE	NE	NA	NA	NA	NA	NA	NA	NA	1.5
2-Methylnaphthalene	NE	NE	NA	NA	NA	NA	NA	NA	NA	2.0
Acenaphthene	NE	NE	NA	NA	NA	NA	NA	NA	NA	0.44 J
Anthracene	3,000	600	<0.20	<0.20	<0.20	<0.20	<0.20	0.4	<0.20	0.15
Benzo(a)anthracene	NE	NE	<0.050	<0.050	<0.050	0.49	<0.050	<0.050	<0.050	0.28
Benzo(a)pyrene	0.2	0.02	<0.024	<0.024	<0.024	**0.54**	<0.024	<0.024	<0.024	0.032 J
Benzo(b)fluoranthene	0.2	0.02	<0.050	<0.050	<0.050	**0.56**	<0.050	<0.050	<0.050	<0.099
Benzo(g,h,i)perylene	NE	NE	<0.20	<0.20	<0.20	0.55	<0.20	<0.20	<0.20	<0.12
Benzo(k)fluoranthene	NE	NE	<0.050	<0.050	<0.050	0.23	<0.050	<0.050	<0.050	<0.049
Chrysene	0.2	0.02	<0.10	<0.10	<0.10	**0.3**	<0.10	<0.10	<0.10	0.088 J
Fluoranthene	400	80	<0.20	<0.20	<0.20	0.81	<0.20	<0.20	<0.20	0.5
Fluorene	400	80	<0.4	<0.4	<0.4	<0.4	<0.4	0.83	<0.4	0.69
Naphthalene	100	10	NA	NA	NA	NA	NA	NA	NA	<0.4
Phenanthrene	NE	NE	<0.40	<0.40	<0.40	<0.40	<0.40	1.3	<0.40	0.1
Pyrene	250	50	<0.20	<0.20	<0.20	0.59	<0.20	<0.20	<0.20	0.62

Bold	Concentration exceeds the WDNR NR 140 Enforcement Standard.
Italic	Concentration exceeds the WDNR NR 140 Preventive Action Limit.
<	Analyte detected below laboratory detection limits.
J	Results reported between the Method Detection Limit (MDL) and Limit of Quantitation (LOQ) are less certain than results at or above the LOQ.
NE	Not established.
PAH	Polycyclic Aromatic Hydrocarbons.
µg/L	Micrograms per liter, equivalent to parts per billion (ppb).
WDNR	Wisconsin Department of Natural Resources.

Table 5. Summary of Groundwater PAH Analytical Results, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Sample Name	GMMW-4	GMMW-5	GMMW-6	GMMW-8	GMMW-9	GMMW-10	GMMW-11	GMMW-13	RT-1	RT-2	TW-176
Sample Date	**01/04/07**	**01/04/07**	**01/04/07**	**01/05/07**	**01/04/07**	**01/05/07**	**01/03/07**	**01/03/07**	**01/05/07**	**01/04/07**	**01/12/07**
PAHs											
1-Methylnaphthalene	<0.33	35	0.75 J	<0.32	3.0	1.1	<0.32	1.1	9.5	1.0 J	<0.32
2-Methylnaphthalene	<0.32	8.0	<0.32	<0.31	<0.32	<0.32	<0.31	2.2	8.0	2.7	<0.31
Acenaphthene	<0.34	2.7	<0.34	<0.33	<0.34	0.89 J	<0.33	2.3	2.6	0.80 J	<0.33
Anthracene	<0.039	0.64	<0.039	<0.038	<0.039	<0.04	<0.038	<0.038	1.7	0.92	0.15
Benzo(a)anthracene	<0.045	0.060 J	<0.045	<0.044	<0.045	<0.046	<0.044	<0.044	1.0	0.93	0.045 J
Benzo(a)pyrene	<0.033	<0.033	<0.033	<0.032	<0.033	<0.033	<0.032	<0.032	<0.033	<0.04	<0.032
Benzo(b)fluoranthene	<0.1	<0.1	<0.1	<0.099	<0.1	<0.1	<0.098	<0.099	<0.1	<0.12	<0.098
Benzo(g,h,i)perylene	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.15	<0.12
Benzo(k)fluoranthene	<0.05	<0.05	<0.05	<0.049	<0.05	<0.051	<0.049	<0.049	<0.05	<0.062	<0.049
Chrysene	<0.042	<0.042	<0.042	<0.041	<0.042	<0.043	<0.041	<0.041	**1.5**	**1.3**	<0.041
Fluoranthene	<0.083	1.1	<0.083	<0.082	<0.083	<0.084	<0.081	<0.082	8.4	4.1	0.13 J
Fluorene	<0.063	5.2	0.20 J	<0.063	<0.063	0.58	<0.062	2.7	4.3	1.8	0.17 J
Naphthalene	<0.41	6.5	<0.41	<0.4	0.42 J	0.60 J	<0.4	0.92 J	5.7	2.2	<0.4
Phenanthrene	<0.031	1.6	<0.031	<0.03	<0.031	0.076 J	<0.03	0.15	1.7	0.59	0.17
Pyrene	<0.045	1.0	<0.045	<0.044	<0.045	<0.046	<0.044	<0.044	7.0	4.0	0.080 J

Bold	Concentration exceeds the WDNR NR 140 Enforcement Standard.
Italic	Concentration exceeds the WDNR NR 140 Preventive Action Limit.
<	Analyte detected below laboratory detection limits.
J	Results reported between the Method Detection Limit (MDL) and Limit of Quantitation (LOQ) are less certain than results at or above the LOQ.
NE	Not established.
PAH	Polycyclic Aromatic Hydrocarbons.
µg/L	Micrograms per liter, equivalent to parts per billion (ppb).
WDNR	Wisconsin Department of Natural Resources.

Table 6. Groundwater Elevation Data, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Monitoring Well	Land Surface Elevation (ft)	Measuring Point Elevation (ft)	Screened Interval (ft bls)	Screen Length (ft)	Depth to Product (ft) 12/24/96	Depth to Water (ft) 12/24/96	Water Elevation (ft msl) 12/24/96		Depth to Product (ft) 01/21/97	Depth to Water (ft) 01/21/97	Water Elevation (ft msl) 01/21/97	
MW-1	738.8	739.7	5.0 - 15.0	10.0	9.05	14.86	729.49(a)	(a)	9.08	14.65	729.5	(a)
MW-2	738.6	740.3	3.0-13.0	10.0	8.86	10.43	731.1	(a)	9.05	10.61	730.9	(a)
MW-3	738.2	739.3	5.0 - 13.0	8.0	ND	8.18	731.1		ND	8.32	731.0	
GMMW-4	739.1	742.5	5.0 - 15.0	10.0	ND	6.08	736.4		ND	6.77	735.7	
GMMW-5	738.95	741.96	4.0 - 14.0	10.0	NI	NI	NI		NI	NI	NI	
GMMW-6	738.6	742.2	5.0 - 15.0	10.0	ND	7.79	734.4		ND	8.31	733.9	
GMMW-7	739.5	742.9	5.0 - 15.0	10.0	ND	6.92	736.0		ND	7.42	735.5	
GMMW-8	738.7	742.3	5.0 - 15.0	10.0	ND	9.36	732.9		ND	9.57	732.7	
GMMW-9	738.10	741.11	5.0 - 15.0	10.0	NI	NI	NI		NI	NI	NI	
GMMW-10	736.85	739.95	4.0 - 14.0	10.0	NI	NI	NI		NI	NI	NI	
GMMW-11	738.91	738.72	4.0 - 14.0	10.0	NI	NI	NI		NI	NI	NI	
GMMW-12	738.55	738.33	4.0 - 14.0	10.0	NI	NI	NI		NI	NI	NI	
GMMW-13	738.82	738.74	4.0 - 14.0	10.0	NI	NI	NI		NI	NI	NI	

Measuring point elevation is from the north side of the top of PVC well casing (TOC).

Elevations are measured relative to a United States Geological Survey (USGS) datum.

(a) Groundwater elevation was corrected for the presence of product; product specific gravity assumed = 0.8 g/cm^3.

amsl Above mean sea level.

(b) GMMW-7 abandoned prior to 6/8/99.

bls Below Land Surface.

(c) GMMW-12 abandoned prior to 10/25/04

(d) MW-1 and MW-2 were removed during installation of recovery trenches

ft Feet

ND None Detected.

NI Not installed.

NM Not measured.

TR Trace (<0.01 foot).

Table 6. Groundwater Elevation Data, Union Pacific Butler Yard Facility, Milwaukee, Wisconsin.

Monitoring Well	Depth to Product (ft) 06/08/99	Depth to Water (ft) 06/08/99	Water Elevation (ft msl) 06/08/99	Depth to Product (ft) 10/25/04	Depth to Water (ft) 10/25/04	Water Elevation (ft msl) 10/25/04	Depth to Product (ft) 01/03/07	Depth to Water (ft) 01/03/07	Water Elevation (ft msl) 01/03/07
MW-1	9.01	11.45	730.2	NM (d)	NM (d)	NM (d)	NM (d)	NM (d)	NM (d)
MW-2	8.01	8.45	732.2	NM (d)	NM (d)	NM (d)	NM (d)	NM (d)	NM (d)
MW-3	TR	7.17	732.1	ND	8.68	730.6	ND	7.68	731.62
GMMW-4	ND	5.13	737.4	ND	6.93	735.6	ND	5.7	736.80
GMMW-5	ND	8.26	733.70	ND	9.78	732.18	ND	8.8	733.16
GMMW-6	ND	NM	NM	ND	9.00	733.2	ND	8.63	733.57
GMMW-7	NM (b)	NM (b)	NM (b)	NM (b)	NM (b)	NM (b)	NM (c)	NM (b)	NM (b)
GMMW-8	ND	7.28	735.0	ND	9.98	732.3	ND	8.14	734.16
GMMW-9	ND	7.75	733.36	ND	9.12	731.99	ND	8.26	732.85
GMMW-10	ND	7.85	732.10	ND	9.08	730.87	ND	8.04	731.91
GMMW-11	ND	5.02	733.70	ND	6.90	731.82	ND	5.18	733.54
GMMW-12	ND	4.00	734.33	NM (c)	NM (c)	NM (c)	NM (c)	NM (c)	NM (c)
GMMW-13	ND	5.10	733.64	ND	6.11	732.63	ND	5.25	733.49

Measuring point elevation is from the north side of the top of PVC well casing (TOC).
Elevations are measured relative to a United States Geological Survey (USGS)

(a) Groundwater elevation was corrected for the presence of product; product specific gravity assumed = 0.8 g/cm^3.
amsl Above mean sea level.
(b) GMMW-7 abandoned prior to 6/8/99.
bls Below Land Surface.
(c) GMMW-12 abandoned prior to 10/25/04
(d) MW-1 and MW-2 were removed during installation of recovery trenches
ft Feet
ND None Detected.
NI Not yet installed.
NM Not measured.
TR Trace (<0.01 foot).