

Technical Memorandum

To Joseph DeMorett, Water Supply Manager
Madison Water Utility
119 East Olin Avenue
Madison, WI 53713

Subject Results of PCE Contaminant Source Inventory
Unit Well 15
3900 East Washington Avenue, Madison, Wisconsin

From



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Date May 18, 2012

AECOM has completed a Contaminant Source Inventory (CSI) to assist the Madison Water Utility (MWU) in identifying potential sources of tetrachloroethylene (PCE) in the capture zone of Unit Well 15.

Background Information

Volatile organic compounds (VOCs), including PCE, trichloroethylene (TCE), and 1,1,1-trichloroethane (1,1,1-TCA) have been detected in Unit Well 15 since the early 1990s. PCE concentrations in the well have generally increased from below 1 microgram per liter ($\mu\text{g/L}$) in the early 1990s to 3 to 4 $\mu\text{g/L}$ between 2008 and 2011. The maximum contaminant level established by the United States Environmental Protection Agency for PCE is 5 $\mu\text{g/L}$. The concentrations of TCE and 1,1,1-TCA have been detected below their respective MCLs, and concentrations have generally decreased or stabilized since 1996. The location of Unit Well 15 is shown on Figure 1.

A regional groundwater flow model was used to delineate time-related (5-, 50-, and 100-year time of travel) zones of contribution (capture zone) for Unit Well 15 in a wellhead protection plan prepared by Strand Associates, Inc (Strand) in 2003. The 50-year time of travel capture zone, assuming 100 percent design capacity pumping rate was used to establish the limits of the CSI study area. The 50-year capture zone was selected based on the age of the well, which was drilled in 1965. Capture zones are shown on Figure 2.

CSI Scope Work

The CSI included a data review, a field reconnaissance, and interviews. The work performed is described in detail in the following sections.

Environmental Database Review

Current federal and state database listings for hazardous waste and other potentially impaired sites were identified in a report provided by Environmental Data Resources (EDR), a subcontract environmental record search firm. The EDR report was reviewed by AECOM to identify potential sources of PCE in the Unit Well 15 capture zone. Multiple databases were searched by EDR, including:

- National Priorities List (NPL)
- Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)
- Federal Resource Conservation and Recovery Act, Treatment, Storage, and Disposal Site (RCRA TSD) Facilities List
- Federal Resource Conservation and Recovery Act Information System (RCRIS)
- Federal Emergency Response Notification System (ERNS)
- Registry of Waste Disposal Sites in Wisconsin
- Wisconsin Department of Natural Resources (WDNR) Leaking Underground Storage Tank (LUST) List
- Wisconsin Department of Safety and Professional Services (DSPS) Underground Storage Tanks (UST) List
- WDNR Spills Summary Report
- Wisconsin Environmental Repair Program (ERP) List

A complete list of database sources and distances searched by EDR are included in the attached database report.

To supplement information in the EDR report, the following sources were reviewed:

- WDNR Bureau of Remediation and Redevelopment Tracking System (BRRTS). The online database includes information relating to investigations and cleanups of contaminated soil and/or groundwater, spills, Superfund sites, and WDNR funding assistance. The BRRTS also includes information relating to the Geographic Information System (GIS) Registry for contaminated sites closure.
- WDNR Remediation and Redevelopment (RR) Map. This includes information from BRRTS via the RR Program's map-based system.
- WDNR Solid and Hazardous Waste Information System (SHWIMS). The online database includes locations and facilities regulated by WDNR's Waste and Materials Management Program, including engineered and licensed solid waste disposal facilities, older unlicensed waste disposal sites, licensed waste transporters, hazardous waste generators, composting sites; wood-burning sites, waste processing facilities; and more.

Pertinent information obtained from the environmental database review is provided in Table 1.

Regulatory Case Files

WDNR and DSPS case file information was obtained from documents available through the WDNR's GIS Registry system, interviews with WDNR and DSPS project managers, and from pertinent case file information for select sites. Pertinent information obtained from the case files is provided in Table 1.

Physical Setting

Information about the physical setting of the Unit Well 15 capture zone was gathered from observations made during the field reconnaissance and from information provided in the Unit Well 15 Wellhead Protection Plan (Strand, 2003), a Volatile Organic Compound Mitigation report (Black & Veatch, 2011), and from regulatory case files.

Unit Well 15 is located west of East Washington Avenue (United States Highway 151) in an urban area in the City of Madison. The well property is adjoined by Reindahl Park (recreational) and commercial property (AT&T, FedEx Kinkos, and Einstein Bagels).

Unit Well 15 is located at an approximate elevation of 870 feet above mean sea level. The surface topography in the area of the well generally slopes downward from east to west.

The geology of the area consists of an upper sand and gravel aquifer overlying shallow sandstone. The shallow sandstone is separated from the deep sandstone aquifer by the Eau Claire Shale (Black & Veatch, 2011). Unit Well 15 is cased to 172 feet below the ground surface, in the shallow sandstone aquifer, but above the shale layer.

Shallow groundwater flow directions in the area of Unit Well 15 are shown on Figure 2.

Review of Historical Documents

AECOM reviewed historical aerial photographs (dated 1937, 1949, 1955, 1962, 1967, 1968, 1976, 1980, 1986, 1993, 1995, 2000, 2005, and 2010), select city directories (dated between 1941 and 2011), and topographic maps (dated 1906, 1959, 1969, 1974, and 1983). Pertinent information obtained from the aerial photos, city directories, and topographic maps is included in Table 1.

AECOM inquired about the availability of Sanborn Fire Insurance Maps from EDR. EDR indicated that there is no Sanborn map coverage available for the Unit Well 15 area.

Field Reconnaissance

Properties within the Unit Well 15 capture zone were observed from public right of way during the field reconnaissance conducted on April 11, 2012. The purpose of the reconnaissance was to investigate for potential contaminant sources.

Interviews

The following people were contacted as part of the CSI:

WDNR

- Stephen Ales, Section Chief, Private Water Supply
- Michael Schmoller, Hydrogeologist/Project Manager
- Constantine Tsois, Water Supply Specialist
- James Walden, Hydrogeologist/Project Manager
- Wendy Weihemuller, Environmental Program Assistant
- Wendell Wojner, Hydrogeologist/Project Manager

Wisconsin Department of Transportation (WisDOT)

- Sharlene TeBeest, Hazardous Materials Specialist

DSPS

- David Swimm, Advanced Hydrogeologist

City of Madison – Engineering Department

- Brynn Bemis, Hydrogeologist

Local, Long-Time Resident

- Jim Wickert, 3834 Ridgeway Avenue

The DNR and DSPS employees who were contacted manage (or formerly managed) LUST and ERP cases in the Unit Well 15 area. Sharlene TeBeest, WisDOT, forwarded a copy of a Phase 1 Hazardous Materials Assessment that was conducted in 2010 in association with proposed improvements to East Washington Avenue, between Thierer Road and East Springs Drive. Jim Wickert currently resides approximately 500 feet east of Unit Well 15 and has been familiar with the area since 1979.

Pertinent information obtained from the interviews is included in Table 1.

CSI Results

The CSI results are summarized in Table 1. The table lists 32 potential sources of PCE contamination, which are identified by a corresponding site number on Figure 2.

Of the 32 sites identified on Table 1, Sites 1 through 10 were ranked according to their perceived relative potential for being a source of PCE impact at Unit Well 15, with Site 1 having the highest potential and Site 10 having the lowest. Sites 11 through 32 are not considered to be significant potential PCE sources at this time. Based on the results of this CSI, field screening investigations are recommended at Sites 1 through 10.

AECOM appreciates the opportunity to assist MWU with this project. If you have any questions, please contact us at (715) 341-8110.

Enclosures: Figure 1
Figure 2
Table 1 – Site Summary Table
Photograph Log
EDR Reports (electronic copy only) - Radius Map™ Report with Geocheck®
Historical Topographic Map Report
Aerial Photo Decade Package
Certified Sanborn® Map Report
City Directory Image Report

References

References

Black & Veatch Corporation, 2011. *Unit Well 15 – Volatile Organic Compound (VOC) Mitigation*, October 13.

Dane County Public Library, 1941, 1951, 1961, 1966, 1971, 1976, 1981, 1986, 1991, 2001 City Directories.

Environmental Data Resources Inc. (EDR), 2012a. *The EDR Radius Map™ Report with Geocheck®, Madison Well 15, 3900 E. Washington Ave., Madison, WI 53704*. Inquiry Number 3296869.2s, April 5.

EDR, 2012b. *EDR Historical Topographic Map Report, Madison Well 15, 3900 E. Washington Ave., Madison, WI 53704*. Inquiry Number 3296869.4, April 6.

EDR, 2012c. *The EDR Aerial Photo Decade Package, Madison Well 15, 3900 E. Washington Ave., Madison, WI 53704*. Inquiry Number 3296869.5, April 6.

EDR, 2012d. *Certified Sanborn® Map Report, Madison Well 15, 3900 E. Washington Ave., Madison, WI 53704*. Inquiry Number 3296869.3, April 9.

EDR, 2012e. *The EDR-City Directory Image Report, Madison Well 15, 3900 E. Washington Ave., Madison, WI 53704*. Inquiry Number 3296869.6, April 11.

Himalayan Consultants, LLC, 2010. *Phase 1 Hazardous Materials Assessment, USH 151/E. Washington Avenue (Portage/Thierer Road – E. Springs Drive), Dane County, WI*, Project ID: 5992-09-00, July.

Strand Associates, Inc. 2003. *Wellhead Protection Plan, Unit Well 15, City of Madison, Wisconsin*, October.

U.S. Geological Survey. 1983a. *DeForest, Wis., 7.5-Minute Quadrangle*.

U.S. Geological Survey. 1983b. *Madison, Wis., 7.5-Minute Quadrangle*.

Dane County. Interactive GIS Mapping (including parcel reports and 1995, 2000, 2005, and 2010 aerial photos). <http://www.countyofdane.com/lio/>.

Wisconsin Department of Safety and Professional Services, Petroleum Tank Database.

Wisconsin Department of Natural Resources (WDNR) Solid and Hazardous Waste Information System.

WDNR, Bureau of Remediation and Redevelopment Tracking System.

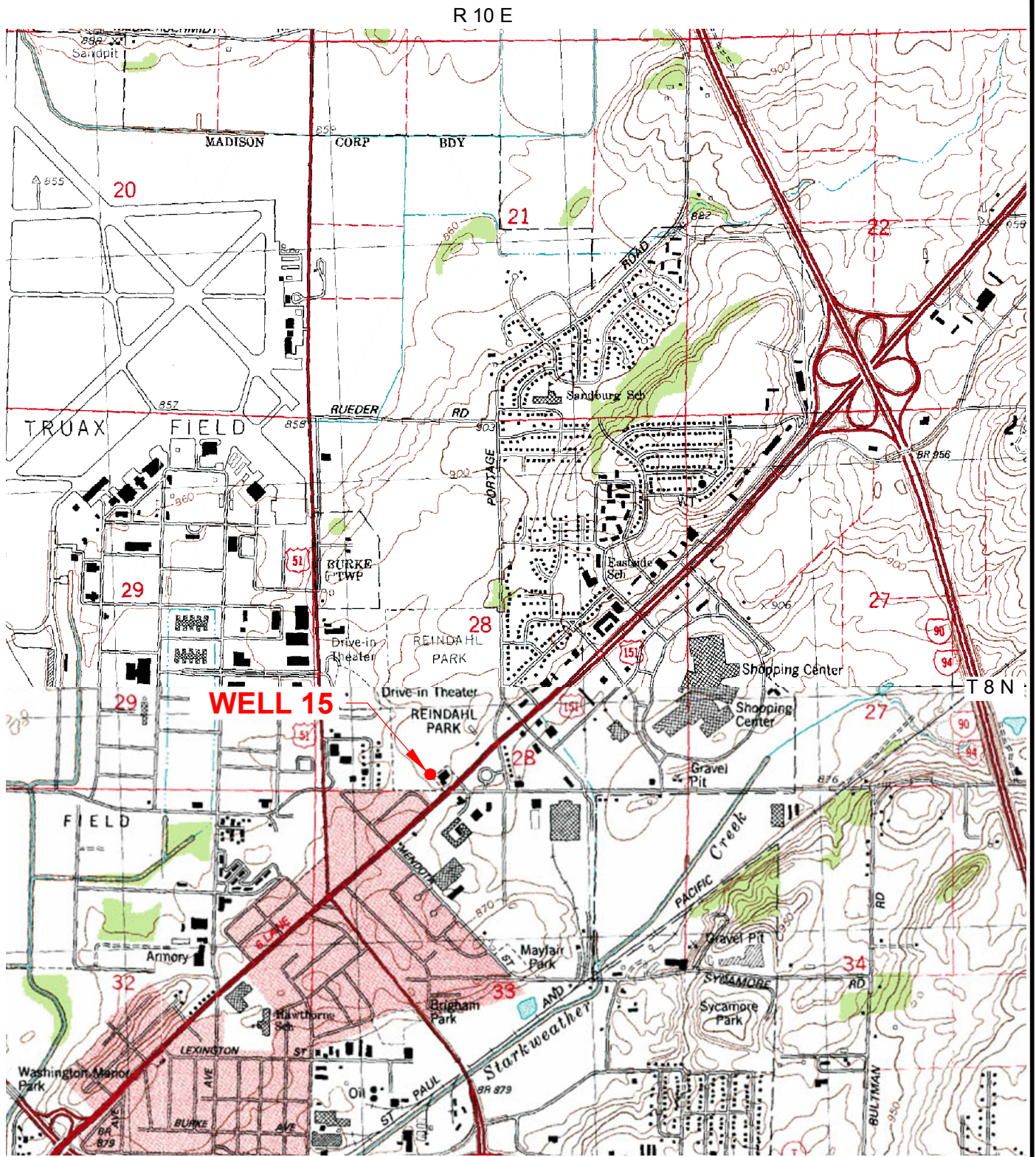
WDNR, GIS Registry of Closed Remediation Sites.

WDNR. Remediation and Redevelopment Map.

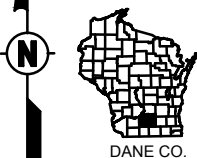
Wisconsin Department of Transportation (WisDOT). 2006. *Facilities Development Manual, Chapter 21, Section 35, Subject 5 Phase 1 Hazardous Material Assessments*. February 10.

WisDOT, 1967 and 1986 Aerial Photographs.

Figure 1



MAP SOURCE: MADISON, EAST, WI USGS TOPO QUADRANGLE, DATED 1983.
 MAP SOURCE: DE FOREST, WI USGS TOPO QUADRANGLE, DATED 1983.

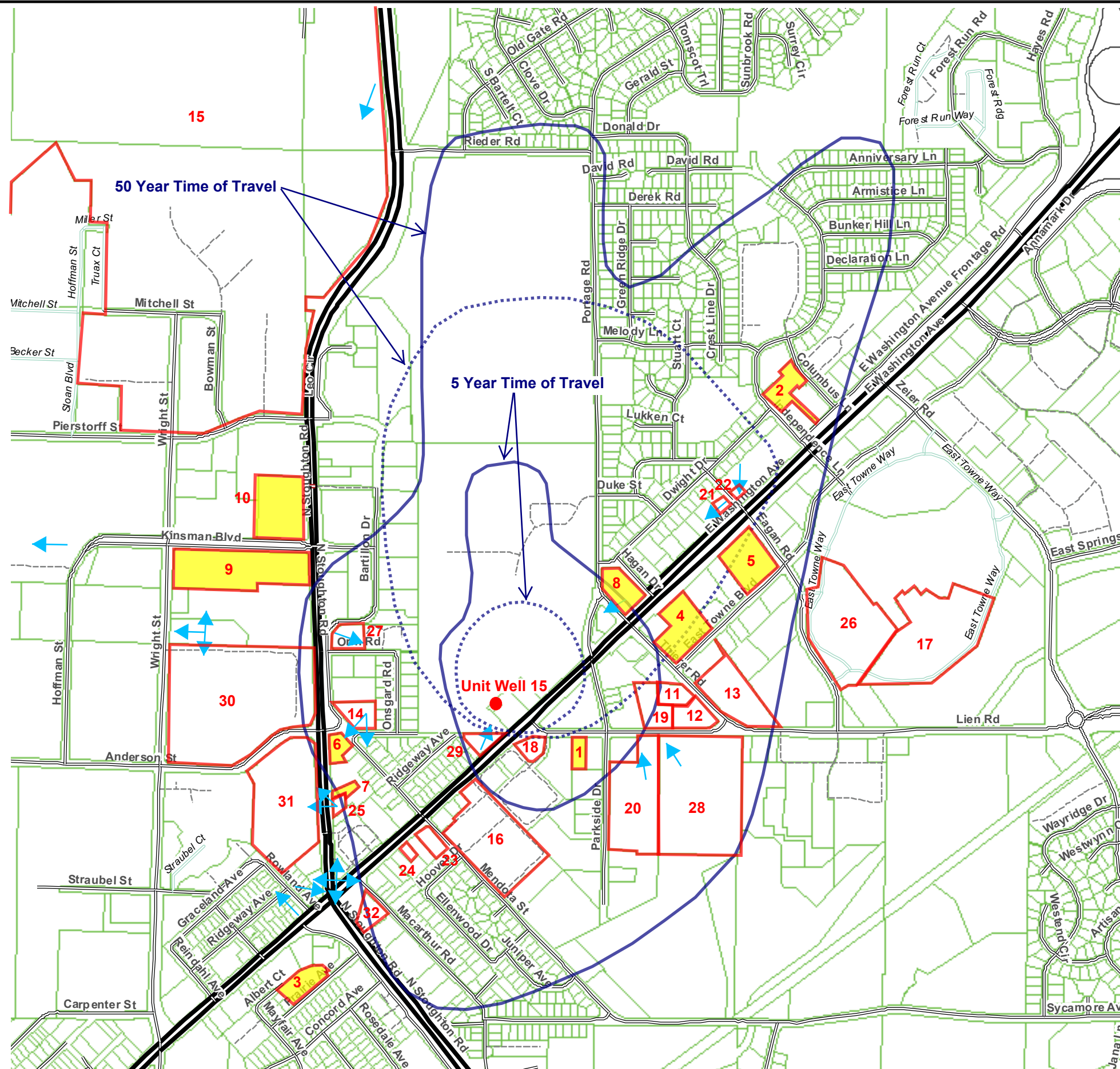


PCE CONTAMINANT SOURCE INVENTORY

UNIT WELL 15
3900 E. WASHINGTON AVE.
MADISON, WISCONSIN

PROJECT NO. 60263461	DRAWN BY: KAM	DATE: 04/10/2012	FIGURE 1
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Figure 2



- Estimated zone of contribution assuming 100% design capacity pumping rate (3 million gallons per day).
- ⋯ Estimated zone of contribution assuming 50% design capacity pumping rate (1.5 million gallons per day).

Note: Zones of contribution/times of travel based off figures included in the Unit Well 15 Wellhead Protection Plan dated October 2003 and prepared by Strand Associates, Inc.

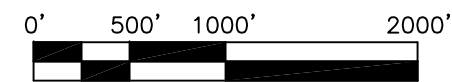
← Estimated shallow groundwater flow direction based on a review of the WDNR GIS Registry and/or Leaking Underground Storage Tank and Environmental Repair Program case file information

◆ Sites recommended for initial Field Screening Investigation

Sites (site order based on likelihood of impact to Unit Well 15)

1. Former Day One Formal Wear
2. Whistle Stop Cleaners
3. Former Duraclean and Johnny on the Spot
4. Former Sherman Williams
5. Former Klinke Cleaners
6. Former Paul's Classic Cleaners
7. Former Wickcraft Manufacturing Company
8. Office Depot
9. Bell Laboratories
10. Former Print Tech
11. Klinke Cleaners
12. Former RTRV Partnership Landfill
13. Former Russ Darrow Landfill
14. Zimbrick Body Shop
15. Dane County Regional Airport
16. Hy-Vee
17. Former Prange Way
18. Mobil Gas Station
19. Madison Gas & Electric
20. Amcor Flexibles Healthcare
21. BP Gas Station
22. Stanton Optical
23. Goodyear Service
24. Midas
25. Former Clark Oil Station
26. Sears
27. Planned Parenthood of Wisconsin
28. Thermastor
29. Capitol Britton Station
30. Madison Area Technical College
31. Virent Energy
32. Tires Plus

Note: Basemap (streets and parcels) obtained from Dane County Interactive GIS Map.



PCE CONTAMINANT SOURCE INVENTORY

UNIT WELL 15
3900 E. WASHINGTON AVE.
MADISON, WISCONSIN

PROJECT NO. 60263461	DRAWN BY: KAM	DATE: 04/10/2012	FIGURE 2
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Table 1 Site Summary Table

**Table 1 - Site Summary
Unit Well 15 PCE Contaminant Source Inventory
3900 East Washington Avenue, Madison, Wisconsin
May 2012**

Site Number	Site and Address	Property Use Concerns and Approximate Period of Operation	Approximate Distance and Direction from Unit Well 15	Estimated Time of Travel of Groundwater from Site to Unit Well 15 ¹	Comments	References
1	Former Day One Formal Wear 3939 Lien Road	Possible former dry cleaner (around 1986)	800 feet southeast	0 to 5 years	Day One Formal Wear is registered as a former generator of hazardous wastes (spent halogenated solvents).	EDR RCRA-NonGen, FINDS, SHWIMS 1976, 1986, and 1991 City Directory 1976 Aerial Photo
2	Whistle Stop Cleaners 4512 Eas Washington Avenue	Dry cleaner (1984 - present)	3,700 feet northeast	5 to 50 years (closer to 50 years)	Whistle Stop Cleaners is registered as a conditionally exempt small quantity generator of hazardous wastes, which included spent halogenated solvents.	EDR RCRA-CESQG, FINDS, Manifest, SHWIMS 1986, 1991, and 2001 City Directory 1987 Telephone Directory Madison Assessment Records
3	Former Duraclean and Johnny on the Spot 3553 and 3555 East Washington Avenue	Dry cleaner (1959 - 1969)	2,900 feet southwest	Outside zone of contribution for 100-year time of travel	Site listed under cleaners in telephone directories. According to advertisements in the telephone directories, coin operated dry cleaning machines were used at the site.	1959 and 1969 Telephone Directories WDNR Interview
4	Former Sherman Williams 1753 Thierer Road	Paint store (1981 - 1991)	1,600 feet northeast	5 to 50 years (closer to 5 years)	Sherman Williams is registered as a former generator of hazardous wastes (spent halogenated solvents).	EDR RCRA-NonGen, FINDS, SHWIMS 1981, 1986, and 1991 City Directory
5	Former Klinke Cleaners 4292 East Towne Boulevard	Dry cleaner (1990-1995)	2,500 feet northeast	5 to 50 years (closer to 50 years)	The current buildings at the site were constructed in 1987.	1991 City Directory 1990 and 1995 Telephone Directories
6	Former Paul's Classic Cleaners 1623 North Stoughton Road	Dry cleaner (1991-1995)	1,400 feet southwest	5 to 50 years (closer to 50 years)	The cleaners was located on the PDQ Gas Station property. Gasoline and diesel USTs are registered at the site. A LUST case was opened at the PDQ site in 1996. The case was closed by DSPS in 2002. DSPS handles petroleum cases only, so it is not expected that PCE was detected at the site during the LUST investigation.	EDR UST 1991 City Directory 1990 and 1995 Telephone Directories Area Resident Interview
7	Former Wickcraft Manufacturing Company 1609 North Stoughton Road	Industrial (1950 - 2000s)	1,500 feet southwest	5 to 50 years (closer to 50 years)	The site was formerly occupied by manufacturer of iron and steel products.	1971-2001 City Directories Madison Assessment Records
8	Office Depot 4016 East Washington Avenue	Municipal garage (1955 - 1995)	1,500 feet northeast	5 years	Site was formerly developed as the Burke Town Hall. Gasoline and diesel USTs were removed in 1990. A LUST case was opened at the site in 1989 and closed in 2004. Based on a review of the GIS Registry package, samples collected as part of the LUST investigation were apparently collected for petroleum related analysis only. Groundwater was measured to flow to the southwest at the site. The Burke Town landfill is located at Nelson/Reiner Roads, which is outside the Unit Well 15 capture zone.	EDR UST, LUST, SWF/LF, SHWIMS, WRRSER, CRS, AUL WDNR GIS Registry 1957 City Directory 1955 Aerial Photo
9	Bell Laboratories 3699 Kinsman Boulevard	Industrial facility that generated spent solvent waste (1976 - present)	2,100 feet northwest	50 to 100 years	The site is registered as a large quantity generator of hazardous waste. Hazardous wastes generated at the site include spent halogenated solvents and PCE. Spill cases were opened at the site following spills of petroleum (unknown type) and ethanol.	EDR RCRA-LQG, Spills, FTTS, HIST FTTS, SSTS, FINDS, Manifest, SHWIMS 1991 and 2001 City Directory 1976 Aerial Photo
10	Former Print Tech 3694 Kinsman Boulevard	Industrial facility that generated spent solvent waste (1976 - unknown)	2,300 feet northwest	50 to 100 years	Print Tech was apparently located at the site historically and was registered as a former generator of hazardous waste. Hazardous wastes generated at the site include spent halogenated solvents and PCE.	EDR RCRA-NonGen, FINDS, SHWIMS 1976 Aerial Photo

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11	Klinke Cleaners 1726 Thierer Road	Dry cleaner (1996 - present)	1,500 feet east	5 years (closer to 5 years)	PCE was used at the site from the late 1990s to the early 2000s. The building was constructed in 1996. Site is registered as a former generator of hazardous wastes (spent halogenated solvents). An ERP case was opened at the site in 2008 due to the presence of benzene in a soil sample and remains open. Chlorinated compounds were not detected in soil and groundwater samples collected during the ERP investigation.	EDR RCRA-NonGen, ERP, SHWIMS, FINDS 2000 Telephone Directory Site Reconnaissance Madison Assessment Records WDNR Interview
12	Former RTRV Partnership Landfill Lien Road	Landfill (1977 - 1991)	1,700 feet east	5 to 50 years	According to location information provided in the SHWIMS database, the inactive RTRV Partnership Landfill is located near the intersection of Lien Road and Thierer Road. The 7-acre landfill was originally licensed in 1977 and was deactivated around 1991. Wastes handled at the facility included foundry sand.	WDNR SHWIMS
13	Former Russ Darrow Landfill Thierer and Lien Roads	Landfill (unknown)	2,000 feet east	5 to 50 years	According to location information provided in the SHWIMS database, the inactive Russ Darrow Landfill is located near the intersection of Lien Road and Thierer Road. The landfill size was listed as six acres.	WDNR SHWIMS
14	Zimbrick Body Shop 1707 North Stoughton Road	Vehicle repair that generates spent solvent waste (1976 - present)	1,100 feet west	5 to 50 years	Site is registered as a conditionally exempt small quantity generator of hazardous wastes, including spent halogenated solvents. A LUST case was opened in 1992 and closed in 1999. Gasoline, diesel, and "other" USTs are registered as being removed from the site. PCE was not detected in samples collected during the LUST investigation. Groundwater was measured to flow to the south or southwest, with some indications of radial flow during the LUST investigation.	EDR RCRA-CESQG, LUST, UST, SHWIMS, WRRSER 1976 Aerial Photo
15	Dane County Regional Airport 4000 International Lane	Aircraft maintenance (1942 - present)	3,300 feet northwest	Outside zone of contribution for 100-year time of travel	The airport was formerly used as an army airfield as early as 1942, and was used as a military training and maintenance area. Multiple LUST and ERP cases have been opened at the Dane County Regional Airport complex. One of the ERP cases remains open.	EDR Closed LUST Open and Closed ERP
16	Hy-Vee 1320 Mendota Street	Vehicle service station (1976 - 2005) Cleaning company (2000 - present)	800 feet southwest	5 to 50 years	The site was listed as B&J Cleaning in a 2000 and 2005 telephone directory; however, records indicating dry cleaning activities at the site were not identified. The site was used as an automotive service center as early as 1976. A LUST case was opened at the site in 1995 and closed in 1998. Three waste oil USTs, a fuel oil UST, and a waste oil AST are registered as being removed from the site between 1990 and 2005. The site is registered as a former generator of hazardous waste.	EDR BRRTS, LUST, SHWIMS, NAR, RCRA- NonGen, FINDS 1976 City Directories 2000 and 2005 Telephone Directories 1976 Aerial Photo
17	Former Prange Way 53 East Towne Mall	Former cleaning operations (1971 - 1984)	3,500 feet east	Outside zone of contribution for 100-year time of travel	The discount department store was listed as a cleaner in a 1984 telephone directory; however, records indicating dry cleaning activities at the site were not identified. The store was located in the East Towne Mall, which opened in 1971. Records indicating dry cleaning activities at the site were not identified.	Historical Telephone Directories 1984 City Directory
18	Mobil Gas Station 3859 East Washington Avenue	Vehicle service station (1980 - present)	400 feet southeast	0 to 5 years	USTs containing gasoline, fuel oil, and used motor oil were removed from the site in 1988. Unleaded gasoline USTs are used at the site. Benzene and ignitable hazardous wastes are generated at the site. Gasoline spill in 1991 caused by an overfilled UST. Spill case closed. The site is registered as a former generator of hazardous waste (ignitable wastes and benzene). Gasoline was spilled at the site in 1991.	EDR RCRA-NonGen, FINDS, SPILLS, SHWIMS, UST
19	Madison Gas & Electric 4012 Lien Road	Utility (unknown)	1,400 feet east	5 years	An ERP case was opened at the site in 1997 and closed in 1998.	EDR ERP

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Site Number	Site and Address	Property Use Concerns and Approximate Period of Operation	Approximate Distance and Direction from Unit Well 15	Estimated Time of Travel of Groundwater from Site to Unit Well 15 ¹	Comments	References
20	Amcor Flexibles Healthcare 4101 Lien Road	Industrial (1968 - present)	1,200 feet southeast	5 to 50 years	Site occupied by a paper bag manufacturer in 1976 and as a medical packaging manufacturer in 1986. A double-walled chemical AST is in use at the property. Site is registered as a large quantity generator of hazardous waste (non-halogenated solvents). An ERP was opened at the site in 1992 and closed in 2006. Based on a review the GIS Registry package, samples collected as part of the ERP investigation were apparently collected for toluene analysis only. Groundwater was measured to flow to the northwest at the site. Spill incidents at the site have resulted in releases of transformer fluid, volatile organic compounds, ammonia, and non-chlorinated solvents. The spill cases have been closed.	EDR RCRA-LQG, FINDS, NPDES, MANIFEST, Tier 2, AST, CRS, ERP, SPILLS, SHWIMS, HMIRS WDNR GIS Registry 1976 and 1986 City Directory 1968 Aerial Photo
21	BP Gas Station 4222 East Washington Avenue	Vehicle service station (1965 - present)	2,700 feet northeast	5 to 50 years	A LUST case was opened at the site in 1985 and closed in 2008. Based on a review the GIS Registry package, samples collected as part of the LUST investigation were apparently collected for petroleum related analysis only. Groundwater was measured to flow to the southwest at the site. USTs containing gasoline and fuel oil were removed from the site between 1990 and 2003. Gasoline USTs and a fuel oil UST are registered as being in use at the site. Gasoline was spilled at the site in 1995. Site is registered as a conditionally exempt small quantity generator of hazardous waste (ignitable and corrosive wastes, lead, and benzene).	EDR RCRA-CESQG, LUST, UST, CRS, Spills, WRRSER, FINDS, AUL, SHWIMS WDNR GIS Registry 1965 City Directory
22	Stanton Optical 4302 East Washington Avenue	Vehicle service station (1965 - 2006)	2,900 feet northeast	5 to 50 years	USTs containing gasoline and used motor oils are registered as being closed at the site. A LUST case was opened at the site in 2006 and closed in 2010. Based on a review the GIS Registry package, samples collected as part of the LUST investigation were apparently collected for petroleum and polycyclic aromatic hydrocarbons analysis only. Groundwater was measured to flow to the southwest at the site.	EDR LUST, UST, CRS, AUL WDNR GIS Registry 1965 City Directory
23	Goodyear Service 3773 East Washington Avenue	Vehicle service station (1976 - present)	1,300 feet southwest	5 to 50 years	Site is registered as a conditionally exempt small quantity generator of hazardous wastes (ignitable wastes, cadmium, chromium, lead, and benzene). A waste/used motor oil UST was removed from the site in 1995. A kerosene AST was removed from the site. A waste/used motor oil AST is in use at the site.	EDR RCRA-CESQG, FINDS, SHWIMS, UST, BRRTS, AST 1976 City Directory 1976 Aerial Photo
24	Midas 3757 East Washington Avenue	Vehicle service station (1976 - present)	1,500 feet southwest	5 to 50 years	Engine waste oil was spilled at the site in 2003.	EDR SPILLS 1976 Aerial Photo
25	Former Clark Oil Station 1601 North Stoughton Road	Vehicle service station (1955 - 2007)	1,600 feet southwest	50 years	A LUST case was opened at the site in 1991 and closed in 1998. Groundwater was measured to flow to the west and northwest. Seven gasoline USTs were removed from the site between 1991 and 2007. The site is registered as former generator of hazardous waste (ignitable wastes and benzene)	EDR LUST, CRS, AUL, WRRSER, SHWIMS, RCRA-NonGen, FINDS, UST, AST 1976 City Directory 1976 Aerial Photo
26	Sears 43 East Towne Way	Vehicle service station (1971 - present)	3,000 feet northeast	Outside zone of contribution for 100-year time of travel	Eight USTs containing gasoline, used oil, and unknown were removed from the property. A used motor oil AST is in use. An ERP case was opened at the site in 1998 and closed in 1999. Site is registered as a conditionally exempt small quantity generator of hazardous waste (ignitable wastes and benzene).	EDR RCRA-CESQG, UST, AST, ERP, FINDS, BRRTS, Manifest, AUL, Tier 2, SHWIMS
27	Planned Parenthood of Wisconsin 3706 Orin Road	Oil company (1962 - 2000)	1,300 feet northwest	5 to 50 years	Site formerly developed as a oil company. A LUST case was opened at the site in 1992 and closed in 2001. Based on a review the GIS Registry package, samples collected as part of the LUST investigation were apparently collected for petroleum related analysis only. Groundwater was measured to flow to the southeast.	EDR SHWIMS, LUST, CRS, AUL, WRRSER WDNR GIS Registry 1976 City Directory 1962 Aerial Photo
28	Thermastor 4201 Lien Road	Industrial (1968 - present)	1,600 feet southeast	5 to 50 years	Site formerly occupied by a box manufacturer. An ERP case was opened in 1991 and closed in 2008. Based on a review the GIS Registry package, chlorinated solvents were analyzed for, but not detected in groundwater samples collected as part of the ERP case. Groundwater was measured to flow to the northwest at the site. Diesel fuel was spilled at the site in 1995. Four chemical ASTs were removed from the site in 1992. Diesel and gasoline USTs were removed from the site in 1985. The site is registered as a former generator of hazardous waste.	EDR UST, AST, CRS, ERP, SPILLS, , AUL, SHWIMS, RCRA-NonGen, FINDS WDNR GIS Registry 1976 City Directory 1968 Aerial Photo

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Site Number	Site and Address	Property Use Concerns and Approximate Period of Operation	Approximate Distance and Direction from Unit Well 15	Estimated Time of Travel of Groundwater from Site to Unit Well 15 ¹	Comments	References
29	Capitol Britton Station 3868 East Washington Avenue	Vehicle service station (1957 - 1995)	300 feet west	5 years	A LUST case was opened at the site in 1997 and remains open. PCE was analyzed during groundwater monitoring in 1997. PCE has not detected in groundwater samples. Groundwater was measured to flow to the north and northeast.	EDR LUST 1957 to 2006 City Directories
30	Madison Area Technical College 3550 Anderson Street	Maintenance operations (1986 - present)	1,700 feet west	50 years	A LUST case was opened at the site in 1992 and closed in 1993. Used oil and fuel is stored at the site in USTs and ASTs. Petroleum was spilled at the site in 1987. Site is listed as a small quantity generator of hazardous waste, including ignitable, corrosive, and reactive materials.	EDR LUST, RCRA-SQG, FINDS, Manifest, AIRS, SHWIMS, Tier II, SPILLS, UST, AST 1986 Aerial Photo
31	Virent Energy 3551 Anderson Street	Industrial (2005 - present)	1,700 feet southwest	50 years	Site is listed as a large quantity generator of hazardous waste, including ignitable wastes, benzene, methyl ethyl ketone, pyridine, and non-halogenated solvents. Hazardous waste, gasoline, and diesel ASTs are registered as being in use at the site.	EDR RCRA-LQG, AST
32	Tires Plus 1450 Macarthur Road	Vehicle service station (2000 - present)	2,100 feet southwest	50 years	Site is listed as a conditionally exempt small quantity generator of hazardous waste. New and used motor oil ASTs are registered at the site.	EDR RCRA-CESQG, FINDS, AST

Notes

¹: Estimated time of travel for groundwater based on Figure 3-3, 5, 50 & 100 YEAR T.O.T. Z.O.C. ASSUMING PUMPING RATE AT 100 PERCENT CAPACITY (3MGD) , included in the Wellhead Protection Plan for Unit Well 15 dated October 2003, Strand Associates, Inc.

Acronyms and Abbreviations

AST: Aboveground Storage Tank
AUL: Activity Use Limitation
BRRTS: Bureau of Remediation and Redevelopment Tracking System
CESQG: Conditionally Exempt Small Quantity Generator of Hazardous Waste
CRS: Closed Remediation Sites
EDR: Environmental Data Resources Inc.
ERP: Environmental Repair Program
FINDS: Facility Index System/Facility Registry System
FTTS: Federal Insecticide, Fungicide, & Rodenticide Act/Toxic Substances Control Act Tracking System
GIS: Geographic Information System
LQG: Large Quantity Generator of Hazardous Waste
LUST: Leaking Underground Storage Tank
NAR: No Action Required
NonGen: Former Generators of Hazardous Waste
NPDES: National Pollutant Discharge Elimination System
RCRA: Resource Conservation and Recovery Act
SHWIMS: Solid & Hazardous Waste Information Management System
SPILLS: Wisconsin Spills Database
SSTS: Section 6 of the Federal Insecticide, Fungicide and Rodenticide Act Tracking System
UST: Underground Storage Tank
WRRSER: Wisconsin Remedial Response Site Evaluation Report

Photograph Log

Photograph Log


Client Name: Madison Water Utility		Project Description: Unit Well 15 – PCE Contaminant Source Inventory	Project No.: 60263461
Photo No. 1	Date: 04/11/12		
Direction Photo Taken: South			
Description: View of the Unit Well 15 well house.			

Photo No. 2	Date: 04/11/12		
Direction Photo Taken: South			
Description: View of the former Day One Formal Wear property.			

PHOTOGRAPH LOG

Client Name: Madison Water Utility		Project Description: Unit Well 15 – PCE Contaminant Source Inventory	Project No.: 60263461
Photo No.: 3	Date: 04/11/12		
Direction Photo Taken: Southwest			
Description: View of the Whistle Stop Cleaners property.			

Photo No.: 4	Date: 04/11/12	
Direction Photo Taken: South		
Description: View of the apparent area of the former Duraclean and Johnny on the Spot property.		

PHOTOGRAPH LOG

Client Name: Madison Water Utility		Project Description: Unit Well 15 – PCE Contaminant Source Inventory	Project No.: 60263461
Photo No. 5	Date: 04/11/12		
Direction Photo Taken: South			
Description: View of the apparent area of the former Sherman Williams property.			

Photo No. 6	Date: 04/11/12	
Direction Photo Taken: Southeast		
Description: View of the apparent area of the former Paul's Classic Cleaners property.		

PHOTOGRAPH LOG

Client Name: Madison Water Utility		Project Description: Unit Well 15 – PCE Contaminant Source Inventory	Project No.: 60263461
Photo No.: 7	Date: 04/11/12		
Direction Photo Taken: West			
Description: View of the Bell Laboratories property.			

Photo No.: 8	Date: 04/11/12	
Direction Photo Taken: Northwest		
Description: View of the Klinke Cleaners property.		

PHOTOGRAPH LOG

Client Name: Madison Water Utility		Project Description: Unit Well 15 – PCE Contaminant Source Inventory		Project No. 60263461
Photo No. 9	Date: 04/11/12			
Direction Photo Taken: Northeast				
Description: View of the Zimbrick Body Shop property.				

Photo No. 10	Date: 04/11/12			
Direction Photo Taken: Southeast				
Description: View of the Hy-Vee property.				