



Wellhead Protection Plan Unit Well 27 City of Madison, Wisconsin



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February 2011

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EXECUTIVE SUMMARY

This report is a Wellhead Protection Plan (WHPP) for City of Madison Unit Well 27. The primary purposes of this WHPP are to define the wellhead protection area (WHPA) for Unit Well 27 and establish specific criteria for protection of Unit Well 27 and groundwater resources in the WHPA including management activities to maintain a high quality water supply, free of contamination. The primary goal of wellhead protection (WHP) planning is to protect water supply wells from contamination and, thereby, protect people who obtain their water supply from those wells. This WHPP was prepared for Unit Well 27 to conform to the requirements of the Wisconsin Administrative Code, Chapter NR 811, Section 12(6), for WHP planning.

Unit Well 27 is located at 18 N. Randall Avenue in the central part of the City of Madison. Construction of Unit Well 27 was completed in 1989. Unit Well 27 is 744-feet deep, is cased and grouted to a depth of 246 feet and is open to the lower bedrock (sandstone) aquifer, and has a design capacity of 2,200 gallons per minute (gpm). Unit Well 27 is typically used as a seasonal supply during the peak demand period of May through October.

Land use in the vicinity of Unit Well 27 is residential, commercial, manufacturing and planned community development. Unit Well 27 is located immediately south of the University of Wisconsin and is near Camp Randall Stadium.

As part of the Dane County regional hydrologic study, a regional groundwater flow model was prepared for Dane County (Krohelski et. al., 2000) and was used to delineate time-related (5-, 50-, and 100-year time of travel (TOT)) zones of contribution (ZOCs) for municipal wells including Unit Well 27. ZOCs extend radially around the well and toward the north-northeast and the south-southwest from Unit Well 27.

The WHPA for Unit Well 27 is illustrated in Figure 3-5. Two zones of protection are within the WHPA. Zone A is defined by the 5-year TOT ZOC. Zone B is defined by a 1,200-foot fixed radius around Unit Well 27. The WHPA will provide a conservative protection zone to account for changes in pumping rates, pumping duration, and interference drawdown from other existing and future wells.

A contaminant source inventory (CSI) was performed for the Unit Well 27 area during November 2010. Known potential and existing contaminant sources and routes within the Unit Well 27 WHPA include sanitary sewer; storm sewer; spill sites; streets, transportation corridors and railroad tracks (potential spills); in-use aboveground storage tank (AST) sites; in-use and closed underground storage tank (UST) sites; closed and open leaking underground storage tank (LUST) and Environmental Repair Program (ERP) sites; gas stations; drycleaners; vehicle repair/maintenance businesses; road salt use; polychlorinated biphenyl (PCB) transformer sites; stormwater retention pond; a zoo; and probable use of pesticide, herbicide, and nutrients on parks, commercial and residential lawns and gardens.

Programs and activities to be used by the City of Madison and others for WHPA management at Unit Well 27 are grouped into five principal categories as follows:

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1. Existing Programs
 - a. Clean Sweep Collection Program
 - b. On-site waste disposal system maintenance
 - c. Well construction and abandonment
 - d. Land application of sludge and septage
 - e. Spill notification and awareness of remedial investigation and cleanup
2. Land Use Controls
 - a. Existing zoning/WHP overlay zoning and ordinance
3. Intergovernmental Cooperation
 - a. Land use planning and site plan review
4. Monitoring
 - a. CSI maintenance
 - b. Water quality monitoring
5. Public Education and Awareness
 - a. Availability of WHPP
 - b. Public informational meeting
 - c. News releases
 - d. Informational materials distributed to residents in WHPA
 - e. Land use and contamination source awareness
 - f. School programs

Some of these programs and activities are currently being performed, while others are new and will be implemented immediately to help protect Unit Well 27.

The Madison Water Utility has an existing water conservation program and encourages water conservation. The Utility has formulated a contingency plan for providing water in the event that Unit Well 27, or one or more of the City's other water supply wells became contaminated or removed from service. Well 27 is part of Pressure Zone 6. In the event of the loss of Unit Well 27, other wells in Zone 6, such as Wells 6, 14, 17, 19, or 24, or Wells in Zone 7 could be used to serve the area.

The City of Madison has a WHP ordinance and overlay zoning district. The WHP ordinance helps ensure that new contaminant sources are not located in the Unit Well 27 WHPA.

1.0 INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

This report is a WHPP for City of Madison Unit Well 27. The primary purposes of this WHPP are to define the WHPA for Unit Well 27 and establish specific criteria for protection of Unit Well 27 and groundwater resources in the WHPA including management activities to maintain a high quality water supply, free of contamination. The primary goal of WHP planning is to protect water supply wells from contamination and, thereby, protect people who obtain their water supply from those wells.

The term “wellhead” refers to the physical structure (well) at the land surface through which groundwater is withdrawn from a subsurface water-bearing formation (aquifer). A WHPA is defined by federal law as “the surface and subsurface area surrounding a water well or wellfield, through which contaminants are reasonably likely to move toward and reach such water well or wellfield” (United States Environmental Protection Agency (USEPA), 2005).

This WHPP was prepared for Unit Well 27 to conform to the requirements of the Wisconsin Administrative Code, Chapter NR 811, Section 12(6), for WHP planning. A copy of this section of the code is in Appendix A. The project scope included the following:

1. Research available information regarding the geology and hydrogeology of the well sites and aquifer parameters.
2. Research well construction and operation of Unit Well 27.
3. Coordinate with the Capital Area Regional Planning Commission (CARPC) to delineate 5-, 50- and 100-year TOT capture zones for Unit Well 27.
4. Perform a CSI to identify and characterize existing and potential contamination sources within a ½-mile radius and within the recharge area equivalent to the 100-year TOT capture zone for Unit Well 27.
5. Assist with the determination of a WHPA for Unit Well 27.
6. Assist with the development of WHP management activities.

1.2 LOCATION AND BACKGROUND

Unit Well 27 is located at 18 North Randall Avenue in the central part of the City of Madison. The site is in the SE¼, SW¼ of the NE¼, of Section 22, Township 7 North, Range 9 East, Dane County, Wisconsin. The location of Unit Well 27 and other water system facilities in the City of Madison are illustrated in Figure 1-1. A portion of the survey plat showing the well site is in Appendix B. Construction of Unit Well 27 was completed in 1989. Unit Well 27 was a replacement well for Unit Well 4 which was located at Randall and Regent Streets (immediately south of Well 27).

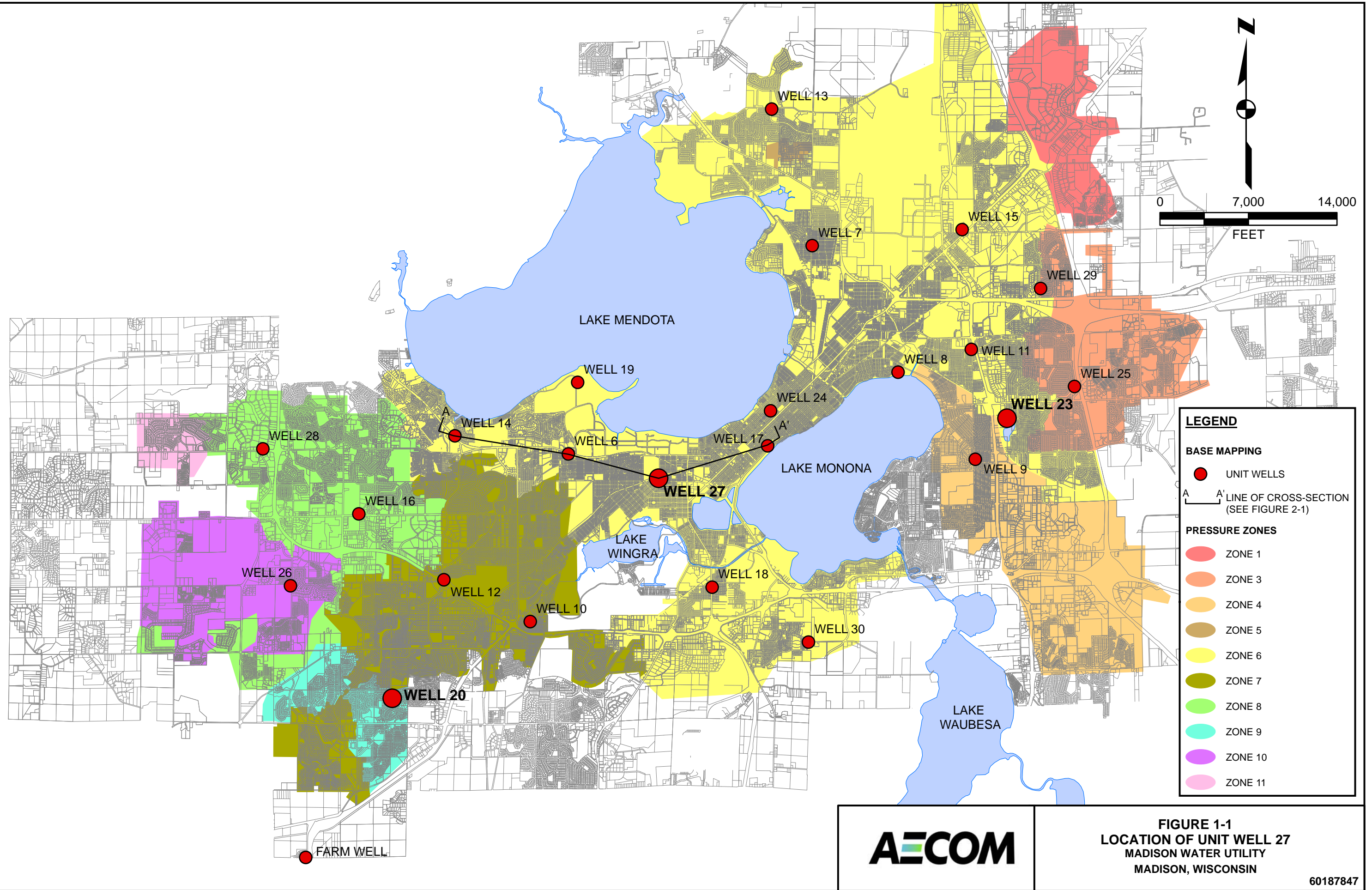


FIGURE 1-1
LOCATION OF UNIT WELL 27
MADISON WATER UTILITY
MADISON, WISCONSIN

The City water system serves approximately 235,000 people and consists of 22 active wells, 29 booster pumping facilities, 25 ground storage reservoirs, 5 elevated water storage tanks, and approximately 840 miles of water transmission and distribution mains. Because of the varying topography in the Madison area, the water system is divided into 10 separate pressure zones. Unit Well 27 is located in Pressure Zone 6. Unit Well 27 is located approximately 1.4 miles east of Unit Well 6 and 1.6 miles west of Unit Well 17.

1.3 UNIT WELL 27

Unit Well 27 was drilled to a depth of 744 feet. Well 27 is cased with 30-inch diameter steel casing pipe to a depth of 246 feet and is open to the lower bedrock (sandstone) aquifer.

Sandstone is the near surface bedrock and was encountered at a depth of 83 feet. The casing is terminated in the Eau Claire Formation (sandstone). Shale was encountered in the cased interval over the depth interval of 225 to 230 feet. The formation log for Unit Well 4 indicates that the basal unit encountered in the vicinity of Unit Well 27 is Pre-Cambrian rhyolite. Unit Well 27 was initially test pumped at a rate of 2,195 gpm and had a specific capacity of 15.5 gallons per minute per foot (gpm/ft) of drawdown. At the time of the test pumping, the static (non-pumping) water level in Unit Well 27 was 45 feet below ground. On May 18, 2010, the static water level in Unit Well 27 was approximately 45.3 below the measuring point at the wellhead. Unit Well 27 is typically used as a seasonal supply during the peak demand period of May through October. A construction report and formation log for Unit Well 27 that was prepared by the drilling contractor is in Appendix C. A construction report for Unit Well 4 that was prepared by the WGNHS is also in Appendix C.

2.0 HYDROGEOLOGIC CONDITIONS

2.1 LAND USE, TOPOGRAPHY, AND DRAINAGE

Well 27 is located on a parcel that is zoned General Residence District (R6), and is surrounded by parcels that are zoned General Residence Districts (R2, R4, R5 and R6), Manufacturing (M1), Commercial Districts (C1, C2 and C3) and Planned Community Development (PCD). Land uses include single and multi-family residential, governmental/institutional, and commercial retail sales and services. A portion of the City of Madison zoning map for the Unit Well 27 area is in Appendix D.

Unit Well 27 is located in an area that is covered by offshore lake sediment that was deposited during Wisconsin Glaciation. The land west and southwest of Well 27 is till covered. The topography surrounding Well 27 is nearly flat lying, whereas areas to the west, southwest and south are hilly with low relief drumlins. A drumlin is also located 2,500 feet directly north of Well 27 on the University of Wisconsin campus.

The ground surface elevation at Unit Well 27 is approximately 854 feet above mean sea level (MSL). The relief within a ½-mile radius of Well 27 ranges from approximately 980 feet above MSL on a hill located 2,500 feet west-northwest of Well 27, to 850 feet above MSL at a gently sloping area located ½-mile east of Well 27. The elevation of Lake Mendota, which is approximately 3,500 feet north of Well 27, is 849 feet above MSL. Drainage is to local storm sewers. The land slopes from Well 27 toward the east-southeast toward Monona Bay.

2.2 GEOLOGY

The area was glaciated by the Green Bay Lobe during the Wisconsin Glaciation. The rocks and unlithified deposits in the area range from Precambrian basement rocks to recent soils. The bedrock from oldest to youngest includes Precambrian rhyolite and Cambrian age bedrock consisting of sandstone, dolomite, and shale.

A geological cross-section which extends west to east through Unit Wells 14, 6, 27 and 17 is presented in Figure 2-1. A formation log for strata encountered at Unit Well 27 is in Appendix C. The stratigraphic sequence encountered in the wells is briefly described in the following sections.

2.2.1 Precambrian Basement Bedrock

Precambrian bedrock was encountered in water supply Unit Well 27 at a depth of 744 feet below ground surface. The Precambrian bedrock encountered in Unit Well 27 is described in the Unit Well 4 formation log as weathered, red rhyolite (WGNHS Well Log DN-51).

2.2.2 Cambrian Bedrock

Cambrian age rocks encountered in Unit Well 27 include, in ascending order, Mount Simon Formation, Eau Claire Formation, Wonewoc Formation, and the Tunnel City Group.

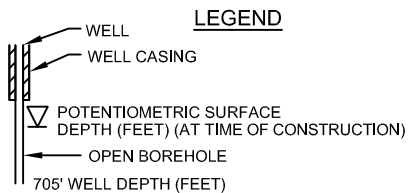
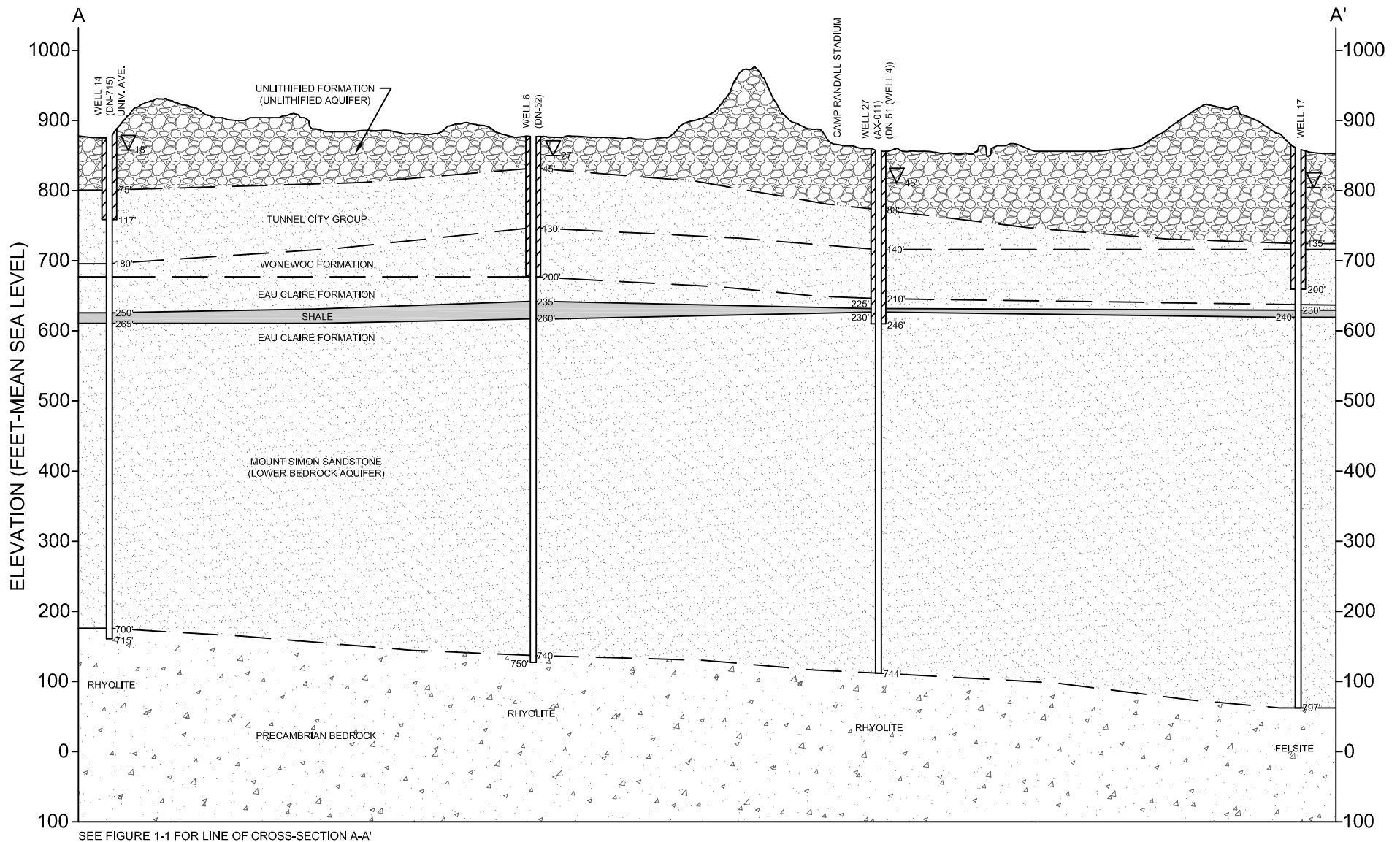


FIGURE 2-1
 GEOLOGICAL CROSS-SECTION THROUGH
 MADISON UNIT WELLS 14, 6, 27 & 17
 MADISON, WISCONSIN

Figure 2-1 illustrates that the Cambrian age rocks slope gently from the west toward the east. The rocks also slope gently toward the south. The cross-section also shows a gentle eastward slope of the Precambrian bedrock surface. The thickness of deep rock units appears to be relatively consistent in the Madison area, although the thickness of the shale layer in the upper part of the Eau Claire Formation varies by several feet between Unit Wells 6 and 27. The occurrence and thickness of the upper Tunnel City Group bedrock varies, because it is the upper erosional surface. The Tunnel City Group strata are 52 feet thick at Unit Well 27. Figure 2-1 illustrates the strata above the Tunnel City Group at Unit Well 27 consists of unlithified deposits. A greenish-gray and red, dolomitic shale layer 5-feet thick is encountered in the upper part of the Eau Claire Formation over the depth interval of 225 to 230 feet, and appears to be laterally extensive across the area.

2.2.3 Unlithified Deposits

Bedrock is mantled by unlithified offshore lake sediment and glacial till deposits. Clayton and Attig (1997) classify the local near surface unlithified deposits in the immediate vicinity of Unit Well 27 as part of the Horicon Member of the Holy Hill Formation, deposited during Wisconsin Glaciation. Clayton and Attig (1997) report that the natural near surface formation at Unit Well 27 is offshore lake sediment consisting of plane-bedded and cross-bedded sand and plane-bedded silt and clay.

At Unit Well 4 (Unit Well 27), the formation from the top of the sandstone bedrock (encountered at a depth of 67 feet) to 5 feet depth below the ground surface is described as medium gray to gray dolomitic, glacial sand with gravel up to ½-inch diameter. Formation samples from 0 to 5 feet in depth were described as dark gray soil (fill).

Soils in the immediate vicinity of Unit Well 27 are classified as the Batavia silt loam and the Dodge silt loam (Hole, 1968; United States Department of Agriculture (USDA), 1978). The Batavia silt loam occurs on 0-2 percent slopes (nearly level) and formed in deep loess and glacial sediments. The soil has thin layers of water-laid silt, and fine sand or clay in the substratum and is well drained (USDA, 1978). The Dodge silt loam occurs on 2 to 6 percent gently sloping to moderately sloping glaciated uplands (side slopes and tops of ridges). The soil formed in loess over sandy glacial till, is deep and well drained (USDA, 1978).

The Batavia silt loam and Dodge silt loam have good contaminant attenuation potential. The Dane County Regional Planning Commission (DCRPC) assigned a risk classification of low to extreme from surface activities within a one mile radius of Unit Well 27 on the basis of several factors including soil properties (DCRPC, 1999).

2.3 HYDROGEOLOGY

In the study area, groundwater occurs within the lower bedrock aquifer, the upper bedrock aquifer, and the shallow unlithified aquifer. The upper bedrock aquifer and the lower bedrock aquifer are used for water supply. No well construction reports were found for wells that are terminated in the unlithified aquifer in the Well 27 area, which may indicate that locally, the unlithified aquifer is not used for water supply. Following is a brief discussion about the aquifers:

2.3.1 Lower Bedrock Aquifer

The lower bedrock aquifer occurs in the Mount Simon Formation and lower part of the Eau Claire Formation. The Precambrian bedrock is the base of the lower bedrock aquifer and the shale layer in the Eau Claire Formation is the upper confining unit. Water occurs within horizontal and vertical fractures, along bedding planes, and between sand grains in the aquifer. The saturated thickness of the lower bedrock aquifer is approximately 514-feet thick in Unit Well 27. The hydraulic conductivity of the lower bedrock aquifer is approximately 10 feet per day (ft/day) (Krohelski et. al., 2000). Unit Well 27 is cased and grouted to a depth of 246 feet, which is 16 feet below the Eau Claire shale confining layer; therefore, Unit Well 27 is open only to the lower bedrock aquifer.

Water levels measured in Unit Well 27 should be representative of the lower bedrock aquifer. On May 18, 2010, the static water level in Unit Well 27 was 45.3 feet below the measuring point at the wellhead (approximately 814 feet MSL). The simulated potentiometric surface in the lower bedrock (Mount Simon) aquifer is illustrated in Figure E-1 in Appendix E. Unit Well 27 is located near the center of a cone of depression that has developed in the Madison pumping center. Groundwater flow toward Unit Well 27 is radially from all directions (DCRPC, 2004). Figure E-1 illustrates the simulated potentiometric surface elevation in the vicinity of Unit Well 27 at slightly less than 840 feet MSL. The storativity of the lower bedrock aquifer is approximately 0.0003, and the porosity is approximately 30 percent (Bradbury, 2001). The porosity of the Eau Claire Formation is approximately 5 percent (Bradbury, 2001).

2.3.2 Upper Bedrock Aquifer

The upper bedrock aquifer occurs in the upper part of the Eau Claire Formation above the shale and within the Wonewoc Formation and Tunnel City Group. Water occurs within fractures, along bedding planes, and between sand grains in the sandstone.

At Unit Well 27, the thickness of the bedrock formation above the shale confining layer is 137 feet. The saturated thickness of the upper bedrock aquifer is approximately 137 feet. The simulated potentiometric (water table) surface in the upper bedrock aquifer and unlithified (sand and gravel) aquifer is illustrated in Figure F-1 (DCRPC, 2004) in Appendix F. Figure F-1 illustrates the elevation of the simulated potentiometric surface in the upper bedrock aquifer (water table) at Unit Well 27 in 2000 was less than 860 feet above MSL.

The hydraulic conductivity of the upper bedrock aquifer is approximately 5 ft/day (Krohelski et. al., 2000). The porosity of the upper bedrock formations is approximately 5 percent (Bradbury, 2001).

2.3.3 Unlithified Aquifer

The unlithified aquifer occurs in the near surface where sand and gravel layers are saturated. A review of well construction reports for wells completed in deeper aquifers shows that the saturated thickness of sand and gravel layers may range from 5- to 50-feet thick. The estimated saturated thickness of the unlithified aquifer at Unit Well 27 is 40 to 45 feet. Lake Mendota (849-feet above MSL) and Lake Wingra (848-feet above MSL) are hydraulically connected to the unlithified aquifer. The hydraulic conductivity of the unlithified aquifer varies. For modeling

purposes, Krohelski et. al., 2000, used a hydraulic conductivity of 7 ft/day and a porosity of 20 percent for the unlithified sand and gravel aquifer.

2.3.4 Groundwater Flow System

Average annual precipitation in the City of Madison area is approximately 30 to 30.5 inches per year (Cline, 1965; Cotter et. al., 1969). Cline (1965) estimated that the amount of recharge to the groundwater reservoir in the Upper Yahara River basin was approximately 6 inches/year (in/yr). Swanson (1996) estimated that the recharge rate in Dane County ranges from 0.3 to 6.7 in/yr and has an average value of 2.6 in/yr. Precipitation infiltrates through the till layer and lake shore sediments, and recharges the unlithified and shallow bedrock aquifers. In some areas, a small percentage of water moves downward from the upper bedrock aquifer through the Eau Claire confining layer and into the lower bedrock aquifer. The location of Unit Well 27, and areas of recharge to and discharge from the lower bedrock (Mount Simon) aquifer are illustrated in Figure E-2 in Appendix E (Bradbury et. al, 1999; DCRPC 1999). Unit Well 27 is located near a recharge area. Discharge from the unlithified and shallow bedrock aquifers is to pumping wells and/or to surface waters (lakes, streams, and wetlands). Discharge from the lower bedrock aquifer is primarily to pumping wells.

3.0 WHPA DELINEATION

This chapter describes methodologies used to define the Zone of Influence (ZOI) and ZOC for Unit Well 27.

3.1 ZOI

The ZOI for Unit Well 27 was estimated in accordance with Wisconsin Department of Natural Resources (DNR) requirements based on 30 days of continuous pumping at the rated pump capacity, assuming no aquifer recharge. The ZOI was determined using the Theis equation. The estimated ZOI for Unit Well 27 to a radius where there is 1 foot of drawdown is approximately 9.4 miles. The estimated ZOI to a radius of zero drawdown is approximately 19.7 miles. These estimated ZOI are conservatively large, because the Theis equation does not incorporate aquifer recharge or the effects of potential hydraulic boundaries. For the calculation, it was assumed that the entire open borehole interval in the lower bedrock aquifer supplies water to Unit Well 27. Distance–drawdown calculations are in Appendix G.

3.2 GROUNDWATER MODEL DEVELOPMENT AND ZOC DELINEATION

As part of the Dane County regional hydrologic study, a regional groundwater flow model was prepared for Dane County (Krohelski et. al., 2000) and was used to delineate time-related ZOCs for municipal wells including Unit Well 27. The Dane County regional hydrologic study was conducted cooperatively by the WGNHS, DCRPC, and the United States Geological Survey (USGS). The USGS modular groundwater modeling code (MODFLOW (McDonald & Harbaugh, 1988)) was used to simulate groundwater flow. After the calibrated groundwater flow model was prepared, PATH3D (Zheng, 1991) was used to determine time-related ZOCs.

The model domain covers an area of 50 by 60 miles and is divided into 144,000 nodes. Each node has regular spacing of 1,312.4 feet (400 meters) on a side. The grid has 200 rows and 240 columns (Krohelski et. al., 2000).

In 2002, the original groundwater flow model was converted from a three-layer model to a four-layer model. The sand and gravel aquifer is Layer 1. The upper bedrock aquifer is Layer 2. The Eau Claire Formation is Layer 3, and the lower bedrock aquifer is Layer 4. The model was recalibrated and various boundary conditions were modified (DCRPC, 2001). Other aquifer parameters input into the model were as previously described in Chapter 2 and in Krohelski et. al., 2000.

Four groundwater flow simulations were performed for this study, by the CARPC (formerly DCRPC), using the calibrated model and different pumping rates for existing and known future municipal supply wells in Dane County. Simulation No. 1 was performed using the projected pumping rates from municipal wells for the year 2030 (Bradbury, 1998). Total City of Madison 2030 pumping is projected to be 44.328 million gallons per day (MGD). For Simulation No. 1, projected 2030 pumping was distributed evenly among the City's existing and planned wells for an average rate of 1.4413 MGD. Pumping at a rate of 1.4413 MGD is equivalent to pumping continuously at a rate of approximately 1,000 gpm.

Simulation No. 2 was performed using the “maximum sustained pumping rate” or “one-half design capacity” (Bradbury, 1998; DCRPC, 2004). The maximum sustained pumping rate (one-half design capacity) for Unit Well 27 is 1.584 MGD. Pumping at a rate of 1.584 MGD is equivalent to pumping continuously at a rate of 1,100 gpm.

Simulation No. 3 was performed using full design capacity. Full capacity for Unit Well 27 is 3.168 MGD. Pumping at a rate of 3.168 MGD is equivalent to pumping continuously at a rate of 2,200 gpm.

Simulation No. 4 was performed using the average pumping rate for Unit Well 27 for the maximum year during the past 10 years (2000-2009). The maximum pumpage year for Unit Well 27 was 2000 when Unit Well 27 was pumped at an average rate of approximately 1.894 MGD. Pumping at a rate of 1.894 MGD is equivalent to pumping continuously at a rate of 1,315 gpm.

PATH3D (Zheng, 1991) was used to determine the time-related ZOCs for Unit Well 27. Particles were input in the model around Unit Well 27 and then tracked backward from the well to points where they enter the groundwater flow system.

3.3 ZOC

The area that recharges or contributes water to Unit Well 27 is defined as the ZOC. The areal extent of the ZOC (capture zone) depends on the pumping rate, amount of horizontal and vertical recharge, aquifer characteristics, pumping duration, and other stresses such as other pumping wells. It is beneficial to know the well capture zone, because contaminants introduced within the zone could reach Unit Well 27.

Figure 3-1 illustrates the 5-, 50-, and 100-year TOT ZOCs for Unit Well 27 based on the projected 2030 pumping rate (Simulation No. 1). Figure 3-2 illustrates the 5-, 50-, and 100-year TOT ZOCs for Unit Well 27 based on the one-half design capacity pumping rate (Simulation No. 2). Figure 3-3 illustrates the 5-, 50-, and 100-year TOT ZOCs for Unit Well 27 based on the full design capacity pumping rate (Simulation No. 3). Figure 3-4 illustrates the 5-, 50-, and 100-year TOT ZOCs for Unit Well 27 based on the average pumping rate for Unit Well 27 for the maximum year (Simulation No. 4).

The capture zones extend radially around the well and particularly toward the north-northeast and the south-southwest. As previously described, Unit Well 27 is located near the central part of the cone of depression that has developed in the Madison area. Table 3-1 provides a summary of the extent of capture zones in the southwesterly and northeasterly directions for the various pumping simulations. The ZOCs delineated using the Simulation No. 3 pumping rates are more conservatively large compared to the ZOCs delineated using the Simulations Nos. 1, 2, and 4 pumping rates.

Figure 2 in Appendix H illustrates the ultimate regional ZOCs for Unit Well 27 and for other wells in Dane County. For the ultimate capture zones simulation, groundwater flow pathlines extend toward the south-southwest from Unit Well 27 in the simulated upgradient groundwater flow direction.


LEGEND

BASE MAPPING

● UNIT WELL 27

CAPTURE AREAS

 5-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE

 50-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE

 100-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE

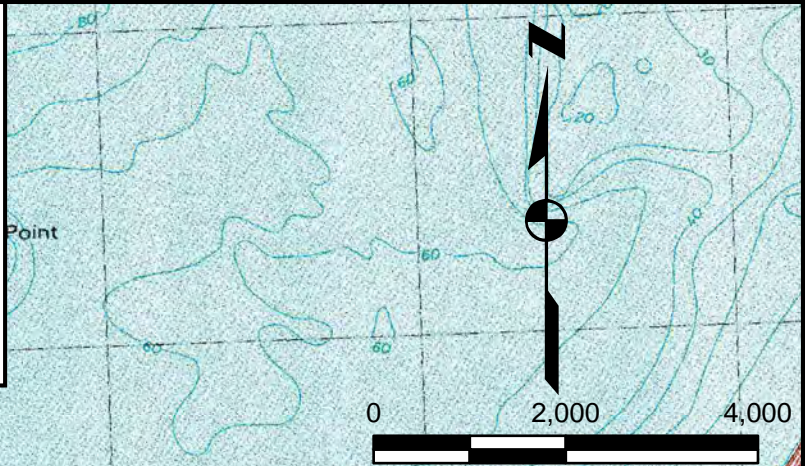


FIGURE 3-1
5, 50, 100 YEAR T.O.T. Z.O.C.s ASSUMING
PROJECTED 2030 PUMPING RATE
UNIT WELL 27
MADISON, WISCONSIN

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LEGEND

BASE MAPPING

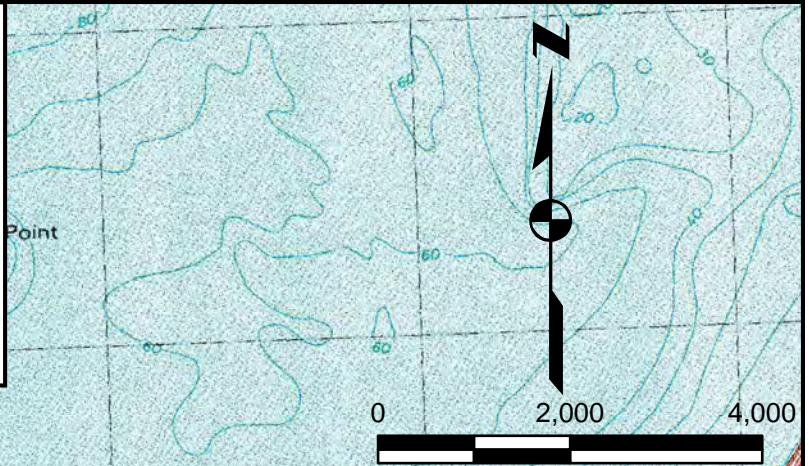
● UNIT WELL 27

CAPTURE AREAS

 5-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE

 50-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE

 100-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE



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FIGURE 3-2
5, 50, 100 YEAR T.O.T. Z.O.C.s ASSUMING
50 PERCENT CAPACITY PUMPING RATE
UNIT WELL 27

MADISON, WISCONSIN

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LEGEND

BASE MAPPING

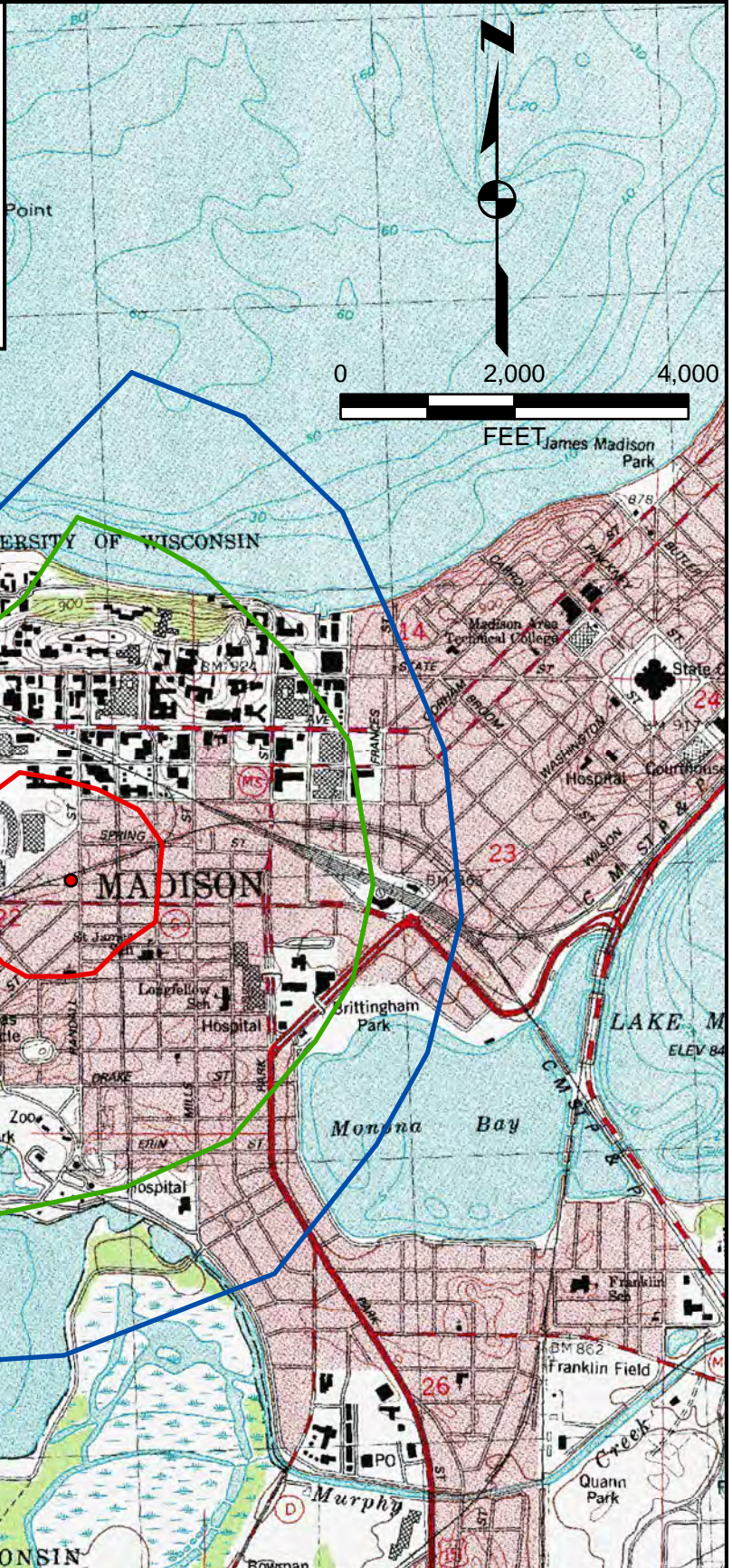
● UNIT WELL 27

CAPTURE AREAS

 5-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE

 50-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE

 100-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE



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FIGURE 3-3
5, 50, 100 YEAR T.O.T. Z.O.C.s ASSUMING
FULL CAPACITY PUMPING RATE
UNIT WELL 27
MADISON, WISCONSIN

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LEGEND


BASE MAPPING

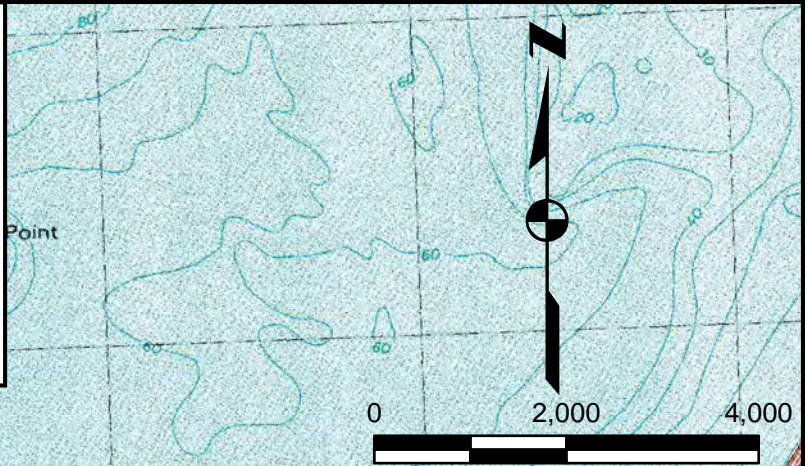
● UNIT WELL 27

CAPTURE AREAS

 5-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE

 50-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE

 100-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE



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FIGURE 3-4
5, 50, 100 YEAR T.O.T. Z.O.C.s ASSUMING
PUMPING AT AVG RATE DURING MAX YEAR
UNIT WELL 27
MADISON, WISCONSIN

60187847

TABLE 3-1
SUMMARY OF EXTENT OF ZOCs (CAPTURE ZONES)
WELLHEAD PROTECTION UNIT WELL 27
MADISON, WISCONSIN

Item	Simulation No. 1 (projected 2030 pumping rates)	Simulation No. 2 (one-half design capacity pumping rates)	Simulation No. 3 (continuous pumping at full capacity)	Simulation No. 4 Average Pumping Rate During Maximum Pumpage Year
Simulated Pumping Rate	1.4413 MGD (1,000 GPM)	1.584 MGD (1,100 GPM)	3.168 MGD (2,200 GPM)	1.894 MGD (1,315 GPM)
Extent of ZOC (feet) in Southwesterly Direction				
5-year TOT	850	800	1,200	950
50-year TOT	2,800	2,900	4,000	3,100
100-year TOT	4,450	4,500	6,050	5,000
Extent of ZOC (feet) in Northeasterly Direction				
5-year TOT	550	650	1,050	700
50-year TOT	2,550	2,750	4,200	3,050
100-year TOT	3,600	3,900	5,900	4,350
Notes:				
MGD = Million Gallons per Day				
ZOC = Zone of Contribution				
TOT = Time of Travel				

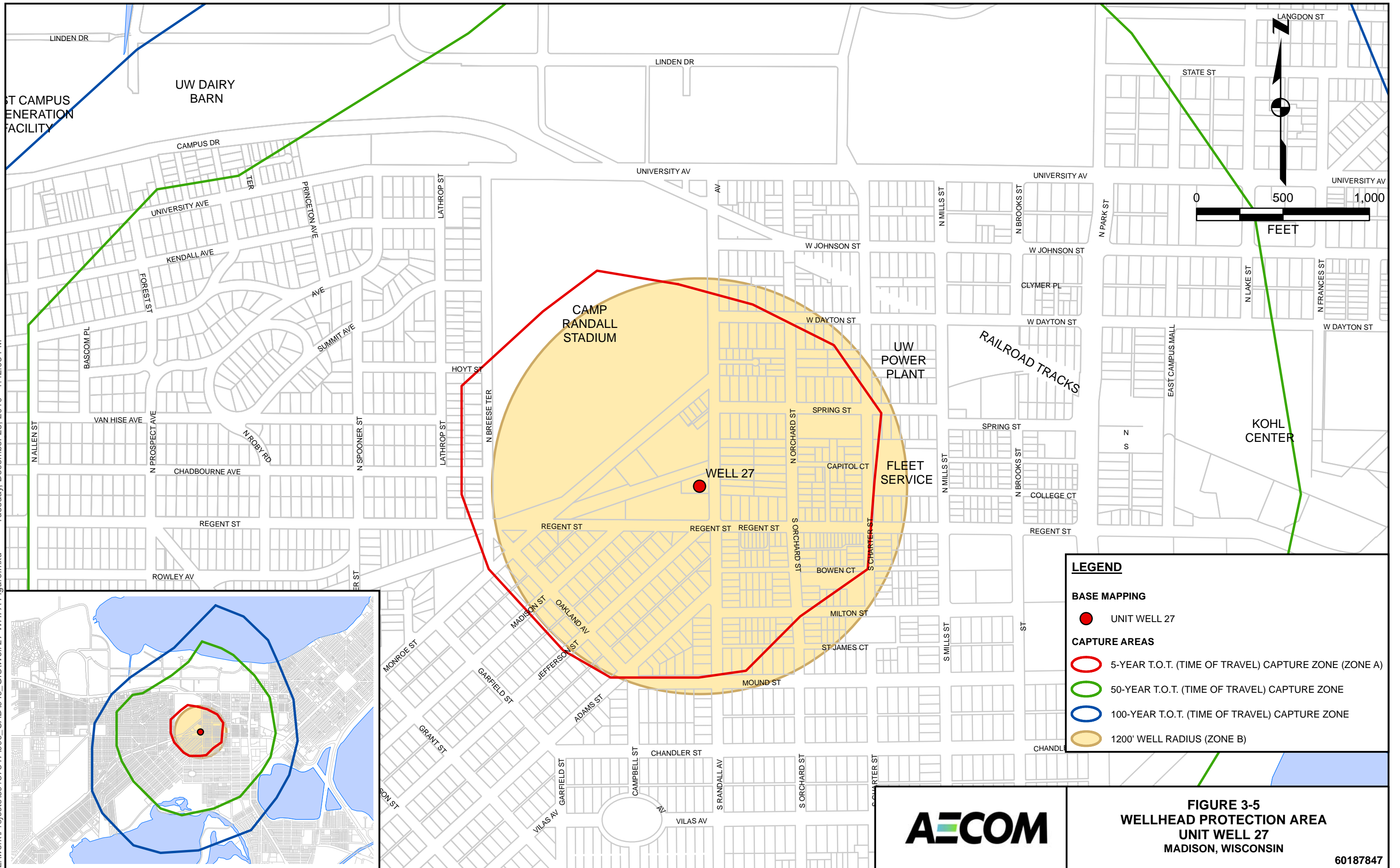
3.4 WHPA

The Wisconsin Administrative Code (Chapter NR 811.12(6)(e)) requires that a WHPA for municipal water supply wells “encompass, at a minimum, that portion of the recharge area equivalent to a 5-year TOT to the well.” Any of the four simulations described above could be used to model the 5-year TOT ZOC for Unit Well 27. It is possible that Unit Well 27 could be pumped at maximum capacity without interruption. Therefore, Simulation No. 3 provides a realistic, but very conservative model of well capture zones for Unit Well 27. Simulation No. 3 was used to generate the long-term capture zones and WHPA for Unit Well 27.

The 5-year TOT ZOC for Unit Well 27 extends 1,500 feet northwesterly from the well and 1,100 feet southeasterly from the well. The 100-year TOT ZOC extends approximately 5,000 feet southwesterly from the well and 4,350 feet northeasterly from the well. Protecting the entire 100-year TOT ZOC from Unit Well 27 to the upgradient boundaries at the same level of protection, as the area within the 5-year TOT ZOC is likely too severe.

The WHPA for Unit Well 27 is illustrated in Figure 3-5. Two zones of protection are within the WHPA. Zone A is the area around Unit Well 27 that is defined by the 5-year TOT ZOC delineated for Simulation No. 3 (full design capacity pumping rate). Zone B is the area around Unit Well 27, beyond Zone A, that is defined by a 1,200-foot fixed radius around Unit Well 27. This radius is selected because the Wisconsin Administrative Code Chapter NR 811.12(5)(d) requires a 1,200-foot separation distance between a municipal water supply well and certain contamination sources.

As illustrated in Figure 3-5, Zones A and B are approximately the same size, with Zone A extending farther to the northwest, and Zone B extending farther toward the southeast, east and northeast. The WHPA will provide a conservative protection zone to account for changes in pumping rates, pumping duration, and interference drawdown from other existing and future wells. The WHPA is located entirely within the City of Madison.



LEGEND

BASE MAPPING

- UNIT WELL 27

CAPTURE AREAS

- 5-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE (ZONE A)
- 50-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE
- 100-YEAR T.O.T. (TIME OF TRAVEL) CAPTURE ZONE
- 1200' WELL RADIUS (ZONE B)



FIGURE 3-5
WELLHEAD PROTECTION AREA
UNIT WELL 27
MADISON, WISCONSIN

4.0 POTENTIAL CONTAMINANT SOURCES

4.1 CSI

A CSI was performed for the Unit Well 27 area during November 2010. The CSI consisted of a search of government records, interviews, and a reconnaissance survey of the area within a ½-mile radius and the recharge area equivalent to the delineated 100-year TOT ZOC for Unit Well 27. General land use observations and reconnaissance were made on November 16 and 17, 2010.

The location of potential, existing, and former contaminant sources in the WHPA, within a ½-mile radius and the recharge area equivalent to the delineated 100-year TOT ZOC for Unit Well 27 are illustrated in Figure 4-1. Table 4-1 provides a summary of potential contaminant sources that were observed and/or reported to be within the WHPA and review area.

Potential, existing, and former contaminant sources and routes within the WHPA and ZOCs for Unit Well 27 include 64 former spill sites, potential spills along roads and railroad tracks; sanitary and storm sewers; 40 in-use AST sites; 12 in-use UST sites, 9 closed AST sites, 172 closed UST sites; 110 closed LUST, ERP or LAST sites; 9 open LUST, ERP or LAST sites; active gas stations; 3 drycleaners; 8 vehicle repair businesses; road salt use; 2 PCB transformer sites, one stormwater retention pond, one zoo and probable use of pesticide, herbicide, and nutrients on parks, commercial and residential lawns and gardens.

Based on the available information, the following are descriptions of known potential, existing, and former contaminant sources in the WHPA, within a ½-mile radius of Unit Well 27 and within the recharge area equivalent to the delineated 100-year TOT ZOC of Unit Well 27:

The nearest storm sewer is located in South Randall Avenue approximately 80 feet east of Unit Well 27. The nearest sanitary sewer main is located in Regent Street approximately 220 feet south of Unit Well 27.

Water wells are conduits (routes) to groundwater. A poorly constructed or damaged well may allow contaminants to enter groundwater or to move from one aquifer into another. No private wells were observed in the Unit Well 27 area during the site reconnaissance survey. The WGNHS 2010 private well database, Dane County private well list, and the Madison Water Utility private well list were reviewed to identify private wells located in the vicinity of Unit Well 27. Two records were found for private wells and one record was found for a cistern located within the area encompassed by the 100 year TOT ZOC for Unit Well 27. One well is owned by a private resident located at 234 Lathrop Street (Figure 4-1 Map No. 501), and is also part of a geothermal system. The other well is located at 130 North Prospect (Figure 4-1 Map No. 502), is owned by the University of Wisconsin and is part of a geothermal system. The cistern is located at 2405 Rugby Row (Figure 4-1 Map No. 503) in the back yard and is covered by a circular concrete cover. The cistern was inspected by the Madison Water Utility in May 2009, and the owner stated that they planned to abandon the structure. There are several private wells located 1-1.5 miles northwest of Unit Well 27, beyond the 100 year TOT ZOC that are used for geothermal systems.

TABLE 4-1
CONTAMINANT SOURCE INVENTORY SUMMARY
WELLHEAD PROTECTION UNIT WELL 27
MADISON, WISCONSIN

Map Site No. (EDR Reference No.)	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
1 (T91, T92)	Madison Gas & Electric Co. (Madison Water Utility Unit Well 27) 18 N Randall Avenue Madison, WI	EDR Report- WI - Registered AST TIER 2	In Use AST: 480 gal. diesel, double wall tank Chlorine gas	In Use AST	At Unit Well 27	Zone A – 5 yr TOT	Moderate - High
2 (T71, T72)	The Regent 1402 Regent Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 673248) WI - LUST (DNR Activity No 03-13-283731)	Closed/Removed UST: 2,000-gal fuel oil (Tank ID No. 272596) 8/1997 Closed LUST 4/2001, petroleum contaminated soil with conditional closure	Closed Removed UST Closed LUST Conditional	200 ft W	Zone A – 5 yr TOT	High
3 (T97)	City of Madison 1398 Regent Street Madison, WI	EDR Report- WI - Registered AST	Closed AST, 250 gal. fuel oil, 4/1996	Closed AST 4/1996	225 ft SE	Zone A – 5 yr TOT	Moderate
4 (AB119)	Beniro and Culver Inc. 1336 Regent Street Madison, WI	EDR Report- RCRA-Non Gen FINDS LUST Spills SHWIMS	Small Quantity Generator – Ignitable hazardous wastes, No RCRA violations Closed LUST 12/1997, petroleum soil contamination, conditional closure under NR 726. Old Spill 5/18/1990, overflow of storage barrel, engine waste oil causing soil contamination.	Closed LUST 12/1997 Historic Spill 5/1990	250 ft E	Zone A – 5 yr TOT	High
5 (Y 98, Y103)	Soya Building 27 N Randall Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 132239) Spills	Closed/Removed UST: 8,000-gallon unleaded gas (Tank ID No. 271446), Closed/Removed UST: 10,000-gallon unleaded gas (Tank ID No. 272697), Closed/Removed UST: 500-gallon leaded gas (Tank ID No. 273182), Closed/Removed UST: 10,000-gallon unleaded gas (Tank ID No. 273183) 7/1986 Spill 8/1988, acid spill contaminating soil	Closed/Removed USTs 7/1986 Closed Spill	250 ft E	Zone A – 5 yr TOT	High
6 (T93)	Open Pantry 1401 Regent Street Madison, WI	EDR Report- Spill	Spill 7/2009, truck delivering propane hit curb and ruptured saddle tank releasing 50 gallons of diesel fuel. Contaminated soil excavated and landfilled	Closed Spill 4/2010	300 ft S	Zone A – 5 yr TOT	High
7 (AB118)	Joe McCormick 1340 Regent Street Madison, WI	EDR Report- WI - Registered AST WI - Registered UST (Facility ID 109564)	Closed/Removed ASTs: 275-gallon fuel oil (Tank ID No. 202410), 275-gallon fuel oil (Tank ID No. 202409) Closed/Removed USTs: 500 gal. leaded gas (Tank ID No. 274241); 500 gal waste/used oil (Tank ID No. 274242) 4/1997	Closed/Removed ASTs Closed/Removed USTs 4/1997	300 ft SE	Zone A – 5 yr TOT	Moderate
8 (Y106)	Muir Heights Randall Avenue Madison, WI	EDR Report- LUSY CRS AUL	Closed LUST 11/2005, gasoline contaminated soil and groundwater. Conditional closure with residual soil and groundwater above WI standards	Closed LUST Conditional Closure	300 ft E	Zone A – 5 yr TOT	High
9 (T74)	Smiles English Hair Designs 1403 Regent Street Madison, WI	EDR Report- CRS AUL WI – LUST (DNR Activity No. 0313000689) Registered UST (Facility ID 140084)	Closed LUST 1/2010, petroleum contaminated soil and groundwater. Groundwater contamination above NR 140 standards closed under NR 700 rules. Residual contamination and GIS Registry	Closed LUST with Groundwater Contamination GIS Registry	350 ft SW	Zone A – 5 yr TOT	High
10 (O58)	WI Dept of Administration 1429 Monroe Street Madison, WI	EDR Report- Registered AST	In Use AST: 451 gal. diesel, double wall tank	In Use AST	350 ft NW	Zone A – 5 yr TOT	Moderate
11 (Y108)	Verizon Wireless 45 N. Randall Ave. Madison, WI	EDR Report- WI - Registered AST	In Use AST, 210 gal. diesel	In Use AST	375 ft NNE	Zone A – 5 yr TOT	Moderate – High
12 (X109)	Richard Potthast 102 N. Randall Ave. Madison, WI	EDR Report- WI - Registered UST (Facility ID 681406)	Closed/Removed USTs: 2- 750-gal leaded gas (Tank ID Nos. 9695, 9701), 750-gal diesel (Tank ID No. 9702) 9/1998	Closed/Removed USTs 9/1998	375 ft N	Zone A – 5 yr TOT	Moderate

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
13 (X94, X95, X96)	J and L Gas Station 1407 Monroe Street Madison, WI	EDR Report- RCRA-Non Gen FINDS SPILLS SHWIMS WI - LUST (DNR Activity No. 0313000689) Registered UST (Facility ID 90204)	Conditionally exempt hazardous wastes – ignitable wastes. Closed LUST 9/1996, gasoline contaminated soil. Closed/Removed UST: 1,000 gal. unknown (Tank ID No. 271763); Closed/Removed UST: 2,000 gal. unknown (Tank ID No. 271764); Closed/Removed UST: 500 gal. waste/used oil (Tank ID No. 271765); Closed/Removed UST: 10,000 gal. unknown (Tank ID No. 271766); Closed/Removed UST: 3-10,000 gal. gasohol (Tank ID Nos. 272662, 272663, 273409) 1/1973. Closed Spill 9/1982 – 20 gal. unknown petroleum spilled on concrete/asphalt and contaminated storm sewer.	Closed LUST 9/1996 Closed Spill 9/1982	400 ft NNW	Zone A – 5 yr TOT	High
14 (AB120, AB121)	JFG Investments Chucks Service 1337 Regent Street Madison, WI	EDR Report- RCRA-Non Gen FINDS LUST WI - Registered UST (Facility ID 62321) CRS AUL WI WRRSER SHWIMS Site Reconnaissance	Small Quantity Generator – non-halogenated solvents, No RCRA violations Closed LUST 3/2007, petroleum soil and groundwater contamination (free product), conditional closure with GIS registry. Residual soil contamination remaining. Closed/Removed USTs: 3,000 gal. leaded gas (Tank ID No. 272335); 2,000 gal. leaded gas (Tank ID No. 272336) 1,000 gal fuel oil (Tank ID No. 272337); 500 gal. waste oil (Tank ID No. 272338); 3,000 gal. unleaded gas (Tank ID No. 272339) 4,000 gal leaded gas (Tank ID No. 272340); 1/1990 Former gas station	Closed LUST w/ GIS Registry 3/2007	400 ft SE	Zone A – 5 yr TOT	High
15 (O56)	UW Credit Union 1433 Monroe Street Madison, WI	EDR Report- CRS AUL WI - ERP (DNR Activity No. 0213544230)	Closed ERP 11/2005, petroleum contaminated soil,. Closed under NR 708. Residual contamination and GIS Registry	Closed ERP Conditional	425 ft WNW	Zone A – 5 yr TOT	High
16 (AB135)	Chris Beebe Foreign Car Specialists 1313 Regent Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 62116) Site Reconnaissance	Closed filled with inert material UST: 500-gal fuel oil (Tank ID No. 273401) 1/1969 Parks repair service, fluids, potential for spills	Closed/Filled UST 1/1969 Active Vehicle Repair Shop	450 ft SE	Zone A – 5 yr TOT	Moderate
17 (O52, O53)	UW System Envir. Health & Safety 1440 Monroe Street Madison, WI	EDR Report- Registered UST (Facility ID 680795) Registered AST	Closed/Removed UST: 10,000-gal fuel oil (Tank ID No. 272901). In Use AST: 600 gal. diesel, double wall tank	Closed/Removed UST In Use AST	600 ft NW	Zone A – 5 yr TOT	Moderate
18 (AJ150, AJ152)	Taco Johns 1234 Regent Street Madison, WI	EDR Report- LUST CRS AUL WI - Registered UST (Facility ID 171795)	Closed LUST 2/2007 petroleum contaminated soil and groundwater. Closed with deed restriction, GIS registry with residual soil and groundwater contamination remaining. Groundwater contamination above NR 140 standards Closed/Removed USTs: 2-3,000 gal. leaded gas (Tank ID Nos. 466433, 466439) 9/1981	Closed LUST 2/2007 with GIS Registry Closed/Removed USTs 9/1981	625 ft ESE	Zone A – 5 yr TOT	High
19 (AJ153, AJ154)	Jensen Auto Inc. 1233 Regent Street Madison, WI	EDR Report- LUST CRS AUL WI - Registered UST (Facility ID 673544) Site Reconnaissance	Closed LUST 8/2005 gasoline contaminated soil. Closed with deed restriction, GIS registry with residual soil and groundwater contamination remaining. Above NR 140 standards. Closed/Removed USTs: 2-5,000 gal. unleaded gas (Tank ID Nos. 271701, 271702), 2-5,000 gal leaded gas (Tank ID Nos. 271703, 271704), 550 gal waste/used oil (Tank ID No. 273567), 10,000 gal. unleaded gas (Tank ID No. 273568) 5/2008 Auto repair shop, fluids and potential spills	Closed LUST 8/2005 with GIS Registry Closed/Removed USTs 5/2008 Active Vehicle repair 2010	700 ft SW	Zone A – 5 yr TOT	High
20 (AN166)	UW Primate Research Center 1220 Capital Court Madison, WI	EDR Report- WI - Registered AST (Facility ID 678294)	In Use AST, 600 gal. diesel (Tank ID No. 861633)	In Use AST	775 ft ENE	Zone A – 5 yr TOT	Moderate

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
21 (AJ167, AJ177)	Primate Center 1223 Capital Court Madison, WI	EDR Report- ERNS Spills	Spill 4/1993, 35 gal. hydraulic oil leaked from elevator and contaminated soil	Closed Spill 12/2003	775 ft E	Zone A – 5 yr TOT	High
22 (O50, O51)	UW System Field House 1450 Monroe Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 139684) WI - LUST (DNR Activity No 03-13-002212)	Closed Removed UST: 210-gal diesel (Tank ID No. 273016) 3/1994 Closed LUST 9/1997, petroleum contaminated soil, closed under NR 726	Closed/Removed UST Closed LUST Conditional	775 ft NW	Zone A – 5 yr TOT	Moderate
23 (AR214, AR215)	Charter Associates 10 N. / 16 N. Charter Street Madison, WI	EDR Report- WI – ERP CRS AUL WI - Registered UST (Facility ID 701879)	Closed ERP 11/2007 contaminated soil and groundwater, conditional closure with GIS registry, groundwater contamination above NR 140 standards. Closed/Removed USTs: 1,200-gallon chemical, 1,700 gal. chemical, 10,000 gal. chemical (Tank ID Nos. 1029852, 1029858, 1030690). 6/2005	Closed ERP 11/2007 Closed with GIS Registry Closed/Removed USTs 6/2005	825 ft E	Zone A – 5 yr TOT	High
24 (AN219)	26 N Charter Street Madison, WI	EDR Report- BRRTS	No significant contamination	No Significant Contamination	900 ft E	Zone A – 5 yr TOT	Low
25 (AN220)	Mullins Property 28 N. Charter Street Madison, WI	EDR Report- WI – ERP Spills	Closed ERP site 11/1994, contaminated soil Historic spill start 2/1992 – sloppy delivery of diesel fuel.	Closed ERP 11/1994 Closed Spill 2/1992	900 ft ENE	Zone A – 5 yr TOT	High
26 (H23, H24, H25)	Wisconsin Ave Associates, LLC UW Credit Union Property 1501 Monroe Street Madison, WI	EDR Report- Registered UST (Facility ID No. 139691) Registered AST WI - ERP	Closed/Removed USTs: 1,000 gal leaded gasoline (Tank ID No. 1216650), 2-2000 gal leaded gasoline (Tank ID Nos. 273796, 273798), 2,000 gal diesel (Tank ID No. 273797) 1/1973 Closed/Removed AST: 500 gal waste/used oil 1/1973 Closed ERP 10/1995, petroleum contaminated soil	Closed/Removed USTs and AST Closed ERP Site	900 ft WSW	Zone A – 5 yr TOT	High
27 (AR212, AR213)	Tim Stancliff/Charly Property 1201 Regent Drive Madison, WI	EDR Report- WI - Registered UST (Facility ID 126832) LUST CRS AUL	Closed/Removed USTs: 2-10,000-gallon leaded gas, 1,500 gal leaded gas, 3,000 gal leaded gas, 550 gal. diesel (Tank ID Nos. 273971, 273972, 273973, 273974, 273975). 1/1971 Closed LUST 10/2003 petroleum contaminated soil and groundwater with remaining groundwater contamination above NR 140 standards, GIS Registry	Closed/Removed USTs 1/1971 Closed LUST with GIS Registry	975 ft ESE	Zone A – 5 yr TOT	High
28 (H27)	Spill Regent / Monroe Street	EDR Report- Spill	Traffic accident caused spill of gasoline which contaminated soil	Historic Spill 3/1983	950 ft W	Zone A – 5 yr TOT	High
29 (H21, H22)	Stadium Barber Tim Stapleton 1515 Monroe Street Madison, WI	EDR Report- CRS AUL WI – LUST (DNR Activity No. 0313528656)	Closed LUST 6/2006, petroleum contaminated soil,. Closed under NR 708. Residual contamination and GIS Registry	Closed LUST	1,000 ft SW	Zone A – 5 yr TOT	High
30 (113)	Beth Israel Center 1406 Mound Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 56812)	Closed/Removed UST: 1,000-gal fuel oil (Tank ID No. 273758) 12/1993	Closed/Removed UST 12/1993	1,050 ft S	Zone A – 5 yr TOT	Low
31 (AN222, AN223)	UW Service Garage 27 N. Charter Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 688422) W – Registered AST Site Reconnaissance	In Use UST: 10,000-gallon unleaded gas (Tank ID No. 1009822). In Use AST: 500 gal. waste oil (Tank ID No. 1132558) Active fueling area	In Use UST In Use AST	1,075 ft E	Zone B – 1200 ft radius	High
32 (AN224)	Stores Building – UW System 29 N. Charter Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 134523)	Closed/Removed UST: 1,000-gallon leaded gas (Tank ID No. 272715). 4/1986	Closed/Removed UST 4/1986	1,075 ft E	Zone B – 1200 ft radius	Low
33 (AV227)	Electrical Manhole Spring / Charter St south of Dayton	EDR Report- Spill	Spill 2/1996, unknown person dumped waste oil down the sewer manhole	Spill 2/1996	1,050 ft NE	Zone A – 5 yr TOT	Moderate
34	Mound Street Laundromat 1302 Mound Street Madison, WI	Site Reconnaissance	Laundry facility, soaps, degreasers. No apparent drycleaning at this site	Active Laundry	1,150 ft SSE	Zone B – 1200 ft radius	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
35 (BA279, BA280)	Klein Dickert 1124 Regent Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 100287) RCRA-SQG FINDS BRRTS SHWIMS	Closed/Removed UST: 1,000 gal. fuel oil (Tank ID No. 274043) 11/1995. RCRA No violations	Closed/Removed UST 11/1995	1,150 ft ESE	Zone B – 1200 ft radius	Low
36 (AV229)	UW Madison Charter Street Heating Plant 117 N Charter Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 139896) WI – Registered AST Site Reconnaissance	Closed/Removed USTs: 2,000-gallon diesel, 57,500 gal fuel oil, 6@69,000 gal fuel oil (Tank ID Nos. 272723, 272724, 272725, 272726, 272727, 272728, 272729, 272730, 272731) 5/1996 In Use USTs: 4@30,000 gal. fuel oil (Tank ID Nos. 274170, 274171, 274172, 274173) Closed/Removed ASTs: 2@275 gal diesel (Tank ID Nos. 892569, 892570) In Use ASTs: 300 gal. diesel, 550 gal. diesel (Tank ID Nos. 920291, 202356) Coal yard, equipment storage, vehicle traffic, potential for leaks and spills	In Use USTs In Use ASTs Closed/Removed USTs and ASTs 5/1996 Active Yard	1,250 ft NE	50 yr TOT	Moderate
37 (AW230, AW268, AW269)	St James Church 1128 St James Court Madison, WI	EDR Report- WI - Registered UST (Facility ID 681312) LUST CRS AUL FINDS	Closed/Removed UST: 10,000 gal. fuel oil (Tank ID No. 638169) 8/1999 Closed LUST 9/2009 petroleum contaminated soil, closed under NR 726 with GIS registry User of insecticides, fungicides, and/or rodenticides	Closed LUST 8/1999 GIS Registry	1,250 ft SE	50 yr TOT	Moderate
38 (10)	Breese Terrace / Regent Street Madison, Wisconsin	EDR Report- Spill	Spill 11/1999, overload of 12-inch dia. waste main overloaded system and spilled wastewater causing surface water contamination	Spill 11/1999	1,250 ft W	Zone A – 5 yr TOT	Low
39 (BE296, BE297)	Curran Property 1102 Regent Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 60851) LUST CRS AUL	Closed/Removed USTs: 2-500 gal. leaded gas, 2,000 gal diesel, 2,000 gal leaded gas, 1,000 gal leaded gas (Tank ID Nos. 274196, 274197, 274198, 274199, 274200) 1/1980 Closed LUST 6/2001 petroleum contaminated soil, closed with GIS registry	Closed LUST 6/2001 with GIS Registry	1,350 ft ESE	50 yr TOT	Moderate
40 (P61)	Dick Goldberg 1611 Adams Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 69615)	Closed/Filled UST: 1,000-gal fuel oil (Tank ID No. 274031) 10/1995	Closed Removed UST	1,350 ft SSW	50 yr TOT	Low
41 (BE202, BE203)	Cathy Pacific Inc Hong Kong Café 2 S Mills Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 88806) LUST	Closed/Removed UST: 1,000 gal. fuel oil, (Tank ID No. 274094) 6/1996 Closed LUST 4/1997 petroleum contaminated soil	Closed LUST 4/1997	1,375 ft ESE	50 yr TOT	Moderate
42 (AY259)	Trio Development LLC 202 N Charter Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 709340)	Closed/Removed UST: 1,000-gal fuel oil (Tank ID No. 1061053) 1/2006	Closed/Removed UST 1/2006	1,375 ft NNE	50 yr TOT	Low
43 (D13, D14, D15)	Larry's Super Service Dale McCue 1614 Monroe Street Madison, WI	EDR Report- WI - Registered UST (Facility ID Nos. 102308 and 102309) WI BRRTS WI - LUST (DNR Activity No. 03-13-001268)	Closed/Removed USTs: 6,000-gal unleaded gasoline (Tank ID No. 271767), 3-2,000 gal. unleaded gasoline (Tank ID Nos. 273452, 273453, 273454), 500 gal. waste oil (Tank ID No. 273455), 300 gal. fuel oil (Tank ID No. 273456), 500 gal. leaded gasoline (Tank ID No. 273457). 9/1991 LUST case closed 7/1992, petroleum contaminated soil.	Closed/Removed USTs Closed LUST	1,425 ft SW	50 yr TOT	Moderate
44 (P60)	Robert Crane 1615 Adams Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 625554)	Closed/Removed UST: 1,000-gal fuel oil (Tank ID No. 777487) 11/2000	Closed Removed UST	1,425 ft SSW	50 yr TOT	Low
45 (F17)	Spill 109 Lathrop Avenue Madison, WI	EDR Report- Spill	Spill 11/1980, hose came off causing contamination of soil	Historic spill 11/1980	1,450 ft WNW	50 yr TOT	Low
46 (F33)	Peters Property 1602 Hoyt Street Madison, WI	EDR Report- WI - LUST (DNR Activity No 03-13-255703)	Closed LUST 3/2001, Petroleum contaminated soil and groundwater. Conditional Closure	LUST Conditional Closure	1,500 ft NW	50 yr TOT	High

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
47 (89)	George Lackner 1506 Chandler Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 82062)	Closed/Removed UST: 1,000-gal fuel oil (Tank ID No. 274085) 5/1996	Closed/Removed UST	1,525 ft SSW	50 yr TOT	Low
48 (6)	Tallard Apartments 30 Lathrop Street Madison, WI	EDR Report- WI Registered UST (Facility ID No. 718470)	Closed/Removed UST: 1,000 gal fuel oil. (Tank ID No. 1098353) 9/2006	Closed/Removed UST	1,600 ft W	50 yr TOT	Low
49 (F32)	Ralph Peters 1606 Hoyt Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 195878)	Closed/Removed UST: 1,000-gallon fuel oil (Tank ID No. 751736) 6/2000	Closed/Removed UST	1,600 ft NW	50 yr TOT	Low
50 (BR318, BR319)	Dean Health System Inc. 1025 Regent Street Madison, WI	EDR Report- WI – ERP SHWIMS MLTS	Closed ERP site 8/2009, hydraulic oil contaminated soil and groundwater Radioactive device listing	Closed ERP 8/2009	1,600 ft E	50 yr TOT	Moderate
51 (AT221)	UW Madison Vivarium N Orchard Street/ Campus Drive Madison, WI	EDR Report- WI – ERP	Open ERP site Begin 2/2008, diesel contaminated soil (PAH and VOC)	Open ERP	1,650 ft NNE	50 yr TOT	High
52 (AH163, AH168, AH171, AH173, AH174)	317 N Randall Avenue Madison, WI	EDR Report- ERNS MLTS	Spill 3/1990, oil washed from parking lot into nearby creek Spill 10/1991, hydrogen sulfide Radioactive devices at this site	Closed Spills	1,675 ft N	50 yr TOT	Low
53 (AT228)	WI Institute of Discovery – UW 330 N. Orchard Street Madison, WI	EDR Report- WI - Registered AST (Facility ID 758646)	In Use AST, 660 gal. diesel (Tank ID No. 1274622)	In Use AST	1,650 ft NNE	50 yr TOT	Low
54 (AH169)	University of Wisconsin Madison 115 N Mills Street Madison, WI	EDR Report- RCRA-Non Gen RCRA-TSDF CORRACTS FINDS RAATS LUST Manifest SPILLS CRS AUL SHWIMS	RCRA – Large Quantity Haz. Waste Generator, batteries, lamps, pesticides, thermostats, ignitable wastes, corrosive wastes, reactive wastes. Violations for containers, permits, and records. Closed LUST 6/2001 (Jackson Property) petroleum contaminated soil and groundwater. Closed with deed restriction, NR 726 GIS registry with residual contamination remaining	Closed LUST 6/2001 with GIS Registry	1,700 ft NE	50 yr TOT	Moderate
55 (V83, V84)	UW Madison Engineering Centers Bldg 1550 Engineering Drive Madison, WI	EDR Report- WI – Registered AST (Facility 677531) SHWIMS	In Use AST 600 gal. diesel (Tank ID No. 878464)	In Use AST	1,725 ft NNW	50 yr TOT	Low
56 (BO341, BO342, BO343, BO344, BO345, BO346)	AT&T Services / Ameritech 1001 Spring Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 679631) WI – Registered AST WI - ERP Spills SHWIMS BRRTS TIER 2	Closed/Removed USTs: 4,000-gallon diesel (Tank ID No. 272270) 9/1989 In Use AST: 600 gal. diesel (Tank ID No. 808112) Open ERP Site Start 5/2006, diesel contaminated soil	Closed/Removed USTs 9/1989 In Use AST Open ERP	1,725 ft E	50 yr TOT	High
57 (BO314)	UW Icke Building 115 Gerry Court Madison, WI	EDR Report- WI - Registered UST (Facility ID 89537)	Closed/Removed USTs: 500 gal. diesel, 1,000 gal. diesel (Tank ID Nos. 272696, 272716) 1/1986	Closed/Removed USTs 1/1986	1,725 ft NE	50 yr TOT	Low
58 (BK307, BK308)	Soo Line railroad Co. 117 N Mills Madison, WI	EDR Report- WI - Registered UST (Facility ID 132083) BRRTS	Closed/Removed UST: 1,000 gal. leaded gas, (Tank ID No. 272613) 11/1989	Closed/Removed UST 11/1989	1,750 ft NE	50 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
59 (AA114, AA115, AA116, AA117)	UW Mechanical Engineering Dept. 1513 University Avenue Madison, WI	EDR Report- WI - Registered AST WI - Registered UST (Facility ID 109564) RCRA-Non Gen FINDS LUST Manifest	In Use ASTs: 600-gallon diesel (Tank ID No. 1089983), 250-gallon diesel (Tank ID No. 1133401) Closed/Removed USTs: 1,000 gal. aviation fuel (Tank ID No. 272705); 1,000 gal fuel oil (Tank ID No. 272706) 6/1998 No RCRA violations Closed LUST 9/1998, soil contamination	In Use ASTs Closed/Removed USTs 6/1998 Closed LUST 9/1998	1,750 ft NNW	50 yr TOT	Moderate
60 (BO324)	Muir Heights Gerry Court Madison, WI	EDR Report- LUST	Closed LUST 5/2002 gasoline contaminated soil and groundwater. Conditional closure under NR 726	Closed LUST 5/2002 Conditional NR 726	1,750 ft NE	50 yr TOT	Moderate
61 (BR333, BR334)	Ten Twenty Five Regent LTD 1002 Regent Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 50008) LUST	Closed/Removed UST: 1,000 gal. leaded gas, (Tank ID No. 273952) 1/1960 Closed LUST 7/1997 petroleum contaminated soil	Closed LUST 7/1997	1,750 ft E	50 yr TOT	Moderate
62 (3)	Edith Reppert Estate 1721 Regent Street Madison, WI	EDR Report- WI Registered UST (Facility ID 73769)	Active In Use UST: 1,111 gal, fuel oil (Tank ID 273818) Closed/Removed UST: 560 gal fuel oil (Tank ID 273824) 5/1994	In Use	1,800 ft WSW	50 yr TOT	Moderate
63 (BR336)	General Medical Laboratories 36 S Brooks Street Madison, WI	EDR Report- RCRA-CESQG FINDS Manifest SHWIMS	RCRA – ignitable hazardous wastes, corrosive wastes, reactive wastes, solvents small quantity wastes. No violations	Active	1,850 ft ESE	50 yr TOT	Low
64 (BR336)	Four Lakes Auto Body Inc. 9 N Brooks Street Madison, WI	EDR Report- RCRA-NonGen FINDS SHWIMS	RCRA – ignitable hazardous wastes, non halogenated, wastes, Volatile organic compounds wastes No violations	Active Auto Body Repair	1,925 ft E	50 yr TOT	Low
65 (BB266, BB267)	UW Medical Science Center 1300 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 673997) LUST Spills SHWIMS	Closed/Removed UST: 300 gal. diesel (Tank ID No. 273813) 3/1994 Closed LUST 8/1994 petroleum contaminated soil Historic Spill 1/1989, explosion caused acid spill. Contained and cleaned-up	Closed LUST 8/1994 Closed Spill 1/1989	2,000 ft NNE	50 yr TOT	Low
66 (111)	Randall Cullen/ C Welling 1526 Vilas Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 65227)	Closed/Removed UST: 1,000-gal fuel oil (Tank ID No. 273957) 3/1995	Closed/Removed UST 3/1995	2,000 ft SSW	50 yr TOT	Low
67 (AM186, AM187)	UW Biotechnology Genetics Building 425 Henry Mall Madison, WI	EDR Report- WI - Registered AST (Facility ID 674196) SHWIMS	In Use AST, 560 gal. diesel, 600 gal diesel (Tank ID Nos. 202305, 999585)	In Use AST	2,000 ft N	50 yr TOT	Low
68 (BY361)	R. Lineweber 932 Spring Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 57623)	Closed/Removed UST: 1,000 gal. leaded gasoline (Tank ID No. 273032) 12/1988	Closed/Removed UST 12/1988	2,000 ft ENE	50 yr TOT	Low
69 (BV350, BV351, BV352)	UW Madison Chemistry Building 1101 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 676810) WI – Registered AST LUST Spills SCHWIMS	Closed/Removed UST: 1,000 gal. fuel oil (Tank ID No. 489787) 8/1999 In Use AST: 600 gal. diesel (Tank ID No. 661306) Closed LUST 11/2000 petroleum contaminated soil, closed under NR 726	Closed LUST 11/2000 Conditional NR 726	2,050 ft NNE	50 yr TOT	Moderate
70 (BJ306)	UW Medical Science Center 1200 University Avenue Madison, WI	EDR Report- WI – Registered AST	In Use AST: 350 gal. diesel (Tank ID No. 153827)	In Use AST	2,075 ft NNW	50 yr TOT	Low
71 (234)	Maxine Cooper 1309 Vilas Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 648702)	Closed/Removed UST: 1,000-gallon fuel oil (Tank ID No. 864092) 12/2001	Closed/Removed UST 12/2001	2,050 ft SSE	50 yr TOT	Low
72 (141)	Mark Nelson 1427 Vilas Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 174366)	Closed/Removed UST: 1,000-gallon fuel oil (Tank ID No. 474167) 5/1999	Closed/Removed UST 5/1999	2,075 ft SSW	50 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
73 (BY368)	Jerome & Carol Mullin 920 Spring Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 674622)	Closed/Removed UST: 10,000 gal. leaded gasoline (Tank ID No. 271536) 12/1988	Closed/Removed UST 12/1988	2,100 ft ENE	50 yr TOT	Low
74 AM160	UW Madison Biochemistry Building 420 Henry Mall Madison, WI	EDR Report- ERNS SHWIMS	Spill 4/2001, 5,000 pounds of freon	Closed Spill	2,100 ft N	50 yr TOT	Low (Air Impact Only)
75 (C11)	First Financial Bank 1720 Monroe Street Madison, WI	EDR Report- Registered UST (Facility ID No. 120558) BRRTS	Closed/Removed UST (Tank ID No. 271768)	Closed/Removed UST	2,150 ft SW	50 yr TOT	Low
76 (CA370)	Park & Regent 20North Park street Madison, WI	EDR Report- Tier 2	Sulfuric acid in batteries stored in building	Active Site	2,150 ft E	50 yr TOT	Low
77 (CA369)	City of Madison 2 N Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 114620)	Closed/Removed UST: 3@3,000 gal. leaded gasoline, 1,000 gal. fuel oil, 1,000 gal waste oil (Tank ID Nos. 274204, 274205, 274206, 274207, 274208) 5/1966	Closed/Removed USTs 5/1966	2,150 ft E	50 yr TOT	Low
78 (CA382)	City of Madison Park / Regent Street Madison, WI	EDR Report- LUST CRS AUL	Closed LUST 11/2003 petroleum contaminated soil and groundwater remaining above NR 140 standards, conditional closure with GIS registry	Closed LUST 11/2003 NR 726 Conditional with GIS Registry	2,150 ft E	50 yr TOT	Moderate
79 (BQ316, BQ317)	UW Madison Chamberlain Hall 1150 University Avenue Madison, WI	EDR Report- WI - Registered AST SHWIMS	In Use AST: 650 gal. diesel (Tank ID No. 961659)	In Use AST	2,200 ft NNE	50 yr TOT	Low
80 (BY380, BY381)	City of Madison 102 N Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 64441) LUST	Closed/Removed UST: 500 gal leaded gas (Tank ID No. 274203) 1/1986 Closed LUST 3/1998 petroleum contaminated soil, NR 726 Closure	Closed/Removed USTs 1/1986 Closed LUST 3/1998 NR 726 Closure	2,200 ft ENE	50 yr TOT	Moderate
81 (I31)	Michael Cassidy 207 N Spooner Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 202722)	Closed/Removed UST: 1,000-gallon fuel oil (Tank ID No. 773990) 9/2000	Closed/Removed UST	2,175 ft NW	50 yr TOT	Low
82 (I28, I29)	Spill Summit / Spooner Madison, WI	EDR Report- Spill	Spill 5/1979, broken hose on tanker released petroleum (unknown type), which contaminated soil Spill 9/1979, broken hose (Quick Flash Fuel Co.) caused contamination of surface water	Historic Spill 5/1979	2,150 ft NW	50 yr TOT	Low
83 (CA371)	Madison Osteoporosis Center 20 South Park Street	EDR Report- MLTS	Radioactive device at site	Active	2,200 ft ESE	50 yr TOT	Low
84 (BX358)	Grand Central Building 1022 W. Johnson Street Madison, WI	EDR Report- WI - Registered AST	In Use ASTs: 145 gal. diesel, 187 gal diesel (Tank ID Nos. 1234585, 1234578)	In Use ASTs	2,200 ft NNE	50 yr TOT	Low
85 (AM206, AM207)	UW Agricultural Engineering Building 460 Henry Mall Madison, WI	EDR Report- WI - Registered UST (Facility ID 139889) BRRTS	Closed/Removed UST: 200-gallon leaded gas (Tank ID No. 273915). 11/1994	Closed/Removed UST 11/1994	2,250 ft N	50 yr TOT	Low
86 (M41, M42)	Jeff Horein 211 N Prospect Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 654052) WI - LUST (DNR Activity No 03-13-255703)	Closed Removed UST: 6,000-gallon fuel oil (Tank ID No. 884443) 10/2002 Closed LUST 12/2007, petroleum contaminated soil, closed under NR 726	Closed/Removed UST Closed LUST Conditional	2,225 ft NW	50 yr TOT	Moderate
87 (2)	Spill 1814 Chadbourne Avenue Madison, WI	EDR Report- Spill	Spill 4/1989, petroleum contaminated soil, no action taken	Historic Spill 4/1989	2,200 ft W	50 yr TOT	Low
88 (90)	Barbara Porter-Quam 1705 Vilas Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 177753)	Closed/Removed UST: 500-gal fuel oil (Tank ID No. 482739) 7/1999	Closed Removed UST	2,200 ft SSW	50 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
89 (305)	UW Madison Chamberlain Hall 425 N Charter Street Madison, WI	EDR Report- Spill	Spill 3/1985, leaking barrel spilled petroleum causing air contamination Spill 7/1994, leak in elevator system spilled petroleum material. Contained/Recovered Spill 9/1996, container with non-chlorinated solvents fell off truck and spilled. Cleaned up using absorbent material.	Historic Spills 3/1985 7/1994 9/1996	2,500 ft NNE	50 yr TOT	Low
90 (AK155)	UW Biochemistry Addition 433 Babcock Drive Madison, WI	EDR Report- WI - Registered AST (Facility ID 677887)	In Use AST, 600 gal. diesel (Tank ID No. 499041)	In Use AST	2,225 ft NNW	50 yr TOT	Low
91 (BX366, BX367)	Community Housing & Service Inc. 306 N. Brooks Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 64419) LUST	Closed/Removed USTs: 2@10,000 gal fuel oil (Tank ID Nos. 274051, 274052) 4/1996 Closed LUST 8/1996 petroleum contaminated soil	Closed/Removed USTs 4/1996 Closed LUST 8/1996	2,300 ft NE	50 yr TOT	Moderate
92 (CB378, CB379)	Luther Memorial Church 1021 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility 106144) BRRTS	Closed/Removed UST 2,000 gal. fuel oil (Tank ID No. 273781) 3/1994	Closed/Removed UST 3/1994	2,300 ft NE	50 yr TOT	Low
93 (BF299, BF300)	Jacqualin Schenck 1242 Drake Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 739679) LUST	Closed/Removed USTs: 2-275 gal. fuel oil, (Tank ID Nos. 1190688, 1190694) 6/2008. Closed LUST 1/2009 diesel fuel and fuel oil contaminated soil. Closed under NR 726	Closed LUST 1/2009 NR 726 Closure	2,325 ft SSE	50 yr TOT	Moderate
94 (M57)	Robert Mare 177 N Prospect Madison, WI	EDR Report- WI - Registered UST (Facility ID 158130)	Closed/Removed UST: 1,250-gal fuel oil (Tank ID No. 418621) 3/1998	Closed Removed UST	2,350 ft NW	50 yr TOT	Low
95 (CA387)	3 N Park Street Madison, WI	EDR Report- Spill	Spill 3/1993, faulty product caused asphalt spill	Historic Spill 3/1993	2,350 ft E	50 yr TOT	Low
96 (A4)	John Baily 1829 Van Hise Street Madison, WI	EDR Report- WI Registered UST (Facility ID 95026)	Closed/Removed UST: 1,000 gal fuel oil (Tank ID 273555) 10/1992	Closed/Removed UST	2,350 ft W	50 yr TOT	Low
97 (Z107)	Naval Armory 1610 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 113324)	Closed/Removed UST: 10,000-gal fuel oil (Tank ID No. 272714) 5/1986	Closed/Removed UST 5/1986	2,325 ft NNW	50 yr TOT	Low
98 (M45, M46)	McNeel Residence 220 N Prospect Avenue Madison, WI	EDR Report- RCRA-NonGen, MANIFEST SHWIMS FINDS	Exempt small quantity generator of hazardous waste – lead No violations	Active	2,350 ft NW	50 yr TOT	Low
99 (BW362, CA383, CA384, CA385, CA386)	UW Physical Plant 21 N Park Street Madison, WI	EDR Report- WI - Registered AST RCRA-NonGen FINDS WI - Registered UST (Facility ID 1009815) Spill	In Use ASTs: 118 gal. diesel, 400 gal diesel, 2@275 gal. waste/used oil, 10,000 gal diesel, 500 gal waste/used oil (Tank ID Nos. 1099546, 1092954, 783276, 783283, 472029, 662591) RCRA – small generation of ignitable haz waste, halogenated solvents, non-halogenated solvents, VOCs, No violations Closed/Removed USTs: 300 gal. unleaded gas, 1,000 gal. unleaded gas, 10,000 gal diesel, 2@10,000 gal unleaded gas (Tank ID Nos. 1009815, 272698, 272732, 272733, 272806) 2/1999 Spill 11/1990, paints, inks and dyes, spill closed	In Use ASTs Closed/Removed USTs 2/1999	2,375 ft E	50 yr TOT	Low
100 (BY393, BY394)	Cornerstone church John Okonek 103 N Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 188340) BRRTS	Closed/Removed UST: 1,000 gal. leaded gasoline (Tank ID No. 652929) 1/2000	Closed/Removed UST 1/2000	2,400 ft ENE	50 yr TOT	Low
101 (359)	Steven Francis 302 S. Brooks Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 172231)	Closed/Removed UST: 1,000 gal. fuel oil (Tank ID No. 476870) 4/1999.	Closed/Removed UST 4/1999	2,400 ft SE	50 yr TOT	Low
102 (BF281)	1304 Drake Street Madison, WI	EDR Report- Spill	Spill 12/1981, traffic accident caused spill which impacted soil	Historic Spill 12/1981	2,400 ft SSE	50 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
103 (AQ217)	UW Madison Bock Labs 1525 Linden Drive Madison, WI	EDR Report- Spill	Spill 5/1990, radioactive material contaminated soil	Historic Spill 5/1990	2,400 ft N	50 yr TOT	Moderate
104 (CC391, CC392)	Schmidt Auto Inc. (159South) Schmidt's Garage (159North) 39 N Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 130241) WI - Registered AST LUST Spills	Closed/Removed USTs: 1,000 gal fuel oil, 2,000 gal. unleaded gas, 2,000 gal diesel, 2@1,000 gal unleaded gas (Tank ID Nos. 272898, 272899, 272900, 274134, 274135) 8/1996 Closed/Removed AST: 550 gal unleaded gas (Tank ID No. 33505) Closed LUST 8/2006 petroleum contaminated soil and groundwater, MTBE contamination, conditional closure with GIS registry Open LUST start date 10/2004, investigation phase Historic Spill 3/1980 waste poured in floor drain- closed 3/1980	Closed/Removed USTs 8/1996 Closed LUST 8/2006 GIS registry Open LUST	2,450 ft ENE	50 yr TOT	High
105 (BS331)	Barden Med Lab UW Madison 1215 Linden Drive Madison, WI	EDR Report- Spill	Spill 8/2008, fire in lab beta emitter containing P-32 phosphorous 32 a radioactive compound, contained recovered Spill 9/1994, worker spilled on self. Cleaned up by Hazmat team	Closed Spill 11/2008	2,450 ft NNE	50 yr TOT	Low
106 (AK196)	UW Babcock Greenhouses Babcock Drive Madison, WI	EDR Report- WI - ERP	Closed ERP 12/2001 contaminated soil.	Closed ERP 12/2001 Closed Under NR 708	2,400 ft NNW	50 yr TOT	Moderate
107 (CA388, CA389, CA390, CA401)	UW Health Physicians Prudential Real Estate One S Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 58992) LUST CRS AUL SCHWIMS RCRA-NonGen FINDS MLTS	Closed/Removed USTs: 2,000 gal leaded gas, 2@1,200 gal. empty (prev. contents not known), (Tank ID Nos. 273166, 273310, 273311) 4/1991 Closed LUST 1/1992 petroleum contaminated soil Closed LUST 12/2008 residual soil contamination above standards, conditional closure with GIS registry and deed restriction RCRA- No violations Radioactive device listing	Closed LUST 1/1992 Closed LUST 12/2008 Conditional with GIS Registry	2,450 ft ESE	50 yr TOT	Moderate
108 (W87)	Madison WI Stake (LDS Institute) 1711 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 62327)	Closed/Removed UST: 2,000-gal fuel oil (Tank ID No. 274021) 6/1995	Closed Removed UST	2,475 ft NW	50 yr TOT	Low
109 (K38)	Van Potter 163 N Prospect Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 140198)	Closed Removed UST: 1,000-gal fuel oil (Tank ID No. 273268) 5/1999	Closed/Removed UST	2,525 ft NW	50 yr TOT	Low
110 (E26)	Monroe Neighbors LLC 1864 Monroe Street Madison, WI	EDR Report- WI - LUST (DNR Activity No. 0313528656)	Closed LUST 3/2009, diesel contaminated soil, Closed under NR 726	Closed LUST	2,300 ft SW	50 yr TOT	Moderate
111 (20)	Kenneth Parson Estate 110 Ely Place Madison, WI	EDR Report- RCRA-NonGen FINDS SHWIMS WI - LUST (DNR Activity No. 0313237033)	Small quantity generator of hazardous waste - lead Closed LUST 3/2000, petroleum contaminated soil. Closed under NR 708	Closed LUST	2,500 ft NW	50 yr TOT	Moderate
112 (BS340)	UW Madison Sterling Hall 475 N Charter Street Madison, WI	EDR Report- WI - Registered AST	In Use AST: 450 gal. diesel (Tank ID No. 1234607)	In Use AST	2,575 ft NNE	50 yr TOT	Low
113 (CK422)	Dayton Street Residence Hall 835 West Dayton Street Madison, WI	EDR Report- WI - ERP	Open ERP site start 5/2005, VOC and PAHs soil contamination	Open ERP	2,550 ft ENE	50 yr TOT	High
114 (AZ246, AZ247)	Agriculture Hall - UW 1450 Linden Drive Madison, WI	EDR Report- WI - Registered UST (Facility ID 50798) BRRTS	Closed/Removed UST: 110-gallon diesel (Tank ID No. 273014) 3/1994	Closed/Removed UST 3/1994	2,600 ft N	50 yr TOT	Low
115 (A5)	Madison Gas & Electric Co. 1833 Van Hise Avenue Madison, WI	EDR Report- Spill	Spill 5/2006, mineral oil spilled from transformer after it was knocked from a pole by a falling tree. Soil contaminated and removed	Closed Spill 5/2006	2,500 ft W	50 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
116 (CD395, CD396, CD397, CD398, CD399, CD400)	Meriter Hospital 202 S. Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 674191) WI - Registered AST RCRA-CESQG FINDS Manifest MLTS BRRTS WI ERP Spills AUL SCHWIMS	Closed/Removed UST: 20,000 gal. fuel oil (Tank ID No. 271428) In Use USTs: 2@7,446 gal fuel oil (Tank ID Nos. 924012, 924018) In Use ASTs: 500 gal. diesel, 250 gal. diesel (Tank ID Nos. 1257877, 202147) Closed/Removed AST: 22,000 gal fuel oil (Tank ID No. 674191) RCRA-small quantity gen of ignitable hazardous wastes, corrosive wastes, reactive wastes, halogenated and non-halogenated solvents, No violations BRRTS: No remedial action required following tank removals Closed ERP site 10/2008, soil contamination, conditional closure with GIS registry Spill 8/1991, diesel fuel overflow from emergency generator causing soil contamination	Closed ERP 10/2008 Conditional with GIS Registry In Use USTs In Use ASTs	2,550 ft SE	50 yr TOT	Moderate
117 (59)	Spill 1810 Kendall Avenue Madison, WI	EDR Report- Spill	Spill 1/1990, petroleum spilled from tank	Historic Spill 1/1990	2,550 ft NW	50 yr TOT	Low
118 (AK194, AK195)	UW Babcock Hall 1605 Linden Drive Madison, WI	EDR Report- ERNS Spills	Spill 7/1988, 200 lbs ammonia released to atmosphere	Closed Leaks	2,550 ft NNW	50 yr TOT	Low (Air Impact Only)
119 (77)	Jerry Pasdo 1801 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 93736)	Closed/Removed UST: 1,000-gal fuel oil (Tank ID No. 273825) 5/1994	Closed Removed UST	2,600 ft NW	50 yr TOT	Low
120 (CL423, CL424, CL425, CL426, CL427, CL428, CL429, CL430)	UW Madison Campus Wide UW Madison Stores 30 N Murray Street Madison, WI	EDR Report- RCRA-LQG PADS FINDS Manifest BRRTS Spills CRS SCHWIMS WI - ERP AUL MLTS	RCRA-large quantity gen campus wide of ignitable hazardous wastes, corrosive wastes, reactive wastes, lead, mercury and chloroform RCRA violations – transporters, manifest and record keeping, used oil, and pre-transport Spill, 5/4/2009, tip over of 55 gallon drum of cooking oil causing storm sewer contamination, closed 10/2009 Historic spill, 7/1991, accidental spill of 4 liters of petroleum product (specific product not reported). Spill was contained Spill, 4/1996, formaldehyde (1 gal) spill in truck Closed ERP site 8/2008 petroleum and chlorinated solvents contaminated soil and groundwater, conditional closure with GIS registry. Residual soil and groundwater contamination above applicable standards. Radioactive device listing	Closed ERP 8/2008 Conditional with GIS Registry	2,600 ft E	50 yr TOT	Moderate
121 (CL431, CL432)	UW Car Fleet 10 N. Murray Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 139893) BRRTS Spills	Closed/Removed UST: 10,000 gal. unleaded gasoline (Tank ID No. 271844) 2/1999. Closed Spill 11/1996, gasoline contaminated soil	Closed/Removed UST 2/1999	2,600 ft E	50 yr TOT	Low
122 (K43, K44)	Paul Soglin 222 Princeton Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 107864) BRRTS	Closed/Removed UST: 550-gallon fuel oil (Tank ID No. 272950) 10/2001	Closed/Removed UST	2,600 ft NW	50 yr TOT	Low
123 (CN452)	UW System Environ. Health & Safety 114 N Murray Street Madison, WI	EDR Report- WI - Registered UST (Facility 674649)	Closed/Removed UST 500 gal. fuel oil (Tank ID No. 273020) 6/1990	Closed/Removed UST 6/1990	2,650 ft E	50 yr TOT	Low
124 (AK208, AQ209, AQ210)	UW Madison Bacteriology 1550 Linden Drive Madison, WI	EDR Report- WI - Registered AST (Facility ID 733808) Spill	In Use AST, 1,500 gal. diesel (Tank ID No. 1167963) Spill 10/2002, air contamination	In Use AST	2,650 ft NNW	50 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
125 (B7, B8)	David Worzala 1907 Rowley Avenue Madison, WI	EDR Report- WI - LUST (DNR Activity No. 03-13-550201), WI - Registered UST (Facility 123282)	LUST case open since 5/2007. Diesel fuel causing soil contamination. Medium-risk clean-up underway. Closed/Removed UST: 1,000 gal fuel oil (Tank ID 274471) 5/2007	Open LUST	2,700 ft WSW	50 yr TOT	High
126 (37)	Charlotte Stein/Marilynn Roos 1904 Monroe Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 61801)	Closed Removed UST: 300-gal leaded gasoline (Tank ID No. 273404) 3/1992 Closed Filled UST: 3,000 gal fuel oil (Tank ID No. 273403) 3/1992	Closed/Removed/ Filled USTs	2,700 ft SW	50 yr TOT	Low
127 (AK198)	1600 Block of Linden Drive Madison, WI	EDR Report- Spill	Spill 7/1995, over-pressurized refrigeration system rupturing coil and releasing ammonia	Spill Impacted Air Only 7/1995	2,750 ft NNW	50 yr TOT	Low (Air Impact Only)
128 (CB404, CB405, CB406)	UW Grainger Hall – School of Business 975 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 678310) WI – Registered AST LUST	Closed/Removed USTs: 1,200 gal fuel oil, 1,000 gal. fuel oil, 1,400 gal. fuel oil (Tank ID Nos. 273282, 273319, 275597) 8/1991 In Use AST: 500 gal. diesel (Tank ID No. 202155) Closed LUST 5/1992 petroleum contaminated soil	Closed/Removed USTs 8/1991 In Use AST Closed LUST 5/1992	2,750 ft NE	50 yr TOT	Moderate
129 (CK470)	OGG Hall 801 W Dayton Street Madison, WI	EDR Report- WI – Registered AST	In Use AST: 451 gal. diesel (Tank ID No. 1141225)	In Use AST	2,750 ft ENE	50 yr TOT	Low
130 (CS480)	301 N. Murray Madison, WI	EDR Report- Spill	Spill 9/1994, fertilizer overfilled tank and spilled	Closed Spill 9/1994	2,750 ft ENE	50 yr TOT	Low
131 (CL435, CL436)	Sinaiko Brothers 15 N Murray Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 111111) LUST AUL SCHWIMS	Closed/Removed USTs: 2@2,000 gal. diesel, 2@1,500 unleaded gasoline (Tank ID Nos. 271769, 272272, 272273, 273300) 7/1990 Closed LUST 12/1996, diesel and gasoline contaminated soil and groundwater, with conditional closure	Closed LUST 12/1996 Conditional closure	2,800 ft E	50 yr TOT	Moderate
132 (355)	UW Madison Botany Dept. 430 Lincoln Drive Madison, WI	EDR Report- Spill	Spill 10/1992, acid leak from broken container, contained/recovered	Closed Spill 10/1992	2,800 ft NE	50 yr TOT	Low
133 (CN455)	UW System Environ. Health & Safety 101 N Murray Street Madison, WI	EDR Report- WI – Registered UST (Facility 272946)	Closed/Removed UST 1,111 gal. leaded gas (Tank ID No. 272946) 8/1988	Closed/Removed UST 8/1998	2,800 ft E (same address as #181 Welch Plumbing)	50 yr TOT	Low
134 (CL437)	Madison CTY N Murray & Regent Streets Madison, WI	BRRTS on the Web Spill	Closed LUST, 8/2002, petroleum contaminated soil, conditional NR 726 closure Spill 4/1979, abandoned drum contaminated soil Spill 12/1997, diesel fuel spill causing contamination of soil, surface water and storm sewer	Closed LUST 8/2002 NR 726 Closure Closed Spills	2,800 ft E	50 yr TOT	Moderate
135	Welch Plumbing 101 N. Murray Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 143733)	Closed/Removed UST: 1,111 gal. leaded gas (Tank ID No. 272946) 8/1988	Closed/Removed UST 8/1988	2,800 ft ESE	50 yr TOT	Low
136 (G18)	Joan Rock 2020 Chadbourne Avenue Madison, WI	EDR Report- Registered UST (Facility ID No. 94403) Visual Inspection	Closed/Removed UST: 1,000 gal fuel oil. (Tank ID No. 273984) 3/1995	Closed/Removed UST	2,800 ft W	50 yr TOT	Low
137 (AO179)	Spill 1665 Linden Drive Madison, WI	EDR Report- Spill	Spill 10/1992, glass container dropped spilling pesticides, herbicides and insecticides. Contained/recovered	Spill 1992	2,800 ft NNW	50 yr TOT	Low
138 (CH411, CH412)	Oak Park Manor 801 Braxton Place Madison, WI	EDR Report- WI – Registered AST SHWIMS	In Use AST: 1,400 gal. diesel (Tank ID No. 1131724)	In Use AST	2,800 ft ESE	50 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
139 (CF407, CF408, CF409)	Dees Park Street Amoco BP Products North America 318 S Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 52802) RCRA-NonGen FINDS LUST CRS AUL SCHWIMS	Closed/Removed USTs: 6,000 gal. leaded gas, 6,000 gal unleaded gas, 8,000 gal unleaded gas, 550 gal waste/used oil, 550 gal fuel oil (Tank ID Nos. 272471, 272472, 272473, 272505, 272506) In Use USTs: 2@10,000 gal unleaded gas, 12,000 gal unleaded gas (Tank ID Nos. 272959, 272960, 272961) RCRA-small quantity gen of ignitable hazardous wastes, corrosive wastes. No violations Closed LUST 1/2002, free product, soil and groundwater contamination in bedrock, conditional closure with GIS registry	Closed LUST 1/2002 Conditional with GIS Registry In Use USTs	2,550 ft SE	50 yr TOT	Moderate
140 (CT481)	West Madison Depot Lake/Murray at Railroad Tracks Madison, WI	EDR Report- WI - ERP	Closed ERP Site, 7/2000	Closed ERP	2,850 ft ESE	50 yr TOT	Moderate
141 (CN447, CN450)	Gartzke Refrigeration Inc. 106 N Murray Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 80658) BRRTS	Closed/Removed UST: 2,000 gal. unknown contents, 2,000 gal. unleaded gas (Tank ID No. 271770, 272614) 8/1990	Closed/Removed UST 8/1990	2,875 ft ESE	50 yr TOT	Low
142 (CN449)	UW Press 114 N. Murray Street Madison, WI	EDR Report- LUST WI - Registered UST (Facility ID 674649)	Closed LUST 11/1992 petroleum contaminated soil. Closed/Removed UST: 500 gal. fuel oil (Tank ID No. 273020) 6/1990	Closed LUST 11/1992	2,900 ft ESE	50 yr TOT	Moderate
143 (AH169, AK189, AK190, AK191, AK192)	UW Dept. of Entomology 1630 Linden Drive Madison, WI	EDR Report- ERNS FINDS SHWIMS Spill	10/1991, hydrogen sulfide spill, barrels near dumpsters behind building	Closed Spill	2,850 ft NNW	50 yr TOT	Low
144 (G19)	Jim Crowley 2024 Chadbourne Avenue Madison, WI	EDR Report- Registered UST (Facility ID No. 93990) Visual Inspection	Closed/Removed UST: 1,000 gal fuel oil. (Tank ID No. 273755) 12/1993	Closed/Removed UST	2,900 ft W	50 yr TOT	Low
144 (J35)	David Uphoff 140 N Prospect Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 68049)	Closed Removed UST: 1,000-gal fuel oil (Tank ID No. 273149) 5/1996	Closed/Removed UST	2,900 ft NW	50 yr TOT	Low
146 (BRRTS)	Way Property 622 Orchard Drive Madison, WI	BRRTS on the Web	Closed LUST, 11/1993, petroleum contaminated soil	Closed LUST 11/1993	2,950 ft S	50 yr TOT	Moderate
147 (J36)	Joan Zwiefel 121 N. Prospect Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 94414)	Closed Removed UST: 1,000-gallon fuel oil (Tank ID No. 274237) 5/1997	Closed/Removed UST	2,975 ft WNW	50 yr TOT	Low
148 (9)	1900 Block of Regent Street Madison, WI	EDR Report- Spill	Spill 5/1984, automobile accident caused gas spill, which was contained/recovered	Closed Spill 5/1984	2,950 ft W	50 yr TOT	Low
149 (444)	UW Madison Law Library 975 Bascom Mall Madison, WI	EDR Report- WI - Registered AST	In Use AST: 150 gal. diesel (Tank ID No. 202367)	In Use AST	2,950 ft NNE	50 yr TOT	Low
150 (CS486)	University Square 1 University Square Madison, WI	EDR Report- WI - Registered UST (Facility ID 716400)	Closed/Removed USTs: 1,080 gal. leaded gasoline, 3@1,200 gal. diesel (Tank ID No. 1090030, 1090036, 1090037, 1090038) 6/2006	Closed/Removed USTs 6/2006	3,000 ft ENE	50 yr TOT	Low
151 (235)	Steenbock Library 550 Babcock Drive Madison, WI	EDR Report- WI - ERP LAST	Closed ERP site 1/2004, no further action required, Closeout under NR 708. Closed LAST site 1/2004	Closed ERP Closed LAST 1/2004	3,025 ft NNW	50 yr TOT	Moderate
152 (BD274)	Bella Holly 543 S. Randall Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 56058)	Closed/Removed UST: 1,000-gallon fuel oil (Tank ID No. 273469) 7/1992	Closed/Removed UST 7/1992	3,000 ft S	50 yr TOT	Low
153 (S69)	Mardella O'Brien 1910 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 107232)	Closed/Removed UST: 500-gal fuel oil (Tank ID No. 274117). Date not reported	Closed Removed UST	3,000 ft NW	50 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
154 (OB510)	UW Madison SE Recreation Facility 715 W Dayton Road Madison, WI	EDR Report- WI - Registered AST	In Use AST: 200 gal. diesel (Tank ID No. 897628)	In Use AST	3,050 ft ENE	50 yr TOT	Low
155 (S102)	Don Dants 1904 Birge Terrace Madison, WI	EDR Report- WI - Registered UST (Facility ID 109461)	Closed/Removed UST: 1,000-gal fuel oil (Tank ID No. 273079)	Closed/Removed UST	3,050 ft NW	50 yr TOT	Low
156 (CV495)	The Den Inc. 74 University Square Madison, WI	EDR Report- RCRA-NonGen FINDS SHWIMS	RCRA- small quantity generator wastes No violations	Active	3,100 ft NE	50 yr TOT	Low
157 (R67, R68)	Joe Cline 2001 Jefferson Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 94465) BRRTS	Closed/Removed UST: 6,000-gal fuel oil (Tank ID No. 274067) 11/1995	Closed Removed UST	3,050 ft SW	50 yr TOT	Low
158 (CI418)	Sam Fedele 424 S. Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 129763)	Closed Filled with inert material UST: 1,000 gal. unknown prev. contents (Tank ID No. 273274) 4/1989	Closed/Filled UST 4/1989	3,075 ft SE	50 yr TOT	Low
159 (CL460)	UW Administration 780 Regent Street Madison, WI	EDR Report- RCRA-CESQS FINDS SHWIMS	RCRA- very small ignitable hazardous wastes, corrosive wastes, cadmium, lead and mercury No violations	Active Site	3,100 ft E	50 yr TOT	Low
160 (S101)	Aklilu Kifle 1906 Birge Terrace Madison, WI	EDR Report- WI - Registered UST (Facility ID 50872)	Closed/Removed UST: 500-gal fuel oil (Tank ID No. 274119)	Closed/Removed UST	3,100 ft NW	50 yr TOT	Low
161 (471)	400 Block of N Park Street Madison, WI	EDR Report- Spill	Spill 7/1999, plug in wastewater line caused filling of manhole, which had to be pumped to the storm sewer	Closed Spill 7/1999	3,100 ft NE	50 yr TOT	Low
162 (CI445)	James Shapiro 405 S. Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 708852)	Closed/Removed UST: 1,000 gal. fuel oil (Tank ID No. 1058471) 12/2005.	Closed/Removed UST 12/2005	3,150 ft SE	50 yr TOT	Low
163 (R76)	Daniel Graff 2016 Jefferson Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 701615)	Closed/Removed UST: 1,000-gal fuel oil (Tank ID No. 1028947) 5/2005	Closed Removed UST	3,150 ft SW	50 yr TOT	Low
164 (BRRTS)	UW Athletic Facility Lake & Murray Streets Madison, WI	BRRTS on the Web	Closed ERP, 7/1997 petroleum contaminated soil. Close-out under NR 708	Closed ERP 7/1997 NR 708	3,150 ft E	50 yr TOT	Moderate
165 (S100)	Mark Kenas 1910 Birge Terrace Madison, WI	EDR Report- WI - Registered UST (Facility ID 107785)	Closed/Removed UST: 1,000-gal fuel oil (Tank ID No. 274118)	Closed/Removed UST	3,175 ft NW	100 yr TOT	Low
166 (U78, U79)	Berryman Apts Site #1 2007 University Avenue Madison, WI	EDR Report- AUL WI - LUST (DNR Activity No. 0313002334) Registered UST (Facility ID 79066)	Closed LUST 12/1996, petroleum contaminated soil. Conditional closure. Residual soil contamination and GIS Registry Closed/Removed UST: 1,000 gal. fuel oil (Tank ID No. 273843) 7/1994	Closed LUST with Soil Contamination GIS Registry	3,225 ft NW	50 yr TOT	Moderate
167 (BN296)	City of Madison 760 Regent Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 62701)	Closed/Removed UST: 1,000 gal. leaded gas (Tank ID No. 273650) 5/1993	Closed/Removed UST 5/1993	3,200 ft E	50 yr TOT	Low
168	Stormwater Pond W Dayton Street / North lake Street Madison, WI	Site Reconnaissance	Stormwater drainage to pond from parking surfaces. Potential for contaminants in surface water to impact groundwater	Active Stormwater Pond	3,200 ft ENE	50 yr TOT	Low
169 (CI446)	Georges Flowers George Choles 421 S. Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 82363)	Closed/Removed UST: 550 gal. fuel oil (Tank ID No. 272769) 9/1990	Closed/Removed UST 9/1990	3,250 ft SE	50 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
170 (CO451)	Ideal Body shop 502 S. Park Street Madison, WI	EDR Report- RCRA-CESQS FINDS Manifest Site Reconnaissance	RCRA- very small ignitable hazardous wastes No violations	Active Site	3,250 ft SE	50 yr TOT	Low
171 (34)	John Skilton 8 North Prospect Madison, WI	EDR Report- WI - Registered UST (Facility ID 650033)	Closed Removed UST: 1,400-gallon fuel oil (Tank ID No. 869291) 4/2002	Closed/Removed UST	3,250 ft W	50 yr TOT	Low
172 (R81)	Jean Pettinger 2023 Jefferson Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 92817)	Closed/Removed UST: 900-gal fuel oil (Tank ID No. 274123) 8/1996	Closed Removed UST	3,250 ft SW	50 yr TOT	Low
173 (63)	Gordon McQuillan 2107 W Lawn Madison, WI	EDR Report- WI - Registered UST (Facility ID 84140)	Closed/Removed USTs: 2-1000-gal fuel oil (Tank ID Nos. 273094, 273095) 8/1989	Closed Removed USTs	3,275 ft SW	50 yr TOT	Low
174 (CE402, CE403)	Madison Gas & Electric Co. 1110 Erin Street Madison, WI	EDR Report- ERNS	2/2000, natural gas leak and explosion/fire	Closed Leak	3,250 ft SSE	50 yr TOT	Low
175	Madison Metro Sewerage District Pumping Station No 2. 833 West Washington Madison, WI	Site Reconnaissance	Sewer pumping station. Potential for leaks	Active Sewer System Pumping Station	3,300 ft SE	50 yr TOT	Low
176 (80, 82)	Berryman Apts Site #2 2009 University Avenue Madison, WI	EDR Report- WI – LUST (DNR Activity No. 0313002335) Registered UST (Facility ID 79067)	Closed LUST 6/1995, petroleum contaminated soil. Closed/Removed UST: 1,000 gal. fuel oil (Tank ID No. 273842) 7/1994	Closed LUST	3,300 ft NW	50 yr TOT	Moderate
177 (DB515)	Construction site Dayton Street / Lake Street Madison, WI	EDR Report- Spill	Spill 4/1996, hydraulic hose blew on crane and spilled mineral oil. Clean up and closed 4/1996	Closed Spill 4/1996	3,250 ft ENE	50 yr TOT	Low
178 (AE136, AE137)	Herro Property 2020 Vilas Avenue Madison, WI	EDR Report- LUST WI – Registered UST (Facility ID 134639)	Closed/Removed UST, 1,250 gal. fuel oil. Closed LUST 10/1995, petroleum soil contamination.	Closed LUST 10/1995	3,300 ft SW	50 yr TOT	Moderate
179 (BM320)	1515 Tripp Circle Madison, WI	EDR Report- Spill	Spill 2/2001, leaking diesel fuel from tractor trailer fuel tank cause storm sewer contamination, closed 2/2001	Closed Spill 2/2001	3,250 ft NNW	100 yr TOT	Low
180 (CT502, CT503, CT504)	Borden Incorporated 104 N. Lake Street 105 N. Lake Street Madison, WI	EDR Report- LUST BRRTS WI - Registered UST (Facility ID 716400)	Closed LUST 11/1991, petroleum contaminated soil. Closed/Removed USTs: 10,000 gal diesel, 2,000 gal fuel oil (Tank ID Nos. 272028, 273362) 10/1989	Closed LUST 11/1991 Closed/Removed USTs 10/1989	3,250 ft ENE	50 yr TOT	Moderate
181 (DB516, DB518)	Badger Truck Service (Former) 105 N Lake Street Madison, WI	EDR Report- RCRA-NonGen FINDS SHWIMS	RCRA- small quantity generator wastes, ignitable hazardous wastes. No violations	Former Truck Service Site / Currently Kohl Center	3,250 ft ENE	50 yr TOT	Low
182 (CO456)	Rustic Tavern 516 S. Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 129351)	Closed/Removed UST: 1,500 gal. fuel oil (Tank ID No. 273669) 5/1998	Closed/Removed UST 5/1998	3,375 ft SE	50 yr TOT	Low
183 (CI453)	UW Madison 455 N Park Street Madison, WI	EDR Report- Spill	Spill 4/2005, mineral oil spill from elevator system caused sanitary sewer contamination	Closed Spill 5/2005	3,350 ft NE	50 yr TOT	Low
184 (62)	Elspeth Krisor 2104 Keyes Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 682641)	Closed/Removed UST: 500-gal fuel oil (Tank ID No. 955436) 4/2004	Closed Removed UST	3,375 ft SW	50 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
185 (U85, U86)	Berryman Apts Site #3 2019 University Avenue Madison, WI	EDR Report- AUL WI - LUST (DNR Activity No. 0313002336) Registered UST (Facility ID 79068)	Closed LUST 12/1996, petroleum contaminated soil. Conditional closure. Residual soil contamination and GIS Registry deed restriction Closed/Removed UST: 1,500 gal. fuel oil (Tank ID No. 273844) 7/1994	Closed LUST with GIS Registry	3,375 ft NW	50 yr TOT	Moderate
186 (CO463)	Kochs One Hour Martinizing 501 South Park Street Madison, WI	EDR Report- RCRA- FINDS	RCRA- large quantity generator halogenated solvents wastes No violations	Active Drycleaning	3,350 ft SE	100 yr TOT	High
187 (BM310)	Experimental Farms Campus (Behind old dairy barn) Madison, WI	EDR Report- WI - Registered UST (Facility ID 77161)	Closed/Removed USTs: 1,000 gal. leaded gas, 500 gal. diesel (Tank ID Nos. 272703, 272704) 8/1989	Closed/Removed USTs 8/1989	3,350 ft NW	100 yr TOT	Low
188 (CY493)	103 Lake Street Madison, WI	EDR Report- ERNS MLTS	Spill 6/1994, barrel leaked 2 gal methoxychloride onto containment pad Spill 7/1994, 1 liter hexane, ethylbutanol and chloroform spilled from waste bucket Radioactive device at site	Closed Spills	3,400 ft NE (Location Uncertain)	50 yr TOT	Low
189 (DE521)	University Square Shopping Center Lot 47 728 W Johnson Street Madison, WI	EDR Report- LUST	Closed LUST 5/2007, contaminated soil.	Closed LUST 5/2007	3,375 ft NE	50 yr TOT	Moderate
190 (CV488)	Chazen Museum Expansion Construction Site 800 University Avenue Madison, WI	EDR Report- WI - ERP	Open ERP Site, start date 8/2009 petroleum, PAHs and lead contaminated soil	Open ERP	3,400 ft NE	50 yr TOT	High
191 (AG140)	Rachelle Richardson 1111 Lincoln Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 664218)	Closed/Removed UST: 1,000-gallon fuel oil (Tank ID No. 918398) 7/2003	Closed/Removed UST 7/2003	3,400 ft SW	50 yr TOT	Low
192 (DE534)	University Square Condo 702 W Johnson Street Madison, WI	EDR Report- WI - Registered AST	In Use AST: 500 gal. diesel (Tank ID No. 1190709)	In Use AST	3,400 ft NE	50 yr TOT	Low
193 (N48, N49)	David Wood & Jane Doughty 2115 Bascom Street Madison, WI	EDR Report- Registered UST (Facility ID 655980) BRRTS	Closed/Removed UST: 850-gallon fuel oil (Tank ID No. 897944) 12/2002	Closed/Removed UST	3,425 ft WNW	50 yr TOT	Low
194 (CO462, CO464)	Amato Realty (Former) and La Hacienda 501 S. Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 77874) WI - ERP LUST	Closed/Removed USTs: 3@2,000 gal. leaded gas, 500 gal. fuel oil, 800 gal. waste/used oil (Tank ID Nos. 273673, 273674, 273675, 273676, 273677) 7/1993 Open ERP Site, start date 5/2008 Open LUST start 4/1994 contaminated soil.	Closed/Removed USTs 7/1993 Open ERP Open LUST	3,425 ft SE	100 yr TOT	Moderate
195 (DE536)	Lake / Johnson Street Madison, WI	EDR Report- Spill	Spill 7/1987, broken hose on truck caused leak which contaminated soil	Historic Spill 7/1987	3,450 ft NE	50 yr TOT	Low
196 (BRRTS)	University Square Shopping Center 180 University Avenue Madison, WI	BRRTS on the Web	Closed LUST, 9/2006, petroleum contamination, closed under NR 708.	Closed LUST 9/2006 NR 708	3,450 ft NE	50 yr TOT	Moderate
197 (U104, U105)	Arthur Peterson 425 Paunack Place Madison, WI	EDR Report- WI - Registered UST (Facility ID 54527)	Closed/Removed UST: 6,000-gal fuel oil (Tank ID No. 274046) 10/1995	Closed/Removed UST 10/1995	3,475 ft NW	100 yr TOT	Low
198 (AP180, AP181)	UW Dairy Barn 1915 Linden Drive West Madison, WI	EDR Report- LUST WI - Registered AST Site Reconnaissance	Closed/Removed AST, 10,000 gal. diesel. Closed LUST 6/1992 gasoline contaminated soil Animal confinement areas, fenced corral, apparent concrete surface. Manure.	Closed LUST 6/1992	3,450 ft NW	100 yr TOT	Moderate
199 (DO569, DO570)	Kohl Center 601 W Dayton Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 674677) WI - Registered AST	Closed/Removed UST: 300 gal. kerosene, 1,000 gal. diesel (Tank ID No. 274112, 274113) 4/1996 In Use AST: 660 gal. diesel (Tank ID No. 447320)	Closed/Removed UST 4/1996 In Use AST	3,400 ft NE	100 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
200 (CO467, CO468, CO469)	Amato's Restaurant, Inc. 515 S. Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 52456) LUST Spill	Closed/Removed UST: 500 gal. fuel oil (Tank ID No. 273790) 2/1994 Closed LUST 11/1994 contaminated soil Closed Spill 1/1996, ruptured hose, hydraulic oil spilled and cleaned up	Closed/Removed UST 2/19934 Closed LUST 11/1994	3,500 ft SE	100 yr TOT	Moderate
201	Henry Vilas Zoo 702 South Randall Avenue Madison, WI	Site Reconnaissance	Animal wastes, animal confinement areas	Active Zoo	2,600 – 3,600 ft SSW	50 yr TOT	Low
202 (DG543)	UW University Club 803 State Street Madison, WI	EDR Report- WI – Registered AST	In Use AST: 145 gal. diesel (Tank ID No. 1277440)	In Use AST	3,550 ft NE	50 yr TOT	Low
203 (AP182, AP183)	US Dairy Forage Research Center 1925 Linden Drive West Madison, WI	EDR Report- WI - Registered UST (Facility ID 139770) RCRA-Non Gen FINDS	Closed/Removed UST: 550 gal diesel (Tank ID Nos. 273537) 10/1992 RCRA- ignitable hazardous wastes – no violations.	Closed/Removed USTs 10/1992	3,475 ft NW	100 yr TOT	Low
204 (DG541, DG542)	State Historical Society 816 State Street Madison, WI	EDR Report- RCRA-NonGen FINDS	RCRA ignitable wastes, corrosive wastes, arsenic, cadmium, mercury, No violations.	Active Site	3,550 ft NE	50 yr TOT	Low
205 (BD291, BD292, BD293, BD298)	Dane County Public Works Dept. Henry Vilas Zoo 702 S. Randall Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 673504) WI – Registered AST BRRTS Spill	Closed/Removed USTs: 2,000-gallon fuel oil, 550 gal diesel, 550 gal unleaded gas (Tank ID No. 800731, 800731, 800742) 5/1996 In Use AST: 300 gal. unleaded gas (Tank ID No. 673504) Spill 7/1996, leak from transformer, closed	Closed/Removed USTs 5/1996 In Use AST Closed spill 7/1996	3,500 ft SSE	100 yr TOT	Low
206 (CE413, CE414)	St Mary's Hospital 707 S Mills Street Madison, WI	EDR Report- RCRA-SQG FINDS Manifest	RCRA-small quantity gen of halogenated solvents wastes. No violations	Active	3,575 ft SSE	100 yr TOT	Low
207 (CO472, CO473)	Amato Realty 529 S. Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 117594) BRRTS	Closed/Removed USTs: 2@4,000 gal leaded gas, 500 gal. fuel oil, 500 gal waste/used oil, 300 gal. diesel, 300 gal. kerosene (Tank ID Nos. 273679, 273680, 273681, 273682, 273683, 273684) 7/1993	Closed/Removed USTs 7/1993	3,550 ft SE	100 yr TOT	Low
208 (CV508, CV509)	UW Peterson Building 750 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 674648) LUST CRS AUL	Closed/Removed UST: 110 gal unleaded gas (Tank ID No. 273018) 1/1993 Closed LUST, 12/2008, contaminated soil, conditional closure with GIS registry. Residual soil contamination remains.	Closed/Removed UST 1/1993 Closed LUST 12/2008 Conditional closure	3,550 ft NE	100 yr TOT	Moderate
209 (DE537)	UW SE Parking 301 N Lake Street Madison, WI	EDR Report- WI – Registered AST	In Use AST: 150 gal. diesel (Tank ID No. 756559)	In Use AST	3,600 ft NE	100 yr TOT	Low
210 (DX606, DX607)	Alexander-City Station 660 W Washington Avenue Madison, WI	EDR Report- SHWIMS AUL ERP	Closed ERP, 6/1997 petroleum contaminated soil and groundwater. Conditional closure with GIS Registry	Closed ERP 6/1997 GIS Registry	3,600 ft E	100 yr TOT	Moderate
211 (BM321, BM322, BM323)	UW Crew House 680 Babcock Drive Madison, WI	EDR Report- WI - Registered UST (Facility ID 673994) WI – Registered AST	Closed/Removed USTs: 2@500-gallon unleaded gas (Tank ID No. 272903, 273449) 6/1992 In Use AST: 550 gal. unleaded gas (Tank ID No. 202140)	Closed/Removed USTs 6/1992 In Use AST	3,625 ft NNW	100 yr TOT	Low
212 (DI548)	Lake Street / University Madison, WI	EDR Report- Spill	Spill 11/1987, auto accident cause spill that contaminated a storm sewer	Historic Spill 11/1987	3,650 ft NE	100 yr TOT	Low
213 (54)	John Barsness 2121 Van Hise Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 744351)	Closed/Removed UST: 1,000-gal fuel oil (Tank ID No. 1208482) 11/2008	Closed Removed UST	3,700 ft WNW	50 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
214 (AG144)	Hiam Gardner 2118 Adams Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 88147)	Closed/Removed UST: 750-gallon fuel oil (Tank ID No. 274048)	Closed/Removed UST 10/1995	3,700 ft SW	50 yr TOT	Low
215 (DD520)	Park / Observatory Drive Madison, WI	EDR Report- Spill	Spill 7/1989, unknown petroleum spilled, cleaned-up	Historic Spill 7/1989	3,700 ft NE	100 yr TOT	Low
216	Herbert Wong Cleaners 622 South Park Street Madison, WI	Site Reconnaissance and Interview	Does laundry on-site. Accepts articles for drycleaning, but sends to off-site location for drycleaning	Active Laundry 2010 No On-Site Drycleaning	3,700 ft SE	100 yr TOT	Low
217 (DI572)	Varsity of Madison, LLC 632 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 695691) LUST	Closed/Removed UST: 500 gal. waste/used oil (Tank ID No. 1007822) 11/2004 Closed LUST 7/2005, engine waste oil contaminated soil, closed-out under NR 708	Closed/Removed UST 11/2004 Closed LUST Under NR 708 7/2005	3,750 ft NE	100 yr TOT	Moderate
218 (DD529, DD528)	660 North Park Madison, WI	EDR Report- ERNS Spill	Spill 12/1989, 1 gal. hydraulic oil leaked from elevator	Closed Spill	3,750 ft NNE	100 yr TOT	Low
219 (Q64)	Jonathan Eal 2130 Chamberlain Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 97151)	Closed/Filled UST: 1,000-gal (Tank ID No. 273594) 10/1997	Closed Removed UST	3,775 ft WNW	50 yr TOT	Low
220 (482)	William Giswold 621 S. Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 164827)	Closed/Removed UST: 560 gal. fuel oil (Tank ID No. 440404) 10/1998	Closed/Removed UST 10/1998	3,775 ft SE	100 yr TOT	Low
221 (DG554, DG555, DG556, DG557)	Memorial Library 728 State Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 673676) WI - Registered AST ERNS BRRTS Spills	Closed/Removed UST: 300 gal. diesel (Tank ID No. 273015) 3/1994 In Use AST: 215 gal. diesel (Tank ID No. 202250) Old spill, 12/1992 100 gal hydraulic oil impacted soil	Closed/Removed UST 3/1994 In Use ASTs Closed Spill	3,800 ft NE	100 yr TOT	Low
222 (55)	Joe Heggstad 2140 Regent Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 174344)	Closed/Removed UST: 1,000-gal fuel oil (Tank ID No. 474119) 3/1999	Closed Removed UST	3,800 ft W	50 yr TOT	Low
223 (DY618, DY619, DY620, DY621, DY622)	Madison Metro School District 545 W Dayton Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 677548) RCRA-CESQG FINDS LUST Manifest SHWIMS Tier 2	In Use UST: 4,000 gal. fuel oil (Tank ID No. 273739) Install date not reported Closed/Removed UST: 4,000 gal. fuel oil (Tank ID No. 272408) 9/1993 Closed LUST, 6/1994, petroleum contaminated soil Spill 4/22/1986, overfilled gas tank causing soil contamination, closed 4/25/1986 RCRA - small quantity generator ignitable hazardous wastes. No violations	In Use UST Closed/Removed UST 9/1993 Closed LUST 6/1994 Closed Spill 4/1986	3,800 ft ENE	100 yr TOT	Moderate
224 (193)	UW Madison School of Veterinary Medicine 2015 Linden Drive Madison, WI	EDR Report- Spill	Spill, 6/1994, wastewater line ruptured causing contamination of surface water Spill 6/1996, faulty valve on cylinder released non-chlorinated solvents	Historic Spills 6/1994 6/1996	3,800 ft NW	100 yr TOT	Moderate
225 (DZ692, DZ630)	Wisconsin Supply Corp. 630 W Mifflin Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 678829) LUST	Closed/Removed UST: 1,000 gal. diesel (Tank ID No. 271711) 11/2/1989 Closed LUST 5/1990, diesel fuel contaminated soil.	Closed/Removed UST 12/1989 Closed LUST 5/1990	3,800 ft E	100 yr TOT	Moderate

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
226 (514)	Parkview Associates Property 765 W Washington Ave. Madison, WI	EDR Report- LUST	Conditionally Closed LUST 3/2001, contaminated soil.	Conditionally Closed LUST 3/2001	3,800 ft ESE	100 yr TOT	Moderate
227 (DI577)	City of Madison Kareoke Kid 614 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 748422)	Closed/Removed UST: 1,000 gal. fuel oil (Tank ID No. 1228061) 5/2009	Closed/Removed UST 5/2009	3,800 ft NE	100 yr TOT	Low
228 (DD531, DD532, DD533)	UW Center for Limnology 680 N Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 60944) SHWIMS BRRTS Spills	Closed/Removed UST: 500 gal. leaded gas (Tank ID No. 272849) 4/1992. Spill 4/1989, details not reported	Closed/Removed UST 4/1992	3,850 ft NNE	100 yr TOT	Low
229 (Q65, Q66)	Robert Bartlett 2134 Chamberlain Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 645036)WI - LUST (DNR Activity No 03-13- 283731)	Closed/Removed UST: 1,000-gallon fuel oil (Tank ID No. 852781). Closed LUST 12/2001, petroleum contaminated soil, Closed under NR 708	Closed/Removed UST Closed LUST Conditional	3,850 ft SW	50 yr TOT	Moderate
230 (Q70)	Olaf Larson 2141 Chamberlain Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 97685)	Closed/Removed UST: 1,000-gal fuel oil (Tank ID No. 273917) 10/1994	Closed Removed UST	3,875 ft WNW	50 yr TOT	Low
231 (CJ419, CJ420, CJ421)	St Mary's Hospital Power Plant 730 S. Mills Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 133029) WI - Registered AST RCRA-NonGen FINDS Manifest	Closed/Removed USTs: 300 gal. unleaded gas, 20,000 gal. fuel oil, 300 gal. leaded gas, 3@10,000 gal. fuel oil (Tank ID Nos. 271432, 271433, 271434, 271435, 271437, 271438, 273291) 8/1990 In Use USTs: 2@20,000 gal. fuel oil (Tank ID Nos. 274223, 274224) In Use ASTs: 4@200 gal. diesel, (Tank ID Nos. 1128469, 1128462, 1128468, 1128470) RCRA-small quantity gen of halogenated solvents wastes. No violations	Closed/Removed USTs 8/1990 In Use USTs In Use ASTs	3,875 ft SSE	50 yr TOT	Moderate
232 (DO571)	City of Madison Site #2 633 University Avenue Madison, WI	EDR Report- BRRTS WI ERP LUST	Closed ERP 4/1998, soil contamination, conditional closure Open LUST start date 7/2006, gasoline soil contamination, VOCs, chlorinated solvents	Closed ERP Conditional Open LUST	3,850 ft NE	100 yr TOT	High
233 (DI561)	McDonalds 441 Lake Street Madison, WI	EDR Report- Spill	Spill 4/1978, cleaning compound evaporated contaminating air	Historic Spill 4/1978	3,850 ft NE (Appears to be Post Office)	100 yr TOT	Low (Air Impact Only)
234 (110)	Wayne Halverson 2127 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 143341)	Closed/Removed UST: 10,000-gal fuel oil (Tank ID No. 273703) 8/1993	Closed/Removed UST 8/1993	3,875 ft WNW	100 yr TOT	Low
235 (211)	200 block of Herrick Street Madison, WI	EDR Report- Spill	Spill 9/1998, unknown petroleum caused surface water contamination	Historic Spill 9/1998	3,850 ft NW	100 yr TOT	Low
236 (CZ496, CZ497, CZ498)	St Mary's Hospital 700 South Park Street Madison, WI	EDR Report- LUST MANIFEST Spills SCHWIMS	Closed LUST 10/1997, no further action Closed LUST 5/1998, contaminated soil and groundwater Spill 4/2007, closed 9/2008, mercury soil and sanitary sewer impacted	Closed LUST Sites 10/1997 5/1998	3,850 ft SE	100 yr TOT	Moderate
237 (DJ552, DJ553)	WI Hooper Sailing Club 800 Langdon Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 680637) BRRTS	Closed/Removed UST: 300 gal. unleaded gas (Tank ID No. 272736) 10/1989	Closed/Removed UST 10/1989	3,900 ft NE	100 yr TOT	Low
238 (DP579)	612 University Avenue Row Madison, WI	EDR Report- LUST	Open LUST start date 5/2009 fuel oil contaminated soil, GIS registry site	Open LUST	3,950 ft NE	100 yr TOT	High
239 (DK582, DK583, DK584, DK585)	Saxony Apartments 305 N Frances Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 163154) Tier 2	Closed/Removed UST: 4,000 gal. fuel oil (Tank ID No. 434111) 9/1998 Sulfuric acid lead batteries stored on-site	Closed/Removed UST 9/1998	3,950 ft ENE	100 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
240 (AP185)	Spill 1930 Linden Drive Madison, WI	EDR Report- Spill	Spill 7/2010, hydraulic hose on a crane ruptured releasing an estimated 20 gallons of hydraulic fluid to sidewalk and soil	Closed Spill 7/2010	4,000 ft NW	100 yr TOT	Moderate
241 (CZ499, CZ501)	Badger Medical Supply Company 702 S. Park Street Madison, WI	EDR Report- LUST Spills WI - Registered UST (Facility ID 716400)	Closed LUST 6/1994, petroleum contaminated soil. Spill 4/2005, fuel tank on ready-mix truck punctured, diesel fuel contaminated soil, Closed 6/2005 Closed/Removed USTs: 2@1,000 gal unleaded gas, 1,000 gal. unknown (Tank ID Nos. 271682, 271683, 273320) 9/1991	Closed LUST 6/1994 Closed/Removed USTs 9/1991 Closed Spill 6/2005	3,975 ft SE	100 yr TOT	Moderate
242 (586)	Hawthorne Apartments 444 Hawthorne Court Madison, WI	EDR Report- WI - Registered UST (Facility ID 679074)	Abandoned with product UST: 1,000 gal. fuel oil (Tank ID No. 271697) Date not reported.	Closed/Removed UST	4,000 ft NE	100 yr TOT	Low
243 (DI575, DI576)	Hawthorne Court Apartments 411 Hawthorne Court Madison, WI	EDR Report- WI - Registered UST (Facility ID 76008) LUST	Closed/Filled with inert material UST: 3,000 gal. fuel oil, (Tank ID No. 273398) 3/1992 Closed LUST 7/1992 petroleum contaminated soil	Closed/Filled UST 3/1992 Closed LUST 7/1992	4,050 ft NE	100 yr TOT	Moderate
244 (DK573)	White Hall Parking Lot 615 W Johnson Street Madison, WI	EDR Report- Spill	Spill 5/2009, car struck building and rupture gas tank, which leaked gasoline. Oil dry used to clean-up. Closed 7/2009	Closed Spill 7/2009	4,050 ft ENE	100 yr TOT	Low
245 (BA277, BA278)	UW Madison Grounds Department 502 Herrick Drive Madison, WI	EDR Report- WI - Registered UST (Facility ID 88188) W – Registered AST	Closed/Removed UST: 500-gallon fuel oil (Tank ID No. 273118) 5/1990 Closed/Removed AST: 10,000 gal. fuel oil (Tank ID No. 472019) 9/2003 In Use AST: 10,000 gal. diesel (Tank ID No. 1030729)	Closed/Removed UST 5/1990 Closed/Removed AST 9/2003 In Use AST	4,075 ft NW	100 yr TOT	Low
246 (CZ523, CZ524, CZ525, CZ526, CZ527)	St Mary's Hospital 802 S Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 133030) RCRA-CESQG LUST AUL SHWIMS CRS	Closed/Removed UST: 1,111 gal. fuel oil (Tank ID No. 273341) No date specified RCRA No violations Closed LUST 3/2001, petroleum contaminated soil and groundwater, conditional closure with GIS registry	Closed/Removed UST Closed LUST With GIS Registry 3/2001	4,050 ft SE	100 yr TOT	Moderate
247 (DR589)	716 Langdon Madison, WI	EDR Report- Spill	Spill 5/1990, acid spilled in soil causing contamination. Cleaned-up	Historic Spill 5/1990	4,100 ft NE	100 yr TOT	Low
248 (DF535)	St Mary's Hospital 806 S Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 133031)	Closed/Removed USTs: 500 gal. waste/used oil, 2,500 gal. fuel oil (Tank ID No. 271436, 273986) 6/1995.	Closed/Removed USTs 6/1995	4,050 ft SE	100 yr TOT	Low
249 (EC649)	Goeden Restaurant 529 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 152265) RCRA-NonGen FINDS LUST SHWIMS	Closed/Removed UST: 5@1,000 gal. unknown contents (Tank ID Nos. 273685, 273686, 273687, 273688, 273689) 7/1993 Closed LUST, 1/1994, contaminated soil, substance not reported RCRA – small quantity generator. Ignitable hazardous wastes, lead, benzene. No violations	Closed/Removed UST 7/1993 Closed LUST 1/1994	4,100 ft ENE	100 yr TOT	Moderate
250 (DK559)	Parking Lot 600 Block of West Johnson Street Madison, WI	EDR Report- Spill	Spill 9/1986, car leaking gasoline contaminated soil	Historic Spill 9/1986	4,100 ft NE	100 yr TOT	Low
251 (CX491, CX492)	Madison CTY St Marys Parking Lot Wingra Drive / Mills Street Madison, WI	EDR Report- SHWIMS WDS	DNR site assessment 10/2004, no solid waste number	No Specific Details 2010	4,150 ft SSE	100 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
252 (DV600, DV601, DV602)	Rhodia (CL379) Miles Lab (CL380) 14 Proudfit Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 108112) RCRA-NonGen FINDS SHWIMS	Closed/Removed UST: 6,000 gal. fuel oil (Tank ID No. 272947) 11/1987 RCRA – historically small quantity generator ignitable waste, chloroform and non-halogenated solvents. No violations	Closed/Removed UST 11/1987	4,150 ft ESE	100 yr TOT	Low
253 (AD130, AD131, AD132, AD133, AD134)	Edgewood High School 2219 Monroe Street Madison, WI	EDR Report- WI - Registered AST RCRA-CESQG WI - Registered UST (Facility ID 73756)	Closed/Removed ASTs: 8- 275-gallon fuel oil (Tank ID Nos. 1230009, 1230007, 1229998, 1230008, 1230006, 1230004, 1230010, 1230005) 5/2009 RCRA – batteries, lamps, pesticides, thermostats, no violations. Abandoned with product UST: 5,000 gal fuel oil (Tank ID No. 272923)	Closed/Removed ASTs 5/2009 Abandoned with product UST 8/1989	4,175 ft SW	100 yr TOT	Moderate
254 (AF138, AF139)	Octopus Car wash 2202 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 115202) RCRA-SQG FINDS LUST CRS AUL SHWIMS	Closed/Removed USTs: 4,000-, 10,000-, 8,000-, 4,000-, 10,000-, 10,000-gal unleaded gasoline (Tank ID Nos. 271814, 272812, 272813, 272814, 272934, 272938). 9/1987 RCRA- ignitable hazardous wastes – no violations. Closed LUST 8/2007 petroleum contaminated soil and groundwater. Closed with deed restriction, NR 726 GIS registry with residual contamination remaining	Closed/Removed USTs 9/1987 Closed LUST 8/2007 with GIS Registry	4,200 ft WNW	100 yr TOT	Moderate
255 (AD146, AD147)	Beissinger Property 2222 Monroe Street Madison, WI	EDR Report- LUST WI - Registered UST (Facility ID 107680)	Closed LUST 12/1993 petroleum contaminated soil. Closed/Removed UST: 500-gallon fuel oil (Tank ID No. 272694) 6/1993	Closed LUST 12/1993 Closed/Removed UST 6/1993	4,250 ft SW	100 yr TOT	Moderate
256 (DV614, DV615)	Marshall Products Proudfit 32 Proudfit Street Madison, WI	EDR Report- RCRA-NonGen FINDS SHWIMS	RCRA – historically small quantity generator ignitable waste, non-halogenated solvents, chloroform and methanol. No violations	Active Site	4,250 ft ESE	100 yr TOT	Low
257 (EB653, EB654)	CITGO Station Greg Scheel 620 W Washington Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 62412) LUST RCRA-Nongen FINDS Spills CRS AUL SHWIMS Site Reconnaissance	Closed/Removed USTs: 1,000 gal. unleaded gas, 12,000 gal unleaded gas, 4,000 gal unleaded gas, 500 gal waste/used motor oil (Tank ID Nos. 271487, 271488, 271489, 416783) 3/1998 RCRA – small quantities of ignitable hazardous wastes, no violations reported Closed LUST 10/2007 (start 9/1995), petroleum contaminated soil and groundwater. Residual remaining above applicable soil and groundwater standards. Conditional NR 726 closure with GIS registry Spill 1/1984, vehicle backed into pump spilling gasoline when hose jerked loose	Closed/Removed USTs 3/1998 Closed LUST 10/2007 conditional NR 726 with GIS Registry Closed Historic Spill 1/1984	4,250 ft E	100 yr TOT	Moderate
258 (BA261, BA262, BA263)	UW Madison Herrick Dr Facility 2120 Herrick Drive Madison, WI	EDR Report- LUST SHWIMS RCRA-TSDF CORRACTS RCRA-NonGen FINDS	Closed LUST 12/1992 petroleum contaminated soil. RCRA violations for permits/conditions/applications, preparedness and prevention, container use	Closed LUST 12/1992	4,350 ft NW	> 100 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
259 (BA248, BA249)	UW Madison Pesticide Building 2105 Herrick Drive Madison, WI	EDR Report- WI - Registered UST (Facility ID 139915) LUST	Closed/Removed UST: 1111-fuel oil (Tank ID No. 272345) 9/1990. Abandoned with product UST: 550 gal. fuel oil (Tank ID No. 272346) Date not reported Closed LUST 12/1992 petroleum contaminated soil and groundwater	Closed/Removed UST 9/1990 Abandoned with Product UST Closed LUST 12/1992	4,275 ft NW	> 100 yr TOT	Low
260 (DR611)	619 Langdon Street Madison, WI	EDR Report- Spill	Spill 7/1994, paints, inks, dyes spilled in storm sewer causing surface water contamination. Closed 7/1994	Closed Spill 7/1994	4,300 ft NE	100 yr TOT	Low
261 (EC667)	International House of Pancakes 505 University Avenue Madison, WI	EDR Report- WI - Registered AST (Facility ID 679787)	Closed/Removed AST: 1,111 gal fuel oil (Tank ID No. 202075) 10/1991 In Use UST: 119 gal fuel oil (Tank ID No. 917184)	Closed/Removed AST 10/1991 In Use AST	4,300 ft NE	100 yr TOT	Low
262 (129)	Amy Regutti 2227 Commonwealth Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 698594)	Closed/Removed UST: 550-gal fuel oil (Tank ID No. 1018576) 9/2005	Closed/Removed UST 9/2005	4,300 ft SW	100 yr TOT	Low
263 (99)	Sharanne Endres 2221 Hollister Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 665708)	Closed/Removed UST: 275-gal fuel oil (Tank ID No. 922722)	Closed/Removed UST	4,325 ft WSW	100 yr TOT	Low
264	Don the Car Care Man 2208 University Avenue Madison, WI	Site Reconnaissance	Vehicle maintenance, fluids storage and use. Vehicle parking. Potential for leaks and spills	Active Vehicle Repair shop 2010	4,300 ft WNW	100 yr TOT	Low
265 (EB648)	626 W Washington Avenue Madison, WI	EDR Report- Spill	Spill 2/1994, nozzle left in car spilling gas and causing soil contamination, closed 2/1994	Closed Spill 2/1994	4,300 ft E	100 yr TOT	Low
266 (200)	Edgewood College 821 Edgewood College Drive Madison, WI	EDR Report- WI - Registered AST (Facility ID 672809)	In Use AST, 300 gal. diesel (Tank ID No. 655914)	In Use AST	4,375 ft SW	100 yr TOT	Low
267 (DR612, DR613)	Greg Steinberger 611 Langdon Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 735401) BRRTS	Closed/Removed UST: 8,000 gal. fuel oil (Tank ID No. 1174723) 3/2008	Closed/Removed UST 3/2008	4,400 ft NE	100 yr TOT	Low
268 (623)	621 N Lake Street Madison, WI	EDR Report- Spill	Spill 10/1979, filling spout spill causing soil contamination (material spilled not reported)	Historic Spill 10/1979	4,400 ft NE	100 yr TOT	Low
269 (EL678)	UHaul Central City Center 602 W Washington Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 139347) LUST SHWIMS RCRA-Nongen FINDS	Closed/Removed USTs: 10,000 gal diesel, 2,000 gal waste/used motor oil (Tank ID Nos. 271599, 274084) 5/1996 Open LUST (began 5/1996), surface water contamination, co-contamination RCRA-small quantities of ignitable hazardous wastes	Closed/Removed USTs 5/1996 Open LUST	4,400 ft E	100 yr TOT	High
270 (ED650)	GMH Associates, Inc. 502 N. Frances Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 678213)	Closed/Removed USTs: 500 gal. fuel oil, 1,500 gal. fuel oil (Tank ID Nos. 272595, 437201) 11/1997	Closed/Removed USTs 11/1997	4,400 ft NE	100 yr TOT	Low
271 (EB655)	625 W Washington Avenue Madison, WI	EDR Report- Spills	Historic spill 11/1979, gasoline spilled contaminating storm sewer	Historic Spill 11/1979	4,400 ft E	100 yr TOT	Low
272 (AF143, AL156)	Erickson Oil Products Inc. New Freedom Service Station 2216 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 80121) LUST BRRTS	In Use USTs: 2-12,000 gal. unleaded gasoline (Tank ID Nos. 273297, 273298) Closed/Removed USTs: 4,000-gal unleaded gas (Tank ID No. 273294), 10,000 gal. unleaded gas (Tank ID No. 273295), 10,000 gal leaded gas (Tank ID No. 273296). 7/1990 Closed LUST 7/1992 gasoline contaminated soil	In Use USTs Closed/Removed USTs 7/1990 Closed LUST 7/1992	4,400 ft WNW	100 yr TOT	Moderate
273 (AC122, AC123)	Madison Gas & electric Company 26 Ash Street Madison, WI	EDR Report- PCB Transformer	PCB transformers	Status not Reported	4,500 ft W	100 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
274 (DG545)	State Street Associates 441 N Frances Street/535 State Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 133659) LUST	Closed/Removed USTs: 7,000 gal. leaded gasoline, 1,000 gal. waste/used oil, 8,000 gal. fuel oil, 7,000 gal. leaded gasoline (Tank ID Nos. 274111, 274114, 274115, 274116) 7/1996. Closed LUST 11/1999, contaminated soil, NR 726 closure	Closed/Removed USTs 7/1996 Closed LUST NR 726 Closure	4,450 ft NE	100 yr TOT	Moderate
275 (681)	1-800-GOT-JUNK? 140 Rodney Court Madison, WI	EDR Report- SHWIMS	SHWIMS listing – no specifics	Residential area	4,400 ft ESE	100 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
276 (AX236, AX237, AX238, AX241, AX242, AX244, AX245, AX250, AX252, AX253, AX254, AX255, AZ256, AX257, AX260)	Madison Gas & Electric Company Walnut Substation West Campus Cogeneration Facility Walnut Street Heating Plant 501 Walnut Street 505 Walnut Street 515 Walnut Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 139846) WI - Registered UST (Facility ID 679389) Registered AST (Facility ID 679389) Registered AST (Facility ID 686427) PCB Transformer Tier 2 BRRTS LUST Spills CRS AUL HMIRS ERNS AIRS RCRA-SQG NPDES Manifest SHWIMS Site Reconnaissance	Closed/Removed UST: 818 gal diesel (Tank ID No. 272156) 9/1993 Closed/Removed USTs: 3,000 gal diesel, 5@47,500 gal fuel oil (Tank ID Nos. 272 717, 272718, 272719, 272720, 272721, 272722) 10/1996 In Use USTs: 4@30,000 gal fuel oil (Tank ID No. 274176, 274177, 274178, 274179) In Use AST: 200 gal diesel (Tank ID No. 660820) In Use ASTs: 1,500 gal diesel, 495,000 gal fuel oil, 185 gal fuel oil (Tank ID Nos. 1008716, 1008710, 1008717) Closed LUST 2/2008, chlorinated solvents contaminated soil and groundwater. Residual soil and groundwater contamination above applicable standards. Conditional closure with GIS registry Spill 12/2003, concrete additive spilled during mixing caused surface water and storm sewer contamination, closed 1/2004 Spill 10/2005, 1,500 bleach spilled impacting soil. Closed 1/2006 Spill 6/2007, oil water separator, caused petroleum contamination of soil and storm sewer. Soil excavated. Closed 9/2008 Spill 2/2010, filling 185 gal diesel storage tank and it overflowed out vent pipe 20-80 gal. Closed 3/2010 PCB Transformer list – 7 transformers, assigned to list 12/1998 Tier 2 – wet cell batteries located in control house contain sulfuric acid. Sodium hypochlorite in tank, ammonium hydroxide in tote, ammonia, fuel oil, potassium formate, sodium hydroxide, sulfuric acid in tank, 1,1,1,2-tetrafluoro-ethane (chillers) HMIRS – 6/2006 spill/explosion (material not reported) ERNS – 1,500 gal sodium hypochlorite spilled from tank into secondary containment RCRA – small quantities of ignitable and corrosive hazardous wastes, no violations reported	Closed/Removed USTs 9/1993, 10/1996 In Use USTs In Use ASTs Closed LUST 2/2008 Closed Spills 1/2004, 1/2006, 9/2008, 3/2010 PCB Transformers Active Industrial Site 2010	4,100 – 4,700 ft NW	> 100 yr TOT	Low
277 (EN699, EN700)	Faust Property 210-212 N Bassett Street Madison, WI	EDR Report- WI – Registered UST (Facility ID 167783) LUST CRS AUL	Closed/Removed UST: 1,000 gal unleaded gas (Tank ID No. 133028) 5/1998 Closed LUST 5/2001, petroleum contaminated soil and groundwater. Conditional closure with GIS registry	Closed/Removed UST 5/1998 Closed LUST 5/2001 Conditional Closure	4,450 ft ENE	100 yr TOT	Moderate
278 (BT349)	Regies Hall (Basement) Edgewood College 865 Woodrow Street Madison, WI	EDR Report- Spill	Spill 7/1997, leaky pipe in AC unit caused air contamination. Closed 8/1997	Closed Spill 7/1991	4,450 ft SW	100 yr TOT	Low (Air Impact Only)
279 (EP708, EP709)	Mullins Property 430-448 W Gorham Street Madison, WI	EDR Report- ERP LUST Spills	Closed ERP 11/1998 at Johnson House, contaminated soil and groundwater Spill 8/1998, mineral oil contaminated soil	Closed ERP 11/1998 Closed Spill 8/1998	4,400 ft NE	100 yr TOT	Moderate

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
280 (157)	Della Steinhauer 2250 Fox Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 68723)	Closed/Removed UST: 560-gallon fuel oil (Tank ID No. 274132) 8/1996	Closed/Removed UST 8/1996	4,500 ft SW	100 yr TOT	Low
281 (BI294, BI295)	UW Madison Biotron Laboratory 2115 Observatory Drive Madison, WI	EDR Report- WI - Registered UST (Facility ID 674652) LUST	Closed/Removed UST: 1,000 gal. fuel oil, (Tank ID No. 273076) 7/1989. Closed LUST 10/1992 petroleum contaminated soil	Closed LUST 10/1992	4,525 ft NW	> 100 yr TOT	Low
282 (DL560)	AAA Transmission of Madison 915 Haywood Drive Madison, WI	EDR Report- WI - Registered UST (Facility ID 50396)	Closed/Removed USTs: 1,000 gal. leaded gas, 8,000 gal diesel (Tank ID Nos. 273142, 273143) 4/1990	Closed/Removed USTs 4/1990	4,500 ft SSE	100 yr TOT	Low
283 (ET715, ET716, ET717, ET718)	Omni Press Inc. Edward's Pizza 454 W Johnson Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 74431) RCRA-NonGen FINDS LUST CRS AUL SHWIMS	Closed/Removed USTs: 2@500 gal leaded gas, 500 gal fuel oil, 500 gal leaded gas (Tank ID Nos. 273531, 273532, 273533, 273534) 11/1992 Closed LUST 10/1999, soil and groundwater contamination. Conditional closure with GIS registry RCRA - no violations reported	Closed/Removed USTs 11/1992 Closed LUST 10/1999 Conditional with GIS Registry	4,500 ft NE	100 yr TOT	Moderate
284 AX260	Walnut Street Greenhouse 525 Walnut Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 142147)	Closed/Removed USTs: 10,000 gal fuel oil, 250 gal leaded gas (Tank ID Nos. 272347, 272348) 1/1986	Closed/Removed USTs 1/1986	4,500 ft NW	>100 yr TOT	Low
285 (AC124, AC125, AC126, AC127)	Madison West High School 30 Ash Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 680029) RCRA-CESQG FINDS BRRTS LUST Spills AUL SHWIMS TIER 2	Closed/Removed USTs: 15,000-gal fuel oil (Tank ID No. 272406); 550-gal waste oil (Tank ID No. 273254) 6/1996 In Use UST: 10,000-gal fuel oil (Tank ID No. 274140) Ignitable wastes - No violations Closed LUST 2/1997, petroleum contaminated soil Spill 6/1996 and closed 2/1997	In Use UST Closed/Removed USTs 6/1996 Closed LUST 2/1997	4,500 ft W	100 yr TOT	Moderate
286 (EN698)	Bio Resources Inc. 212 North Bassett Street Madison, WI	EDR Report- RCRA-NonGen FINDS SHWIMS	RCRA - non-commercial, non generator, no violations reported	Active Business	4,500 ft ENE	>100 yr TOT	Low
287 (EM693)	Hinkley Gregory 521 State Street Madison, WI	EDR Report- WI - Registered AST	Closed/Removed AST: 275 gal. fuel oil (Tank ID No. 202290)	Closed/Removed AST	4,550 ft NE	100 yr TOT	Low
288 (669)	Madison Mutual Housing 641 West Main Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 106801)	Closed/Removed UST: 5,000 gal. unleaded gas (Tank ID No. 273396) 3/1992. Closed LUST start 1/1992, soil and groundwater contamination, gasoline, leaded and unleaded. Closed 10/1992	Closed/Removed UST 3/1992 Closed LUST 10/1992	4,500 ft ESE	> 100 yr TOT	Low
289 (EP704, EP706)	PROCO 437 W Gorham Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 677557) LUST	Closed/Removed USTs: 1,000 gal fuel oil, 4@1,000 gal. leaded gas (Tank ID Nos. 650772, 661723, 661729, 661730, 661731) 1/2000 Closed LUST 12/2003, petroleum contaminated soil	Closed Removed USTs 1/2000 Closed LUST 12/2003	4,500 ft NE	100 yr TOT	Moderate

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
290 (DT609)	Octopus Car Wash 907 S Park Street Madison, WI	EDR Report- LUST RCRA-CESQG FINDS Spills CRS AUL SHWIMS	Closed LUST 8/2007, petroleum contaminated soil and groundwater. Residual contaminant concentrations above applicable soil and groundwater standards. Conditional closure with GIS Registry RCRA – small quantities of ignitable hazardous wastes, no violations reported Spill 11/2000, bus hit debris and spilled diesel fuel causing surface water and storm sewer contamination	Closed LUST 8/2007 conditional with GIS Registry Closed Spill 11/2000	4,550 ft SSE	100 yr TOT	Moderate
291 (EL695)	Badger Coaches 2 South Bedford Street Madison, WI	EDR Report- WI – Registered UST (Facility ID 106757) LUST	Closed/Removed USTs: 6,250 gal leaded gas, 3@3,000 gal leaded gas (Tank ID Nos. 125612, 273434, 273435, 273436) 2/1973 and 11/2009 Closed LUST 10/2009, (start 4/1991)	Closed/Removed USTs 1/1973 and 11/2009 Closed LUST 10/2009	4,500 ft E	>100 yr TOT	Low
292 (EJ665, EJ666)	Beta Building Assoc. 622 Mendota Court Madison, WI	EDR Report- WI - Registered UST (Facility ID 56811) LUST	Closed/Removed UST: 860 gal. fuel oil (Tank ID No. 273392) 3/1992 Closed LUST 9/1994, contaminated soil	Closed/Removed UST 3/1992 Closed LUST 9/1994	4,550 ft NE	100 yr TOT	Moderate
293 (AI148)	George Hoffberg 2306 Kendall Madison, WI	EDR Report- WI - Registered UST (Facility ID 81973)	Closed/Removed UST: 1,000-gallon fuel oil (Tank ID No. 273125) 3/1990	Closed/Removed UST 3/1990	4,575 ft WNW	100 yr TOT	Low
294 (EV740, EV741, EV746)	Joyce Building Orourke Property 540 W Washington Avenue Madison, WI	EDR Report- WI – Registered UST (Facility ID 679825) BRRTS ERP	Closed/Removed UST: 1,000 gal leaded gas (Tank ID No. 897613) 12/2002 Closed ERP 10/1998, soil contamination, no further action required	Closed/Removed UST 12/2002 Closed ERP 10/1998	4,550 ft E	>100 yr TOT	Low
295 (ES710, ES711)	Level 3 Communications LLC 612 W Main Street Madison, WI	EDR Report- WI - Registered AST (Facility ID 719350) Tier 2	In Use AST: 700 gal diesel (Tank ID No. 1102158) Tier 2 – lead and sulfuric acid in batteries	In Use AST	4,600 ft E	>100 yr TOT	Low
296 (DL562)	Famous Daves Restaurant 900 S Park Street Madison, WI	EDR Report- BRRTS Brownfields	Tank Closure Report Received (NOUST Reference): No detection or insignificant contamination	No Action Required 9/2007	4,600 ft SSE	100 yr TOT	Low
297 (EP714)	Great Dane Development 424 W Gorham Street Madison, WI	EDR Report- LUST	Closed LUST 9/2004, gasoline contaminated soil. Closed under NR 708	Closed LUST 9/2004 Under NR 708	4,600 ft NE	>100 yr TOT	Low
298 (AL197)	Ronald Fedler 2302 University Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 60594)	In Use UST: 1,500-gallon fuel oil (Tank ID No. 272009)	In Use UST	4,650 ft WNW	> 100 yr TOT	Low
299 (AI149, AI151)	Frank Berryman 2308 Kendall Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 79058) LUST	Closed/Removed UST: 500-gallon fuel oil (Tank ID No. 273377) 1/1991 Closed LUST 2/1994 petroleum contaminated soil	Closed/Removed UST 1/1991 Closed LUST 2/1994	4,675 ft WNW	> 100 yr TOT	Low
300 (EQ705)	Jerome Mullins & Assoc. 265 Langdon Street Madison, WI	EDR Report- WI – Registered UST (Facility ID 112808)	Closed/Removed UST: 3,000 gal fuel oil (Tank ID No. 274003) 8/1995	Closed/Removed UST 8/1995	4,650 ft NE	>100 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
301 (DR590, DR591, EI663, EI664)	Lowell Hall 610 Langdon Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 677616) WI - Registered AST LUST	Closed/Removed UST: 10,000 gal. fuel oil (Tank ID No. 272401) 8/1995 Closed/Removed ASTs: 2@1,000 gal. fuel oil (Tank ID Nos. 202319, 202318) 3/2006 Closed LUST 1/1996, contaminated soil	Closed/Removed UST 8/1995 Closed/Removed ASTs 3/2006 Closed LUST 1/1996	4,700 ft NE	100 yr TOT	Moderate
302 (DL580)	Ryan Brothers Medical Supply 922 S Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 129492)	Closed/Removed UST: 500 gal unleaded gas, 500 gal fuel oil (Tank ID Nos. 273205, 273206) 9/1990	Closed/Removed USTs 9/1990	4,700 ft SSE	100 yr TOT	Low
303 (158)	Catherine Marin 2326 Chamberlain Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 60708)	Closed/Removed UST: 1,000-gallon fuel oil (Tank ID No. 273275) Date not reported	Closed/Removed UST	4,750 ft WNW	> 100 yr TOT	Low
304 (ET743)	Natalie Manor 430 W Johnson Street Madison, WI	EDR Report- BRRTS	BRRTS 12/1992 start - Soil contamination. No further action required 1/2004	Soil Contamination No Further Action Required 1/2004	4,750 ft NE	>100 yr TOT	Low
305 (AI178)	Kendall Associates 2324 Kendall Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 137397)	Closed/Removed UST: 1,000-gallon fuel oil (Tank ID No. 273831) 6/1994	Closed/Removed UST 6/1994	4,775 ft WNW	> 100 yr TOT	Low
306 (EP724)	Equinox Apartments 409 W Gorham Street Madison, WI	EDR Report- BRRTS	Liability exemption for contamination off-site 2/2007	Off-Site Contamination Liability Exemption 2/2007	4,750 ft NE	>100 yr TOT	Low
307 (551)	Olga Farrell Estate 917 High Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 115357)	Closed/Removed UST: 1,000 gal fuel oil (Tank ID No. 273812) 4/1994	Closed/Removed UST 4/1994	4,750 ft SSE	100 yr TOT	Low
308 (EP725, EP726)	LG Property LLC 408 W Gorham Street Madison, WI	EDR Report- WI - Registered AST (Facility ID 748406) WI - Registered UST	Closed/Removed AST: 275 gal fuel oil (Tank ID No 1228009) 5/2009 Closed/Removed UST: 1,000 gal fuel oil (Tank ID No. 1228007) 5/2009	Closed/Removed AST 5/2009 Closed/Removed UST 5/2009	4,750 ft NE	>100 yr TOT	Low
309 (EI692, EI694)	CMI Property 613 N. Francis Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 68825) LUST	Closed/Removed UST: 1,000 gal. fuel oil (Tank ID No. 273887) 9/1994 Closed LUST 2/1996, contaminated soil	Closed UST 9/1994	4,800 ft NE	>100 yr TOT	Low
310 (751)	600 Block of West Doty Street Madison, WI	EDR Report- Spills	Spill 8/1987, train hit truck spill unknown substance and contaminating soil. Last action 8/1987	Closed Spill 8/1987	4,800 ft ESE	> 100 yr TOT	Low
311 (AL199, AL201)	Highland Transitional Care Facility 2308 University Madison, WI	EDR Report- LUST BRRTS WI - Registered UST (Facility ID 678477)	Closed LUST 5/2002 petroleum contaminated soil and groundwater Closed/Removed UST: 1000 gal fuel oil (Tank ID Nos. 655914) 3/2000	Closed LUST 5/2002 Closed/Removed UST 3/2000	4,850 ft WNW	> 100 yr TOT	Low
312 (176)	Lawrence Yunck 310 Vista Road Madison, WI	EDR Report- WI - Registered UST (Facility ID 631487)	Closed Filled with inert material UST: 1,111-gallon fuel oil (Tank ID No. 797733) 1/1975	Closed/Removed UST 1/1975	4,825 ft WSW	100 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
313 (DT594, DT595)	Park Street Mini Mart 950 S Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 116519) LUST RCRA-CESQG FINDS CRS AUL SHWIMS	Closed/Removed UST: 10,000 gal unleaded gas, 550 gal waste/used oil, 550 gal fuel oil, 6,000 gal unleaded gas, 4,000 gal unleaded gas, 5,000 gal unleaded gas (Tank ID No. 271684, 271685, 271686, 271687, 271688, 271689) 2/1999 In Use USTs: 12,000 gal unleaded gas, 8,000 gal unleaded gas (Tank ID Nos. 464708, 464717) RCRA - ignitable hazardous wastes, no violations reported Closed LUST 8/2005, contaminated soil and groundwater. Residual contaminant concentrations above applicable soil and groundwater standards. Conditional closure with GIS Registry	Closed/Removed USTs 2/1999 In Use USTs 2010 Closed LUST 8/2005 Conditional with GIS Registry	4,850 ft SSE	100 yr TOT	Moderate
314 (EU737)	Sherman Dutch 628 W Doty Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 50292)	Closed/Removed UST: 10,000 gal diesel (Tank ID No. 272172) 4/1990	Closed/Removed UST 4/1990	4,800 ft ESE	> 100 yr TOT	Low
315 (DT634, DT635, DT636, DT637)	Valvoline Instant Oil Change 939 S Park Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 674644) WI - Registered AST RCRA-CESQG FINDS CRS LUST Spills AUL SHWIMS	Closed/Removed USTs: 500 gal waste/used oil, 560 gal fuel oil, 550 gal waste/used oil, 2@6,000 gal unleaded gas, 8,000 gal unleaded gas, 550 gal waste/used oil (Tank ID Nos. 272829, 273926, 273927, 274032, 274033, 274034, 274035) 3/1985, 11/1994 Closed/Removed AST: 1,000 gal waste/used oil (Tank ID No. 202296) 4/2003 Closed LUST 6/2001, petroleum contaminated soil and groundwater. GIS Registry Spill 6/2002, overflow of oil water separator due to heavy rains spilled petroleum. Closed 6/2002 RCRA - Small quantities of ignitable hazardous wastes, no violations reported	Closed/Removed USTs 3/1985, 11/1994 Closed/Removed AST 4/2003 Closed LUST 6/2001 Closed Spill 6/2002	4,850 ft SSE	>100 yr TOT	Low
316 (159)	Thomas & Sheila Spear 2317 Hollister Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 670597)	Closed/Removed UST: 1,000-gallon fuel oil (Tank ID No. 941786) 2/2004	Closed/Removed UST 2/2004	4,900 ft WSW	100 yr TOT	Low
317 (EQ742)	James Korb 612 Howard Place Madison, WI	EDR Report- WI - Registered UST (Facility ID 91757)	Closed/Removed UST: 2,000 gal fuel oil (Tank ID No. 274068) 12/1995	Closed/Removed UST 12/1995	4,900 ft NE	>100 yr TOT	Low
318 (EU731)	Tobacco Row LLC 651 W Doty Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 706870) LUST RCRA-NonGen FINDS Manifest SHWIMS	Closed/Removed UST: 1,000 gal fuel oil (Tank ID No. 271640) 4/1986 Open LUST - start date 11/2001, arsenic contaminated soil RCRA - non generator, no violations reported No specific environmental listing	Closed/Removed UST 4/1986 Open LUST Arsenic Contaminated Soil	4,900 ft E	>100 yr TOT	Low
319 Site Obs.	Klinke Cleaners 939 S Park Street Madison, WI	Site Reconnaissance	Drycleaners, potential spills	Active Drycleaner 2010	4,950 ft SSE	>100 yr TOT	Low
320 (DT610)	Curtis Ambulance Service 960 S Park Street Madison, WI	EDR Report- LUST Spills	Closed LUST 12/2002, contaminated soil, conditional closure Spill 4/1984, removing old tank which tipped and spilled diesel fuel	Closed LUST 12/2002 conditional closure Historic Spill 4/1984	5,000 ft SSE	>100 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
321 (258)	Millers Liquor LLC 2401 University Avenue Madison, WI	EDR Report- WI – ERP LAST	Open ERP site began 2/2003, non-chlorinated solvents contamination. Open LAST site began 2/2003	Open ERP Open LAST	4,975 ft WNW	> 100 yr TOT	Low
322 (EQ744)	Meryllyn & Son Management 615/635 Howard Place Madison, WI	EDR Report- LUST CRS AUL	Closed LUST 7/2007, contaminated soil. Closure with deed restriction, GIS registry	Closed LUST with GIS Registry 7/2007	4,950 ft NE	>100 yr TOT	Low
323 (EU738)	A J Sweet of Madison Inc. 629 West Doty Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 50293)	Closed/Removed UST: 10,000 gal. diesel (Tank ID No. 273211) 4/1990	Closed/Removed UST 4/1990	4,950 ft ESE	> 100 yr TOT	Low
324 (134)	Mary Vogel 2321 Rugby Row Madison, WI	EDR Report- WI - Registered UST (Facility ID 273355)	Closed/Removed UST: 1,100-gallon fuel oil (Tank ID No. 273355) Date not reported	Closed/Removed UST	5,000 ft SW	100 yr TOT	Low
325 (FG778, FG779)	Sprint 448 W Washington Avenue Madison, WI	EDR Report- WI – Registered UST (Facility ID 85027) LUST	Closed/Removed USTs: 2@2,000 gal diesel (Tank ID Nos. 271632, 272231) 4/1994 Closed LUST 4/1996, diesel contaminated soil	Closed/Removed USTs 4/1994 Closed LUST 4/1996	5,000 ft ENE	>100 yr TOT	Low
326 Site Obs.	Toby's Auto Sales 1004 Fish Hatchery Road Madison, WI	Site Reconnaissance	Vehicle parking, vehicle maintenance, staging area, garage bays, potential for leaks and spills	Active Vehicle Sales 2010	5,000 ft SSE	>100 yr TOT	Low
327 (598)	Maurine Wiedholz 1009 S Brooks Street Madison, WI	EDR Report- WI – Registered UST (Facility ID 168006)	Closed/Removed UST: 550 gal fuel oil (Tank ID No. 453868) 12/1998	Closed/Removed UST 12/1998	5,100 ft SSE	>100 yr TOT	Low
328 (EX750)	City of Madison 452 State Street Madison, WI	EDR Report- WI – Registered UST (Facility ID 759612)	Closed/Removed UST: 500 gal. fuel oil (Tank ID No. 1278415) 7/2010	Closed/Removed UST 7/2010	5,100 ft NE	>100 yr TOT	Low
329 (BT338)	Edgewood College 855 Woodrow Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 677862)	Closed/Removed USTs: 3,000 gal. fuel oil, 500 gal. unleaded gas, (Tank ID Nos. 272920, 272921) 9/1988	Closed/Removed USTs 9/1988	5,150 ft SW	100 yr TOT	Low
330 (145, AU225, AU226)	Edgewood College 1000 Edgewood Drive Madison, WI	EDR Report- LUST CRS AUL RCRA-CESQC FTTS FINDS Manifest SHWIMS	Closed LUST 7/2005 petroleum contaminated soil. Closed with deed restriction, GIS registry with residual contamination remaining. RCRA – small quantity generator batteries, lamps, pesticides, thermostats, ignitable wastes, no violations.	Closed LUST 7/2005 with GIS Registry	5,150 ft SW	100 yr TOT	Moderate
331 (FF800, FF801)	Terry's Car Care Terry McCaugheys Service Center Inc 332 West Johnson Street Madison, WI	EDR Report- WI – Registered UST (Facility ID 180271) WI – Registered AST Site Reconnaissance	Closed/Removed UST: 500 gal waste/used motor oil (Tank ID No 272638) 3/1996 In Use AST: 285 gal waste/used motor oil (Tank ID 202320) Auto repair and maintenance (brakes, tires, tune-up, repairs) General potential for leaks and spills	Closed/Removed UST 3/1996 In Use AST Active Auto Repair and Maintenance 2010	5,100 ft NE	>100 yr TOT	Low
332 (BA279, BA280)	Bramson Property 2339 Keyes Avenue Madison, WI	EDR Report- WI - Registered UST (Facility ID 4516) LUST	Closed/Removed USTs: 500 gal. fuel oil, 200 gal fuel oil (Tank ID Nos. 10165, 10622) 9/1997 Closed LUST 3/1998 petroleum contaminated soil	Closed LUST 3/1998	5,175 ft SW	100 yr TOT	Moderate
333 (EE651)	Josephine Fiore 1009 High Street Madison, WI	EDR Report- WI – Registered UST (Facility ID 191460)	Closed Filled with Inert Material UST: 500 gal fuel oil (Tank ID No. 661685) 3/2000	Closed/Filled UST 3/2000	5,200 ft SSE	>100 yr TOT	Low
334 (332)	2370 W Lawn Avenue Madison, WI	EDR Report- Spill	Spill 5/1978, traffic accident released fluid causing soil contamination	Historic Spill 5/1978	5,400 ft SW	100 yr TOT	Low

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
335 (BC270, BC271)	City of Madison Forest Hill Cemetery 1 Speedway Road Madison, WI	EDR Report- WI - Registered UST (Facility ID 152018) W - Registered AST	Closed/Removed UST: 550-gallon diesel (Tank ID No. 272510) 11/1995 In Use AST: 550 gal. unleaded gas (Tank ID No. 202316) Active Cemetery	Closed/Removed UST 11/1995 In Use AST	5,500 ft WSW	> 100 yr TOT	Low
336 (417, 474)	Resurrection Catholic Cemetery 2705 Regent Street Madison, WI	EDR Report- LUST WI - Registered UST (Facility ID 129763) Site Reconnaissance	Closed LUST 8/1999 petroleum contaminated soil, NR 708 Closure Closed/Removed UST: 500 gal. fuel oil (Tank ID No. 479611) 6/1999 Maintenance garage, fuels and waste oil storage Cemetery	Closed LUST 8/1999 NR 7208 Closure	5,925 ft WSW	> 100 yr TOT	Low
337 (BZ363, BZ364, BZ365)	Budd's Union 76 2422 Monroe Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 58992) RCRA-NonGen FINDS LUST CRS AUL SCHWIMS	Closed/Removed USTs: 300 gal. used/waste oil, 4,000 gal. leaded gas, 2@8,000 gal unleaded gas, 520 gal fuel oil (Tank ID Nos. 271738, 271739, 271740, 271741, 273814) 4/1994. RCRA-small quantity gen of ignitable hazardous wastes, metals, VOCs, No violations Closed LUST 10/2003 petroleum contaminated soil and groundwater remaining above NR 140 standards, contamination in bedrock, conditional closure with GIS registry	Closed LUST 10/2003 Conditional with GIS Registry	5,900 ft SW	> 100 yr TOT	Low
338 (360)	Tom Schaefer 2606 Chamberlain Madison WI	EDR Report- WI - Registered UST (Facility ID 137760)	Closed/Removed UST: 500 gal. fuel oil (Tank ID No. 273419) 5/1992.	Closed/Removed UST 5/1992	6,050 ft WNW	>100 yr TOT	Low
339 (CG410)	Klinke Cleaners 2502 Monroe Street Madison, WI	EDR Report- RCRA-SQG FINDS WI ERP CRS AUL SCHWIMS	RCRA-small quantity gen of halogenated solvents wastes. No violations Closed ERP 2/2005, chlorinated solvents contamination of soil and groundwater, conditional closure with GIS registry. Site Reconnaissance	Closed ERP 2/2005 Conditional with GIS Registry Active Drycleaner	6,100 ft SW	> 100 yr TOT	Low
340 (CG416)	Michaels Frozen Custard 2531 Monroe Street Madison, WI	EDR Report- ERP AUL CRS	Closed ERP 7/2006, petroleum and chlorinated solvents contaminated groundwater. Conditional closure with GIS Registry	Closed ERP 7/2006 GIS Registry	6,100 ft SW	>100 yr TOT	Low
341 (CP465, CP466)	Fiore Coal & Oil Company 2623 Monroe Street Madison, WI	EDR Report- WI - Registered UST (Facility ID 93218) LUST	Closed/Removed USTs: 500 gal. waste/used oil, 2,000 gal unleaded gas, 2,000 gal leaded gas (Tank ID Nos. 271742, 271743, 271744) 3/1990 Closed LUST 6/1994 gasoline contaminated soil	Closed/Removed USTs 3/1990 Closed LUST 6/1994	6,500 ft SW	> 100 yr TOT	Low
342 (CP458, CP459)	Rice's Fill and Fix Em 2620 Monroe Street Madison, WI	EDR Report- LUST SCHWIMS RCRA-NonGen FINDS WI - Registered UST (Facility ID 122348)	Closed LUST 2/1999, contaminated soil and groundwater – substance not reported RCRA small quantity generator ignitable hazardous wastes, No violations Closed/Removed USTs: 2@4,000 gal. unleaded gas, 6,000 gal unleaded gas, 500 gal. fuel oil, 500 gal. waste/used oil (Tank ID Nos. 271945, 271946, 271947, 272016, 272017) 12/1990	Closed LUST 2/1999 Closed/Removed USTs 12/1990	6,500 ft SW	> 100 yr TOT	Low
343	See Map Site No. 341						
	Highways, roads, streets throughout the area	Visual Inspection	Salt application. Potential spills.	Active	At Site	Zone A – 5 yr TOT	Low-Moderate

TABLE 4-1 (cont.)

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contaminant Sources	Reported Status	Approximate Distance to Unit Well 27	Location within Capture Zone	Estimated Threat to Supply Wells
<p>Notes:</p> <ol style="list-style-type: none"> 1. Zone A = Within 5 year TOT ZOC 2. Zone B = Beyond Zone A, but within 1200-ft. radius. <p>AST - Aboveground Storage Tank AUL - Deed Restriction Data BRRTS - Wisconsin Bureau of Remediation & Redevelopment Tracking System CERCLIS - Comprehensive Environmental Response, Compensation, and Liability Information System COORACTS - Corrective Action Activity CRS - Closed Remediation Sites DNR - Wisconsin Department of Natural Resources EPA - Environmental Protection Agency ERNS - Emergency Response Notification System ERP - Wisconsin Environmental Repair Program Database FINDS - Facility Index System/Facility Registry System LAST - Leaking Aboveground Storage Tank LUST - Leaking Underground Storage Tank MANIFEST - Hazardous Waste Manifest Information NPL - National Priorities List (NPL) SHWIMS - Solid & Hazardous Waste Information Management System RCRA-CESQG - Resource Conservation and Recovery Act- Conditionally Exempt Small Quantity Generator RCRA-LQG - Resource Conservation and Recovery Act (RCRA) - Large Quantity Generator RCRA-SQG - Resource Conservation and Recovery Act- Small Quantity Generator SPILLS - Wisconsin DNR Spills Database TOT - Time of Travel UST - Underground Storage Tank yr - Year WI - Wisconsin</p> <p>Environmental Data Resources (EDR) Report No. 2937229.1s December 3, 2010</p>							

There are no private sewage disposals systems in the vicinity of Unit Well 27. All businesses and residents located in the area are served by the City of Madison municipal sewer system.

Based on the site reconnaissance and a review of the Wisconsin registered storage tank list, there is one in-use UST site located within 1,200 feet of Unit Well 27. The nearest in-use UST site is at the University of Wisconsin Service Garage located at 29 N Charter Street, which is approximately 1,175 feet east of Unit Well 27. Seven closed, removed, or abandoned UST sites are located within 1,200 feet of Unit Well 27.

There are 15 closed LUST or ERP sites within 1,200 feet of Unit Well 27. The closest closed LUST site is 200 feet west of Unit Well 27 at 1402 Regent Street. There are no active LUST/ERP sites located within 1,200 feet of Unit Well 27. Eleven of the twelve closed LUST sites, and one closed ERP site located within 1,200 feet of Unit Well 27 had contaminated soil and/or groundwater and received closure with residual contamination remaining at the sites.

Based on the site reconnaissance and a review of the Wisconsin registered storage tank list, the nearest AST is located at the Unit Well 27 site. The 480 gallon, double wall AST contains diesel. The next closest in-use AST is located at 1429 Monroe Street and is approximately 350 feet northwest of Unit Well 27. The 451 gallon AST contains diesel.

Based on the review of the Wisconsin Spills List, six reported spills have occurred within 1,200 feet of Unit Well 27. Spills have been relatively low volume releases of petroleum products and have resulted from overfilling tanks, vehicle accidents, ruptured elevator hydraulic system and illegal dumping. Spills have impacted storm sewers and soil. The sites have historic spill or closed status. The closest spill occurred at 1336 Regent Street, approximately 250 feet east of Unit Well 27. There are several streets and high volume transportation corridors through the Unit Well 27 ZOCs. Also railroad tracks and a railroad spur to the University of Wisconsin Power Plant are located 1,200 feet northeast of Unit Well 27 and are in WHPA Zone B. Coal is stored on a paved surface at the power plant.

Drycleaners are located approximately 3,350 feet southeast, 4,950 feet south-southeast and 6,100 feet southwest of Unit Well 27.

DNR records show that a historical solid waste disposal site (City of Madison St Mary's Parking Lot) is located approximately 4,150 feet south-southeast of Unit Well 27 (Figure 4-1 Site No. 329). Records show the site was used for solid waste disposal (undifferentiated waste) (DCRPC, 1999). The years of operation are not reported.

Two cemeteries are located 5,500 to 6,000 feet west of Unit Well 27 and are beyond the 100-year TOT ZOC.

There are no sludge or septage spreading areas in the Unit Well 27 WHPA or in upgradient ZOCs.

No bulk salt storage sheds or bulk pesticide, fertilizer storage, and/or mix-load sites were identified within the ½-mile radius or the recharge area equivalent to the delineated 100-year TOT of Unit Well 27, or within the upgradient recharge area. Salt is applied to roadways in the Unit Well 27 ZOCs during the winter, as a deicer.

The separation distances between Unit Well 27 and potential contaminant sources identified in Wisconsin Administrative Code NR 811.12(6) are summarized in Table 4-2. The required separation distance from Unit Well 27 is not met for several closed LUST sites that were closed with residual groundwater contamination exceeding Chapter NR 140 Enforcement Standards as recorded on the DNR GIS Registry.

The required separation distances from Unit Well 27 may not be met for several ASTs and one UST located within 1,200 feet of Unit Well 27 unless the tanks have double wall thickness, secondary containment and continuous electronic interstitial monitoring for the tank system. ASTs located at 45 North Randall Avenue and 1220 Capital Court (Figure 4-1, Sites 62 and 92, respectively) have single walls. It is reported in the Wisconsin AST and UST database that the other tanks have double walls. A separation distance of 10 feet is required between Unit Well 27 and the double walled AST at the site that supplies fuel to the standby generator, provided that the AST is equipped with continuous electronic interstitial leakage monitoring.

4.2 UNIT WELL 27 WATER QUALITY AND LAND USES

Based on the latest water quality samples, water pumped from Unit Well 27 is hard (436 milligram per liter (mg/L)), and contains low levels of iron (0.095 mg/L), manganese (0.044 mg/L), nitrate (0.368 mg/L), chloride (64.5 mg/L), sulfate (55.62 mg/L), and radon (215 pico curies per liter (pCi/L)) (DNR, 2010). No volatile organic compounds (VOCs) or synthetic organic compounds (SOCs) were detected in water pumped from Unit Well 27 during the last sampling cycles of 2010 for VOCs and 2008 for SOCs (DNR, 2010). Table 4-3 presents a summary of the Unit Well 27 inorganic water quality. Appendix I contains the detailed historical water quality information for Well 27.

Select water quality parameters were graphed and reviewed to determine if there are trends in the water quality. Appendix I includes the historical water quality graphs. On the basis of these water quality data, it does not appear that road salt application (chlorides), or nutrient loading (nitrates) on grass areas in the well capture zone areas has significantly affected the quality of groundwater pumped from Unit Well 27. The concentrations are well below the nitrate maximum contaminant level (MCL) of 10 mg/L, and the secondary standard of 250 mg/L for chloride. There does appear to be an inclining trend in the chloride and sodium concentrations at the site, which would indicate a trend of road salt infiltration.

Unit Well 27 is cased through the Eau Claire shale confining layer; therefore, Unit Well 27 is less vulnerable to contamination from near-surface contaminant sources compared to other nearby municipal wells. Infiltration of road salt may occur through the confining layer as the layer is only 5-feet thick at the well. Infiltration of road salt may also occur through other wells in the surrounding area.

4.3 LAND USES AND WHP PLANNING

Some of the land uses in the vicinity of Unit Well 27 are not compatible with WHP planning, including major roads and railroad tracks (high potential for spills), vehicle repair and maintenance, gas stations and drycleaning. Land uses summarized in Table 4-2 should be prohibited in the vicinity of Unit Well 27, within the respective minimum separation distances shown. Also, it is not desirable to have commercial and manufacturing, or industrial districts located in WHPAs. There are currently no industrial districts located in the vicinity of Unit

**TABLE 4-2
MINIMUM SEPARATION REQUIREMENTS
BETWEEN PUBLIC WELLS AND
POTENTIAL CONTAMINANT SOURCES
WELLHEAD PROTECTION PLAN, UNIT WELL 20
MADISON, WISCONSIN**

Potential Contamination Source	Minimum Separation Distance
Emergency or Standby Power System for Well	10 feet
Storm Sewer	50 feet
Sanitary Sewer	200 feet ¹
Sanitary Lift Station	200 feet
Single Family Residential Fuel Oil Tank	200 feet
Private on Site Water Treatment System (POWTS) Treatment Tank or Holding Tank Component and Associated Piping.	200 feet
Double Walled Above Ground Gasoline or Fuel Oil Tank Approved by Comm 10.260	300 feet
Cemetery	400 feet
Stormwater Retention or Detention Pond	400 feet
POWTS Dispersal Component With a Capacity of Less Than 12,000 gpd.	400 feet
Double Walled Below Ground Gasoline or Fuel Oil Tank Approved by Comm 10.260	600 feet
Land Application of Municipal, Commercial, or Industrial Waste	1,000 feet
Boundaries of Land Spreading Facility Regulated Under Chapter NR 718	1,000 feet
Agricultural, Industrial, Commercial, or Municipal Wastewater Treatment Plant Treatment Units, Lagoons, or Storage Structures	1,000 feet
Manure Stacks or Storage Structures	1,000 feet
POWTS Dispersal Component With a Capacity of 12,000 gpd or More.	1,000 feet
Solid Waste Storage, Transportation, Transfer, Incineration, Air Curtain Destructor, Processing, Wood Burning, or One-Time Disposal or Small Demolition Facility	1,200 feet
Sanitary Landfill	1,200 feet
Property with Residual Groundwater Contamination Exceeding Chapter NR 140 Enforcement Standards	1,200 feet
Coal Storage Area	1,200 feet
Salt or Deicing Material Storage	1,200 feet
Gasoline or Fuel Oil Storage Tanks not Approved by Comm 10.260	1,200 feet
Pesticide or Fertilizer Handling or Storage Facilities	1,200 feet
Reference: Wisconsin Administrative Code, NR 811, November 2010.	
Footnote:	
¹ Lesser separation for sanitary sewer may be allowed if the sewer is constructed of water main materials and pressure tested. Less than 50 feet separation is not allowed.	

TABLE 4-3
SUMMARY OF WATER QUALITY DATA
WELLHEAD PROTECTION PLAN, UNIT WELL 27
MADISON, WISCONSIN

Parameter	Value	Maximum Contaminant Limit (MCL) Or Secondary Standard
Alkalinity (mg/L)	298 - 344	None
Hardness (mg/L)	350 - 460	None
pH	7.39 – 7.76	6.5 – 8.5
Iron (mg/L)	0.05 – 0.23	0.3
Manganese (mg/L)	0.03 – 0.064	0.05
Chloride (mg/L)	23.1 – 64.5	250
Nitrate – Nitrogen (mg/L)	Non Detect – 0.456	10.0
Sulfate (mg/L)	43 - 78	250
Barium (mg/L)	0.014 – 0.032	2.0
VOCs (Concentration greater than MCL)	None	Varies
SOCs (Concentration greater than MCL)	None	Varies

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Well 27; however, the University of Wisconsin Power Plant site located at 117 North Charter Street has industrial type activity. Land uses summarized in Table J-1 in Appendix J should be prohibited from WHPA Zones A and B. Where any of the uses listed in Table J-1 currently exist within Zones A and B, owners should be allowed to upgrade the facilities to facilitate or enhance groundwater protection.

Tables 4-4 and 4-5 in Appendix J summarize several potential sources of groundwater contamination and land uses, and their relative risk to groundwater, respectively.

5.0 MANAGEMENT ACTIVITIES

5.1 ALTERNATIVE MANAGEMENT ACTIVITIES

Table 5-1 summarizes key elements of a management plan developed for the City of Madison. Activities were identified for resource management within the delineated WHPA and within far upgradient ZOCs.

The various activities can be grouped into five principal categories as follows:

1. Existing programs
2. Land use controls
3. Intergovernmental cooperation
4. Monitoring
5. Public education and awareness

All landowners in the Unit Well 27 area, whether residing in the City of Madison or in surrounding areas, rely on groundwater resources for water supply. Emphasis should be placed on management activities that provide a mutual benefit to the City of Madison residents and other property owners who rely on the groundwater resources.

5.1.1 Category 1 - Existing Programs

5.1.1.1 Hazardous Waste Collection/Disposal Program (Clean Sweep)

Public Health Madison and Dane County operates the Clean Sweep Collection Program. The Clean Sweep program involves collection and disposal of residential, agricultural, and small business hazardous chemicals and wastes and product exchange of unwanted hazardous products when applicable. Disposal of household residential hazardous wastes is free; however, some household hazardous wastes cannot be accepted by the Clean Sweep Program. The Clean Sweep website should be consulted about specific items being disposed. Small quantities of hazardous materials and wastes from small businesses are accepted on Thursday mornings, by appointment only, and there is a per pound charge for materials. Costs are summarized on the Clean Sweep website. There are similar charges for disposal of hazardous materials disposed of by producers of agricultural crops and commodities; however, Dane County farmers receive a subsidy. Collections are held between 7:30 a.m. and 2:00 p.m. on Tuesdays, Wednesdays, Fridays, and Saturdays; May 1 through October 30. The Clean Sweep site is located at the north end of the Dane County Highway Garage property, 2302 Fish Hatchery Road, Madison, Wisconsin.

Information about the Clean Sweep Collection Program can be obtained by calling (608) 243-0368. Clean Sweep Collection Program website is www.danecountycleansweep.com.

The Clean Sweep Collection Program is advertised using public service announcements and materials distributed by municipalities including direct mail to select customer groups, press releases, publications and newsletters, television coverage, and brochures. The program also maintains a website as noted above and an informational hotline. Funding for the program is

TABLE 5-1
SUMMARY OF MANAGEMENT ACTIVITIES
WELLHEAD PROTECTION PLAN - UNIT WELL 27
MADISON, WISCONSIN

Program Category	Activity	Description	Responsible Unit(s) of Government	Implementation Schedule	
				Date	Action Item
1. Existing Programs	a. Hazardous Waste Collection (CLEAN SWEEP)	<ul style="list-style-type: none"> Hazardous waste collection and disposal. Residential, agricultural, and small business hazardous waste. Commercial with small fee. May through October collections in Madison. Target local property owners and residents to participate. 	<ul style="list-style-type: none"> Public Health Madison and Dane County 	1. 2011	1. Madison Water Utility send information about the Clean Sweep Collection Program to property owners in the WHPA, to encourage participation in the program.
				2. As needed	2. Dane County sponsors advertising and feature articles.
	b. On Site Waste Disposal System (Septic) Maintenance	<ul style="list-style-type: none"> Maintenance/servicing contract currently required for system owners on record. Orders issued to confirm failing system owners. Include all property/septic system owners in WHPA in notification database. Conduct Public Education. 	<ul style="list-style-type: none"> Public Health Madison and Dane County Environmental Health Services 	1. 2011, then annually	1. Madison Water Utility request that Public Health Madison and Dane County Health Services provide information to owners of private sewage disposal systems about sewage system maintenance, and the types of waste that should not be disposed of in a septic system.
				2. 2011	2. Madison Water Utility prepare an article for newspaper release about septic system dos and don'ts.
				3. Every 3 years	3. Public Health Madison and Dane County Environmental Health Services ensure that system maintenance and pumping are performed.

TABLE 5-1 (cont.)

Program Category	Activity	Description	Responsible Unit(s) of Government	Implementation Schedule	
				Date	Action Item
1. Existing Programs (cont.)	c. Well Construction and Abandonment	<ul style="list-style-type: none"> Dane County review applications and require construction permits for new private water supply wells. Enforce well abandonment ordinance(s) (Dane County Chapter 45, and City of Madison General Ordinance Sec. 13.21) and review new well construction. Madison Water Utility review applications for private well operation permits. City of Madison require proper abandonment of unused and unsafe wells. Update well inventory in WHPA. Familiarize with WI Admin. Codes, Chapters NR 141, 811, and 812. 	<ul style="list-style-type: none"> Wisconsin DNR Public Health Madison & Dane County Environmental Health Services City of Madison Madison Water Utility 	1. Ongoing	1. Dane County Environmental Health Division continue to review well applications and require construction permits for new private water supply wells.
				2. Ongoing	2. Madison Water Utility continue to review applications for private wells operation permits.
				3. 2011, then annually	3. Madison Water Utility request that Public Health Madison & Dane County Environmental Health Services provide the names and addresses of owners of private wells located in the Unit Well 27 WHPA.
				4. Ongoing	4. Madison Water Utility determine the location of other private water supply wells that may be located within the WHPA and which are not recorded in the County database.
				5. Every 5 years in conjunction with well permits	5. Madison Water Utility send private well owners within the WHPA, DNR pamphlets about well upkeep and proper abandonment procedures in the event the owners abandon their existing wells.
				6. Ongoing	6. Madison Water Utility update the private well inventory for wells located in the WHPA.
				7. Ongoing	7. City of Madison and Dane County enforce existing well abandonment ordinances, to ensure that all private wells are permitted, or properly abandoned if unused.
				8. 2011	8. Madison Water Utility request that Dane County consider proximity and depth of proposed private wells relative to Unit Well 27 prior to issuing permits for construction of new private water supply wells.
				9. Ongoing	9. Madison Water Utility direct residents to the DNR private well code (Chapter NR 812) or to the Wisconsin DNR private well section (608-266-0821) when questions arise about private water supply wells.
				10. 2011	10. Madison Water Utility provide information in the annual Consumer Confidence Report (CCR) about proper abandonment of unused wells.

TABLE 5-1 (cont.)

Program Category	Activity	Description	Responsible Unit(s) of Government	Implementation Schedule	
				Date	Action Item
1. Existing Programs (cont.)	d. Land Application of Sludge and Septage	<ul style="list-style-type: none"> Enforce existing rules. 	<ul style="list-style-type: none"> Wisconsin DNR Dane County Madison Metropolitan Sewerage District (MMSD) 	1. 2011	1. Madison Water Utility provide a copy of the WHPA and ultimate recharge area maps to the MMSD and request that sludge not be spread in the Unit Well 27 ultimate recharge area.
				2. 2011	2. Madison Water Utility provide a copy of the WHPA and ultimate recharge area maps to the DNR Watershed Management office (608-267-7694 (central office) 608-275-3325 (Fitchburg office)) and request that new permits for sludge and septage spreading not be issued for properties located in the Unit Well 27 ultimate recharge area.
				3. Ongoing	3. Madison Water Utility encourage development of additional authorized septage discharge points in the City of Madison wastewater treatment system.
				4. Ongoing	4. DNR enforce rules, particularly in WHPAs.
				5. 2011	5. Dane County develop regulatory program including ordinance.
	e. Spill Notification and Awareness of Remedial Investigation and Cleanup	<ul style="list-style-type: none"> Monitor and keep informed of potential contamination sources in the WHPA and recharge areas. Work with DNR to achieve investigation and cleanup of known contamination sources. 	<ul style="list-style-type: none"> Wisconsin DNR Dane County Emergency Management Wisconsin DATCP and COMM City of Madison Fire Department 	1. 2011	1. Madison Water Utility request that DNR, City Police, and the Dane County Emergency Management Office inform the City about future events (spills, leaks, investigations, etc.) that occur in the Unit Well 27 WHPA or in upgradient recharge areas.
				2. 2011, then ongoing	2. Madison Water Utility monitor the status of existing and potential contamination sources in the WHPA, investigations regarding nature and extent of releases, and the status of cleanup activities, then determine if Utility action is needed.
				3. 2011	3. Madison Water Utility provide WHPA map to DNR and request that contaminated sites located in the Unit Well 27 WHPA be carefully reviewed before being granted closure.
2. Land Use Controls	a. Existing Zoning/Wellhead Protection Overlay Zoning and Ordinance	<ul style="list-style-type: none"> Enforce existing zoning. Discourage conditional uses or zoning changes that increase risk to groundwater. 	<ul style="list-style-type: none"> City of Madison Dane County Planning and Development 	1. April 2011	1. City of Madison amend WHP ordinance and add WP-27 Wellhead Protection District No. 27.
				2. 2011	2. City of Madison provide Dane County with a copy of the WHP ordinance and WHPA map.
				3. 2011	3. Dane County consider developing WHP Overlay District ordinance.

TABLE 5-1 (cont.)

Program Category	Activity	Description	Responsible Unit(s) of Government	Implementation Schedule	
				Date	Action Item
3. Intergovernmental Cooperation	a. Land Use Planning and Site Plan Review	<ul style="list-style-type: none"> Cooperate in land use planning to protect groundwater resources and WHPAs. Keep apprised of development in WHPA. Ensure development complies with separation distances between the well and potential contamination sources as required by WI Admin. Code, Chapter NR 811.12. 	<ul style="list-style-type: none"> City of Madison Planning and Development Department 	1. 2011 - Ongoing	1. City of Madison Planning and Development Department ensure that development complies with separation distances required between municipal water supply wells and potential contamination sources.
				2. 2011	2. City of Madison Planning and Development Department will use an Environmental Permits Checklist for site plan review. The checklist will help ensure compliance with local, County, and State permits and will raise awareness about groundwater protection.
				3. 2011 – Ongoing	3. City of Madison Planning and Development Department provide a copy of the WHPA map and Site Plan Review Environmental Permits Checklist to developers and property owners and require that the developer indicate on the environmental permits checklist and hazardous substances reporting form whether the proposed development is in a WHPA.
4. Monitoring	a. Contaminant Source Inventory (CSI) Maintenance	<ul style="list-style-type: none"> Update CSI and conduct windshield survey 	<ul style="list-style-type: none"> Madison Water Utility 	1. November 2010, then every 5 years (November 2015)	1. Madison Water Utility update the CSI by conducting a windshield survey of properties located in the WHPA and by performing State and Federal database checks.
	b. Water Quality Monitoring	<ul style="list-style-type: none"> Conduct sampling of supply wells. 	<ul style="list-style-type: none"> Madison Water Utility 	1. As required – Ongoing 2. Ongoing	1. Madison Water Utility perform water quality monitoring as required by DNR and as otherwise needed. 2. Madison Water Utility continue to post water quality data online at (http://www.madisonwater.org or http://www.cityofmadison.com/water/) for public review
5. Public Education and Awareness	a. Availability of WHPP	<ul style="list-style-type: none"> Provide copies to Water Utility Office, Public Library, City Hall and Dane County. 	<ul style="list-style-type: none"> City of Madison 	1. 2011	1. City of Madison provide copies of the WHPP for review by the public at the Water Utility Office, Madison Public Library, and City Hall.
				2. 2011	2. City of Madison provide a copy of the WHPP to Dane County.
				3. 2011	3. Madison Water Utility communicate the availability of the plan through a newspaper article.
	b. Public Informational Meeting	<ul style="list-style-type: none"> Perform as part of a City Committee meeting or Common Council Meeting. 	<ul style="list-style-type: none"> City of Madison 	1. 2011	1. City of Madison conduct a public informational meeting as part of a City committee meeting or the Common Council meeting during the review phase of the WHPP.
				2. 2011	2. City of Madison provide WHPA maps for public review and an information sheet or brochure available for public use.
	c. News Releases	<ul style="list-style-type: none"> Issue early in program implementation, and reinforce annually, as necessary. 	<ul style="list-style-type: none"> City of Madison 	1. 2011, then annually	1. Madison Water Utility will provide a news release to the local newspaper about the WHPP for Unit Well 27.

TABLE 5-1 (cont.)

Program Category	Activity	Description	Responsible Unit(s) of Government	Implementation Schedule	
				Date	Action Item
5. Public Education and Awareness (cont.)	d. Informational Materials Distributed To Residents in WHPA	<ul style="list-style-type: none"> Hazardous Waste Collection (Clean Sweep) Program Materials describing proper use and application of fertilizers and pesticides. 	<ul style="list-style-type: none"> City of Madison Wisconsin DNR University Extension Office 	1. 2011, then ongoing	<p>1. Madison Water Utility prepare informational materials and/or obtain from the Wisconsin DNR Bureau of Drinking Water and Groundwater, Dane County or UW Extension fliers, brochures and pamphlets, including:</p> <ul style="list-style-type: none"> a. Information about hazardous waste collection/disposal program (Clean Sweep) activities. b. Materials describing the proper use and application of lawn fertilizers and pesticides. c. Wellhead protection planning d. Annual Consumer Confidence Report (CCR) containing information about WHP planning. <p>2. Madison Water Utility update information in website (http://www.madisonwater.org or http://www.cityofmadison.com/water/) about WHP planning.</p>
	e. Land Use and Contaminant Source Awareness	<ul style="list-style-type: none"> Notify and offer guidance to owners of potential high risk land uses in WHPA. 	<ul style="list-style-type: none"> City of Madison 	1. 2011	<p>1. Madison Water Utility provide information to owners of property with existing or potential contamination sources located within the WHPA to emphasize the importance of awareness of the WHPA, the owner's location with respect to the WHPA, and potential contamination source(s) of concern. Specific information to be provided includes:</p> <ul style="list-style-type: none"> a. Leaking USTs and ASTs. b. Upgrading existing ASTs and USTs systems. c. Materials describing the proper use and application of lawn fertilizers and pesticides.
	f. School Programs	<ul style="list-style-type: none"> Participate in school programs. 	<ul style="list-style-type: none"> City of Madison University Extension Office Madison Public Schools 	1. 2011 2. 2011	<p>1. Madison Water Utility inform schools about the availability of tours at water supply facilities.</p> <p>2. Madison Water Utility prepare a water/groundwater fact sheet for school education</p>

primarily provided by a percentage of tipping fees collected at local landfills. Additional information about the Clean Sweep Collection Program is in Appendix K.

The Clean Sweep Collection Program will be coupled with the City of Madison's WHP planning efforts. The following will be completed for this management activity:

1. Madison Water Utility will send information about the Clean Sweep Collection Program to property owners in the WHPA, to encourage participation in the program.

5.1.1.2 On-Site Waste Disposal System Maintenance

The nearest private sewage disposal systems are located several miles south of Unit Well 27 and are well beyond the 100-year TOT ZOC for Well 27. The sewage disposal systems are low risk to Unit Well 27. However, nutrient loading to groundwater is a regional concern, and it is prudent to be proactive regarding management of private sewage disposal systems.

The Public Health Madison and Dane County has an existing program for the inventorying and servicing of private on-site waste disposal (septic) systems located in Dane County. Data for private waste disposal systems are recorded in a central database. All owners of septic systems are required every three years to have their septic tanks pumped and inspected and any required maintenance performed. The Public Health Madison and Dane County charges the owners of septic systems an annual fee of \$8.67 per system, to support the Public Health Inventory Program. The purpose of the inventory is to ensure that private systems are maintained and operating correctly, so that they do not endanger the groundwater resources (Public Health Madison, 2010).

The Public Health Madison and Dane County Environmental Health Services investigates complaints about non-complying sewage disposal systems and issues replacement orders to owners of failing systems.

For this management activity, the City will perform the following:

1. Request that Public Health Madison and Dane County provide information to owners of private sewage disposal systems located in Dane County, about sewage system maintenance, and the types of waste that should not be disposed of in a septic system.
2. Prepare an article for the newspaper about private sewage disposal systems do's and don'ts.

5.1.1.3 Well Construction and Abandonment

The proposed activities under this category for WHP include public education and private well inventory maintenance. Education will improve awareness on the part of private well owners of the importance of proper well construction and abandonment (filling and sealing) of unused wells.

The City of Madison (General Ordinance Section 13.21) and Dane County (Chapter 45) have well abandonment ordinances for non-complying, unsafe, and unused wells. A copy of the City of Madison Well Abandonment Ordinance and the Dane County ordinance "Relating to

Private Water Systems” are in Appendix L. Other information about wells and well abandonment is in Appendix M. As of June 1, 2008, only licensed well drillers and pump installers can fill and seal wells in Wisconsin (Wisconsin DNR, 2010).

Dane County and the Wisconsin DNR have regulatory authority for proper construction and abandonment of unused wells (Wisconsin Administrative Code, Chapters NR 811 and 812). A DNR notification number is required prior to well construction. Dane County also requires a permit prior to construction. After a well is constructed, Public Health Madison and Dane County sanitarians inspect the well.

Madison General Ordinance Section 13.21 requires an owner of a private well located in the City of Madison, or on premises served by the Madison Water Utility to abandon the private well, or obtain a well operation permit from the Madison Water Utility. Madison Water Utility oversees (witnesses) the abandonment of unsafe, unused, or non-complying wells that are located in the City. Dane County oversees the abandonment of unsafe, unused, or non-complying wells that are located in the County. The Public Health Madison and Dane County Environmental Health Division administers a county reimbursement program for abandoning these categories of wells. The City of Madison offers partial reimbursement of the cost (up to fifty percent of the cost, up to \$1,000) to abandon a private domestic well.

The following will be completed for this management activity:

1. Dane County Environmental Health Division will continue to review well applications and require construction permits for new private water supply wells.
2. Madison Water Utility will continue to review applications for private wells operation permits.
3. Madison Water Utility will request that the Dane County Environmental Health Division provide the names and addresses of owners of private wells located in the Unit Well 20 WHPA.
4. Madison Water Utility will determine the location of other private water supply wells that may be located within the WHPA and which are not recorded in the County database.
5. Madison Water Utility will send information to property owners located within the Unit Well 20 WHPA, about proper abandonment procedures in the event the property owners have an unused well on their property.
6. Madison Water Utility will update the private well inventory for wells located in the WHPA.
7. The City of Madison and Dane County will enforce the existing City and Dane County well abandonment ordinances, to ensure that all private wells are permitted or properly abandoned if unused.
8. Madison Water Utility will request that Dane County consider proximity and depth of proposed private wells relative to Unit Well 20 prior to issuing permits for construction of new private water supply wells.

9. Madison Water Utility will direct residents to the DNR private well code (Chapter NR 812) or to the Wisconsin DNR private well section (Bureau of Drinking Water and Groundwater) (608) 266-0821) when questions arise about private water supply wells.
10. Madison Water Utility will provide information in the annual Consumer Confidence Report (CCR) about proper abandonment of unused wells.

5.1.1.4 Land Application of Sludge and Septage

There are no permitted septage application sites located within the Unit Well 27 ZOCs. The Wisconsin DNR issues permits for septage and sludge disposal sites in Wisconsin. Current sludge and septage application sites are very distant and are very low risk to Unit Well 27. The Unit Well 27 100 year TOT ZOC is located entirely within the City of Madison and there is no chance that sludge and septage spreading would be approved in the area. However, nutrient loading to groundwater is a regional concern, and it is prudent to be proactive regarding management of sludge and septage disposal.

The following will be completed for this management activity:

1. Madison Water Utility will provide a copy of the WHPA and ultimate recharge area maps to the MMSD and request that sludge and septage not be spread in the Unit Well 27 ultimate recharge area.
2. Madison Water Utility will provide a copy of the WHPA and recharge area maps to the DNR Watershed Management office (608) 267-7694 (central office) (608) 275-3325 (Fitchburg office)) and request that new permits for sludge and septage spreading not be issued for properties located in the Unit Well 27 ultimate recharge areas.
3. Madison Water Utility will encourage development of additional authorized septage discharge points in the City of Madison wastewater treatment system.

5.1.1.5 Spill Notification and Awareness of Remedial Investigation and Cleanup

There are 12 closed LUST sites, three closed ERP sites, and seven known spill sites within the Unit Well 27 WHPA. Several of the closed LUST sites and ERP sites have contaminated soil and/or groundwater and received closure from the DNR with residual contamination remaining at the site and above applicable Wisconsin standards. The following will be completed for this management activity:

1. Madison Water Utility will request that the City Police, DNR, and the Dane County Emergency Management Office inform the Utility about future events (spills, leaks, investigations, etc.) that occur in the Unit Well 27 WHPA or in upgradient recharge areas.
2. Madison Water Utility will monitor the status of existing and potential contamination sources in the WHPA and upgradient recharge areas, investigations regarding nature and extent of releases, and the status of cleanup activities.

3. Madison Water Utility will provide the DNR a map showing the location of Unit Well 27 WHPA and request that contaminated site(s) located in the Unit Well 27 WHPA be carefully reviewed before being granted closure.

5.1.2 Category 2 - Land Use Controls

5.1.2.1 Existing Zoning/Wellhead Protection Overlay Zoning and Ordinance

The City of Madison and Dane County have land subdivision and zoning ordinances to control and direct development. Land subdivision and zoning ordinances are used to safeguard flood plains, wetlands, shore lands, highway access, air quality, surface water, and other concerns. Existing zoning regulations will be enforced to help protect municipal well recharge areas and groundwater.

The City of Madison has a WHP ordinance. The ordinance prohibits incompatible development with the establishment of an overlay district for the 5-year TOT ZOC (Zone A) and the 1,200-foot radius ZOC (Zone B). The WHP ordinance helps ensure that future potential contamination sources are not located in the Unit Well 27 WHPA. A copy of the WHP ordinance is in Appendix N.

The following will be completed for this management activity:

1. The City of Madison will amend Section 28.06 of the Madison General Ordinances and add Wellhead Protection District No. 27.
2. The City of Madison will provide Dane County with a copy of the WHP ordinance and Unit Well 27 WHPA map.

5.1.3 Category 3 - Intergovernmental Cooperation

5.1.3.1 Land Use Planning and Site Plan Review

Land use planning is performed to control and direct development. Land use planning and site plan review should also be used to help protect WHPAs. The following will be completed for this management activity:

1. The City of Madison Planning and Development Department will ensure that development complies with separation distances required between municipal water supply wells and potential contamination sources (Wisconsin Administrative Code, Chapter NR 811.12(5)(d)).
2. The City of Madison Planning and Development Department will use an Environmental Permits Checklist for site plan review for proposed development in the Unit Well 27 recharge area. The checklist will help ensure compliance with local, county, and state permits; and will raise awareness about groundwater protection.
3. The City of Madison Planning and Development Department will provide a copy of the WHPA map and Site Plan Review Environmental Permits Checklist to developers and

property owners and require that the developer indicate on the environmental permits checklist and hazardous substances reporting form whether the proposed development is in a WHPA.

5.1.4 Category 4 - Monitoring

5.1.4.1 CSI Maintenance

As part of this study, a CSI was conducted within the delineated WHPA and ZOCs. It will be important to maintain current knowledge of land use, potential contamination sources, and development within the WHPA. The following will be completed for this management activity:

1. Madison Water Utility will update the CSI by conducting a windshield survey of properties located in the WHPA and by performing state and federal database checks on an interval of once every five years.

5.1.4.2 Water Quality Monitoring

Currently, each of the City of Madison's supply wells are tested annually, some are tested more often depending on the analytes and the detected level. VOCs are tested annually and quarterly for several wells. SOCs are tested every three years. Inorganic testing is done at a minimum of every three years. Microbiological testing, total coliform bacteria, are tested for weekly. Results are summarized and reviewed for conformance with regulatory drinking water standards, for comparison with current water quality results, and to identify any potential trends in contaminant concentrations.

City of Madison property owners and residents can go to the Madison Water Utility's website at www.madisonwater.org or <http://www.cityofmadison.com/water/> and look up the wells that serve their address, and can review the water quality data for the previous year for the well(s) of interest.

The following will be completed for this management activity:

1. Madison Water Utility will perform water quality monitoring as required by DNR and as otherwise needed.
2. Madison Water Utility will continue to post water quality data online for public review.

5.1.5 Category 5 - Public Education and Awareness

The City of Madison will implement an education program to inform area residents of the need to protect the public water supply. Education is the best way to help people understand that human activities on the land and in the atmosphere influence the water cycle and affect the quality of our groundwater and surface water resources. The public education program will consist of the following:

1. Make available copies of the WHPP
2. Public Informational Meeting
3. News releases

4. Make available and distribute information materials
5. Land Use and Contaminant Source Awareness
6. School programs

5.1.5.1 Availability of WHPP

The following will be completed for this management activity:

1. The City of Madison will provide copies of the WHPP for review by the public at the Water Utility Office, Madison Public Library, and City Hall.
2. The City of Madison will provide a copy of the WHPP to Dane County.
3. Madison Water Utility will communicate the availability of the plan through a newspaper article.

5.1.5.2 Public Informational Meeting

The purpose of a public informational meeting will be to inform residents of the WHPP, and provide an opportunity for public education and awareness.

The following will be completed for this management activity:

1. The City of Madison will conduct a public informational meeting as part of a City committee meeting or the Common Council meeting during the review phase of the WHPP.
2. The City of Madison will provide WHPA maps available for public review and an information sheet or brochure available for public use.

5.1.5.3 News Releases

The purposes of news releases are to elevate public awareness, educate the public on the need for WHP, and provide examples of prudent WHP measures. Initially, a news release will inform the public that a WHPP has been developed for Unit Well 27 and will indicate the locations where the WHPP will be available for review.

The following will be completed for this management activity:

1. Madison Water Utility will provide a news release to the local newspaper, at the beginning of the WHP project for Unit Well 27, then annually.

5.1.5.4 Informational Materials Distributed to Residents in WHPA

Informational materials will be prepared and distributed to residents living within the WHPA to educate and inform property owners about various topics such as WHP planning activities, and best waste management procedures.

The following will be completed for this management activity:

1. Madison Water Utility will prepare informational materials and/or obtain from the Wisconsin DNR Bureau of Drinking Water and Groundwater, Dane County or University of Wisconsin Extension fliers, brochures, and pamphlets, including:
 - a. Information about hazardous waste collection/disposal program (Clean Sweep) activities
 - b. Materials describing the proper use and application of lawn fertilizers and pesticides
 - c. WHP planning
 - d. Annual Consumer Confidence Report (CCR) containing information about WHP planning
2. Madison Water Utility will add WHP planning information to their website homepage (<http://www.madisonwater.org> or <http://www.cityofmadison.com/water/>).

5.1.5.5 Land Use and Contaminant Source Awareness

During the CSI, properties were identified with land uses and existing or potential contaminant sources that pose, or may pose, a threat to groundwater. To increase awareness and minimize risk to groundwater and Unit Well 27, it is important to inform property owners about existing and potential contaminant sources on their properties. An initial mailing will be made at the beginning of the WHP program. In this mailing, property owners will be advised to contact the City if they have questions, or require additional information.

The following will be completed for this management activity:

1. Madison Water Utility will provide information to owners of property with existing or potential contaminant sources located within the WHPA to emphasize the importance of awareness of the WHPA, the owner's location with respect to the WHPA, and potential contaminant source(s) of concern. Specific information to be provided includes:
 - a. Leaking USTs and ASTs
 - b. Upgrading existing ASTs and USTs systems
 - c. Materials describing the proper use and application of lawn fertilizers and pesticides

5.1.5.6 School Programs

The City of Madison will participate in school education programs. The following will be completed for this management activity:

1. Madison Water Utility will inform schools about the availability of tours at water supply facilities. During tours, students will be exposed to important concepts related to groundwater and WHP.
2. Madison Water Utility will prepare a water/groundwater fact sheet for school education programs.

5.2 WATER CONSERVATION PROGRAM

The Madison Water Utility has an existing water conservation program that includes addressing the needs for both water accountability in the distribution system, and water conservation by the public. The 2008 Water Conservation Plan (Appendix O) provides further details on the conservation plans developed.

During 2009, the Utility maintained water accountability in the distribution system of 89 percent. The Utility maintains this high level of water accountability by regularly servicing water meters, reviewing water accountability records, and conducting water leak detection surveys when needed.

The Utility currently has brochures available free to the public describing useful water conservation measures. The brochures are also distributed to the public and discussed in speaking engagements with local organizations and schools by Water Utility staff.

The Madison Water Utility also has information about water conservation at its website (<http://www.madisonwater.org> or <http://www.cityofmadison.com/water/>). Water conservation information is in Appendix P.

The Utility has the authority to impose water use restrictions when necessary.

5.3 CONTINGENCY PLAN

The Utility has formulated a contingency plan for providing water in the event that Unit Well 27 or one or more of the City's other water supply wells became contaminated or removed from service. The plan primarily relies on the capacity of the system without the capacity of any given well or wells to meet the supply needs of the City of Madison.

The City's water system was designed to supply the maximum water demand for an indefinite period with the largest well out of service. As a result, if Unit Well 27, or any other supply well of the water system, is out of service for a short period of time, the reliable water supply capacity is sufficient to meet demands. Unit Well 27 provides reliable supply to the water system and fire protection for the central part of the City (Pressure Zone 6), specifically the neighborhoods near the University of Wisconsin-Madison Campus. In the event of the loss of Unit Well 27, Unit Well 6, 14, 17, 19, or 24 in Pressure Zone 6 or unit wells in Pressure Zone 7 can serve the area.

Additionally, the City's wells and wellfields are widely spaced and generally have different recharge areas, thereby making them less vulnerable to potential localized contamination. In the event of a power failure, several of Madison's supply well pumping stations are equipped with standby generators or power plugs for connecting portable generators.

The contingency plan also relies on communication with first responders and a plan of action in the event of a water system emergency. Dane County Emergency Management Office will be requested to notify the Water Utility if there is an occurrence in the vicinity of the Unit Well 27 WHPA. As well, the Wisconsin Contingency Plan for Hazardous Substance Discharges specifically includes protection of potable water system within the plan immediately following prevention of human injury (DNR 1998).

A list of emergency contact numbers was compiled to provide Utility staff immediate access to the appropriate agencies in the event of an emergency. This list is provided in Table 5-2.

5.4 MANAGEMENT PLAN

A management plan was formulated to help protect the Unit Well 27 WHPA from existing and potential future sources of contamination. Table 5-1 summarizes major elements of the management plan.

Public education is an important element in the management plan for property owners located within the WHPA and ZOCs.

The hazardous waste collection/disposal program (Clean Sweep) is also an important part of the management plan. The program provides a means for residents and businesses in the WHPA and throughout the area to properly dispose of hazardous chemicals. Residents and producers of agricultural crops and commodities can dispose of hazardous materials and wastes free of charge. Small quantities of commercial wastes from small businesses can be disposed of for a nominal fee. The City will promote the Clean Sweep Programs using the public education activities summarized in this plan.

Local governmental agencies recognize the need for planning to protect WHPAs. Intergovernmental cooperation is an important part of the plan as agencies work together to consider the needs for WHP during planning and permitting processes. The Madison Water Utility will provide the City of Madison Planning and Development Department a copy of the Unit Well 27 WHPA map and a list of potential contamination sources that can threaten groundwater. The Madison Planning and Development Department will ensure that future development complies with the separation distances required between municipal water supply wells and potential contamination sources (Wisconsin Administrative Code, Chapter NR 811.12(5)(d)). The City will encourage the county to help protect the municipal supply well's WHPAs and ultimate recharge areas when evaluating proposed development.

The City of Madison has a WHP ordinance and overlay zoning district. The WHP ordinance helps ensure that new potential contamination sources located within the City of Madison are not located in the Unit Well 27 WHPA.

**TABLE 5-2
EMERGENCY CONTACT NUMBERS
WELLHEAD PROTECTION PLAN, UNIT WELL 27
MADISON, WISCONSIN**

Emergency Contact	Name	Phone No.
Water Utility Emergency Service	On-call	Office: 608-266-4665
Water Utility Manager	Tom Heikkinen	Office: 608-266-4651
Principal Engineer	Alan Larson	Office: 608-266-4653
Civil Engineer	Dennis Cawley	Office: 608-261-9243
Police Department	Emergency Dispatch Non-Emergency Dispatch	911 608-255-2345
Fire Department	Emergency Dispatch Administration	911 608-266-4420
Dane County Emergency Response	On-Call	911
Dane County Emergency Management Office	Hazardous Materials Planning Office (General)	608-266-4330
Dane County Environmental Health	Office	608-242-6515
Local – DNR Water Supply Contact Person	Tom Stunkard Fitchburg	608-275-3300
Central Office – DNR Water Supply	Norman Hahn Madison	608-267-7661
Well Driller	Municipal Well & Pump Tracy Greenfield	Office: 920-324-3400 Cellular: 262-424-2328
Well Driller	Layne Northwest Jeff Gibson	Office: 262-246-4646 After Hours: 262-246-4646
Pump Installer	Municipal Well & Pump Tracy Greenfield	Office: 920-324-3400 Cellular: 262-424-2328
Pump Installer	Layne Northwest Jeff Gibson	Office: 262-246-4646 After Hours: 262-246-4646
State Patrol	Emergency Administration	911 608-266-3212
Hazardous Material Response Team Wisconsin Division of Emergency Mgt.	DNR - Leroy Conner	1-800-943-0003 (Menu)
Electric Utility	Madison Gas & Electric Emergency Service	608-252-1111