

US EPA ARCHIVE DOCUMENT



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January 25, 2013

30284050



Superfund

Ms. Diana Engeman
Remedial Project Manager
Superfund Division
U.S. Environmental Protection Agency, Region VII
11201 Renner Boulevard
Lenexa, KS 66219

MWH #10500630.010102

RE: 2012 Annual Report
Former Peoples Natural Gas Site
Dubuque, Iowa

Dear Ms. Engeman:

On behalf of MidAmerican Energy Company (MidAmerican), MWH has prepared this Annual Report for the former Peoples Natural Gas (PNG) site located at 925 Kerper Boulevard in Dubuque, Iowa (site) (Figure 1). This Annual Report summarizes activities performed in 2012.

The City of Dubuque (City) constructed a new off-site facility in 2006 for the City Street Division, which formerly operated out of the public works garage built on the site. The building continues to be used by the City for storage of seasonal items and other City equipment. The yard surrounding the building is currently used by the City for storage of various municipal supplies and equipment, as well as a training area by local law enforcement. Since July 2011, the City has leased the northeast addition to the building and a portion of the property located east of the building to Spahn and Rose Lumber Company (Spahn and Rose). Spahn and Rose uses the leased area for storage of construction materials, including asphalt shingles, lumber, and other similar materials. The City also stores snow in the yard during the winter months. The City maintains access to all wells located within the property's perimeter fencing. The City's fueling system at the PNG site is no longer in use. The canopy, fuel pumps, and associated piping were removed, and the fuel tanks were closed in place in August 2010. The City is not actively searching for a new tenant for the property; however, the possibility of finding a new tenant for the property remains.

SUMMARY OF GROUNDWATER RESTORATION

No active treatment was completed during 2012. In May 2006, MidAmerican submitted a Technical Impracticability (TI) Evaluation Report to the United States Environmental Protection Agency (EPA), and subsequently submitted a petition on December 1, 2006 to EPA, to waive compliance with performance standards for groundwater on a portion of the PNG site. On May 15, 2012, MidAmerican submitted a TI Evaluation Amendment to the EPA, which provided additional data collected since the initial submittal of the TI Evaluation in 2006. During 2012, MidAmerican also submitted supporting documents for EPA's use in the evaluation of the 2006 TI waiver request and proposed remedial strategy, including a Detailed Analysis and

Comparison of Remedial Action Alternatives (July 2012) and Applicable or Relevant and Appropriate Requirements tables (November 2012). The proposed alternative remedial strategy is a technically practicable alternative that incorporates access restrictions, previous soil removal actions, monitored natural attenuation (MNA), and downgradient hydraulic containment to achieve the site groundwater chemical-specific remediation goals outside of the TI zone. The alternative remedial strategy is protective of human health and the environment. EPA approval of the TI Waiver is currently pending.

ACTIVITIES COMPLETED DURING THE REPORTING PERIOD

City of Dubuque Sewer Line Break and Repair

The City informed EPA and MidAmerican of a sewer line break beneath the facility's building on October 4, 2011. Based on information provided by the City, 408.88 tons of contaminated soil was generated from the repair project. The City disposed the soil at the Dubuque Metropolitan Area Solid Waste Agency landfill on January 2, 2012.

Semiannual Groundwater Sampling Activities

Groundwater sampling of the compliance monitoring wells and other selected wells at the site was conducted during the weeks of April 24 and September 24, 2012. The laboratory analytical reports for the 2012 semiannual monitoring events were previously provided to the EPA under separate cover. During the 2012 sampling events, the groundwater analyte list at selected wells included key MNA parameters in addition to the contaminants of concern (polynuclear aromatic hydrocarbons [PAHs]; and benzene, toluene, ethylbenzene, and xylenes [BTEX]). The groundwater analytical database is provided in Attachment A. Water elevation data are provided in Table 1. Groundwater flow and contaminant plume maps for the 2012 monitoring events are illustrated in Figures 2 through 11. The concentrations of BTEX and naphthalene detected in monitoring well P-112 over time are graphed in Figure 12.

Preliminary Remedial Design Investigation Activities

In late 2011, MidAmerican conducted a 96-hour constant rate aquifer test at SE-3 to determine aquifer properties in the downgradient area of the plume, between Kerper Boulevard and the Mississippi River. During 2012, the aquifer test data were analyzed, and a numerical groundwater flow model was developed to simulate groundwater flow and the proposed hydraulic containment system. Discussion of the aquifer test and analysis is provided in Attachment B, and the numerical groundwater flow model is discussed in Attachment C.

During June 2012, the existing sanitary sewer service line from the manhole near the existing groundwater remediation building (Figure 13) was cleaned, located, and inspected in preparation for using the service line for discharge of water recovered from the proposed hydraulic containment system. Initially, the plan was to locate and video inspect the line to evaluate its condition. However, during the initial video inspection, it was determined the line

was full of biofouling residues, similar to what routinely fouled the previous groundwater extraction system. Therefore, in order to allow video inspection, it was necessary to clean the service line using a high pressure water jetter. Following cleaning, the service line was video inspected. The line location was traced across the site toward 11th Street where the service line enters the sanitary sewer main. No apparent damage was noted during the video inspection of the 6-inch diameter sanitary sewer line.

During September 2012, MWH retained IIW, PC of Dubuque, Iowa to conduct a site topographic survey. The survey was completed to provide a base map, establish on-site survey control points, and map the locations of existing utilities and structures for the proposed remedial construction work. A copy of the topographic survey is provided in Attachment D.

Preliminary Remedial Design

During 2012, MidAmerican evaluated remedial options to address groundwater impact in the vicinity of monitoring well P-112 and developed a preliminary remedial design for hydraulic containment of the downgradient dissolved plume. Draft preliminary design drawings were provided to the City for pre-permitting review. On July 25, 2012, MidAmerican received a letter providing the City's requirements for installation of the remedial system on the City's property, and the preliminary remedial design was subsequently revised to accommodate the requirements.

The proposed preliminary remedial design calls for the injection of water treatment chemicals at the extraction well heads to minimize the potential for biofouling of the containment system components. Use of the water treatment chemicals is intended to reduce the potential for significant biofouling of the system as was encountered during the operation of the previous groundwater treatment system. In preparation for the injection of chemicals at the well heads, MidAmerican submitted an underground injection control (UIC) Authorization by Rule application to EPA in a letter dated August 20, 2012. Approval of the UIC Rule Authorization is pending.

On August 31, 2012, the IDNR replied to the TI Evaluation Amendment, agreeing with the selected remedial strategy, but recommending inclusion of institutional controls requiring the removal of former gas plant structures and impacted soil if the overlying buildings, utilities, or highway are ever removed.

ACTIVITIES ANTICIPATED DURING THE UPCOMING REPORTING PERIOD

MidAmerican anticipates EPA will issue an amended Record of Decision (ROD Amendment) and Proposed Plan in 2013 to reflect the proposed remedial strategy. Upon issuance of the Proposed Plan by EPA, MidAmerican will submit a preliminary design report for EPA review and approval. Pending approval by the EPA, MidAmerican will begin construction of the groundwater recovery system. Additional monitoring wells likely will be installed during 2013, including replacement of W-20 to provide monitoring of the alluvial aquifer on that portion of the

site, and installation of silty sand aquifer monitoring wells northeast of P-112 and east of W-117R to provide monitoring locations near the perimeter of the TI Zone. MidAmerican proposes to continue semiannual groundwater monitoring during 2013, with the semiannual monitoring events scheduled for April and October 2013.

If you have any questions regarding the site, please contact Jenny McIvor of MidAmerican at (712) 352-5434 or me at (515) 253-0830.

Sincerely,



Kevin G. Armstrong, C.P.G.
Project Manager

/cwo:kga:vas

Enclosures:

Table 1 - Water Level Elevation Data

Figure 1 - Site Map

Figure 2 - Groundwater Flow Direction Map, Water Table Aquifer, April 24, 2012

Figure 3 - Groundwater Flow Direction Map, Silty Sand Aquifer, April 24, 2012

Figure 4 - Groundwater Flow Direction Map, Alluvial Aquifer, April 24, 2012

Figure 5 - Groundwater Flow Direction Map, Water Table Aquifer, September 24, 2012

Figure 6 - Groundwater Flow Direction Map, Silty Sand Aquifer, September 24, 2012

Figure 7 - Groundwater Flow Direction Map, Alluvial Aquifer, September 24, 2012

Figure 8 - Benzene and Naphthalene Concentrations in Silty Sand Aquifer, April 2012

Figure 9 - Benzene and Naphthalene Concentrations in Alluvial Aquifer, April 2012

Figure 10 - Benzene and Naphthalene Concentrations in Silty Sand Aquifer,
September 2012

Figure 11 - Benzene and Naphthalene Concentrations in Alluvial Aquifer, September 2012

Figure 12 - P-112 Concentrations

Figure 13 - Existing Sanitary Sewer Lines

Attachment A - Groundwater Analytical Database

Attachment B - SE-3 Aquifer Testing and Analysis

Attachment C - Groundwater Modeling

Attachment D - Topographic Survey

cc: Jenny McIvor, MidAmerican Energy Company
Dan Cook, Iowa Department of Natural Resources
Jim Rost, Iowa Department of Transportation
Barry Lindahl, City of Dubuque
Don Vogt, City of Dubuque

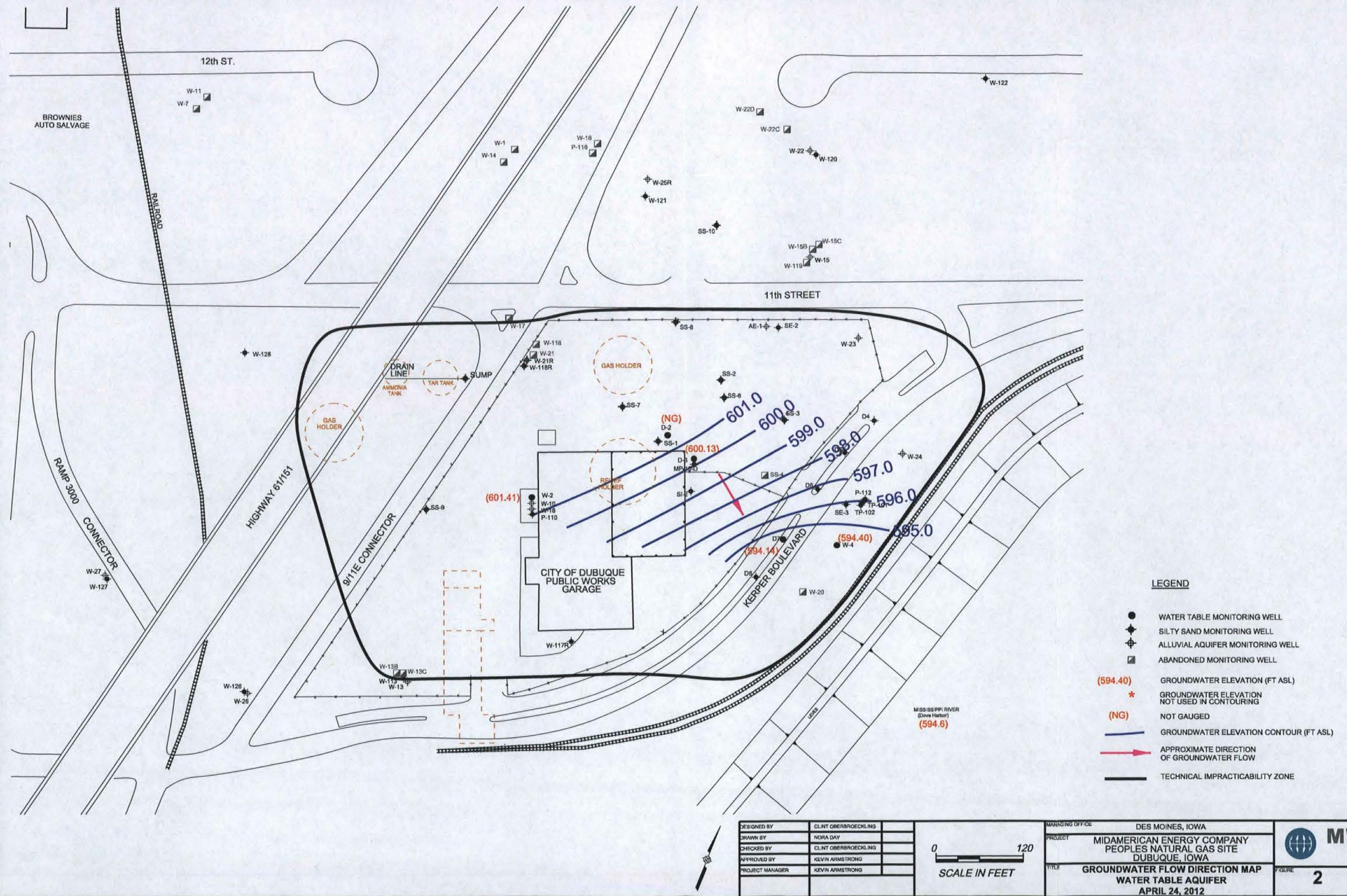
TABLE 1
WATER LEVEL ELEVATION DATA
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Location	Reference Elevation (NAVD 1988)	Total Well Depth (feet btoc)	14-Mar-06	11-Sep-06	17-Apr-07	19-Sep-07	5-May-08	30-Sep-08	28-Apr-09	15-Sep-09	30-Mar-10	5-May-10	14-Sep-10	26-Apr-11	19-Sep-11	24-Apr-12	24-Sep-12
Water Table Wells																	
W-2	613.30	22.7	597.30	599.36	600.09	599.80	601.72	599.49	600.38	599.92	599.19	600.13	600.35	601.63	600.20	601.41	601.31
W-4	613.07	23.4	593.69	594.09	597.90	595.27	600.52	593.66	596.16	594.39	596.91	595.90	595.69	602.02	594.96	594.40	593.24
D-2	609.48	20.0	602.49	602.16	603.26	601.06	603.17	600.83	602.84	600.69	600.14	602.04	602.03	603.38	601.51	---	599.83
D-3	609.17	20.0	599.30	600.87	602.04	600.17	602.61	601.96	601.58	600.29	599.78	600.44	603.73	602.56	600.57	600.13	599.87
D-7	609.16	22.3	597.25	598.76	596.52	598.81	601.05	598.46	595.26	598.81	598.41	598.91	599.34	601.44	599.22	594.14	598.54
Silty Sand Aquifer Wells																	
SI-2	612.66	39.6	593.71	592.60	597.25	593.17	600.06	592.79	596.08	592.46	598.55	594.52	594.61	600.76	593.23	594.43	592.13
SE-2	608.90	32.5	593.70	592.65	597.32	593.20	599.93	592.80	596.08	592.47	598.42	594.87	594.68	600.42	593.22	594.43	592.14
SE-3	611.25	39.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	592.00
Drain Sump	610.20	27.9	594.62	---	598.10	594.48	600.83	594.09	597.18	593.55	599.25	595.89	595.87	601.16	595.38	595.46	593.30
MP-10-D	612.12	36.8	597.06	596.74	596.83	595.34	599.67	599.24	596.31	596.08	598.89	598.81	598.87	599.71	599.27	598.67	598.37
P-110	612.64	33.5	593.76	592.61	597.18	593.25	599.99	592.90	596.06	592.55	598.42	594.62	594.73	600.65	593.26	594.38	592.16
P-112	612.15	38.8	593.73	592.57	597.13	593.10	600.17	592.64	596.08	592.33	598.61	594.39	594.53	601.84	593.07	594.39	592.01
W-113	610.36	34.8	593.79	592.51	597.05	593.18	599.85	592.82	596.01	592.39	598.36	594.61	594.74	600.60	593.19	595.20	592.02
W-117R	612.91	35.7	593.79	592.68	597.22	593.29	600.10	592.86	592.23	592.52	598.56	594.59	594.63	601.01	593.23	594.45	592.18
W-118R	607.85	29.0	593.81	592.75	595.38	593.37	599.93	593.14	596.02	592.70	598.34	594.79	594.94	600.51	593.36	594.47	592.24
W-120	613.64	38.0	593.96	592.94	597.31	594.54	599.99	593.04	596.33	592.74	598.56	594.80	594.78	600.22	593.49	594.67	592.33
W-121	611.24	32.9	594.19	593.13	597.33	593.74	600.05	593.38	596.37	593.01	599.07	595.06	595.19	600.35	593.72	594.73	592.53
W-122	612.49	38.1	593.94	592.92	597.38	592.38	599.79	592.97	596.34	592.69	598.40	594.72	594.97	599.78	593.43	594.64	592.24
W-126	610.01	30.0	593.53	592.76	596.75	593.29	599.69	593.03	595.98	592.46	598.46	594.81	594.92	600.03	593.37	594.23	592.04
W-127	607.83	26.0	593.72	593.43	596.94	593.59	598.80	593.78	596.21	592.75	598.17	595.71	595.48	599.61	593.87	594.26	592.16
W-128	608.10	24.8	---	---	---	593.45	---	592.26	592.22	592.73	598.07	595.00	595.20	599.69	593.40	594.10	592.11
SS-6	608.05	31.5	593.62	592.57	597.11	593.19	600.03	592.76	596.07	592.42	598.42	594.49	594.95	600.52	591.60	594.45	593.49
SS-7	608.73	33.2	593.78	593.43	597.13	593.33	600.05	592.95	596.68	592.50	598.45	594.58	594.74	600.42	593.12	594.34	591.82
SS-8	609.97	33.4	593.82	592.82	597.32	593.39	599.95	592.97	596.16	592.67	598.15	594.67	594.87	600.43	593.36	594.49	592.21
SS-9	606.45	28.0	593.70	592.56	596.90	593.24	599.45	593.02	595.90	592.59	597.98	594.69	594.63	600.17	593.30	594.13	592.15
SS-10	611.40	35.1	594.03	592.91	597.31	593.49	600.37	593.07	596.34	592.74	598.67	594.78	594.96	600.69	593.53	594.61	592.35
D-4	608.62	37.0	593.71	592.76	597.25	593.12	600.10	592.68	596.10	592.33	598.51	594.40	594.53	600.64	593.12	594.42	592.04
D-5	609.54	37.5	593.69	592.72	597.24	593.09	600.09	592.68	596.07	592.16	598.48	594.36	594.49	600.64	593.09	594.39	591.99
D-6	609.59	37.0	594.85	592.76	597.24	593.05	600.14	592.63	596.05	592.34	598.53	594.34	594.47	600.74	593.05	594.37	592.01
D-8	608.64	37.8	593.70	592.68	597.06	592.04	600.22	592.66	596.10	592.34	598.66	594.39	594.52	601.09	593.12	594.39	592.11

TABLE 1
WATER LEVEL ELEVATION DATA
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

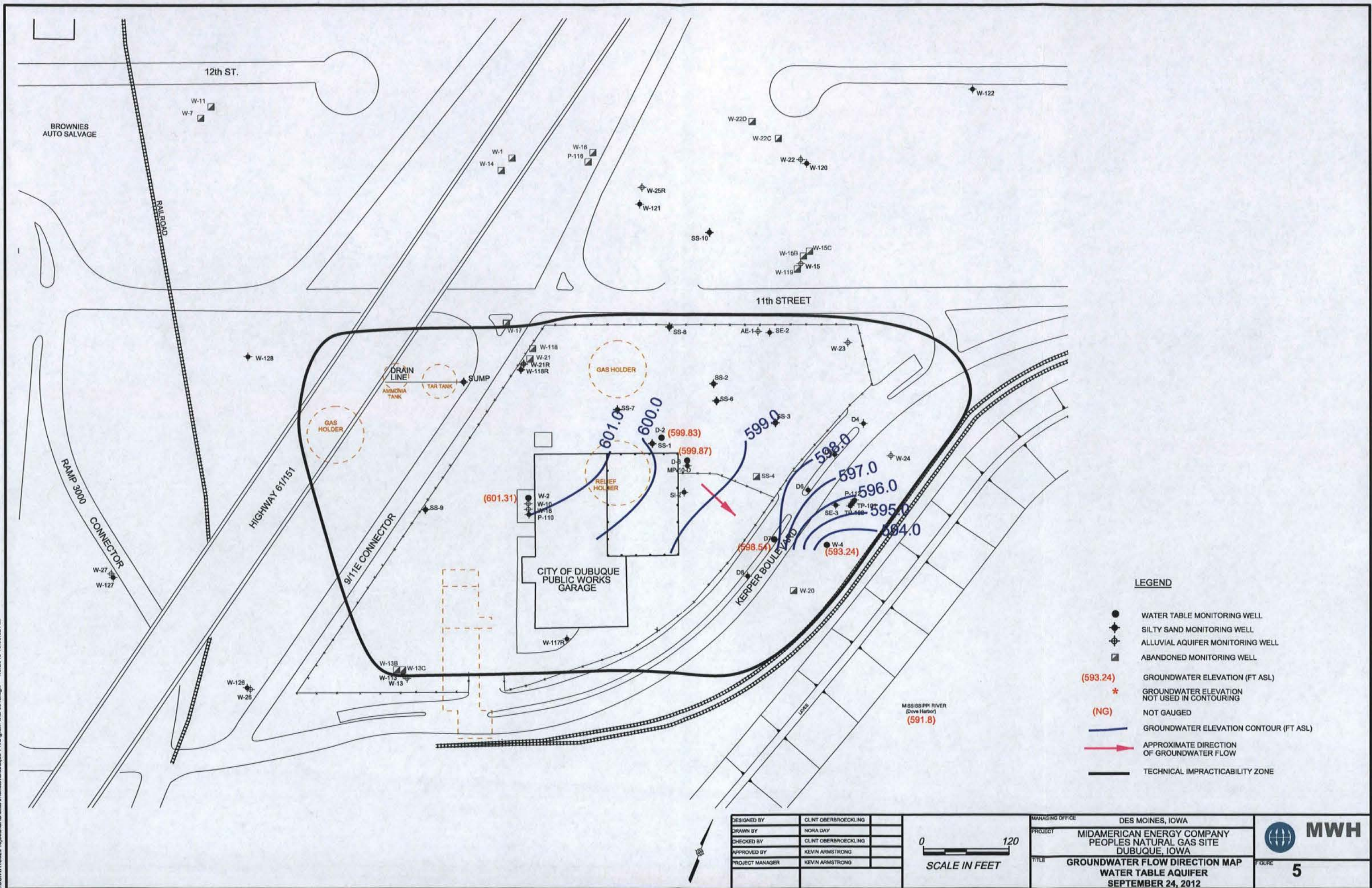
Location	Reference Elevation (NAVD 1988)	Total Well Depth (feet btoc)	14-Mar-06	11-Sep-06	17-Apr-07	19-Sep-07	5-May-08	30-Sep-08	28-Apr-09	15-Sep-09	30-Mar-10	5-May-10	14-Sep-10	26-Apr-11	19-Sep-11	24-Apr-12	24-Sep-12
Alluvial Aquifer Wells																	
AE-1	610.46	87.7	593.79	592.57	597.27	593.19	600.26	592.78	596.17	592.44	598.70	594.53	594.65	600.92	593.15	594.43	592.05
W-10	612.49	47.2	593.80	592.55	597.24	593.21	600.06	592.85	596.09	592.46	598.49	594.64	592.73	600.77	593.17	594.31	591.99
W-13	609.46	48.0	593.85	592.63	597.16	593.26	599.97	592.88	596.08	592.52	598.41	594.68	594.78	600.71	593.28	593.29	592.03
W-15	612.69	53.0	594.01	592.78	597.33	597.34	600.43	592.90	596.34	592.67	598.83	594.67	594.77	600.85	593.26	594.57	592.18
W-18	612.44	50.9	593.86	592.63	597.23	593.24	600.10	592.88	596.13	592.51	598.54	594.65	594.75	600.73	593.22	594.38	592.03
W-21R	607.64	49.5	593.80	592.60	597.08	593.24	600.00	592.89	596.09	592.49	598.37	594.63	595.36	600.49	593.19	594.29	592.00
W-22	613.95	69.0	594.04	592.84	597.35	593.40	600.40	592.98	596.37	592.64	598.92	594.75	594.86	600.92	593.32	594.62	592.23
W-23	609.75	73.0	593.75	592.53	597.15	593.13	600.30	592.66	596.14	592.34	598.82	594.41	594.53	601.01	592.97	594.37	591.87
W-24	612.18	76.5	593.79	592.62	597.17	593.08	600.35	592.60	596.15	592.31	598.77	594.40	594.51	601.20	593.07	594.42	591.96
W-25R	611.81	72.4	594.10	592.90	598.41	593.50	600.29	593.12	596.37	592.75	598.75	594.86	595.00	600.71	593.40	594.60	592.24
W-26	610.41	49.7	594.30	592.78	596.98	593.31	599.71	593.06	596.06	592.47	598.43	594.83	594.95	600.73	593.37	594.26	592.04
W-27	607.70	49.7	594.04	592.90	596.81	593.45	599.40	593.33	596.42	592.72	598.15	595.15	595.33	599.89	593.60	594.25	592.15
Mississippi River ^a	584.80	NA	593.5	591.9	597.7	592.6	601.8	592.0	596.5	592.0	600.1	593.6	593.7	603.9	592.3	594.6	591.8

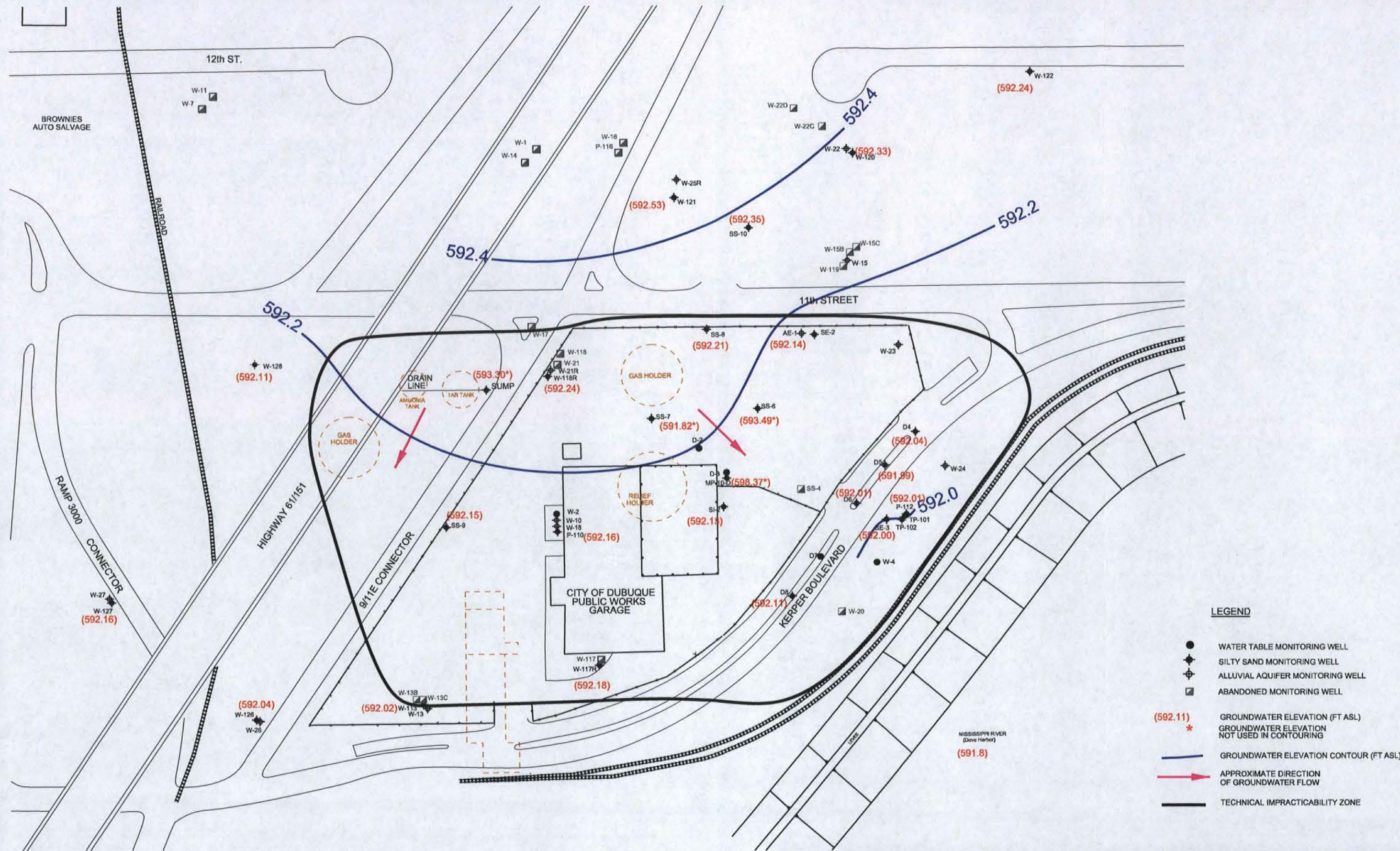
Notes:
btoc = Below top of casing.
NA = Not applicable.
--- = Not gauged.
NAVD 1988 = North American Vertical Datum of 1988.
^a River gage reading at station DBQI4 (corrected to NAVD 1988).











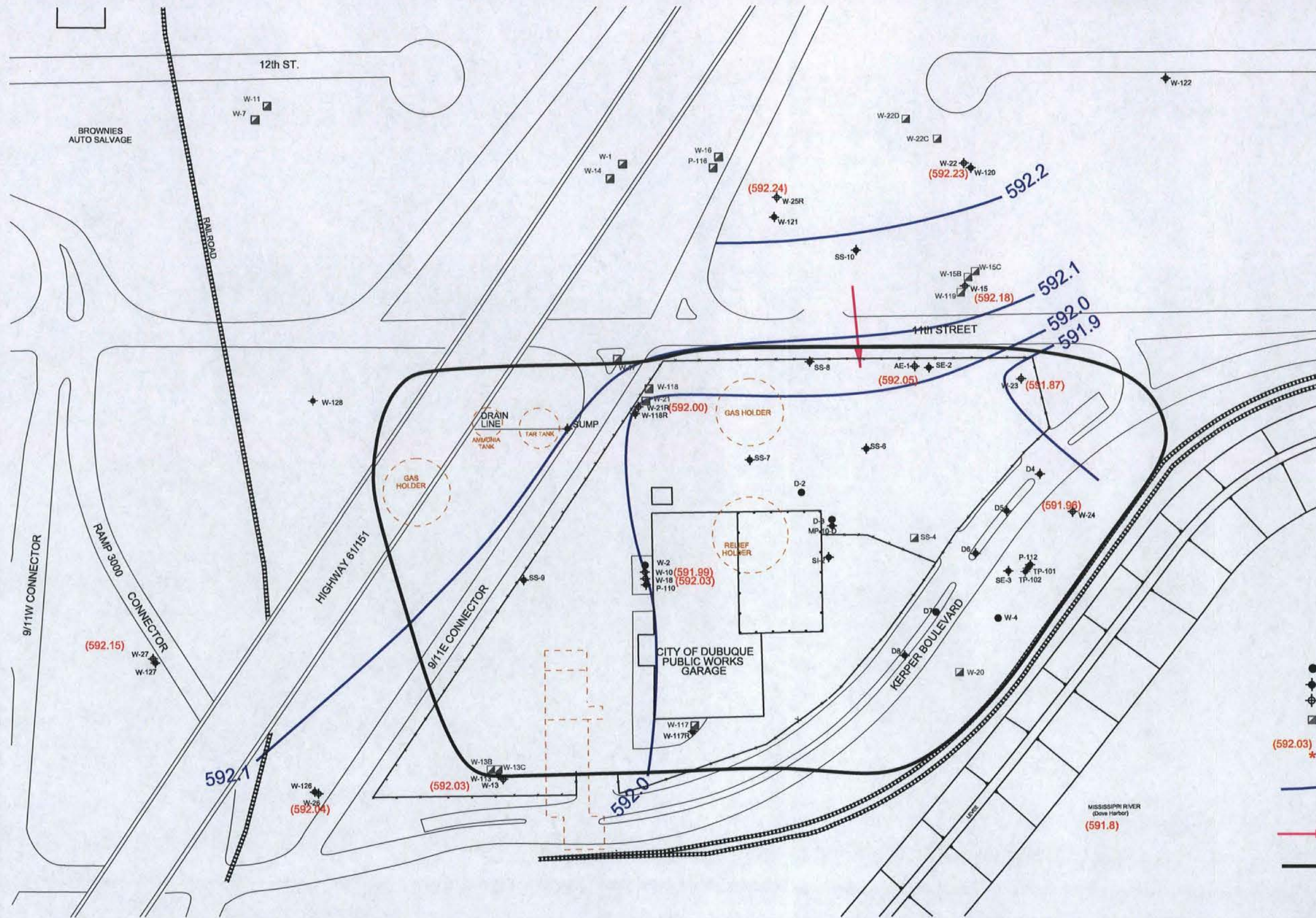
DESIGNED BY	CLINT OBERBROECKING
DRAWN BY	NORA DAY
CHECKED BY	CLINT OBERBROECKING
APPROVED BY	KEVIN ARMSTRONG
PROJECT MANAGER	KEVIN ARMSTRONG



MANAGING OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	GROUNDWATER FLOW DIRECTION MAP SILTY SAND AQUIFER SEPTEMBER 24, 2012

MWH

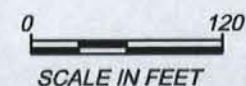
FIGURE 6



LEGEND

- WATER TABLE MONITORING WELL
- ◆ SILTY SAND MONITORING WELL
- ⊕ ALLUVIAL AQUIFER MONITORING WELL
- ABANDONED MONITORING WELL
- (592.03) * GROUNDWATER ELEVATION (FT ASL)
- * GROUNDWATER ELEVATION NOT USED IN CONTOURING
- GROUNDWATER ELEVATION CONTOUR (FT ASL)
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- TECHNICAL IMPRACTICABILITY ZONE

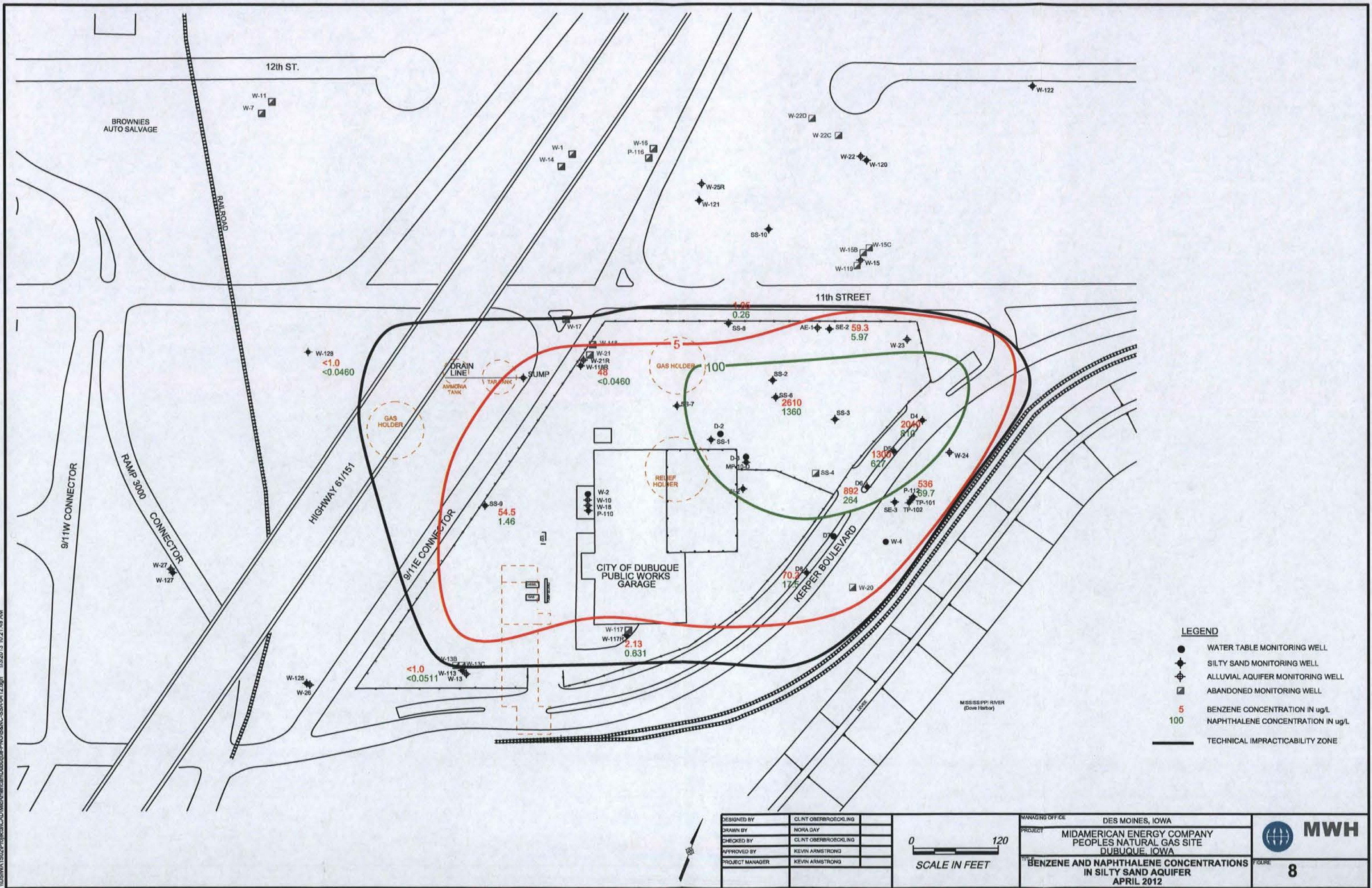
DESIGNED BY	CLINT OBERBROECKLING
DRAWN BY	NORA DAY
CHECKED BY	CLINT OBERBROECKLING
APPROVED BY	KEVIN ARMSTRONG
PROJECT MANAGER	KEVIN ARMSTRONG



MANAGING OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY GAS SITE PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	GROUNDWATER FLOW DIRECTION MAP ALLUVIAL AQUIFER SEPTEMBER 24, 2012

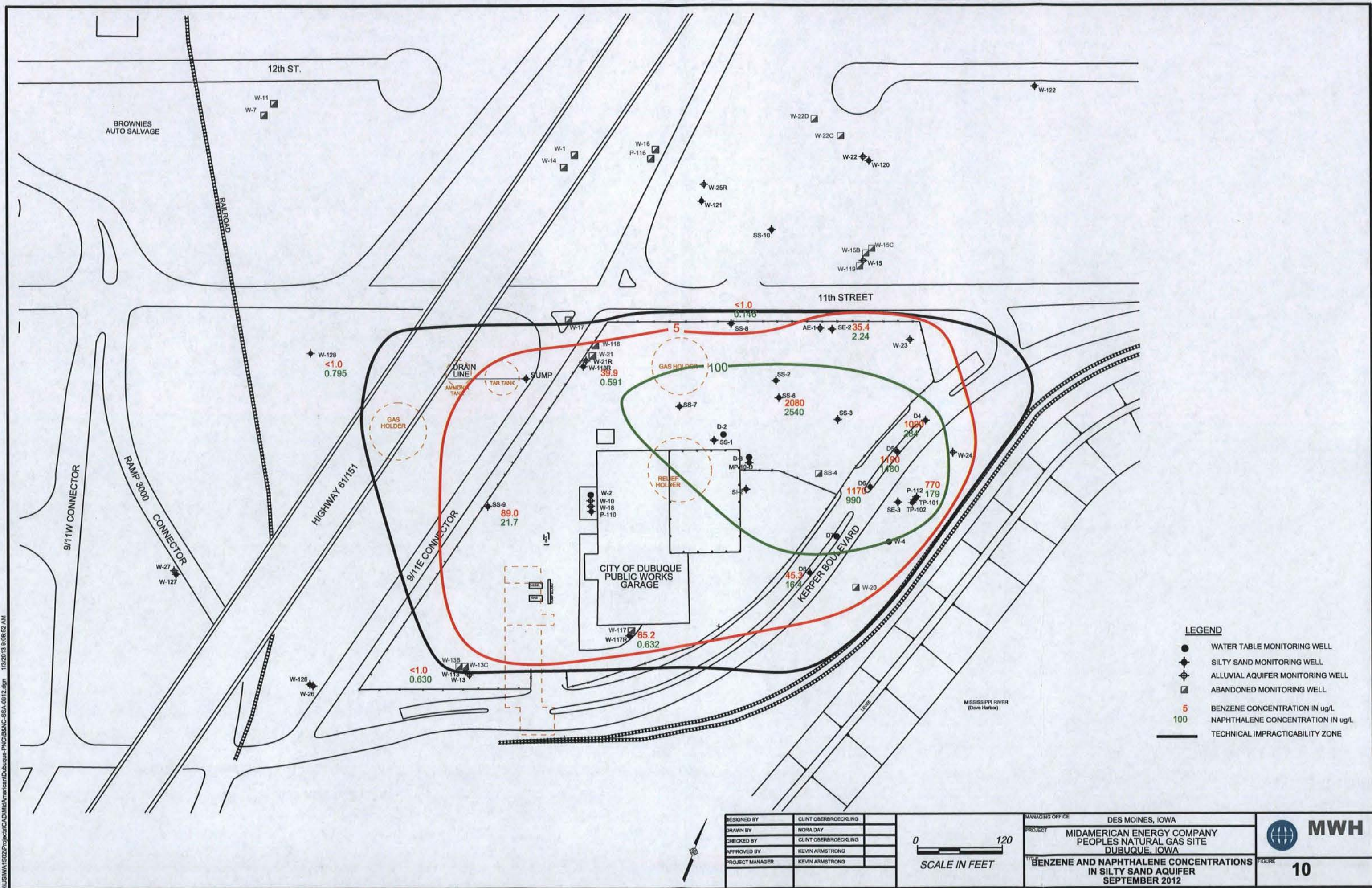


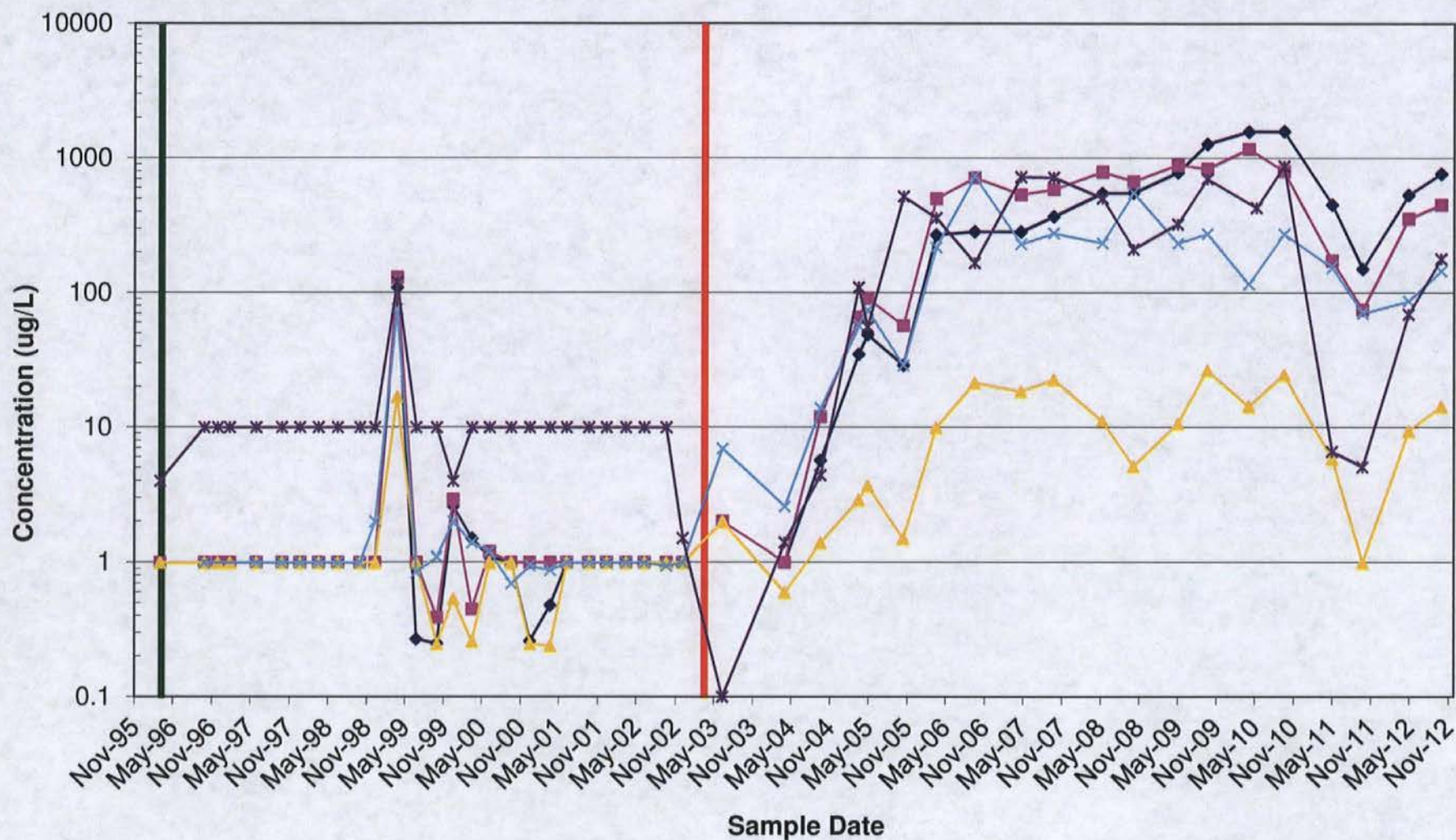
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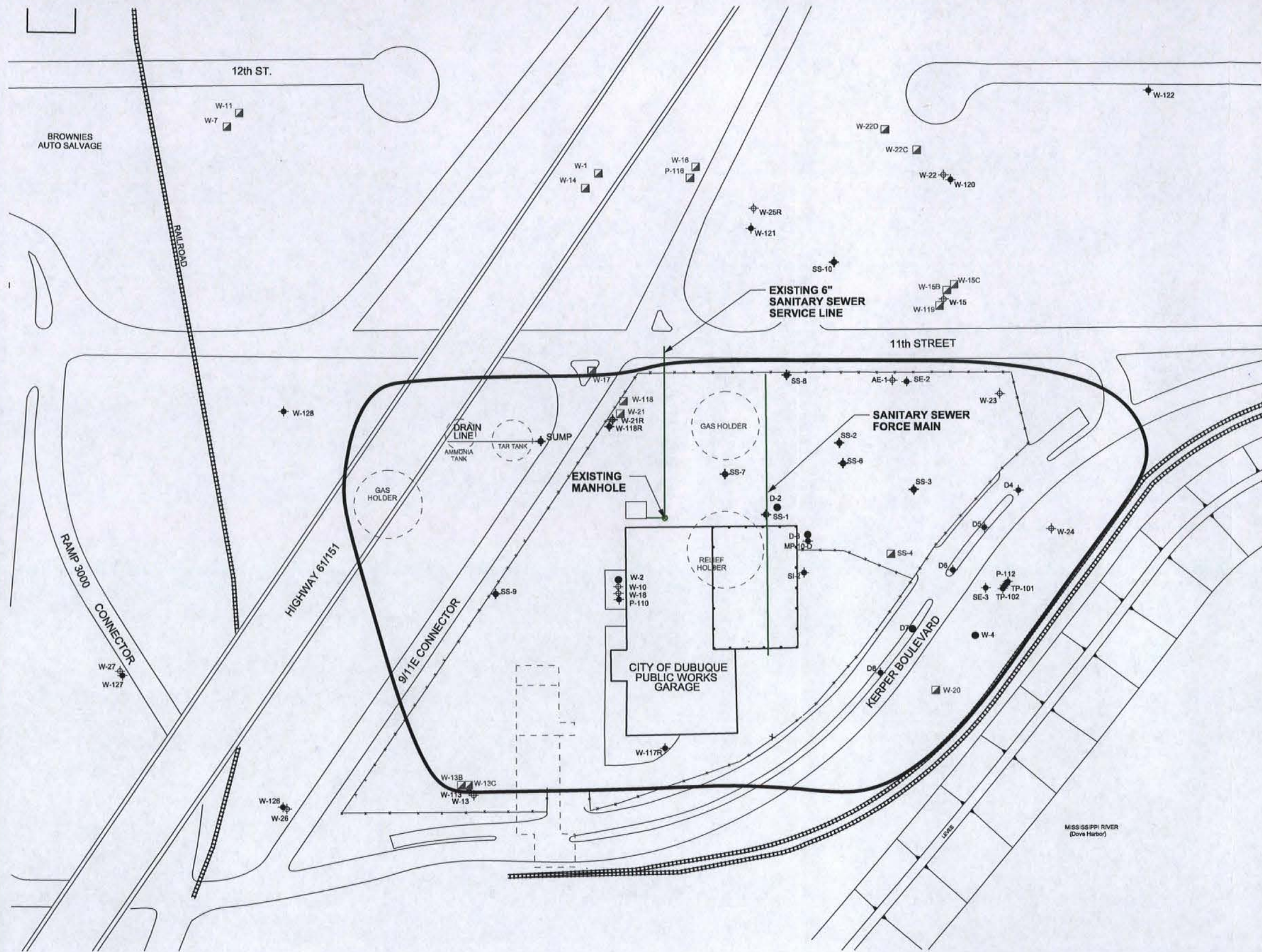
System Startup	System Shutdown	Benzene	Ethylbenzene
Toluene	Xylenes	Naphthalene	

DESIGNED BY	MWH	
DRAWN BY	K. ARMSTRONG	
CHECKED BY	C. OBERBROECKING	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

MANAGING OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	P-112 CONCENTRATIONS



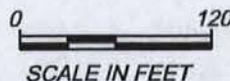
FIGURE	12	REVISION	1
FILE NAME			



LEGEND

- WATER TABLE MONITORING WELL
- ◆ SILTY SAND MONITORING WELL
- ◆ ALLUVIAL AQUIFER MONITORING WELL
- ABANDONED MONITORING WELL
- SANITARY SEWER
- TECHNICAL IMPRACTICABILITY ZONE

DESIGNED BY	CLINT OBERBROECKLING
DRAWN BY	NORA DAY
CHECKED BY	CLINT OBERBROECKLING
APPROVED BY	KEVIN ARMSTRONG
PROJECT MANAGER	KEVIN ARMSTRONG



MANAGING OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	EXISTING SANITARY SEWER LINES

MWH

FIGURE 13

ATTACHMENT A



MWH

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Goal	Sample Location:	D-7	D-7	D-7	D-7	D-7	D-7	D-7
			Screened Unit:	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table
			Depth BTOC (feet):	22.3	22.3	22.3	22.3	22.3	22.3	22.3
			Sample Date:	06-Jun-01	20-Sep-01	29-Apr-09	15-Sep-09	31-Mar-10	06-May-10	20-Sep-11
			Remediation							
Benzene	µg/L	5	970	1400	726	638	638	na	582	
Toluene	µg/L	2,000	390	600	318	240	247	na	225	
Ethylbenzene	µg/L	700	140	250	142	126	109	na	115	
Xylenes	µg/L	10,000	150	370	236	232	231	na	174	
2-Methylnaphthalene	µg/L	--	460	550	na	na	na	na	na	
Dibenzofuran	µg/L	--	41	39	na	na	na	na	na	
Acenaphthene	µg/L	--	130	92	43.9	136	0.337 U	61.8	48.7	
Acenaphthylene	µg/L	--	93	69	38.3	133	1.33 U	0.435 U	5.93	
Anthracene	µg/L	--	40	47	16.2	177	318	13.8	27	
Benzo(a)anthracene	µg/L	0.1	16	18	5.34	71.6	147	31.7	8.51	
Benzo(a)pyrene	µg/L	0.2	9.7	12	7.44	53.8	125	38.7	7.1	
Benzo(b)fluoranthene	µg/L	0.2	6.8 J	14	6.54	39.4	0.429 U	0.140 U	6.75	
Benzo(g,h,i)perylene	µg/L	--	4.2 J	10 U	4.47	29.1	0.122 U	15.8	3.29	
Benzo(k)fluoranthene	µg/L	0.2	8.2 J	5.1 J	2.20	24	35.8	0.0350 U	1.95	
Chrysene	µg/L	0.2	14	17	4.15	80.5	435	18.7	9.58	
Dibenzo(a,h)anthracene	µg/L	0.2	1.4 J	10 U	0.936	6.85	0.0510 U	0.0100 U	0.635	
Fluoranthene	µg/L	--	38	42	19.7	337	598	112	39.4	
Fluorene	µg/L	--	82	81	55.9	306	0.816 U	70.5	57.9	
Indeno(1,2,3cd)pyrene	µg/L	0.4	4.6 J	4.8 J	4.08	26.2	0.0306 U	14.2	3.38	
Naphthalene	µg/L	100	1600	1600	105	1460	R	939	0.0523 U	
Phenanthrene	µg/L	--	160	200	27.5	710	1350	107	78.3	
Pyrene	µg/L	--	55	54	17	177	268	11.8	34.3	

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Goal	Sample Location:	D-7	D-7	W-4	W-4	W-4	W-4	W-4
			Screened Unit:	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table
			Depth BTOC (feet):	22.3	22.3	23.4	23.4	23.4	23.4	23.4
			Sample Date:	24-Apr-12	25-Sep-12	11-Oct-05	15-Mar-06	12-Sep-06	18-Apr-07	20-Sep-07
			Remediation							
Benzene	µg/L	5	576	557	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	
Toluene	µg/L	2,000	258	250	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	
Ethylbenzene	µg/L	700	139	167	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	
Xylenes	µg/L	10,000	264	311	1.0 U	1.0 U	3.00 U	3.00 U	3.00 U	
2-Methylnaphthalene	µg/L	--	10.2	40.7	na	na	na	na	na	
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	
Acenaphthene	µg/L	--	25.6	44.7	1.1 Ja	2.6 U	1.06	0.298	0.526	
Acenaphthylene	µg/L	--	9.69	30.4	2.4	0.77 Ja	0.0850 U	0.0850 U	0.0850 U	
Anthracene	µg/L	--	6.07	8.13	0.073	0.052 Ua	0.0103 J	0.0100 U	0.0100 U	
Benzo(a)anthracene	µg/L	0.1	2.92	2.36	0.032 Ja	0.13 U	0.00300 U	0.00300 U	0.00300 U	
Benzo(a)pyrene	µg/L	0.2	2.94	1.87	0.028 Ja	0.13 U	0.0320 U	0.0320 U	0.0320 U	
Benzo(b)fluoranthene	µg/L	0.2	2.51	1.53	0.049 U	0.052 U	0.0130 U	0.0130 U	0.0130 U	
Benzo(g,h,i)perylene	µg/L	--	1.74	1.85	0.19 U	0.21 U	0.00900 U	0.00900 U	0.00900 U	
Benzo(k)fluoranthene	µg/L	0.2	0.91	0.721	0.049 U	0.052 U	0.0150 U	0.0150 U	0.0150 U	
Chrysene	µg/L	0.2	2.22	2.87	0.031 Ja	0.13 U	0.00500 U	0.00500 U	0.0197 J	
Dibenzo(a,h)anthracene	µg/L	0.2	0.264	0.498	0.29 U	0.31 U*	0.0100 U	0.0100 U	0.0100 U	
Fluoranthene	µg/L	--	11.5	11.9	0.18	0.13 U	0.0100 U	0.0100 U	0.0100 U	
Fluorene	µg/L	--	21.9	36	0.11 Ja	0.056 Ja	0.0100 U	0.0653 J	0.31	
Indeno(1,2,3cd)pyrene	µg/L	0.4	1.45	0.908	0.13 U	0.13 U	0.00700 U	0.00700 U	0.00700 U	
Naphthalene	µg/L	100	2.54	7.29	1.3 U	1.3 U	0.0540 U	0.0567 J,B	0.0540 U	
Phenanthrene	µg/L	--	15.2	20.8	0.15	0.10 Ua	0.00700 U	0.00700 U	0.00700 U	
Pyrene	µg/L	--	8.94	9.77	0.12 Ja	0.26 U	0.0190 U	0.0190 U	0.0190 U	

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Goal	Sample Location:	W-4	W-4	W-4	W-4	W-4	W-4	W-4
			Screened Unit:	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table
			Depth BTOC (feet):	23.4	23.4	23.4	23.4	23.4	23.4	23.4
			Sample Date:	06-May-08	01-Oct-08	29-Apr-09	16-Sep-09	31-Mar-10	06-May-10	14-Sep-10
			Remediation							
Benzene	µg/L	5		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	na	1.00 U
Toluene	µg/L	2,000		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	na	1.00 U
Ethylbenzene	µg/L	700		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	na	1.00 U
Xylenes	µg/L	10,000		3.00 U	3.00 U	3.00 U	3.00 U	6.00 U	na	3.00 U
2-Methylnaphthalene	µg/L	--		na	na	na	na	na	na	na
Dibenzofuran	µg/L	--		na	na	na	na	na	na	na
Acenaphthene	µg/L	--		0.263	2.75	0.631	1.39	0.570	0.332	0.558
Acenaphthylene	µg/L	--		0.0850 U	0.0967 U	0.0978 U	0.0870 U	0.0870 U	0.0989 U	0.291
Anthracene	µg/L	--		0.0100 U	0.0378 J	0.0112 U	0.0189 J	0.0100 U	0.0114 U	0.0100 U
Benzo(a)anthracene	µg/L	0.1		0.00300 U	0.00556 U	0.00562 U	0.00651 J	0.00500 U	0.00568 U	0.00500 U
Benzo(a)pyrene	µg/L	0.2		0.0320 U	0.00889 U	0.00899 U	0.00800 U	0.00800 U	0.00909 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2		0.0130 U	0.0311 U	0.0315 U	0.0280 U	0.0280 U	0.0318 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--		0.00900 U	0.00889 U	0.00899 U	0.00800 U	0.00800 U	0.00909 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2		0.0150 U	0.00778 U	0.00787 U	0.00700 U	0.00700 U	0.00795 U	0.00700 U
Chrysene	µg/L	0.2		0.00500 U	0.00889 U	0.00899 U	0.00800 U	0.00800 U	0.00909 U	0.00800 U
Dibenzo(a,h)anthracene	µg/L	0.2		0.0100 U	0.0111 U	0.0112 U	0.0100 U	0.0100 U	0.0114 U	0.0100 U
Fluoranthene	µg/L	--		0.0100 U	0.0111 U	0.0112 U	0.0100 U	0.0100 U	0.0114 U	0.0100 U
Fluorene	µg/L	--		0.18 J	1.43	0.0180 U	0.764	0.0160 U	0.0182 U	0.0160 U
Indeno(1,2,3cd)pyrene	µg/L	0.4		0.00700 U	0.00667 U	0.00674 U	0.00600 U	0.00600 U	0.00682 U	0.00600 U
Naphthalene	µg/L	100		0.0540 U	0.0511 U	0.0517 U	0.153	R	0.0737 J	0.161
Phenanthrene	µg/L	--		0.00700 U	0.00556 U	0.00562 U	0.0505 J	0.00500 U	0.00568 U	0.00500 U
Pyrene	µg/L	--		0.0190 U	0.0284 J	0.0191 U	0.0170 U	0.0170 U	0.0193 U	0.0170 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	W-4	W-4	W-4	W-4
			Screened Unit:	Water Table	Water Table	Water Table	Water Table
			Depth BTOC (feet):	23.4	23.4	23.4	23.4
			Sample Date:	27-Apr-11	20-Sep-11	24-Apr-12	25-Sep-12
			Remediation				
Benzene	µg/L	5		1.00 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	2,000		1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	700		1.00 U	1.00 U	1.00 U	1.00 U
Xylenes	µg/L	10,000		3.00 U	3.00 U	3.00 U	3.00 U
2-Methylnaphthalene	µg/L	--		na	na	0.100 U	0.185 J
Dibenzofuran	µg/L	--		na	na	na	na
Acenaphthene	µg/L	--		0.528	0.991	1.02	2.42
Acenaphthylene	µg/L	--		0.0870 U	0.346	0.0870 U	0.605
Anthracene	µg/L	--		0.0100 U	0.0126 J	0.0100 U	0.0555 J
Benzo(a)anthracene	µg/L	0.1		0.0200 U	0.0200 U	0.0200 U	0.0203 J
Benzo(a)pyrene	µg/L	0.2		0.00800 U	0.00800 U	0.00800 U	0.00962 J
Benzo(b)fluoranthene	µg/L	0.2		0.0280 U	0.0280 U	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--		0.00800 U	0.00800 U	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2		0.00700 U	0.00700 U	0.00700 U	0.00700 U
Chrysene	µg/L	0.2		0.00800 U	0.00800 U	0.00800 U	0.0244 J
Dibenzo(a,h)anthracene	µg/L	0.2		0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--		0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluorene	µg/L	--		0.0265 J	0.242	0.0160 U	0.581
Indeno(1,2,3cd)pyrene	µg/L	0.4		0.00600 U	0.00600 U	0.00600 U	0.00600 U
Naphthalene	µg/L	100		0.0460 U	0.0795 J,B	0.227	0.544
Phenanthrene	µg/L	--		0.00500 U	0.00500 U	0.00500 U	0.150
Pyrene	µg/L	--		0.0170 U	0.0170 U	0.0170 U	0.0614 J

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Goal	Sample Location: D-4						
			Screened Unit: Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet): 37.0	37.0	37.0	37.0	37.0	37.0	37.0
			Sample Date: 29-Apr-09	15-Sep-09	31-Mar-10	06-May-10	15-Sep-10	27-Apr-11	20-Sep-11
			Remediation						
Benzene	µg/L	5	458.0	413	222	na	440	1430	778
Toluene	µg/L	2,000	13.5	10.0 U	5.00 U	na	6.97	26.5	19.3
Ethylbenzene	µg/L	700	484	321	99.8	na	349	1010	673
Xylenes	µg/L	10,000	176.0	137	30.0 U	na	119	500	203
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na
Acenaphthene	µg/L	--	59.9	40.4	39.4	71.9	85.4	94.5	137
Acenaphthylene	µg/L	--	56.4	0.870 U	51.1	0.870 U	95	0.0870 U	176
Anthracene	µg/L	--	1.57	0.746	1.68	1.51	2.52	2.25	2.9
Benzo(a)anthracene	µg/L	0.1	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.0200 U	0.0200 U
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.0186 J	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--	0.0100 U	0.471	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluorene	µg/L	--	47.8	36.1	21.7	39	39.6	13	56.4
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U
Naphthalene	µg/L	100	214	107	R	320*	30.2	964 B	214 B
Phenanthrene	µg/L	--	15.1	9.91	9.52	12	17.6	17.9	21.5
Pyrene	µg/L	--	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Sample Location:			D-4	D-4	D-5	D-5	D-5	D-5	D-5	D-6
Screened Unit:			Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
Depth BTOC (feet):			37.0	37.0	37.5	37.5	37.5	37.5	37.5	37.0
Sample Date:			24-Apr-12	25-Sep-12	31-Mar-10	06-May-10	20-Sep-11	24-Apr-12	25-Sep-12	21-Mar-01
Remediation										
Analyte	Units	Goal								
Benzene	µg/L	5	2040	1090	1290	na	1120	1300	1190	52
Toluene	µg/L	2,000	87.4	23.2	432	na	192	329	406	17
Ethylbenzene	µg/L	700	989	780	850	na	571	759	722	59
Xylenes	µg/L	10,000	512	339	770	na	468	743	762	56
2-Methylnaphthalene	µg/L	--	7.75	7.96	na	na	na	116	617	93
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	12
Acenaphthene	µg/L	--	45.3	99.6	111	97.1	104	62.3	259	68
Acenaphthylene	µg/L	--	159	99.4	1.74 U	0.870 U	163	0.435 U	<0.870	11
Anthracene	µg/L	--	0.86	2	5.89	6.01	8.35	21.1	105	5.2 J
Benzo(a)anthracene	µg/L	0.1	0.0200 U	0.0200 U	3.05	2.19	2.25	8.98	46.3	10 U
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	3.40	0.00800 U	2.35	8.29	41	10 U
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	2.11	5.76	27.2	10 U
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	2.84	1.23	4.89	17.6	10 U
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.868	2.46	13.8	10 U
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	1.06	2.53	6.42	63	10 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.217	0.698	2.11	10 U
Fluoranthene	µg/L	--	0.0100 U	1.22	10.6	10.8	8.22	25.4	149	1.8 J
Fluorene	µg/L	--	20.2	45.5	52.3	49.5	50.1	40.9	232	28
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.777	1.16	3.97	16.4	10 U
Naphthalene	µg/L	100	810	284	R	2280	3130 B	627	1480	620
Phenanthrene	µg/L	--	11.7	20.1	34.6	25	30.8	59.9	343	28
Pyrene	µg/L	--	0.0170 U	0.0170 U	0.0170 U	0.0170 U	7.58	16.5	134	2 J

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Goal	Sample Location:	D-6	D-6	D-6	D-6	D-6	D-6	D-6
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	37.0	37.0	37.0	37.0	37.0	37.0	37.0
			Sample Date:	06-Jun-01	20-Sep-01	11-Dec-01	13-Mar-02	07-Jun-02	18-Sep-02	27-Apr-05
			Remediation							
Benzene	µg/L	5		48	80	20	13	56	97	610
Toluene	µg/L	2,000		7.9	12	2.3	3.8	13	25	87
Ethylbenzene	µg/L	700		38	37	6.4	15	61	83	620
Xylenes	µg/L	10,000		34	32	16	28	65	110	640
2-Methylnaphthalene	µg/L	--		47	48	16	18	14	8.7 J	na
Dibenzofuran	µg/L	--		6.2 J	5.3 J	4.2 J	3.6 J	6.6 J	9.1 J	na
Acenaphthene	µg/L	--		41	36	32	30	53	53	690
Acenaphthylene	µg/L	--		4.8 J	3.5 J	2.4 J	8.4 J	12	14	4300
Anthracene	µg/L	--		5.5 J	4.8 J	3.2 J	6.6 J	13	15	290
Benzo(a)anthracene	µg/L	0.1		10 U	10 U	10 U	2.9 J	7.9 J	12	180
Benzo(a)pyrene	µg/L	0.2		10 U	10 U	10 U	2.4 J	6.1 J	14	110
Benzo(b)fluoranthene	µg/L	0.2		10 U	10 U	10 U	2.4 J	6.5 J	14	55
Benzo(g,h,i)perylene	µg/L	--		10 U	10 U	10 U	0.82 J	2.0 J	4.3 J	37
Benzo(k)fluoranthene	µg/L	0.2		10 U	10 U	10 U	0.88 J	2.5 J	5.4 J	35
Chrysene	µg/L	0.2		10 U	10 U	10 U	2.1 J	7.4 J	12	120
Dibenzo(a,h)anthracene	µg/L	0.2		10 U	10 U	10 U	10 U	10 U	10 U	20
Fluoranthene	µg/L	--		2.3 J	2.6 J	2.2 J	8.9 J	20	27	810
Fluorene	µg/L	--		16	13	12	14	21	28	350
Indeno(1,2,3cd)pyrene	µg/L	0.4		10 U	10 U	10 U	10 U	2.4 J	5.2 J	47
Naphthalene	µg/L	100		220	160	22	24	12	4.6	4800
Phenanthrene	µg/L	--		23	19	15	14	11	32	1200
Pyrene	µg/L	--		2.2 J	2.6 J	2.4 J	11	28	32	450

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Sample Location: D-6			D-6	D-6	D-6	D-6	D-6	D-6	D-6	D-6
Screened Unit: Silty Sand			Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
Depth BTOC (feet): 37.0			37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sample Date: 15-Mar-06			15-Mar-06	12-Sep-06	18-Apr-07	09-Sep-07	06-May-08	15-Sep-09	31-Mar-10	06-May-10
Remediation Goal										
Analyte	Units	Goal								
Benzene	µg/L	5	670	638	556	1220	1030	966	1470	NS
Toluene	µg/L	2,000	33	24.4	22.3	159	25.8	49.2	49.6	NS
Ethylbenzene	µg/L	700	620	635	582	795	948	870	700 C9	NS
Xylenes	µg/L	10,000	340	253	222	564	253	1140	345 C9	NS
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	na
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na
Acenaphthene	µg/L	--	110	170	226	143	194	213	186	148
Acenaphthylene	µg/L	--	1400	46.4	0.0850 U	0.0850 U	0.0850 U	4.35 U	1.35 U	1.74 U
Anthracene	µg/L	--	20	52.2	54.6	19.4	37.9	33.6	29.7	14.8
Benzo(a)anthracene	µg/L	0.1	9.6	21.9	22.9	8	18.5	13.4	14.5	4.83
Benzo(a)pyrene	µg/L	0.2	5.8	22	20.9	9.36	18.2	12.4	13.4	4.9
Benzo(b)fluoranthene	µg/L	0.2	3.1	17.6	16.6	5.74	12.8	7.56	0.0433 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--	2.1	8.07	7.98	6.81	10	7.3	0.0124 U	2.38
Benzo(k)fluoranthene	µg/L	0.2	1.3	7.07	7.24	2.83	6.44	4.54	0.0108 U	0.00700 U
Chrysene	µg/L	0.2	6.2	24.8	18.6	8.74	17.7	10.1	0.124 U	2.47
Dibenzo(a,h)anthracene	µg/L	0.2	0.88 J	1.95	1.73	1.07	1.95	1.56	0.140 J	0.0100 U
Fluoranthene	µg/L	--	44	75.2	106	29.1	73.4	58.4	42.2	16
Fluorene	µg/L	--	34	149	149	142	207	207	103	88.8
Indeno(1,2,3cd)pyrene	µg/L	0.4	2.7	9.41	10	5.07	9.59	6.91	0.00928 U	1.98
Naphthalene	µg/L	100	800	583	712	854	591	659	R	616
Phenanthrene	µg/L	--	77	170	181	86.3	158	153	120	53.2
Pyrene	µg/L	--	24	317	320	27	52.6	43.8	0.0263 U	2.95

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

			Sample Location: D-6		D-6		D-6		D-6		D-8		D-8		D-8	
			Screened Unit: Silty Sand		Silty Sand		Silty Sand		Silty Sand		Silty Sand		Silty Sand		Silty Sand	
			Depth BTOC (feet): 37.0		37.0		37.0		37.0		37.8		37.8		37.8	
			Sample Date: 16-Sep-10		28-Apr-11		20-Sep-11		25-Apr-12		25-Sep-12		29-Apr-09		15-Sep-09	
			Remediation Goal													
Analyte	Units	Goal														
Benzene	µg/L	5	1060	659	1600	892	1170	187	103	103						
Toluene	µg/L	2,000	44.8	39.5	219	75.8	103	8.22	3.14	3.24						
Ethylbenzene	µg/L	700	737	424	709	588	766	32.2	24.1	18.8 C9						
Xylenes	µg/L	10,000	356	230	713	385	500	94.0	35.8	28.7 C9						
2-Methylnaphthalene	µg/L	--	na	na	na	62.2	198	na	na	na						
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na						
Acenaphthene	µg/L	--	3.67	151	228	33.6	103	13.1	9.34	9.45						
Acenaphthylene	µg/L	--	13.9	0.0870 U	225	<0.435	<8.70	14.2	10.9	26.1						
Anthracene	µg/L	--	0.0654 J	22.1	48.5	11.8	25.1	3.60	1.04	1.83						
Benzo(a)anthracene	µg/L	0.1	0.00500 U	8.5	15.8	4.58	11.8	1.83	0.159	0.625						
Benzo(a)pyrene	µg/L	0.2	0.00800 U	6.6	13.8	3.65	10.3	2.88	0.00800 U	0.00800 U						
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	4.88	13	3.12	5.77	2.46	0.0280 U	0.0280 U						
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	4.08	7.26	1.92	5.00	1.25	0.00800 U	0.00800 U						
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	2.31	3.32	1.12	3.21	1.06	0.509	0.00700 U						
Chrysene	µg/L	0.2	0.00800 U	11.3	16.2	2.29	13.5	2.18	0.301	0.967						
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.336	1.15	0.31 J	0.821	0.183	0.138	0.0100 U						
Fluoranthene	µg/L	--	0.0100 U	20.1	61.1	14.8	41.9	9.28	1.37	2.77						
Fluorene	µg/L	--	2.41	42.7	140	25.2	86.6	17.2	10.6	6.75						
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	3.95	7.31	1.67	5.18	1.00	0.00600 U	0.00600 U						
Naphthalene	µg/L	100	10.2	538	2610 B	264	990	56.1	69.6	R						
Phenanthrene	µg/L	--	0.226	71.2	163	35.4	98.6	14.1	2.91	5.19						
Pyrene	µg/L	--	0.0170 U	1.82	50.3	8.07	31.8	23.3	0.563	0.017 U						

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	D-8	D-8	D-8	D-8	D-8	D-8	P-112	P-112
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	37.8	37.8	37.8	37.8	37.8	37.8	38.8	38.8
			Sample Date:	06-May-10	15-Sep-10	27-Apr-11	20-Sep-11	24-Apr-12	25-Sep-12	29-Feb-96	24-Sep-96
			Remediation								
Benzene	µg/L	5	na	79.3	112	49.8	70.2	45.3	1	1 U	
Toluene	µg/L	2,000	na	2.67	5.15	3.93	4.37	2.29	1 U	1 U	
Ethylbenzene	µg/L	700	na	15.4	25.2	20.7	24.7	13.7	1	1 U	
Xylenes	µg/L	10,000	na	23.7	49.3	34.4	35.3	19.3	na	1 U	
2-Methylnaphthalene	µg/L	--	na	na	na	na	3.81	2.81	10 U	10 U	
Dibenzofuran	µg/L	--	na	na	na	na	na	na	10 U	10 U	
Acenaphthene	µg/L	--	9.55	7.03	12.8	20.4	7.33	6.55	10 U	10 U	
Acenaphthylene	µg/L	--	0.0870 U	0.0870 U	0.0870 U	22.2	9.4	7.66	10 U	10 U	
Anthracene	µg/L	--	0.445	0.85	0.834	1.94	1.07	0.739	10 U	10 U	
Benzo(a)anthracene	µg/L	0.1	0.179	0.136	0.0407 J	0.302	0.306	0.164	10 U	10 U	
Benzo(a)pyrene	µg/L	0.2	0.131 J	0.00800 U	0.00800 U	0.0399 J	0.00800 U	0.0618 J	10 U	10 U	
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	10 U	10 U	
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	10 U	10 U	
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	10 U	10 U	
Chrysene	µg/L	0.2	0.00800 U	0.185	0.0582 J	0.221	0.105	0.187	10 U	10 U	
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	10 U	10 U	
Fluoranthene	µg/L	--	0.0100 U	1.03	0.576	2.5	1.28	1.04	10 U	10 U	
Fluorene	µg/L	--	0.0160 U	6.27	3.21	13.2	4.38	6.03	10 U	10 U	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	10 U	10 U	
Naphthalene	µg/L	100	56.1	73.8	34.8 B	25 B	17.5	16.4	4	10 U	
Phenanthrene	µg/L	--	2.94	2.43	1.79	3.59	2.22	1.68	10 U	10 U	
Pyrene	µg/L	--	0.0170 U	0.404	0.0170 U	1.38	0.745	0.633	10 U	10 U	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

			Sample Location:	P-112	P-112	P-112	P-112	P-112	P-112	P-112	P-112
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8
			Sample Date:	26-Nov-96	23-Jan-97	28-May-97	25-Sep-97	19-Dec-97	17-Mar-98	16-Jun-98	29-Sep-98
			Remediation								
Analyte	Units	Goal									
Benzene	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	µg/L	2,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	µg/L	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes	µg/L	10,000	na	na	1 U	1 U	1 U	1 U	1 U	1 U	2
2-Methylnaphthalene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	µg/L	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenanthrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

			Sample Location:	P-112	P-112	P-112	P-112	P-112	P-112	P-112	P-112	P-112
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8
			Sample Date:	24-Mar-99	23-Jun-99	28-Sep-99	15-Dec-99	15-Mar-00	06-Jun-00	14-Sep-00	13-Dec-00	20-Mar-01
			Remediation									
Analyte	Units	Goal										
Benzene	µg/L	5	110	0.27	0.25	2.6	1.5	1.1	1 U	0.26 J	0.48 J	
Toluene	µg/L	2,000	17	1 U	0.25	0.54	0.26	1 U	1 U	0.25 J	0.24 J	
Ethylbenzene	µg/L	700	130	1 U	0.39	2.9	0.45	1.2	1 U	1 U	1 U	
Xylenes	µg/L	10,000	76	0.85	1.1	2	1.4	1.2	0.7 J	0.95 J	0.88 J	
2-Methylnaphthalene	µg/L	--	4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Dibenzofuran	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Acenaphthene	µg/L	--	2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Acenaphthylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Anthracene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Chrysene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Fluoranthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Fluorene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Naphthalene	µg/L	100	120	10 U	10 U	4	10 U	10 U	10 U	10 U	10 U	
Phenanthrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Pyrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Goal	Sample Location:	P-112	P-112	P-112	P-112	P-112	P-112	P-112	P-112	
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8
			Sample Date:	07-Jun-01	19-Sep-01	11-Dec-01	13-Mar-02	07-Jun-02	18-Sep-02	04-Dec-02	10-Jun-03	30-Mar-04
			Remediation									
Benzene	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1.0 U	
Toluene	µg/L	2,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	0.61 Ja	
Ethylbenzene	µg/L	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1.0 U	
Xylenes	µg/L	10,000	1 U	1 U	1 U	1 U	1 U	0.95 J	1 P	7 U	2.6	
2-Methylnaphthalene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	na	na	
Dibenzofuran	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	na	na	
Acenaphthene	µg/L	--	0.84 J	0.59 J	1.0 J	0.93 J	0.69 J	1.1 J	1.1J	0.54	1.3 Ja	
Acenaphthylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	4.4	
Anthracene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.053 Ua	
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.14 U	
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.14 U	
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.053 U	
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.21 U	
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.053 U	
Chrysene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.14 U	
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.32 U	
Fluoranthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.12	0.14 U	
Fluorene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.26 Ua	
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.14 U	
Naphthalene	µg/L	100	10 U	10 U	10 U	10 U	10 U	10 U	1.5	0.1 U	1.4 Ua	
Phenanthrene	µg/L	--	10 U	10 U	1.0 J	10 U	10 U	10 U	10 U	0.2	0.031 Ja	
Pyrene	µg/L	--	10 U	10 U	0.73 J	10 U	10 U	10 U	10 U	0.14	0.26 U	

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

			Sample Location:	P-112	P-112	P-112	P-112	P-112	P-112	P-112	P-112
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8
			Sample Date:	15-Sep-04	14-Mar-05	25-Apr-05	11-Oct-05	15-Mar-06	12-Sep-06	18-Apr-07	20-Sep-07
			Remediation								06-May-08
Analyte	Units	Goal									
Benzene	µg/L	5	5.7	35	49	29	270	286	285	369 M1	551
Toluene	µg/L	2,000	1.4	2.9	3.7	1.5	10 U	21.6	18.6	22.8 M1	11.2 L1
Ethylbenzene	µg/L	700	12	66	91	57	500	715	536	585	789
Xylenes	µg/L	10,000	14	57	75	29	220	734	232	279 M1	236 L1
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	na	na
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	na
Acenaphthene	µg/L	--	1.7 Ja	5.6	2.0 Ja	18	11	32.4	54.3	55.4	84.7
Acenaphthylene	µg/L	--	13	100	50	380	270	0.0850 U	0.0944 U	0.0850 U	0.0850 U
Anthracene	µg/L	--	0.049 U	0.050 U	0.050 U	0.24 U	0.051 U	0.0113	0.0721 J	0.136 J	0.217
Benzo(a)anthracene	µg/L	0.1	0.13 U	0.13 U	0.13 U	0.62 U	0.13 U	0.00558	0.00333 U	0.00300 U	0.0100 J
Benzo(a)pyrene	µg/L	0.2	0.13 U	0.13 U	0.13 U	0.62 U	0.13 U	0.0130 U	0.0356 U	0.0320 U	0.0320 U
Benzo(b)fluoranthene	µg/L	0.2	0.049 U	0.050 U	0.050 Ua	0.24 U	0.051 U	0.0150 U	0.0144 U	0.0130 U	0.0130 U
Benzo(g,h,i)perylene	µg/L	--	0.19 U	0.20 U	0.20 U	0.95 U	0.20 U	0.0320 U	0.0100 U	0.00900 U	0.00900 U
Benzo(k)fluoranthene	µg/L	0.2	0.049 U	0.050 U	0.050 U	0.24 U	0.051 U	0.00900 U	0.0167 U	0.0150 U	0.0150 U
Chrysene	µg/L	0.2	0.13 U	0.13 U	0.13 U	0.62 U	0.13 U	0.0338 J	0.00556 U	0.00500 U	0.00500 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.29 U	0.30 U	0.3 U	1.4 U	0.30 U*	0.0100 U	0.0111 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--	0.13 U	0.13 U	0.13 U	0.22 Ja	0.13 U	0.0100 U	0.0111 U	0.0100 U	0.0100 U
Fluorene	µg/L	--	0.051 Ja	0.25 U	0.25 U	1.8	1.2	10.1	20.3	33.5	64.2
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.13 U	0.13 U	0.13 U	0.62 U	0.13 U	0.00700 U	0.00778 U	0.007	0.00700 U
Naphthalene	µg/L	100	4.4	110	56	520	360	167	727 B	719	506
Phenanthrene	µg/L	--	0.018 Ja	0.099 U	0.099 Ua	0.48 U	0.10 U	0.544	2.4	1.65	2.95
Pyrene	µg/L	--	0.24 U	0.25 U	0.25 Ua	1.2 U	0.25 U	0.0190 U	0.0211 U	0.0190 U	0.0248 J

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	P-112	P-112	P-112	P-112	P-112	P-112	P-112	
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8
			Sample Date:	01-Oct-08	29-Apr-09	16-Sep-09	31-Mar-10	06-May-10	14-Sep-10	28-Apr-11	20-Sep-11
			Remediation								
Benzene	µg/L	5	554	786	1280	1580	na	1590	454	151	
Toluene	µg/L	2,000	5.15	10.7	26.7	14.4	na	24.8	5.89	1.0 U	
Ethylbenzene	µg/L	700	671	890	831	1170	na	798	173	74.6	
Xylenes	µg/L	10,000	556	235	277	117	na	276	155	70.9	
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	na	
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	
Acenaphthene	µg/L	--	79.4	80.6	101	109	120 MHA	113	41.4	50.2	
Acenaphthylene	µg/L	--	0.0870 U	0.0870 U	0.0870 U	1.74 U	0.870 U	0.435 U	0.0870 U	56.8	
Anthracene	µg/L	--	0.125 J	0.160 J	0.265	0.0100 U	0.192	0.432	0.126 J	0.0100 U	
Benzo(a)anthracene	µg/L	0.1	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.0200 U	0.0200 U	
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	
Fluoranthene	µg/L	--	0.0100 U	0.0100 U	0.198	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	
Fluorene	µg/L	--	8.06	11.5	91.7	53	54 MHA	41.6	4.64	15.3	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	
Naphthalene	µg/L	100	211	324	703	R	429 MHA	877	6.63	5.09 B	
Phenanthrene	µg/L	--	2.17	2.63	3.52	0.100 U	0.00500 U,M1	5.05	1.39	0.00500 U	
Pyrene	µg/L	--	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location: P-112	
			Screened Unit: Silty Sand	P-112 Silty Sand
			Depth BTOC (feet): 38.8	38.8
			Sample Date: 25-Apr-12	25-Sep-12
			Remediation	
Benzene	µg/L	5	536	770
Toluene	µg/L	2,000	9.47	14.4
Ethylbenzene	µg/L	700	355	451
Xylenes	µg/L	10,000	87.7	147
2-Methylnaphthalene	µg/L	--	1.9	11.8
Dibenzofuran	µg/L	--	na	na
Acenaphthene	µg/L	--	39.8	70.5
Acenaphthylene	µg/L	--	0.870 U	0.870 U
Anthracene	µg/L	--	0.209	0.293
Benzo(a)anthracene	µg/L	0.1	0.0200 U	0.0200 U
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U
Chrysene	µg/L	0.2	0.00800 U	0.00800 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U
Fluoranthene	µg/L	--	0.0100 U	0.0100 U
Fluorene	µg/L	--	15.8	38.6
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U
Naphthalene	µg/L	100	69.7	179
Phenanthrene	µg/L	--	2.67	5.9
Pyrene	µg/L	--	0.0170 U	0.0170 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

			Sample Location:	SE-2	SE-2	SE-2	SE-2	SE-2	SE-2	SE-2
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	32.5	32.5	32.5	32.5	32.5	32.5	32.5
			Sample Date:	25-May-94	29-Feb-96	25-Sep-96	26-Nov-96	23-Jan-97	30-May-97	30-Sep-97
			Remediation							
Analyte	Units	Goal								
Benzene	µg/L	5	660	2300	1500	960	950	1200	510	940
Toluene	µg/L	2,000	290	500	370	240	240	350	140	310
Ethylbenzene	µg/L	700	1600	2300	890	570	690	830	360	690
Xylenes	µg/L	10,000	1300	na	710	450	530	620	300	560
2-Methylnaphthalene	µg/L	--	78	400 U	72	51	74	64	37	73
Dibenzofuran	µg/L	--	200 U	400 U	8	150 U	9	100 U	100 U	10
Acenaphthene	µg/L	--	96	160	59	53	55	62	42	59
Acenaphthylene	µg/L	--	37	81	38	35	35	40	28	40
Anthracene	µg/L	--	200 U	400 U	1	150 U	1	100 U	100 U	1
Benzo(a)anthracene	µg/L	0.1	200 U	400 U	10 U	150 U	10 U	100 U	100 U	10 U
Benzo(a)pyrene	µg/L	0.2	200 U	400 U	10 U	150 U	10 U	100 U	100 U	10 U
Benzo(b)fluoranthene	µg/L	0.2	200 U	400 U	10 U	150 U	10 U	100 U	100 U	10 U
Benzo(g,h,i)perylene	µg/L	--	200 U	400 U	10 U	150 U	10 U	100 U	100 U	10 U
Benzo(k)fluoranthene	µg/L	0.2	200 U	400 U	10 U	150 U	10 U	100 U	100 U	10 U
Chrysene	µg/L	0.2	200 U	400 U	10 U	150 U	10 U	100 U	100 U	10 U
Dibenzo(a,h)anthracene	µg/L	0.2	200 U	400 U	10 U	150 U	10 U	100 U	100 U	10 U
Fluoranthene	µg/L	--	200 U	400 U	10 U	150 U	10 U	100 U	100 U	10 U
Fluorene	µg/L	--	200 U	400 U	13	150 U	13	100 U	100 U	10 U
Indeno(1,2,3cd)pyrene	µg/L	0.4	200 U	400 U	10 U	150 U	10 U	100 U	100 U	10 U
Naphthalene	µg/L	100	2000	5000	1200	1300	1100	900	690	910
Phenanthrene	µg/L	--	13	400 U	12	150 U	13	12	100 U	12
Pyrene	µg/L	--	200 U	400 U	10 U	150 U	10 U	100 U	100 U	10 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Sample Location: SE-2			SE-2	SE-2	SE-2	SE-2	SE-2	SE-2	SE-2	SE-2
Screened Unit: Silty Sand			Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
Depth BTOC (feet): 32.5			32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5
Sample Date: 17-Mar-98			17-Mar-98	16-Jun-98	29-Sep-98	25-Jun-99	28-Sep-99	15-Dec-99	15-Mar-00	06-Jun-00
Remediation Goal										
Analyte	Units	Goal								
Benzene	µg/L	5	1000	840	260	210	1200	1400	890	580
Toluene	µg/L	2,000	250	190	10 U	130	150	140	170	160
Ethylbenzene	µg/L	700	620	470	420	1400	940	890	660	460
Xylenes	µg/L	10,000	540	480	260	730	560	590	500	390
2-Methylnaphthalene	µg/L	--	62	33	11	50	17	6	34	na
Dibenzofuran	µg/L	--	8	150 U	5	10	10	11	9	na
Acenaphthene	µg/L	--	49	58	58	130	65	67	62	na
Acenaphthylene	µg/L	--	35	34	15	18	62	57	37	na
Anthracene	µg/L	--	1	150 U	10 U	2	10 U	2	10 U	na
Benzo(a)anthracene	µg/L	0.1	10 U	150 U	10 U	10 U	10 U	10 U	10 U	na
Benzo(a)pyrene	µg/L	0.2	10 U	150 U	10 U	10 U	10 U	10 U	10 U	na
Benzo(b)fluoranthene	µg/L	0.2	10 U	150 U	10 U	10 U	10 U	10 U	10 U	na
Benzo(g,h,i)perylene	µg/L	--	10 U	150 U	10 U	10 U	10 U	10 U	10 U	na
Benzo(k)fluoranthene	µg/L	0.2	10 U	150 U	10 U	10 U	10 U	10 U	10 U	na
Chrysene	µg/L	0.2	10 U	150 U	10 U	10 U	10 U	10 U	10 U	na
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	150 U	10 U	10 U	10 U	10 U	10 U	na
Fluoranthene	µg/L	--	10 U	150 U	10 U	10 U	10 U	4	10 U	na
Fluorene	µg/L	--	14	150 U	8	20	17	24	18	na
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	150 U	10 U	10 U	10 U	10 U	10 U	na
Naphthalene	µg/L	100	1200	840	620	1900	1700	1500	1200	na
Phenanthrene	µg/L	--	10	150 U	6	15	15	23	13	na
Pyrene	µg/L	--	10 U	150 U	10 U	10 U	10 U	4	10 U	na

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

			Sample Location:	SE-2	SE-2	SE-2	SE-2	SE-2	SE-2	SE-2
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	32.5	32.5	32.5	32.5	32.5	32.5	32.5
			Sample Date:	15-Sep-00	15-Dec-00	21-Mar-01	07-Jun-01	20-Sep-01	11-Dec-01	14-Mar-02
			Remediation							
Analyte	Units	Goal								
Benzene	µg/L	5	400	5.3	150	150	130	200	ns	39
Toluene	µg/L	2,000	140	1.6	38	45	28	24	ns	9.4
Ethylbenzene	µg/L	700	300	1.7	37	65	90	120	ns	11
Xylenes	µg/L	10,000	240	3.7	110	110	89	120	ns	37
2-Methylnaphthalene	µg/L	--	40	4 J	9.6 J	16	6.6 J	19	ns	10 U
Dibenzofuran	µg/L	--	8 J	4 J	3.1 J	3.2 J	3.1 J	4.1 J	ns	0.99 J
Acenaphthene	µg/L	--	45	23	18	23	20	27	ns	3.8 J
Acenaphthylene	µg/L	--	24	3 J	5.2 J	6.5 J	5.7 J	13	ns	0.58 J
Anthracene	µg/L	--	1 J	10 U	10 U	0.75 J	10 U	0.76 J	ns	10 U
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	10 U	10 U	10 U	10 U	ns	10 U
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	ns	10 U
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	ns	10 U
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	ns	10 U
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	ns	10 U
Chrysene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	ns	10 U
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	ns	10 U
Fluoranthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	ns	10 U
Fluorene	µg/L	--	13	8 J	6.5 J	7.1 J	6.3 J	7.4 J	ns	3.5 J
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	10 U	10 U	10 U	10 U	ns	10 U
Naphthalene	µg/L	100	630	10 U	40	59	60	320	ns	10 U
Phenanthrene	µg/L	--	11	5 J	3.6 J	3.8 J	3.3 J	4.4 J	ns	1.6 J
Pyrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	ns	10 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	SE-2	SE-2	SE-2	SE-2	SE-2	SE-2	SE-2
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	32.5	32.5	32.5	32.5	32.5	32.5	32.5
			Sample Date:	18-Sep-02	05-Dec-02	11-Oct-05	15-Mar-06	12-Sep-06	17-Apr-07	19-Sep-07
			Remediation							
Benzene	µg/L	5		88	160	23	22	34.1	15.9	24.3
Toluene	µg/L	2,000		8.7	8.8	1.0 U	1.0 U	1.64	1.00 U	1.27
Ethylbenzene	µg/L	700		23	44	26	8.7	35.5	2.35	27.6
Xylenes	µg/L	10,000		54	59	10	4.5	23.2	3.00 U	32
2-Methylnaphthalene	µg/L	--		10 U	15	na	na	na	na	na
Dibenzofuran	µg/L	--		2.1 J	3.3J	na	na	na	na	na
Acenaphthene	µg/L	--		5.8 J	20	41	35	39.1	25.8	33.5
Acenaphthylene	µg/L	--		1.5 J	9.0J	120	61	9.99	0.100 U	0.0850 U
Anthracene	µg/L	--		10 U	10 U	0.43	0.19 Ja	0.355	0.664	0.099 J
Benzo(a)anthracene	µg/L	0.1		10 U	10 U	0.13 U	0.64 U	0.00300 U	0.00353 U	0.0151 J
Benzo(a)pyrene	µg/L	0.2		10 U	10 U	0.13 U	0.64 U	0.0320 U	0.0376 U	0.0320 U
Benzo(b)fluoranthene	µg/L	0.2		10 U	10 U	0.051 U	0.25 U	0.0130 U	0.0153 U	0.0130 U
Benzo(g,h,i)perylene	µg/L	--		10 U	10 U	0.20 U	0.99 U	0.00900 U	0.0106 U	0.00900 U
Benzo(k)fluoranthene	µg/L	0.2		10 U	10 U	0.051 U	0.25 U	0.0150 U	0.0176 U	0.0150 U
Chrysene	µg/L	0.2		10 U	10 U	0.13 U	0.64 U	0.00500 U	0.00588 U	0.00500 U
Dibenzo(a,h)anthracene	µg/L	0.2		10 U	10 U	0.30 U	1.5 U*	0.0100 U	0.0118 U	0.0782 J
Fluoranthene	µg/L	--		10 U	10 U	0.92	0.64 U	0.68	0.0118 U	0.536
Fluorene	µg/L	--		10 U	5.8J	3.9	2.5	9.01	7.08	12.7
Indeno(1,2,3cd)pyrene	µg/L	0.4		10 U	10 U	0.13 U	0.64 U	0.00700 U	0.00824 U	0.00700 U
Naphthalene	µg/L	100		10 U	260	1.3 U	6.4 U	4.91	0.41 B	6.43
Phenanthrene	µg/L	--		2.4 J	3.2J	0.73	0.22 Ja	1.16	0.00824 U	0.00700 U
Pyrene	µg/L	--		10 U	10 U	0.45 M	1.2 U	0.0774 J	0.766	0.479

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	SE-2	SE-2	SE-2	SE-2	SE-2	SE-2	SE-2	
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5
			Sample Date:	30-Sep-08	28-Apr-09	15-Sep-09	30-Mar-10	05-May-10	15-Sep-10	27-Apr-11	19-Sep-11
			Remediation								
Benzene	µg/L	5	31.6	20.8	45	30.1	na	22.1	99.6	112	
Toluene	µg/L	2,000	1.00 U	1.00 U	3.63	1.00 U	na	1.17	1	5.88	
Ethylbenzene	µg/L	700	13	5.41	73.4	3.58	na	6.12	20.7	78.9	
Xylenes	µg/L	10,000	9.2	3.00 U	41.5	6 U	na	9.26	16.9	43	
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	na	
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	
Acenaphthene	µg/L	--	33.8	27.2	50.1	35.1	29.5	38.1	14.6	21.2	
Acenaphthylene	µg/L	--	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	6.05	6.15	4.18	
Anthracene	µg/L	--	0.186 J	0.130 J	0.312	0.0100 U	0.0454 J	0.0100 U	0.0100 U	0.265	
Benzo(a)anthracene	µg/L	0.1	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.0200 U	0.0200 U	
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.0159 J	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	
Fluoranthene	µg/L	--	0.657	0.505	0.0100 U	0.0100 U	0.0100 U	0.977	0.296	0.619	
Fluorene	µg/L	--	14.4	12.2	23.6	9.26	3.77	10.8	1.89	6.35	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	
Naphthalene	µg/L	100	1.27	0.277	26.6	R	0.0460 U	1.11	3.09 B	96.6 B	
Phenanthrene	µg/L	--	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	
Pyrene	µg/L	--	0.386	0.298	<0.0170 U	0.0170 U	0.0170 U	0.143 J	0.0170 U	0.324	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	SE-2	SE-2	SS-6	SS-6	SS-6	SS-6	SS-6	SS-6
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	32.5	32.5	31.5	31.5	31.5	31.5	31.5	31.5
			Sample Date:	25-Apr-12	25-Sep-12	11-Jan-05	14-Mar-05	10-Oct-05	14-Mar-06	11-Sep-06	17-Apr-07
			Remediation								
Benzene	µg/L	5		59.3	35.4	2000	2000	2700	2300	2130	1670
Toluene	µg/L	2,000		1.00 U	1.00 U	380	350	490	500	431	446
Ethylbenzene	µg/L	700		10.6	3.06	670	390	670	620	635	747
Xylenes	µg/L	10,000		4.96	4.7	1200	960	100 U	1400	1250	1390
2-Methylnaphthalene	µg/L	--		0.308	0.839	na	na	na	na	na	na
Dibenzofuran	µg/L	--		na	na	na	na	na	na	na	na
Acenaphthene	µg/L	--		18.2	26.5	130 U	90 Ja	120 U	24 U	40.6	86.3
Acenaphthylene	µg/L	--		2.99	3.89	2600	1900	2000	1600	315	393
Anthracene	µg/L	--		<0.0100	0.361	37 *	77	97	28	33.3	42.3
Benzo(a)anthracene	µg/L	0.1		0.0200 U	0.0200 U	16	43	53	13	11.7	17.6
Benzo(a)pyrene	µg/L	0.2		0.00800 U	0.00800 U	10	28	35	8.2	11.3	15.9
Benzo(b)fluoranthene	µg/L	0.2		0.0280 U	0.0280 U	5.6	18	17	4.5	8.66	12.9
Benzo(g,h,i)perylene	µg/L	--		0.00800 U	0.00800 U	10 U	9.6 Ja	9.9	2.4	3.66	5.77
Benzo(k)fluoranthene	µg/L	0.2		0.00700 U	0.00700 U	3.4	9.7	7.3	1.8 M	4.32	5.31
Chrysene	µg/L	0.2		0.00800 U	0.0216 J	12	34	39	9.7	11.7	16.6
Dibenzo(a,h)anthracene	µg/L	0.2		0.0100 U	0.0100 U	16 U	29 U	14 U	2.7 J*	1	1.45
Fluoranthene	µg/L	--		0.0100 U	0.653	53	170	190	46	33.1	71.1
Fluorene	µg/L	--		4.4	7.25	69	130	140	60	152	185
Indeno(1,2,3cd)pyrene	µg/L	0.4		0.00600 U	0.00600 U	3.8 Ja	10 Ja	13	3.1	4.56	7.34
Naphthalene	µg/L	100		5.97	2.24	3100	2100	2200	1600	1390	1950 B
Phenanthrene	µg/L	--		0.00500 U	0.647	120 H	280	270	87	81.8	111
Pyrene	µg/L	--		0.0170 U	0.222	19 M	110	130	33 M	136	186

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	SS-6	SS-6	SS-6	SS-6	SS-6	SS-6	SS-6
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	31.5	31.5	31.5	31.5	31.5	31.5	31.5
			Sample Date:	19-Sep-07	05-May-08	30-Sep-08	15-Sep-09	31-Mar-10	06-May-10	15-Sep-10
			Remediation							
Benzene	µg/L	5		1540	1660	1880	1560	1750	na	1710
Toluene	µg/L	2,000		380	471	392	453	451	na	521
Ethylbenzene	µg/L	700		909	1080	586	919	1120	na	928
Xylenes	µg/L	10,000		1750	1570	1290	1470	1670	na	1560
2-Methylnaphthalene	µg/L	--		na	na	na	na	na	na	na
Dibenzofuran	µg/L	--		na	na	na	na	na	na	na
Acenaphthene	µg/L	--		32.6	25.3	37	18.4	72.9	0.110 U	50.1
Acenaphthylene	µg/L	--		378	294	433	209	634	647	611
Anthracene	µg/L	--		31.2	12.3	21.1	4.23	32.8	46.2	48.6
Benzo(a)anthracene	µg/L	0.1		17.4	5.76	10.8	0.471	12.7	18.4	16.4
Benzo(a)pyrene	µg/L	0.2		17.2	6.11	10.4	0.475	11.3	16.6	13.7
Benzo(b)fluoranthene	µg/L	0.2		8.47	4.36	7.03	0.324	0.0566 U	0.0280 U	9.03
Benzo(g,h,i)perylene	µg/L	--		9.15	2.87	5.52	0.205	0.0162 U	4.73	7.36
Benzo(k)fluoranthene	µg/L	0.2		5.43	2.39	4.27	0.159	0.0141 U	0.00700 U	0.00700 U
Chrysene	µg/L	0.2		16	5.39	9.96	0.527	13.3	9.39	19.6
Dibenzo(a,h)anthracene	µg/L	0.2		1.57	0.652	1.01	0.0377 J	0.0202 U	0.0100 U	1.29
Fluoranthene	µg/L	--		42	17.1	35.2	2.91	0.101 U	52	48.8
Fluorene	µg/L	--		248	156	143	98.6	179	222	158
Indeno(1,2,3cd)pyrene	µg/L	0.4		7.45	2.94	4.84	0.18	3.77	5.29	6.61
Naphthalene	µg/L	100		1760	1740	1670	1720	R	2800	2750
Phenanthrene	µg/L	--		112	56.7	80	25.5	97.8	131	139
Pyrene	µg/L	--		34.5	11.8	22.1	1.74	16.9	7.8	22.9

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	SS-6	SS-6	SS-6	SS-8	SS-8	SS-8	SS-8	SS-8
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	31.5	31.5	31.5	33.4	33.4	33.4	33.4	33.4
			Sample Date:	20-Sep-11	24-Apr-12	25-Sep-12	11-Jan-05	14-Mar-05	10-Oct-05	14-Mar-06	11-Sep-06
			Remediation								
Benzene	µg/L	5		2720	2610	2080	1.6	1.6	1.1	1.0 U	1.0 U
Toluene	µg/L	2,000		583	555	482	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	700		1480	1390	1100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes	µg/L	10,000		1860	1820	1560	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
2-Methylnaphthalene	µg/L	--		na	306	455	na	na	na	na	na
Dibenzofuran	µg/L	--		na	na	na	na	na	na	na	na
Acenaphthene	µg/L	--		33.9	25.6	30.2	0.59 Ja	0.50 Ja	2.5 U	0.48 Ja	0.701
Acenaphthylene	µg/L	--		752	186	436	47	38	47	18	0.0850 U
Anthracene	µg/L	--		54.8	15.9	17.1	0.051 U*	0.050 U	0.049 U	0.050 U	0.185 J
Benzo(a)anthracene	µg/L	0.1		19.1	5.36	6.51	0.13 U	0.13 U	0.13 U	0.13 U	0.00300 U
Benzo(a)pyrene	µg/L	0.2		17.3	4.17	5.65	0.13 U	0.13 U	0.13 U	0.13 U	0.0320 U
Benzo(b)fluoranthene	µg/L	0.2		12	3.61	3.69	0.051 U	0.050 U	0.049 U	0.050 Ua	0.0130 U
Benzo(g,h,i)perylene	µg/L	--		8.55	2.75	2.42	0.20 U	0.20 U	0.20 U	0.20 U	0.00900 U
Benzo(k)fluoranthene	µg/L	0.2		6.85 J	1.74	2.05	0.051 U	0.050 U	0.049 U	0.050 U	0.0150 U
Chrysene	µg/L	0.2		20.6	3.95	7.31	0.13 U	0.13 U	0.13 U	0.13 U	0.00500 U
Dibenzo(a,h)anthracene	µg/L	0.2		0.0100 U	0.434	0.449	0.31 U	0.30 U	0.29 U	0.30 U*	0.0100 U
Fluoranthene	µg/L	--		61.1	16.9	21.3	0.13 U	0.13 U	0.13 U	0.13 U	0.0100 U
Fluorene	µg/L	--		201	58.3	101	0.26 U	0.25 U	0.25 U	0.25 U	0.647
Indeno(1,2,3cd)pyrene	µg/L	0.4		7.92	2.5	2.3	0.13 U	0.13 U	0.13 U	0.13 U	0.00700 U
Naphthalene	µg/L	100		4080 B	1360	2540	0.66 Ja	0.36 Ja	1.3 U	0.31 Ja	0.0551 J
Phenanthrene	µg/L	--		170	54.9	72.8	0.039 Ja	0.099 Ua	0.098 U	0.099 U	0.0151 J
Pyrene	µg/L	--		49.3	10.4	14.9	0.20 Ja	0.25 U	0.25 U	0.25 U	0.0303 J

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	SS-8	SS-8	SS-8	SS-8	SS-8	SS-8	SS-8	SS-8
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	33.4	33.4	33.4	33.4	33.4	33.4	33.4	33.4
			Sample Date:	17-Apr-07	19-Sep-07	05-May-08	30-Sep-08	28-Apr-09	15-Sep-09	30-Mar-10	15-Sep-10
			Remediation								
Benzene	µg/L	5		1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	2,000		1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	700		1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Xylenes	µg/L	10,000		3.0 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	6.00 U	3.00 U
2-Methylnaphthalene	µg/L	--		na	na	na	na	na	na	na	na
Dibenzofuran	µg/L	--		na	na	na	na	na	na	na	na
Acenaphthene	µg/L	--		0.107 J	0.0490 U	0.181 J	0.484	0.0220 U	0.0220 U	0.0220 U	0.0220 U
Acenaphthylene	µg/L	--		0.0850 U	0.0850 U	0.0850 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U
Anthracene	µg/L	--		0.0100 U	0.0100 U	0.0100 U	0.0145 J	0.0100 U	0.0126 J	0.0100 U	0.0100 U
Benzo(a)anthracene	µg/L	0.1		0.00300 U	0.0149 J	0.00300 U	0.00500 U	0.00500 U	0.00658 J	0.00500 U	0.00500 U
Benzo(a)pyrene	µg/L	0.2		0.0320 U	0.0320 U	0.0320 U	0.00800 U	0.00800 U	0.0154 J	0.00800 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2		0.0130 U	0.0130 U	0.0130 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--		0.00900 U	0.00900 U	0.0323 J	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2		0.0150 U	0.0150 U	0.0150 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U
Chrysene	µg/L	0.2		0.00500 U	0.0368 J	0.0148 J	0.00800 U	0.00800 U	0.00891 J	0.00800 U	0.00800 U
Dibenzo(a,h)anthracene	µg/L	0.2		0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--		0.0288 J	0.0326 J	0.0153 J	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluorene	µg/L	--		0.0100 U	0.868	0.777	1.12	0.0160 U	0.0160 U	0.0160 U	0.84
Indeno(1,2,3cd)pyrene	µg/L	0.4		0.00700 U	0.00700 U	0.00700 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U
Naphthalene	µg/L	100		0.165 B	0.0540 U	0.0857 J	0.0460 U	0.0460 U	0.0460 U	R	0.0460 U
Phenanthrene	µg/L	--		0.00700 U	0.0732 J	0.00700 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U
Pyrene	µg/L	--		0.0556 J	0.0408 J	0.0190 U	0.022 J	0.0170 U	0.0170 U	0.0170 U	0.0170 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	SS-8	SS-8	SS-8	SS-8	SS-9	SS-9	SS-9	SS-9
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	33.4	33.4	33.4	33.4	28.0	28.0	28.0	28.0
			Sample Date:	27-Apr-11	20-Sep-11	25-Apr-12	25-Sep-12	11-Jan-05	14-Mar-05	10-Oct-05	15-Mar-06
			Remediation								
Benzene	µg/L	5	1.05	7.93	1.95	1.00 U	29.0	24	29	30	
Toluene	µg/L	2,000	1.00 U	1.00 U	1.00 U	1.00 U	2.5	2.1	2.6	2.5	
Ethylbenzene	µg/L	700	1.00 U	1.82	1.00 U	1.00 U	1.2	1	1.3	1.1	
Xylenes	µg/L	10,000	3.00 U	3.00 U	3.00 U	3.00 U	3.0	1.6	3.6	3.5	
2-Methylnaphthalene	µg/L	--	na	na	0.100 U	0.100 U	na	na	na	na	
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	
Acenaphthene	µg/L	--	0.642	1.96	0.145 J	<0.0220	4	5	10	8.9	
Acenaphthylene	µg/L	--	0.0870 U	0.0870 U	0.0870 U	0.0870 U	4.1	2.2 M	3.3 M	0.83 Ja	
Anthracene	µg/L	--	0.0151 J	0.0286 J	0.0100 U	0.0100 U	0.015 Ja*	0.048 Ua	0.033 Ja	0.049 Ua	
Benzo(a)anthracene	µg/L	0.1	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.13 U	0.12 U	0.13 U	0.13 U	
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.13 U	0.12 U	0.13 U	0.13 U	
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.052 U	0.048 U	0.049 U	0.049 U	
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.21 U	0.19 U	0.20 U	0.20 U	
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.052 U	0.048 U	0.049 U	0.049 U	
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.13 U	0.12 U	0.13 U	0.13 U	
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.31 U	0.29 U	0.29 U	0.29 U*	
Fluoranthene	µg/L	--	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.13 U	0.12 U	0.064 Ja	0.13 U	
Fluorene	µg/L	--	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.084 Ja	0.14 Ja	0.21 Ja	0.088 Ja	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.13 U	0.12 U	0.13 U	0.13 U	
Naphthalene	µg/L	100	1.8 B	2.53 B	0.26	0.146	6.8	6.2	7.6	3.1	
Phenanthrene	µg/L	--	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.17	0.19	0.28	0.12	
Pyrene	µg/L	--	0.0170 U	0.0234 J	0.0170 U	0.0170 U	0.26 U	0.24 U	0.045 Ja	0.25 U	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	SS-9	SS-9	SS-9	SS-9	SS-9	SS-9	SS-9	SS-9
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0
			Sample Date:	11-Sep-06	17-Apr-07	19-Sep-07	06-May-08	30-Sep-08	28-Apr-09	15-Sep-09	30-Mar-10
			Remediation								
Benzene	µg/L	5	32.8	33.8	25.1	51.1	31.2	49.5	53.8	49.5	
Toluene	µg/L	2,000	2.57	2.59	2.38	4.33	1.34 L5	4.28	4.84	3.11	
Ethylbenzene	µg/L	700	1.11	1.33	1.29	3.13	1.56	1.57	2.43	1.75	
Xylenes	µg/L	10,000	3.84	4.32	5.64	7	3.03	4.65	7.21	6.00 U	
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	na	
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	
Acenaphthene	µg/L	--	10.5	13.4	14.8	9.18	18.1	19.2	19.9	27.6	
Acenaphthylene	µg/L	--	0.0850 U	0.0850 U	0.0850 U	1.82	3.18	0.0870 U	0.0870 U	5.88 M1	
Anthracene	µg/L	--	0.0162 J	0.0156 J	0.0100 U	0.0102 J	0.0100 U	0.0100 U	0.0136 J	0.0100 U	
Benzo(a)anthracene	µg/L	0.1	0.00300 U	0.00300 U	0.00300 U	0.00300 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	
Benzo(a)pyrene	µg/L	0.2	0.0320 U	0.0320 U	0.0320 U	0.0320 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U M	
Benzo(b)fluoranthene	µg/L	0.2	0.0130 U	0.0130 U	0.0130 U	0.0130 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	
Benzo(g,h,i)perylene	µg/L	--	0.00900 U	0.00900 U	0.00900 U	0.00900 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	
Benzo(k)fluoranthene	µg/L	0.2	0.0150 U	0.0150 U	0.0150 U	0.0150 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	
Chrysene	µg/L	0.2	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	
Fluoranthene	µg/L	--	0.0100 U	0.0318 J	0.0308 J	0.0365 J	0.025 J	0.0100 U	0.0100 U	0.0100 U	
Fluorene	µg/L	--	0.205	0.322	0.298	0.366	0.637	0.582	0.704	0.794	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	
Naphthalene	µg/L	100	6.88	10.5 B	9.88	13.3	6.32	14.1	16.3	R	
Phenanthrene	µg/L	--	0.15	0.214	0.213	0.277	0.208	0.00500 U	0.271	0.000500 U	
Pyrene	µg/L	--	0.0533 J	0.0844 J	0.0222 J	0.0248 J	0.0170 U	0.0170 U	0.0170 U	0.0170 U	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location: SS-9 SS-9 SS-9 SS-9 SS-9 SS-9					
			Screened Unit: Silty Sand Silty Sand Silty Sand Silty Sand Silty Sand Silty Sand					
			Depth BTOC (feet): 28.0 28.0 28.0 28.0 28.0 28.0					
			Sample Date: 05-May-10 15-Sep-10 27-Apr-11 19-Sep-11 25-Apr-12 24-Sep-12					
			Remediation					
Benzene	µg/L	5	na	44.6	42.6	36.8	54.5	89
Toluene	µg/L	2,000	na	3.55	3.44	3.46	5.14	6.99
Ethylbenzene	µg/L	700	na	1.67	2.08	1.87	2.05	3.31
Xylenes	µg/L	10,000	na	6.00	5.6	5.82	7.54	11.3
2-Methylnaphthalene	µg/L	--	na	na	na	na	0.49	0.901
Dibenzofuran	µg/L	--	na	na	na	na	na	na
Acenaphthene	µg/L	--	26.5	27.7	11.8	35.8	17.2	13.6
Acenaphthylene	µg/L	--	0.0870 U	0.0870 U	1.7	0.0870 U	0.0870 U	0.0870 U
Anthracene	µg/L	--	0.0100 U	0.0211 J	0.0309 J	0.0296 J	0.0184 J	0.0491 J
Benzo(a)anthracene	µg/L	0.1	0.00500 U	0.00500 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--	0.0100 U	0.0100 U	0.0237 J	0.0100 U	0.0100 U	0.0100 U
Fluorene	µg/L	--	0.0160 U	0.834	0.179 J	0.647	0.0160 U	0.0160 U
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U
Naphthalene	µg/L	100	8.27	11.5	8.93 B	13.3 B	1.46	21.7
Phenanthrene	µg/L	--	0.16	0.269	0.43	0.315	0.243	0.286
Pyrene	µg/L	--	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0226 J	0.0537 J

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	W-113	W-113	W-113	W-113	W-113	W-113	W-113	
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8
			Sample Date:	10-Oct-05	14-Mar-06	11-Sep-06	17-Apr-07	19-Sep-07	05-May-08	30-Sep-08	28-Apr-09
			Remediation								
Benzene	µg/L	5	1.0 U	1.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Toluene	µg/L	2,000	1.0 U	1.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Ethylbenzene	µg/L	700	1.0 U	1.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Xylenes	µg/L	10,000	1.0 U	1.0 U	15.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	na	
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	
Acenaphthene	µg/L	--	2.5 U	2.4 U*	0.0490 U	0.0490 U	0.0490 U	0.0490 U	0.0331 J	0.0702 J	
Acenaphthylene	µg/L	--	1.3 U	1.2 U*	0.0850 U	0.0850 U	0.0850 U	0.0850 U	0.0870 U	0.0870 U	
Anthracene	µg/L	--	0.050 U	0.048 Ua*	0.0100 J	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	
Benzo(a)anthracene	µg/L	0.1	0.13 U	0.12 U	0.0101 J	0.00300 U	0.0199 J	0.00903 J	0.00500 U	0.0102 J	
Benzo(a)pyrene	µg/L	0.2	0.13 U	0.017 Ja	0.0320 U	0.0320 U	0.0320 U	0.0320 U	0.00800 U	0.00800 U	
Benzo(b)fluoranthene	µg/L	0.2	0.050 U	0.048 U	0.0130 U	0.0130 U	0.0130 U	0.0130 U	0.0280 U	0.0280 U	
Benzo(g,h,i)perylene	µg/L	--	0.20 U	0.19 U	0.00900 U	0.00900 U	0.0199 J	0.00900 U	0.00800 U	0.00800 U	
Benzo(k)fluoranthene	µg/L	0.2	0.050 U	0.048 U	0.0150 U	0.0150 U	0.0150 U	0.0150 U	0.00700 U	0.00700 U	
Chrysene	µg/L	0.2	0.13 U	0.12 U	0.01 J	0.00500 U	0.0304 J	0.0270 J	0.00800 U	0.00800 U	
Dibenzo(a,h)anthracene	µg/L	0.2	0.30 U	0.29 U	0.0100 U	0.0100 U	0.01	0.0100 U	0.0100 U	0.0100 U	
Fluoranthene	µg/L	--	0.13 U	0.045 Ja	0.0100 U	0.0100 U	0.0157 J	0.0100 U	0.0100 U	0.0100 U	
Fluorene	µg/L	--	0.25 U	0.24 U*	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0160 U	0.0160 U	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.13 U	0.12 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00600 U	0.00600 U	
Naphthalene	µg/L	100	1.3 U	1.2 U*	0.0540 U	0.197	0.0540 U	0.702	0.0460 U	0.0460 U	
Phenanthrene	µg/L	--	0.099 U	0.030 Ja	0.0197 J	0.00700 U	0.00700 U	0.00700 U	0.00500 U	0.00500 U	
Pyrene	µg/L	--	0.25 U	0.040 Ja	0.0213 J	0.0325 J	0.0232 J	0.0190 U	0.0170 U	0.0170 U	

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Sample Location: W-113			W-113	W-113	W-113	W-113	W-113	W-113	W-113	W-117
Screened Unit: Silty Sand			Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
Depth BTOC (feet): 34.8			34.8	34.8	34.8	34.8	34.8	34.8	34.8	35.0
Sample Date: 15-Sep-09			15-Sep-09	30-Mar-10	15-Sep-10	27-Apr-11	19-Sep-11	25-Apr-12	25-Sep-12	26-May-94
Remediation Goal										
Analyte	Units	Goal								
Benzene	µg/L	5	1.00 U	1.00 U	1.2	4.11	1.00 U	1.00 U	1.00 U	5.7
Toluene	µg/L	2,000	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.4
Ethylbenzene	µg/L	700	1.00 U	1.00 U	1.00 U	1.86	1.28	1.13	1.44	1.0 U
Xylenes	µg/L	10,000	3.00 U	6.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	2.1
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	0.111 U	0.197	10 U
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	10 U
Acenaphthene	µg/L	--	0.136 J	0.0220 U	0.0861 J	0.0220 U	0.0282 J	0.0244 U	0.149 J	1
Acenaphthylene	µg/L	--	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0967 U	0.0870 U	0.8
Anthracene	µg/L	--	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.012 J	0.0111 U	0.0443 J	10 U
Benzo(a)anthracene	µg/L	0.1	0.00500 U	0.00500 U	0.00696 J	0.0200 U	0.0200 U	0.0222 U	0.0200 U	10 U
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00889 U	0.00925 J	10 U
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0311 U	0.0280 U	10 U
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00889 U	0.00800 U	10 U
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00778 U	0.00700 U	10 U
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.0175 J	0.00800 U	0.00800 U	0.00889 U	0.0217 J	10 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0111 U	0.0100 U	10 U
Fluoranthene	µg/L	--	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.046 J	0.0111 U	0.0631 J	10 U
Fluorene	µg/L	--	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0178 U	0.123 J	10 U
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00667 U	0.00600 U	10 U
Naphthalene	µg/L	100	0.0460 U	R	0.129	0.0460 U	0.265 B	0.0511 U	0.630	9
Phenanthrene	µg/L	--	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00556 U	0.137	10 U
Pyrene	µg/L	--	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0318 J	0.0189 U	0.0397 J	10 U

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Goal	Sample Location:	W-117	W-117	W-117	W-117	W-117	W-117	W-117	W-117	
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
			Sample Date:	26-May-94	29-Feb-96	24-Sep-96	26-Nov-96	23-Jan-97	29-May-97	30-Sep-97	17-Dec-97	17-Mar-98
			Remediation									
Benzene	µg/L	5	5.2	11	12	8.6	8.9	7.5	11	9.7	9.5	
Toluene	µg/L	2,000	1.1	2	2.8	1.9	2.2	1.9	2.5	2.2	2	
Ethylbenzene	µg/L	700	1.0 U	3.8	1.7	1 U	1.3	1.2	1.8	1.7	1.6	
Xylenes	µg/L	10,000	1.0 U	na	4.1	na	na	2.2	3.7	3.3	2.4	
2-Methylnaphthalene	µg/L	--	10 U	2	3	2	1	1	3	2	1	
Dibenzofuran	µg/L	--	10 U	2	2	2	2	2	3	3	3	
Acenaphthene	µg/L	--	1	4	5	5	4	5	8	7	7	
Acenaphthylene	µg/L	--	0.8	10 U	10 U	1	10 U	10 U	1	1	1	
Anthracene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	1	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Chrysene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	1	10 U	10 U	10 U	10 U	10 U	10 U	
Fluoranthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Fluorene	µg/L	--	10 U	10 U	10 U	1	1	1	2	2	1	
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	1	10 U	10 U	10 U	10 U	10 U	10 U	
Naphthalene	µg/L	100	8	28	28	22	18	21	38	26	21	
Phenanthrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	1	1	10 U	
Pyrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

			Sample Location:	W-117	W-117	W-117	W-117	W-117	W-117	W-117	W-117
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
			Sample Date:	16-Jun-98	29-Sep-98	10-Dec-98	24-Mar-99	23-Jun-99	28-Sep-99	15-Dec-99	15-Mar-00
			Remediation Goal								
Analyte	Units	Goal									
Benzene	µg/L	5	13	14	12	10	8.5	8.8	12	3.6	10
Toluene	µg/L	2,000	2.9	4.2	2	1.2	1.6	1.2	3.4	0.56	1 U
Ethylbenzene	µg/L	700	1.9	3.1	2	1.4	2	1.6	15	0.72	1.7
Xylenes	µg/L	10,000	3.6	5.1	3	1.9	2.6	2.4	12	1.4	2.3
2-Methylnaphthalene	µg/L	--	2	3	10 U	10 U	2	10 U	10 U	10 U	10 U
Dibenzofuran	µg/L	--	3	4	10 U	2	5	4	4	2	2
Acenaphthene	µg/L	--	6	11	10 U	6	12	8	9	4	7
Acenaphthylene	µg/L	--	1	3	10 U	10 U	10 U	10 U	10 U	10 U	2
Anthracene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	µg/L	--	2	2	10 U	10 U	2	2	2	1	1
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	µg/L	100	29	48	37	20	31	26	51	6	12
Phenanthrene	µg/L	--	1	2	10 U	10 U	2	10 U	2	10 U	0.9
Pyrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Goal	Sample Location:	W-117	W-117	W-117	W-117	W-117	W-117	W-117	W-117
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
			Sample Date:	15-Sep-00	14-Dec-00	20-Mar-01	07-Jun-01	20-Sep-01	12-Dec-01	14-Mar-02	07-Jun-02
			Remediation								
Benzene	µg/L	5		9.8	12	11	1.6	17	16	1 U	11
Toluene	µg/L	2,000		1.1	1.3	1	1 U	5.8	4.2	2.7	3
Ethylbenzene	µg/L	700		1.7	1.8	1.7	1 U	3.9	4	5.6	3.1
Xylenes	µg/L	10,000		2.4	3.1	2.5	1 U	6.8	5.2	7.6	4.3
2-Methylnaphthalene	µg/L	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	µg/L	--		2 J	2 J	2.2 J	1.0 J	3.7 J	5 J	10 U	5.7 J
Acenaphthene	µg/L	--		6 J	6 J	1.9 J	2.4 J	13	16	10 U	19
Acenaphthylene	µg/L	--		2 J	2 J	2.2 J	10 U	10 U	1.9 J	10 U	10 U
Anthracene	µg/L	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	µg/L	0.1		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	µg/L	0.2		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	µg/L	0.2		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	µg/L	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	µg/L	0.2		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	µg/L	0.2		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	µg/L	0.2		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	µg/L	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	µg/L	--		10 U	10 U	10 U	10 U	1.6 J	2.3 J	10 U	2.5 J
Indeno(1,2,3cd)pyrene	µg/L	0.4		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	µg/L	100		6 J	10 J	0.98 J	10 U	57	33	1.2 J	27
Phenanthrene	µg/L	--		10 U	10 U	10 U	10 U	10 U	0.61 J	10 U	0.67 J
Pyrene	µg/L	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Goal	Sample Location:	W-117	W-117	W-117	W-117	W-117	W-117	W-117R	W-117R	W-117R
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	35.0	35.0	35.0	35.0	35.0	35.0	35.7	35.7	35.7
			Sample Date:	05-Dec-02	09-Jun-03	30-Mar-04	15-Sep-04	14-Mar-05	27-Apr-05	11-Oct-05	15-Mar-06	12-Sep-06
			Remediation									
Benzene	µg/L	5	2.6	9.9	1.7 H	8.7	0.79	1.1	2.7	35	24.8	
Toluene	µg/L	2,000	0.77 J	2 U	1.0 U	3.2	1.0 U	1.0 U	1.0 U	3.1	9	
Ethylbenzene	µg/L	700	0.74 J	2 U	1.0 U	2.8	1.0 U	1.0 U	1.8	3.2	5.72	
Xylenes	µg/L	10,000	1.2	7 U	1.0 U	4.1	1.0 U	1.0 U	1.0 U	3.4	10.2	
2-Methylnaphthalene	µg/L	--	10 U	na	na	na	na	na	na	na	na	
Dibenzofuran	µg/L	--	1.1J	na	na	na	na	na	na	na	na	
Acenaphthene	µg/L	--	2.8J	11	3.7	1.5 Ja	1.2	1.0 Ja	1.2 Ja	2.4 U	3.04	
Acenaphthylene	µg/L	--	1.7J	0.92	4.1	4	3.8	2.3	15	15	4.95	
Anthracene	µg/L	--	10 U	0.22	0.036 Ja	0.022 Ja	0.027	0.050 Ua	0.029 Ja	0.049 Ua	0.0407 J	
Benzo(a)anthracene	µg/L	0.1	10 U	0.17	0.034 Ja	0.13 U	0.12 U	0.13 U	0.018 Ja	0.13 U	0.00341 U	
Benzo(a)pyrene	µg/L	0.2	10 U	0.12	0.057 Ja	0.13 U	0.12 U	0.13 U	0.025 Ja	0.13 U	0.0148 U	
Benzo(b)fluoranthene	µg/L	0.2	10 U	0.1 U	0.040 Ja	0.050 U	0.048 U	0.050 U	0.025 Ja	0.049 Ua	0.0170 U	
Benzo(g,h,i)perylene	µg/L	--	10 U	0.1 U	0.2 U	0.20 U	0.19 U	0.2 U	0.19 U	0.19 U	0.0364 U	
Benzo(k)fluoranthene	µg/L	0.2	10 U	0.12	0.020 Ja	0.050 U	0.048 U	0.050 U	0.047 U	0.049 U	0.0102 U	
Chrysene	µg/L	0.2	10 U	0.12	0.13 U	0.13 U	0.12 U	0.13 U	0.046 Ja	0.13 U	0.00568 U	
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	0.1 U	0.30 U	0.30 U	0.29 U	0.30 U	0.28 U	0.29 U*	0.0114 U	
Fluoranthene	µg/L	--	10 U	0.26	0.090 Ja	0.13 U	0.12 U	0.13 U	0.068 Ja	0.13 U	0.0114 U	
Fluorene	µg/L	--	10 U	1.4	0.31	0.13 Ja	0.083	0.079 Ja	1.2	1.1	1.52	
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	0.1 U	0.13 U	0.13 U	0.12 U	0.13 U	0.12 U	0.13 U	0.00795 U	
Naphthalene	µg/L	100	6	3.9	7.1	7	1.2 U	0.51 Ja	1.2 U	1.3 U	2.47	
Phenanthrene	µg/L	--	10 U	0.48	0.035 Ja	0.10 U	0.096 U	0.052 Ja	0.12	0.11	0.13	
Pyrene	µg/L	--	10 U	0.21	0.25 U	0.25 U	0.24 U	0.25 U	0.23 U	0.24 U	0.0216 U	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	W-117R	W-117R	W-117R	W-117R	W-117R	W-117R	W-117R	W-117R
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7
			Sample Date:	18-Apr-07	20-Sep-07	06-May-08	01-Oct-08	29-Apr-09	16-Sep-09	31-Mar-10	06-May-10
			Remediation								
Benzene	µg/L	5		16.6	39.8	15.8	8.08	3.43	43 FM	27.1	na
Toluene	µg/L	2,000		2.55	9.32	1.26	1.0 U	1.00 U	5.1 FM	1.00 U	na
Ethylbenzene	µg/L	700		2.56	8.3	5.91	3.42	6.28	8.1 FM	4.91	na
Xylenes	µg/L	10,000		4.36	14.2	6.6	6.09	3.00 U	15.0 U FM	6.00 U	na
2-Methylnaphthalene	µg/L	--		na	na	na	na	na	na	na	na
Dibenzofuran	µg/L	--		na	na	na	na	na	na	na	na
Acenaphthene	µg/L	--		3.93	4.49	3.41	4.33	2.93	0.135 J	5.29	3.6
Acenaphthylene	µg/L	--		7.51	11.5	6.44	16.3	9.31	0.0870 U	13.6	16.1
Anthracene	µg/L	--		0.0495 J	0.075 J	0.027 J	0.0100 U	0.0419 J	0.0276 J	0.0100 U	0.0100 U
Benzo(a)anthracene	µg/L	0.1		0.00337 U	0.00300 U	0.00300 U	0.00500 U	0.00500 U	0.0506 J	0.00500 U	0.00500 U
Benzo(a)pyrene	µg/L	0.2		0.0360 U	0.0320 U	0.0320 U	0.00800 U	0.00800 U	0.0866 J	0.00800 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2		0.0146 U	0.0130 U	0.0130 U	0.0280 U	0.0280 U	0.0938 J	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--		0.0101 U	0.00900 U	0.00900 U	0.00800 U	0.00800 U	0.085 J	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2		0.0169 U	0.0150 U	0.0150 U	0.00700 U	0.00700 U	0.0586 J	0.00700 U	0.00700 U
Chrysene	µg/L	0.2		0.00562 U	0.00500 U	0.00500 U	0.00800 U	0.00800 U	0.0745 J	0.00800 U	0.00800 U
Dibenzo(a,h)anthracene	µg/L	0.2		0.0112 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--		0.0112 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0732 J	0.0100 U	0.0100 U
Fluorene	µg/L	--		2.23	2.82	1.7	3.06	1.76	0.0579 J	1.52	1.61
Indeno(1,2,3cd)pyrene	µg/L	0.4		0.00787 U	0.00700 U	0.00700 U	0.00600 U	0.00600 U	0.0771 J	0.00600 U	0.00600 U
Naphthalene	µg/L	100		4.18 B	6.12	2.4	6.68	0.528	0.151	R	15
Phenanthrene	µg/L	--		0.152	0.296	0.204	0.308	0.188	0.0784 J	0.00500 U	0.155
Pyrene	µg/L	--		0.0213 U	0.0190 U	0.0190 U	0.0170 U	0.0170 U	0.107 J	0.0170 U	0.0170 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Sample Location: Screened Unit: Depth BTOC (feet): Sample Date: Remediation			W-117R	W-117R	W-117R	W-117R	W-118	W-118	W-118	W-118
			Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			35.7	35.7	35.7	35.7	28.5	28.5	28.5	28.5
			28-Apr-11	20-Sep-11	25-Apr-12	25-Sep-12	25-Sep-96	26-Nov-96	22-Jan-97	29-May-97
Analyte	Units	Goal								
Benzene	µg/L	5	1.00 U	1.88	2.13	65.2	1200	960	250	1 U
Toluene	µg/L	2,000	1.00 U	1.00 U	1.00 U	1.00 U	40	21	10 U	1 U
Ethylbenzene	µg/L	700	2.72	1.00 U	2.03	1.00 U	40U	1100	360	1 U
Xylenes	µg/L	10,000	12.6	3.00 U	3.47	3.00 U	600	na	na	1 U
2-Methylnaphthalene	µg/L	--	na	na	0.335	0.425	200 U	400 U	10 U	20 U
Dibenzofuran	µg/L	--	na	na	na	na	200 U	400 U	3	4
Acenaphthene	µg/L	--	4.89 RL1	3.04	1.7	3.57	26	400 U	17	10 U
Acenaphthylene	µg/L	--	10.5 RL1	9.46	4.55	5.15	32	40	23	20 U
Anthracene	µg/L	--	0.108 RL1,J	0.0602 J	0.0312 J	0.0710 J	200 U	400 U	10 U	20 U
Benzo(a)anthracene	µg/L	0.1	0.0400 U,RL1	0.0200 U	0.0200 U	0.0200 U	200 U	400 U	10 U	20 U
Benzo(a)pyrene	µg/L	0.2	0.0160 U,RL1	0.00800 U	0.00800 U	0.00800 U	200 U	400 U	10 U	20 U
Benzo(b)fluoranthene	µg/L	0.2	0.0560 U,RL1	0.0280 U	0.0280 U	0.0280 U	200 U	400 U	10 U	20 U
Benzo(g,h,i)perylene	µg/L	--	0.0160 U,RL1	0.00800 U	0.00800 U	0.00800 U	200 U	400 U	10 U	20 U
Benzo(k)fluoranthene	µg/L	0.2	0.0140 U,RL1	0.00700 U	0.00700 U	0.00700 U	200 U	400 U	10 U	20 U
Chrysene	µg/L	0.2	0.0204 RL1,J	0.00800 U	0.00800 U	0.00800 U	200 U	400 U	10 U	20 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.0200 U,RL1	0.0100 U	0.0100 U	0.0100 U	200 U	400 U	10 U	20 U
Fluoranthene	µg/L	--	0.0318 RL1,J	0.0100 U	0.0100 U	0.0100 U	200 U	400 U	10 U	20 U
Fluorene	µg/L	--	0.0320 U,RL1	1.43	0.773	0.723	200 U	400 U	6	20 U
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.0120 U,RL1	0.00600 U	0.00600 U	0.00600 U	200 U	400 U	10 U	20 U
Naphthalene	µg/L	100	0.831 RL1	0.0460 U	0.0631 J	0.632	1400	1400	340	120
Phenanthrene	µg/L	--	0.0867 RL1,J	0.178	0.0917 J	0.0837 J	200 U	400 U	3	5
Pyrene	µg/L	--	0.0340 U,RL1	0.0170 U	0.0170 U	0.0171 J	200 U	400 U	10 U	20 U

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Goal	Sample Location:	W-118	W-118	W-118	W-118	W-118	W-118	W-118	W-118
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5
			Sample Date:	25-Sep-97	18-Dec-97	17-Mar-98	16-Jun-98	29-Sep-98	10-Dec-98	23-Mar-99	23-Jun-99
			Remediation								
Benzene	µg/L	5		120	44	27	22	18	10	13	3.2
Toluene	µg/L	2,000		9.8	2.5U	1 U	2.1	3	1	0.58	0.29
Ethylbenzene	µg/L	700		400	93	45	66	23	8	2.9	3.2
Xylenes	µg/L	10,000		156	3.4	1 U	7.9	5.9	2	1 U	0.73
2-Methylnaphthalene	µg/L	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	µg/L	--		3	1	1	1	10 U	10 U	10 U	10 U
Acenaphthene	µg/L	--		28	12	9	11	7	10 U	3	6
Acenaphthylene	µg/L	--		22	8	6	7	4	10 U	2	3
Anthracene	µg/L	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	µg/L	0.1		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	µg/L	0.2		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	µg/L	0.2		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	µg/L	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	µg/L	0.2		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	µg/L	0.2		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	µg/L	0.2		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	µg/L	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	µg/L	--		8	3	10 U	3	2	10 U	10 U	2
Indeno(1,2,3cd)pyrene	µg/L	0.4		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	µg/L	100		270	3	10 U	4	5	10 U	10 U	10 U
Phenanthrene	µg/L	--		5	3	2	2	1	10 U	10 U	10 U
Pyrene	µg/L	--		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

			Sample Location:	W-118	W-118	W-118	W-118	W-118	W-118	W-118	W-118
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5
			Sample Date:	15-Dec-99	15-Mar-00	06-Jun-00	14-Sep-00	14-Dec-00	21-Mar-01	07-Jun-01	20-Sep-01
			Remediation								
Analyte	Units	Goal									
Benzene	µg/L	5	71	6.1	20	35	16	10	79	43	100
Toluene	µg/L	2,000	14	1	1.5	3.1	1.2	0.71 J	2 U	1.5	1.8
Ethylbenzene	µg/L	700	50	1.9	42	87	10	1.8	54	2.7	0.92 J
Xylenes	µg/L	10,000	30	2.7	10	25	6	2.6	18	7.9	4.4
2-Methylnaphthalene	µg/L	--	10 U	10 U	11 U	10 U	10 U	11 U	10 U	10 U	10 U
Dibenzofuran	µg/L	--	10 U	10 U	11 U	10 U	10 U	11 U	0.62 J	10 U	10 U
Acenaphthene	µg/L	--	8	7	5	9 J	11	6.2 J	17	8.7 J	17
Acenaphthylene	µg/L	--	6	2	2	3 J	4 J	4.3 J	7.1 J	3.1 J	4.9 J
Anthracene	µg/L	--	10 U	10 U	11 U	10 U	10 U	11 U	10 U	10 U	10 U
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	11 U	10 U	10 U	11 U	10 U	10 U	10 U
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	11 U	10 U	10 U	11 U	10 U	10 U	10 U
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	11 U	10 U	10 U	11 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	11 U	10 U	10 U	11 U	10 U	10 U	10 U
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	11 U	10 U	10 U	11 U	10 U	10 U	10 U
Chrysene	µg/L	0.2	10 U	10 U	11 U	10 U	10 U	11 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	11 U	10 U	10 U	11 U	10 U	10 U	10 U
Fluoranthene	µg/L	--	10 U	10 U	11 U	10 U	10 U	11 U	10 U	10 U	10 U
Fluorene	µg/L	--	2	2	1	2 J	2 J	2.5 J	3.1 J	1.4 J	3.7 J
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	11 U	10 U	10 U	11 U	10 U	10 U	10 U
Naphthalene	µg/L	100	62	2	3	14 J	4 J	11 U	30	1.4 J	1.1 J
Phenanthrene	µg/L	--	10 U	10 U	11 U	10 U	10 U	1.5 J	1.8 J	10 U	1.6 J
Pyrene	µg/L	--	10 U	10 U	11 U	10 U	10 U	11 U	10 U	10 U	10 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	W-118	W-118	W-118	W-118	W-118	W-118	W-118	W-118R
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	28.5	28.5	28.5	28.5	28.5	28.5	28.5	29.0
			Sample Date:	14-Mar-02	04-Jun-02	18-Sep-02	04-Dec-02	09-Jun-03	30-Mar-04	14-Sep-04	02-May-05
			Remediation								
Benzene	µg/L	5		240	130	260	350	61	220 M	170	170
Toluene	µg/L	2,000		4.1 J	25 U	2.4	2	2 U	1.6	1.9	0.82 Ja
Ethylbenzene	µg/L	700		25 U	25 U	1 U	2.3	2 U	4.4	6.8	0.95 J
Xylenes	µg/L	10,000		25 U	25 U	4	3.3	7 U	12	15	1.5
2-Methylnaphthalene	µg/L	--		10 U	10 U	10 U	10 U	na	na	na	na
Dibenzofuran	µg/L	--		10 U	10 U	0.44 J	0.50 J	na	na	na	na
Acenaphthene	µg/L	--		13	5.5 J	12	17	8.2	12	2.7 Ua	9.8
Acenaphthylene	µg/L	--		3.5 J	1.6 J	2.8 J	4.1 J	1.1	6.5 U	15	68
Anthracene	µg/L	--		10 U	10 U	10 U	10 U	0.1 U	0.045 Ja	0.055 U	0.035 Ja
Benzo(a)anthracene	µg/L	0.1		10 U	10 U	10 U	10 U	0.1 U	0.13 U	0.14 U	0.12 U
Benzo(a)pyrene	µg/L	0.2		10 U	10 U	10 U	10 U	0.1 U	0.13 U	0.14 U	0.12 U
Benzo(b)fluoranthene	µg/L	0.2		10 U	10 U	10 U	10 U	0.1 U	0.050 U	0.055 U	0.047 Ua
Benzo(g,h,i)perylene	µg/L	--		10 U	10 U	10 U	10 U	0.1 U	0.20 U	0.22 U	0.19 U
Benzo(k)fluoranthene	µg/L	0.2		10 U	10 U	10 U	10 U	0.1 U	0.050 U	0.055 U	0.047 U
Chrysene	µg/L	0.2		10 U	10 U	10 U	10 U	0.1 U	0.13 U	0.14 U	0.12 U
Dibenzo(a,h)anthracene	µg/L	0.2		10 U	10 U	10 U	10 U	0.1 U	0.30 U	0.33 U	0.28 U
Fluoranthene	µg/L	--		10 U	10 U	10 U	10 U	0.1 U	0.068 Ja	0.14 U	0.069 Ja
Fluorene	µg/L	--		2.3 J	0.98 J	1.9 J	2.8 J	1.2	1.5	0.14 Ja	0.65
Indeno(1,2,3cd)pyrene	µg/L	0.4		10 U	10 U	10 U	10 U	0.1 U	0.13 U	0.14 U	0.12 U
Naphthalene	µg/L	100		10 U	6.1 J	10 U	1.3	0.56	25	110	1.2 J
Phenanthrene	µg/L	--		10 U	10 U	10 U	0.70 J	0.24	0.12	0.069 Ja	0.28
Pyrene	µg/L	--		10 U	10 U	10 U	10 U	0.1 U	0.25 U	0.27 U	0.051 Ja

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

			Sample Location:	W-118R	W-118R	W-118R	W-118R	W-118R	W-118R	W-118R	W-118R
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
			Sample Date:	10-Oct-05	14-Mar-06	11-Sep-06	17-Apr-07	19-Sep-07	05-May-08	30-Sep-08	28-Apr-09
			Remediation Goal								
Analyte	Units	Goal									
Benzene	µg/L	5	190	120	71.3	72.7 M1	21.7	97.5	165	137	230
Toluene	µg/L	2,000	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	5.98
Ethylbenzene	µg/L	700	1.2	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	4.96	61.4
Xylenes	µg/L	10,000	3.2	1.0 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	22
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	na	na
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	na
Acenaphthene	µg/L	--	9.7	4.5	2.9	3.43	4.18	9.45	10.6	3.78	7.83
Acenaphthylene	µg/L	--	56	19	3.34	3.56	5.46	10.4	15.6	7.75	17.8
Anthracene	µg/L	--	0.055 U	0.049 U	0.0100 U	0.0100 U	0.0100 U	0.0262 J	0.0417 J	0.0155 J	0.0107 J
Benzo(a)anthracene	µg/L	0.1	0.14 U	0.13 U	0.00300 U	0.00300 U	0.00300 U	0.00300 U	0.00500 U	0.00500 U	0.00500 U
Benzo(a)pyrene	µg/L	0.2	0.14 U	0.13 U	0.0320 U	0.0320 U	0.0320 U	0.0320 U	0.00800 U	0.00800 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2	0.055 U	0.049 U	0.0130 U	0.0130 U	0.0130 U	0.0130 U	0.0280 U	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--	0.22 U	0.20 U	0.00900 U	0.00900 U	0.00900 U	0.00900 U	0.00800 U	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2	0.055 U	0.049 U	0.0150 U	0.0150 U	0.0150 U	0.0150 U	0.00700 U	0.00700 U	0.00700 U
Chrysene	µg/L	0.2	0.14 U	0.13 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00800 U	0.00800 U	0.00800 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.33 U	0.29 U*	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--	0.14 U	0.13 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0495 J	0.0100 U	0.0100 U
Fluorene	µg/L	--	0.58	0.19 Ja	0.998	0.755	1.35	3.03	3.44	1.41	3.83
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.14 U	0.13 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00600 U	0.00600 U	0.00600 U
Naphthalene	µg/L	100	1.4 U	1.3 U	0.193	0.398	0.21	1.07	0.805	0.0460 U	49.6
Phenanthrene	µg/L	--	0.19	0.064 Ja	0.0988 J	0.0824 J	0.13	0.153	0.199	0.0856 J	0.222
Pyrene	µg/L	--	0.27 U	0.25 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0170 U	0.0170 U	0.0170 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

			Sample Location:	W-118R	W-118R	W-118R	W-118R	W-118R	W-118R	W-118R	W-128
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	29.0	29.0	29.0	29.0	29.0	29.0	29.0	24.8
			Sample Date:	30-Mar-10	05-May-10	15-Sep-10	27-Apr-11	19-Sep-11	25-Apr-12	24-Sep-12	10-Jul-07
			Remediation								
Analyte	Units	Goal									
Benzene	µg/L	5	1.00 U	na	220	26.1	6.19	48	39.9	1.00 U	
Toluene	µg/L	2,000	1.00 U	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Ethylbenzene	µg/L	700	1.00 U	na	1.27	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Xylenes	µg/L	10,000	6.00 U	na	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	0.100 U	0.210	na	
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	
Acenaphthene	µg/L	--	0.0220 U	14.1	15.8	8.61	0.0220 U	1.63	1.96	4.16	
Acenaphthylene	µg/L	--	0.0870 U	27.2	24.7	5.42	4.57	1.28	1.87	0.0850 U	
Anthracene	µg/L	--	0.0100 U	0.0100 U	0.0568 J	0.0258 J	0.0100 U	0.0100 U	0.0468 J	0.405	
Benzo(a)anthracene	µg/L	0.1	0.00500 U	0.00500 U	0.00500 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.189	
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.197	
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.292	
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.114	
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.139 J	
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.0161 J	0.218	
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	
Fluoranthene	µg/L	--	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0607 J	1.53	
Fluorene	µg/L	--	0.364	1.01	3.51	0.59	1.06	0.0160 U	0.492	0.685	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.165	
Naphthalene	µg/L	100	R	0.0460 U	0.0460 U	0.0460 U	0.332 B	0.0460 U	0.591	0.354	
Phenanthrene	µg/L	--	0.00500 U	0.435	0.868	0.0566 J	0.00500 U	0.00500 U	0.141	0.329	
Pyrene	µg/L	--	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0556 J	2.35	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Sample Location: W-128 Screened Unit: Silty Sand Depth BTOC (feet): 24.8 Sample Date: 20-Sep-07 Remediation Goal			W-128 Silty Sand 24.8 05-May-08	W-128 Silty Sand 24.8 01-Oct-08	W-128 Silty Sand 24.8 28-Apr-09	W-128 Silty Sand 24.8 16-Sep-09	W-128 Silty Sand 24.8 30-Mar-10	W-128 Silty Sand 24.8 15-Sep-10	W-128 Silty Sand 24.8 27-Apr-11
Analyte	Units	Goal							
Benzene	µg/L	5	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	2,000	1.00 U	1.00 U	1.00 U, L5	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	700	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Xylenes	µg/L	10,000	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	6.00 U	3.00 U
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na
Acenaphthene	µg/L	--	5.25	4.19	5.27	3.91	4.01	3.24	2.08
Acenaphthylene	µg/L	--	0.0850 U	0.0850 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U
Anthracene	µg/L	--	0.128 J	0.0764 J	0.0754 J	0.0936 J	0.0579 J	0.0291 J	0.0559 J
Benzo(a)anthracene	µg/L	0.1	0.124 J	0.0553 J	0.0536 J	0.112 J	0.0698 J	0.0374 J	0.0547 J
Benzo(a)pyrene	µg/L	0.2	0.147 J	0.120 J	0.088 J	0.169 J	0.0807 J	0.00800 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2	0.239	0.0130 U	0.0280 U	0.238	0.0929 J	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--	0.2	0.0877 J	0.00800 U	0.117	0.112	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2	0.116 J	0.0150 U	0.00700 U	0.0510 J	0.0375 J	0.00700 U	0.00700 U
Chrysene	µg/L	0.2	0.218	0.162	0.164	0.205	0.0657 J	0.00800 U	0.0982 J
Dibenzo(a,h)anthracene	µg/L	0.2	0.0235 J	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--	0.63	0.334	0.306	0.375	0.17 J	0.0537 J	0.0100 U
Fluorene	µg/L	--	0.772	0.551	0.67	0.0160 U	0.452	0.0160 U	0.0160 U
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.144	0.0696 J	0.00600 U	0.119	0.0612 J	0.00600 U	0.00600 U
Naphthalene	µg/L	100	0.627	0.0540 U	0.0460 U	0.0460 U	0.225	R	0.0460 U
Phenanthrene	µg/L	--	0.653	0.113	0.0734 J	0.0879 J	0.0511 J	0.00500 U	0.00500 U
Pyrene	µg/L	--	1.31	0.485	0.481	0.221	0.11 J	0.0170 U	0.0170 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	W-128	W-128	W-128
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	24.8	24.8	24.8
			Sample Date:	19-Sep-11	25-Apr-12	25-Sep-12
			Remediation			
Benzene	µg/L	5		1.00 U	1.00 U	1.00 U
Toluene	µg/L	2,000		1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	700		1.00 U	1.00 U	1.00 U
Xylenes	µg/L	10,000		3.00 U	3.00 U	3.00 U
2-Methylnaphthalene	µg/L	--		na	0.100 U	0.220
Dibenzofuran	µg/L	--		na	na	na
Acenaphthene	µg/L	--		2.44	1.66	2.85
Acenaphthylene	µg/L	--		0.0870 U	0.0870 U	0.0870 U
Anthracene	µg/L	--		0.0100 U	0.0100 U	0.0624 J
Benzo(a)anthracene	µg/L	0.1		0.0306 J	0.0200 U	0.0447 J
Benzo(a)pyrene	µg/L	0.2		0.00800 U	0.00800 U	0.0405 J
Benzo(b)fluoranthene	µg/L	0.2		0.0280 U	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--		0.00800 U	0.00800 U	0.0340 J
Benzo(k)fluoranthene	µg/L	0.2		0.00700 U	0.00700 U	0.00700 U
Chrysene	µg/L	0.2		0.00800 U	0.00800 U	0.0767 J
Dibenzo(a,h)anthracene	µg/L	0.2		0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--		0.0100 U	0.0100 U	0.0894 J
Fluorene	µg/L	--		0.0160 U	0.0160 U	0.0160 U
Indeno(1,2,3cd)pyrene	µg/L	0.4		0.00600 U	0.00600 U	0.00600 U
Naphthalene	µg/L	100		1.09 B	0.0460 U	0.795
Phenanthrene	µg/L	--		0.00500 U	0.00500 U	0.160
Pyrene	µg/L	--		0.128 J	0.0170 U	0.115 J

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

			Sample Location:	W-13	W-13	W-13	W-13	W-13	W-13	W-13	W-13
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0
			Sample Date:	10-Oct-05	14-Mar-06	11-Sep-06	17-Apr-07	19-Sep-07	05-May-08	30-Sep-08	28-Apr-09
			Remediation Goal								
Analyte	Units	Goal									
Benzene	µg/L	5	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	2,000	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U,L5	1.00 U
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Xylenes	µg/L	10,000	1.0 U	1.0 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	na	na
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	na
Acenaphthene	µg/L	--	2.4 U	2.5 U*	0.0490 U	0.0544 U	0.0490 U	0.0490 U	0.0220 U	0.0220 U	0.0220 U
Acenaphthylene	µg/L	--	1.2 U	1.3 U*	0.0850 U	0.0944 U	0.0850 U	0.0850 U	0.0870 U	0.0870 U	0.0870 U
Anthracene	µg/L	--	0.048 U	0.050 U*	0.0100 U	0.0111 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Benzo(a)anthracene	µg/L	0.1	0.020 Ja	0.13 U	0.015 J	0.00333 U	0.00300 U	0.00300 U	0.00500 U	0.00500 U	0.00500 U
Benzo(a)pyrene	µg/L	0.2	0.021 Ja	0.13 U	0.0320 U	0.0356 U	0.0320 U	0.0320 U	0.00800 U	0.00800 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2	0.048 U	0.050 U	0.0130 U	0.0144 U	0.0130 U	0.0130 U	0.0280 U	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--	0.19 U	0.20 U	0.00900 U	0.0100 U	0.00900 U	0.00900 U	0.00800 U	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2	0.048 U	0.050 U	0.0150 U	0.0167 U	0.0150 U	0.0150 U	0.00700 U	0.00700 U	0.00700 U
Chrysene	µg/L	0.2	0.12 U	0.13 U	0.0431 J	0.00556 U	0.00500 U	0.00500 U	0.00800 U	0.00800 U	0.00800 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.29 U	0.30 U	0.0100 U	0.0111 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--	0.048 Ja	0.13 U	0.0100 U	0.0111 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluorene	µg/L	--	0.24 U	0.25 U*	0.0100 U	0.0111 U	0.0100 U	0.0100 U	0.0160 U	0.0160 U	0.0160 U
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.12 U	0.13 U	0.00700 U	0.00778 U	0.00700 U	0.00700 U	0.00600 U	0.00600 U	0.00600 U
Naphthalene	µg/L	100	1.2 U	1.3 U*	0.0540 U	0.117 B	0.0540 U	0.0540 U	0.0460 U	0.0460 U	0.0589 J
Phenanthrene	µg/L	--	0.096 U	0.099 Ua	0.0292 J	0.0115 J	0.00700 U	0.00700 U	0.0137 J	0.00500 U	0.00500 U
Pyrene	µg/L	--	0.048 Ja	0.25 U	0.16 J	0.0211 U	0.0190 U	0.0190 U	0.0170 U	0.0170 U	0.0170 U

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

			Sample Location:	W-13	W-13	W-13	W-13	W-13	W-13	W-13	W-15	W-15
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	48.0	48.0	48.0	48.0	48.0	48.0	48.0	53.0	53.0
			Sample Date:	30-Mar-10	05-May-10	15-Sep-10	27-Apr-11	19-Sep-11	24-Apr-12	25-Sep-12	24-Sep-96	24-Sep-96
Analyte	Units	Goal	Remediation									
Benzene	µg/L	5	1.00 U	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1 U	1 U
Toluene	µg/L	2,000	1.00 U	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1 U	1 U
Ethylbenzene	µg/L	700	1.00 U	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1 U	1 U
Xylenes	µg/L	10,000	6.00 U	na	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	1 U	1 U
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	0.100 U	0.167 J	10 U	10 U
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	10 U	10 U
Acenaphthene	µg/L	--	0.234	0.0220 U	0.0220 U	0.0220 U	0.0220 U	0.0220 U	0.0220 U	0.0286 J	10 U	10 U
Acenaphthylene	µg/L	--	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	10 U	10 U
Anthracene	µg/L	--	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0399 J	10 U	10 U
Benzo(a)anthracene	µg/L	0.1	0.00500 U	0.00500 U	0.00500 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	10 U	10 U
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	10 U	10 U
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	10 U	10 U
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	10 U	10 U
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	10 U	10 U
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.0216 J	10 U	10 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	10 U	10 U
Fluoranthene	µg/L	--	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0672 J	10 U	10 U
Fluorene	µg/L	--	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0160 U	10 U	10 U
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	10 U	10 U
Naphthalene	µg/L	100	R	0.0460 U	0.0645 J	0.0460 U	0.0952 J,B	0.0460 U	0.404		10 U	10 U
Phenanthrene	µg/L	--	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.127		10 U	10 U
Pyrene	µg/L	--	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0696 J		10 U	10 U

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

			Sample Location:	W-15	W-15	W-15	W-15	W-15	W-15	W-15	W-15
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0
			Sample Date:	26-Nov-96	22-Jan-97	29-May-97	25-Sep-97	19-Dec-97	17-Mar-98	16-Jun-98	29-Sep-98
			Remediation								09-Dec-98
Analyte	Units	Goal									
Benzene	µg/L	5	1 U	1 U	2.5	1 U	1 U	1 U	1 U	na	1 U
Toluene	µg/L	2,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	na	1 U
Ethylbenzene	µg/L	700	1.3	1 U	1.3	1 U	1 U	1 U	1 U	na	1 U
Xylenes	µg/L	10,000	na	na	3.9	1.1	1.8	1 U	1	na	3
2-Methylnaphthalene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	µg/L	100	10 U	10 U	11	2	5	10 U	10 U	5	10 U
Phenanthrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location: W-15 W-15 W-15 W-15 W-15 W-15 W-15 W-15 W-15 Screened Unit: Alluvial Alluvial Alluvial Alluvial Alluvial Alluvial Alluvial Alluvial Alluvial Depth BTOC (feet): 53.0 53.0 53.0 53.0 53.0 53.0 53.0 53.0 53.0 Sample Date: 23-Mar-99 23-Jun-99 28-Sep-99 15-Dec-99 15-Mar-00 06-Jun-00 14-Sep-00 14-Dec-00 20-Mar-01 Remediation								
Benzene	µg/L	5	1 U	1 U	1 U	4.1	3	5.1	1 U	1 U	0.2 J
Toluene	µg/L	2,000	1 U	1 U	1 U	0.56	1.9	1.4	1 U	0.17 J	0.24 J
Ethylbenzene	µg/L	700	1 U	1 U	1 U	2.4	2.8	3.5	1 U	1 U	1 U
Xylenes	µg/L	10,000	1.1	1 U	1 U	1.5	4	2.8	1 U	0.45 J	0.69 J
2-Methylnaphthalene	µg/L	--	10 U	10 U	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U
Dibenzofuran	µg/L	--	10 U	10 U	10 U	10 U	na	10 U	10 U	10 U	10 U
Acenaphthene	µg/L	--	10 U	10 U	10 U	10 U	0.59	10 U	10 U	10 U	10 U
Acenaphthylene	µg/L	--	10 U	10 U	10 U	10 U	1.2	10 U	10 U	10 U	10 U
Anthracene	µg/L	--	10 U	10 U	10 U	10 U	0.15	10 U	10 U	10 U	10 U
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	10 U	10 U	0.029	10 U	10 U	10 U	10 U
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	10 U	10 U	0.05	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	0.038	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	10 U	10 U	0.043	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	0.10 U	10 U	10 U	10 U	10 U
Chrysene	µg/L	0.2	10 U	10 U	10 U	10 U	0.034	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	10 U	10 U	0.20 U	10 U	10 U	10 U	10 U
Fluoranthene	µg/L	--	10 U	10 U	10 U	10 U	0.12	10 U	10 U	10 U	10 U
Fluorene	µg/L	--	10 U	10 U	10 U	10 U	0.079	10 U	10 U	10 U	10 U
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	10 U	10 U	0.091	10 U	10 U	10 U	10 U
Naphthalene	µg/L	100	10 U	10 U	10 U	5	2.5	10 U	10 U	10 U	10 U
Phenanthrene	µg/L	--	10 U	10 U	10 U	10 U	0.27	10 U	10 U	10 U	10 U
Pyrene	µg/L	--	10 U	10 U	10 U	10 U	0.13	10 U	10 U	10 U	10 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	W-15	W-15	W-15	W-15	W-15	W-15	W-15	W-15	
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0
			Sample Date:	06-Jun-01	19-Sep-01	11-Dec-01	13-Mar-02	05-Jun-02	18-Sep-02	04-Dec-02	10-Jun-03	30-Mar-04
			Remediation									
Benzene	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U	0.59	2 U	1.0 U	
Toluene	µg/L	2,000	1 U	1 U	0.23 J	1 U	1 U	1 U	1 U	2 U	1.0 U	
Ethylbenzene	µg/L	700	1 U	1 U	0.96 J	1.2	1 U	1 U	1 U	2 U	1.0 U	
Xylenes	µg/L	10,000	1 U	1 U	0.41 J	1 U	1 U	1 U	1 U	7 U	1.0 U	
2-Methylnaphthalene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	na	na	
Dibenzofuran	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	na	na	
Acenaphthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	2.4 U	
Acenaphthylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	1.2 U	
Anthracene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.048 U	
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.12 U	
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.12 U	
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.048 U	
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.19 U	
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.048 U	
Chrysene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.12 U	
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.29 U	
Fluoranthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.12 U	
Fluorene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.24 U	
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.12 U	
Naphthalene	µg/L	100	10 U	10 U	1 J	4.6 J	10 U	2.2 J	10	0.1 U	1.2 U	
Phenanthrene	µg/L	--	10 U	10 U	0.3 J	0.3 J	10 U	10 U	10 U	0.1 U	0.096 U	
Pyrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.1 U	0.24 U	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	W-15	W-15	W-15	W-15	W-15	W-15	W-15	W-15	
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0
			Sample Date:	15-Sep-04	15-Mar-05	11-Oct-05	15-Mar-06	12-Sep-06	18-Apr-07	20-Sep-07	06-May-08	01-Oct-08
			Remediation									
Benzene	µg/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Toluene	µg/L	2,000	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Xylenes	µg/L	10,000	1.0 U	1.0 U	1.0 U	1.0 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	na	na	
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	na	
Acenaphthene	µg/L	--	2.4 U	2.4 U	2.4 U	2.5 U	0.0557 U	0.0544 U	0.0490 U	0.0490 U	0.0220 U	
Acenaphthylene	µg/L	--	1.2 U	1.3 U	1.2 U	1.3 U	0.0966 U	0.0944 U	0.0850 U	0.0850 U	0.0870 U	
Anthracene	µg/L	--	0.048 U	0.049 U	0.084	0.051 U	0.0114 U	0.0111 U	0.0100 U	0.0100 U	0.0100 U	
Benzo(a)anthracene	µg/L	0.1	0.12 U	0.13 U	0.059 Ja	0.13 U	0.00341 U	0.00333 U	0.00300 U	0.00300 U	0.00500 U	
Benzo(a)pyrene	µg/L	0.2	0.12 U	0.13 U	0.12 U	0.13 U	0.0364 U	0.0356 U	0.0320 U	0.0320 U	0.00800 U	
Benzo(b)fluoranthene	µg/L	0.2	0.048 U	0.049 U	0.035 Ja	0.051 U	0.0148 U	0.0144 U	0.0130 U	0.0130 U	0.0280 U	
Benzo(g,h,i)perylene	µg/L	--	0.19 U	0.19 U	0.19 U	0.20 U	0.0102 U	0.0100 U	0.00900 U	0.00900 U	0.00800 U	
Benzo(k)fluoranthene	µg/L	0.2	0.048 U	0.049 U	0.048 U	0.051 U	0.0170 U	0.0167 U	0.0150 U	0.0150 U	0.00700 U	
Chrysene	µg/L	0.2	0.12 U	0.13 U	0.032 Ja	0.13 U	0.00568 U	0.00556 U	0.00500 U	0.00500 U	0.00800 U	
Dibenzo(a,h)anthracene	µg/L	0.2	0.29 U	0.29 U	0.29 U	0.30 U*	0.0114 U	0.0111 U	0.0100 U	0.0100 U	0.0100 U	
Fluoranthene	µg/L	--	0.12 U	0.13 U	0.12 J	0.13 U	0.0114 U	0.0111 U	0.0100 U	0.0100 U	0.0100 U	
Fluorene	µg/L	--	0.24 U	0.24 U	0.24 U	0.25 U	0.0114 U	0.0111 U	0.0100 U	0.0100 U	0.0160 U	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.12 U	0.13 U	0.12 U	0.13 U	0.00795 U	0.00778 U	0.00700 U	0.00700 U	0.00600 U	
Naphthalene	µg/L	100	1.2 U	1.3 U	1.2 U	1.3 U	0.0614 U	0.0600 U	0.0540 U	0.0540 U	0.0460 U	
Phenanthrene	µg/L	--	0.095 U	0.097 Ua	0.076 Ja	0.10 U	0.00795 U	0.00778 U	0.00700 U	0.00700 U	0.00500 U	
Pyrene	µg/L	--	0.24 U	0.24 U	0.11 Ja	0.25 U	0.0216 U	0.0211 U	0.0190 U	0.0190 U	0.0170 U	

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Sample Location: W-15 W-15 W-15 W-15 W-15 W-15 W-15 W-15 W-15 W-20										
Screened Unit: Alluvial Alluvial Alluvial Alluvial Alluvial Alluvial Alluvial Alluvial Alluvial Alluvial										
Depth BTOC (feet): 53.0 53.0 53.0 53.0 53.0 53.0 53.0 53.0 53.0 51.0										
Sample Date: 28-Apr-09 16-Sep-09 31-Mar-10 15-Sep-10 27-Apr-11 20-Sep-11 25-Apr-12 25-Sep-12 29-Apr-09										
Remediation Goal										
Analyte	Units	Goal								
Benzene	µg/L	5	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	2,000	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	700	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Xylenes	µg/L	10,000	3.00 U	3.00 U	6.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	0.100 U	0.157 J	na
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na
Acenaphthene	µg/L	--	0.0220 U	0.0220 U	0.0220 U	0.0220 U	0.0220 U	0.0220 U	0.0220 U	0.253
Acenaphthylene	µg/L	--	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0978 U
Anthracene	µg/L	--	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.036 J	0.0220 J
Benzo(a)anthracene	µg/L	0.1	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.0200 U	0.0200 U	0.0200 U	0.00562 U
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.0315 U
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.00787 U
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00899 U
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00899 U
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.0183 J	0.00899 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0112 U
Fluoranthene	µg/L	--	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0476 J	0.0374 J
Fluorene	µg/L	--	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0790 J	0.223
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00674 U
Naphthalene	µg/L	100	0.0460 U	0.0460 U	R	0.0460 U	0.0460 U	0.0460 U	0.416	0.0517 U
Phenanthrene	µg/L	--	0.00500 U	0.00500 U	0.00500 U	0.0379 J	0.00500 U	0.00500 U	0.106	0.00562 U
Pyrene	µg/L	--	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0350 J	0.0191 U

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Goal	Sample Location:	W-20	W-20	W-20	W-20	W-20	W-21	W-21	W-21
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	51.0	51.0	51.0	51.0	51.0	50.0	50.0	50.0
			Sample Date:	16-Sep-09	31-Mar-10	05-May-10	14-Sep-10	27-Apr-11	26-Nov-96	22-Jan-97	29-May-97
			Remediation								
Benzene	µg/L	5	8.71	1.00 U	na	1.00 U	1.00 U	67	1 U	71	
Toluene	µg/L	2,000	1.09	1.00 U	na	1.00 U	1.00 U	20 U	1 U	10 U	
Ethylbenzene	µg/L	700	1.7	1.00 U	na	1.00 U	1.00 U	81	1.2	260	
Xylenes	µg/L	10,000	3.54	6.00 U	na	3.00 U	3.00 U	na	na	89	
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	10 U	10 U	10 U	
Dibenzofuran	µg/L	--	na	na	na	na	na	10 U	10 U	10 U	
Acenaphthene	µg/L	--	3.01	0.407	2.43	1.91	2.72	10 U	10 U	10 U	
Acenaphthylene	µg/L	--	3.09	0.0870 U	2.18	1.48	0.0870 U	10 U	10 U	10 U	
Anthracene	µg/L	--	0.0691 J	0.0567 J	0.0447 J	0.0584 J	0.0904 J	10 U	10 U	10 U	
Benzo(a)anthracene	µg/L	0.1	0.0249 J	0.0216 J	0.00500 U	0.0123 J	0.043 J	10 U	10 U	10 U	
Benzo(a)pyrene	µg/L	0.2	0.00889 U	0.00800 U	0.00800 U	0.00800 U	0.0459 J	10 U	10 U	10 U	
Benzo(b)fluoranthene	µg/L	0.2	0.0311 U	0.0280 U	0.0280 U	0.0280 U	0.0588 J	10 U	10 U	10 U	
Benzo(g,h,i)perylene	µg/L	--	0.00899 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	10 U	10 U	10 U	
Benzo(k)fluoranthene	µg/L	0.2	0.00778 U	0.00700 U	0.00700 U	0.00700 U	0.0431 J	10 U	10 U	10 U	
Chrysene	µg/L	0.2	0.0174 J	0.00800 U	0.00800 U	0.0376 J	0.0666 J	10 U	10 U	10 U	
Dibenzo(a,h)anthracene	µg/L	0.2	0.0111 U	0.0100 U	0.0100 U	0.0100 U	0.0533 J	10 U	10 U	10 U	
Fluoranthene	µg/L	--	0.0805 J	0.0187 J	0.0100 U	0.0100 U	0.0693 J	10 U	10 U	10 U	
Fluorene	µg/L	--	2.66 M1	0.503	1.41	1.11	0.53	10 U	10 U	10 U	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00667 U	0.00600 U	0.00600 U	0.00600 U	0.0788 J	10 U	10 U	10 U	
Naphthalene	µg/L	100	0.916	R	0.183 J	0.13	0.318 B	10 U	10 U	10 U	
Phenanthrene	µg/L	--	0.127	0.00500 U	0.00500 U	0.00500 U	0.0889 J	10 U	10 U	10 U	
Pyrene	µg/L	--	0.075 J	0.0170 U	0.0170 U	0.0255 J	0.0170 U	10 U	10 U	10 U	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	W-21	W-21	W-21	W-21	W-21	W-21	W-21	W-21	
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
			Sample Date:	25-Sep-97	18-Dec-97	18-Dec-97	17-Mar-98	16-Jun-98	29-Sep-98	10-Dec-98	23-Mar-99	23-Jun-99
			Remediation									
Benzene	µg/L	5	2.3	1 U	na	1 U	1 U	2	3	2.3	3.9	
Toluene	µg/L	2,000	1 U	1 U	na	1 U	1 U	1 U	1 U	1 U	1 U	
Ethylbenzene	µg/L	700	6.2	1 U	na	1 U	1 U	1 U	0.5	1 U	6.1	
Xylenes	µg/L	10,000	3.2	1 U	na	1 U	1 U	1 U	1 U	1 U	1.5	
2-Methylnaphthalene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Dibenzofuran	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Acenaphthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	2	10 U	10 U	10 U	
Acenaphthylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Anthracene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Chrysene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Fluoranthene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Fluorene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Naphthalene	µg/L	100	2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Phenanthrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Pyrene	µg/L	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Goal	Sample Location:	W-21	W-21	W-21	W-21	W-21	W-21	W-21	W-21	
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
			Sample Date:	28-Sep-99	15-Dec-99	15-Mar-00	06-Jun-00	14-Sep-00	14-Dec-00	21-Mar-01	07-Jun-01	20-Sep-01
			Remediation									
Benzene	µg/L	5	0.48	0.91	0.56	4.7	1 U	1 U	0.18 J	1 U	1 U	
Toluene	µg/L	2,000	1 U	0.36	0.48	1.5	1 U	0.3 J	0.29 J	1 U	1 U	
Ethylbenzene	µg/L	700	1 U	1.4	0.42	2.9	1 U	1 U	1 U	1 U	1 U	
Xylenes	µg/L	10,000	1 U	0.89	0.64	2.6	1 U	0.5 J	0.21 J	1 U	1 U	
2-Methylnaphthalene	µg/L	--	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	10 U	10 U	
Dibenzofuran	µg/L	--	10 U	10 U	na	10 U	10 U	10 U	10 U	10 U	10 U	
Acenaphthene	µg/L	--	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	10 U	10 U	
Acenaphthylene	µg/L	--	10 U	10 U	2.0 U	10 U	10 U	10 U	10 U	10 U	10 U	
Anthracene	µg/L	--	10 U	10 U	0.10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	0.10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	0.10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	0.10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	0.20 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	0.10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Chrysene	µg/L	0.2	10 U	10 U	0.10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	0.20 U	10 U	10 U	10 U	10 U	10 U	10 U	
Fluoranthene	µg/L	--	10 U	10 U	0.029	10 U	10 U	10 U	10 U	10 U	10 U	
Fluorene	µg/L	--	10 U	10 U	0.048	10 U	10 U	10 U	10 U	10 U	10 U	
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	0.20 U	10 U	10 U	10 U	10 U	10 U	10 U	
Naphthalene	µg/L	100	10 U	4	2.0 U	2	10 U	10 U	10 U	10 U	10 U	
Phenanthrene	µg/L	--	10 U	10 U	0.062	10 U	10 U	10 U	0.37 J	10 U	10 U	
Pyrene	µg/L	--	10 U	10 U	0.023	10 U	10 U	10 U	10 U	10 U	10 U	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	W-21	W-21	W-21	W-21	W-21	W-21	W-21	W-21	
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
			Sample Date:	12-Dec-01	14-Mar-02	07-Jun-02	18-Sep-02	05-Dec-02	09-Jun-03	30-Mar-04	14-Sep-04	14-Mar-05
			Remediation									
Benzene	µg/L	5	110	42	35	3.7	3	2 U	1.4	44	66	
Toluene	µg/L	2,000	16	6.6	5.5	0.39 J	0.45 J	2 U	1.0 U	1.0 U	1.0 U	
Ethylbenzene	µg/L	700	57	37	16	2.5	3.4	2 U	1.0 U	0.67 Ja	1.0 U	
Xylenes	µg/L	10,000	77	33	25	2.4	1.7	7 U	1.0 U	1.0 U	1.0 U	
2-Methylnaphthalene	µg/L	--	10 U	2.7 J	10 U	10 U	10 U	na	na	na	na	
Dibenzofuran	µg/L	--	10 U	4.3 J	1.6 J	0.53 J	4.1 J	na	na	na	na	
Acenaphthene	µg/L	--	0.6 J	37	12	4.1 J	14	1.4	0.72 Ja	1.3Ja	0.92 Ja	
Acenaphthylene	µg/L	--	0.85 J	26	8.6 J	1.8 J	5.1 J	0.28	1.2 Ja	11	3.1	
Anthracene	µg/L	--	10 U	10 U	10 U	10 U	10 U	0.12	0.055	0.034 Ja	0.026 Ja	
Benzo(a)anthracene	µg/L	0.1	10 U	10 U	10 U	10 U	10 U	0.1	0.3	0.10 Ja	0.13	
Benzo(a)pyrene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	0.14	0.43	0.12 J	0.16	
Benzo(b)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	0.14	0.52	0.17	0.23	
Benzo(g,h,i)perylene	µg/L	--	10 U	10 U	10 U	10 U	10 U	0.11	0.47	0.11 Ja	0.22	
Benzo(k)fluoranthene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	0.15	0.25	0.079	0.11	
Chrysene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	0.15	0.4	0.14	0.17 M	
Dibenzo(a,h)anthracene	µg/L	0.2	10 U	10 U	10 U	10 U	10 U	0.1 U	0.30 U	0.29 U	0.29 U	
Fluoranthene	µg/L	--	10 U	10 U	1.2 J	10 U	10 U	0.36	0.78	0.29	0.36	
Fluorene	µg/L	--	10 U	4.4 J	1.6 J	10 U	3.0 J	0.29	0.15 Ja	0.13 Ja	0.068 Ja	
Indeno(1,2,3cd)pyrene	µg/L	0.4	10 U	10 U	10 U	10 U	10 U	0.1	0.46	0.14	0.21	
Naphthalene	µg/L	100	270	1300	260	10 U	7	0.15	1.3 Ua	0.61 Ja	1.3 U	
Phenanthrene	µg/L	--	0.25 J	10 U	0.81 J	10 U	10 U	0.21	0.32	0.13	0.13	
Pyrene	µg/L	--	10 U	10 U	1.4 J	10 U	10 U	0.27	0.6	0.20 Ja	0.28	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	W-21R	W-21R	W-21R	W-21R	W-21R	W-21R	W-21R	
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5
			Sample Date:	02-May-05	10-Oct-05	14-Mar-06	11-Sep-06	17-Apr-07	19-Sep-07	05-May-08	30-Sep-08
			Remediation								
Benzene	µg/L	5	65	23	3.2	5.57	104	2.41	34.2	2.17	
Toluene	µg/L	2,000	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Xylenes	µg/L	10,000	1.0 U	1.0 U	1.0 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	na	
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	
Acenaphthene	µg/L	--	12	7.2	3.7	1.69	7.79	1.18	2.55	3.66	
Acenaphthylene	µg/L	--	30	12	4.9	0.0850 U	1.78	0.0850 U	1.00	0.568	
Anthracene	µg/L	--	0.32	0.31	0.25	0.306	0.288	0.124 J	0.117 J	0.149 J	
Benzo(a)anthracene	µg/L	0.1	0.12 U	0.12 U	0.13 U	0.00300 U	0.00300 U	0.00300 U	0.00300 U	0.00500 U	
Benzo(a)pyrene	µg/L	0.2	0.12 U	0.12 U	0.13 U	0.0320 U	0.0320 U	0.0320 U	0.0320 U	0.00800 U	
Benzo(b)fluoranthene	µg/L	0.2	0.046 U	0.047 U	0.049 U	0.0130 U	0.0130 U	0.0130 U	0.0130 U	0.0280 U	
Benzo(g,h,i)perylene	µg/L	--	0.19 U	0.19 U	0.19 U	0.00900 U	0.00900 U	0.00900 U	0.00900 U	0.00800 U	
Benzo(k)fluoranthene	µg/L	0.2	0.046 U	0.047 U	0.049 U	0.0150 U	0.0150 U	0.0150 U	0.0150 U	0.00700 U	
Chrysene	µg/L	0.2	0.12 U	0.12 U	0.13 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00800 U	
Dibenzo(a,h)anthracene	µg/L	0.2	0.28 U	0.28 U	0.29 U*	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	
Fluoranthene	µg/L	--	0.12 U	0.12 U	0.13 U	0.0243 J	0.0100 U	0.0100 U	0.0100 U	0.0398 J	
Fluorene	µg/L	--	6.1	3.1	2.6	1.88	3.35	0.906	1.18	3.8	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.12 U	0.12 U	0.13 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00600 U	
Naphthalene	µg/L	100	0.57 Ja	1.2 U	1.3 U	0.217	0.0540 U	0.119	0.438	0.417	
Phenanthrene	µg/L	--	0.030 Ja	0.094 U	0.097 U	0.0445 J	0.00700 U	0.0589 J	0.0589 J	0.0547 J	
Pyrene	µg/L	--	0.23 U	0.24 U	0.24 U	0.102 J	0.0190 U	0.0190 U	0.0190 U	0.0170 U	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

			Sample Location: W-21R	W-21R	W-21R	W-21R	W-21R	W-21R	W-21R	W-21R
			Screened Unit: Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet): 49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5
			Sample Date: 28-Apr-09	15-Sep-09	30-Mar-10	05-May-10	15-Sep-10	27-Apr-11	19-Sep-11	25-Apr-12
			Remediation							
Analyte	Units	Goal								
Benzene	µg/L	5	67.0	1.00 U	206	na	2.84	1.00 U	28.5	22.8
Toluene	µg/L	2,000	1.00 U	1.00 U	1.00 U	na	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	700	1.00 U	1.00 U	1.64	na	1.00 U	1.00 U	1.00 U	1.00 U
Xylenes	µg/L	10,000	3.00 U	3.00 U	6.00 U	na	3.00 U	3.00 U	3.00 U	3.00 U
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	0.100 U
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na
Acenaphthene	µg/L	--	7.32	2.82	16.1	0.979	1.34	0.2	0.0220 U	16.6
Acenaphthylene	µg/L	--	1.27	0.952	30.5	0.0870 U	0.0870 U	0.0870 U	0.0870 U	1.72
Anthracene	µg/L	--	0.14800 J	0.257	0.0100 U	0.0583 J	0.188 J	0.0324 J	0.204	0.115 J
Benzo(a)anthracene	µg/L	0.1	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.0200 U	0.0200 U	0.0200 U
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2	0.02800 U	0.02800 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--	0.0631 J	0.0526 J	0.0100 U	0.0100 U	0.104 J	0.0100 U	0.133 J	0.0788 J
Fluorene	µg/L	--	4.99	1.91	0.0160 U	0.724	1.14	0.301	7.8	5.16
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U
Naphthalene	µg/L	100	0.04600 U	0.166	R	0.0460 U	0.0460 U	0.0460 U	0.0460 U	0.0460 U
Phenanthrene	µg/L	--	0.00500 U	0.00666 J	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U
Pyrene	µg/L	--	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

		Sample Location: W-21R	
		Screened Unit: Alluvial	
		Depth BTOC (feet): 49.5	
		Sample Date: 24-Sep-12	
		Remediation	
Analyte	Units	Goal	
Benzene	µg/L	5	57.3
Toluene	µg/L	2,000	1.00 U
Ethylbenzene	µg/L	700	1.00 U
Xylenes	µg/L	10,000	3.00 U
2-Methylnaphthalene	µg/L	--	0.164 J
Dibenzofuran	µg/L	--	na
Acenaphthene	µg/L	--	9.63
Acenaphthylene	µg/L	--	0.0870 U
Anthracene	µg/L	--	0.154 J
Benzo(a)anthracene	µg/L	0.1	0.0200 U
Benzo(a)pyrene	µg/L	0.2	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U
Benzo(g,h,i)perylene	µg/L	--	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U
Chrysene	µg/L	0.2	0.0197 J
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U
Fluoranthene	µg/L	--	0.147 J
Fluorene	µg/L	--	4.97
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U
Naphthalene	µg/L	100	0.572
Phenanthrene	µg/L	--	0.128
Pyrene	µg/L	--	0.0596 J

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Analyte	Units	Goal	Sample Location:	W-24	W-24	W-24	W-24	W-24	W-24	W-24	W-24	
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.5
			Sample Date:	29-Apr-09	16-Sep-09	31-Mar-10	06-May-10	14-Sep-10	27-Apr-11	20-Sep-11	24-Apr-12	25-Sep-12
			Remediation									
Benzene	µg/L	5	1.00 U	1.00 U	1.00 U	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Toluene	µg/L	2,000	1.00 U	1.00 U	1.00 U	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Ethylbenzene	µg/L	700	1.00 U	1.00 U	1.00 U	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Xylenes	µg/L	10,000	3.00 U	3.00 U	6.00 U	na	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	0.100 U	0.164 J	
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	na	
Acenaphthene	µg/L	--	0.0250 U	0.0220 U	0.0220 U	0.0220 U	0.0244 U	0.0220 U	0.0220 U	0.0220 U	0.0373 J	
Acenaphthylene	µg/L	--	0.0989 U	0.0870 U	0.0870 U	0.0870 U	0.0967 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	
Anthracene	µg/L	--	0.0114 U	0.0100 U	0.0100 U	0.0100 U	0.0111 U	0.0100 U	0.0100 U	0.0100 U	0.0401 J	
Benzo(a)anthracene	µg/L	0.1	0.00568 U	0.00500 U	0.00500 U	0.00500 U	0.00556 U	0.0200 U	0.0200 U	0.0200 U	0.0219 J	
Benzo(a)pyrene	µg/L	0.2	0.00909 U	0.00800 U	0.00800 U	0.00800 U	0.00889 U	0.00800 U	0.00800 U	0.00800 U	0.016 J	
Benzo(b)fluoranthene	µg/L	0.2	0.0318 U	0.0280 U	0.0280 U	0.0280 U	0.0311 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	
Benzo(g,h,i)perylene	µg/L	--	0.00909 U	0.00800 U	0.00800 U	0.00800 U	0.00889 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	
Benzo(k)fluoranthene	µg/L	0.2	0.00795 U	0.00700 U	0.00700 U	0.00700 U	0.00778 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	
Chrysene	µg/L	0.2	0.00909 U	0.00800 U	0.00800 U	0.00800 U	0.00889 U	0.00800 U	0.00800 U	0.00800 U	0.0272 J	
Dibenzo(a,h)anthracene	µg/L	0.2	0.0114 U	0.0100 U	0.0100 U	0.0100 U	0.0111 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	
Fluoranthene	µg/L	--	0.0114 U	0.0100 U	0.0100 U	0.0100 U	0.0111 U	0.0100 U	0.0100 U	0.0100 U	0.0569 J	
Fluorene	µg/L	--	0.0182 U	0.0160 U	0.0160 U	0.0160 U	0.0178 U	0.0160 U	0.0160 U	0.0160 U	0.0879 J	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00682 U	0.00600 U	0.00600 U	0.00600 U	0.00667 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	
Naphthalene	µg/L	100	0.0523 U	0.120	R	0.0460 U	0.0511 U	0.215 B	0.0717 JB	0.0460 U	0.479	
Phenanthrene	µg/L	--	0.00568 U	0.0117 J	0.00500 U	0.00500 U	0.00556 U	0.00500 U	0.00500 U	0.00500 U	0.119	
Pyrene	µg/L	--	0.0193 U	0.0170 U	0.0170 U	0.0170 U	0.0189 U	0.0170 U	0.0170 U	0.0170 U	0.041 J	

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

			Sample Location:	W-27	W-27	W-27	W-27	W-27	W-27	W-27	W-27
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7
			Sample Date:	10-Oct-05	14-Mar-06	12-Sep-06	17-Apr-07	19-Sep-07	05-May-08	01-Oct-08	28-Apr-09
			Remediation Goal								
Analyte	Units	Goal									
Benzene	µg/L	5	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	2,000	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Xylenes	µg/L	10,000	1.0 U	1.0 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	na	na	na
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na	na
Acenaphthene	µg/L	--	2.5 U	2.5 U*	0.0490 U	0.0490 U	0.0490 U	0.0490 U	0.0220 U	0.0220 U	0.0220 U
Acenaphthylene	µg/L	--	1.3 U	1.3 U*	0.0850 U	0.0850 U	0.0850 U	0.0850 U	0.0870 U	0.0870 U	0.0870 U
Anthracene	µg/L	--	0.051 U	0.049 U*	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Benzo(a)anthracene	µg/L	0.1	0.13 U	0.13 U	0.00300 U	0.00300 U	0.00300 U	0.00300 U	0.00500 U	0.00500 U	0.00500 U
Benzo(a)pyrene	µg/L	0.2	0.13 U	0.13 U	0.0320 U	0.0320 U	0.0320 U	0.0320 U	0.00800 U	0.00800 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2	0.051 U	0.049 U	0.0130 U	0.0130 U	0.0130 U	0.0130 U	0.0280 U	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--	0.20 U	0.20 U	0.00900 U	0.00900 U	0.00900 U	0.00900 U	0.00800 U	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2	0.051 U	0.049 U	0.0150 U	0.0150 U	0.0150 U	0.0150 U	0.00700 U	0.00700 U	0.00700 U
Chrysene	µg/L	0.2	0.13 U	0.13 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00800 U	0.00800 U	0.00800 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.30 U	0.29 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--	0.13 U	0.13 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluorene	µg/L	--	0.25 U	0.25 U*	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0160 U	0.0160 U	0.0160 U
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.13 U	0.13 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00600 U	0.00600 U	0.00600 U
Naphthalene	µg/L	100	1.3 U	1.3 U*	0.0540 U	0.0540 U	0.0540 U	0.0540 U	0.0460 U	0.0460 U	0.0874 J
Phenanthrene	µg/L	--	0.10 U	0.098 U	0.00956 J	0.00700 U	0.00700 U	0.00700 U	0.00500 U	0.00500 U	0.00500 U
Pyrene	µg/L	--	0.25 U	0.25 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0170 U	0.0170 U	0.0170 U

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

			Sample Location:	W-27	W-27	W-27	W-27	W-27	W-27	W-27
			Screened Unit:	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
			Depth BTOC (feet):	49.7	49.7	49.7	49.7	49.7	49.7	49.7
			Sample Date:	30-Mar-10	06-May-10	15-Sep-10	27-Apr-11	19-Sep-11	25-Apr-12	25-Sep-12
			Remediation							
Analyte	Units	Goal								
Benzene	µg/L	5	1.00 U	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	2,000	1.00 U	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	700	1.00 U	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Xylenes	µg/L	10,000	6.00 U	na	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U
2-Methylnaphthalene	µg/L	--	na	na	na	na	na	na	0.100 U	0.360
Dibenzofuran	µg/L	--	na	na	na	na	na	na	na	na
Acenaphthene	µg/L	--	0.0220 U	0.0220 U	0.0220 U	0.0220 U	0.0220 U	0.0220 U	0.0220 U	0.0939 J
Acenaphthylene	µg/L	--	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U	0.0870 U
Anthracene	µg/L	--	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0475 J
Benzo(a)anthracene	µg/L	0.1	0.00500 U	0.00500 U	0.00500 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.0216 J
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0621 J
Fluorene	µg/L	--	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.0160 U	0.140 J
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U
Naphthalene	µg/L	100	R	0.0460 U	0.0460 U	0.0460 U	0.189 B	0.0460 U		1.66
Phenanthrene	µg/L	--	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.160
Pyrene	µg/L	--	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0452 J

GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Remediation Goal	Sample Location:	P-112	P-112	P-112	P-112	P-112	P-112	P-112	P-112	P-112	P-112	
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8
			Sample Date:	25-Apr-05	11-Oct-05	15-Mar-06	12-Sep-06	18-Apr-07	20-Sep-07	06-May-08	01-Oct-08	29-Apr-09	16-Sep-09	31-Mar-10
Alkalinity, Total as CaCO3	mg/L	--	510	670	810	854	995	1090	1220	1200	1340	1290	1880	
Ammonia(NH3+NH4), as N	mg/L	--	31	32	32	41.6	41.3	54.3	58.2	74.2	95.7	114	128	
Chloride	mg/L	--	na	na	na	964 M1	na	na	na	na	na	na	na	
Iron, Total	mg/L	--	na	95	120	122 MHA	137	101 MHA	65	94.7	78.8	68.8	64.6	
Iron, Dissolved	mg/L	--	na	99	120	119 MHA	125	98.8 MHA	100	89.5	86.2	71.8	70	
Manganese, Total	mg/L	--	na	5.5	6.2	6.07	6.24	5.33 MHA	9.62	5.17	4.29	4.06	3.76	
Manganese, Dissolved	mg/L	--	na	na	6.6	5.97	5.87	5.21	5.08	4.91	4.60	4.2	4.04	
Methane	µg/L	--	2400	2900	2800	11600	16200	4600 M7	4200	8530	16500	10600	7170	
Nitrate as N (NO3-N)	mg/L	--	0.10 U	0.10 U	0.10 U	0.100 U M1	0.100 U	0.100 U M1	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	
Nitrite as N (NO2-N)	mg/L	--	0.020 U	0.020 U	0.020 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	
Nitrogen, Total Kjeldahl as N	mg/L	--	27	30	32	34.2 M1	43.1	50.4 M1	61.8	58.1	93.6	113 M1	130	
Phosphate, Ortho as P	mg/L	--	0.027 B^	0.050 U	0.016 B	0.100 U	0.100 U	1.00 U RL1	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	
Sulfate	mg/L	--	9.3	15	5.0 U	15.9	12.2 M7	88.7	140	76.3	81.9	165	165	
Sulfide	mg/L	--	2.3	6.3	6.8	1	1.55 pH<12	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U pH<12	
Total Organic Carbon	mg/L	--	12	18	18	16.6 M1	7.42 ET	7.22 ET, M1	7.66 ET	16.9 ET	26.7 ET	25.4	26.7 ET	
Benzene	µg/L	5	49	29	270	286	285	369 M1	551	554	786	1280	1580	
Toluene	µg/L	2,000	3.7	1.5	10 U	21.6	18.6	22.8 M1	11.2 L1	5.15	10.7	26.7	14.4	
Ethylbenzene	µg/L	700	91	57	500	715	536	585	789	671	890	831	1170	
Xylenes	µg/L	10,000	75	29	220	734	232	279 M1	236 L1	556	235	277	117	
Acenaphthene	µg/L	--	2.0 Ja	18	11	32.4	54.3	55.4	84.7	79.4	80.6	101	109	
Acenaphthylene	µg/L	--	50	380	270	0.0850 U	0.0944 U	0.0850 U	0.0850 U	0.0870 U	0.0870 U	0.0870 U	1.74 U	
Anthracene	µg/L	--	0.050 U	0.24 U	0.051 U	0.0113	0.0721 J	0.136 J	0.217	0.125 J	0.160 J	0.265	0.0100 U	
Benzo(a)anthracene	ug/L	0.1	0.13 U	0.62 U	0.13 U	0.00558	0.00333 U	0.00300 U	0.01 J	0.00500 U	0.00500 U	0.00500 U	0.00500 U	
Benzo(a)pyrene	µg/L	0.2	0.13 U	0.62 U	0.13 U	0.0320 U	0.0356 U	0.0320 U	0.0320 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	
Benzo(b)fluoranthene	µg/L	0.2	0.050 Ua	0.24 U	0.051 U	0.0130 U	0.0144 U	0.0130 U	0.0130 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	
Benzo(g,h,i)perylene	µg/L	--	0.20 U	0.95 U	0.20 U	0.00900 U	0.0100 U	0.00900 U	0.00900 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	
Benzo(k)fluoranthene	µg/L	0.2	0.050 U	0.24 U	0.051 U	0.0150 U	0.0167 U	0.0150 U	0.0150 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	
Chrysene	µg/L	0.2	0.13 U	0.62 U	0.13 U	0.0338 J	0.00556 U	0.00500 U	0.00500 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	
Dibenzo(a,h)anthracene	µg/L	0.2	0.30 U	1.4 U	0.30 U*	0.0100 U	0.0111 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	
Fluoranthene	µg/L	--	0.13 U	0.22 Ja	0.13 U	0.0100 U	0.0111 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.198	0.0100 U	
Fluorene	µg/L	--	0.25 U	1.8	1.2	10.1	20.3	33.5	64.2	8.06	11.5	91.7	53	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.13 U	0.62 U	0.13 U	0.00700 U	0.00778 U	0.007	0.00700 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	
Naphthalene	µg/L	100	56	520	360	167	727 B	719	506	211	324	703	R	
Phenanthrene	µg/L	--	0.099 Ua	0.48 U	0.10 U	0.544	2.4	1.65	2.95	2.17	2.63	3.52	0.100 U	
Pyrene	µg/L	--	0.25 U	1.2 U	0.25 U	0.0190 U	0.0211 U	0.0190 U	0.0248 J	0.0170 U	0.0170 U	0.0170 U	0.0170 U	
TPH as Gasoline	mg/L	--	na	na	na	na	na	na	na	na	na	na	8.53	
Diesel	µg/L	--	na	na	na	na	na	na	na	na	na	na	5340 N1,Q	
Gasoline	µg/L	--	na	na	na	na	na	na	na	na	na	na	13000 B,N1,Q	
Motor Oil	µg/L	--	na	na	na	na	na	na	na	na	na	na	512 N1,Q	
Total Extractable Hydrocarbons	µg/L	--	na	na	na	na	na	na	na	na	na	na	18900	
BOD - 5 Day	mg/L	--	na	na	na	na	na	na	na	na	na	na	16.4	
Chemical Oxygen Demand	mg/L	--	na	na	na	na	na	na	na	na	na	na	75.7 M1	
Phosphorous, Total	mg/L	--	na	na	na	na	na	na	na	na	na	na	na	

Dubuque-PNG Groundwater (10-12).xlsx

MNA

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**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

		Sample Location:	P-112	P-112	P-112	P-112	P-112	P-112	W-117	W-117R	W-117R	W-117R	W-117R
		Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
		Depth BTOC (feet):	38.8	38.8	38.8	38.8	38.8	38.8	35.0	35.7	35.7	35.7	35.7
		Sample Date:	06-May-10	14-Sep-10	28-Apr-11	20-Sep-11	25-Apr-12	25-Sep-12	27-Apr-05	11-Oct-05	15-Mar-06	12-Sep-06	18-Apr-07
Analyte	Units	Remediation Goal											
Alkalinity, Total as CaCO ₃	mg/L	--	na	1490	1160	1030	1260	1350	650	590	640	590	673
Ammonia(NH ₃ +NH ₄), as N	mg/L	--	na	127	83.8	76.4	105	112	77	38	23	25	27.3
Chloride	mg/L	--	na	1080	NA	na	na	na	na	na	na	2160	na
Iron, Total	mg/L	--	na	75.8	65	81	70.3	67.1	na	110	70	71.1	83.5 MHA
Iron, Dissolved	mg/L	--	na	59.1	62.7	65.1	64.7	67.6	na	43	46	46.2	64.0 MHA
Manganese, Total	mg/L	--	na	3.79	3.58	3.6	3.78	3.84	na	9.4	8.6	8.04	9.47
Manganese, Dissolved	mg/L	--	na	3.28	3.5	3.27	3.67	3.99	na	na	8.5	7.26	9.05 MHA
Methane	µg/L	--	na	6670	4300	2830	7730	4720	1000	200	140	530	748
Nitrate as N (NO ₃ -N)	mg/L	--	na	0.10 U,H ₃ ,P ₂	0.10 U,P ₂	0.10 U	0.100 U,P ₂	0.100 U	0.10 U	0.10 U	0.10 U	0.100 U	0.100 U
Nitrite as N (NO ₂ -N)	mg/L	--	na	0.100 U,H ₃	0.100 U	0.100 U	0.100 U	0.100 U	0.020 U	0.020 U	0.020 U	0.100 U	0.100 U
Nitrogen, Total Kjeldahl as N	mg/L	--	na	114	86.4	72.1	96.1	119	80	44	23	21.3	27 M1
Phosphate, Ortho as P	mg/L	--	na	0.100 U,H ₃	0.100 U	0.100 U	0.100 U	0.100 U	0.015 B	0.050 U	0.016 B	0.100 U	0.108 M1
Sulfate	mg/L	--	na	108	20.5	49.8	78.4	47.9	230	280	270	284	346
Sulfide	mg/L	--	na	2.00 U,pH<12	2.00 U,pH<12	2.00 U,pH<12	2.00 U,pH<12	2.00 U,pH<12	6.5	7.9	6.6	1	1.76
Total Organic Carbon	mg/L	--	na	18.5 ET	6.65 ET	10.2 ET	19.1 ET	12.7	7	15	14	8.88	2.93 ET,M1
Benzene	µg/L	5	na	1590	454	151	536	770	1.1	2.7	35	24.8	16.6
Toluene	µg/L	2,000	na	24.8	5.89	1.0 U	9.47	14.4	1.0 U	1.0 U	3.1	9	2.55
Ethylbenzene	µg/L	700	na	798	173	74.6	355	451	1.0 U	1.8	3.2	5.72	2.56
Xylenes	µg/L	10,000	na	276	155	70.9	87.7	147	1.0 U	1.0 U	3.4	10.2	4.36
Acenaphthene	µg/L	--	120 MHA	113	41.4	50.2	39.8	70.5	1.0 Ja	1.2 Ja	2.4 U	3.04	3.93
Acenaphthylene	µg/L	--	0.870 U,MHA	0.435 U	0.0870 U	56.8	0.870 U	0.870 U	2.3	15	15	4.95	7.51
Anthracene	µg/L	--	0.192	0.432	0.126 J	0.0100 U	0.209	0.293	0.050 Ua	0.029 Ja	0.049 Ua	0.0407 J	0.0495 J
Benzo(a)anthracene	µg/L	0.1	0.00500 U	0.00500 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.13 U	0.018 Ja	0.13 U	0.00341 U	0.00337 U
Benzo(a)pyrene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.13 U	0.025 Ja	0.13 U	0.0364 U	0.0360 U
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.0280 U	0.050 U	0.025 Ja	0.049 Ua	0.0148 U	0.0146 U
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.20 U	0.19 U	0.19 U	0.0102 U	0.0101 U
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.00700 U	0.050 U	0.047 U	0.049 U	0.0170 U	0.0169 U
Chrysene	µg/L	0.2	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.00800 U	0.13 U	0.046 Ja	0.13 U	0.00568 U	0.00562 U
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.30 U	0.28 U	0.29 U*	0.0114 U	0.0112 U
Fluoranthene	µg/L	--	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.13 U	0.068 Ja	0.13 U	0.0114 U	0.0112 U
Fluorene	µg/L	--	54 MHA	41.6	4.64	15.3	15.8	38.6	0.079 Ja	1.2	1.1	1.52	2.23
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.13 U	0.12 U	0.13 U	0.00795 U	0.00787 U
Naphthalene	µg/L	100	429 MHA	877	6.63	5.09 B	69.7	179	0.51 Ja	1.2 U	1.3 U	2.47	4.18 B
Phenanthrene	µg/L	--	0.00500 U,M1	5.05	1.39	0.00500 U	2.67	5.90	0.052 Ja	0.12	0.11	0.13	0.152
Pyrene	µg/L	--	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.25 U	0.23 U	0.24 U	0.0216 U	0.0213 U
TPH as Gasoline	mg/L	--	na	na	na	na	na	na	na	na	na	na	na
Diesel	µg/L	--	na	na	na	na	na	na	na	na	na	na	na
Gasoline	µg/L	--	na	na	na	na	na	na	na	na	na	na	na
Motor Oil	µg/L	--	na	na	na	na	na	na	na	na	na	na	na
Total Extractable Hydrocarbons	µg/L	--	na	na	na	na	na	na	na	na	na	na	na
BOD - 5 Day	mg/L	--	na	na	na	na	na	na	na	na	na	na	na
Chemical Oxygen Demand	mg/L	--	na	na	na	na	na	na	na	na	na	na	na
Phosphorous, Total	mg/L	--	1.75	na	na	na	na	na	na	na	na	na	na

Dubuque-PNG Groundwater (10-12).xlsx

MNA

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GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Sample Location: Screened Unit: Depth BTOC (feet): Sample Date: Remediation Goal	W-117R	W-117R	W-117R	W-117R	W-117R	W-117R	W-117R	W-117R	W-117R	W-117R	W-117R	
			Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7
			20-Sep-07	06-May-08	01-Oct-08	29-Apr-09	16-Sep-09	31-Mar-10	06-May-10	16-Sep-10	28-Apr-11	20-Sep-11	25-Apr-12	
Alkalinity, Total as CaCO3	mg/L	--	639	621	615	572	653	837	na	656	748	666 M1	645	
Ammonia(NH3+NH4), as N	mg/L	--	28.7	17.5	32.9	30.6	47.7	39.7	na	40.3	82.2	47.8	49.6	
Chloride	mg/L	--	na	na	na	na	na	na	na	2280	na	na	na	
Iron, Total	mg/L	--	53.8	101	43.6	82.0	45.6	42.1	na	40.4	35	48 MHA	64.2 MHA	
Iron, Dissolved	mg/L	--	46.9	63.1	42.4	88.2	43.6	42.7 S3	na	39.0	33.2	43.3	56.3 MHA	
Manganese, Total	mg/L	--	6.81	5.09	5.95	12.7	6.62	6.50 MHA	na	5.95	5.85	6.47 MHA	8.66	
Manganese, Dissolved	mg/L	--	6.7	9.48	5.84	13.6	6.58	6.60 S3	na	5.82	5.84	6.28	8.14	
Methane	µg/L	--	273	154	529	578	997	823	na	608	740	561	629	
Nitrate as N (NO3-N)	mg/L	--	0.100 U	0.10 U	0.10 U	0.10 U P2	0.10 U	0.10 U,M1	na	0.10 U	0.10 U,P2	0.10 U	0.100 U,M1,P2	
Nitrite as N (NO2-N)	mg/L	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	na	0.100 U	0.100 U	0.100 U	0.100 U,M1	
Nitrogen, Total Kjeldahl as N	mg/L	--	29.2	31.5	33.4	34.1 M1	43.5	39.4 M1	na	37.1	86.9	46.5 M1	45.9 M1	
Phosphate, Ortho as P	mg/L	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	na	0.100 U	0.100 U	0.100 U,M1	0.100 U,M1	
Sulfate	mg/L	--	396	347	347	581	357	286	na	366	308	400 M1	359	
Sulfide	mg/L	--	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U pH<12	na	2.00 U,pH<12	2.00 U,pH<12	2.00 U,pH<12	2.00 U,pH<12	
Total Organic Carbon	mg/L	--	2.86 ET	2.47 ET	7.79 ET	8.93 ET	16.7 ET	12.4 ET	na	7.19 ET	2.84	5.2 ET	8.85 ET,M1	
Benzene	µg/L	5	39.8	15.8	8.08	3.43	43 FM	27.1	na	31.5	1.00 U	1.88	2.13	
Toluene	µg/L	2,000	9.32	1.26	1.00 U	1.00 U	5.1 FM	1.00 U	na	1.6	1.00 U	1.00 U	1.00 U	
Ethylbenzene	µg/L	700	8.3	5.91	3.42	6.28	8.1 FM	4.91	na	11.1	2.72	1.00 U	2.03	
Xylenes	µg/L	10,000	14.2	6.60	6.09	3.00 U	15.0 U FM	6.00 U	na	9.97	12.6	3.00 U	3.47	
Acenaphthene	µg/L	--	4.49	3.41	4.33	2.93	0.135 J	5.29	3.6	0.164 J	4.89 RL1	3.04	1.7	
Acenaphthylene	µg/L	--	11.5	6.44	16.3	9.31	0.0870 U	13.6	16.1	0.0870 U	10.5 RL1	9.46	4.55	
Anthracene	µg/L	--	0.075 J	0.0270 J	0.0100 U	0.0419 J	0.0276 J	0.0100 U	0.0100 U	0.0100 U	0.108 RL1,J	0.0602 J	0.0312 J	
Benzo(a)anthracene	ug/L	0.1	0.00300 U	0.00300 U	0.00500 U	0.00500 U	0.0506 J	0.00500 U	0.00500 U	0.00500 U	0.0400 U,RL1	0.0200 U	0.0200 U	
Benzo(a)pyrene	µg/L	0.2	0.0320 U	0.0320 U	0.00800 U	0.00800 U	0.0866 J	0.00800 U	0.00800 U	0.00800 U	0.0160 U,RL1	0.00800 U	0.00800 U	
Benzo(b)fluoranthene	µg/L	0.2	0.0130 U	0.0130 U	0.0280 U	0.0280 U	0.0938 J	0.0280 U	0.0280 U	0.0280 U	0.0560 U,RL1	0.0280 U	0.0280 U	
Benzo(g,h,i)perylene	µg/L	--	0.00900 U	0.00900 U	0.00800 U	0.00800 U	0.085 J	0.00800 U	0.00800 U	0.00800 U	0.0160 U,RL1	0.00800 U	0.00800 U	
Benzo(k)fluoranthene	µg/L	0.2	0.0150 U	0.0150 U	0.00700 U	0.00700 U	0.0586 J	0.00700 U	0.00700 U	0.00700 U	0.0140 U,RL1	0.00700 U	0.00700 U	
Chrysene	µg/L	0.2	0.00500 U	0.00500 U	0.00800 U	0.00800 U	0.0745 J	0.00800 U	0.00800 U	0.00800 U	0.0204 RL1,J	0.00800 U	0.00800 U	
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0200 U,RL1	0.0100 U	0.0100 U	
Fluoranthene	µg/L	--	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0732 J	0.0100 U	0.0100 U	0.0100 U	0.0318 RL1,J	0.0100 U	0.0100 U	
Fluorene	µg/L	--	2.82	1.7	3.06	1.76	0.0579 J	1.52	1.61	0.0160 U	0.0320 U,RL1	1.43	0.773	
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00700 U	0.00700 U	0.00600 U	0.00600 U	0.0771 J	0.00600 U	0.00600 U	0.00600 U	0.0120 U,RL1	0.00600 U	0.00600 U	
Naphthalene	µg/L	100	6.12	2.4	6.68	0.528	0.151	R	15	0.0460 U	0.831 RL1	0.0460 U	0.0631 J	
Phenanthrene	µg/L	--	0.296	0.204	0.308	0.188	0.0784 J	0.00500 U	0.155	0.00500 U	0.0867 RL1,J	0.178	0.0917 J	
Pyrene	µg/L	--	0.0190 U	0.0190 U	0.0170 U	0.0170 U	0.107 J	0.0170 U	0.0170 U	0.0335 J	0.0340 U,RL1	0.0170 U	0.0170 U	
TPH as Gasoline	mg/L	--	na	na	na	na	na	na	na	na	na	na	na	
Diesel	µg/L	--	na	na	na	na	na	na	na	na	na	na	na	
Gasoline	µg/L	--	na	na	na	na	na	na	na	na	na	na	na	
Motor Oil	µg/L	--	na	na	na	na	na	na	na	na	na	na	na	
Total Extractable Hydrocarbons	µg/L	--	na	na	na	na	na	na	na	na	na	na	na	
BOD - 5 Day	mg/L	--	na	na	na	na	na	na	na	na	na	na	na	
Chemical Oxygen Demand	mg/L	--	na	na	na	na	na	na	na	na	na	na	na	
Phosphorous, Total	mg/L	--	na	na	na	na	na	na	na	na	na	na	na	

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MNA

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**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

		Sample Location:	W-117R	D-6	D-6	D-6	D-6	D-6	D-6	D-6	D-6	D-6	D-6
		Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
		Depth BTOC (feet):	35.7	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
		Sample Date:	25-Sep-12	27-Apr-05	11-Oct-05	15-Mar-06	12-Sep-06	18-Apr-07	09-Sep-07	06-May-08	15-Sep-09	31-Mar-10	06-May-10
Analyte	Units	Remediation Goal											
Alkalinity, Total as CaCO ₃	mg/L	--	641	1300	1200	1300	1490	1820	1500	1840	1720	1630	na
Ammonia(NH ₃ +NH ₄), as N	mg/L	--	72.0	110	120	130	193	165	147	204	210	194	na
Chloride	mg/L	--	na	na	na	na	1390	na	na	na	na	na	na
Iron, Total	mg/L	--	29.1	na	64	66	68.2	31.0 pH>2	59.7	15.4	44.7	30	na
Iron, Dissolved	mg/L	--	32.3	na	38	31	49	9.45	45.6	15.2	22.7 pH>2	23.7	na
Manganese, Total	mg/L	--	3.77	na	5.3	8.3	8.85	4.04 pH>2	6.74	9.62	8.9	5.53	na
Manganese, Dissolved	mg/L	--	4.13	na	na	7.2	7.7	3.54	6.28	7.56	8.22 pH>2	6.25	na
Methane	µg/L	--	1280	5100	2200	4000	7660	10900	5790	2390	12500	11500	na
Nitrate as N (NO ₃ -N)	mg/L	--	0.100 U	0.10 U	0.1	0.040 B	0.100 U	0.100 U	0.100 U	0.10 U	0.10 U	0.10 U	na
Nitrite as N (NO ₂ -N)	mg/L	--	0.100 U	0.020 U	0.020 U	0.020 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	na
Nitrogen, Total Kjeldahl as N	mg/L	--	67.4	130	130	130	106	159	164	186	205	193	na
Phosphate, Ortho as P	mg/L	--	0.100 U	0.044 B	0.050 U	0.022 B	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	na
Sulfate	mg/L	--	480	20	80	50	30.2	13.8	196	122	222	63	na
Sulfide	mg/L	--	2.00 U, pH<12	67	7.5	11	2.4	5.5 pH<12	2.0 U	2.0 U	3.84	2.0 U pH<12	na
Total Organic Carbon	mg/L	--	5.47	35	36	35	28	26.9 ET	30.3 ET	32.6 ET	39.3 ET	36.2 ET	na
Benzene	µg/L	5	65.2	610	990	670	638	556	1220	1030	966	1470	na
Toluene	µg/L	2,000	1.00 U	87	120	33	24.4	22.3	159	25.8	49.2	49.6	na
Ethylbenzene	µg/L	700	1.00 U	620	730	620	635	582	795	948	870	882 C9	na
Xylenes	µg/L	10,000	3.00 U	640	600	340	253	222	564 MHA	253	1140	345 C9	na
Acenaphthene	µg/L	--	3.57	690	88	110	170	226	143	194	213	186	148
Acenaphthylene	µg/L	--	5.15	4300	1300	1400	46.4	0.0850 U	0.0850 U	0.0850 U	4.35 U	1.35 U	1.74 U
Anthracene	µg/L	--	0.0710 J	290	20	20	52.2	54.6	19.4	37.9	33.6	29.7	14.8
Benzo(a)anthracene	µg/L	0.1	0.0200 U	180	8.3	9.6	21.9	22.9	8.0	18.5	13.4	14.5	4.83
Benzo(a)pyrene	µg/L	0.2	0.00800 U	110	5.2	5.8	22	20.9	9.36	18.2	12.4	13.4	4.9
Benzo(b)fluoranthene	µg/L	0.2	0.0280 U	55	2.7	3.1	17.6	16.6	5.74	12.8	7.56	0.0433 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--	0.00800 U	37	1.8 Ja	2.1	8.07	7.98	6.81	10	7.3	0.0124 U	2.38
Benzo(k)fluoranthene	µg/L	0.2	0.00700 U	35	1.1	1.3	7.07	7.24	2.83	6.44	4.54	0.0108 U	0.00700 U
Chrysene	µg/L	0.2	0.00800 U	120	5.5	6.2	24.8	18.6	8.74	17.7	10.1	0.124 U	2.47
Dibenzo(a,h)anthracene	µg/L	0.2	0.0100 U	20	0.87 Ja	0.88 Ja*	1.95	1.73	1.07	1.95	1.56	0.140 J	0.0100 U
Fluoranthene	µg/L	--	0.0100 U	810	42	44	75.2	106	29.1	73.4	58.4	42.2	16
Fluorene	µg/L	--	0.723	350	35	34	149	149	142	207	207	103	88.8
Indeno(1,2,3cd)pyrene	µg/L	0.4	0.00600 U	47	2.2	2.7	9.41	10	5.07	9.59	6.91	0.00928 U	1.98
Naphthalene	µg/L	100	0.632	4800	1200	800	583	712 B	854	591	659	R	616
Phenanthrene	µg/L	--	0.0837 J	1200	74	77	170	181	86.3	158	153	120	53.2
Pyrene	µg/L	--	0.0171 J	450	21	24	317	320	27	52.6	43.8	0.0263 U	2.95
TPH as Gasoline	mg/L	--	na	na	na	na	na	na	na	na	na	10	na
Diesel	µg/L	--	na	na	na	na	na	na	na	na	na	15900 N1,Q	na
Gasoline	µg/L	--	na	na	na	na	na	na	na	na	na	22900 B,N1,Q	na
Motor Oil	µg/L	--	na	na	na	na	na	na	na	na	na	2460 N1,Q	na
Total Extractable Hydrocarbons	µg/L	--	na	na	na	na	na	na	na	na	na	41300	na
BOD - 5 Day	mg/L	--	na	na	na	na	na	na	na	na	na	30.3	na
Chemical Oxygen Demand	mg/L	--	na	na	na	na	na	na	na	na	na	102 M1	na
Phosphorous, Total	mg/L	--	na	na	na	na	na	na	na	na	na	102 M1	na

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GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Remediation Goal	Sample Location:	D-6	D-6	D-6	D-6	D-6	SS-8	SS-8	SS-8
			Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
			Depth BTOC (feet):	37.0	37.0	37.0	37.0	37.0	33.4	33.4	33.4
			Sample Date:	16-Sep-10	28-Apr-11	20-Sep-11	25-Apr-12	25-Sep-12	20-Sep-11	25-Apr-12	25-Sep-12
Alkalinity, Total as CaCO ₃	mg/L	--		1660	1420	1190	1410	1480	588	578	479 M1
Ammonia(NH ₃ +NH ₄), as N	mg/L	--		199	198	118	189	184	21.6	24.3	36.5
Chloride	mg/L	--		1640	na	na	na	na	na	na	na
Iron, Total	mg/L	--		29.1 pH>2	59	90.2	77	57.8	48.2	50.2	72.2 MHA
Iron, Dissolved	mg/L	--		21.2	57.2	70.3	60.6	44	42.5	44	67.4 MHA
Manganese, Total	mg/L	--		6.74 pH>2	8.17	5.14	6.05	5.53	14.2	16.6	21.8 MHA
Manganese, Dissolved	mg/L	--		6.08	8.17	4.89	5.97	5.85	13.7	15	21.1 MHA
Methane	µg/L	--		8740	4200	7360	9070	7420	615	309	353
Nitrate as N (NO ₃ -N)	mg/L	--		0.10 U	0.10 U,P2	0.10 U	0.100 U,P2	0.100 U	0.10 U	0.208 P2	0.100 U,M1,P2
Nitrite as N (NO ₂ -N)	mg/L	--		0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.110
Nitrogen, Total Kjeldahl as N	mg/L	--		180	203	113	181	195	21.4	24.5	39.0 M1
Phosphate, Ortho as P	mg/L	--		0.199	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U,M1
Sulfate	mg/L	--		147	4.25	7.75	5.00 U,RL1	30.0	145	161	144
Sulfide	mg/L	--		2.00 U,pH<12	2.00 U,pH<12	2.00 U,pH<12	2.00 U,pH<12	2.00 U,pH<12	2.00 U,pH<12	2.00 U,pH<12	2.00 U,pH<12
Total Organic Carbon	mg/L	--		21.4 ET	8.14 ET	13.1 ET	19.6 ET	11.4	7.29 ET	7.26 ET	6.38 ET
Benzene	µg/L	5		1060	659	1600	892	1170	7.93	1.95	1.00 U
Toluene	µg/L	2,000		44.8	39.5	219	75.8	103	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	700		737	424	709	588	766	1.82	1.00 U	1.00 U
Xylenes	µg/L	10,000		356	230	713	385	500	3.00 U	3.00 U	3.00 U
Acenaphthene	µg/L	--		3.67	151	228	33.6	103	1.96	0.145 J	0.0220 U
Acenaphthylene	µg/L	--		13.9	0.0870 U	225	0.435 U	8.70 U	0.0870 U	0.0870 U	0.0870 U
Anthracene	µg/L	--		0.0654 J	22.1	48.5	11.8	25.1	0.0286 J	0.0100 U	0.0100 U
Benzo(a)anthracene	µg/L	0.1		0.00500 U	8.5	15.8	4.58	11.8	0.0200 U	0.0200 U	0.0200 U
Benzo(a)pyrene	µg/L	0.2		0.00800 U	6.6	13.8	3.65	10.3	0.00800 U	0.00800 U	0.00800 U
Benzo(b)fluoranthene	µg/L	0.2		0.0280 U	4.88	13	3.12	5.77	0.0280 U	0.0280 U	0.0280 U
Benzo(g,h,i)perylene	µg/L	--		0.00800 U	4.08	7.26	1.92	5	0.00800 U	0.00800 U	0.00800 U
Benzo(k)fluoranthene	µg/L	0.2		0.00700 U	2.31	3.32	1.12	3.21	0.00700 U	0.00700 U	0.00700 U
Chrysene	µg/L	0.2		0.00800 U	11.3	16.2	2.29	13.5	0.00800 U	0.00800 U	0.00800 U
Dibenzo(a,h)anthracene	µg/L	0.2		0.0100 U	0.336	1.15	0.31 J	0.821	0.0100 U	0.0100 U	0.0100 U
Fluoranthene	µg/L	--		0.0100 U	20.1	61.1	14.8	41.9	0.0100 U	0.0100 U	0.0100 U
Fluorene	µg/L	--		2.41	42.7	140	25.2	86.6	0.0160 U	0.0160 U	0.0160 U
Indeno(1,2,3cd)pyrene	µg/L	0.4		0.00600 U	3.95	7.31	1.67	5.18	0.00600 U	0.00600 U	0.00600 U
Naphthalene	µg/L	100		10.2	538	2610 B	264	990	2.53 B	0.26	0.146
Phenanthrene	µg/L	--		0.226	71.2	163	35.4	98.6	0.00500 U	0.00500 U	0.00500 U
Pyrene	µg/L	--		0.0170 U	1.82	50.3	8.07	31.8	0.0234 J	0.0170 U	0.0170 U
TPH as Gasoline	mg/L	--		na	na	na	na	na	na	na	na
Diesel	µg/L	--		na	na	na	na	na	na	na	na
Gasoline	µg/L	--		na	na	na	na	na	na	na	na
Motor Oil	µg/L	--		na	na	na	na	na	na	na	na
Total Extractable Hydrocarbons	µg/L	--		na	na	na	na	na	na	na	na
BOD - 5 Day	mg/L	--		na	na	na	na	na	na	na	na
Chemical Oxygen Demand	mg/L	--		na	na	na	na	na	na	na	na
Phosphorous, Total	mg/L	--		na	na	na	na	na	na	na	na

**GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA**

Notes:

-- = Remediation Goal not established.
BTOC = Below top of casing.
na = Not analyzed.
ns = Not sampled.
* = LCS, LCD, ELC, ELD, CV, MS, MSD, Surrogate: Batch QC exceeds the upper or lower control limits.
µg/l = Microgram(s) per liter.
a = Concentration is below the reporting limit.
B = Analyte was detected in the associated Method Blank.
C9 = Calibration Verification recovery was outside the method control limits for this analyte. The LCS for this analyte met CCV acceptance criteria, and was used to validate the batch.
CIN = The % RSD for this compound was above 15%. The average % RSD for all compounds in the calibration met the 15% criteria specified in EPA methods 8260B/8270C.
ET = Matrix interference in sample is causing an endpoint timeout.
FM = Elevated detection limits due to sample foaming.
H = Sample analysis performed past method-specified holding time.
J = Estimated concentration below the reporting limit.
L1 = Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was outside control limits.
L5 = Laboratory Control Sample was outside of acceptance Limits. The MS or MSD was used to validate the batch.
M1 = The MS and/or MSD were outside control limits.
mg/L = Milligram(s) per liter.
MHA = Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information.
N1 = See case narrative.
P2 = Sample adjusted to method prescribed pH range prior to analysis.
pH<12 = Sample received at pH<12. It was adjusted correctly prior to analysis.
pH>2 = Sample received at pH>2. It was adjusted correctly prior to analysis.
P-HS = The sample container contained headspace.
Q = Poor chromatographic match to standard.
R = Sample result rejected; not usable.
RL1 = Reporting limit raised due to sample matrix effects.
S3 = Post digestion spike is out of acceptance limits for this analyte.
U = Analyte not-detected at or above reporting limit.
ZX = Due to sample matrix effects, the surrogate recovery was outside the control limits.

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Notes

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ATTACHMENT B



MWH

ATTACHMENT B SE-3 AQUIFER TESTING AND ANALYSIS

Aquifer Testing

MWH conducted a 96-hour constant-discharge aquifer test from November 28 through December 2, 2011, to assess the hydrogeologic properties of the silty sand aquifer in the downgradient area of the currently proposed Technical Impracticability (TI) zone. MWH was on site during the pumping phase of the aquifer test to collect water level data and groundwater samples, ensure proper operation of the pump, verify transducer data collection, and monitor discharge containment.

Aquifer Test Setup and Implementation. During the aquifer test, groundwater was pumped from well SE-3 using a Grundfos Redi-Flo3™ submersible pump. Discharge was controlled at a target flow rate of 9 gallons per minute by a high capacity needle valve incorporated into a precision flow meter. Discharge was passed through a totalizer meter and a flow weir equipped with a pressure transducer prior to containment in a 21,000-gallon mobile water tank. Because the capacity of the mobile water tank was smaller than the total volume of water produced during the aquifer test, water was transferred out of the tank into tanker trucks on several occasions during the course of the aquifer test. The discharge water was disposed of at the City of Dubuque wastewater treatment plant. Based on totalizer readings, a total of 51,855 gallons of groundwater were pumped from the silty sand aquifer and disposed off site during the 96-hour pumping period (average of 9.0026 gallons per minute). The relationship of cumulative discharge over time, as noted by totalizer readings, is provided in Figure B-1. The water head values obtained from the transducer installed in the weir are also provided in Figure B-1. No interruptions to pumping occurred during the test.

Groundwater elevation measurements were collected during the aquifer test via both periodic manual measurements and at a greater frequency with data logging pressure transducers. Manual groundwater elevation measurements were recorded in select wells at a 30-minute interval during the early portions of the aquifer test and recorded at a 4-hour interval during later portions of the test. Site-wide manual measurements were collected prior to the start of pumping and at a 2-hour interval during the early portions of the aquifer test. During later portions of the test, measurements were collected at a less frequent basis toward later portions of the test at a 24-hour interval. Transducers were placed in selected site wells several weeks before the aquifer test and remained until approximately four days after the aquifer test pumping to assess pretest groundwater flow conditions, drawdown during aquifer pumping, and recovery following pumping. Transducers placed in pumping well SE-3 and in nearby observation wells collected data on a logarithmic interval while transducers at further distance collected data on a linear interval. Wells monitored via transducer and frequent manual groundwater elevation measurements are shown in Table B-1. Manual depth-to-water measurements are provided in Table B-2.

Aquifer Test Analysis. Groundwater elevations prior to the start of the aquifer test were relatively stable and generally varied within 0.6 foot during the week prior to the test. Groundwater elevations measured in the silty sand aquifer just prior to the start of pumping are

provided in Figure B-2. Upon the start of pumping, groundwater elevations in pumping well SE-3 nearly immediately fell by over 2 feet and continued to fall to a maximum drawdown of approximately 3 feet. Drawdown in nearby silty sand aquifer observation wells ranged from over one foot in monitoring well TP-101, TP-102, and P-112 to less than one tenth of a foot at outlying wells such as W-113, W-118R, SS-10, and W-122. Significant drawdown was not observed in wells screened in the water table and alluvial aquifers. Drawdown, as observed in select wells during manual groundwater elevation measurements, is illustrated in Figure 3.

As shown in Figure B-3, the progression of drawdown in nearly all observation wells appeared to reverse slightly during the middle portion of the aquifer test. Because pumping was documented to occur at a very constant discharge, this deviation in the progression of drawdown is attributed to changes in Mississippi River stage. River stage data collected at the National Weather Service's "Railroad Bridge" Gauge (DBQ14; located immediately downstream of Dove Harbor) shows that river stage varied by over 0.4 foot just prior to and during aquifer test pumping, with a significant increase in stage observed during the pumping portion of the aquifer test. This fluctuation may have masked a portion of the drawdown in site monitoring wells that may have otherwise been attributed to the pumping test. River stage data over time is provided in Figure B-4 along with silty sand aquifer groundwater elevations recorded via transducers. Groundwater elevations measured just prior to the end of pumping are provided in Figure B-5.

To quantitatively determine aquifer properties, aquifer test drawdown data were analyzed using Aqtesolv™ Professional version 2.13 developed by HydroSOLVE, Inc. Displacement and elapsed time data for pumping well SE-3 and observations wells TP-102, P-112, D-4, D-6, and D-8 were entered into the software and analyzed using Theis methods to determine aquifer hydraulic conductivity and storativity values for a confined aquifer. Recovery data from SE-3 and P-112 were also used to estimate aquifer properties. Hydraulic conductivity values obtained from observations during pumping were found to range from 3.3×10^{-2} centimeters per second (cm/sec) at P-112 to 8.8×10^{-2} cm/sec at monitoring wells D-4 and D-8. The geometric mean hydraulic conductivity of these wells was calculated to be 4.6×10^{-2} cm/sec (Table B-3). A geometric mean of 3.6×10^{-2} cm/sec was calculated for wells in the central portion of the downgradient plume. Hydraulic conductivity values obtained from recovery data were consistent with estimates from the pumping data and are likely within the range of subjectivity associated with curve-matching time-displacement data. Storativity values calculated from observation wells near the pumping well were relatively consistent with a geometric mean of approximately 6×10^{-4} . Curve matching plots from the Aqtesolv™ program are provided in Exhibit B-1.

Groundwater Quality. During the aquifer test, MWH staff observed staining (likely iron precipitation) in the casing of SE-3 and around the weir discharge piping. Although no product or sheen was observed in the discharge, a former manufactured gas plant (FMGP)-type odor was generally noticeable near the point of discharge. Several photographs depicting the general aquifer test setup and monitoring components are provided in the Photographic Log provided in Exhibit B-2. Groundwater samples were collected periodically from pumping well SE-3 for analysis of groundwater quality parameters (Table B-4). Samples for analysis of the contaminants of concern (COCs) consisting of benzene, toluene, ethylbenzene, xylenes (BTEX)

and polycyclic aromatic hydrocarbons (PAHs) were collected from the pump discharge at approximately 4, 24, 48, 72, and 96 hours after startup of the aquifer test. At approximately 96 hours after startup, groundwater samples were collected for the broader list of analytes specified in the previous discharge permit (Permit No. 97-008) for the Peoples Natural Gas (PNG) site. Samples collected 96 hours into the pilot test are expected to be indicative of the water quality that will be generated during long-term pumping. The laboratory analyses were conducted by TestAmerica Laboratories, Inc. in Cedar Falls, Iowa.

- Table B-1 - Monitoring Wells Selected for Groundwater Elevation Measurements
- Table B-2 - SE-3 Aquifer Test Manual Water Level Measurements
- Table B-3 - SE-3 Aquifer Test Results
- Table B-4 - SE-3 Groundwater Analytical Results
- Figure B-1 - SE-3 Discharge and Weir Water Head
- Figure B-2 - Groundwater Flow Direction Map, Silty Sand Aquifer, November 28, 2011, 11:00 a.m.
- Figure B-3 - SE-3 Aquifer Test Drawdown
- Figure B-4 - Mississippi River and Groundwater Elevations During SE-3 Aquifer Test
- Figure B-5 - Groundwater Flow Direction Map, Silty Sand Aquifer, December 2, 2011, 12:00 Noon
- Exhibit B-1 - Aquifer Test Graphical Solutions
- Exhibit B-2 - Photographic Log

P:\Word Processing\MIDAMERICAN ENERGY\DUBUQUE-PNG SITE\01-13-ANNUAL REPORT (CY 2012)\Attachment B - SE-3 Aquifer Testing.docx

TABLE B-1

MONITORING WELLS SELECTED FOR GROUNDWATER ELEVATION MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA

Transducer Measurements	Frequent Manual Measurements
SE-3 (pumping well)	SE-3 (pumping well)
P-112	P-112
TP-102	TP-102
W-24	W-24
W-4	W-4
D-4	D-4
D-6	D-6
D-8	D-8
W-117R	W-117R
W-118R	W-118R
SE-2	SE-2
W-128	W-128
	TP-101
	SI-2
	W-113
	SS-9
	W-122
	SS-10

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

Test Status: Pre-Pumping Pumping Pumping Pumping									
Pumping Duration (hours): 0 0.1 0.5 1									
Date: 11/28/2011 11/28/2011 11/28/2011 11/28/2011									
Start Time: 10:45 13:00 13:17 13:48									
Finish Time: 12:05 13:02 13:42 14:06									
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	18.53	10:48	---	---	20.81	13:20	20.97	13:50
P-112	612.15	19.44	10:45	---	---	20.26	13:20	20.41	13:50
TP-101	609.33	16.58	10:46	---	---	17.46	13:19	17.61	13:49
TP-102	609.05	16.30	10:47	---	---	17.30	13:18	17.46	13:49
W-4	613.07	19.31	10:49	---	---	19.30	13:17	19.28	13:48
W-24	612.18	19.45	10:58	---	---	19.43	13:21	19.44	13:50
D-4	608.62	15.87	10:56	---	---	16.08	13:24	16.15	13:52
D-6	609.59	16.82	10:55	---	---	17.53	13:25	17.65	13:52
D-8	608.64	15.84	10:51	---	---	15.85	13:26	15.90	13:53
SI-2	612.66	19.81	11:56	---	---	19.85	13:42	19.89	14:04
W-117R	612.91	19.97	11:52	---	---	19.97	13:35	19.98	14:06
W-113	610.36	17.49	11:33	---	---	17.48	13:37	17.46	14:00
SS-9	606.45	13.46	11:36	---	---	13.47	13:38	13.46	14:01
W-118R	607.85	14.81	11:42	---	---	14.81	13:40	14.80	14:02
SE-2	608.90	16.03	11:47	---	---	16.11	13:42	16.13	14:03
W-122	612.49	19.53	11:09	---	---	19.54	13:30	19.55	13:56
SS-10	611.40	18.30	11:03	---	---	18.30	13:32	18.33	13:56
W-128	608.10	15.09	11:13	---	---	15.03	13:33	15.02	13:57
Totalizer (gallons)	---	148	12:39	160	13:02	344	13:23	595	13:51
Discharge (gpm)	---	---	---	9	13:01	9	13:22	9	13:51

Notes:

--- = Measurement not applicable.
gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

Test Status: Pumping									
Pumping Duration (hours): 1.5									
Date: 11/28/2011									
Start Time: 14:20									
Finish Time: 14:42									
Pumping 2									
11/28/2011									
14:47									
15:10									
Pumping 2.5									
11/28/2011									
15:16									
15:37									
Pumping 3									
11/28/2011									
15:47									
16:09									
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.04	14:23	21.07	14:50	21.12	15:19	21.16	15:50
P-112	612.15	20.45	14:22	20.48	14:49	20.51	15:19	20.52	15:49
TP-101	609.33	17.65	14:22	17.69	14:48	17.72	15:18	17.74	15:48
TP-102	609.05	17.52	14:21	17.52	14:48	17.56	15:17	17.59	15:48
W-4	613.07	19.30	14:20	19.31	14:47	19.31	15:16	19.30	15:47
W-24	612.18	19.44	14:24	19.44	14:52	19.48	15:21	19.48	15:52
D-4	608.62	16.19	14:25	16.21	14:54	16.24	15:22	16.25	15:53
D-6	609.59	17.07	14:25	17.73	14:54	17.78	15:23	17.79	15:54
D-8	608.64	15.92	14:26	15.95	14:55	15.97	15:24	15.99	15:55
SI-2	612.66	19.92	14:41	19.92	15:05	19.96	15:32	19.96	16:04
W-117R	612.91	20.00	14:42	20.01	15:03	20.02	15:31	20.03	16:03
W-113	610.36	17.46	14:36	17.48	15:10	17.50	15:37	17.51	16:09
SS-9	606.45	13.47	14:37	13.48	15:09	13.49	15:36	13.48	16:08
W-118R	607.85	14.82	14:39	14.84	15:07	14.84	15:35	14.84	16:07
SE-2	608.90	16.15	14:40	16.19	15:06	16.22	15:33	16.25	16:05
W-122	612.49	19.56	14:27	19.57	14:56	19.60	15:25	19.60	15:56
SS-10	611.40	18.33	14:30	18.35	14:58	18.37	15:26	18.38	15:57
W-128	608.10	15.05	14:32	15.03	14:59	15.05	15:28	15.05	15:59
Totalizer (gallons)	---	864	14:20	1130	14:51	1394	15:20	1675	15:51
Discharge (gpm)	---	9	14:20	9	14:51	9	15:20	9	15:51

Notes:

--- = Measurement not applicable.
gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

Test Status: Pumping Pumping Pumping Pumping									
Pumping Duration (hours): 3.5 4 4.5 5									
Date: 11/28/2011 11/28/2011 11/28/2011 11/28/2011									
Start Time: 16:18 16:50 17:24 17:53									
Finish Time: 16:36 17:16 17:48 18:18									
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.18	16:20	21.22	16:53	21.20	17:28	21.22	17:57
P-112	612.15	20.54	16:19	20.55	16:52	20.52	17:27	20.56	17:56
TP-101	609.33	17.76	16:19	17.76	16:51	17.80	17:26	17.78	17:55
TP-102	609.05	17.60	16:18	17.60	16:50	17.60	17:25	17.59	17:54
W-4	613.07	19.31	16:18	19.24	16:50	19.30	17:24	19.30	17:53
W-24	612.18	19.40	16:21	19.51	16:55	19.52	17:29	19.49	17:57
D-4	608.62	16.24	16:22	16.30	16:57	16.27	17:30	16.27	18:00
D-6	609.59	17.79	16:23	17.82	16:58	17.82	17:30	17.83	18:01
D-8	608.64	15.99	16:23	16.02	16:59	16.02	17:31	16.01	18:02
SI-2	612.66	19.99	16:32	20.01	17:11	20.01	17:43	20.00	18:13
W-117R	612.91	20.05	16:30	20.06	17:10	20.07	17:42	20.06	18:12
W-113	610.36	17.52	16:36	17.53	17:16	17.53	17:48	17.52	18:18
SS-9	606.45	13.52	16:35	13.52	17:15	13.51	17:47	13.51	18:17
W-118R	607.85	14.86	16:34	14.88	17:14	14.86	17:46	14.86	18:16
SE-2	608.90	16.25	16:33	16.27	17:13	16.26	17:45	16.27	18:15
W-122	612.49	19.62	16:24	19.62	17:03	19.60	17:35	19.62	18:06
SS-10	611.40	18.40	16:25	18.41	17:05	18.40	17:37	18.41	18:07
W-128	608.10	15.06	16:27	15.05	17:07	15.07	17:39	14.90	18:09
Totalizer (gallons)	---	1933	16:19	2232	16:53	2557	17:28	2829	17:57
Discharge (gpm)	---	9	16:19	9	16:53	9	17:28	9	17:57

Notes:

--- = Measurement not applicable.

gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

		Test Status:	Pumping	Pumping	Pumping	Pumping	Pumping	Pumping	Pumping
		Pumping Duration (hours):	5.5	6	6.5	7			
		Date:	11/28/2011	11/28/2011	11/28/2011	11/28/2011			
		Start Time:	18:20	18:46	19:17	19:50			
		Finish Time:	18:45	19:12	19:44	20:11			
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.23	18:23	21.24	18:51	21.24	19:20	21.24	19:53
P-112	612.15	20.55	18:24	20.56	18:50	20.55	19:21	20.55	19:52
TP-101	609.33	17.77	18:22	17.78	18:43	17.77	19:19	17.78	19:51
TP-102	609.05	17.60	18:21	17.60	18:48	17.57	19:18	17.60	19:51
W-4	613.07	19.30	18:20	19.30	18:47	19.31	19:17	19.32	19:50
W-24	612.18	19.48	18:27	19.48	18:53	19.48	19:22	19.45	19:54
D-4	608.62	16.27	18:28	16.28	18:55	16.27	19:25	16.27	19:54
D-6	609.59	17.85	18:29	17.82	18:56	17.82	19:26	17.81	19:55
D-8	608.64	16.02	18:30	16.00	18:57	16.00	19:27	16.00	19:56
SI-2	612.66	20.01	18:40	20.00	19:07	20.00	19:35	20.00	20:05
W-117R	612.91	20.06	18:38	20.05	19:05	20.06	19:34	20.05	20:04
W-113	610.36	17.50	18:45	17.50	19:12	17.50	19:44	17.50	20:11
SS-9	606.45	13.49	18:44	13.51	19:11	13.51	19:40	13.50	20:10
W-118R	607.85	14.85	18:42	14.86	19:09	14.86	19:38	14.85	20:09
SE-2	608.90	16.27	18:41	16.27	19:08	16.27	19:37	16.27	20:06
W-122	612.49	19.62	18:32	19.60	18:59	19.61	19:29	19.60	19:58
SS-10	611.40	18.41	18:33	18.40	19:01	18.40	19:30	18.37	19:59
W-128	608.10	15.07	18:35	15.06	19:03	15.06	19:32	15.06	20:00
Totalizer (gallons)	---	3074	18:25	3329	18:52	3582	19:21	3850	19:53
Discharge (gpm)	---	9	18:25	9	18:52	9	19:21	9	19:53

Notes:

--- = Measurement not applicable.

gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

Test Status: Pumping Pumping Pumping Pumping Pumping Duration (hours): 7.5 8 9 10 Date: 11/28/2011 11/28/2011 11/28/2011 11/28/2011 Start Time: 20:15 20:45 21:45 22:46 Finish Time: 20:39 21:05 22:04 23:10									
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.25	20:18	21.25	20:48	21.28	21:48	21.28	22:49
P-112	612.15	20.55	20:17	20.55	20:49	20.55	21:48	20.54	22:48
TP-101	609.33	17.77	20:17	17.74	20:47	17.78	21:47	17.75	22:47
TP-102	609.05	17.59	20:16	17.58	20:46	17.54	21:46	17.57	22:47
W-4	613.07	19.32	20:15	19.32	20:45	19.31	21:45	19.31	22:46
W-24	612.18	19.46	20:20	19.46	20:49	19.45	21:49	19.45	22:50
D-4	608.62	16.26	20:21	16.26	20:50	16.26	21:50	16.27	22:51
D-6	609.59	17.80	20:22	17.81	20:51	17.82	21:51	17.81	22:52
D-8	608.64	16.00	20:23	16.00	20:52	16.01	21:52	16.01	22:53
SI-2	612.66	20.01	20:23	20.01	21:00	20.01	21:59	20.00	23:05
W-117R	612.91	20.04	20:31	20.04	20:59	20.04	21:57	20.03	23:04
W-113	610.36	17.48	20:39	17.49	21:05	17.48	22:04	17.48	23:10
SS-9	606.45	13.50	20:37	13.49	21:04	13.49	22:03	13.46	23:09
W-118R	607.85	14.86	20:36	14.85	21:03	14.85	22:01	14.85	23:08
SE-2	608.90	16.27	20:33	16.27	21:02	16.27	22:00	16.26	23:07
W-122	612.49	19.60	20:25	19.60	20:54	19.59	21:52	19.58	22:57
SS-10	611.40	18.37	20:26	18.37	20:55	18.37	21:53	18.38	22:58
W-128	608.10	15.07	20:28	15.06	20:56	15.05	21:55	15.01	22:59
Totalizer (gallons)	---	4100	20:18	4366	20:49	4866	21:49	5440	22:49
Discharge (gpm)	---	9	20:18	9	20:49	9	21:49	9	22:49

Notes:

--- = Measurement not applicable.
gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

		Test Status:	Pumping	Pumping		Pumping		Pumping	
		Pumping Duration (hours):	11	12		13		14	
		Date:	11/29/2011	11/29/2011		11/29/2011		11/29/2011	
		Start Time:	23:46	0:35		1:44		2:45	
		Finish Time:	0:07	1:32		2:03		3:06	
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.28	23:49	21.28	0:38	21.32	1:47	21.33	2:47
P-112	612.15	20.53	23:48	20.52	0:37	20.54	1:46	20.55	2:47
TP-101	609.33	17.74	23:48	17.73	0:36	17.76	1:46	17.77	2:46
TP-102	609.05	17.56	23:47	17.55	0:36	17.58	1:45	17.59	2:46
W-4	613.07	19.29	23:46	19.30	0:35	19.31	1:44	19.31	2:45
W-24	612.18	19.44	23:51	19.44	0:41	19.40	1:48	19.46	2:49
D-4	608.62	16.24	23:52	16.23	0:42	16.26	1:50	16.27	2:50
D-6	609.59	17.80	23:53	17.78	0:44	17.80	1:51	17.81	2:51
D-8	608.64	15.99	23:54	15.99	0:46	16.00	1:52	16.00	2:52
SI-2	612.66	19.99	00:01	20.00	1:28	20.00	1:58	20.01	3:00
W-117R	612.91	20.03	00:00	20.02	1:13	20.02	1:57	20.03	2:59
W-113	610.36	17.47	00:07	17.46	1:14	17.47	2:03	17.47	3:06
SS-9	606.45	13.48	00:05	13.48	1:16	13.48	2:01	13.50	3:05
W-118R	607.85	14.83	00:04	14.82	1:17	14.84	2:00	14.85	3:03
SE-2	608.90	16.23	00:03	16.23	1:19	16.24	1:59	16.25	3:02
W-122	612.49	19.57	23:55	19.57	0:47	19.60	1:52	19.60	2:54
SS-10	611.40	18.38	23:56	18.35	0:54	18.37	1:53	18.38	2:55
W-128	608.10	15.04	23:58	15.03	1:02	15.05	1:55	15.06	2:57
Totalizer (gallons)	---	5975	23:50	6432	0:40	7024	1:47	7584	2:48
Discharge (gpm)	---	9	23:50	9	0:40	9	1:47	9	2:48

Notes:

--- = Measurement not applicable.

gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

		Test Status:	Pumping	Pumping	Pumping	Pumping			
		Pumping Duration (hours):	15	16	17	18			
		Date:	11/29/2011	11/29/2011	11/29/2011	11/29/2011			
		Start Time:	3:45	4:45	5:45	6:58			
		Finish Time:	4:05	5:04	6:08	7:27			
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.35	3:47	21.36	4:47	21.37	5:47	21.37	7:02
P-112	612.15	20.56	3:47	20.55	4:47	20.55	5:47	20.56	7:01
TP-101	609.33	17.77	3:46	17.75	4:46	17.77	5:46	17.77	7:00
TP-102	609.05	17.60	3:46	17.58	4:46	17.60	5:46	17.60	6:59
W-4	613.07	19.31	3:45	19.31	4:45	19.30	5:45	19.31	6:59
W-24	612.18	19.45	3:48	19.45	4:49	19.44	5:49	19.45	7:04
D-4	608.62	16.27	3:49	16.27	4:50	16.26	5:50	16.27	7:06
D-6	609.59	17.82	3:50	17.82	4:51	17.81	5:51	17.82	7:07
D-8	608.64	16.01	3:51	16.01	4:52	16.00	5:52	16.00	7:08
SI-2	612.66	20.01	3:59	20.00	4:59	20.00	6:02	20.01	7:20
W-117R	612.91	20.04	3:58	20.03	4:58	20.03	6:01	20.03	7:19
W-113	610.36	17.47	4:05	17.48	5:04	17.47	6:08	17.48	7:27
SS-9	606.45	13.50	4:03	13.49	5:03	13.49	6:07	13.50	7:26
W-118R	607.85	14.85	4:02	14.85	5:02	14.86	6:05	14.85	7:24
SE-2	608.90	16.26	4:01	16.25	5:01	16.25	6:04	16.26	7:22
W-122	612.49	19.60	3:53	19.59	4:53	19.60	5:55	19.59	7:13
SS-10	611.40	18.38	3:54	18.38	4:54	18.39	5:56	18.38	7:15
W-128	608.10	15.05	3:56	15.06	4:56	15.05	6:00	15.05	7:17
Totalizer (gallons)	---	8129	3:47	8662	4:48	9205	5:48	9892	7:03
Discharge (gpm)	---	9	3:47	9	4:48	9	5:48	9	7:03

Notes:

--- = Measurement not applicable.

gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

Test Status: Pumping Pumping Duration (hours): 19 Date: 11/29/2011 Start Time: 8:00 Finish Time: 8:28										Pumping 20 11/29/2011 9:00 9:32										Pumping 21 11/29/2011 10:00 10:27										Pumping 22 11/29/2011 11:00 11:29									
Location		Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)		Clock Time	Depth to Water (feet)		Clock Time	Depth to Water (feet)		Clock Time																										
SE-3		611.25	21.38	8:24	21.40		9:04	21.39		10:04	21.39		11:04																										
P-112		612.15	20.56	8:05	20.55		9:05	20.55		10:05	20.52		11:03																										
TP-101		609.33	17.77	8:03	17.76		9:03	17.75		10:03	17.73		11:02																										
TP-102		609.05	17.60	8:02	17.59		9:02	17.58		10:02	17.56		11:01																										
W-4		613.07	19.32	8:01	19.32		9:01	19.32		10:01	19.31		11:00																										
W-24		612.18	19.44	8:07	19.43		9:07	19.42		10:06	19.40		11:06																										
D-4		608.62	16.27	8:08	16.27		9:08	16.27		10:08	16.22		11:08																										
D-6		609.59	17.82	8:09	17.83		9:09	17.82		10:09	17.79		11:09																										
D-8		608.64	16.00	8:10	16.00		9:10	16.00		10:10	15.98		11:10																										
SI-2		612.66	20.01	8:21	20.00		9:25	20.00		10:21	19.97		11:22																										
W-117R		612.91	20.03	8:20	20.03		9:23	20.03		10:20	19.99		11:20																										
W-113		610.36	17.48	8:28	17.46		9:32	17.44		10:27	17.44		11:28																										
SS-9		606.45	13.48	8:26	13.48		9:30	13.47		10:26	13.48		11:27																										
W-118R		607.85	14.88	8:25	14.85		9:29	14.85		10:24	14.85		11:25																										
SE-2		608.90	16.25	8:23	16.26		9:27	16.25		10:23	16.27		11:24																										
W-122		612.49	19.58	8:13	19.58		9:16	19.56		10:13	19.54		11:14																										
SS-10		611.40	18.36	8:15	18.37		9:18	18.36		10:15	18.33		11:15																										
W-128		608.10	15.04	8:17	15.05		9:20	15.03		10:11	15.02		11:17																										
Totalizer (gallons)		---	10440	8:06	10977		9:06	11519		10:05	12054		11:05																										
Discharge (gpm)		---	9	8:06	9		9:06	9		10:05	9		11:05																										

Notes:

--- = Measurement not applicable.

gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

Test Status: Pumping Pumping Pumping Pumping									
Pumping Duration (hours): 23 24 26 28									
Date: 11/29/2011 11/29/2011 11/29/2011 11/29/2011									
Start Time: 12:00 12:53 15:00 17:02									
Finish Time: 12:27 14:00 15:26 17:36									
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.37	12:04	21.39	12:56	21.39	15:04	21.42	17:07
P-112	612.15	20.50	12:03	20.51	12:57	20.51	15:03	20.56	17:06
TP-101	609.33	17.70	12:02	17.72	12:55	17.72	15:02	17.72	17:05
TP-102	609.05	17.56	12:01	17.55	12:54	17.55	15:01	17.55	17:04
W-4	613.07	19.31	12:00	19.31	12:53	19.31	15:00	19.30	17:03
W-24	612.18	19.40	12:05	19.38	13:01	19.38	15:06	19.38	17:09
D-4	608.62	16.22	12:06	16.21	13:02	16.20	15:07	16.21	17:10
D-6	609.59	17.75	12:07	17.75	13:05	17.76	15:08	17.77	17:11
D-8	608.64	15.95	12:08	15.94	13:06	15.95	15:09	15.95	17:12
SI-2	612.66	19.95	12:21	19.95	13:28	19.95	15:20	19.96	17:24
W-117R	612.91	19.97	12:20	19.96	13:27	19.97	15:19	19.98	17:23
W-113	610.36	17.44	12:27	17.44	13:43	17.42	15:26	17.41	17:36
SS-9	606.45	13.45	12:25	13.45	13:44	13.44	15:25	13.45	17:35
W-118R	607.85	14.81	12:24	14.81	13:34	14.81	15:24	14.81	17:34
SE-2	608.90	16.22	12:22	16.19	13:30	16.17	15:22	16.21	17:26
W-122	612.49	19.57	12:13	19.53	13:11	19.53	15:13	19.54	17:16
SS-10	611.40	18.32	12:15	18.32	13:16	18.31	15:14	18.32	17:18
W-128	608.10	15.00	12:17	14.90	13:20	15.00	15:16	15.01	17:20
Totalizer (gallons)	---	12593	12:05	13062	12:58	14222	15:05	15334	17:08
Discharge (gpm)	---	9	12:05	9	12:58	9	15:05	9	17:08

Notes:

--- = Measurement not applicable.

gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

Test Status: Pumping Pumping Pumping Pumping									
Pumping Duration (hours): 30 32 34 36									
Date: 11/29/2011 11/29/2011 11/29/2011 11/30/2011									
Start Time: 18:54 20:52 23:02 0:52									
Finish Time: 19:28 21:14 23:24 1:14									
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.40	18:56	21.41	20:54	21.42	23:05	21.41	0:54
P-112	612.15	20.48	18:56	20.46	20:54	20.47	23:04	20.46	0:54
TP-101	609.33	17.68	18:55	17.67	20:53	17.67	23:03	17.67	0:53
TP-102	609.05	17.53	18:55	17.52	20:53	17.52	23:03	17.51	0:53
W-4	613.07	19.31	18:54	19.29	20:52	19.31	23:02	19.31	0:52
W-24	612.18	19.37	18:58	19.35	20:56	19.36	23:07	19.36	0:56
D-4	608.62	16.20	18:59	16.18	20:59	16.17	23:08	16.15	0:58
D-6	609.59	17.75	19:00	17.72	21:00	17.72	23:09	17.71	0:59
D-8	608.64	15.94	19:01	15.92	21:01	15.91	23:10	15.90	1:00
SI-2	612.66	19.93	19:22	19.93	21:09	19.92	23:19	19.91	1:09
W-117R	612.91	19.96	19:21	19.95	21:08	19.95	23:18	19.94	1:08
W-113	610.36	17.40	19:28	17.40	21:14	17.40	23:24	17.40	1:14
SS-9	606.45	13.44	19:27	13.43	21:13	13.42	23:23	13.41	1:13
W-118R	607.85	14.80	19:25	14.79	21:12	14.78	23:21	14.77	1:12
SE-2	608.90	16.17	19:24	16.18	21:11	16.17	23:20	16.15	1:10
W-122	612.49	19.52	19:08	19.50	21:03	19.47	23:13	19.47	1:02
SS-10	611.40	18.30	19:10	18.28	21:04	18.28	23:14	18.28	1:04
W-128	608.10	15.01	19:18	15.01	21:06	14.99	23:15	15.00	1:05
Totalizer (gallons)	---	16348	18:57	17378	20:55	18542	23:06	19515	0:55
Discharge (gpm)	---	9	18:57	9	20:55	9	23:06	9	0:55

Notes:

--- = Measurement not applicable.

gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

Test Status: Pumping Pumping Duration (hours): 38 Date: 11/30/2011 Start Time: 2:54 Finish Time: 3:20 Pumping 40 11/30/2011 4:55 5:20 Pumping 42 11/30/2011 7:00 7:27 Pumping 44 11/30/2011 9:00 9:32									
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.43	2:56	21.43	4:59	21.45	7:04	21.45	9:04
P-112	612.15	20.47	2:56	20.47	4:58	20.48	7:03	20.46	9:03
TP-101	609.33	17.66	2:55	17.67	4:57	17.69	7:02	17.70	9:02
TP-102	609.05	17.52	2:55	17.51	4:56	17.52	7:01	17.52	9:01
W-4	613.07	19.30	2:54	19.31	4:55	19.32	7:00	19.31	9:00
W-24	612.18	19.36	2:58	19.35	5:01	19.35	7:06	19.36	9:06
D-4	608.62	16.17	3:04	16.17	5:04	16.18	7:07	16.18	9:07
D-6	609.59	17.72	3:05	17.72	5:05	17.75	7:08	17.73	9:08
D-8	608.64	15.92	3:06	15.91	5:06	15.93	7:09	15.91	9:09
SI-2	612.66	19.91	3:15	19.92	5:14	19.93	7:21	19.92	9:26
W-117R	612.91	19.95	3:14	19.94	5:13	19.96	7:19	19.96	9:25
W-113	610.36	17.40	3:20	17.40	5:20	17.41	7:27	17.41	9:32
SS-9	606.45	13.42	3:19	13.42	5:19	13.43	7:26	13.43	9:31
W-118R	607.85	14.78	3:18	14.77	5:17	14.80	7:24	14.78	9:29
SE-2	608.90	16.17	3:17	16.17	5:16	16.18	7:23	16.17	9:28
W-122	612.49	19.49	3:09	19.50	5:08	19.50	7:13	19.51	9:15
SS-10	611.40	18.29	3:10	18.29	5:10	18.30	7:15	18.30	9:17
W-128	608.10	14.99	3:12	15.00	5:11	14.99	7:17	14.99	9:20
Totalizer (gallons)	---	20650	2:57	21723	5:00	22833	7:05	23915	9:05
Discharge (gpm)	---	9	2:57	9	5:00	9	7:05	9	9:05

Notes:

--- = Measurement not applicable.

gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

Test Status: Pumping Pumping Pumping Pumping Pumping Duration (hours): 46 48 52 56 Date: 11/30/2011 11/30/2011 11/30/2011 11/30/2011 Start Time: 11:00 12:58 16:45 21:05 Finish Time: 11:30 13:54 17:11 21:28									
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.44	11:03	21.43	13:02	21.41	16:49	21.44	21:08
P-112	612.15	20.45	11:04	20.41	13:01	20.41	16:47	20.43	21:07
TP-101	609.33	17.65	11:02	17.62	13:00	17.61	16:46	17.62	21:07
TP-102	609.05	17.49	11:01	17.45	12:59	17.46	16:45	17.47	21:06
W-4	613.07	19.32	11:00	19.30	12:58	18.46	16:45	19.31	21:05
W-24	612.18	19.31	11:06	19.29	13:04	19.30	16:52	19.31	21:09
D-4	608.62	16.15	11:07	16.11	13:08	16.10	16:53	16.12	21:12
D-6	609.59	17.70	11:08	17.71	13:10	17.65	16:54	17.67	21:13
D-8	608.64	15.90	11:09	15.95	13:13	15.86	16:55	15.87	21:14
SI-2	612.66	19.90	11:24	19.85	13:36	19.86	17:06	19.88	21:23
W-117R	612.91	19.92	11:23	17.88	13:35	19.90	17:05	19.91	21:22
W-113	610.36	17.37	11:30	17.35	13:54	17.37	17:11	17.37	21:28
SS-9	606.45	13.40	11:29	13.37	13:52	13.47	17:10	13.41	21:27
W-118R	607.85	14.75	11:28	14.72	13:47	14.73	17:08	14.75	21:26
SE-2	608.90	16.19	11:26	16.09	13:40	16.10	17:07	16.12	21:24
W-122	612.49	19.47	11:16	19.43	13:15	19.44	16:59	19.40	21:16
SS-10	611.40	18.26	11:17	18.23	13:20	18.23	17:01	18.24	21:18
W-128	608.10	14.97	11:19	14.95	13:24	14.96	17:02	14.97	21:19
Totalizer (gallons)	---	25000	11:05	26069	13:03	28125	16:51	30434	21:09
Discharge (gpm)	---	9	11:05	9	13:03	9	16:51	9	21:09

Notes:

--- = Measurement not applicable.
gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

		Test Status:	Pumping	Pumping	Pumping	Pumping	Pumping		
		Pumping Duration (hours):	60	64	68	72			
		Date:	12/1/2011	12/1/2011	12/1/2011	12/1/2011			
		Start Time:	1:00	4:53	8:55	12:55			
		Finish Time:	1:22	5:17	9:24	13:51			
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.50	1:04	21.49	4:57	21.53	9:00	21.55	12:59
P-112	612.15	20.44	1:03	20.42	4:56	20.47	8:58	20.48	12:58
TP-101	609.33	17.65	1:02	17.63	4:55	17.69	8:57	17.69	12:57
TP-102	609.05	17.49	1:01	17.47	4:54	17.53	8:56	17.54	12:56
W-4	613.07	19.31	1:00	19.31	4:53	19.31	8:55	19.31	12:55
W-24	612.18	19.30	1:06	19.30	4:58	19.33	9:02	19.36	13:01
D-4	608.62	16.12	1:06	16.12	5:00	16.18	9:03	16.17	13:02
D-6	609.59	17.70	1:07	17.69	5:01	17.74	9:04	17.72	13:04
D-8	608.64	15.89	1:08	15.88	5:02	15.93	9:05	15.93	13:06
SI-2	612.66	19.90	1:10	19.90	5:10	19.94	9:18	19.93	13:32
W-117R	612.91	19.92	1:15	19.91	5:09	19.97	9:17	19.96	13:31
W-113	610.36	17.37	1:22	17.35	5:17	17.40	9:24	17.43	13:51
SS-9	606.45	13.42	1:21	13.40	5:15	13.44	9:23	13.43	13:49
W-118R	607.85	14.76	1:19	14.76	5:13	14.83	9:22	14.81	13:44
SE-2	608.90	16.12	1:18	16.11	5:12	16.16	9:20	16.18	13:37
W-122	612.49	19.44	1:10	19.44	5:04	19.48	9:10	19.48	13:10
SS-10	611.40	18.26	1:12	18.25	5:05	18.29	9:11	18.31	13:15
W-128	608.10	14.99	1:13	14.97	5:07	15.00	9:14	15.00	13:19
Totalizer (gallons)	---	32558	1:05	34659	4:58	36850	9:01	38940	12:53
Discharge (gpm)	---	9	1:05	9	4:58	9	9:01	9	13:00

Notes:

--- = Measurement not applicable.

gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

Test Status: Pumping Pumping Duration (hours): 76 Date: 12/1/2011 Start Time: 16:44 Finish Time: 17:14 Pumping 80 12/1/2011 20:54 21:16 Pumping 84 12/2/2011 0:47 1:08 Pumping 88 12/2/2011 4:54 5:19									
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.61	16:46	21.62	20:58	21.64	0:51	21.65	4:58
P-112	612.15	20.52	16:47	20.52	20:57	20.58	0:50	20.54	4:57
TP-101	609.33	17.73	16:46	17.72	20:56	17.74	0:49	17.73	4:56
TP-102	609.05	17.58	16:45	17.59	20:55	17.58	0:48	17.60	4:55
W-4	613.07	19.31	16:44	19.31	20:54	19.33	0:47	19.33	4:54
W-24	612.18	19.38	16:49	19.39	21:00	19.39	0:53	19.40	4:59
D-4	608.62	16.21	16:56	16.21	21:00	16.21	0:54	16.22	5:02
D-6	609.59	17.78	16:57	17.79	21:01	17.78	0:55	17.79	5:03
D-8	608.64	15.95	16:58	15.96	21:02	15.96	0:56	15.98	5:04
SI-2	612.66	19.97	17:09	19.98	21:11	19.98	1:04	19.99	5:14
W-117R	612.91	19.99	17:07	20.00	21:10	20.00	1:03	20.01	5:13
W-113	610.36	17.42	17:14	17.44	21:16	17.45	1:08	17.45	5:19
SS-9	606.45	13.47	17:13	13.48	21:15	13.49	1:07	13.50	5:18
W-118R	607.85	14.85	17:12	14.86	21:14	14.86	1:06	14.86	5:17
SE-2	608.90	16.21	17:10	16.25	21:12	16.25	1:05	16.22	5:15
W-122	612.49	19.50	17:00	19.53	21:04	19.53	0:57	19.55	5:07
SS-10	611.40	18.33	17:03	18.34	21:06	18.33	0:59	18.34	5:08
W-128	608.10	15.02	17:05	15.02	21:07	15.05	1:00	15.04	5:10
Totalizer (gallons)	---	41124	16:47	43310	20:59	45415	0:52	47662	4:59
Discharge (gpm)	---	9	16:47	9	20:59	9	0:52	9	4:59

Notes:

--- = Measurement not applicable.

gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

Test Status: Pumping Pumping Pump Off Pump Off									
Pumping Duration (hours): 92 95 off 0.5									
Date: 12/2/2011 12/2/2011 12/2/2011									
Start Time: 8:55 12:00 13:00									
Finish Time: 9:20 12:40 13:00									
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	21.66	8:59	21.68	12:11	---	---	18.73	13:22
P-112	612.15	20.55	8:58	20.52	12:10	---	---	19.62	13:21
TP-101	609.33	17.75	8:57	17.75	12:09	---	---	16.77	13:20
TP-102	609.05	17.62	8:56	17.79	12:08	---	---	16.51	13:19
W-4	613.07	19.32	8:55	19.33	12:07	---	---	19.33	13:18
W-24	612.18	19.41	9:02	19.40	12:12	---	---	19.39	13:23
D-4	608.62	16.17	9:03	16.22	12:13	---	---	15.95	13:24
D-6	609.59	17.80	9:04	17.77	12:14	---	---	17.05	13:25
D-8	608.64	15.98	9:05	15.97	12:15	---	---	15.90	13:26
SI-2	612.66	19.95	9:14	19.96	12:26	---	---	19.88	13:35
W-117R	612.91	20.03	9:12	19.99	12:25	---	---	19.97	13:34
W-113	610.36	17.46	9:20	17.43	12:34	---	---	17.45	13:40
SS-9	606.45	13.47	9:18	13.46	12:33	---	---	13.45	13:39
W-118R	607.85	14.87	9:17	14.86	12:32	---	---	14.82	13:37
SE-2	608.90	16.23	9:15	16.21	12:38	---	---	16.12	13:36
W-122	612.49	19.56	9:05	19.54	12:20	---	---	19.51	13:29
SS-10	611.40	18.34	9:07	18.33	12:21	---	---	18.31	13:30
W-128	608.10	15.05	9:09	15.02	12:23	---	---	15.06	13:32
Totalizer (gallons)	---	49810	9:00	51580	12:12	52003	13:00	---	---
Discharge (gpm)	---	9	9:00	9	12:12	0	13:00	---	---

Notes:

--- = Measurement not applicable.

gpm = Gallons per minute.

TABLE B-2

**SE-3 AQUIFER TEST MANUAL WATER LEVEL MEASUREMENTS
PEOPLES NATURAL GAS SITE – DUBUQUE, IOWA**

	Test Status: Pumping Duration (hours): Date: Start Time: Finish Time:	Pump Off off 1 12/2/2011 13:45 14:06	Pump Off off 1.5 12/2/2011 14:15 14:38	Pump Off off >3 days 12/6/2011 10:12 13:07			
Location	Top of Casing Elevation (feet)	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time	Depth to Water (feet)	Clock Time
SE-3	611.25	18.59	13:48	18.53	14:19	18.55	10:20
P-112	612.15	19.48	13:47	19.45	14:18	19.41	10:18
TP-101	609.33	16.64	13:47	16.57	14:17	16.58	10:16
TP-102	609.05	16.36	13:46	16.31	14:16	16.29	10:14
W-4	613.07	19.32	13:45	19.31	14:15	19.48	10:12
W-24	612.18	19.38	13:46	19.43	14:20	19.42	10:25
D-4	608.62	15.87	15:47	15.82	14:21	16.90	10:30
D-6	609.59	16.93	15:48	16.86	14:22	16.89	10:58
D-8	608.64	15.86	15:49	15.81	14:23	15.88	11:05
SI-2	612.66	19.84	14:00	19.81	14:33	19.80	12:28
W-117R	612.91	19.95	13:59	19.93	14:32	19.95	12:26
W-113	610.36	17.43	14:06	17.45	14:38	17.53	13:07
SS-9	606.45	13.46	14:05	13.44	14:36	13.42	13:04
W-118R	607.85	14.80	14:03	14.78	14:36	14.88	12:56
SE-2	608.90	16.07	14:02	16.02	14:34	16.18	12:42
W-122	612.49	19.51	13:54	19.48	14:26	19.50	11:52
SS-10	611.40	18.27	13:55	18.25	14:27	18.31	11:59
W-128	608.10	15.03	13:57	15.02	14:28	15.15	12:07
Totalizer (gallons)	---	---	---	---	---	---	---
Discharge (gpm)	---	---	---	---	---	---	---

Notes:

--- = Measurement not applicable.

gpm = Gallons per minute.

TABLE B-3

**SE-3 AQUIFER TEST RESULTS
PEOPLES NATURAL GAS SITE - DUBUQUE, IOWA**

Observation Well	Transmissivity (cm ² /sec)	Storativity (unitless)	Hydraulic Conductivity ^a (cm/sec)	Solution Method
SE-3	7.7	8.0E-04	3.9E-02	Theis-Recovery (Confined)
P-112	7.3	4.6E-04	3.7E-02	Theis (Confined)
P-112	6.5	4.8E-04	3.3E-02	Theis-Recovery (Confined)
TP-102	6.9	4.6E-04	3.5E-02	Theis (Confined)
D-4	17.3	1.9E-04	8.8E-02	Theis (Confined)
D-6	6.5	6.0E-04	3.3E-02	Theis (Confined)
D-8	17.5	2.6E-03	8.8E-02	Theis (Confined)
Geometric Mean	9.1	6E-04	4.6E-02	---

Notes:

^a Based on a silty sand aquifer thickness of 6.5 feet.

cm²/sec = Centimeters squared per second.

cm/sec = Centimeters per second.

TABLE B-4

SE-3 GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

				Sample Location:	SE-3	SE-3	SE-3	SE-3	SE-3	SE-3
				Screened Unit:	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
				Depth BTOC (feet):	39.5	39.5	39.5	39.5	39.5	39.5
				Sample Date:	10/19/2011	11/28/11 18:00	11/29/11 12:45	11/29/11 12:50	12/1/11 12:55	12/2/11 12:55
<u>Permit Limits</u>				Remediation Goal						
Analyte	Units	Average	Maximum.							
Benzene	µg/L	2,000	5,000	5	311	329	354	443	528	534
Toluene	µg/L	1,500	3,750	2,000	4.21	<10.0	12.3	22.1	30.6	28.4
Ethylbenzene	µg/L	1,050	2,625	700	273	260	256	320	333	326
Xylenes	µg/L	10,000	25,000	10,000	247	41.5	73.1	117	144	142
2-Methylnaphthalene	µg/L	2,000	5,000	--	na	10.1	14.4	46.8	56.2	57.8
Acenaphthene	µg/L	400	1,000	--	79.5	73.4	61.0	72.5	76.4	70.1
Acenaphthylene	µg/L	400	1,000	--	<0.870	<0.870	<0.870	<0.870	<8.70	<8.70
Anthracene	µg/L	2,000	5,000	--	0.831	0.805	0.814	0.984	1.03	1.3
Benzo(a)anthracene	µg/L	19	47	0.1	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Benzo(a)pyrene	µg/L	20	48	0.2	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800
Benzo(b)fluoranthene	µg/L	19	47	0.2	<0.0280	<0.0280	<0.0280	<0.0280	<0.0280	<0.0280
Benzo(g,h,i)perylene	µg/L	400	1,000	--	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800
Benzo(k)fluoranthene	µg/L	19	47	0.2	<0.00700	<0.00700	<0.00700	<0.00700	<0.00700	<0.00700
Chrysene	µg/L	19	47	0.2	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800
Dibenzo(a,h)anthracene	µg/L	45	65	0.2	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Fluoranthene	µg/L	400	1,000	--	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Fluorene	µg/L	200	500	--	35.9	32.9	27.5	32.5	36.6	36
Indeno(1,2,3cd)pyrene	µg/L	45	65	0.4	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Naphthalene	µg/L	2,000	5,000	100	21.3	71.6	183	359	464	454
Phenanthrene	µg/L	400	1,000	--	9.14	9.28	8.06	9.72	10.1	9.31
Pyrene	µg/L	400	1,000	--	0.224	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170
Dibenzofuran	µg/L	400	1,000	--	na	na	na	na	na	<50.0
Total PAHs	µg/L	6,000	15,000	--	147	198	295	522	644	629
2,4-Dinitrotoluene	µg/L	400	1,000	--	na	na	na	na	na	<50.0
2,6-Dinitrotoluene	µg/L	400	1,000	--	na	na	na	na	na	<50.0
Nitrobenzene	µg/L	2,000	5,000	--	na	na	na	na	na	<50.0

TABLE B-4

SE-3 GROUNDWATER ANALYTICAL RESULTS
MIDAMERICAN ENERGY COMPANY
PEOPLES NATURAL GAS SITE
DUBUQUE, IOWA

Analyte	Units	Permit Limits		Remediation Goal	Sample Location: SE-3						
		Average	Maximum		Screened Unit: Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	
					Depth BTOC (feet): 39.5	39.5	39.5	39.5	39.5	39.5	
					Sample Date: 10/19/2011	11/28/11 18:00	11/29/11 12:45	11/29/11 12:50	12/1/11 12:55	12/2/11 12:55	
2,4-Dimethylphenol	µg/L	2,000	5,000	--	na	na	na	na	na	<50.0	RL1
2,4-Dinitrophenol	µg/L	400	1,000	--	na	na	na	na	na	<100	RL1
4,6-Dinitro-2-methylphenol	µg/L	400	1,000	--	na	na	na	na	na	<50.0	RL1
2-Nitrophenol	µg/L	400	1,000	--	na	na	na	na	na	<50.0	RL1
4-Nitrophenol	µg/L	400	1,000	--	na	na	na	na	na	<50.0	RL1
Phenol	µg/L	2,000	5,000	--	na	na	na	na	na	<50.0	RL1
Total Phenolic Compounds	µg/L	4,000	10,000	--	na	na	na	na	na	ND	
Chromium, Total	mg/L	--	--	--	na	na	na	na	na	<0.0200	
Copper, Total	mg/L	--	--	--	na	na	na	na	na	<0.0200	
Iron, Total	mg/L	--	--	--	na	na	na	na	na	68.8	
Lead, Total	mg/L	400	1,000	--	na	na	na	na	na	<0.100	
Manganese, Total	mg/L	--	--	--	na	na	na	na	na	4.21	
Nickel, Total	mg/L	--	--	--	na	na	na	na	na	<0.0500	
Zinc, Total	mg/L	1,000	2,500	--	na	na	na	na	na	<0.100	IE
Cyanide, Total	mg/L	500	1,250	--	na	na	na	na	na	0.848	pH<12
TPH as Gasoline	mg/L	--	--	--	na	na	na	na	na	5.45	
Hardness, Total	mg/L	--	--	--	na	na	na	na	na	1920	pH>2
Cyanide (amenable)	mg/L	500	1,250	--	na	na	na	na	na	0.039	pH<12
pH (field)	s.u.	--	--	--	6.49	6.31	6.50	6.37	6.09	6.80	

Notes:

-- = Remediation Goal or Permit Limit not established.

BTOC = Below top of casing.

na = Not analyzed.

ND = Not detected.

s.u. = Standard units.

RL1 = Reporting limit raised due to sample matrix effects.

IE = Elevated reporting limit due to interelement interference.

pH<12 = Sample received at pH<12. It was adjusted correctly prior to analysis.

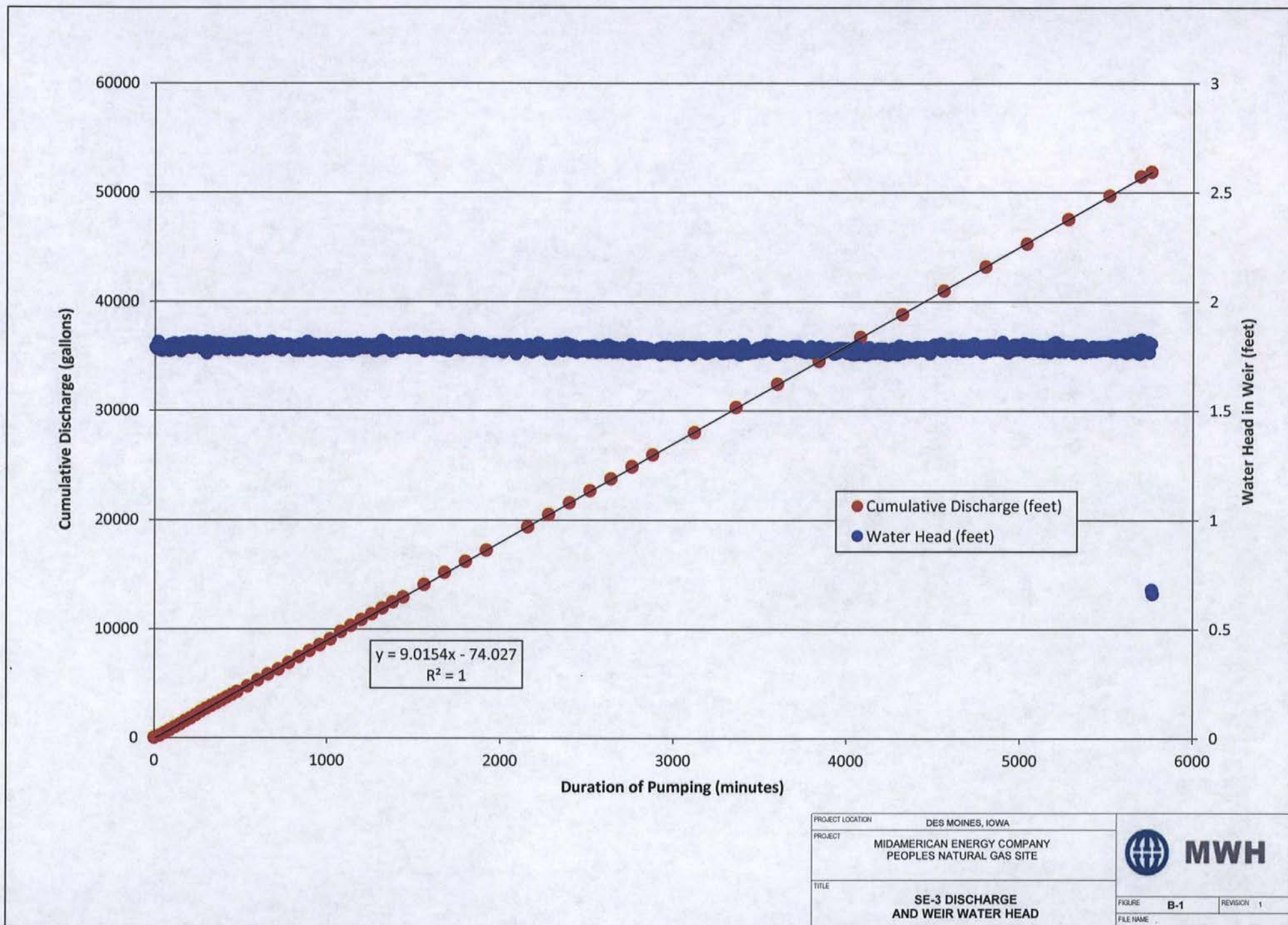
pH>2 = Sample received at pH>2. It was adjusted correctly prior to analysis.

µg/l = Microgram(s) per liter.

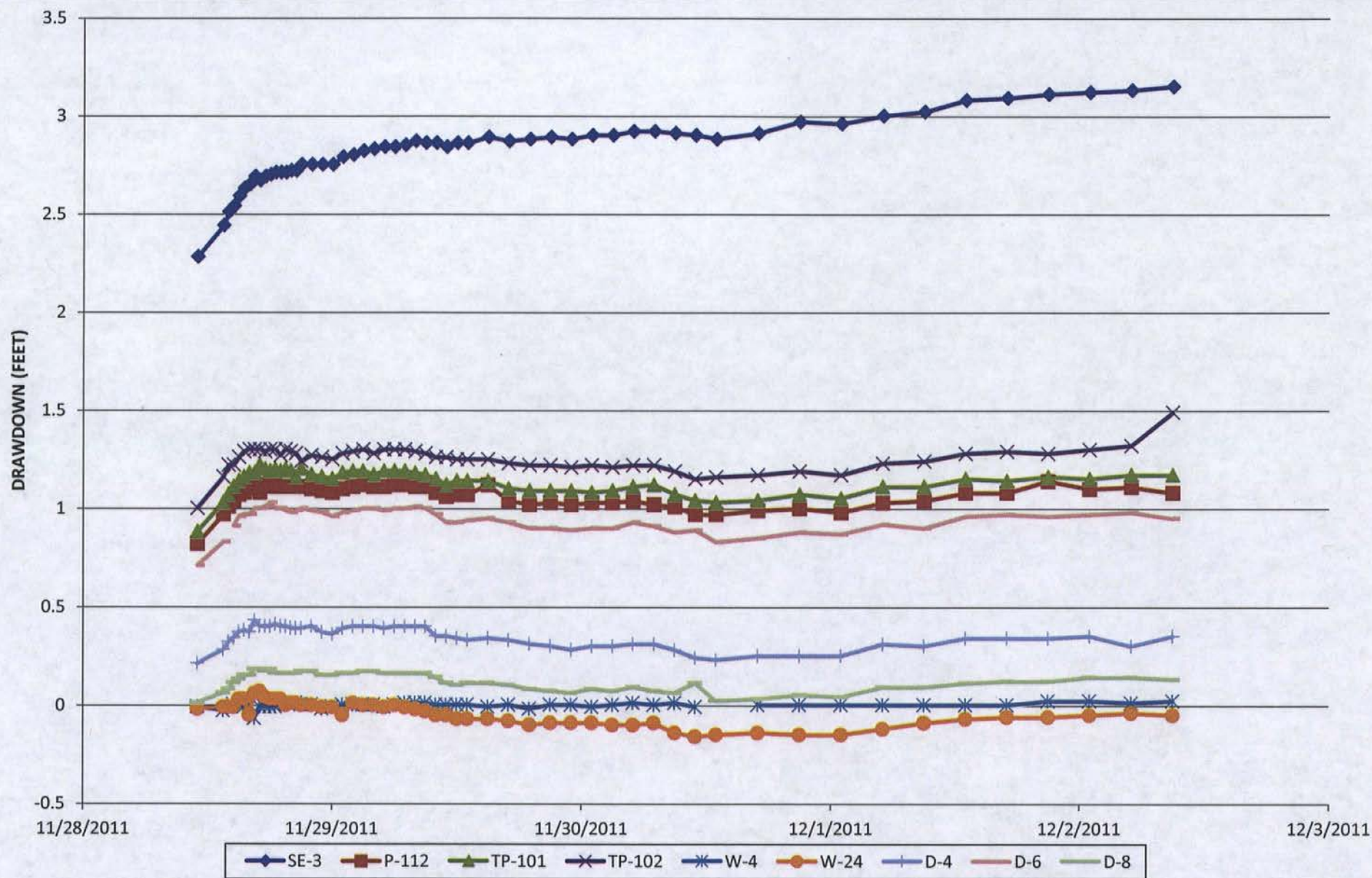
mg/L = Milligram(s) per liter.

PAH = Polynuclear aromatic hydrocarbons.

TPH = Total petroleum hydrocarbons.







PROJECT LOCATION	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE
TITLE	SE-3 AQUIFER TEST DRAWDOWN



FIGURE	B-3	REVISION	1
FILENAME			

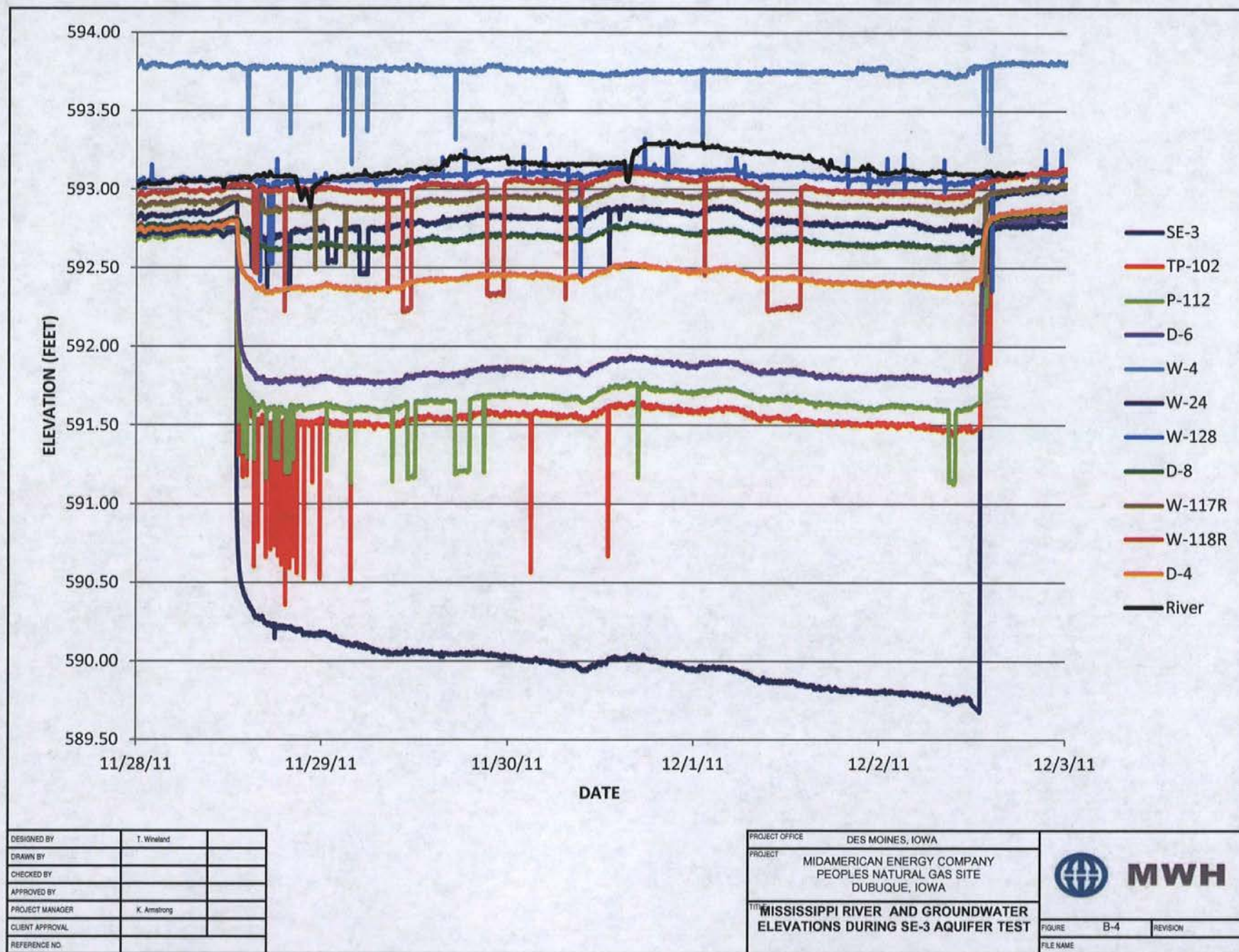
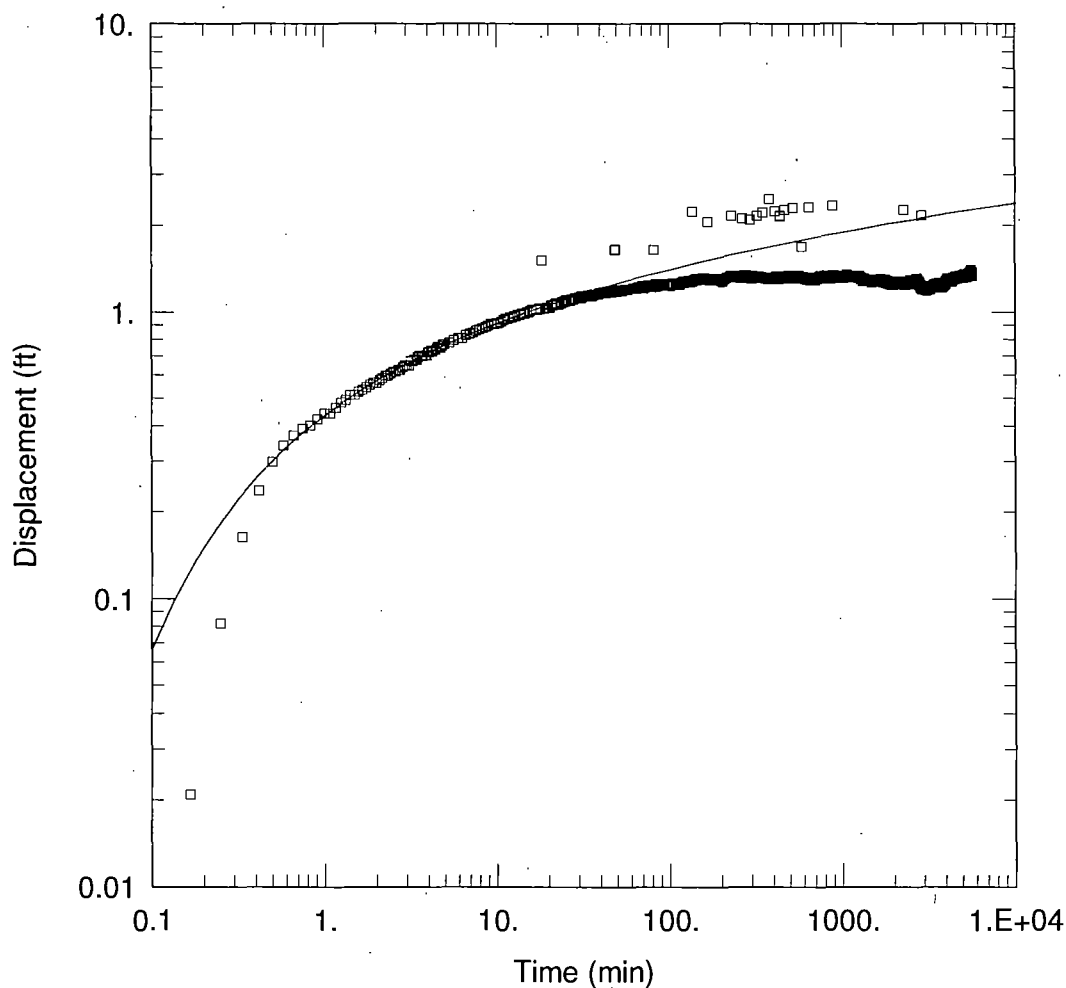




EXHIBIT B-1



WELL TEST ANALYSIS

Data Set: P:\PROJEC~1\MIDAME~1\DUBUQU~1\HYDRO\P-112A~1\AQTESO~1\TP-102.AQT

Date: 05/24/12

Time: 09:22:31

PROJECT INFORMATION

Company: MWH

Client: MEC

Project: 1011180

Test Location: Dubuque, IA (PNG)

Test Well: SE-3

Test Date: 11-28-11

AQUIFER DATA

Saturated Thickness: 6.5 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
SE-3	2.272E+006	1.545E+007	TP-102	2.272E+006	1.545E+007

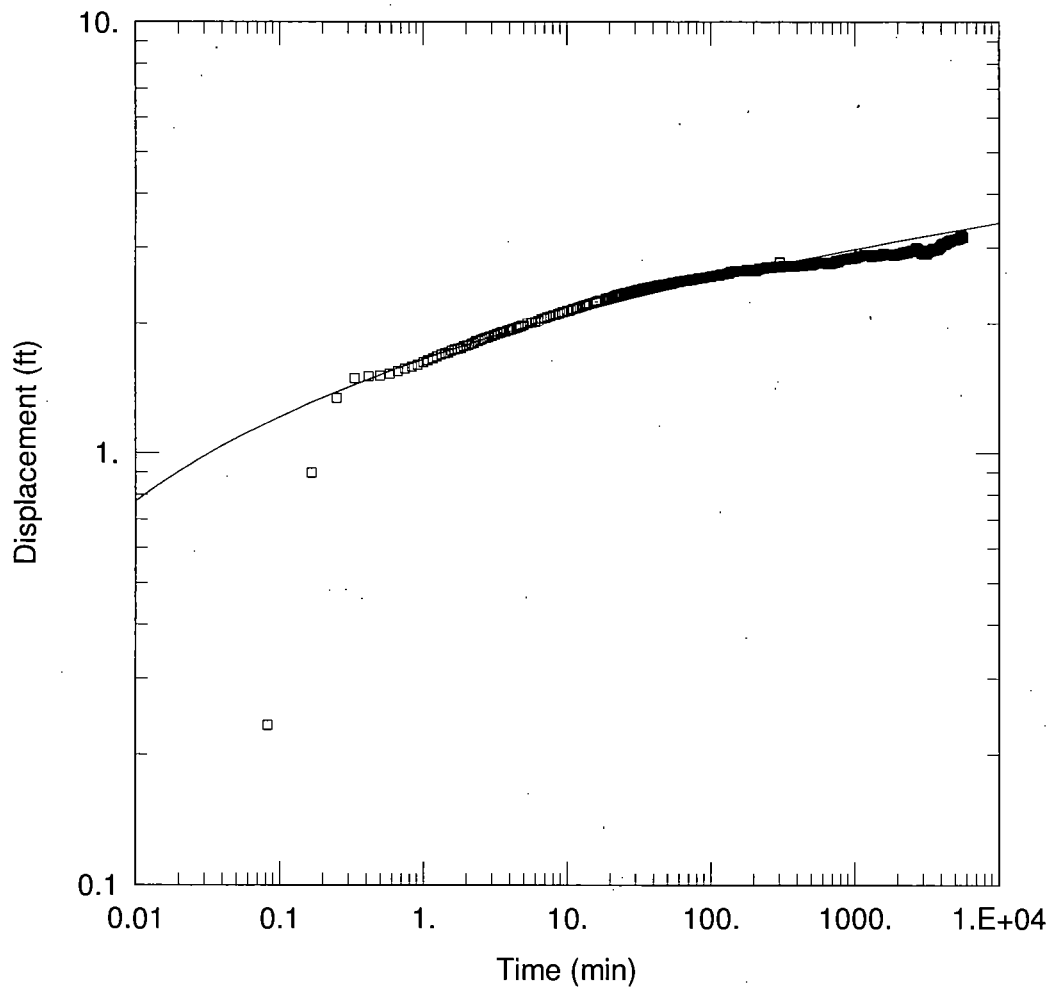
SOLUTION

Aquifer Model: Confined

Solution Method: Theis

T = 6.941 cm²/sec

S = 0.0004622



WELL TEST ANALYSIS

Data Set: P:\PROJEC~1\MIDAME~1\DUBUQU~1\HYDRO\P-112A~1\AQTESO~1\SE-3B.AQT

Date: 05/24/12

Time: 09:14:38

PROJECT INFORMATION

Company: MWH

Client: MEC

Project: 1011180

Test Location: Dubuque, IA (PNG)

Test Well: SE-3

Test Date: 11-28-11

AQUIFER DATA

Saturated Thickness: 6.5 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
SE-3	2.272E+006	1.545E+007	SE-3	2.272E+006	1.545E+007

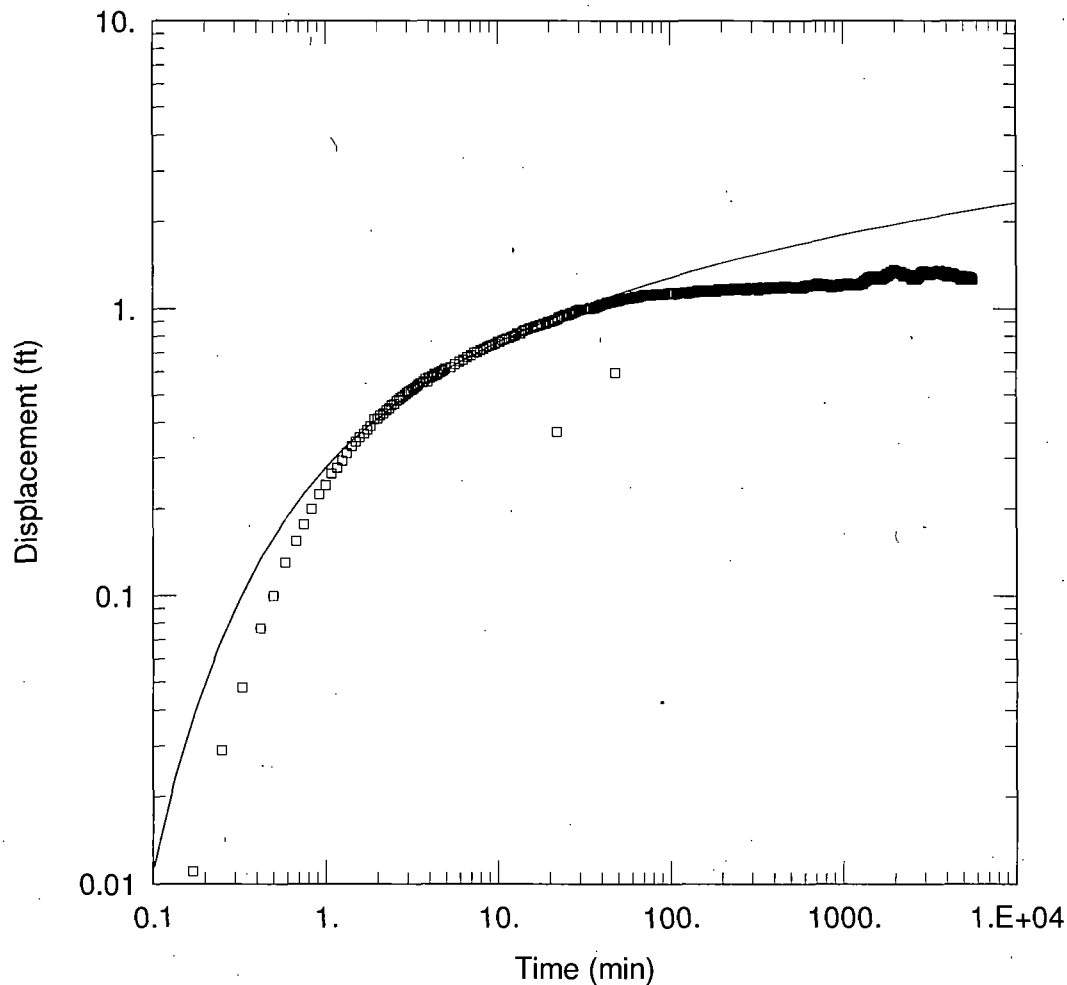
SOLUTION

Aquifer Model: Confined

Solution Method: Theis

$T = 7.744 \text{ cm}^2/\text{sec}$

$S = 0.0007967$



WELL TEST ANALYSIS

Data Set: P:\PROJEC~1\MIDAME~1\DUBUQU~1\HYDRO\P-112A~1\AQTESO~1\P-112R.AQT

Date: 05/24/12

Time: 11:04:53

PROJECT INFORMATION

Company: MWH

Client: MEC

Project: 1011180

Test Location: Dubuque, IA (PNG)

Test Well: SE-3

Test Date: 12-2-11

AQUIFER DATA

Saturated Thickness: 6.5 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
SE-3	2.272E+006	1.545E+007

Observation Wells

Well Name	X (ft)	Y (ft)
□ P-112	2.272E+006	1.545E+007

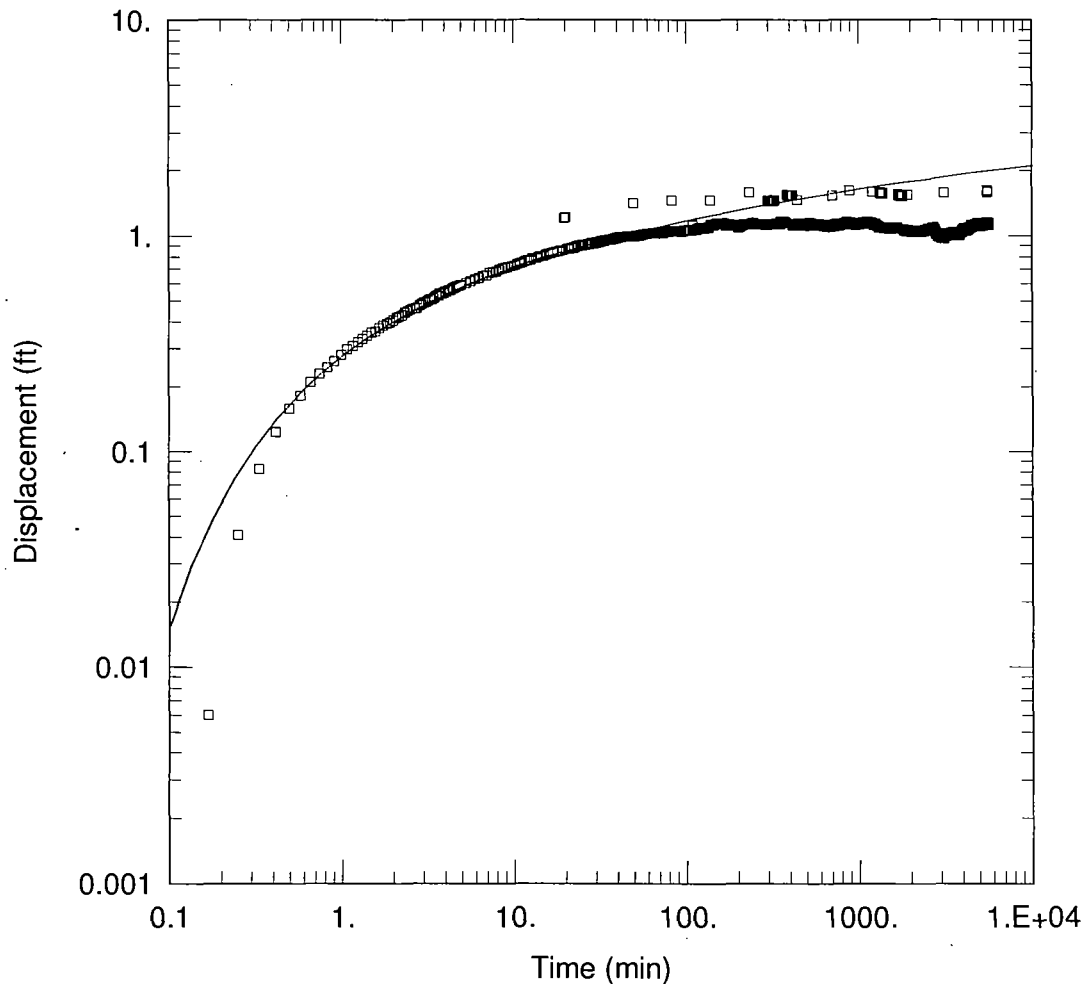
SOLUTION

Aquifer Model: Confined

Solution Method: Theis

T = 6.539 cm²/sec

S = 0.0004844



WELL TEST ANALYSIS

Data Set: P:\PROJEC~1\MIDAME~1\DUBUQU~1\HYDRO\P-112A~1\AQTESO~1\P-112.AQT

Date: 04/23/12

Time: 11:43:14

PROJECT INFORMATION

Company: MWH

Client: MEC

Project: 1011180

Test Location: Dubuque, IA

Test Well: SE-3

Test Date: 11-28-11

AQUIFER DATA

Saturated Thickness: 6.5 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
SE-3	2.272E+006	1.545E+007	□ P-112	2.272E+006	1.545E+007

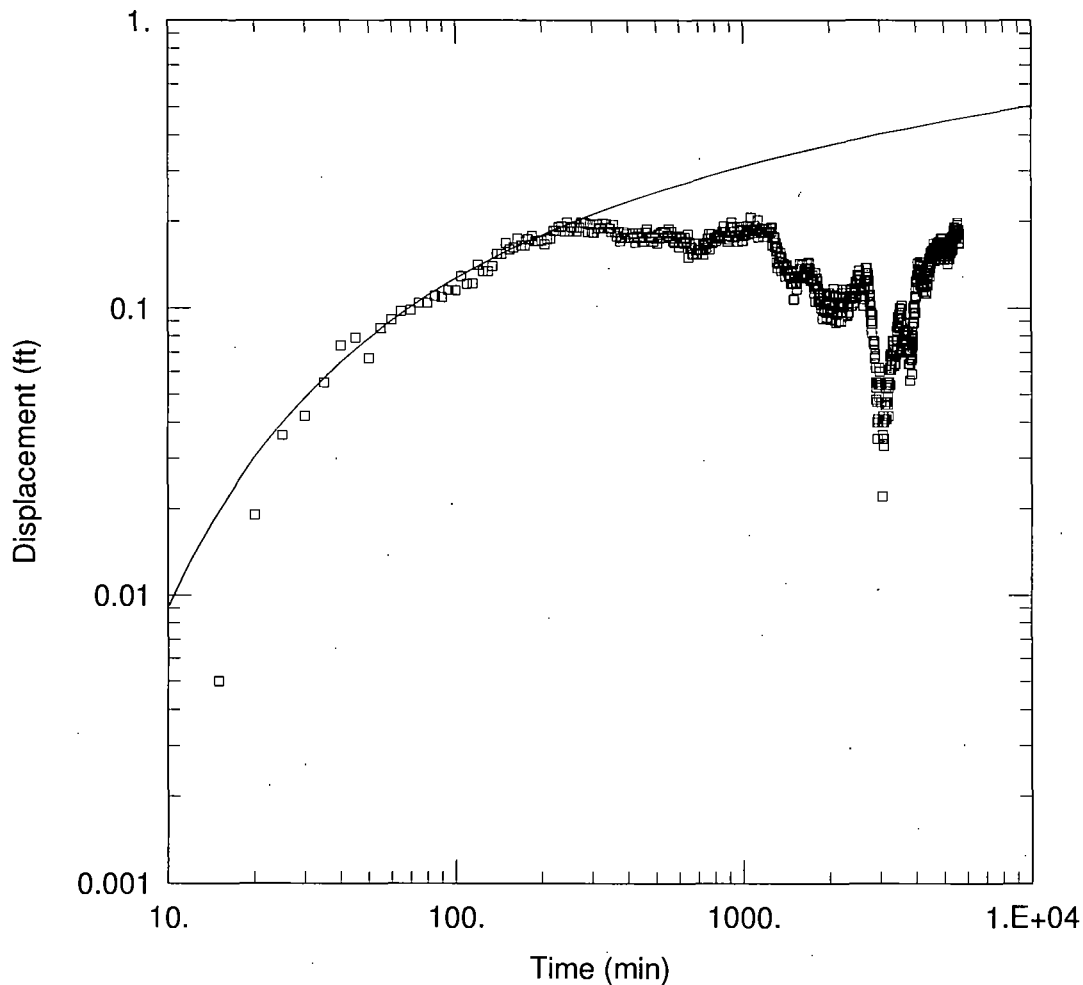
SOLUTION

Aquifer Model: Confined

Solution Method: Theis

$T = 7.328 \text{ cm}^2/\text{sec}$

$S = 0.0004625$



WELL TEST ANALYSIS

Data Set: P:\PROJEC~1\MIDAME~1\DUBUQU~1\HYDRO\P-112A~1\AQTESO~1\D-8.AQT

Date: 04/23/12

Time: 11:42:19

PROJECT INFORMATION

Company: MWH

Client: MEC

Project: 1011180

Test Location: Dubuque, IA (PNG)

Test Well: SE-3

Test Date: 11-28-11

AQUIFER DATA

Saturated Thickness: 6.5 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
SE-3	2.272E+006	1.545E+007

Observation Wells

Well Name	X (ft)	Y (ft)
D-8	2.272E+006	1.545E+007

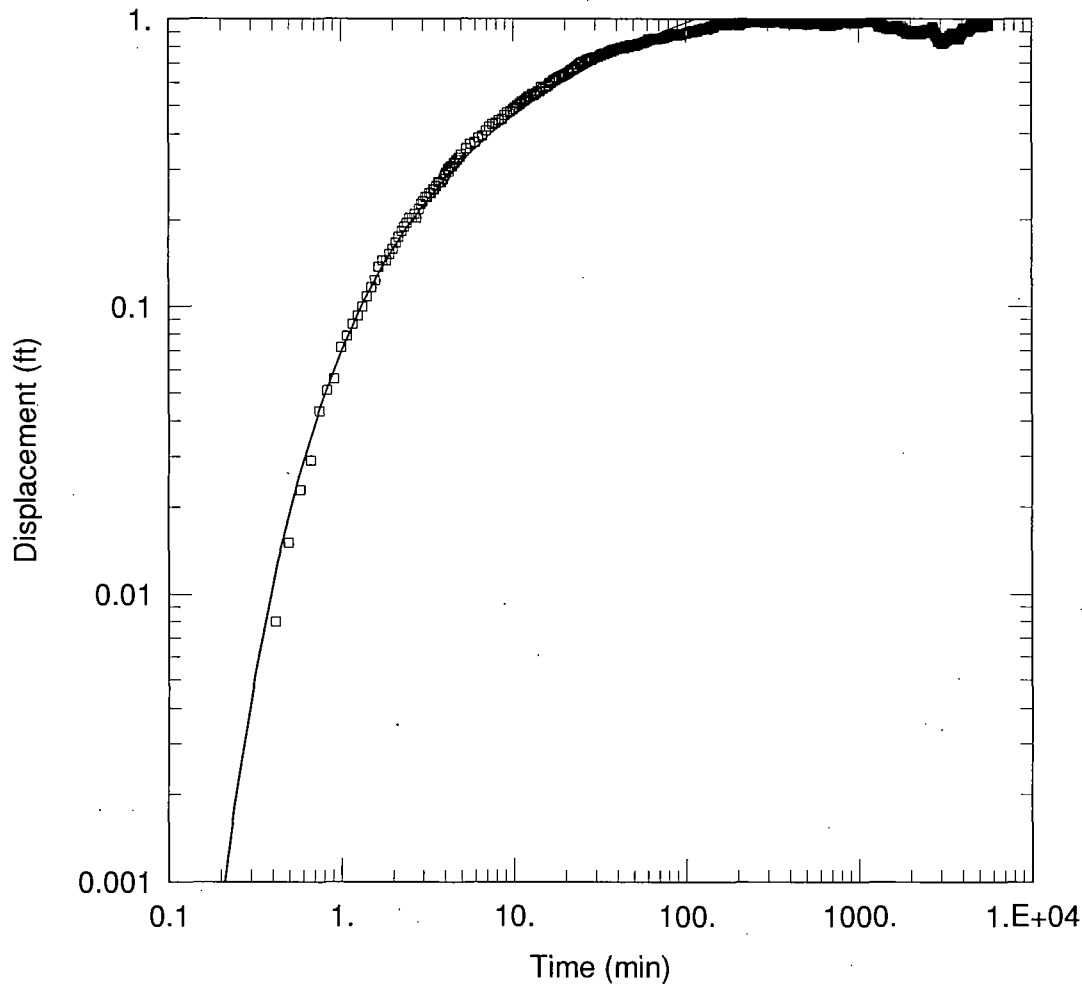
SOLUTION

Aquifer Model: Confined

Solution Method: Theis

T = 17.52 cm²/sec

S = 0.002631



WELL TEST ANALYSIS

Data Set: P:\PROJEC~1\MIDAME~1\DUBUQU~1\HYDRO\P-112A~1\AQTESO~1\D-6.AQT

Date: 04/23/12

Time: 11:40:42

PROJECT INFORMATION

Company: MWH

Client: MEC

Project: 1011180

Test Location: Dubuque, IA (PNG)

Test Well: SE-3

Test Date: 11-28-11

AQUIFER DATA

Saturated Thickness: 6.5 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
SE-3	2.272E+006	1.545E+007	□ D-6	2.272E+006	1.545E+007

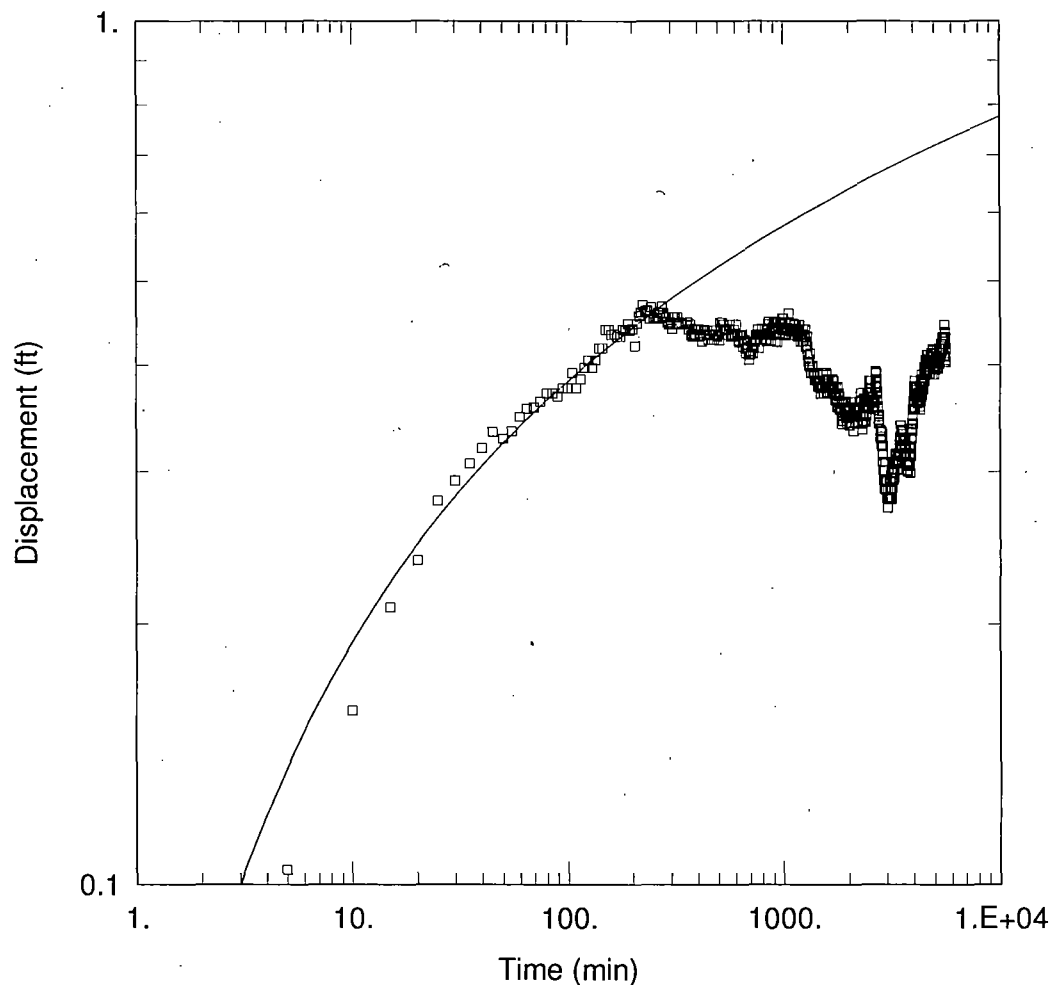
SOLUTION

Aquifer Model: Confined

Solution Method: Theis

$T = 6.472 \text{ cm}^2/\text{sec}$

$S = 0.0006005$



WELL TEST ANALYSIS

Data Set: P:\PROJEC~1\MIDAME~1\DUBUQU~1\HYDRO\P-112A~1\AQTESO~1\D-4.AQT

Date: 04/23/12

Time: 11:38:08

PROJECT INFORMATION

Company: MWH

Client: MEC

Project: 1011180

Test Location: Dubuque, IA (PNG)

Test Well: SE-3

Test Date: 11-28-11

AQUIFER DATA

Saturated Thickness: 6.5 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
SE-3	2.272E+006	1.545E+007

Observation Wells

Well Name	X (ft)	Y (ft)
D-4	2.272E+006	1.545E+007

SOLUTION

Aquifer Model: Confined

Solution Method: Theis

$T = 17.33 \text{ cm}^2/\text{sec}$

$S = 0.0001878$

EXHIBIT B-2

Photo No.: DSCN0621

Photographer:
Tim Wineland

Date:
November 11, 2011

Direction:
north

Description:
General site layout of
aquifer testing.

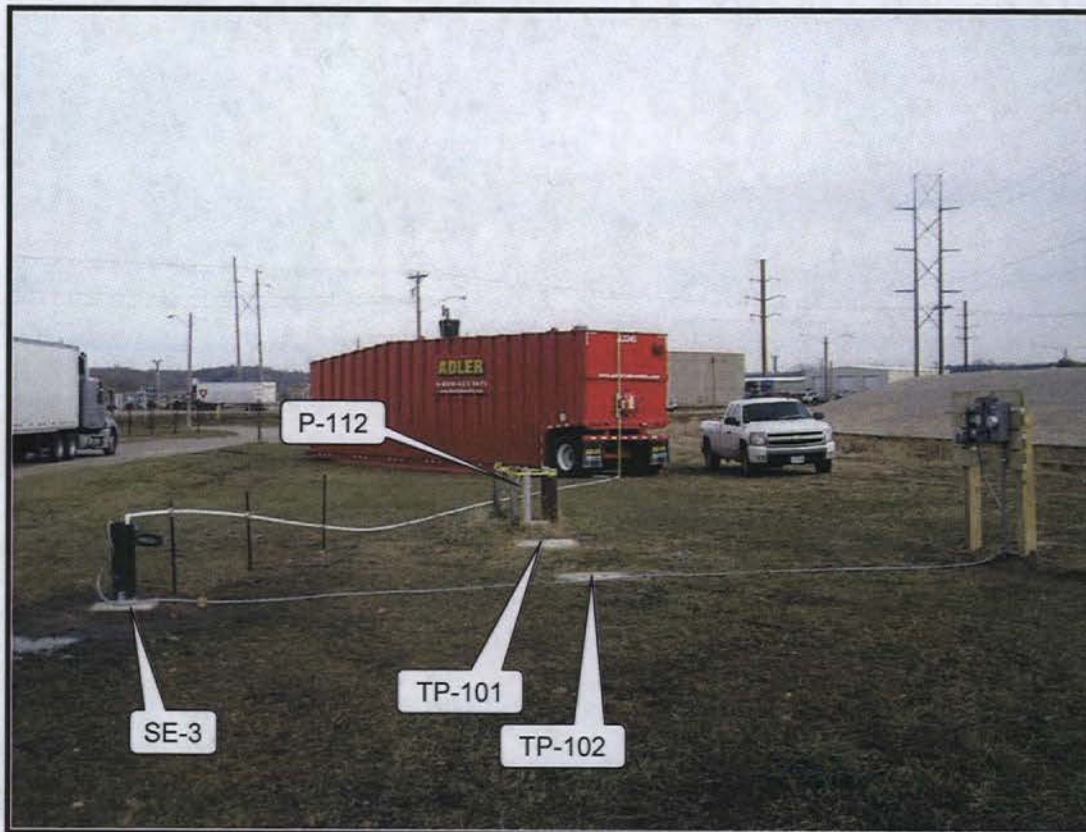


Photo No.: DSCN0627

Photographer:
Tim Wineland

Date:
November 11, 2011

Direction:
northwest

Description:
Flow totalizer used to
quantify cumulative
discharge.

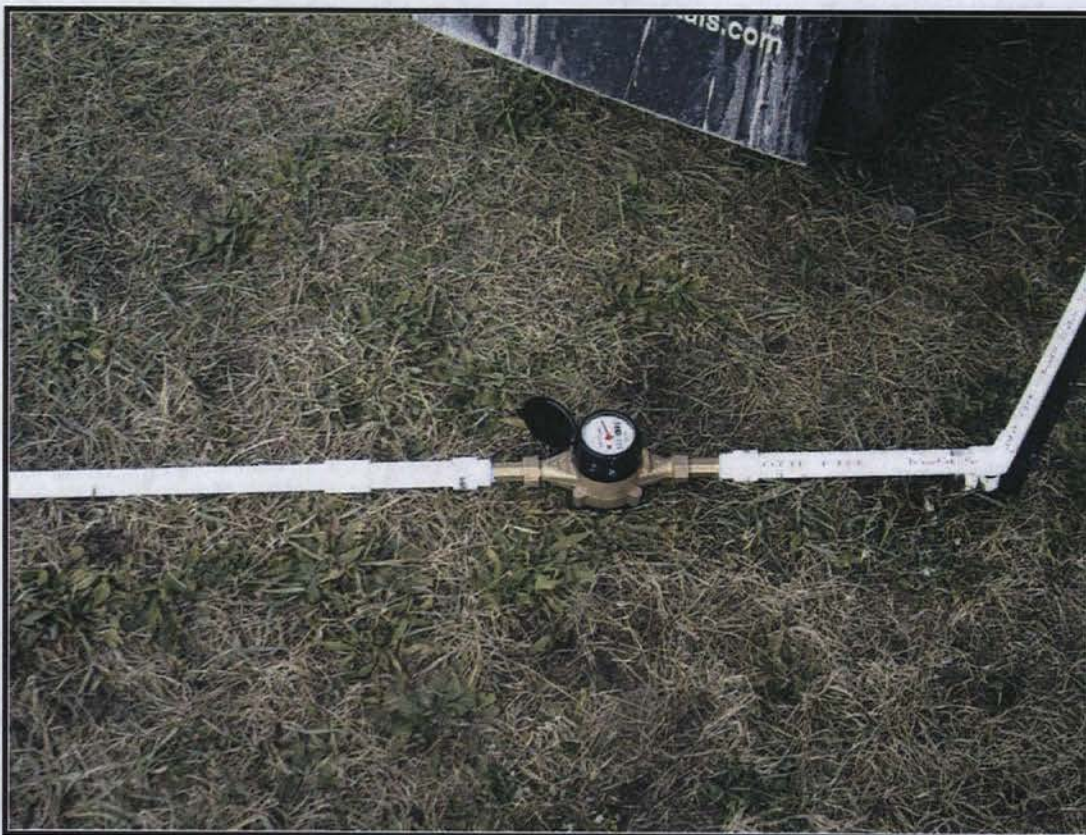


Photo No.: DSCN0629

Photographer:
Tim Wineland

Date:
November 11, 2011

Direction:
north

Description:
Precision flow meter / flow control device and sample spigot.



Photo No.: DSCN0634

Photographer:
Tim Wineland

Date:
November 28, 2011

Direction:
Southeast

Description:
Weir apparatus used for continuous collection of discharge data. Data-logging pressure transducer installed to monitor water head in weir.

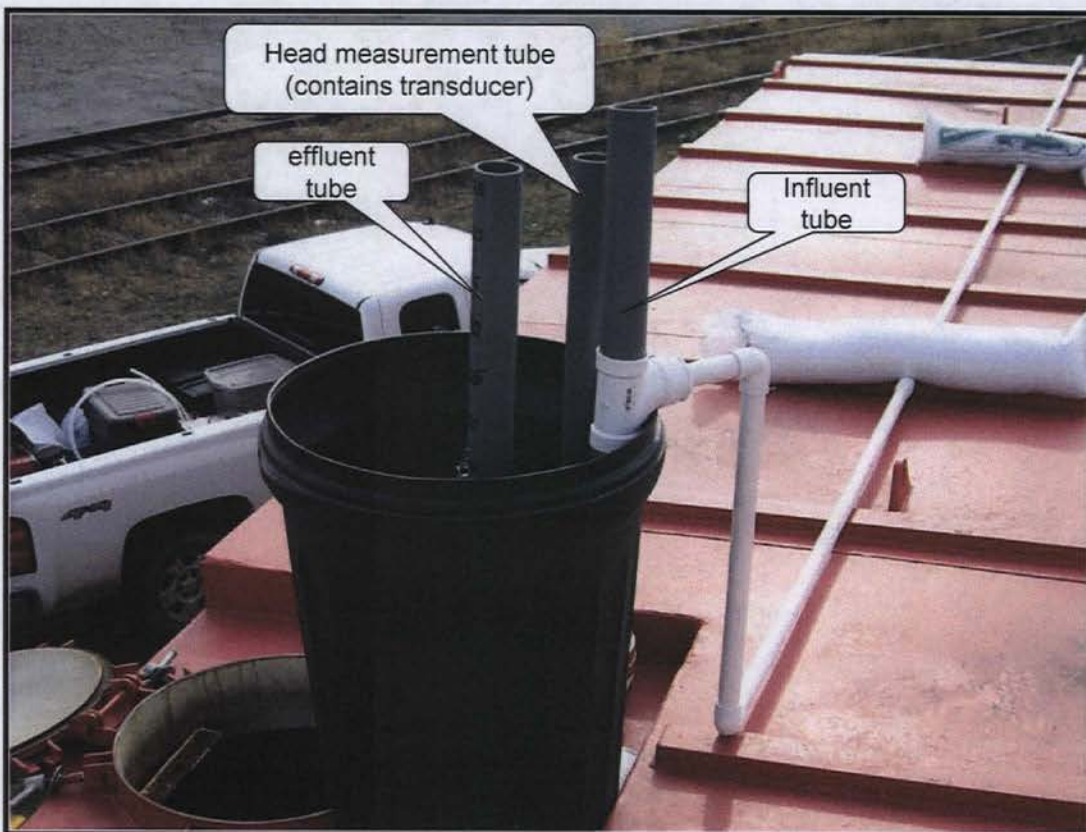


Photo No.: DSCN0635

Photographer:
Tim Wineland

Date:
November 28, 2011

Direction:
southeast

Description:
Weir assembly at
beginning of aquifer test
(notice lack of staining)



Photo No.: DSCN0654

Photographer:
Tim Wineland

Date:
December 2, 2011

Direction:
southwest

Description:
Weir assembly near end of
aquifer test (note staining
on weir pipes and foam on
water)



ATTACHMENT C

ATTACHMENT C GROUNDWATER MODELING

A numerical groundwater model was developed to represent the hydrogeologic conditions in the vicinity of the former Peoples Natural Gas (PNG) site (site). The purpose of the modeling was to evaluate the use of extraction well(s) along the eastern side of the site for hydraulic control of downgradient groundwater impacts in the silty sand aquifer. Prior to starting the numerical model, a conceptual site model (CSM) was developed from available site data.

The CSM represents the understanding of the groundwater flow system, identifies sources of groundwater inflow and outflow, stratigraphy of the aquifer, aquifer properties, and groundwater flow boundaries. For the purposes of this numerical model, the CSM focused on groundwater flow in the silty sand aquifer along the eastern side of the site where site-related groundwater impacts have been detected between the site and the Mississippi River. In this area, the silty sand aquifer is confined from above by the upper confining unit (UCU), which underlies the water table aquifer, and is underlain by the lower confining unit (LCU), which overlies the alluvial aquifer. The LCU is absent along portions of the western extent of the site and the silty sand aquifer and alluvial aquifer merge to a single aquifer in these locations. Groundwater flow is generally controlled by the stage of the Mississippi River and Dove Harbor, located east of the site behind a flood control levee. It is assumed the silty sand aquifer is in good hydraulic communication with Dove Harbor and the alluvial aquifer is in communication with the Mississippi River. It is assumed both the Mississippi River and Dove Harbor have limitless potential as a source or sink of water resulting in negligible stage change. A schematic of the conceptual model is provided in Figure 1.

The numerical groundwater model for the site was developed based on MODFLOW, a block-centered three-dimensional finite difference groundwater flow model, developed by the United States Geological Survey (USGS). The input and output processing to MODFLOW were accomplished using the Visual MODFLOW (version 2009.1) modeling package developed by Schlumberger Water Services.

Model Domain

Numerical modeling efforts were focused on simulating the controlling forces that influence groundwater flow in the silty sand aquifer near the areas of concern. The model used specified head boundary conditions at the perimeter of the alluvial aquifer domain to reproduce observed conditions within the alluvial aquifer. Because head in the alluvial aquifer was specified during model development, it was not necessary to simulate groundwater flow or contribution from the underlying bedrock aquifer or from adjacent portions of the alluvial aquifer.

The numerical model domain included an area that was 2,378 feet from north to south and 1,980 feet from east to west. The finite difference grid spacing was set to approximately 20 feet by 20 feet at the model boundaries and refined to approximately 10 feet by 10 feet in the vicinity of the downgradient impact plume (Figure 2). The model includes 124 rows, 119 columns, and five layers. Ground surface and geologic contact elevations were generated within the model by

interpolating observations noted in boring and well construction logs. A brief summary of layer thicknesses is provided below:

- Layer 1 of the model consists of the water table aquifer, with a thickness of 14 to 21 feet near the PNG site.
- Layer 2 consists of the UCU, with a thickness of 3 to 14 feet near the site.
- Layer 3 consists of the silty sand aquifer, with a thickness of 3 to 18 feet near the site.
- Layer 4 consists of the LCU with a thickness of up to 10 feet near the site. The lower confining unit is absent along the western extent of the site.
- Layer 5 consists of the alluvial aquifer, with a bottom elevation set at 400 feet, NAVD88.

Aquifer Boundaries

As previously discussed, flow within the alluvial aquifer is defined by the presence of specified head boundaries to the east and west of the site. These boundaries were defined as general head boundaries by the software and were assigned specific head values. To simulate the bluffs at the perimeter of the flood plain, a head of 594 feet was specified 2,500 feet west of the model domain. To simulate the Mississippi River, a head of 593 feet was specified 500 feet east of the model domain.

Recharge and Discharge Boundaries

Due to the presence of impermeable structures and the widespread distribution of the Dubuque municipal stormwater drainage system, the model incorporated an estimated recharge rate of 2 to 3 inches per year across the model domain. This rate is a relatively small fraction of the average annual precipitation for the region of 30 to 35 inches per year (USDA-Natural Resources Conservation Service [NRCS] Water and Climate Center, 1994).

Water elevations for Dove Harbor were simulated with a river boundary polygon. The stage of Dove Harbor was modeled at a constant 593 feet, to represent base flow conditions within the Mississippi River. The base of Dove Harbor was modeled at 582 feet based on a conversation with the City Engineer of Dubuque, Mr. Bob Schiesel, in which he stated the base of the harbor was maintained at an elevation of 581 to 583 feet. Base conductance of Dove Harbor was simulated with a thickness of 1 foot and a vertical hydraulic conductivity (K_z) of 1 foot/day (0.00035 centimeter per second [cm/sec]), which is consistent with USGS modeling efforts for the Mississippi River in Iowa (Savoca, et al., 2002).

Water elevations for the stormwater retention pond located along the northern extent of the model domain were also simulated with a river boundary polygon. The stage of the stormwater retention pond was modeled at a constant 593.25 feet, to represent base flow conditions within the Mississippi River (slightly upriver from the entrance to Dove Harbor). The base of the retention pond was modeled at 592 feet based on a conversation with Mr. Darin Muehring at the City of Dubuque Engineering Department. Base conductance of the retention pond was

simulated with a thickness of 1 foot and a vertical hydraulic conductivity (K_z) of 1 foot/day (0.00035 cm/sec).

Aquifer Parameters

Aquifer hydraulic conductivity (K) values used in the model were generally adapted from previous phases of PNG site investigations. Layer 1, the water table aquifer, was assigned a K of 5×10^{-3} cm/sec. Layer 2, the upper confining unit, was modeled with a K of 1×10^{-5} cm/sec. Layer 3, the silty sand aquifer, was assigned a K of 3×10^{-2} cm/sec (consistent with 2011 aquifer test results near the proposed extraction area). Layer 4, the lower confining unit, was modeled with a K of 2×10^{-7} cm/sec. Layer 5, the alluvial aquifer, was modeled with a K of 1×10^{-2} cm/sec. For modeling purposes, each unit was generally assumed to be homogeneous and isotropic (i.e., $K_x = K_y = K_z$). The only exceptions to these assigned values were modifications to the silty sand aquifer and lower confining unit where K values were varied based on observed variations in aquifer properties. The silty sand aquifer was modeled with decreasing conductivity toward the west, transitioning from 3×10^{-2} to 6.5×10^{-3} to 5×10^{-3} cm/sec, based on available historic K data and model calibration efforts. The LCU was modeled with increasing conductivity toward the west, transitioning from 2×10^{-7} to 1×10^{-5} to 3×10^{-2} cm/sec, based on the absence of the LCU in borings on the western portion of the site. The distribution of K values in the silty sand aquifer and the LCU are provided in Figures 3 and 4, respectively.

Model Calibration

The numerical model was initially developed to simulate typical groundwater flow conditions with the Mississippi River at typical flow conditions (stage of approximately 593 feet). During this phase, model parameters such as K , infiltration and the location and head of general head boundaries were varied in order to approximate modeled head results to actual head conditions as observed during the September 2011 monitoring event in which river stage was 593 feet. The distribution of modeled head values simulating typical flow conditions is presented for the water table aquifer, silty sand aquifer and alluvial aquifer in Figures 5, 6, and 7, respectively; and head values observed during the September 2011 monitoring event are presented in Figures 8, 9, and 10, respectively.

Upon achieving reasonable simulation of typical (base) flow conditions, the model was altered to simulate a high Mississippi River stage (603.9 feet) as observed during the April 2011 monitoring event. During this simulation the river boundary conditions for Dove Harbor and the retention pond (located north of the PNG site) were simulated at stages of 604 feet and 604.25 feet, respectively; and the general head boundaries on the east and west sides of the alluvial aquifer were changed to stages of 603 feet and 596 feet, respectively. This simulation provided head results for the water table aquifer, silty sand aquifer, and alluvial aquifer (Figures 11, 12, and 13, respectively) that were similar to those observed during the April 2011 monitoring event, which are presented in Figures 14, 15, and 16, respectively.

Model Verification

To further verify its operation, the numerical model it was used to simulate the aquifer test of the silty sand aquifer conducted during the fall of 2011. Extraction well SE-3 was incorporated into the model and the model was run in a transient state to simulate both observed pretest conditions and extraction at a rate of 9 gallons per minute for 96 hours. The distribution of modeled head values in the silty sand aquifer at the end of 96 hours of pumping is provided in Figure 17. Following the simulation, groundwater elevations observed during the aquifer test were compared to modeled head values. As can be seen in Table 1, numerical model results were in general agreement with observed conditions at the conclusion of the aquifer test. It should be noted that during the fall 2011 aquifer test, the Mississippi River stage was observed to vary by approximately 0.45 foot, with a net increase of approximately 0.1 foot. This may explain why the model over-predicted some aquifer test displacement values, particularly from outlying wells. In consideration of this, it can be assumed that the model provides a conservative under-estimate of displacement, particularly in monitoring points near the point of extraction, such that actual extraction may possibly provide hydraulic control in excess of design parameters.

Extraction Simulation

Upon completion of model calibration and verification, additional model runs were conducted to evaluate different hydraulic control scenarios along the eastern extent of the site to prevent the flow of site-related groundwater impacts toward the Mississippi River. In determining the number and distribution of extraction wells, several factors were qualitatively considered including the extent of the capture zone, the anticipated variability (transiency) of groundwater flow direction and magnitude, the magnitude of induced horizontal hydraulic gradient at known locations of site-related nonaqueous phase liquids (NAPLs), the volume of groundwater extracted and cost of disposal, the cost of the extraction system installation, and the annual/lifetime cost of the extraction system maintenance and operation. Model simulations were run with one to five wells, with extraction rates of 0.5 to 3 gallons per minute per well. Each simulation included existing extraction well SE-3, which was installed as part of the aquifer test.

The scenario using three extraction wells spaced approximately 85 feet apart balances maintenance/operation costs while minimizing induced gradients along locations of observed NAPLs. These wells were simulated at pumping rates of 0.75, 1, and 1.25 gallons per minute per well. In order to help visualization of groundwater flow during extraction simulations, an array of backward tracking particles was established around each extraction well. Each tracking particle array consisted of a ring of 30 particles at a radial distance of 10 feet away from each well. The particles were designated to show a 5-year flow path and include tick marks showing 100-day travel intervals. Figures 18, 19, and 20 show particle tracking paths and distribution of head values for extraction rates of 0.75, 1, and 1.25 gallons per minute, respectively. In each simulation, the entire downgradient width of site-related groundwater impacts above Remediation Goals (RGs) was captured by the three extraction wells. Induced horizontal gradients of approximately 0.00161, 0.00192, and 0.00205 near the monitoring wells located in the median of Kerper Boulevard were associated with extraction rates of 0.75, 1, and 1.25 gallons per minute, respectively.

To further assess the extraction system's ability to provide hydraulic control of the downgradient silty sand aquifer impact plume, the numerical model was manipulated to increase the horizontal hydraulic gradient in the downgradient section of the silty sand aquifer from the typical value of approximately 0.0005 foot/foot (ft/ft) to a steepened gradient condition of approximately 0.001 ft/ft under nonpumping conditions. This was accomplished by increasing the general head boundary on the western portion of Layer 5 (alluvial aquifer) from 594 feet to 595.2 feet, which ultimately resulted in a non-pumping silty sand aquifer gradient of 0.00088 to 0.0011 in the vicinity of the proposed extraction system. Head distributions in the silty sand aquifer under these conditions are provided in Figure 21.

The model was then used to simulate extraction from the three wells under elevated horizontal gradient conditions at extraction rates of 0.75, 1, and 1.25 gallons per minute per well. Figures 22, 23, and 24 show particle tracking paths and distribution of head values for extraction rates of 0.75, 1, and 1.25 gallons per minute, respectively. In these simulations, the entire downgradient width of the site-related groundwater impacts above the RGs was captured by the three extraction wells at pumping rates of 1 and 1.25 gallons per minute, but the northern extent of observed groundwater impacts (near DP-8) was not captured at 0.75 gallon per minute. During these simulations, the model predicted induced horizontal gradients of approximately 0.00231 and 0.00246 near the monitoring wells located in the median of Kerper Boulevard for extraction rates of 1 and 1.25 gallons per minute, respectively.

To further assess the extent of the capture during "stressed" conditions, a linear array of forward tracking particles was simulated in the model along the west side of Kerper Boulevard. Model results showing the extent of capture for 1 and 1.25 gallons per minute extraction rates are provided in Figures 25 and 26, respectively.

Hydraulic Containment with Cutoff Wall. As an alternative to hydraulic containment alone, the numerical model was also used to simulate hydraulic containment in conjunction with a physical flow barrier (e.g., a slurry wall). The physical barrier was simulated in the model by including a line of reduced K cells (1×10^{-7} cm/sec) just downgradient of well SE-3 and upgradient of wells P-112, TP-101, and TP-102; and extending from DP-8 in the northeastern portion of the site to between DP-2 and DP-3 in the southeastern portion of the site, as shown in Figure 27. The barrier was a minimum of 1 cell thick and was included in Layers 1, 2, and 3, as would be necessitated for installation.

Groundwater flow simulation under this configuration was conducted with extraction rates of 1, 1.5, 2, and 2.5 gallons per minute from a single extraction well (SE-3). A line of forward tracking particles was included in each simulation to aid in visualization of groundwater capture by the extraction well. Figures 28, 29, 30, and 31 show particle tracking paths and distribution of head values for extraction rates of 1, 1.5, 2, and 2.5 gallons per minute, respectively. During these simulations, the model predicted induced horizontal gradients of approximately 0.00194, 0.00288, 0.00385 and 0.00485 in the vicinity of monitoring well D-6 for extraction rates of 1, 1.5, 2, and 2.5 gallons per minute, respectively.

References

USDA-NRCS Water and Climate Center, 1994. Annual Average Precipitation Map (Continental United States). http://www.wrcc.dri.edu/pcpn/us_precip.gif

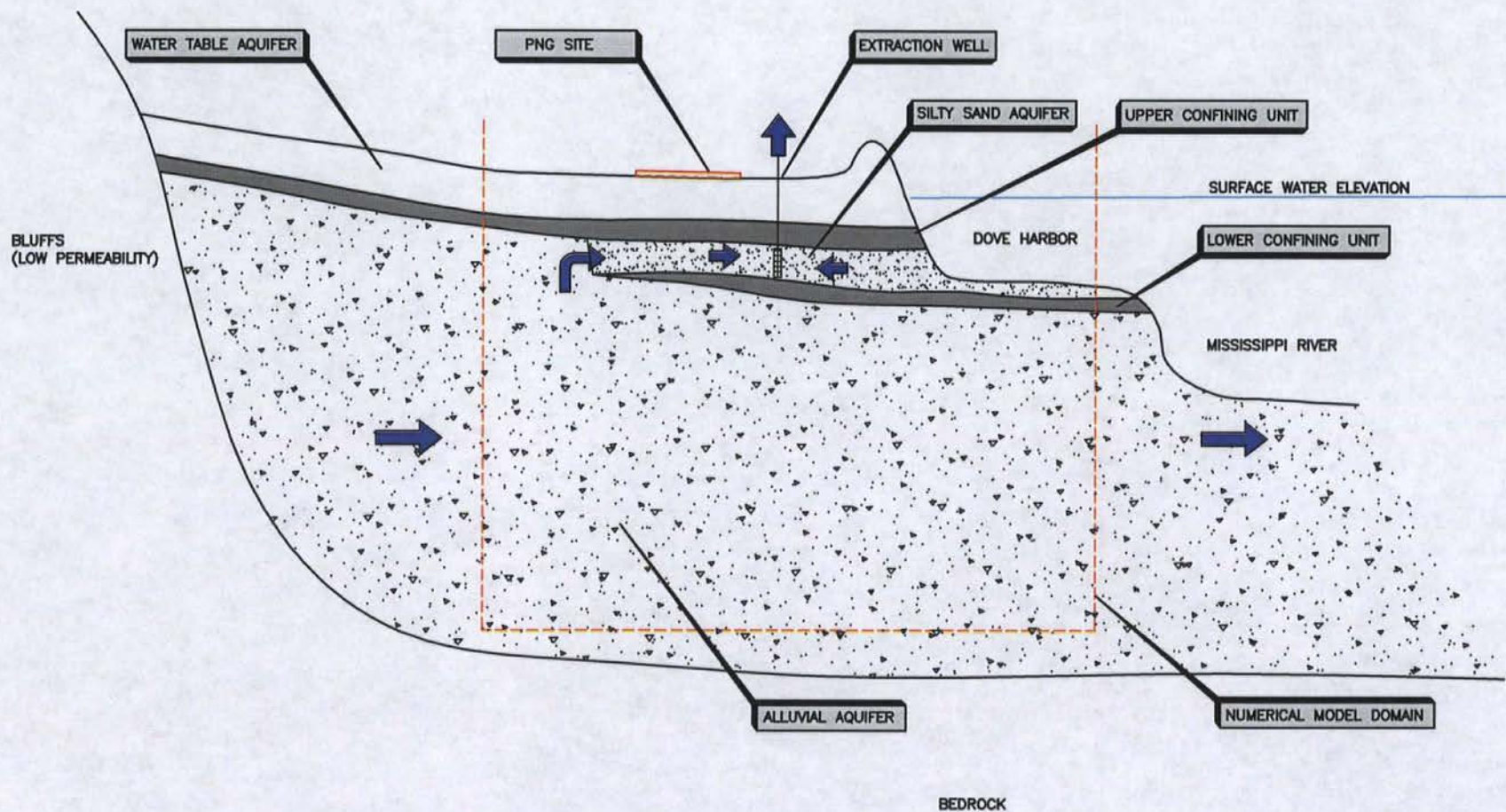
Savoca, M. E., K. J. Lucey, and B. D. Lanning, 2002. Simulation of Ground-Water Flow and Delineation of Areas Contributing Recharge to Municipal Water-Supply Wells, Muscatine, Iowa. U. S. Geological Survey – Water-Resources Investigation Report 02-4004.

P:\Word Processing\MIDAMERICAN ENERGY\DUBUQUE-PNG SITE\01-13-ANNUAL REPORT (CY 2012)\Attachment C- PNG Groundwater Modeling.docx

TABLE 1

COMPARISON OF MODELED/OBSERVED DRAWDOWNS AT END OF AQUIFER TEST
(all units in feet)

Well	Observed Conditions			Modeled Conditions			Difference in Drawdown
	Static Elevation	Pumping Elevation	Drawdown	Static Elevation	Pumping Elevation	Drawdown	
TP-102	593.70	592.21	1.49	593.19	592.01	1.18	0.31
TP-101	593.42	592.25	1.17	593.19	592.05	1.14	0.03
P-112	592.71	591.63	1.08	593.19	592.09	1.1	-0.02
D-4	592.75	592.40	0.35	593.22	592.71	0.51	-0.16
D-5	592.74	591.97	0.77	593.23	592.52	0.71	0.06
D-6	592.77	591.82	0.95	593.23	592.35	0.88	0.07
D-8	592.80	592.67	0.13	593.24	592.86	0.38	-0.25
SI-2	592.85	592.70	0.15	593.31	592.95	0.36	-0.21
SE-2	592.87	592.69	0.18	593.32	592.96	0.36	-0.18



NOT TO SCALE

LEGEND:



GROUNDWATER FLOW

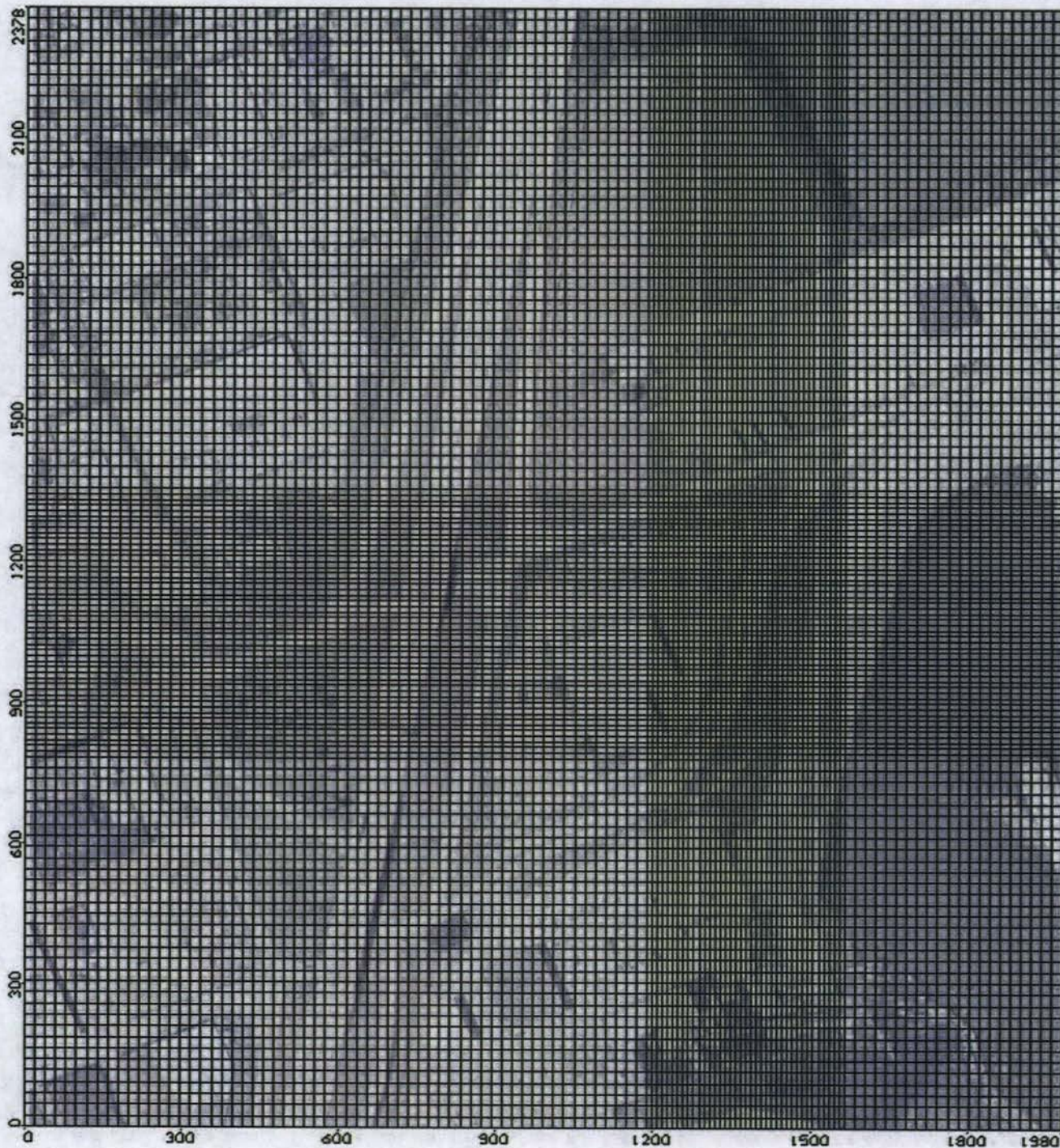
DESIGNED BY	TIM WINELAND	MANAGING OFFICE	DES MOINES, IOWA
DRAWN BY	NORA DAY	PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
CHECKED BY	TIM WINELAND		
APPROVED BY	KEVIN ARMSTRONG		
PROJECT MANAGER	KEVIN ARMSTRONG	TITLE	CONCEPTUAL MODEL CROSS SECTION



MWH

FIGURE

1



DESIGNED BY	T. WINELAND	
DRAWN BY	MWH	
CHECKED BY	T. WINELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	NUMERICAL MODEL DOMAIN AND GRID



FIGURE	2	REVISION	1
FILE NAME			



LEGEND:

HYDRAULIC CONDUCTIVITY:

-  5×10^{-3} cm/sec
-  6.5×10^{-3} cm/sec
-  3×10^{-2} cm/sec

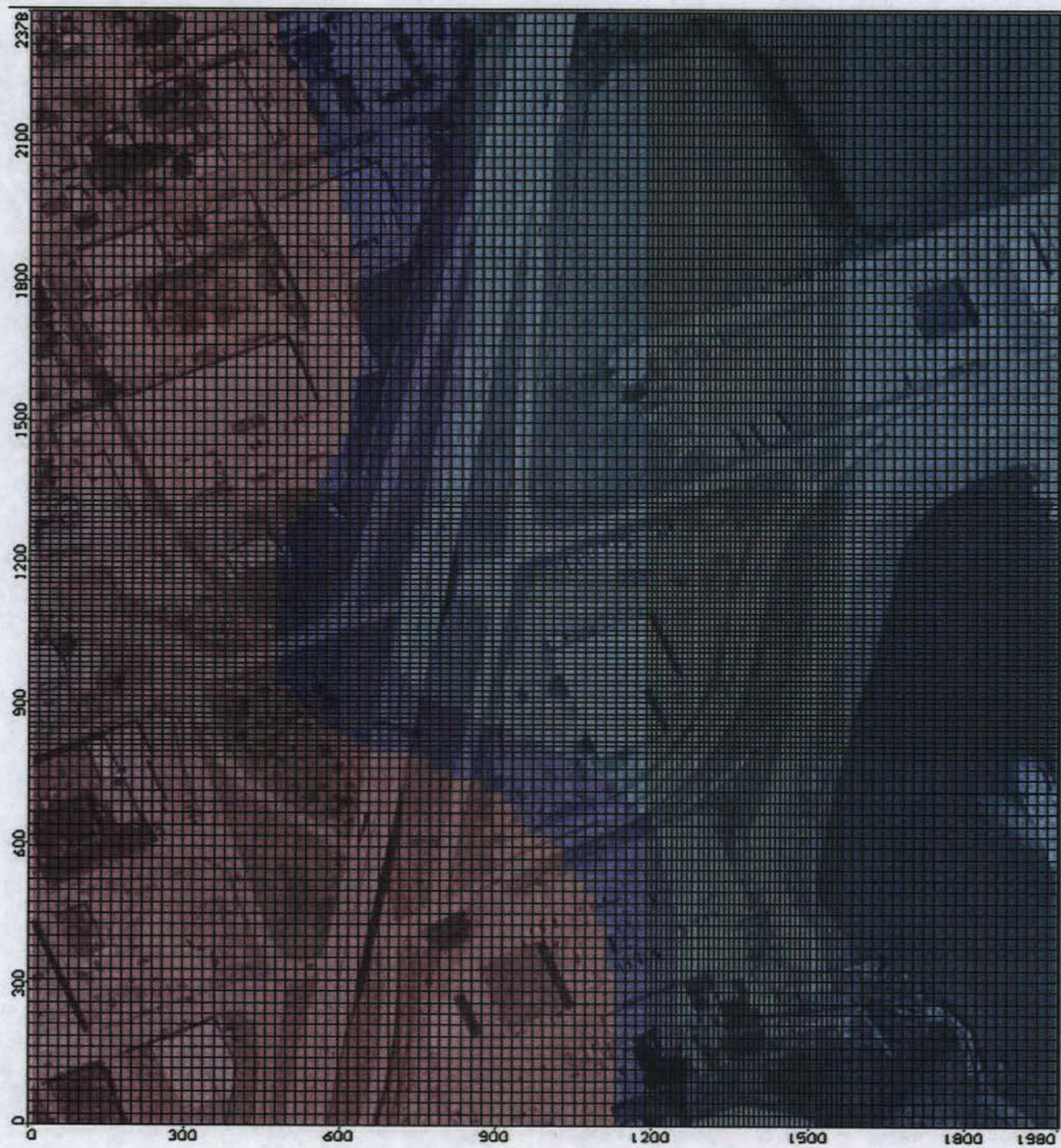
DESIGNED BY	T. WINELAND	
DRAWN BY	MWH	
CHECKED BY	T. WINELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	DISTRIBUTION OF LAYER 3 HYDRAULIC CONDUCTIVITIES



FIGURE	3	REVISION	1
FILE NAME			



LEGEND:

HYDRAULIC CONDUCTIVITY:

-  3×10^{-2} cm/sec
-  1×10^{-5} cm/sec
-  2×10^{-7} cm/sec

DESIGNED BY	T. WINELAND	
DRAWN BY	MWH	
CHECKED BY	T. WINELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	DISTRIBUTION OF LAYER 4 HYDRAULIC CONDUCTIVITIES



FIGURE	4	REVISION	1
FILE NAME			



LEGEND:

-  POTENTIOMETRIC SURFACE CONTOURS
 DEWATERED CELLS



DESIGNED BY	T. WIELAND	
DRAWN BY	MWH	
CHECKED BY	T. WIELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER



FIGURE	6	REVISION	1
FILE NAME			



LEGEND:

— POTENTIOMETRIC SURFACE CONTOURS



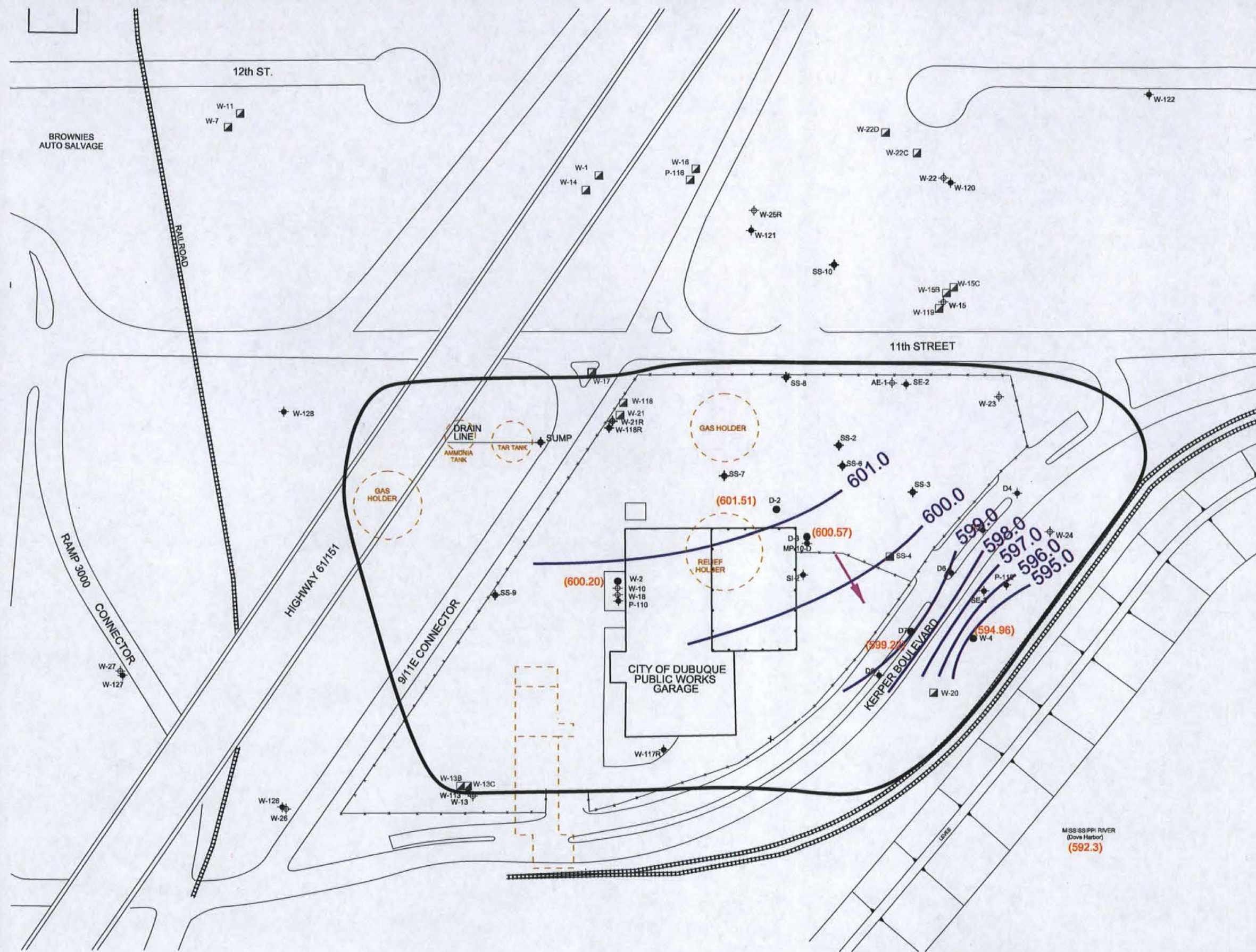
DESIGNED BY	T. WHELAND	
DRAWN BY	MWH	
CHECKED BY	T. WHELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE ALLUVIAL AQUIFER



FIGURE	7	REVISION	1
FILE NAME			

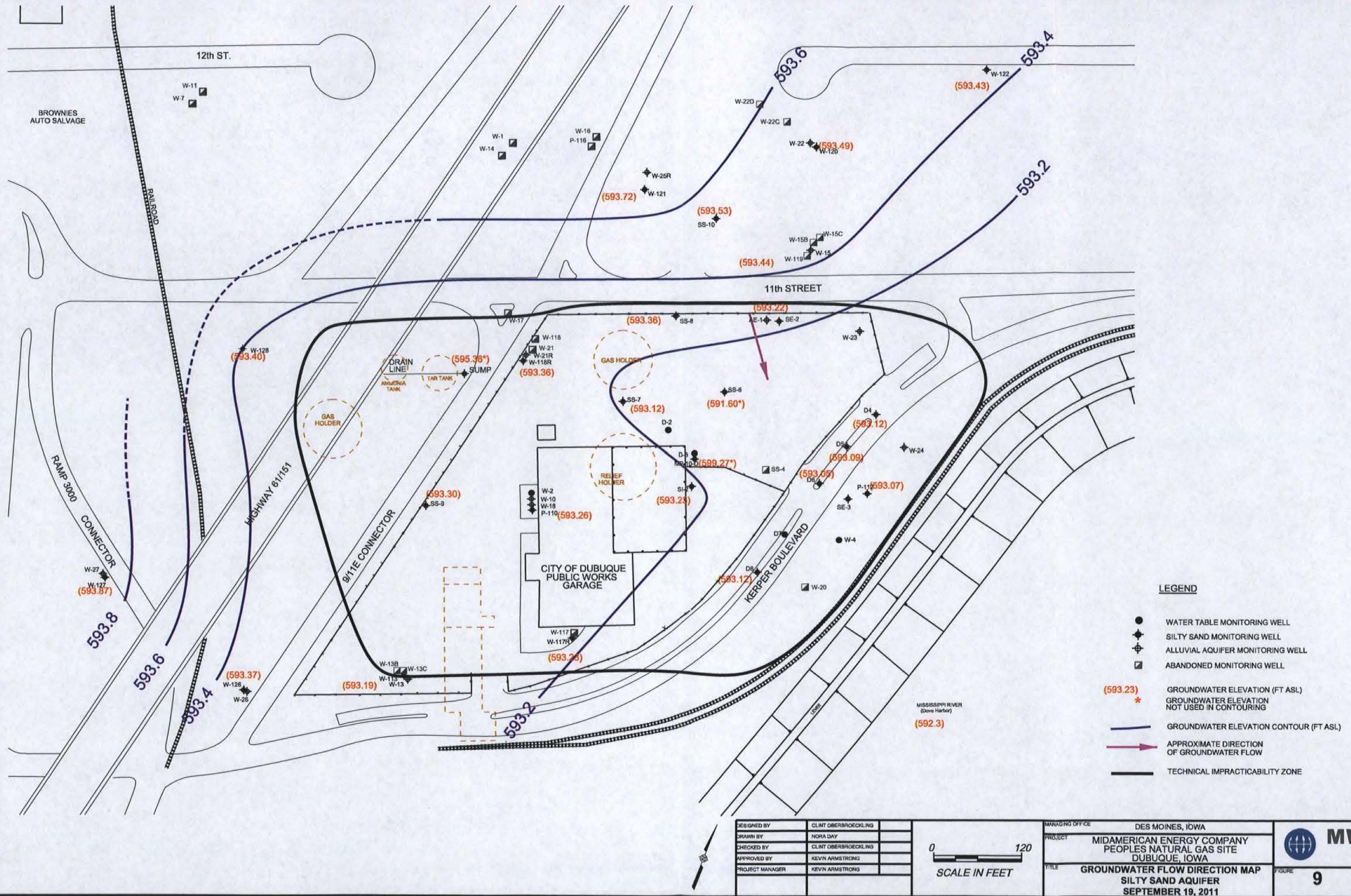


- LEGEND**
- WATER TABLE MONITORING WELL
 - ◆ SILTY SAND MONITORING WELL
 - ⊕ ALLUVIAL AQUIFER MONITORING WELL
 - ABANDONED MONITORING WELL
 - (601.51) GROUNDWATER ELEVATION (FT ASL)
 - * GROUNDWATER ELEVATION NOT USED IN CONTOURING
 - GROUNDWATER ELEVATION CONTOUR (FT ASL)
 - APPROXIMATE DIRECTION OF GROUNDWATER FLOW
 - TECHNICAL IMPRACTICABILITY ZONE

DESIGNED BY	CLINT OBERBROECKLING
DRAWN BY	NORA DAY
CHECKED BY	CLINT OBERBROECKLING
APPROVED BY	KEVIN ARMSTRONG
PROJECT MANAGER	KEVIN ARMSTRONG

0 120
SCALE IN FEET

MANAGING OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	GROUNDWATER FLOW DIRECTION MAP WATER TABLE AQUIFER SEPTEMBER 19, 2011







LEGEND:

-  WATER TABLE SURFACE CONTOURS
-  DEWATERED CELLS



DESIGNED BY	T. WINELAND	
DRAWN BY	MWH	
CHECKED BY	T. WINELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE WATER TABLE AQUIFER DURING HIGH RIVER STAGE



FIGURE	11	REVISION	1
FILE NAME			



LEGEND:

-  POTENTIOMETRIC SURFACE CONTOURS
-  DEWATERED CELLS



DESIGNED BY	T. WINELAND	
DRAWN BY	MWH	
CHECKED BY	T. WINELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER DURING HIGH RIVER STAGE

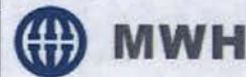
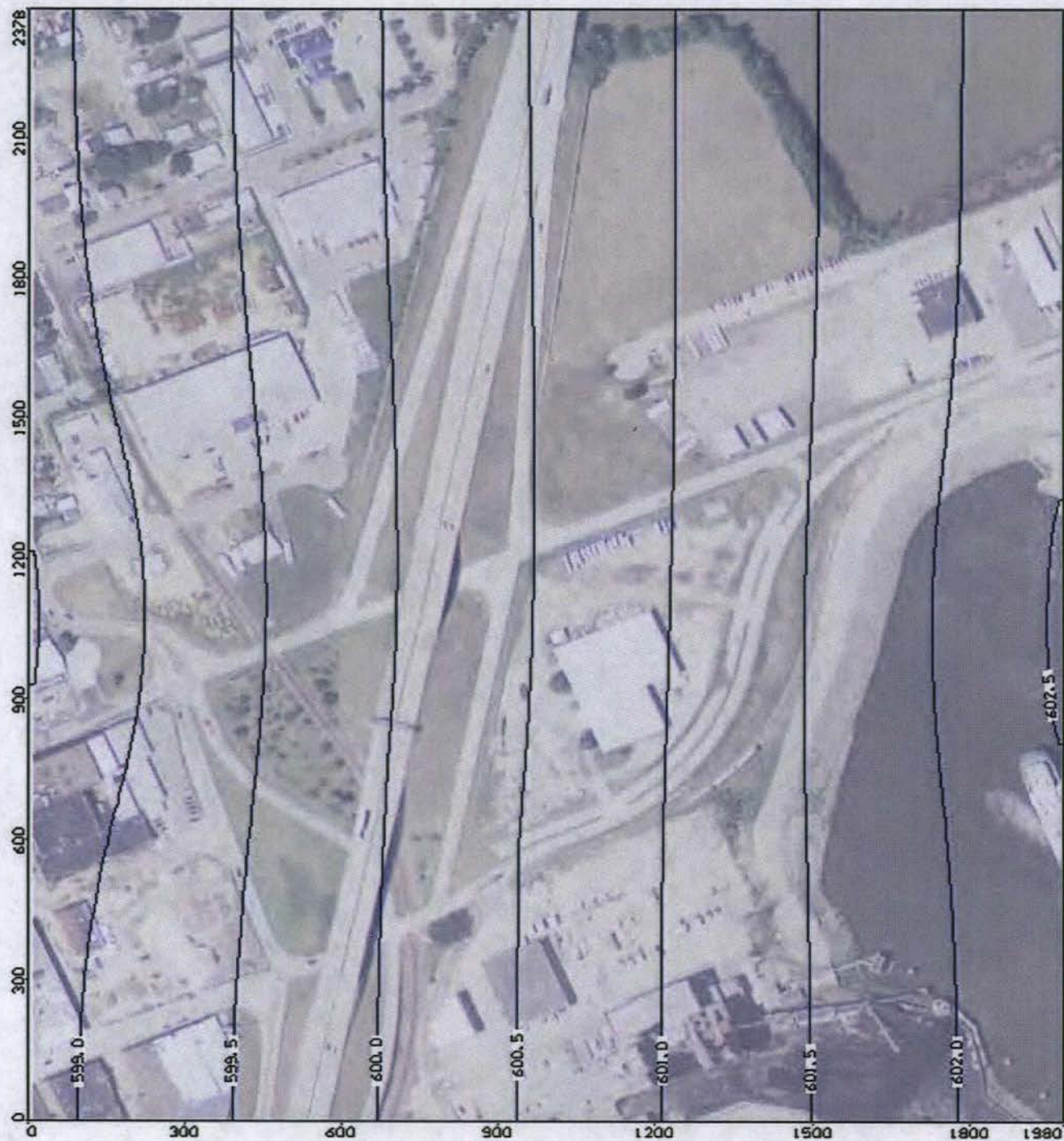


FIGURE	12	REVISION	1
FILE NAME			



LEGEND:

— POTENTIOMETRIC SURFACE CONTOURS



DESIGNED BY	T. WIELAND	
DRAWN BY	MWH	
CHECKED BY	T. WIELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

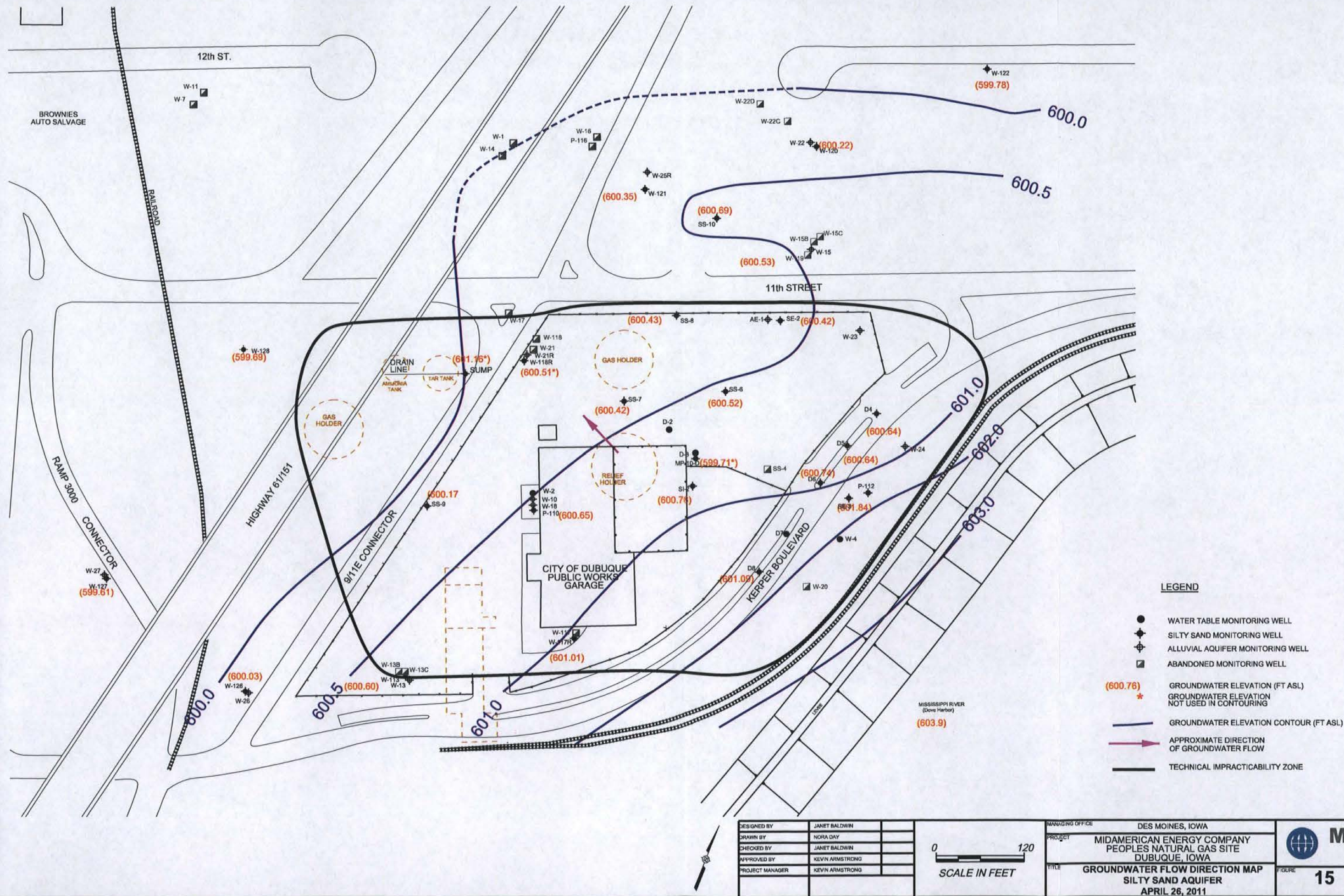
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SCALE IN FEET

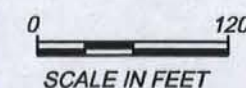
PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE ALLUVIAL AQUIFER DURING HIGH RIVER STAGE



FIGURE	13	REVISION	1
FILE NAME			







MANAGING OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	GROUNDWATER FLOW DIRECTION MAP ALLUVIAL AQUIFER APRIL 26, 2011





LEGEND:

-  POTENTIOMETRIC SURFACE CONTOURS
 DEWATERED CELLS



DESIGNED BY	T. WINELAND	
DRAWN BY	MWH	
CHECKED BY	T. WINELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

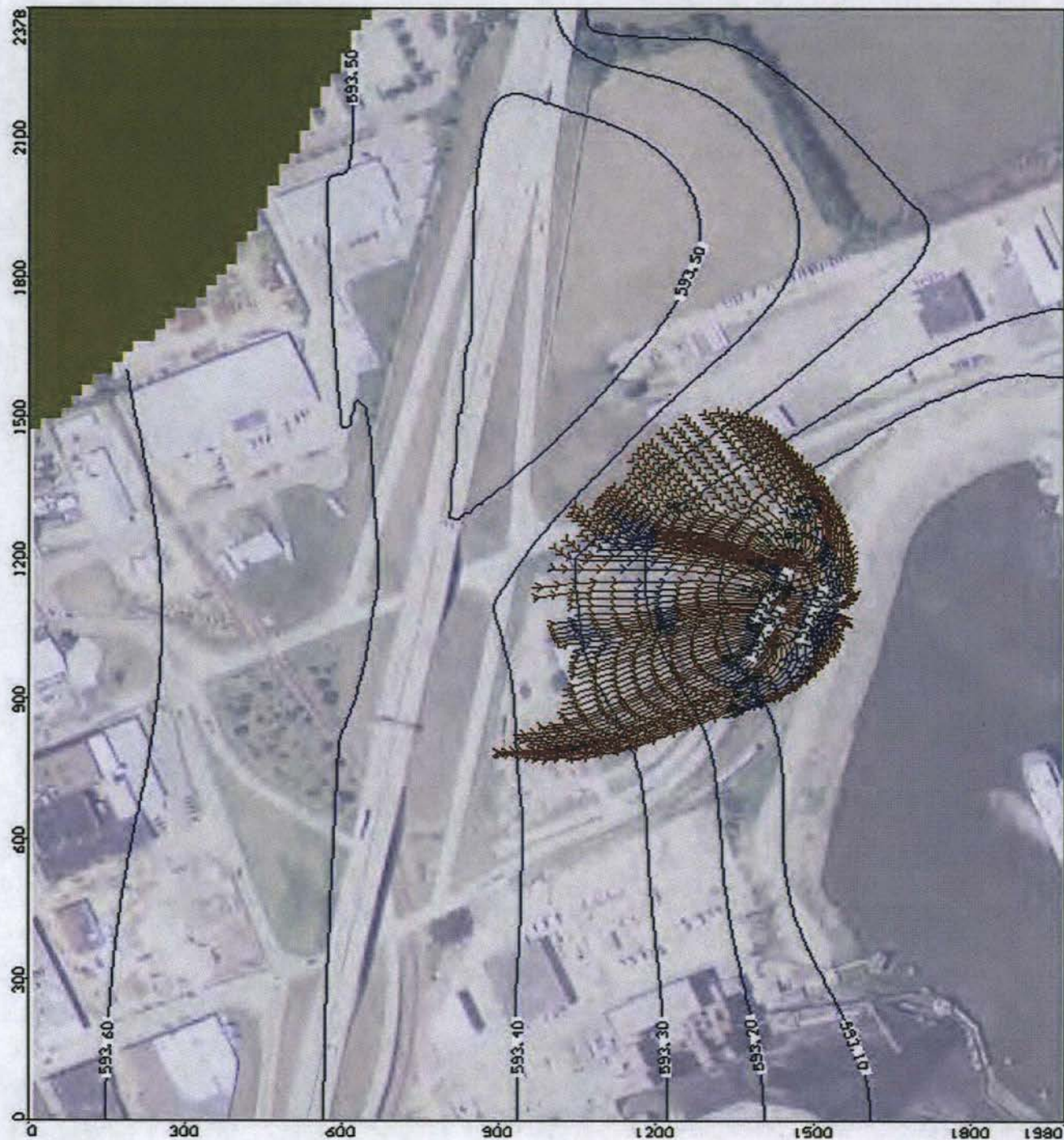
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SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE ALLUVIAL AQUIFER DURING HIGH RIVER STAGE



MWH

FIGURE	17	REVISION	1
FILE NAME			



LEGEND:

-  POTENTIOMETRIC SURFACE CONTOURS
-  PARTICLE TRACKING LINES
-  DEWATERED CELLS



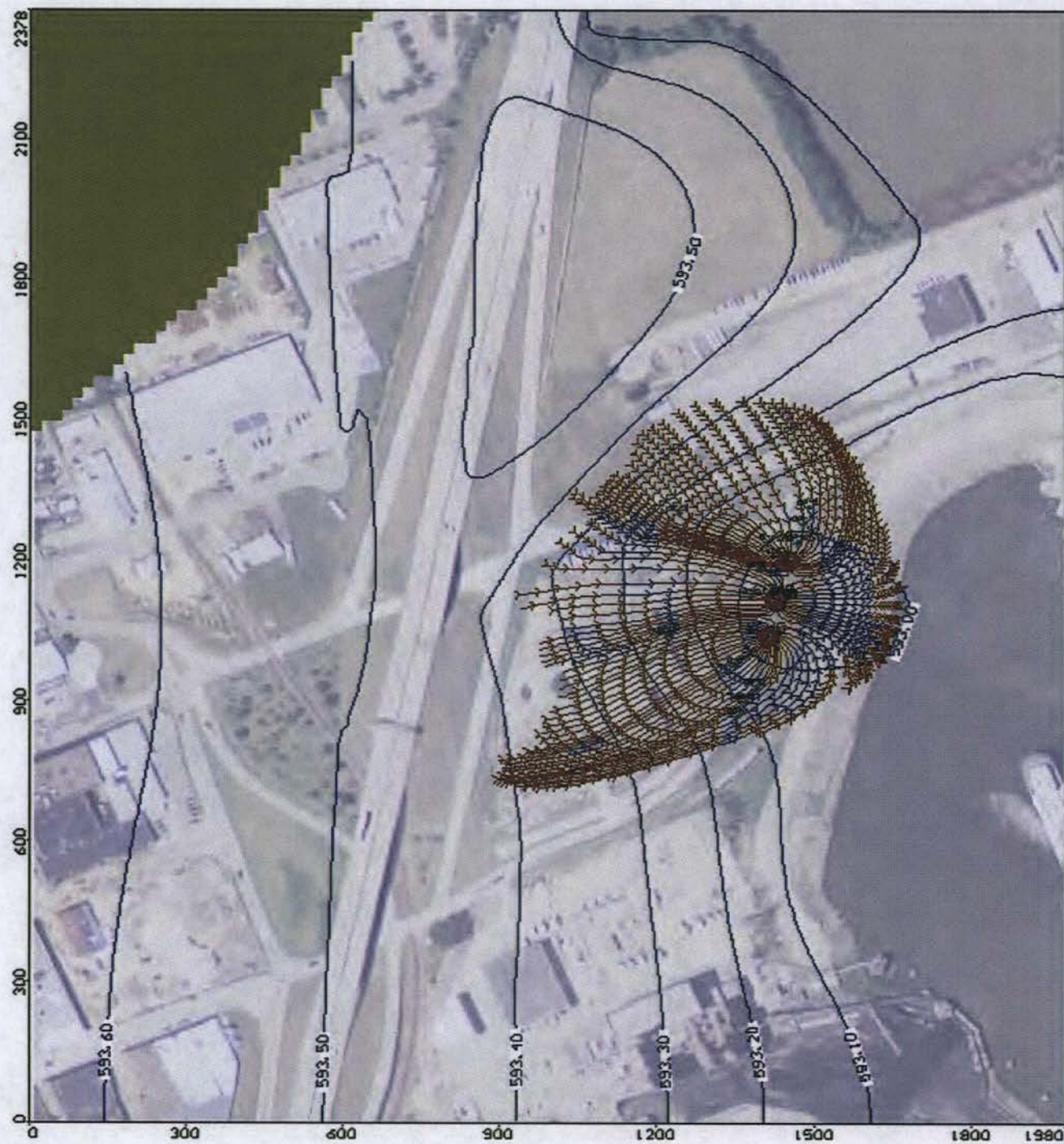
DESIGNED BY	T. WINELAND	
DRAWN BY	MWH	
CHECKED BY	T. WINELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER DURING EXTRACTION OF 3 WELLS AT 0.75 GPM



FIGURE	18	REVISION	1
FILE NAME			



LEGEND:

-  POTENTIOMETRIC SURFACE CONTOURS
-  PARTICLE TRACKING LINES
-  DEWATERED CELLS

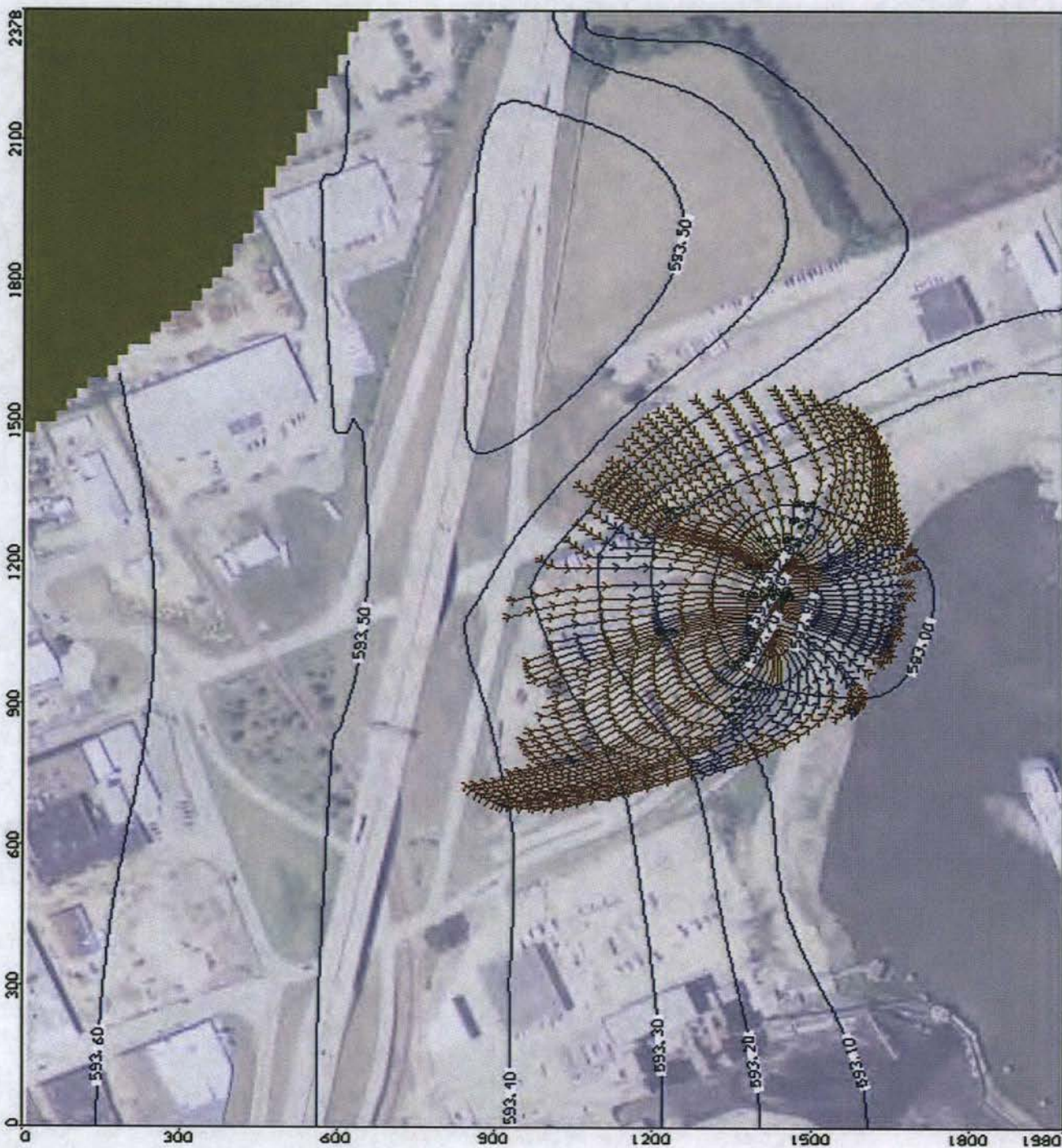
DESIGNED BY:	T. WINELAND	
DRAWN BY:	MWH	
CHECKED BY:	T. WINELAND	
APPROVED BY:	K. ARMSTRONG	
PROJECT MANAGER:	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER DURING EXTRACTION OF 3 WELLS AT 1 GPM



FIGURE	19	REVISION	1
FILE NAME			



LEGEND:

-  POTENTIOMETRIC SURFACE CONTOURS
-  PARTICLE TRACKING LINES
-  DEWATERED CELLS

DESIGNED BY	T. WHELAND	
DRAWN BY	MWH	
CHECKED BY	T. WHELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER DURING EXTRACTION OF 3 WELLS AT 1.25 GPM

**MWH**

FIGURE	20	REVISION	1
FILE NAME			



LEGEND:

-  POTENTIOMETRIC SURFACE CONTOURS
-  DEWATERED CELLS



DESIGNED BY	T. WINKLAND	
DRAWN BY	MWH	
CHECKED BY	T. WINKLAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER WITH ELEVATED GRADIENT



FIGURE	21	REVISION	1
FILE NAME			



LEGEND:

-  POTENTIOMETRIC SURFACE CONTOURS
-  PARTICLE TRACKING LINES
-  DEWATERED CELLS

DESIGNED BY	T. WIELAND	
DRAWN BY	MWH	
CHECKED BY	T. WIELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER WITH ELEVATED GRADIENT AND 3 WELLS AT 0.75 GPM



MWH

FIGURE	22	REVISION	1
FILE NAME			



LEGEND:

-  POTENTIOMETRIC SURFACE CONTOURS
-  PARTICLE TRACKING LINES
-  DEWATERED CELLS

DESIGNED BY	T. WINELAND	
DRAWN BY	MWH	
CHECKED BY	T. WINELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER WITH ELEVATED GRADIENT AND 3 WELLS AT 1 GPM



FIGURE	23	REVISION	1
FILE NAME			



LEGEND:

-  POTENTIOMETRIC SURFACE CONTOURS
-  PARTICLE TRACKING LINES
-  DEWATERED CELLS

DESIGNED BY	T. WINELAND	
DRAWN BY	MWH	
CHECKED BY	T. WINELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER WITH ELEVATED GRADIENT AND 3 WELLS AT 1.25 GPM



MWH

FIGURE	24	REVISION	1
FILE NAME			



LEGEND:

- POTENTIOMETRIC SURFACE CONTOURS
 PARTICLE TRACKING LINES
 DEWATERED CELLS



DESIGNED BY	T. WHELAND	
DRAWN BY	MWH	
CHECKED BY	T. WHELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER WITH ELEVATED GRADIENT AND 3 WELLS AT 1 GPM



FIGURE	25	REVISION	1
FILE NAME			



LEGEND:

-  POTENTIOMETRIC SURFACE CONTOURS
-  PARTICLE TRACKING LINES
-  DEWATERED CELLS

DESIGNED BY	T. WINELAND	
DRAWN BY	MWH	
CHECKED BY	T. WINELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 150 300
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER WITH ELEVATED GRADIENT AND 3 WELLS AT 1.25 GPM



FIGURE	26	REVISION	1
FILE NAME			



LEGEND:

HYDRAULIC CONDUCTIVITY:

-  5×10^{-3} cm/sec
-  6.5×10^{-3} cm/sec
-  3×10^{-2} cm/sec
-  1×10^{-7} cm/sec (SIMULATED SLURRY WALL)

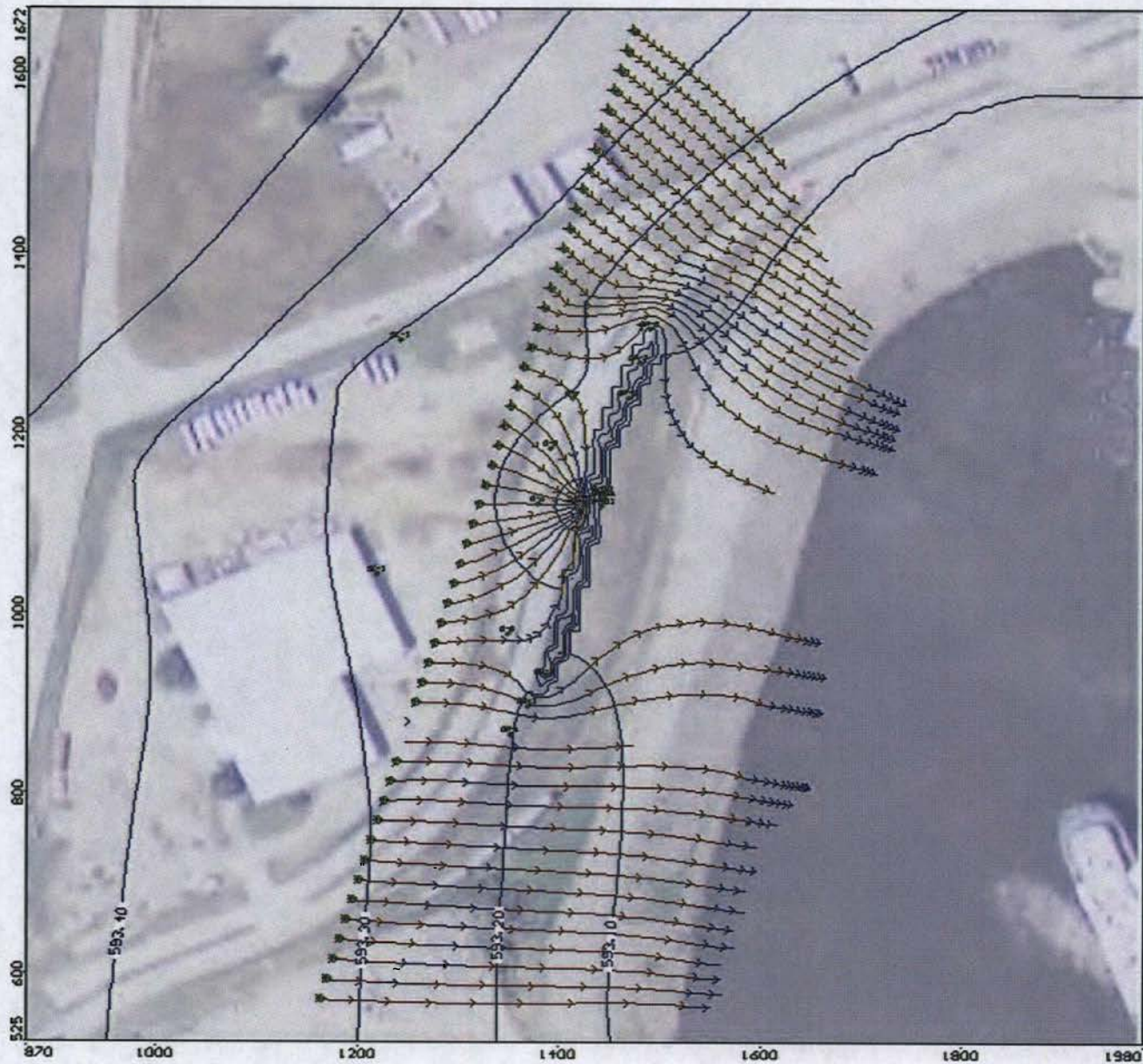
DESIGNED BY	T. WIELAND	
DRAWN BY	MWH	
CHECKED BY	T. WIELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 100 200
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	SIMULATED LOCATION OF SLURRY WALL (SHOWN IN LAYER 3)



FIGURE	27	REVISION	1
FILE NAME			

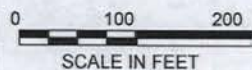


LEGEND:

-  POTENTIOMETRIC SURFACE CONTOURS
-  PARTICLE TRACKING LINES



DESIGNED BY	T. WINELAND	
DRAWN BY	MWH	
CHECKED BY	T. WINELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	



PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER WITH SLURRY WALL AND 1 WELL AT 1 GPM



FIGURE	28	REVISION	1
FILE NAME			



LEGEND:

- POTENTIOMETRIC SURFACE CONTOURS
→ PARTICLE TRACKING LINES

DESIGNED BY	T. WINELAND
DRAWN BY	MWH
CHECKED BY	T. WINELAND
APPROVED BY	K. ARMSTRONG
PROJECT MANAGER	K. ARMSTRONG

0 100 200
SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER WITH SLURRY WALL AND 1 WELL AT 1.5 GPM



FIGURE	29	REVISION	1
FILE NAME			



LEGEND:

- POTENTIOMETRIC SURFACE CONTOURS
 → PARTICLE TRACKING LINES

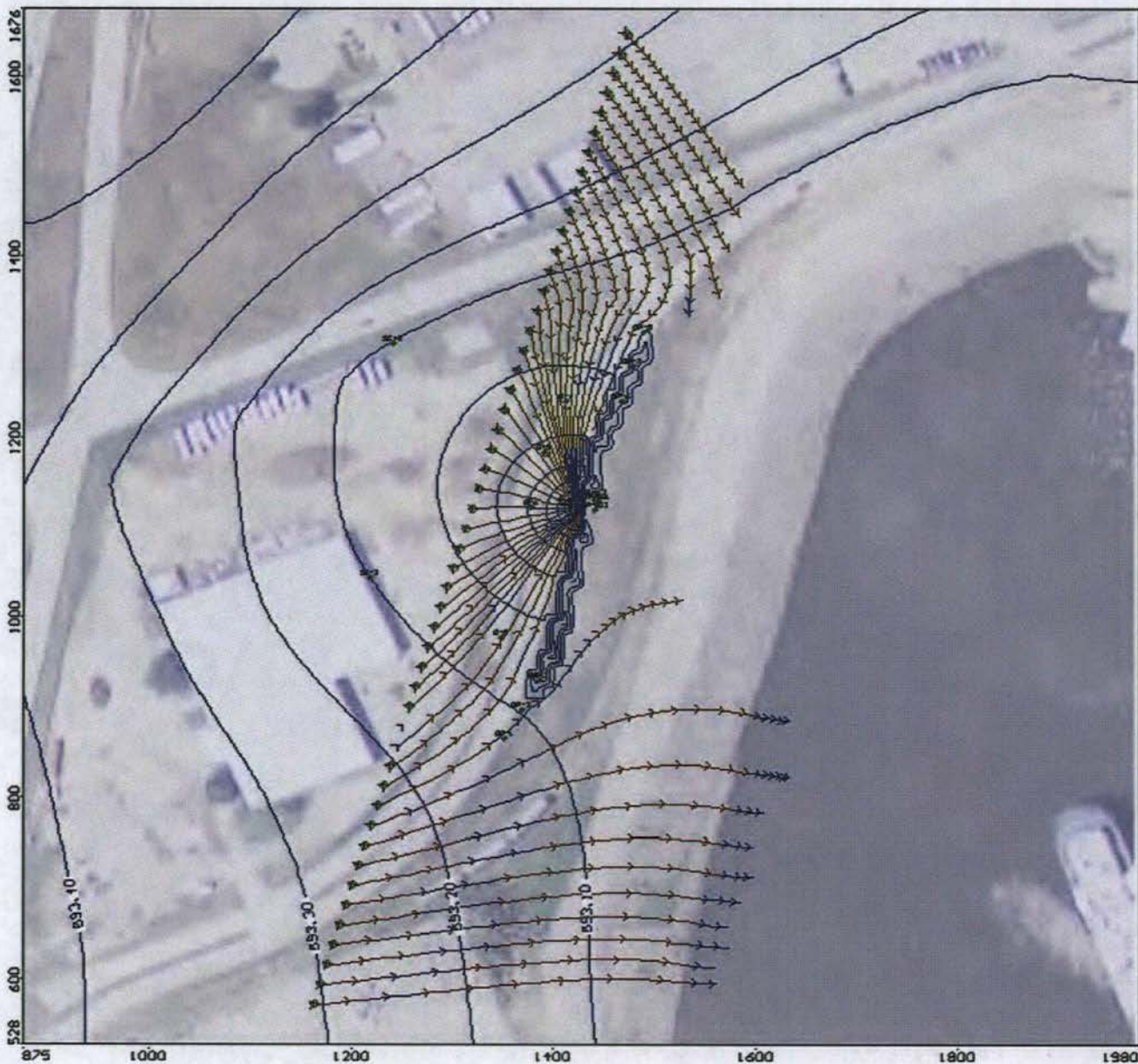
DESIGNED BY	T. WIELAND	
DRAWN BY	MWH	
CHECKED BY	T. WIELAND	
APPROVED BY	K. ARMSTRONG	
PROJECT MANAGER	K. ARMSTRONG	

0 100 200
 SCALE IN FEET

PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY GAS SITE PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER WITH SLURRY WALL AND 1 WELL AT 2 GPM



FIGURE	30	REVISION	1
FILE NAME			



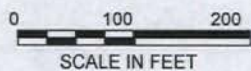
LEGEND:

— POTENTIOMETRIC SURFACE CONTOURS

→ PARTICLE TRACKING LINES



DESIGNED BY	T. WINELAND
DRAWN BY	MWH
CHECKED BY	T. WINELAND
APPROVED BY	K. ARMSTRONG
PROJECT MANAGER	K. ARMSTRONG



PROJECT OFFICE	DES MOINES, IOWA
PROJECT	MIDAMERICAN ENERGY COMPANY PEOPLES NATURAL GAS SITE DUBUQUE, IOWA
TITLE	MODELED HEAD VALUES IN THE SILTY SAND AQUIFER WITH SLURRY WALL AND 1 WELL AT 2.5 GPM

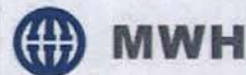
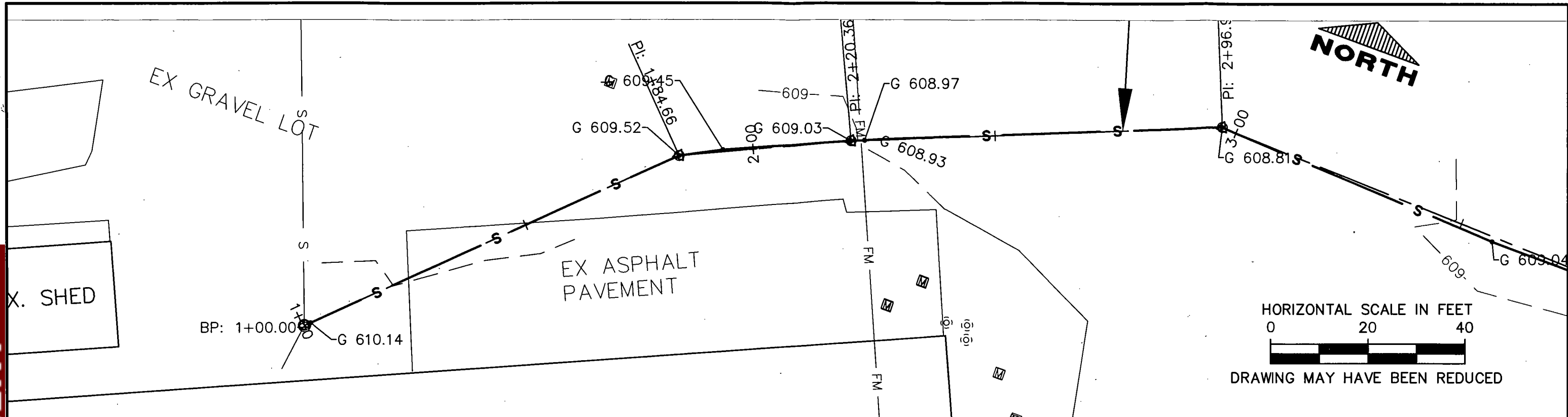


FIGURE	31	REVISION	1
FILE NAME			

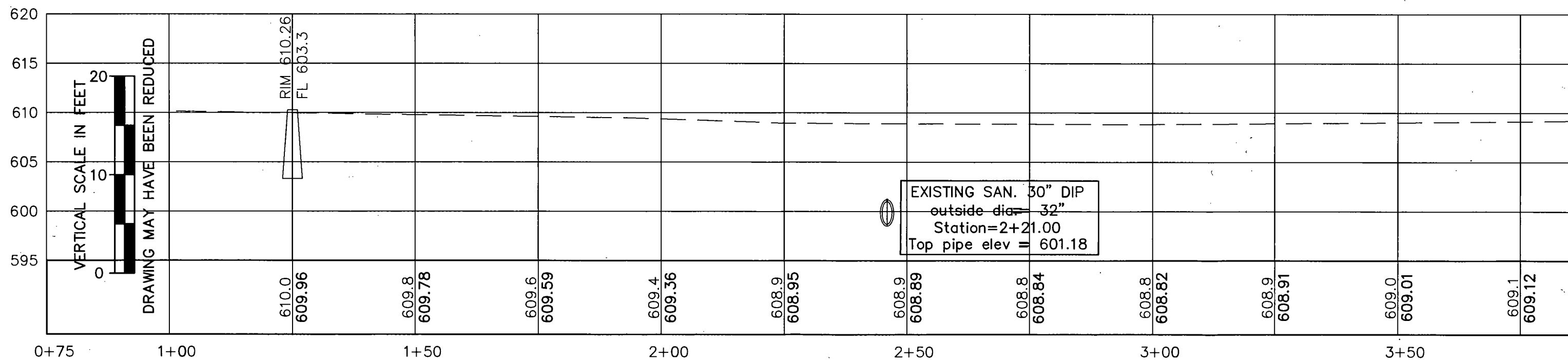
ATTACHMENT D



MWH



PROFILE OF PROPOSED 2" SANITARY SEWER



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DRAWN KMS	PLAT NO. N/A
CHECKED SAF	PROJ. NO. 12212-01
DATE 9-18-12	SHEET 1 of 2
P:\12\212\212-01\DRAWINGS\SURVEY\12212-01T	

REVISED: 9-29-12 SAF

608.9	609.0	609.1	609.2	609.4	609.4	609.2	609.5
608.91	609.01	609.12	609.25	609.38	609.36	609.20	609.49
3+50		4+00		4+50		5+00	

