PUBLIC WORKS COMMITTEE
CITY HALL CONFERENCE ROOM
OCTOBER 9, 2013
5:00 P.M.

AGENDA

I. CALL TO ORDER

II. CONSENT AGENDA
   A. Minutes (page 1)

III. NEW BUSINESS
   A. Move November Meeting? – Council has been moved to November 12, 2013; does the Committee wish to do the same?

IV. OLD BUSINESS
   A. Water Plant Rehab Project – Update
   B. Wastewater Facility Re-Scoping Project – Update
   C. MPCA Former Mid Town Service Station (page 4)
   D. 2014 Street Improvement Project – Update
   E. Alley Between River St. & Lake Ave. (page 21)

V. INFORMATIONAL

VI. ADJOURN

***** Please call or email Ron at 320-243-3714 ext. 230 or at ron@paynesvillemn.com if you are not able to attend the meeting.*****

Members: Dave Peschong, Donavan Mayer, Melvin Schaefer, Keith Hemmesch, and Matt Quade – or his proxy.
Advisory Members: Chuck DeWolf, Ron Mergen, and Renee Eckerly

This agenda has been prepared to provide information regarding an upcoming meeting of the Paynesville Public Works Committee. This document does not claim to be complete and is subject to change.

BARRIER FREE: All Paynesville Public Works Committee meetings are accessible to the handicapped. Attempts will be made to accommodate any other individual need for special services. Please contact City Hall (320) 243-3714 early so necessary arrangements can be made.

REQUEST FOR COMMITTEE/COUNCIL ACTION

COMMITTEE/COUNCIL NAME: Public Works Committee

Committee/Council Meeting Date: October 9, 2013

Agenda Section: Consent

Originating Department:

Item Number: II - A

ITEM DESCRIPTION: Minutes

Prepared by: Staff

COMMENTS:

Please review the minutes of the September 11, 2013 Public Works Committee meeting.

ADMINISTRATOR COMMENTS:

COMMITTEE/COUNCIL ACTION:

Motion to approve the minutes of the September 11, 2013 Public Works Committee meeting.

MINUTES
PUBLIC WORKS COMMITTEE

SEPTEMBER 11, 2013

The meeting was called to order by Chairperson Mel Schaefer at 5:00 p.m. Members present were Donavan Mayer, Matt Quade, Dave Peschong, and Keith Hemmesch. Advisory members present were Ron Mergen, Public Works Director; and Chuck DeWolf, Bolton & Menk, Inc.

Motion was made by Quade to approve the minutes from the August 14, 2013 Public Works Committee meeting. Seconded by Hemmesch and unanimously carried.

REGIONAL STORM WATER POND

DeWolf presented a letter requesting authorization to submit a grant for a regional pond through the Clean Water Fund. The area the City is targeting is west of Industrial Loop and Minnie Street. The project will be approximately $275,000.00 and the grant would cover 75%. The local share would be $68,750.00. It was also noted that the City is working with the land owner to acquire the property.

Motion was made by Hemmesch to authorize Bolton and Menk, Inc. to submit the grant application for the regional pond and recommend such to the City Council. Seconded by Peschong and unanimously carried.

WATER AND SEWER BUDGETS

The budget line items were reviewed along with the proposed rate increases, rate comparisons, WAC & SAC charges, trunk charges, water & sewer loss reports, projected revenues, cash balances and irrigation details. The proposed rate increases are as follows:

Water	base charge no increase	bulk rate $.08
Sewer	base charge no increase	bulk rate $.23
WAC & SAC	no increase	
Trunk charge	no increase	

After a short discussion,

Motion was made by Peschong to approve the rate increases and recommend such to the City Council. Seconded by Hemmesch and unanimously carried.

IRRIGATION TILE LINE REQUEST

A letter and map were reviewed noting Bill Pflipson's request to install a 12" tile line from the City's retention pond which lies, west approximately 2,500 feet into the ditch which runs north/ south through his property. Pflipson noted he would pay for all the drainage costs. Members discussed that this could short circuit the water. It was suggested that the City agree to the tiling of the field, but not to the out letting into the ditch.

SNOWPLOWING CONTRACT

The proposed contract was reviewed noting the only change is the hourly rate that increased from $100.00 to $115.00 per hour. It was stated that over the past several years the rate has increased minimally and that costs have risen in fuel, cutting edges, etc. It was also noted that in several areas D & D's plowing operation needs to be adjusted.

Motion was made by Hemmesch to approve the contract and recommend such to the City Council. Seconded by Quade and unanimously carried.

ALLEY BETWEEN RIVER ST. AND AUGUSTA AVE.

It was reported that this is the area where AMPI is deeding 10' as road right of way; this area is now gravel. Members discussed paving this with the 2104 project. DeWolf will bring a cost estimate to the next meeting.

WATER PLANT REHAB

DeWolf reviewed the bids with the apparent low bidder being Magney Construction in the amount of $3,128,700.00. The Committee also reviewed the proposed rate increase analysis to cover the costs. After a short discussion,

Motion was made by Quade to approve the project and recommend such to the City Council. Seconded by Peschong and unanimously carried.

WASTE WATER RE-SCOPING PROJECT

It was reported that the irrigation pump station and the pretreatment station pumps and blowers are all on line. The main lift station is scheduled to go on line Tuesday, September 17, 2013.

MPCA – FORMER MIDTOWN SERVICE STATION

There was no report at this time.

2014 STREET PROJECT

DeWolf reported that he is currently working on the design.

COAKLEY ST. WASHOUTS

It was reported that Mergen met with DeWolf and Don Pietsch. The conclusion is that it will be extremely expensive to install any corrective measure at this time and that as the area develops the developer will be required to install water retention. In the area of Spruce St. and Coakley St. the best time to get this corrected is when the street is scheduled for an overlay or rehab which is currently 2020.

There being no further business, the meeting was adjourned at 5:55 p.m.

MINNESOTA MDH DEPARTMENT OF HEALTH

Protecting, maintaining and improving the health of all Minnesotans

August 13, 2013

Steve Robertson, Supervisor
Source Water Protection Section
Environmental Health Division
Minnesota Department of Health
625 Robert St North
St. Paul, Minnesota 55164

Re: Letter Health Consultation on Midtown Service Station - MPCA Site ID#s LEAK0002181 and LEAK0000131

Dear Mr. Robertson,

This letter is in response to your request for the Minnesota Department of Health (MDH) Site Assessment and Consultation Unit to review the available data and reports on the contamination of the City Wells in Paynesville, MN. Paynesville (population 2,434) is located on the North Fork Crow River in Stearns County in Central Minnesota. I have reviewed the annual reports from 1999 – 2012, the 2006 Focused Feasibility Study, the 2011 Pilot Test Report, and the 2012 Hydrogeological Assessment (Terracon Consultants, 2000; 2001; 2002; 2003; 2004; 2005; 2006a; 2006b; 2007; 2008; 2009; 2010; 2011a; 2011b; 2012a; 2012b). This consultation discusses the potential contamination of the Paynesville City wells and anomalies in soil vapor and vapor intrusion data in the vicinity of the contamination. Considerable data are available from monitoring wells near the site that do not impact the evaluation of the vulnerability of the City wells; these wells are not discussed.

Site History

Contamination of the municipal water system was first noted in City Well #4 (CW-4) in 1985. CW-3 was subsequently also found to be contaminated. Benzene and 1,2-dichloroethane (1,2-DCA) are the primary contaminants of concern. Leaking underground storage tanks from the site of the former Midtown Service Station at 400 Lake Avenue South were identified as the source of the contamination (Site). While tank removal was completed in 1989, apparently the building on the Site may have been occupied until the Minnesota Pollution Control Agency (MPCA) acquired the site in 2011. The residential building and attached garage were removed in February and March 2012.

Site Hydrogeology

The area of Paynesville has complex geological stratigraphy with interbedded alluvial sand, gravel, silt and clay. Generally, core data show an upper transmissive region (water table aquifer) and a separate lower transmissive region (drinking water aquifer), but these aquifers

do not appear to be hydrologically isolated. Groundwater depth is generally around 20 feet below ground surface (bgs), but it has been shown to vary 10 or more feet over time and is also strongly affected by groundwater pumping. Regional groundwater flow is reported as southeast towards the Crow River and Lake Koronis (Terracon Consultants, 2012a). Local groundwater flow is reported to be north toward the North Branch Crow River which passes north of the City; entering from the southwest and bending to east-southeast as it leaves the City.

Contaminants of concern

Gasoline range organics (GRO) is the primary Site-related mixture of concern. GRO is made up of many organic compounds including benzene, ethylbenzene, toluene and xylene. These individual constituents of the GRO mixture as well as 1,2-dichloroethane, which has also been associated with the Site, are Site-related contaminants of concern. Trichloroethylene is also a contaminant of interest in the area of the Site because of the levels found in soil vapor (SV) during the Vapor Intrusion (VI) investigation. Contaminants of concern at this Site are evaluated using MDH Health Risk Limits (HRLs), MDH Health-Based Values (HBVs), US Environmental Protection Agency Maximum Contaminant Levels (MCLs) and MPCA Inhalation Screening Values (ISVs). HRLs are promulgated, recommended health-based limits for drinking water and are available for benzene, ethylbenzene, toluene and xylene mixtures. HBVs are concentrations of a chemical in drinking water that is likely to pose little or no risk to human health. MCLs are regulatory standards for chemicals that may be found in public water systems. ISVs are concentrations of chemicals in air that are not likely to represent a health risk to exposed individuals. Table 1 contains screening reference values and regulatory concentrations for these compounds.

Table 1: Applicable Reference and Regulatory Concentrations

	Groundwater/Drinking Water Values - µg/L		Vapor Intrusion Screening Values - µg/m^3
	MDH	EPA	MPCA
	Chronic HRL (*), HBV (†)	MCL	ISVs
Benzene	2 (c)*	5	4.5
Ethylbenzene	50 *	700	1,000
Toluene	200 *	1,000	5,000
Xylenes	300 *	10,000	100
1,2-Dichloroethane (1,2-DCA)	1 (c)†	5	0.4
Trichloroethylene (TCE)	0.4 † [2 (c)†]	5	2

(c) cancer endpoint assumes lifetime exposure

EPA MCLs – http://water.epa.gov/drink/contaminants/index.cfm

MDH HRLs / HBVs – http://www.health.state.mn.us/divs/eh/risk/guidance/gw/table.html

MPCA ISVs – http://www.pca.state.mn.us/index.php/waste/waste-and-cleanup/cleanup/superfund/risk-based-site-evaluation-process-guidance-documents.html)

6

Site-Associated Groundwater Contamination

Both an LNAPL-containing free product plume and a dissolved aqueous phase plume have been attributed to the Site. The inferred extent of the LNAPL, from Laser Induced Fluorescence (LIF) data acquired in 2007-8, is a 320 by 200 foot oval with an estimated thickness of up to 18.5 feet. The 2006 Focused Feasibility Study Report (Terracon Consultants, 2006a), apparently not referring to any specific bailing event, stated that bailing of MW-25 never reduced the amount of free product below 1.5 inches. Pumpout of free product from the LNAPL plume appears to have occurred primarily before 2000. With the suspension of pumping on DW-5 in 2002, LNAPL removal essentially ceased.

The locations of the City wells (CW-3, CW-4, CW-5, CW-6, CW-7, and CW-8) are shown in attached Figure 1. City well information is shown in Table 2, below.

Table 2: Paynesville City Well and Select Monitoring Well Information*

	Location from Site					
Well Name	Distance (feet)	Direction (degrees from north)	Total Depth (feet)	Elevation (feet)	Standard Pumping Rate (gpm)	Approximate Production Usage
CW-3	1400	30	93	1170	100	100%
CW-4	910	340	111	1172	100	0%
CW-5	2300	80	90	1168	450	33%
CW-6	2600	90	97	1168	450	33%
CW-7	2500	110	110	1165	450	33%
CW-8	2600	210	157	1180	500	100%
DW-3	450	80	90	1176	--	--
DW-3R	450	80	90	1174	--	--
DW-7S	790	100	35	1171	--	--
DW-7D	790	100	95	1171	--	--
DW-8	770	70	90	1173	--	--
DW-8S	770	70	35	1174	--	--
DW-9	400	45	31.5	1174	--	--

* See attached Figure 1 for an aerial view of the well locations.

CW-4 ceased to be used for drinking water production in 1997 and has been pumped since then to contain the dissolved phase plume (Terracon Consultants, 2012b). In 2007 DW-8 (see attached Figure 1) was installed to a depth of 90 feet as a "sentinel well" between the Site and CW-5 and CW-6 (Terracon Consultants, 2007). Benzene has been detected in this well every year since it was installed, and concentrations have been steadily increasing from the low of non-detect (ND) and 2.0 micrograms per liter (µg/L) in samples from February and November, 2008 to 14.0, 16.5 and 13.5 µg/L in March, August and November, 2012, respectively. DW-8 samples have not been analyzed for 1,2-DCA since 2007. Benzene data suggest that the dissolved phase plume extends to and beyond the sentinel well, east of the Site.

CW-5, CW-6 and CW-7 pump about 450 gallons per minute (gpm) on a rotating schedule (Terracon Consultants, 2012a). Monitoring well DW-8 is east-northeast of the Site, a third of the way between the Site and the eastern city well field, and about equidistant between CW-4

and CW-5. Data from DW-8 and other monitoring wells east of the Site suggest that CW-5, CW-6 and CW-7 are hydraulically connected to the dissolved phase plume, and that pumping of the city wells is drawing the plume in that direction. This is supported by the increasing benzene concentrations in DW-8 described above. Without control or removal of the LNAPL, the available contamination appears to be sufficient to maintain benzene levels of concern in the dissolved plume at some distance from the source (see attached Table 4 and attached Figure 2), and, over time, may be sufficient to allow benzene from the Site to reach the eastern well field. Recent samples from monitoring wells east of the Site have not been analyzed for 1,2-DCA.

Given the complex stratigraphy of the region it is likely that additional transmissive layers are present that could provide flow paths between the Site and the eastern well field without intersecting DW-8. Without additional monitoring wells between the Site or DW-8 and the city wells east of the Site (CW-5, CW-6, CW-7) and south of the Site (CW-8) it is not possible to evaluate the vulnerability of the city water supply to Site contaminants.

Data do not appear to be available on possible contamination of private wells within the area of the plume.

Soil Vapor / Vapor Intrusion Investigation

The VI investigation characterized SV near and under foundation slabs of houses in the area of the LNAPL plume. Benzene concentrations in SV were found to exceed MPCA action levels near several residences (Terracon Consultants, 2007), and additional sampling was conducted beneath the building foundation slab ("sub-slab") or in basement crawl space below four homes. Access to one residence for sub-slab testing could not be obtained. Additional sampling was conducted in the basement, main living quarters and in ambient air outside of one home. Attached Table 5 shows concentrations of volatile chemicals found in sub-slab and other residence-related sampling. Table 3 below, shows chemicals with at least 1 hit in sub-slab or crawl space at concentrations greater than the MPCA Inhalation Screening Values (ISVs). Sub-slab concentrations 10 times greater than the ISVs will not generally lead to basement air concentrations above the ISVs (see Table 3, below, for ISVs). Concentrations exceeding the ISVs over lengthy periods of time inside of homes may be of health concern. The source of the contaminant should be identified, and concentrations should be lowered. This can often be accomplished by removing the source, by venting the source, or by ventilating the building.

Table 3: Air Sample Data (µg/m^3) Exceeding MPCA ISVs and Associated with Residences ISVs

Residence ID	A							B			C		D			MPCA Residential ISVs
Sample Location	SubSlab	SubSlab	SubSlab	Crawl Space	Basement	Main Level	Ambient (outside)	SubSlab	SubSlab	SubSlab	Crawl Space	Crawl Space	SubSlab	SubSlab	SubSlab	
Sample Date	11/7/2007	4/8/2008	11/11/2008	2/12/2009	2/12/2009	2/12/2009	2/12/2009	1/11/2008	4/8/2008	11/11/2008	11/7/2007	4/8/2008	1/11/2008	5/20/2008	11/11/2008	
1,2,4-Trimethylbenzene	6.3			8.6		3.8		5.2	4.5							7
Methylene Chloride	1.1		2.1	1.4	1.1	3.3	2		9.3	2.4			112	22	2.6	20
Naphthalene	7.8	14	6.9					18.7					4.7			9
Tetrachloroethene														25.1		20
Trichloroethene			15.1	1.6	3.6	29.6	127									3

Bolded sampling results exceed the MPCA Residential Inhalation Screening Values (ISVs)
Highlighted data are at or above 10 times the MPCA Residential ISVs

While no chemicals were found to exceed 10X the ISVs below the basement slabs or in crawl spaces, five chemicals were found to exceed the ISVs:

- Trimethylbenzene is a petroleum distillate that is found in gasoline.
- Methylene chloride is a common solvent found in paint strippers and has numerous other manufacturing uses.
- Naphthalene is found in high concentrations in moth repellants and toilet deodorant blocks, but is also found in many petroleum distillates and is produced by burning cigarettes or wood.
- Tetrachloroethene (PERC) is a common solvent that is used in commercial drycleaners, textile processing and metal-cleaning.
- Trichloroethene (TCE) is a common industrial degreaser that, in the past, was used as a dry-cleaning solvent.

These contaminants have not been identified as Midtown Service Site-related contaminants. Additional evaluation was conducted at one residence that was also used as a daycare center. On 2/12/2009 air samples were taken from the crawl space below the house, the basement, the main living space, and outdoor ambient air (see Table 3 and attached Table 5). TCE was found at 1.6 micrograms per cubic meter ($\mu g/m^3$), 3.6 $\mu g/m^3$, 29.6 $\mu g/m^3$ and 127 $\mu g/m^3$ and benzene was found at 1.6 $\mu g/m^3$, 1.1 $\mu g/m^3$, 1.3 $\mu g/m^3$, and 1.7 $\mu g/m^3$ in the crawl space, basement, living space, and ambient air, respectively. Benzene results were below levels of concern for a home, but TCE concentrations in the basement, main living space, and outside air exceeded the ISVs which are levels of concern for long term exposure. If the source of the TCE or the benzene was the LNAPL or dissolved-phase plume, their concentrations would be expected to be higher in the sub-slab sample than in the samples inside and outside the house. As a result, although no TCE source was identified, the data suggest a relatively large nearby air discharge. Unfortunately, there are no data to suggest whether the TCE in air was from a temporary source or a longer-term source.

Additional vapor investigation has not been conducted at the Site since 2008. It appears that the LNAPL remains mobile and that its impact on SV concentrations may change over time.

Conclusions and Recommendations

Data suggest that chemicals, including benzene, from the Midtown Service Station Site dissolved contaminant plume are moving in the direction of the Paynesville City well field on the east side of the City. The LNAPL plume is likely acting as a continuing source of dissolved contamination to groundwater, resulting in continued expansion of the plume. While SV and VI measurements in the past have not shown exposures by this pathway to approach levels of concern, as long as the LNAPL remains and is mobile, conditions could change. Recommendations include:

- further investigation and remediation of this Site
- control and removal the LNAPL
- additional characterization of groundwater conductivity between the Site and the wellfields to the east and south of the Site
- investigation of contamination in private wells
- the SV investigation be continued as long as the LNAPL remains mobile
- unrelated to the Site, nearby potential TCE sources should be identified and investigated, or the residence that showed high levels of TCE in 2008 should be re-

sampled to confirm that the high TCE concentrations found in 2008 were caused by a transient source

Please let me know if I can be of additional assistance.

Sincerely,

Carl Herbrandson, PhD

Toxicologist
Site Assessment and Consultation Unit
Environmental Surveillance and Assessment Section
Environmental Health Division
Minnesota Department of Health

cc: Lauralin Kania, Project Leader, MPCA
Paul Stock, Hydrogeologist, MPCA
David Moore, Project Manager, MPCA

References

Terracon Consultants Inc. (2000). Annual Monitoring Report – 1999: Paynesville Municipal Water Supply. St. Paul, MN. MPCA Site ID # LEAK00000131, February 28, 2000.

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Terracon Consultants Inc. (2010). Annual Monitoring Report – 2009/2010: Paynesville Municipal Water Supply / Former Midtown Service Station. St. Paul, MN. MPCA Site ID #: LEAK0002181 and 131, May 17, 2010.

Terracon Consultants Inc. (2011a). Pilot Test Report: Paynesville Municipal Water Supply / Former Midtown Service Station. St. Paul, MN. MPCA Site ID #: LEAK000131, June 30, 2011.

Terracon Consultants Inc. (2011b). Annual Monitoring Report – 2010/2011: Paynesville Municipal Water Supply / Former Midtown Service Station. St. Paul, MN. MPCA Site ID #: LEAK0002181 and 131, May 17, 2011.

10

Terracon Consultants Inc. (2012a). Hydrogeologic Assessment Report: Paynesville Municipal Water Supply / Former Midtown Service Station. St. Paul, MN. MPCA Site ID #: LEAK000131, July 24, 2012.

Terracon Consultants Inc. (2012b). Annual Monitoring Report – 2011/2012: Paynesville Municipal Water Supply / Former Midtown Service Station. St. Paul, MN. MPCA Site ID #: LEAK0002181 and 131, September 20, 2012.

CERTIFICATION

This Letter Health Consultation was prepared by the Minnesota Department of Health (MDH) with support from the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was begun. This document has not been reviewed and cleared by ATSDR. Other MDH programs have reviewed this document.

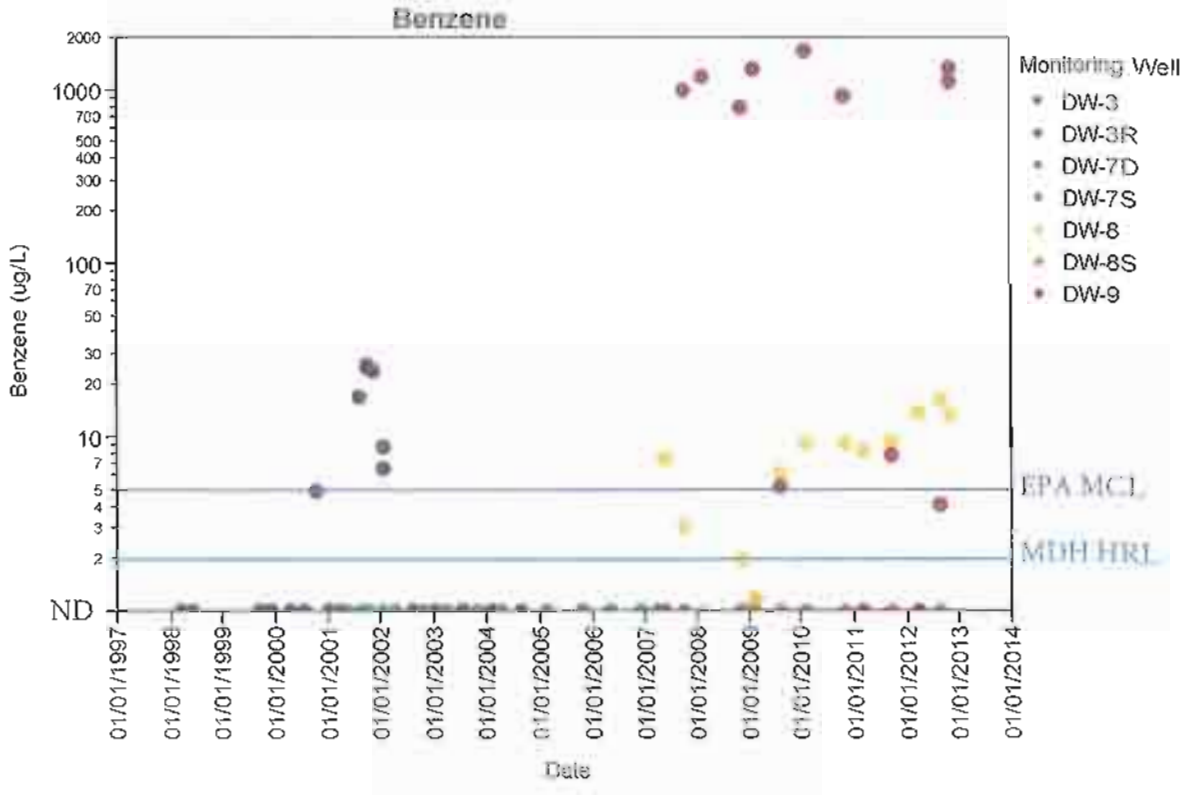
Rita B. Messing

Rita B. Messing, PhD, Supervisor
Site Assessment and Consultation Unit, Environmental Assessment and Surveillance Section,
Division of Environmental Health, Minnesota Department of Health

12

Figure 1: Midtown Service Station Site and Selected Wells

Figure 2: Sample Data - Selected Wells - All Dates



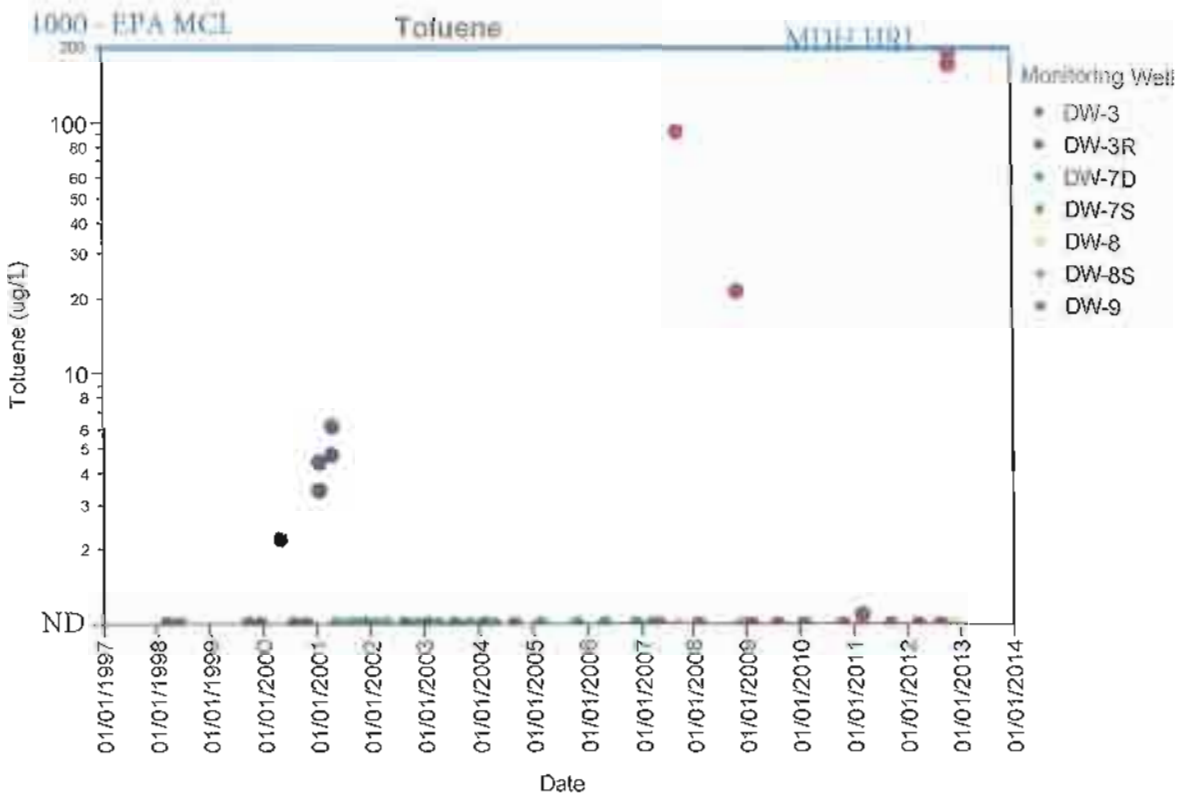
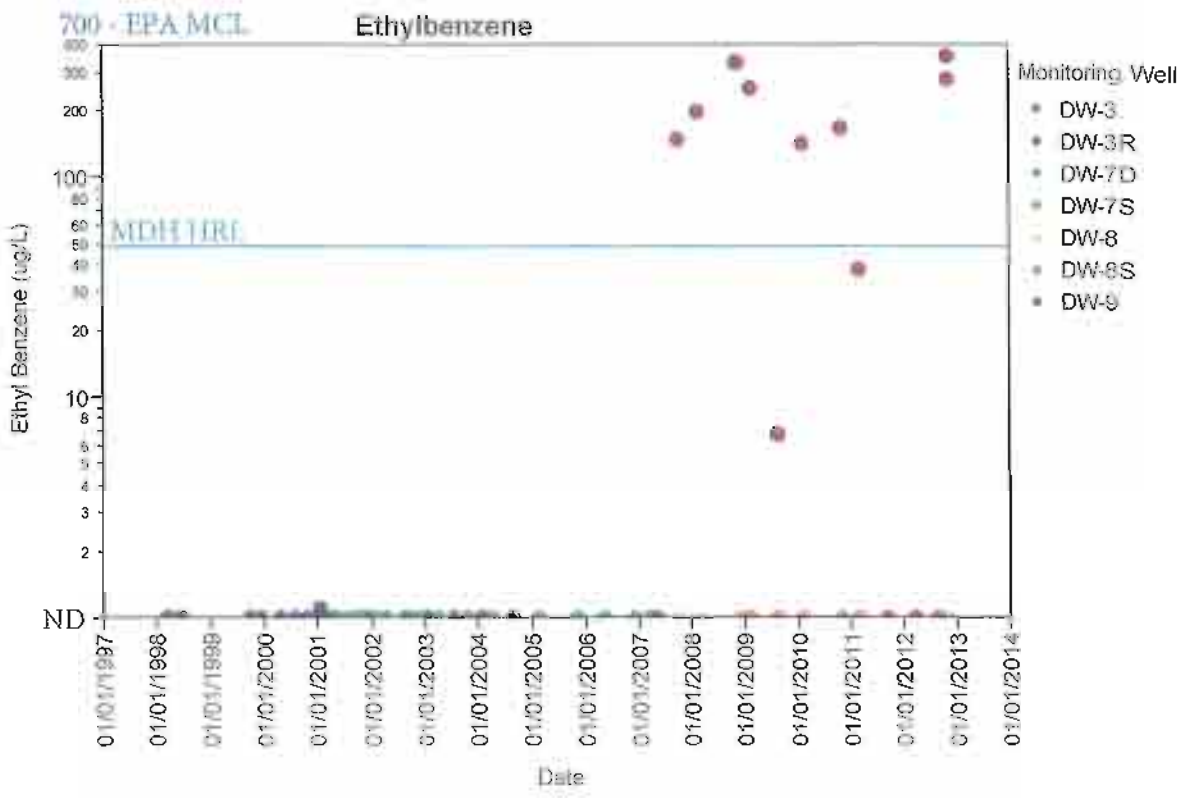


Figure 2(cont'd): Sample Data - Selected Wells - All Dates



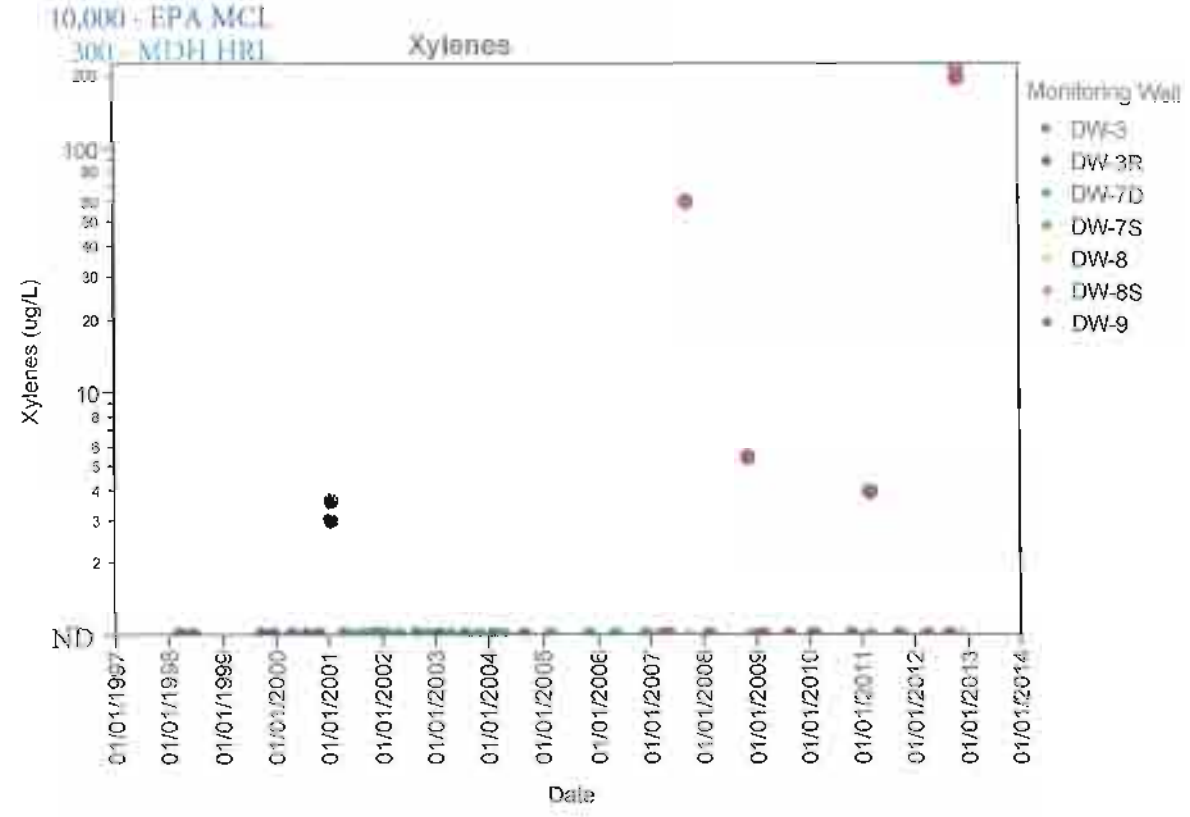
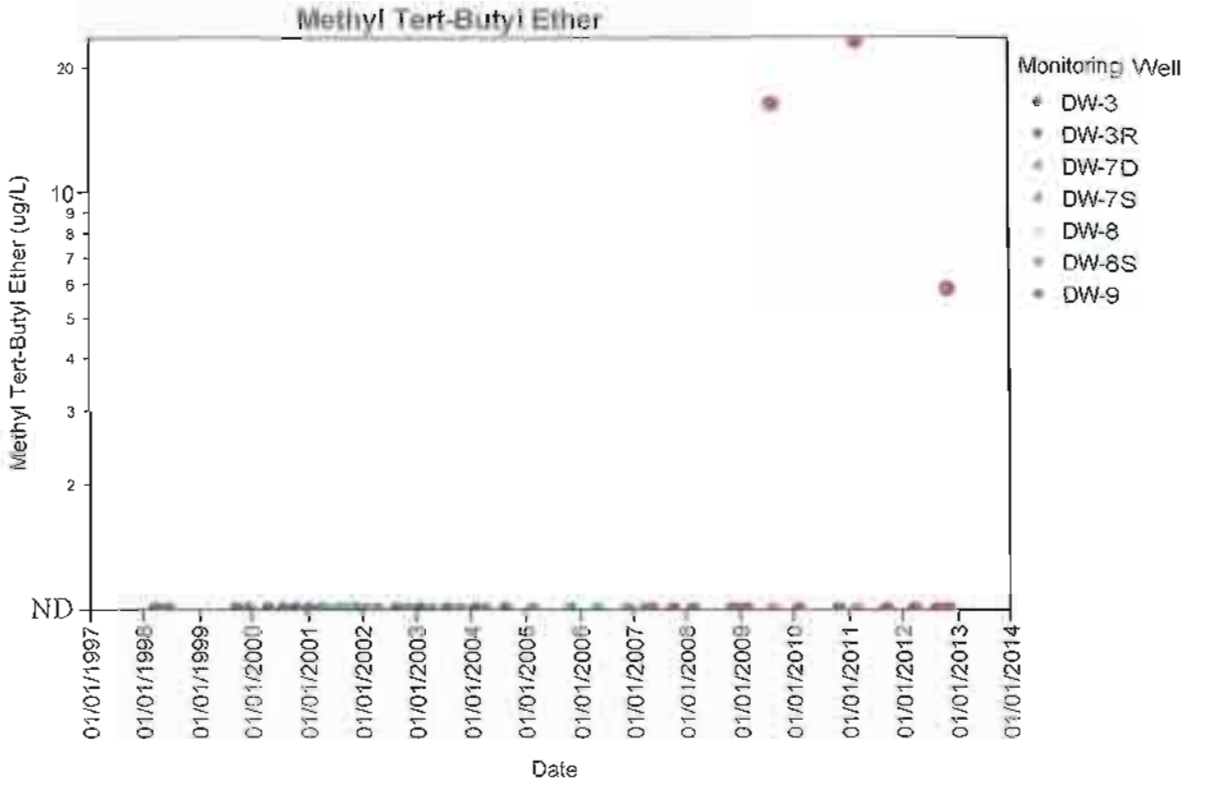


Figure 2(cont'd): Sample Data - Selected Wells - All Dates



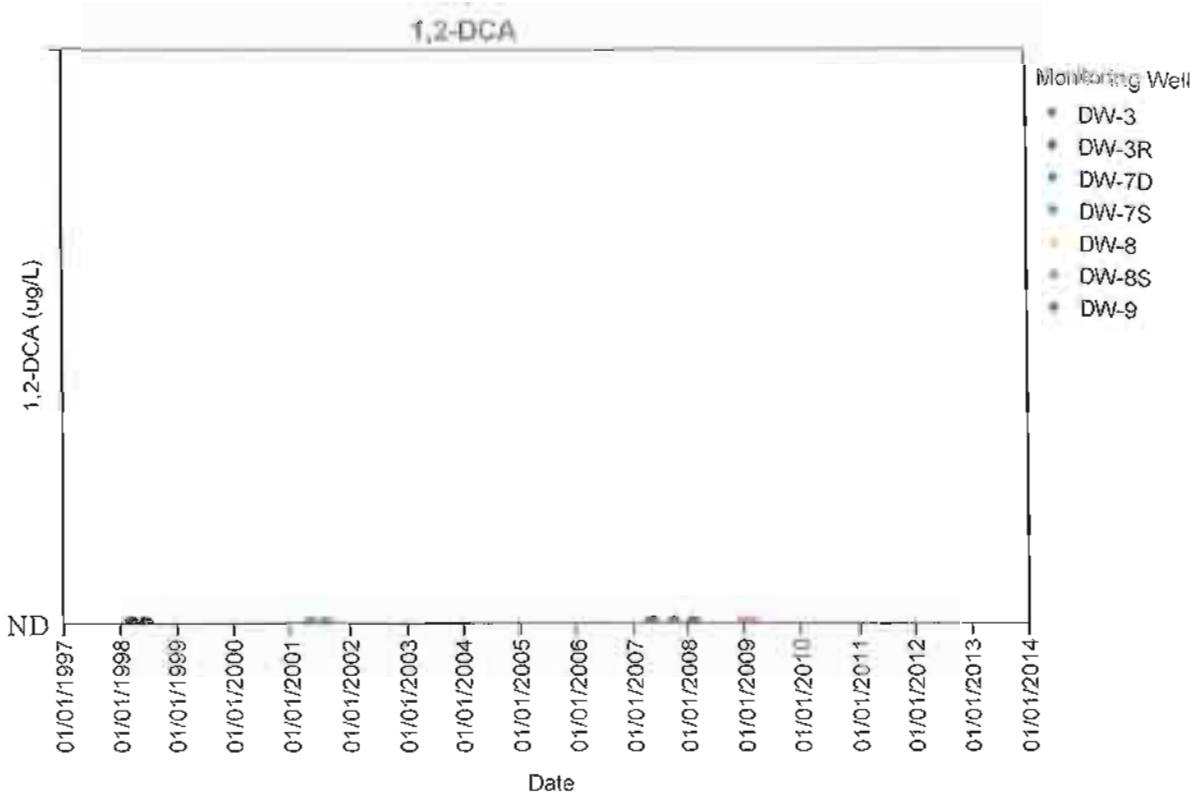


Figure 2(cont'd): Sample Data - Selected Wells - All Dates

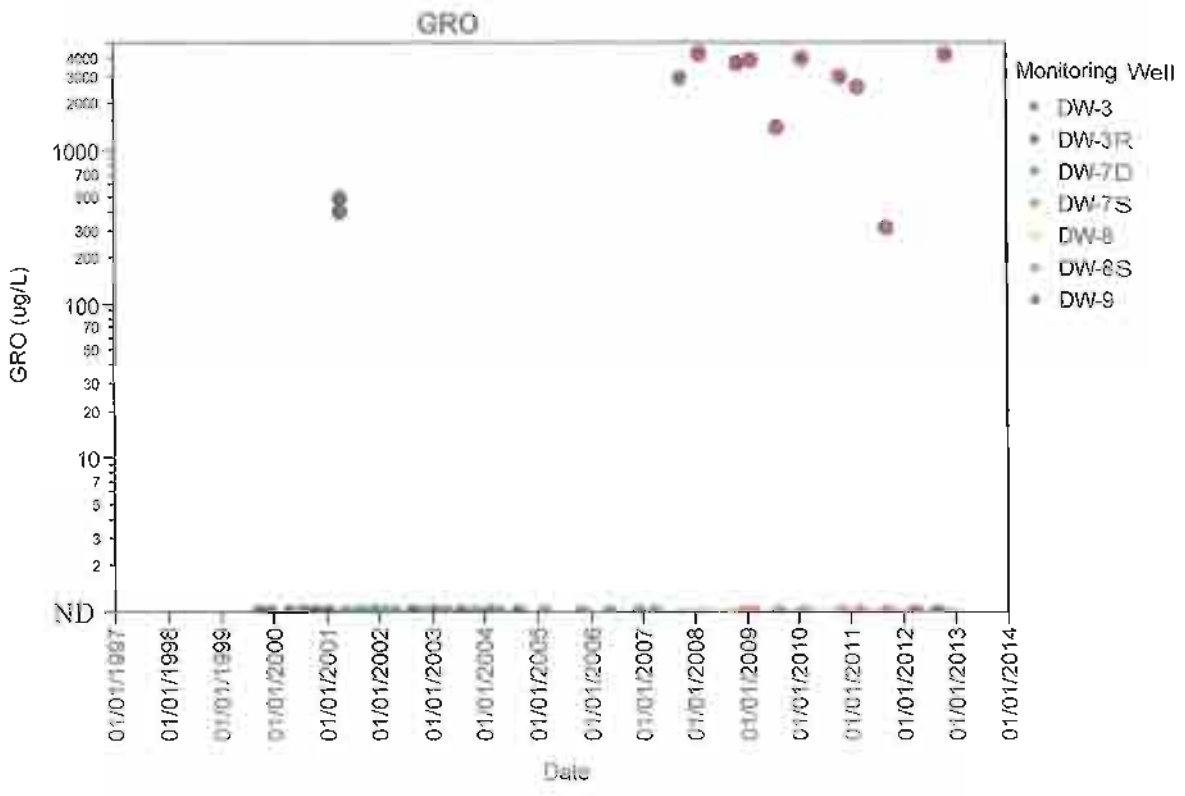


Table 4: Analytical Data for Selected Monitoring Wells

Available Analytical Data from 7 Monitoring Wells (Data from Table 11, 2012 Annual Report)

Sample ID		Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Xylenes (µg/L)	Methyl Tert-Butyl Ether (µg/L)	Naphthalene (µg/L)	1,2-Dichloroethane (µg/L)	Gasoline Range Organics (µg/L)	Diesel Range Organics (µg/L)
DW-3	G	03/16/98	<1	<1	<1	<3	<5	<5	<1	-	-
DW-3		03/25/98	<0.30	<0.30	<0.50	<1.2	<1.0	<0.40	<0.50	-	-
DW-3		06/13/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-
DW-3	G	06/13/98	<1	<1	<1	<3	-	<5	<1	-	-
DW-3		09/22/99	<1.0	<1.0	<1.0	<1.0	<5.0	-	-	<100	-
DW-3		12/09/99	<1.0	<1.0	<1.0	<1.0	<5.0	-	-	<100	-
DW-3		04/20/00	<1.0	2.2	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		07/27/00	<1.0	<1.0	<1.0	<1.0	<5.0	-	-	<100	-
DW-3		10/20/00	4.9	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		01/16/01	<1.0	4.4	<1.0	**3.0**	<5.0	-	-	<100	-
DW-3		01/16/01	<1.0	3.4	1.1	**3.6**	<5.0	-	-	<100	-
DW-3	2	04/12/01	<1.0	6.1	<1.0	<3.0	<5.0	-	-	**400**	-
DW-3		04/12/01	<1.0	4.7	<1.0	<3.0	<5.0	-	-	**490**	-
DW-3		08/13/01	17	<1.0	<1.0	<3.0	<5.0	<5.0	<5.0	<100	-
DW-3		10/09/01	26	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		10/09/01	**25**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3	D	11/19/01	24	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		01/29/02	8.8	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		01/29/02	6.6	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		04/16/02	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		04/16/02	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		08/19/02	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		08/19/02	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		11/05/02	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		11/05/02	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		01/17/03	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		01/17/03	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		04/04/03	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		04/04/03	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		07/24/03	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		07/24/03	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		10/28/03	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		02/04/04	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		02/04/04	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		04/07/04	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		04/07/04	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		08/24/04	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		08/24/04	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		02/16/05	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3		11/02/05	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	<50	-
DW-3		05/04/06	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	<50	-
DW-3		05/05/06	Abandoned								
DW-3R		05/03/07	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-
DW-3R		09/25/07	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<50	-
DW-3R		02/13/08	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	<1.0	<50	-
DW-3R		11/12/08	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3R		02/12/09	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3R		08/11/09	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3R		02/03/10	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3R		10/29/10	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3R		03/03/11	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3R		09/15/11	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3R		03/21/12	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-3R		08/21/12	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		05/11/01	<0.50	<0.50	<0.50	<1.5	<1.0	<0.50	<0.50	<100	-
DW-7D	3	08/13/01	<0.50	<0.50	<0.50	<1.5	<1.0	<0.50	<0.50	<100	-
DW-7D		10/09/01	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		01/29/02	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		04/16/02	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		11/05/02	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		04/03/03	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		10/28/03	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		04/07/04	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		02/16/05	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		11/02/05	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	<50	-
DW-7D		05/04/06	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	<50	-
DW-7D		11/30/06	<0.14	<0.36	<0.40	<1.1	<0.36	-	-	<26	-
DW-7D		03/20/07	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	<50	-
DW-7D		09/25/07	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	<50	-
DW-7D		11/11/08	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		08/11/09	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		10/29/10	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		03/03/11	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		09/15/11	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7D		08/21/12	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		05/11/01	<0.50	<0.50	<0.50	<1.5	<1.0	<0.50	<0.50	<100	-
DW-7S	3	08/13/01	<0.50	<0.50	<0.50	<1.5	<1.0	<0.50	<0.50	<100	-

Table 4: Analytical Data for Selected Monitoring Wells

Available Analytical Data from 7 Monitoring Wells (Data from Table 11, 2012 Annual Report)

Sample ID		Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Xylenes (µg/L)	Methyl Tert-Butyl Ether (µg/L)	Naphthalene (µg/L)	1,2-Dichloro-ethane (µg/L)	Gasoline Range Organics (µg/L)	Diesel Range Organics (µg/L)
DW-7S		10/09/01	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		01/29/02	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		04/16/02	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		11/05/02	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		04/03/03	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		10/28/03	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		04/07/04	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		02/16/05	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		11/02/05	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	<50	-
DW-7S		05/04/06	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	<50	-
DW-7S		11/30/06	<0.14	<0.36	<0.40	<1.1	<0.36	-	-	<26	-
DW-7S		03/20/07	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	<50	-
DW-7S		09/25/07	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	<50	-
DW-7S		11/11/08	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		08/11/09	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		10/29/10	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		03/03/11	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		09/15/11	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-7S		08/21/12	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8		05/03/07	**7.6**	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	-	-
DW-8		09/25/07	**3.1**	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<50	-
DW-8		02/13/08	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	<50	-
DW-8		11/11/08	**2.0**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8		02/12/09	**1.2**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8		08/11/09	**6.3**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8		02/04/10	**9.4**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8		10/29/10	**9.4**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8		03/03/11	**8.5**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8		09/15/11	**9.5**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8		09/15/11	**9.4**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8		03/21/12	**14.0**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8		08/22/12	**16.5**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8		11/05/12	**13.5**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8S		12/29/08	<1.0	<1.0	<1.0	<3.0	<1.0	<4.0	<1.0	<100	-
DW-8S	[3]	02/12/09	<1.0	<1.0	<1.0	<3.0	<1.0	<4.0	<1.0	<100	-
DW-8S		02/12/09	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8S		08/11/09	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8S		02/04/10	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8S		10/29/10	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8S		03/03/11	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8S		09/15/11	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8S		03/21/12	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-8S		08/22/12	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-9	[1]	05/03/07	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	-	-
DW-9	[1, 5]	09/25/07	**1,000**	**93**	**150**	**61**	<25	<120	<25	**3,000**	-
DW-9	[5]	02/13/08	**1,200**	<10	**200**	<30	<10	-	-	**4,300**	-
DW-9		11/11/08	**797**	**21.6**	**335**	**5.4**	<5.0	-	-	**3,730**	-
DW-9		02/12/09	**1,330**	<5.0	**256**	<15.0	<25.0	-	-	**3,920**	-
DW-9		08/11/09	**5.2**	<1.0	**6.9**	<3.0	**16.4**	-	-	**1,430**	-
DW-9		02/04/10	**1,690**	<5.0	**144**	<15.0	<25.0	-	-	**3,980**	-
DW-9		10/28/10	**924**	<5.0	**169**	<15.0	<25.0	-	-	**3,040**	-
DW-9		03/04/11	<1.0	**1.1**	**38.5**	**3.9**	**23.2**	-	-	**2,610**	-
DW-9		09/16/11	**7.9**	<1.0	<1.0	<3.0	<5.0	-	-	**318**	-
DW-9		03/21/12	<1.0	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-9		08/22/12	**4.1**	<1.0	<1.0	<3.0	<5.0	-	-	<100	-
DW-9		11/05/12	**1,340**	**193**	**359**	**218.2**	**5.9**	-	-	**4,240**	-
DW-9		11/05/12	**1,120**	**172**	**281**	**196**	<1.0	-	-	**4,210**	-

Note:
Concentrations in micrograms per liter (µg/L), equivalent to parts per billion. ND - Not Detected 9/13/2012
Results at or below the laboratory reporting limits (RLs) were preceded by the less than symbol (<). D - Duplicate
Analytes not sampled, or results not applicable, were represented with a hyphen (-). * - Other petroleum related VOCs detected.
Bolded values exceeded the reporting limits for the selected analytes. ** - Concentration due to sample carry over.
G - Samples analyzed using GC in Geoprobe Sampling Vehicle.
HRL/HBV - Health Risk Limit / Health Based Values (Minnesota Department of Health\)
MCL - Maximum Contaminant Levels (Environmental Protection Agency, http://www.epa.gov/safewater/mcl.html#mcls, 3/8/2005)
NPDES - National Pollutant Discharge Elimination System limits only apply to water discharged from CW-4 (last revised 4/11/06).
1. One or more non-petroleum VOCs detected.
2. Large unidentified peak present in DW-3 and Dup GRO (tentative ID 2-ethyl-1-hexanol).
3. Benzene and 1,2-Dichloroethane were not detected between the MDL and RL unless J flagged
4. Benzene and 1,2-Dichloroethane were not detected to 1/2 the RL unless J flagged
5. Early and late eluting peaks were present outside the GRO window of analysis.
6. Early eluting peaks were present outside the GRO window of analysis.
T7. Low boiling point hydrocarbons present in DRO sample.

Table 5: Air Sample Data Associated with Residences

Residence ID	Residence A							Residence B			Residence C		Residence D		
SAMPLE LOCATION	SubSlab	SubSlab	SubSlab	Crawl Space	Basement	Main Level	Ambient (outside)	SubSlab	SubSlab	SubSlab	Crawl Space	Crawl Space	SubSlab	SubSlab	SubSlab
DATE SAMPLE	11/7/2007	4/8/2008	11/11/2008	2/12/2009	2/12/2009	2/12/2009	2/12/2009	1/11/2008	4/8/2008	11/11/2008	11/7/2007	4/8/2008	1/11/2008	5/20/2008	11/11/2008
1,1,1-Trichloroethane	<1.5	<1.9	**1.6**	<1.6	<1.6	<1.5	<1.4	<1.6	<1.8	<1.7	**2.5**	<1.8	<1.6	<1.5	<1.7
1,1,2,2-Tetrachloroethane	<1.9	<2.4	<2.1	<2.1	<2.0	<1.9	<1.8	<2	<2.3	<2.2	<1.8	<2.3	<2	<1.9	<2.2
1,1,2-Trichloroethane	<1.5	<1.9	<1.6	<1.6	<1.6	<1.5	<1.4	<1.6	<1.8	<1.7	<1.4	<1.8	<1.6	<1.5	<1.7
1,1,2-Trichlorotrifluoroethane	<2.2	<2.8	<2.4	<2.4	<2.3	<2.1	<2.0	<2.3	<2.7	<2.5	<2	<2.7	<2.3	<2.1	<2.5
1,1-Dichloroethane	<1.1	<1.4	<1.2	<1.2	<1.2	<1.1	<1.0	<1.2	<1.4	<1.3	<1	<1.4	<1.2	<1.1	<1.3
1,1-Dichloroethene	<1.1	<1.4	<1.2	<1.2	<1.2	<1.1	<1.0	<1.2	<1.3	<1.2	<1	<1.3	<1.2	<1.1	<1.2
1,2,4-Trichlorobenzene	<1.4	<1.7	<1.5	<1.5	<1.4	<1.3	<1.2	<1.4	<1.6	<1.5	<1.2	<1.6	<1.4	<1.3	<1.5
1,2,4-Trimethylbenzene	**6.3**	<4.4	<3.7	<3.7	<3.6	<3.4	<3.1	**5.2**	<4.2	<3.8	<3.1	<4.2	<3.6	<3.4	<3.8
1,2-Dibromoethane (EDB)	<2.2	<2.8	<2.4	<2.4	<2.3	<2.1	<2.0	<2.3	<2.7	<2.5	<2	<2.7	<2.3	<2.1	<2.5
1,2-Dichlorobenzene	<1.7	<2.1	**20**	<1.8	<1.7	<1.6	<1.5	<1.7	<2.0	<1.8	<1.5	<2.0	<1.7	<1.6	<1.8
1,2-Dichloroethane	<1.1	<1.4	<1.2	<1.2	<1.2	<1.1	<1.0	<1.2	<1.4	<1.3	<1	<1.4	<1.2	<1.1	<1.3
1,2-Dichloropropane	<1.3	<1.6	<1.4	<1.4	<1.3	<1.3	<1.2	<1.3	<1.6	<1.4	<1.2	<1.6	<1.3	<1.3	<1.4
1,3,5-Trimethylbenzene	<3.4	<4.4	<3.7	<3.7	<3.6	<3.4	<3.1	<3.6	<4.2	<3.8	<3.1	<4.2	<3.6	<3.4	<3.8
1,3-Butadiene	<0.62	<0.78	<0.67	<0.67	<0.64	<0.60	<0.56	<0.64	<0.75	<0.69	<0.56	<0.75	<0.64	<0.60	<0.69
1,3-Dichlorobenzene	<1.7	<2.1	<1.8	<1.8	<1.7	<1.6	<1.5	<1.7	<2.0	<1.8	<1.5	<2.0	<1.7	<1.6	<1.8
1,4-Dichlorobenzene	<1.7	<2.1	**4.7**	<1.8	<1.7	<1.6	<1.5	<1.7	<2.0	<1.8	<1.5	<2.0	<1.7	<1.6	<1.8
2-Butanone (MEK)	**12.8**	<1.0	**6**	<0.89	<0.86	<0.80	<0.75	**16**	<1.0	**2.1**	**1.5**	<1.0	**3**	<0.80	**2**
2-Hexanone	**2.8**	<1.4	<1.2	<1.2	<1.2	<1.1	<1.0	**1.7**	<1.4	<1.3	<1	<1.4	<1.2	<1.1	<1.3
2-Propanol	<3.4	<4.4	<3.7	<3.7	<3.6	<3.4	<3.1	**9.1**	<4.2	<3.8	<3.1	<4.2	<3.6	<3.4	<3.8
4-Ethyltoluene	<3.4	<4.4	<3.7	<3.7	<3.6	<3.4	<3.1	<3.6	<4.2	<3.8	<3.1	<4.2	<3.6	<3.4	<3.8
4-Methyl-2-pentanone (MIBK)	**1.9**	<1.4	<1.2	<1.2	<1.2	<1.1	<1.0	**2.6**	<1.4	<1.3	<1	<1.4	<1.2	<1.1	<1.3
Acetone	**73.2**	<0.84	**23.6**	<0.71	<0.69	<0.64	<0.60	**130**	<0.80	**10**	**5.2**	<0.80	**13.6**	<0.64	**5.8**
Benzene	**1**	<1.1	<0.96	<0.96	<0.93	<0.87	<0.81	<0.93	<1.1	<1	<0.81	<1.1	<0.93	<0.87	<1
Bromodichloromethane	<1.9	<2.4	<2.1	<2.1	<2.0	<1.9	<1.8	<2	<2.3	<2.2	<1.8	<2.3	<2	<1.9	<2.2
Bromoform	<2.9	<3.7	<3.1	<3.1	<3.0	<2.8	<2.6	<3	<3.5	<3.2	<2.6	<3.5	<3	<2.8	<3.2
Bromomethane	<1.1	<1.4	<1.2	<1.2	<1.1	<1.1	<0.99	<1.1	<1.3	<1.2	<0.99	<1.3	<1.1	<1.1	<1.2
Carbon disulfide	**3.3**	<1.1	<0.93	<0.93	<0.90	<0.84	<0.79	**2.1**	<1.0	<0.97	<0.79	<1.0	**1.7**	<0.84	<0.97
Carbon tetrachloride	<1.8	<2.3	<1.9	<1.9	<1.9	<1.7	<1.6	<1.9	<2.2	<2	<1.6	<2.2	<1.9	<1.7	<2
Chlorobenzene	<1.3	<1.6	**2**	<1.4	<1.3	<1.3	<1.2	<1.3	<1.6	<1.4	<1.2	<1.6	<1.3	<1.3	<1.4
Chloroethane	<0.75	<0.94	<0.8	<0.80	<0.77	<0.72	<0.68	<0.77	<0.90	<0.83	<0.68	<0.90	<0.77	<0.72	<0.83
Chloroform	<1.4	<1.7	<1.5	<1.5	<1.4	<1.3	<1.2	<1.4	<1.6	<1.5	<1.2	<1.6	<1.4	<1.3	<1.5
Chloromethane	<0.58	<0.73	<0.62	<0.62	<0.60	<0.56	<0.52	<0.6	<0.70	<0.65	<0.52	<0.70	<0.6	<0.56	<0.65
Cyclohexane	<0.94	<1.2	<1	<1.0	<0.97	<0.91	<0.85	<0.97	<1.1	<1	<0.85	<1.1	<0.97	<0.91	<1
Dibromochloromethane	<2.3	<3.0	<2.5	<2.5	<2.4	<2.3	<2.1	<2.4	<2.8	<2.6	<2.1	<2.8	<2.4	<2.3	<2.6
Dichlorodifluoromethane	**2.1**	<1.7	**2.6**	<1.5	<1.4	<1.3	<1.2	<1.4	<1.7	**2.6**	**2.2**	<1.7	<1.4	<1.3	**3**
Dichlorotetrafluoroethane	<1.9	<2.4	<2.1	<2.1	<2.0	<1.9	<1.8	<2	<2.3	<2.2	<1.8	<2.3	<2	<1.9	<2.2
Ethanol	**54**	<3.3	**13.8**	<2.8	<2.7	<2.5	<2.4	**33.5**	<3.2	<2.9	**3.1**	<3.2	**33.1**	<2.5	**13.7**
Ethyl acetate	<1	<1.3	<1.1	<1.1	<1.0	<0.98	<0.91	<1	<1.2	<1.1	<0.91	<1.2	<1	<0.98	<1.1
Ethylbenzene	**2.5**	<1.5	<1.3	<1.3	<1.3	<1.2	<1.1	<1.3	<1.5	<1.4	<1.1	<1.5	<1.3	<1.2	<1.4
Hexachloro-1,3-butadiene	<3	<3.8	<3.3	<3.3	<3.1	<2.9	<2.8	<3.1	<3.7	<3.4	<2.8	<3.7	<3.1	<2.9	<3.4
Methyl-tert-butyl ether	<1	<1.3	<1.1	<1.1	<1.0	<0.98	<0.91	<1	<1.2	<1.1	<0.91	<1.2	<1	<0.98	<1.1
Methylene Chloride	**1.1**	<1.2	**2.1**	<1.1	<1.0	<0.95	<0.89	<1	<1.2	**2.4**	<0.89	<1.2	**112**	<0.95	**2.6**
Naphthalene	**7.8**	**14**	**6.9**	<4.0	<3.9	<3.6	<3.4	**18.7**	<4.5	<4.2	<3.4	<4.5	**4.7**	<3.6	<4.2
Propylene	<0.48	<0.61	<0.52	<0.52	<0.50	<0.47	<0.44	<0.5	<0.58	<0.54	<0.44	<0.58	**1**	<0.47	<0.54
Styrene	**1.7**	<1.5	**1.7**	<1.3	<1.2	<1.2	<1.1	<1.2	<1.4	<1.3	<1.1	<1.4	<1.2	<1.2	<1.3
Tetrachloroethene	<1.9	<2.4	<2.1	<2.1	<2.0	<1.9	<1.8	<2	<2.3	<2.2	<1.8	<2.3	<2	<1.9	<2.2
Tetrahydrofuran	<0.83	<1.0	<0.89	<0.89	<0.86	<0.80	<0.75	<0.86	<1.0	<0.92	<0.75	<1.0	<0.86	<0.80	<0.92
Toluene	**6.5**	**1.3**	**3.8**	<1.1	<1.1	<1.0	<0.96	<1.1	<1.3	<1.2	<0.96	<1.3	<1.1	<1.0	**1.4**
Trichloroethene	<1.5	<1.9	**15.1**	<1.6	<1.6	<1.5	<1.4	<1.6	<1.8	<1.7	<1.4	<1.8	<1.6	<1.5	<1.7
Trichlorofluoromethane	**1.6**	<1.9	**1.6**	<1.6	<1.6	<1.5	<1.4	<1.6	<1.8	<1.7	**2.1**	<1.8	<1.6	<1.5	<1.7
Vinyl acetate	<0.98	<1.2	**2.3**	<1.1	<1.0	<0.95	<0.89	**3**	<1.2	**2.6**	<0.89	<1.2	<1	<0.95	<1.1
Vinyl chloride	<0.72	<0.90	<0.77	<0.77	<0.74	<0.70	<0.65	<0.74	<0.86	<0.8	<0.65	<0.86	<0.74	<0.70	<0.8
cis-1,2-Dichloroethene	<1.1	<1.4	**2.1**	<1.2	<1.2	<1.1	<1.0	<1.2	<1.3	<1.2	<1	<1.3	<1.2	<1.1	<1.2
cis-1,3-Dichloropropene	<1.3	<1.6	<1.4	<1.4	<1.3	<1.2	<1.2	<1.3	<1.5	<1.4	<1.2	<1.5	<1.3	<1.2	<1.4
m&p-Xylene	**4.5**	<3.1	<2.6	<2.6	<2.5	<2.4	<2.2	<2.5	<2.9	<2.7	<2.2	<2.9	<2.5	<2.4	<2.7
n-Heptane	<1.1	<1.4	<1.2	<1.2	<1.2	<1.1	<1.0	<1.2	<1.4	<1.3	<1	<1.4	<1.2	<1.1	<1.3
n-Hexane	**1**	<1.3	<1.1	<1.1	<1.0	<0.96	<0.90	<1	<1.2	<1.1	<0.9	<1.2	<1	<0.96	<1.1
o-Xylene	**1.9**	<1.5	<1.3	<1.3	<1.3	<1.2	<1.1	<1.3	<1.5	<1.4	<1.1	<1.5	<1.3	<1.2	<1.4
trans-1,2-Dichloroethene	<1.1	<1.4	<1.2	<1.2	<1.2	<1.1	<1.0	<1.2	<1.3	<1.2	<1	<1.3	<1.2	<1.1	<1.2
trans-1,3-Dichloropropene	<1.3	<1.6	<1.4	<1.4	<1.3	<1.2	<1.2	<1.3	<1.5	<1.4	<1.2	<1.5	<1.3	<1.2	<1.4

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
2040 Highway 12 East • Willmar, MN 56201-5818
Phone (320) 231-3956 • Fax (320) 231-9710
www.bolton-menk.com

MEMORANDUM

Date: October 1, 2013

To: Ron Mergen
Public Works Director

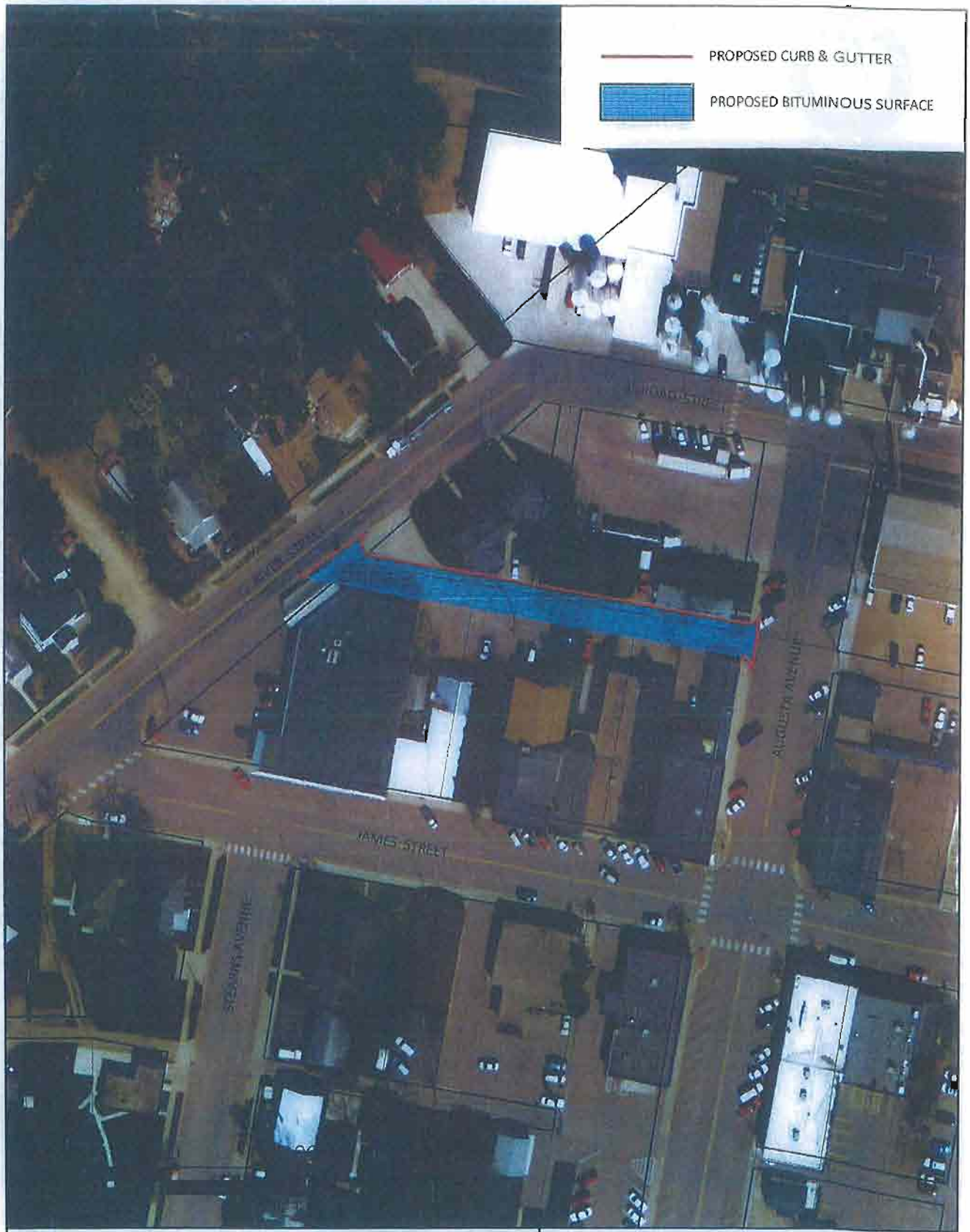
From: Chuck DeWolf, P.E.
City Engineer

Subject: Alley Improvements
City of Paynesville, Minnesota

As requested, we have prepared a preliminary cost estimate to complete improvements to the alley that is located between River Street and Augusta Avenue just south of the AMPI campus. The proposed improvements would consist of constructing a 24-foot wide paved surface with concrete curb and gutter along the north side of the alley. The curb and gutter would allow storm water to adequately drain to River Street and Augusta Avenue. The attached figure illustrates the proposed improvements. The total preliminary estimated cost to complete the improvements is $50,000.00. If you decide to move forward with these improvements, they could be added to the 2014 Improvement Project.

If you have any questions, please feel free to contact me at any time.

21



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CITY OF PAYNESVILLE
2014 ALLEY IMPROVEMENTS OVERVIEW

OCTOBER, 2013 FIGURE NO. 1

2.2