Interim Response Action Implementation Report -Groundwater Remediation and Vapor Intrusion

MN Bio Business Center 221 First Avenue S.W. Rochester, Minnesota

Prepared for City of Rochester

June 2010

# Interim Response Action Implementation Report Groundwater Remediation & Vapor Intrusion MN Bio Business Center 221 First Avenue S.W. Rochester, Minnesota

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# **Section 1 Introduction**

This Interim Response Action ("RA") Implementation Report was prepared on behalf of the City of Rochester ("City") and the Economic Development Authority for the City ("the EDA") following implementation of RAs related to groundwater remediation and vapor intrusion systems installation activities at the property located at 221 First Avenue S.W. in Rochester, Olmsted County, Minnesota (the "Property"). The Property currently supports the Minnesota Bio Business Center Building. The Property location is shown on Figure 1.

The purpose of this RA Implementation Report is to summarize and document the installation of the passive venting, vapor barrier, and dual phase extraction ("DPE") systems described in the following documents approved by the Minnesota Pollution Control Agency ("MPCA") Voluntary Investigation and Cleanup ("VIC") Program: *Voluntary Response Action Plan* ("VRAP") and Preliminary Response Action Design ("RAD"), dated June 2007; Voluntary Response Action Plan Addendum – Response Action Design, dated July 17, 2007; the VRAP, ECP, and Design Modifications Submittal, dated September 18, 2007; the VRAP Addendum dated March 30, 2009; and the VRAP Addendum #2, dated April 20, 2009 (hereafter, collectively referred to as the MPCA-approved VRAP).

The VRAP was approved by the MPCA VIC Program in letters, dated July 27, 2007, and April 28, 2009. The *VRAP*, *ECP*, and *Design Modifications Submittal* was approved in an email from Mr. Allan Timm with the MPCA VIC Program, dated Wednesday October 17, 2007.

In July 2008, Landmark submitted a RA Implementation Report to the MPCA VIC Program which included a summary of the soil disposal and soil management activities completed at the Property. In a letter dated November 17, 2008, the MPCA issued a "Limited No Further Action Determination for Soil." Appendix A includes copies of pertinent approval letters and correspondence with the MPCA VIC Program. A final RA Implementation Report, related to future operation and maintenance and decommissioning activities, will be submitted to the MPCA VIC Program upon final completion of the approved RAs.

# 1.1 Background

The Property is owned by the City and previously consisted of two parcels, the 219 1<sup>st</sup> Avenue SW Parcel and the 223 1<sup>st</sup> Avenue SW. The City acquired a portion of the Property (the 219 1<sup>st</sup> Avenue SW Parcel) from Rochester DC LLC, a Delaware limited liability company on May 31, 2007. EDA

acquired the remaining portion of the Property (the 223 1<sup>st</sup> Avenue SW Parcel) from the Mayo Clinic Rochester, a Minnesota non-profit corporation on July 18, 2007. The 223 Parcel was subsequently transferred from EDA to the City on October 15, 2007. Both parcels comprise the Property and were most recently used as surface parking lots. Figure 2 shows the locations of each former parcel.

#### 219 1st Avenue SW Parcel (the 219 Parcel)

The 219 Parcel consisted of 14,300 square feet of land that historically supported two dry cleaning facilities; historical structures were demolished prior to the construction of the current parking lot. The historical activities involved the use of hazardous substances, including the common dry cleaning solvent tetrachoroethylene ("PCE"). Environmental investigations and RAs were previously conducted on this parcel to address the releases of PCE. The previous RAs included the installation and operation of a DPE system (see Section 1.2 below).

The general Property vicinity has been developed since prior to 1884 for residential/commercial use. A number of the commercial operations located in the vicinity of the Property involved the use of hazardous substances or petroleum compounds and were the sites of leaking underground storage tanks and documented releases of volatile organic compounds ("VOCs").

#### 223 1st Avenue SW Parcel (the 223 Parcel)

The 223 Parcel consisted of approximately 4,300 square feet of land that historically was used as a stable and later as a hotel and then as the Lawler Movie Theatre; historical structures were demolished prior to the construction of the current surface parking lot. These historical activities likely did not involve the use of significant quantities of hazardous substances or petroleum products.

# 1.2 Previous Investigation and Reports

Previous environmental investigations and RAs have been conducted at the Property. Information regarding the land use history of the Property, as well as the results of previous environmental investigations conducted at the Property, have been provided in the various reports and documents previously submitted to the MPCA, VIC Program for review and approval. The following is a list of these reports and documents:

• Additional Information – Interim Response Action Plan, Former Dry Cleaners, 219 First Avenue Southwest, completed August 24, 2001 (DPRA);

- Implementation Report, Groundwater Monitoring, Vapor Extraction System Installation & Start-up, Former Dry Cleaners, 219 First Avenue Southwest, completed January 2004 (DPRA);
- Revised Corrective Action Design Report, Former Dry Cleaners, 219 First Avenue Southwest, completed August 2005 (DPRA);
- Revised Corrective Action Report, Former Dry Cleaners, 219 First Avenue Southwest, completed November 10, 2005 (DPRA);
- Status Update, Former Dry Cleaners, 219 First Avenue Southwest, completed March 9, 2006 (DPRA);
- Implementation Report Dual Phase Extraction System Start-up, Former Dry Cleaners, 219 First Avenue Southwest, completed July 2006 (DPRA);
- Status Update and Work Plan, Former Dry Cleaners, 219 First Avenue Southwest, completed December 4, 2006 (DPRA);
- Status Update, Former Dry Cleaners, 219 First Avenue Southwest, completed February 5, 2007 (DPRA);
- Phase I Environmental Site Assessment, 223 First Avenue Southwest, completed March 2007 (Landmark);
- Phase I Environmental Site Assessment, 219 First Avenue Southwest, completed March 2007 (Landmark);
- Supplemental Environmental Investigation Report, 219 and 223 1<sup>st</sup> Avenue Southwest, completed January 2007 (Landmark); and,
- Phase II Environmental Investigation Report, 219 and 223 1<sup>st</sup> Avenue Southwest, completed March 2007 (Landmark).

Based upon the previous investigations, the MPCA-approved VRAP was developed to address the following areas of potential environmental concern:

- VOC-impacted groundwater at the Property;
- Elevated VOC concentrations in the soils located at boring B-7 from 13 to 15 feet below grade on the 219 Parcel (see Figure 2);
- Elevated RCRA metals and polynuclear aromatic hydrocarbons in the soils at two sampling locations on the 223 Parcel; and,
- Buried demolition and building materials on the 223 Parcel.

This RA Implementation Report addresses the RAs at the Property related solely to groundwater remediation and vapor intrusion.

# 1.3 Voluntary Response Action Plan Summary

The MPCA-approved VRAP was developed based on the planned commercial use for the Property and was incorporated into the City's redevelopment plan. The City constructed the Property building with a partial basement and underground utilities. The City also built a tunnel on an adjacent property which connects to the partial basement located on the Property.

Prior reports identified PCE in groundwater that exceeded Minnesota Department of Health ("MDH"), Health Risk Limits ("HRLs"). The soil located in the fractured bedrock was also reported to be impacted by PCE. As a result, the chemical of concern for groundwater at the Property is PCE.

The previous DPE system was removed and replaced with an upgraded system during redevelopment of the Property. The upgraded DPE system is designed to remove source area PCE from the soil, fractured bedrock, and groundwater. The upgraded DPE system operational goals include achieving asymptotic PCE air exhaust concentrations, and achieving asymptotic mass removal quantities of PCE. The proposed cleanup goal for the groundwater is to reduce the source of PCE to the groundwater. DPE system success will be determined by asymptotic air emissions of PCE, and decreasing groundwater concentrations.

The groundwater remediation and vapor intrusion related RAs completed at the Property, to date, generally consist of the following:

- Decommissioning the previous remediation system and sealing the associated wells prior to redevelopment.
- Designing and installing an upgraded DPE system to address the chlorinated VOCs detected in groundwater samples on the Property.
- Designing and installing vapor barrier and venting systems beneath the entire Property building to prevent vapor intrusion into the building after operation of the new DPE system is no longer required.

The remaining groundwater remediation and vapor intrusion RAs at the Property consist of the following:

- Conducting monthly DPE system operation, maintenance, and monitoring events;
- Conducting quarterly groundwater monitoring events;
- Decommissioning the DPE system per the MPCA's approval;
- After the MPCA approves decommissioning of the DPE system, groundwater will be monitored quarterly, at a minimum, for a period of one year after the date of DPE system shut-down; and,
- Conducting passive venting system monitoring after the DPE system operation is discontinued.

# **Section 2 Response Actions**

This section summarizes and documents the implementation of RAs at the Property. Adolfson and Peterson Construction ("AP") was hired by the City as the general contractor in charge of the Property redevelopment and Property building construction. Photographs documenting the implementation of RAs are included in Appendix B.

# 2.1 Previous DPE System Decommissioning

Prior to any excavation activities at the Property, the previous DPE system was decommissioned and removed from the Property on August 2, 2007, by Midwest Recovery Systems Inc. ("MRSI"). Equipment from the previous DPE system was disconnected and hauled off site by MRSI. The equipment removed during decommissioning included the soil vapor extraction ("SVE") and DPE pumps and condensate tanks, breaker panels and control panels, manifold and other piping, valves, flow meters, gauges, filters, and the remediation shed which housed all of the equipment. MRSI subcontracted with Barott Drilling Services, Inc. to abandon six monitoring wells, eight soil vapor extraction wells, one DPE well, and five soil gas monitoring wells. The wells were abandoned according to the MDH rules and regulations. The MDH Well and Boring Sealing Records are included in Appendix C.

# 2.2 Upgraded DPE System Installation

An upgraded DPE system was installed in the basement of the Property building to address the source area of VOCs detected in groundwater at the Property. The DPE system consists of a high vacuum pump connected to eight DPE extraction wells capable of extracting groundwater and soil vapor from the fractured bedrock. The DPE system was designed to dewater the fractured bedrock zone to expose pockets of source area VOCs. As the fractured bedrock zone is dewatered, the DPE system removes source area VOCs by soil vapor extraction. The new DPE system layout is shown in Figures 3 and 4.

The DPE system, DPE wells, and monitoring wells were installed by Stevens Drilling and Environmental, Inc. ("SDE") using a rotosonic drill rig. SDE was under contract with AP, the general contractor, for DPE system installation activities. SDE subcontracted with Boart Longyear Inc. for installing the wells, and Product Level Control for providing the DPE system equipment. The DPE and monitoring wells were installed from February 5 through February 12, 2008. The wells were installed according to the MDH rules and regulations were permitted by Olmsted County's

Inspections Division. The monitoring and DPE well details are included in Figures 5 and 6, respectively. Table 1 includes a well construction summary. Appendix D includes the well installation permits from Olmsted County and the well and boring records from the MDH.

The DPE system piping, equipment, and electrical connections were installed from November 1, 2008, through April 9, 2009. On April 9, 2009, the DPE system was temporarily started to collect an air emissions sample and a groundwater discharge sample for laboratory analysis. The results from these samples were used for the design of proposed groundwater and air emissions treatment systems. A groundwater treatment system consisting of an air stripper was installed from June 1, 2009, through June 5, 2009. An air emissions treatment system was not installed at the Property. On June 23, 2009, at the request of the City, SDE installed a permanent secondary containment berm in the doorway to the DPE room, an additional floor sump and alarm, a conductivity meter and alarm on the floor, and connected the elevator pit drain tile sump to the air stripper. The DPE system was started for permanent operation on June 29, 2009. After continuous corrosion and sediment plugging issues with the DPE pump inlet screen, a secondary demister moisture separator ("MS#2") was installed on February 23, 2010, to further reduce the amount of water vapor passing through the screen, and, ultimately, decrease the plugging frequency of the pump inlet screen.

The DPE system includes eight DPE wells controlled by automated solenoid valves located near the system manifold. The DPE system is designed to operate one or multiple DPE wells at a time depending on the Programmable Logic Control program settings. A 7.5 horsepower Rietschle VLR300 rotary claw vacuum pump capable of operating at a continuous vacuum of 24 inches of mercury and a flow rate of 212 cubic feet per minute was installed. Two moisture separators were installed. The primary moisture separator ("MS#1") is used to separate the groundwater from the soil vapor. MS#2 was installed to reduce the amount of water vapor passing through the DPE pump inlet screen, and minimize pump inlet screen plugging. Groundwater collected in the moisture separators and elevator pit sump is pumped to the air stripper for VOC removal prior to discharge to the sanitary sewer. Soil vapor emissions generated by the DPE system and air stripper are discharged directly to the atmosphere. Each stack exits the side of the building in west alley at a height of approximately 26 feet above the ground surface. Vapor emissions and groundwater discharge samples are collected for laboratory analysis on a monthly basis and compared to the applicable emissions and discharge limits. Process and instrumentation diagrams and the bill of materials for the DPE and groundwater treatment systems are included in Appendix E.

Groundwater generated from the DPE system and elevator pit sump is pretreated on site by an air stripper prior to discharge to the City's Water Reclamation Plant. The City obtained an industrial discharge permit from the Water Reclamation Plant on January 8, 2008, which allows a discharge VOC concentration of less than 2.13 milligrams per liter. The industrial discharge permit is included in Appendix F.

A water appropriations permit is required by the Minnesota Department of Natural Resources (DNR) because the DPE system extracts groundwater from the subsurface. Appendix G includes the Permit Application for Appropriation of Waters of the State, water use report directions, and a copy of the 2009 DNR Annual Report of Water Use worksheet.

Emissions treatment is not required for the DPE system. Air emissions rates for VOCs are evaluated using the MPCA Remediation Risk Analysis Spreadsheet ("RRASS"). The RRASS spreadsheet generates site specific emissions rates for individual VOCs and compares them to the screening emissions rates ("SERs") for chronic and acute risk and the excess lifetime cancer risk ("ELCR"). The site specific emissions rates includes emissions generated from the DPE exhaust stack, and the air stripper exhaust stack. Table 2 includes a summary of the site specific emissions rates to date.

# 2.3 Vapor Barrier and Venting Systems Installation

Vapor barrier and venting systems were installed under the entire building to prevent vapor intrusion into the Property building. The vapor barrier and venting systems were installed by Addudle Inc. and Winona Heating and Venting Inc., respectively, subcontractors for AP. Installation activities began in January 2008 and continued intermittently until completed in January 2009. The vapor barrier was installed beneath the basement slab, on the subsurface sidewalls of the proposed building and around the proposed tunnel located on the adjacent property. The vapor barrier material consisted of a 40-mil thick low linear density polyethylene barrier with protrusion boots, and thermally welded seams. The barrier joints/seams, both lateral and butt, overlapped at least 12 inches and in accordance with manufacturer's recommended seam completion and testing procedures. Appendix H includes the asbuilt drawings of the vapor barrier system.

The passive venting system installed on the Property utilizes the building's foundation drain tile system to collect vapors from the subsurface. The sub-slab piping was installed to slope such that groundwater drains to the storm sewer. Subsurface vapors move through drain tile and rise up through the solid riser piping until the vapors enter the atmosphere after passing through the exhaust stacks. There are three exhaust stacks which exit the side of the building in the west alley at a height of approximately 26 feet above the ground surface. A rotary wind turbine is installed on each of the

stacks to passively increase the movement of the vapors from the subsurface drain tile to the atmosphere. The exhaust stack outlets are located at least 10 feet from any building openings or any public or private access area.

Each riser piping system has a manual butterfly shutoff valve to prevent venting system operation while the DPE system is operational. The shut-off valves for the venting system are currently closed. Closing the venting system shutoff valves prevents the DPE system from extracting atmospheric air through the passive venting system instead of VOC-impacted vapors from the subsurface. The venting system will be operated in the "closed" position until the DPE system is permanently decommissioned as approved by the MPCA. After the DPE system is decommissioned, the venting system shut-off valves will be opened to initiate "passive" sub-slab venting of the building. Asbuilt design drawings are included in Appendix H.

The Sub-Slab Venting System Monitoring Plan, included in Appendix I, discusses how the system will be maintained, how performance monitoring will be performed, and what failed performance criteria will be used for deciding to upgrade the "passive" vent system to an "active" vent system. The performance of the venting system will be evaluated to determine the effectiveness of the rotary wind turbines to maintain airflow from the subsurface to the atmosphere. If it appears that the sloping of the sub-slab piping is inhibiting the effectiveness of the rotary wind turbines to operate successfully, in-line fans will be installed in the venting system riser pipes for "active" service mode. The venting system has been configured such that any subsequent upgrade can be made to accommodate an in-line fan for "active service" mode.

# **Section 3 Deviations from the Response Actions**

This section summarizes and documents the deviations from the RAs approved by the MPCA for the Property.

# 3.1 Elevator Pit Draintile Sump

On April 9, 2009, Landmark sampled the groundwater in the elevator pit draintile sump for laboratory analysis of total toxic organics ("TTOs") by EPA Method 624. The TTOs concentration of the groundwater in the sump was 70,768 micrograms per liter ("ug/L") which exceeded the sanitary sewer discharge limits of 2,130 ug/L TTOs. PCE was detected at a concentration of 60,300 ug/L which exceeded the MPCA National Pollutant Discharge Elimination System discharge limit of 5 ug/L. To address the contaminated groundwater discovered in the elevator pit sump, the MPCA approved the following RAs in their letter dated April 28, 2009:

- 1. Installation of an air-tight cover on the sump pit;
- 2. Installation of vent piping from the sump pit to the passive venting system;
- 3. Installation of an explosion-proof sump pump with intrinsically safe float switches; and,
- 4. Installation of groundwater discharge piping from the sump to the air stripper.

Each of these RAs was completed in June 2009 except for the installation of an explosion proof sump pump with intrinsically safe float switches. As stated in the April 17, 2009, letter to Mr. Gale Mount, the Chief Plumbing Inspector at the Department of Building Safety, an analysis by Landmark of the detected contaminant concentrations and their explosive characteristics indicated there isn't a risk for explosion as long as the sump basin is air tight and vented. On June 1, 2009, Landmark monitored the elevator sump pit for explosive vapors (percent lower explosive limit, carbon monoxide, and hydrogen sulfide) and found no detections of any explosive vapors. Based on results from the explosive contaminant analysis and explosive vapor monitoring, and Landmark's recommendation, Mr. Dave Theil, the mechanical engineer with HGA Architects and Engineers, prepared a letter to Mr. Mount to document that an explosion-proof sump pump with intrinsically safe float switches was not required. Appendix J includes the June 1, 2009, letter that was sent by Mr. Theil to Mr. Mount, the April 17, 2009, letter from Landmark to Mr. Mount, and the field notes from the June 1, 2009, explosive vapor monitoring event.

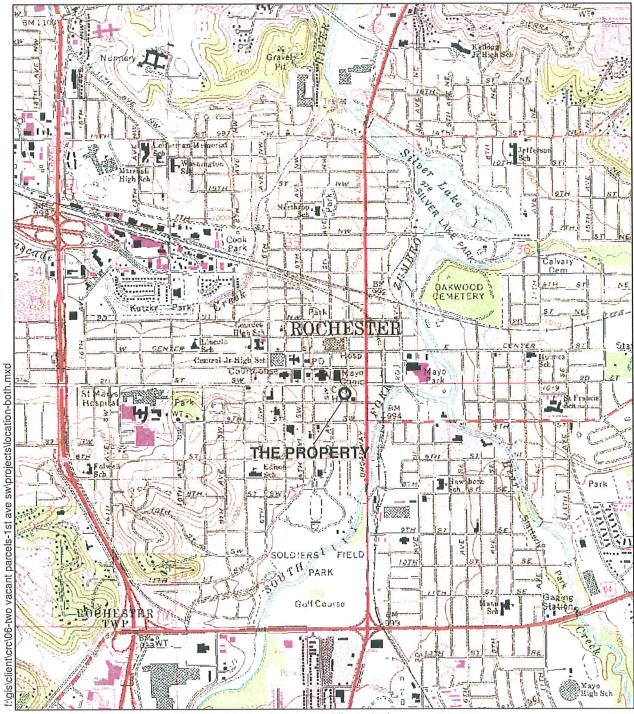
# 3.2 Air Emissions Treatment

In a letter from Landmark to the MPCA, dated April 20, 2009, Landmark requested the approval of RAs related to the installation of an air emissions treatment system for the DPE system and air stripper. The MPCA approved the RAs in a letter to Doug Knott with the City dated April 28, 2009. After four months of DPE system operation, the emissions concentrations of PCE dropped below the MPCA RRASS SERs for chronic risk. The SER for acute risk has not been exceeded to date. In a telephone conversation between Landmark and Mr. Timm on November 11, 2009, Mr. Timm stated that he consulted the MPCA air emissions specialists and they determined air emissions treatment would not be necessary based on the decreasing PCE concentration and site specific SER trends observed from the DPE system and air stripper (See Appendix A). Therefore, an air emissions treatment system will not be installed as part of the approved RAs. Table 2 includes the RRASS emissions rates summary table.

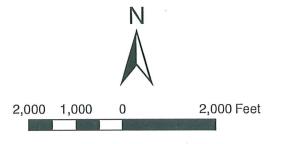
# **Section 4 Conclusions**

The RAs pertaining to the DPE, vapor barrier, and passive venting systems installation at the Property were performed and completed in accordance with the MPCA-approved VRAP. RAs related to operation of the DPE system will continue until the MPCA approves the DPE system operation can be discontinued. As soon as DPE system operation is discontinued, RAs related to operation and monitoring of the passive venting system will begin. Based on the outcome achieved through the implementation of the approved RAs at the Property, the City requests that the MPCA VIC Program review and approve this Interim RA Implementation Report with respect to the groundwater remediation and vapor intrusion RAs related to the installation of the DPE, vapor barrier, and passive venting systems.

# Figures

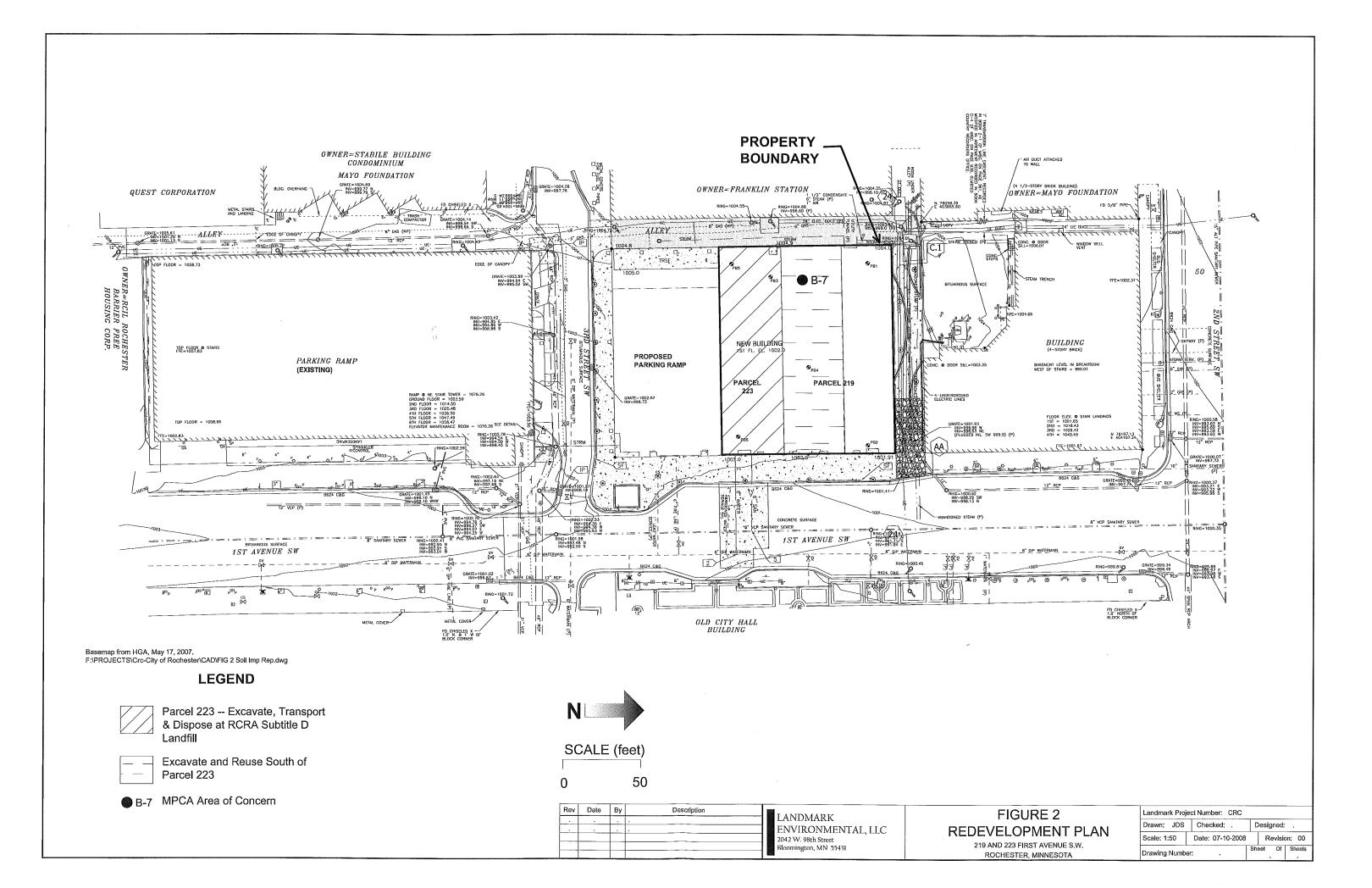


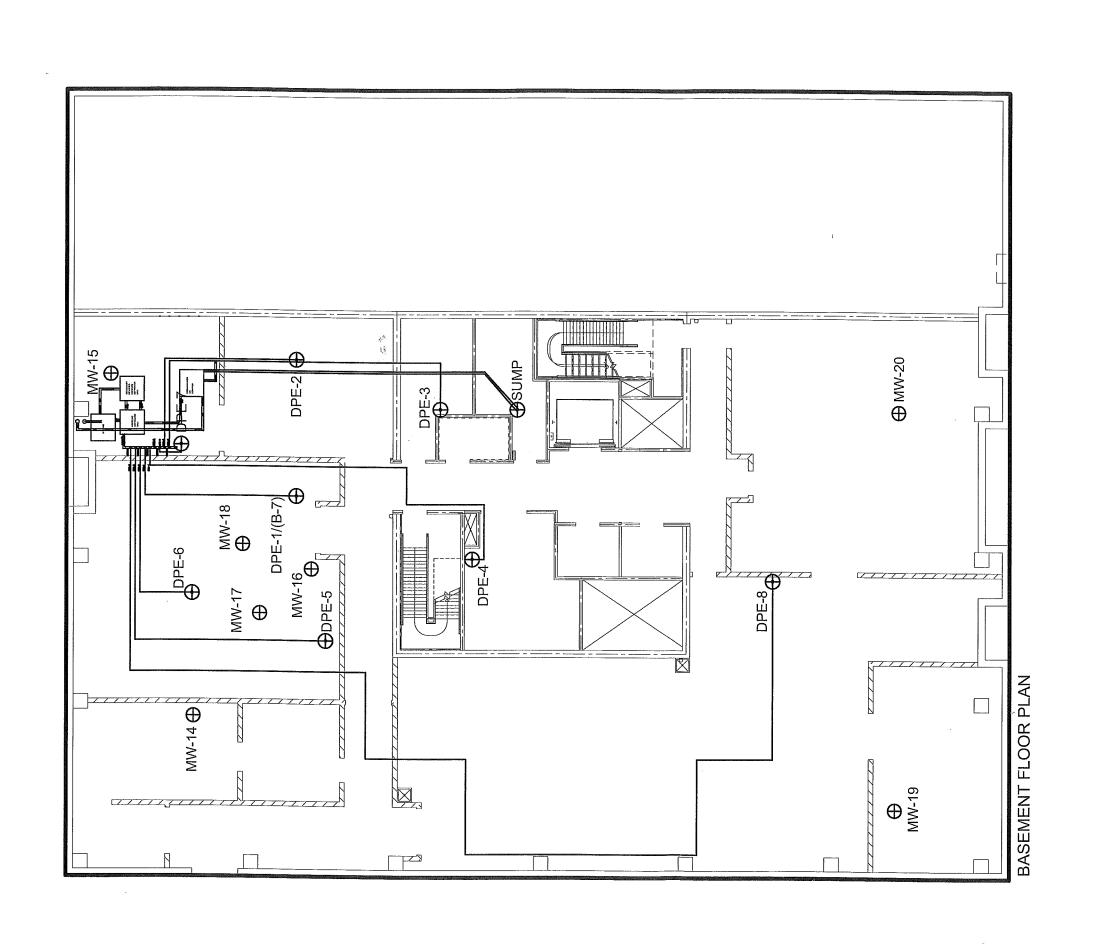
Source: Rochester, Minnesota Topographic Quadrangle, 7.5-Minute Series



# FIGURE 1

PROPERTY LOCATION MAP 219 and 223 1ST Avenue Southwest Rochester, Minnesota





LEGEND

DPE, Monitoring Well, or Sump Location DPE Piping Location

 $\oplus$ 

Property Boundary

BASE DRAWINGS PROVIDED BY HGA F:/Projects/CRC/CAD/basement planview\DPE AS Layout.dwg

Rev Date By Description  LANDMARK ENVIRONMENTAL, LLC 2042 West 98th Street Bloomington, MN 55431	FIGURE 3	DPE SYSTEM LAYOUT	221 FIRST AVENUE S.W. ROCHESTER, MINNESOTA	
/ Date By	T ANDMARK	ENVIRONMENTAL, LLC	L04.2 West-9dfil Street Bloomington, MN 55431	
Dat	Description			
Dat	By			
Rev	Date			
	Rev			

20 feet SCALE Designed: JDS Revision: ked: JDS

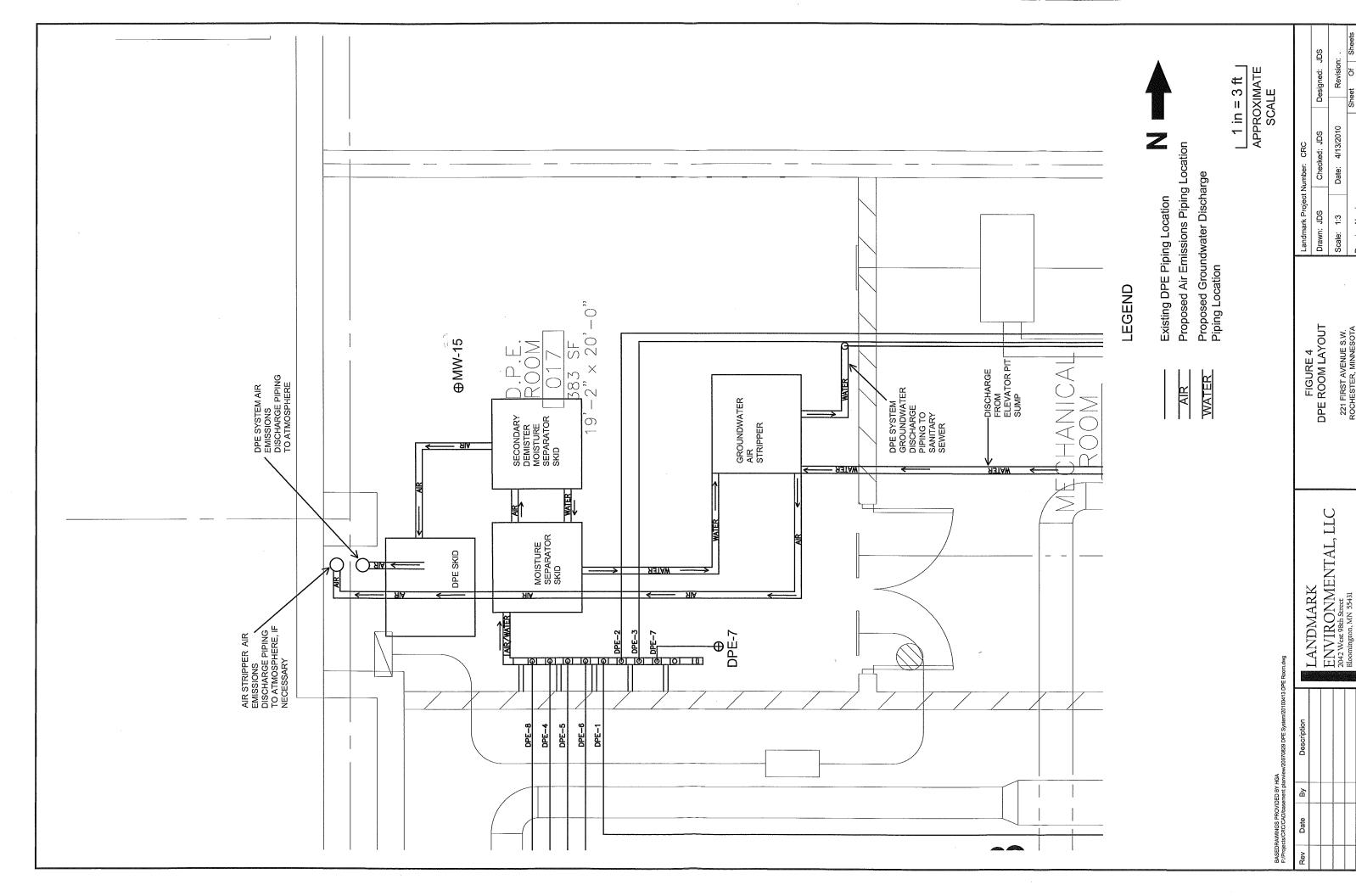
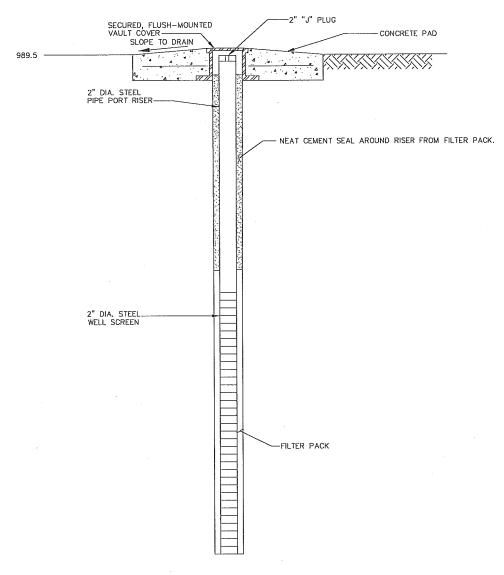


FIGURE 4 DPE ROOM LAYOUT

221 FIRST AVENUE S.W. ROCHESTER, MINNESOTA

Designed: JDS
Revision: . Landmark Project Number: CRC
Drawn: JDS | Checked: JDS
Scale: 1:3 | Date: 4/13/2010



NOTES:

1. ALL CONNECTIONS SHALL BE IN ACCORDANCE WITH MINNESOTA DEPARTMENT OF HEALTH WELL CODE.

2. SEE SECTION 026200.10 TABLE 1 — PROPOSED REMEDIATION AND MONITORING WELL CONSTRUCTION SUMMARY.

Rev	Date	Ву	Description	
1	11/27/07	JDS	Addendum 1	
2	12/4/07	JDS	Addendum 2	
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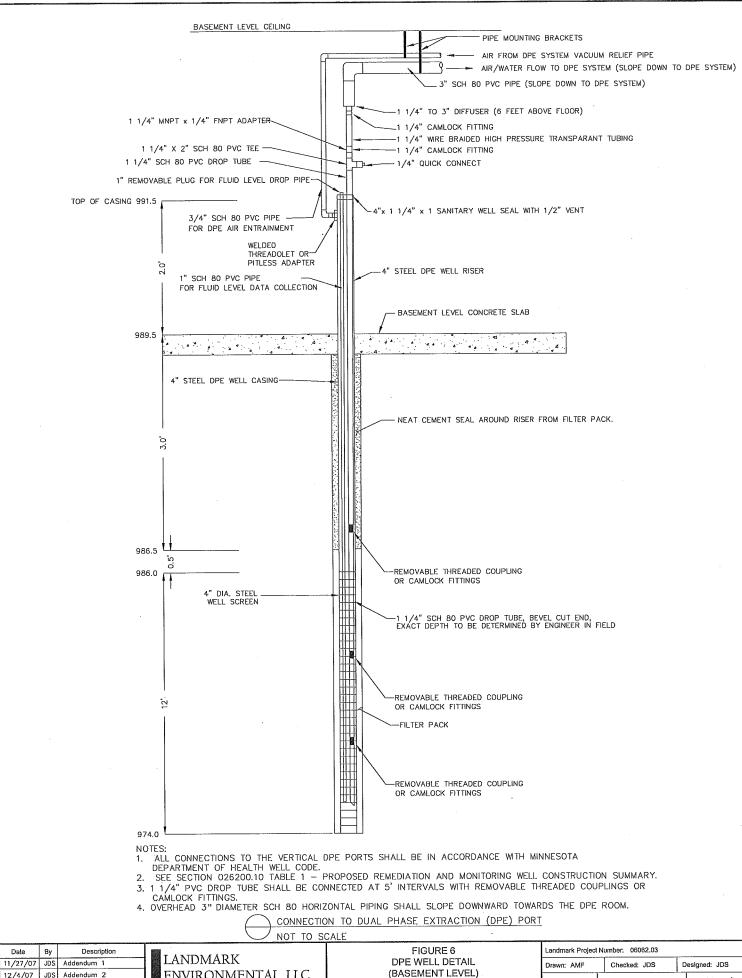
F\PROJECTS\Crc-City of Rochester\CAD\20071101 DPE Details.dwg

LANDMARK ENVIRONMENTAL, LLC 2042 West 98th Street Bloomington, MN 55431

FIGURE 5 MONITORING WELL DETAIL

219 AND 223 FIRST AVENUE SW ROCHESTER, MINNESOTA

Landmark Project	Number: 06062.03			
Drawn: AMF	Checked: JDS	C	esigned: J	DS
Scale: NONE	Date: 11/07/07		Revision	ı:
Drawing Number:	•	Sh	eet Of 7	Sheets 7



12/4/07 JDS Addendum 2 RFP1 3 8/08/08 JDS JDS RFP1- Revised Final 9/18/08

final

Details-

DPE

Rochester\CAD\20080918

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ENVIRONMENTAL, LLC 2042 West 98th Street Bloomington, MN 55431

(BASEMENT LEVEL)

219 AND 223 FIRST AVENUE SW ROCHESTER, MINNESOTA

Revision: 4 Of Drawing Number:

Tables

# TABLE 1

# WELL CONSTRUCTION SUMMARY (elevations are in feet above mean sea level)

MN Bio Business Center 221 First Avenue SW Rochester, Minnesota

		Contoconna	ei-exerce.	mahaaninene	nduliki birita		**********	-		inanina kan		en inicialization		digital share	AND LOCAL	mescacionesco.
Well	Completion	flush-mounted	stickup	flush-mounted	flush-mounted	flush-mounted	stickup	stickup	stickup	stickup	stickup	stickup	stickup	stickup	stickup	stickup
Bottom of Well	Elevation	972.00	973.50	971.44	964.53	929.50	971.13	974.80	970.53	972.28	975.42	973.07	974.32	972.87	971.32	975.34
Depth to Bottom of Well	(feet)	17.5	18.0	18.0	25.0	0.09	20.0	16.7	21.9	20.5	17.1	19.3	18.1	19.5	22.2	17.5
Screen Interval	(feet)	10	10	10	5	5	10	10	12	12	12	12	12	12	12	12
Bottom of Well Screen	Elevation	974.00	975.50	973.44	966.53	931.50	973.13	976.80	970.53	972.28	975.42	973.07	974.32	972.87	971.32	975.34
Top of Well Screen	Elevation	984.00	985.50	983.44	971.53	936.50	983.13	08.986	982.53	984.28	987.42	985.07	986.32	984.87	983.32	987.34
Top of Filter Pack	Elevation	00.986	987.50	985.44	973.53	938.50	984.13	988.80	984.53	986.28	989.42	987.07	987.32	78.986	984.32	989.34
Top of Seal	Elevation	989.50	990.50	989.94	989.03	989.25	690.63	992.80	989.53	990.28	990.42	70.066	990.32	78.686	990.32	990.84
Basement Floor	Elevation	989.50	989.50	989.50	989.50	989.50	989.50	989.50	989.50	989.50	989.50	989.50	989.50	989.50	989.50	086.50
Top of Casing	Elevation <sup>1,2</sup>	989.50	991.50	989.44	989.53	989.50	991.13	991.50	992.40	992.80	992.48	992.40	992.46	992.40	993.48	992.84
Monitoring	Well	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	MW-20	DPE-1	DPE-2	DPE-3	DPE-4	DPE-5	DPE-6	DPE-7	DPE-8

# Notes

- 1. Monitoring well top of casing elevations were surveyed by Adolfson and Peterson on 4/22/08.
- basement floor elevation of 989.5 ft and include the distance from the floor to the top of the well seal cover and the distance from the well seal cover to the top of the PVC stickup for collecting water level readings. 2. DPE well top of casing elevations changed during DPE well head installation and were estimated from a

# **TABLE 2**

# RASS EMISSIONS RATES SUMMARY MN Bio Business Center Rochester, Minnesota 221 1st Avenue SW

						Emissions Rates	Rates	
	בויין אין במט					Site		
Date	Operation	Parameter		DPE	AS	Specific	SER for	SER for
	Operaling		Concentration	(ng per	(ng per	(ng ber	Chronic Risk	Acute Risk
			(ng/m³)	sec)	sec)	sec)	(ug per sec)	(ng per sec)
9/4/2009	DPE-1	Tetrachloroethylene	3,630,000	61,710	70	61,780	16,300	5,980,000
10/15/2009	DPE-1	Tetrachloroethylene	396,000	5,940	9	5,946	16,300	5,980,000
10/16/2009	All Wells	Tetrachloroethylene	571,000	8,565	9	8,571	16,300	5,980,000
11/17/2009	All Wells	Tetrachloroethylene	381,000	4,953	0.5	4,953	16,300	5,980,000
12/17/2009	All Wells	Tetrachloroethylene	6,790	197	0.5	197	16,300	5,980,000
1/14/2010	All Wells	Tetrachloroethylene	8,550,000	393,300	4	393,304	16,300	5,980,000
2/22/2010	All Wells	Tetrachloroethylene	1,720,000	82,560	1	82,561	16,300	5,980,000
3/25/2010	All Wells	Tetrachloroethylene	215,000	11,180	2	11,182	16,300	5,980,000
4/16/2010	All Wells	Tetrachloroethylene	282,000	9,588	-	9,589	16,300	5,980,000

SERs: MPCA Screening Emissions Rates
61,780 Emissions rate is above MPCA SER

Appendices

# Appendix A

MPCA Approval Letters and Correspondence



520 Lafayette Road North | St. Paul, MN 55155-4194 | 651-296-6300 | 800-675-3843 | 651-282-5332 TTY | www.pca.state.mn.us

July 27, 2007

Mr. Douglas Knott City of Rochester 201 4<sup>th</sup> Street SE Rochester, MN 55904

RE: Former Dry Cleaners – Rochester #3 Site, 219 and 223 First Avenue SW, Rochester MPCA Project Number VP12562
Response Action Plan Approval

Dear Mr. Knott:

The Minnesota Pollution Control Agency (MPCA) staff in the Voluntary Investigation and Cleanup (VIC) Program has reviewed the "Voluntary Investigation and Cleanup, Voluntary Response Action Plan and Preliminary Response Action Design" dated June, 2007, the "Voluntary Response Action Plan Addendum- Response Action Design" dated July 17, 2007, and the electronic correspondence "MN Bio Business Center – DPE Design Revisions and Project Update" dated July 26, 2007 (altogether here as Response Action Plan), prepared by Landmark Environmental, Inc. (Landmark), for the Former Dry Cleaners – Rochester #3 site located at the address referenced above (the Site).

The Site consists of two adjoining parcels serving as a paved, surface-grade parking lot for the area business district. A small remediation shed with Dual Phase Extraction (DPE) system has been operational on the 219 First Avenue SW parcel in conjunction with a separate VIC project at the Site in order to remediate soil and ground water contamination. Historically, the Site supported a former dry cleaners and a movie theater on the 219 and 223 First Avenue SW parcels, respectively. Site documents indicate the building foundation remnants and as much as 15 feet of fill soils containing brick and other building debris remain at the Site. Contaminants identified at the Site include naphthalene, tetrachloroethylene (PCE) and polynuclear aromatic hydrocarbons (PAHs) in the Site soil at concentrations above the MPCA's industrial Soil Reference Values (SRVs) and several volatile organic compounds (VOCs) including PCE in the ground water at concentrations above the Health Risk Limits (HRLs).

VIC staff understands that response actions consist of the following: excavation and off-Site disposal of all impacted soils disturbed by redevelopment activities; field screening of excavated materials; cleanup confirmations sampling of excavation base and sidewalls in accordance with MPCA guidance; maintaining interim cover as necessary for storm water control; capping remaining soils with building expansion; installing a passive soil vapor

Mr. Douglas Knott Page 2 July 27, 2007

mitigation system with a vapor barrier below the new building; installation, maintenance and operation of a new DPE system to complete remediation of volatile organic contaminants; and the preparation and recording of an "Affidavit Concerning Real Property Contaminated with Hazardous Substances" in the event verification sampling results indicate the presence of contaminants remain above the MPCA's residential Soil Reference Values and Soil Leaching Values.

Based upon a review of Site documents, the Response Action Plan is hereby approved pursuant to Minn. Stat. § 115B.17, state response to releases, subd. 14, requests for review, investigation, and oversight, subject to the modifications listed in Attachment B. Please submit modifications to MPCA staff prior to beginning earthwork for review and approval.

Please be advised that the determination made in this letter is subject to the disclaimers found in Attachment A. If you have any questions about the contents of this letter, please contact me at 651-296-8111 or Allan Timm, Hydrogeologist at 651-297-1808.

Sincerely,

Edward P. Olson, CEP

Project Manager

Voluntary Investigation and Cleanup Unit Superfund and Emergency Response Section

Remediation Division

EPO/jmp

Attachments

cc: The Honorable Aredell F. Brede, Mayor, City of Rochester Terry Lee, Olmsted County Ken Haberman, Landmark Environmental LLC. Nancy Quattlebaum Burke, Gray Plant Mooty

# ATTACHMENT A DISCLAIMERS

Former Dry Cleaners – Rochester #3 Site, VP12562

#### 1. Reservation of Authorities

The MPCA Commissioner reserves the authority to take any appropriate actions with respect to any release, threatened release, or other conditions at the Site. The MPCA Commissioner also reserves the authority to take such action if the voluntary party does not proceed in the manner described in this letter or if actions taken or omitted by the voluntary party with respect to the Site contribute to any release or threatened release, or create an imminent and substantial danger to public health and welfare.

## 2. No MPCA Assumption of Liability

The MPCA, its Commissioner and staff do not assume any liability for any release, threatened release or other conditions at the Site or for any actions taken or omitted by the voluntary party with regard to the release, threatened release, or other conditions at the Site, whether the actions taken or omitted are in accordance with this letter or otherwise.

### 3. Letter Based on Current Information

All statements, conclusions and representations in this letter are based upon information known to the MPCA Commissioner and staff at the time this letter was issued. The MPCA Commissioner and staff reserve the authority to modify or rescind any such statement, conclusion or representation and to take any appropriate action under his authority if the MPCA Commissioner or staff acquires information after issuance of this letter that provides a basis for such modification or action.

# 4. Disclaimer Regarding Use or Development of the Property

The MPCA, its Commissioner and staff do not warrant that the Site is suitable or appropriate for any particular use.

# 5. Disclaimer Regarding Investigative or Response Action at the Property

Nothing in this letter is intended to authorize any response action under Minn. Stat. § 115B.17, subd. 12.

# ATTACHMENT B RESPONSE ACTION PLAN MODIFICATIONS Former Dry Cleaners – Rochester #3 Site, VP12562

- 1. Soils represented by DPRA boring B-7 and sample from 13-15 feet below grade surface on the 219 parcel, cannot be reused and needs to be included in the soils disposed of at the RCRA subtitle D landfill. These soils exhibited elevated concentrations of volatile organic compounds and therefore needs to be included in off-site disposal consistent with the Hazardous Waste Determination form issued by RCRA/Superfund Unit staff on July 20, 2007.
- 2. The following is needed in order to ensure conformance with the Interstate Technology & Regulatory Council (ITRC) and the U.S. EPA's Technical Guidance (3<sup>rd</sup> ed.) for Active Soil Depressurization Systems (i.e. radon mitigation standards) as recognized by VIC staff for vapor intrusion control at this Site:
  - The selected sub-floor vapor barrier shall be at least a 40-mil thick barrier with protrusion boots. All seams will be thermally welded. Provide VIC staff vapor barrier performance, installation and serviceability assurance details; The RAP, Attachment 6, Division 1 & Division 2 Specifications Section 02666, Vapor Barrier, needs significant modification.
  - Any barrier joints/seams, both lateral and butt, shall be overlapped at least 12" and in accordance with manufacturer's recommended seam completion and testing procedures;
  - Provide VIC staff additional sub-slab venting system details including slope of horizontal piping runs toward intake risers (not "storm sewer" as in Attachment 6, Section 02667), and how the system will be maintained as in a valve "open", passive venting condition;
  - Provide VIC staff details as to performance monitoring for effectiveness of the sub-slab venting system (i.e. a minimum of two post-construction monitoring events), and the failed performance criteria to be used in any decision for upgrading the passive vent system to an active vent system by installing inline fan(s); and
  - All remedial system exhaust stacks outlet shall be located at least 10' distance from any building openings or any public or private access area, and be configured such that any subsequent upgrade to accommodate an in-line fan for "active" service mode.
- 3. Provide VIC staff information on DPE system including:
  - Sealing the ground water monitoring wells (from DPRA project) and DPE recovery wells. Sealing shall be in accordance with MDH standards;
  - Depths of extraction wells and screen intervals;
  - Permit details for discharge to sanitary service; and
  - Operational goals to ensure diminished contaminant concentrations in the ground water over time, including ground water monitoring on a quarterly basis for at least a one-year period after the date of DPE system shut-down.

- 4. All electrical equipment for the DPE system and the remediation room shall be intrinsically safe.
- 5. RAP Attachment 2, Emission Control Plan:
  - Excavation, Loading, Transportation and Reconsolidation ACWM shall be totally contained in "burrito-style" wrapped plastic.
  - Project Personnel Clarify information in item 3.
- 6. RAP Attachment 5, DPE System Design Drawings:
  - Provide a description of automated sequence of operation.
  - Specifications shall specify that exhaust stack outlet be at least 10' distance from any building openings or any public or private access area.
- 7. RAP Attachment 6, Division 1 & Division 2 Specifications:
  - Significant modification is needed see also item 2, above.
  - Section 02100, Soil Remediation, Part 3 –EXECUTION, Note: any stockpiles shall not be greater than 50 cubic yards in size.

#### Jason Skramstad

From: Timm, Allan [Allan.Timm@state.mn.us]

Sent: Wednesday, October 17, 2007 2:28 PM

To: Jason Skramstad

Cc: Olson, Edward

Subject: Former Drycleaner #3 - Rochester - VRAP, ECP. & Design Modifications Submittal Approval

RE: Former Drycleaner #3 - Rochester VP12562

219 and 223 First Avenue S. W., Rochester

VRAP, ECP. & Design Modifications Submittal Report

Jason,

This email is to confirm our conversation on Thursday, October 11, 2007. Based on VIC staff review of the VRAP, ECP. & Design Modifications Submittal Report, the documents are approved, with the following exception: The proposed excavation verification sampling for Parcel 223, presented in Attachment 2 - Table 1, shall be modified. In addition to the analysis that is listed in the Table, all floor and sidewall samples from Parcel 223 shall also be analyzed for volatile organic compounds (VOCs).

If you have any questions or comments, please contact Ed Olson, the Project Manager, at 651-296-8111 or me at

If you have any questions or comments, please contact Ed Olson, the Project Manager, at 651-296-8111 or me at 651-297-1808. Thanks,

Allan Timm
Hydrogeologist
Voluntary Investigation and Cleanup Unit
MPCA
651-297-1808

allan.timm@state.mn.us

April 28, 2009

Mr. Douglas Knott City of Rochester 201 – 4<sup>th</sup> Street SE Rochester, MN 55904

RE: Former Dry Cleaner - Rochester #3 Site 219 and 223 First Avenue SW, Rochester MPCA Project Number VP12562 Response Action Plan Approval

Dear Mr. Knott:

The Minnesota Pollution Control Agency (MPCA) staff in the Voluntary Investigation and Cleanup (VIC) Unit has reviewed the "VRAP Addendum, Minnesota Bio Business Center," dated March 30, 2009, and the "VRAP Addendum #2, Minnesota Bio Business Center," dated April 20, 2009, (together referred to as the Response Action Plan or RAP), located at the above referenced address (the Site). The RAP was prepared by Landmark Environmental, LLC (Landmark) and submitted on your behalf. The "VRAP Addendum #2" was intended to provide additional technical information that VIC staff requested in an e-mail dated April 13, 2009, and follows response actions previously approved by the MPCA. This RAP approval is for the proposed air and groundwater treatment plans associated with the recently installed subsurface extraction systems at the newly constructed Minnesota Bio Business Center building (i.e. dual phase extraction or "DPE" and groundwater sump collection).

The RAP was developed in response to elevated concentrations of chlorinated volatile organic compounds (VOCs) detected in the soil and groundwater at the Site. The highest concentrations of chlorinated VOCs in the soil and groundwater were detected at the former location of a dry well that was removed in January 2008, during the general excavation for the building's basement. Groundwater in the bedrock aquifer has been impacted by the chlorinated VOC tetrachloroethene at concentrations five orders of magnitude above the Minnesota Department of Health's Health Risk Limits (HRLs).

The RAP proposes the following activities:

- Installation of a groundwater treatment system, consisting of an air stripper, to treat impacted groundwater generated by the DPE system and the sump pumps;
- Installation of air emission treatment equipment consisting of a booster pump and activated carbon and /or a vapor combustion unit; and

# ATTACHMENT A DISCLAIMERS Former Dry Cleaner - Rochester #3 Site MPCA Project Number VP12562

#### 1. Reservation of Authorities

The MPCA Commissioner reserves the authority to take any appropriate actions with respect to any release, threatened release, or other conditions at the Site. The MPCA Commissioner also reserves the authority to take such action if the voluntary party does not proceed in the manner described in this letter or if actions taken or omitted by the voluntary party with respect to the Site contribute to any release or threatened release, or create an imminent and substantial danger to public health and welfare.

## 2. No MPCA Assumption of Liability

The MPCA, its Commissioner and staff do not assume any liability for any release, threatened release or other conditions at the Site or for any actions taken or omitted by the voluntary party with regard to the release, threatened release, or other conditions at the Site, whether the actions taken or omitted are in accordance with this letter or otherwise.

#### 3. Letter Based on Current Information

All statements, conclusions and representations in this letter are based upon information known to the MPCA Commissioner and staff at the time this letter was issued. The MPCA Commissioner and staff reserve the authority to modify or rescind any such statement, conclusion or representation and to take any appropriate action under his authority if the MPCA Commissioner or staff acquires information after issuance of this letter that provides a basis for such modification or action.

# 4. Disclaimer Regarding Use or Development of the Property

The MPCA, its Commissioner and staff do not warrant that the Site is suitable or appropriate for any particular use.

# 5. Disclaimer Regarding Investigative or Response Action at the Property

Nothing in this letter is intended to authorize any response action under Minn. Stat. § 115B.17, subd. 12.

# ATTACHMENT B RAP MODIFICATIONS Former Dry Cleaner - Rochester #3 Site MPCA Project Number VP12562

- 1. A final water and air treatment systems design document shall be submitted the MPCA VIC staff for review and approval before systems installation.
- 2. The water treatment system shall be designed to handle the combined flow rates of the discharge water generated by the dual phase extraction system and the water discharged by the building sump.
- 3. The booster blower shall be sized to match the anticipated air flow rate of the DPE system blower.

2042 98<sup>th</sup> West Street Bloomington, MN 55431 Phone # 952-887-9601 Fax # 952-887-9605

### Landmark Environmental, LLC

### **Telephone Memo**

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Remediation Division St. Paul Office 520 Lafayette Road North - St. Paul, MN 55155

Date:	07/20/09	Number of pages (including this page): 5							
То:		Jason Skramstad							
Compar	ny or agency:	Landmark Environmental LLC							
Fax nun	nber:	952-887-9605							
Subject		Former Drycleaner #3 Rochester							
Messag	e:	Limited No Further Action Determination for Soil							
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From:		Allan Timm							
Telepho	one number:	651-757-2786							
Fax nur	nber:	651-296-9707							
if you h	ave any quest	ions regarding this fax, please call:							



### **Minnesota Pollution Control Agency**

520 Lafayette Road North | St. Paul, MN 55155-4194 | 651-296-6300 | 1-800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us

November 17, 2008

Mr. Douglas Knott City of Rochester 201 4th Street SE Rochester, MN 55904

Official File Stamp	,
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Page #	_ Staff
Category	,

RE: Former Dry Cleaners - Rochester #3 Site, 219 and 223 First Avenue SW, Rochester MPCA Project Number VP12562 Limited No Further Action Determination for Soil

Dear Mr. Knott:

The Minnesota Pollution Control Agency (MPCA) staff in the Voluntary Investigation and Cleanup (VIC) Unit has been requested to provide a No Further Action Determination for releases identified at the Former Dry Cleaners - Rochester #3 site, located at the address referenced above (the Site). The MPCA staff has reviewed the information submitted for the Site. The Site consists of two adjoining parcels which most recently were used a surfacegrade, paved parking lot serving a downtown commercial district. Each parcel had various commercial building uses and supporting structures dating back to as early as 1884. Historic businesses include a commercial laundry with dry cleaning service, movie theatre, nursing home and hotel.

Subsurface investigations have been conducted at the Site beginning in 1999. Investigation findings indicated the presence of up to 15 feet of fill soils containing brick and other building debris at the Site. The volatile organic compounds (VOCs) naphthalene and tetrachloroethylene (PCE), and polynuclear aromatic hydrocarbons (PAHs), were detected in the Site soil at concentrations above the MPCA's Soil Reference Values (SRVs) for industrial use. Arsenic was detected in the soil within normal background concentrations. Oversight of petroleum contamination is being addressed by the MPCA Petroleum Remediation Unit. VOCs were detected in the ground water at concentrations above the Health Risk Limits (HRLs) established by the Minnesota Department of Health; however, these contaminants are being addressed under response activities to be implemented largely in early 2009. For the purposes of this letter the identified release at the Site consists of naphthalene, PCE and PAHs in the soil (Identified Release).

Response actions pertaining to the soil at the Site were conducted in accordance with the MPCA-approved voluntary Response Action Plan and environmental contingency plan. 4,351 tons of impacted soil and debris, and 14 tons of hazardous waste soil, bedrock and concrete were excavated from a hot spot location and disposed of at permitted facilities. Contaminants were not detected in excavation confirmation samples at concentrations above the SRVs for industrial land use, except for chlorinated VOCs in bedrock beneath a former underground injection well. A vapor barrier and passive sub-slab venting system were

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Mr. Douglas Knott Page 2 November 17, 2008

installed as a part of the new building construction to mitigate vapor impacts. The approved response actions for remaining bedrock and ground water contamination at the Site, including soil gas impacts, will be addressed with the installation and operation of a dual phase extraction system, scheduled to be completed in March of 2009.

Based on a review of the information provided to the MPCA, the MPCA staff will not request the City of Rochester, to conduct any further investigation or remediation of the Identified Release to soil at the Site. Furthermore, the MPCA is issuing a determination to take no action under Minn. Stat. §§ 115B.01-115B.18, against the City of Rochester with respect to the Identified Release. Specifically, the MPCA staff will not refer the Identified Release to the U.S. Environmental Protection Agency for inclusion on the Comprehensive Environmental Response, Compensation and Liability Information System list, to the State Site Assessment staff for preparation of a Hazard Ranking System score, or to the MPCA Commissioner for the placement of the Site on the Permanent List of Priorities.

This determination is subject to the following conditions:

1. The City of Rochester shall record, at its own expense, in the office of the County Recorder or Registrar of Titles, whichever is appropriate, in and for Olmsted County, an Environmental Covenant approved by the MPCA as provided in the Uniform Environmental Covenants Act, 2007 Minn. Laws, ch. 131, secs. 59-72 and 74, to be codified in Minn. Stat. ch. 114E ("UECA"). The Environmental Covenant shall ensure the operation and maintenance of the dual phase extraction system as necessary to manage risks associated with residual contamination in the soil, bedrock and ground water, and prohibit Site activities which would expose or disturb the contaminated subsurface, without receiving prior written approval from the MPCA or its successors. The Environmental Covenant must also contain the information described in Minn. Stat. § 115B.16, subd. 2; i.e., it must contain a description of the identity, quantity, location, condition and circumstances of contamination currently located on the property, to the full extent known or reasonably ascertainable. This description shall include information disclosing that the Site is contaminated with compounds of the Identified Release in the soil, and VOC contamination in the ground water in the vicinity of boring B-7. The Environmental Covenant shall be recorded as provided in UECA. A copy of the proposed Environmental Covenant language shall be submitted to the MPCA staff for review and approval within sixty (60) days receipt of this letter and the City of Rochester shall file the Environmental Covenant within thirty (30) days after receipt of MPCA approval. The City of Rochester shall submit a copy of the Environmental Covenant as recorded to the MPCA within thirty (30) days after the Environmental Covenant is officially recorded. The City of Rochester shall provide notice of the Environmental Covenant to those parties to whom notice is required under UECA.

Mr. Douglas Knott Page 3 November 17, 2008

This determination is based solely on the results of the soil investigation conducted on the Site. This letter does not address any conclusions or representations regarding the future need for further investigation or response actions relating to ground water.

Please be advised that the determination made in this letter is subject to the disclaimers found in Attachment A and is contingent on compliance with the terms and conditions set forth herein including the submittal of the copy of the recorded Environmental Covenant documents. If you have any questions about the contents of this letter, please contact Ed Olson, Project Manager, at 651-296-8111 or Allan Timm, Hydrogeologist at 651-297-1808.

Sincerely,

Barbare Jackson Barbara Jackson

Supervisor

Superfund, RCRA and Voluntary Cleanup Section

Remediation Division

BJ/EO:jmp

Attachment

cc: Judy Kay Scherr, Clerk, City of Rochester
Terry Lee, Olmsted County
Ken Haberman, Landmark Environmental LLC
Nancy Quattlebaum Burke, Gray Plant Mooty
Artie Dworak, MPCA

## ATTACHMENT A DISCLAIMERS

Former Dry Cleaners – Rochester #3 Site, VP12562

#### 1. Reservation of Authorities

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Page 1 of 1

# Appendix B

Photographs Documenting Response Actions



Feb. 5 thru 12, 2008 - Roto-sonic drill rig set up at DPE-2 location



Feb. 5 thru 12, 2008 - DPE and monitoring well screen



Feb. 5 thru 12, 2008 - Well inside a custom wellhead protective structure



Feb. 5 thru 12, 2008 - Custom protective wellhead structure



Feb. 5 thru 12, 2008 - Several custom wellhead protective barriers



Mat slab vapor barrier installation.



Mat slab vapor barrier installation.



Mat slab vapor barrier installation.



Feb. 26 and 27, 2008 - Extruding a seem on the northeast corner of the building



Feb. 26 and 27, 2008 - Backfilling with sand along the south side of the building



Feb. 26 and 27, 2008 - Typical extrusion seem



Feb. 26 and 27, 2008 - Existing vapor barrier under the super footing



Feb. 26 and 27, 2008 - Well inside a custom protective structure



Feb. 26 and 27, 2008 - Extruding seems along the east side of the building



Feb. 26 and 27, 2008 - Custom protective structure



Feb. 26 and 27, 2008 - Drain tile installation showing filter fabric, peagravel and perforated drain tile.



Feb. 26 and 27, 2008 - Several custom barriers



Feb. 26 and 27, 2008 - Perforations observed on the drain tile



Mar. 19 and 20, 2008 - Future floor drain and venting system in foreground



Mar. 19 and 20, 2008 - MW-15



Mar. 19 and 20, 2008 - Bank of electrical conduit



Mar. 19 and 20, 2008 - Multiple DPE and groundwater wells present on the west side



Mar. 19 and 20, 2008 - Skilled hand work prevailed in sealing the electrical conduits placed for a switch gear



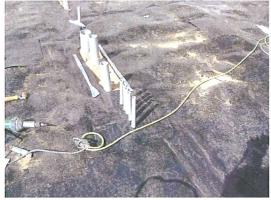
Mar. 19 and 20, 2008 - Another example of skilled hand work in sealing conduits



Mar. 19 and 20, 2008 - Multiple DPE and groundwater wells present on the west side



Mar. 19 and 20, 2008 - Connection between the barrier beneath the superstructure and the remaining horizontal barrier



Mar. 19 and 20, 2008 - Bank of electrical conduit



Mar. 19 and 20, 2008 - Barrier installation completed along the west side of the superstructure – yet to be tested



Vertical foundation wall vapor barrier installation



Mar. 25, 2008 – Sand cushion placed on top of vapor barrier prior to pouring the concrete slab



Mar. 25, 2008 – Sand cushion placed on top of vapor barrier prior to pouring the concrete slab



Mar. 25, 2008 – Additional vapor barrier installation activities



Mar. 25, 2008 – Completed vapor barrier connection to the vertical wall



Mar. 25, 2008 – Completed vapor barrier pipe boot and extrusion welding



Mar. 25, 2008 – Additional vapor barrier installation activities



Mar. 25, 2008 – Additional vapor barrier installation activities



Mar. 25, 2008 – Additional vapor barrier installation activities



Shutoff valve from one of the passive venting system riser pipes



Mar. 25, 2008 – Additional vapor barrier installation activities



Passive venting system riser piping being installed in the ceiling on the second floor of the building



Passive venting system riser piping



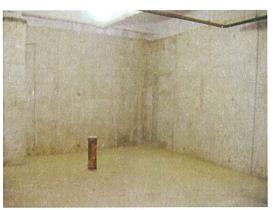
Passive venting system riser piping exiting the building, prior to the installation of the exhaust stack and rotary wind turbine



Aug. 2008 - MW-16



Aug. 2008 - DPE-3



Aug. 2008 - MW-15



Aug. 2008 - MW-20



Aug. 2008 - DPE-7



Aug. 2008 - MW-19



Control panel for DPE system.



DPE system manifold, MS#1, and DPE pump



DPE system manifold



DPE-7 well head



DPE-2 well head connection to lateral piping



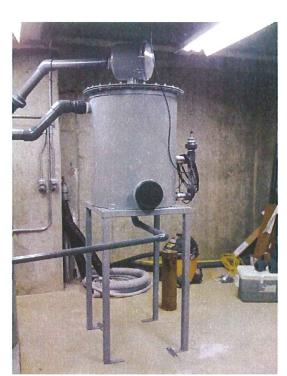
Lateral DPE piping from a well to the DPE room



Solenoid valve between MS#1 and MS#2



Piping between MS#1 and MS#2



MS#2



Slits cut into DPE system drop tube



Air stripper



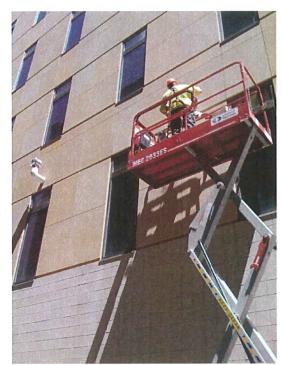
DPE-3 with modified air entrainment gatevalve and check valve



Passive venting (on left), DPE pump, and air stripper riser piping exiting the building



Galvanized steel riser piping from the DPE pump and air stripper



Passive venting stack with rotary wind turbine installed



Galvanized steel riser piping from the DPE pump and air stripper

## Appendix C

Previous DPE System Boring and Well Sealing Records

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	had situ sour BRN	mase '	(B)	5	
1000		li !		ر م د	
	Linchton BRN	Harris 15	<del>'</del>		Type of periorator
	· · · · · · · · · · · · · · · · · · ·	,			
			!	T	Other
		<u> </u>		+	GROUTING MATERIAL(S)
1000					Grouting Material
				+-	Ground waterial from 1 to 1 th yards bags
100					from to it vards bags
5					
		<b></b>	+	+	ROM RO IL Justin
H			;		OTHER WELLS AND BORINGS
	Use a second sheet, if needed	-		+	Other unsealed and unused well or boring on proterty? Tes The Mowniamy:
	REMARKS, ELEVATION, SOURCE OF DATA 600	,			LICENSED OR REGISTERED CONTRACTOR CERTIFICATION
					This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725.
ĺ					This well or boring was sealed in accordance with histocolor and in the report is true to the best of my knowledge.
				-	
					BAROTT DRILLING SERVICES, ITC.
ı					Contractor Business Name Lic. or Roy, No.
		•			Authorized Representative Signature Date
					Mationized Hobitocompany and Mationized
	2 SEALING NICE	B258	138	<u>.</u>	Name of Person Sealing Well or Besing
	sealing no.	5.8 Co - W 40	Laria - A		
		H I	111	l' i	

3.							
] <b>-</b> -		NAININESOT	1168	48	INDER CONTRACTOR	esora Well and Boung	H258135
line	WELL OR BORING LOCATION	WELLAND	BOR	NO	3601	ing No. esoia Unique No.	VP #7
F	County Name OTIME SAD	Minnes	ota Sid	rute	s Unapter 1031 or W	-series No Date Well or Boring	Constructed
	OWNERING PRINCE	Tection No. (Fraction 2C LIN 1/4NE	1BAse	,	Date Sealed   1/4   \$2 - 3 - 6   7	05-CX	<u> </u>
-	ROCHESTER 1060 140	ļ,					
ŀ	EPS LOCATION Latitude Degrees	Minutes Sec	bndi		Depth Sefore Sealing	STATIC WATER LE	/FI
oj ∵•••	Latitude Degrees	Minutes Secon	de:		Single Aquiller Limultaquiller		I Estimates
3	Numerical Street Address or Fire Number and City of V	rell or Boring Location	504		WELLIBORING		
1	SE VAR BA	165166		<u> </u>	☐ VVator Supply Well ☐ Monit Well ☐ Env. Boring Hole Otter	bi	elow Usuaso land surface
ं '' ==	Show exact location of well in section grid with "X".	Sketch map of w Bagwing proper	all loca w lines,	llan.	CASING TYPE(S)		
1		roads and buildi	ក់ដូច.		D√Stesl □ Finstic □ The □Oth	의	and the first control of the control
ľ					METABLISH COMPLETION		
-					ONTESTING: WEST -	louse B	watent in fact
	•				T:tla	ss Ada W	ללת דוב
1		<u>!</u> 			Well	Pic D	relad
				-	Burne	c.	
	PROPERTY OWNER'S NAME CITY OF ROCHESTER				CASING		
j 	Property owner's roalling address if different than well	estion address indical	લ્વા લામા	v!-	Diameter Depth Se	S C TH Mad Not	lar space initially grouted? Yes No D Unknown
7	201 AUR STREET				in from in in	n.   Yes   No E	Yes D No D Unknown
r	1				SCREEN/OPEN HOLE		
j - , _	ROCHESTER	55904			Screen fromtof	•	toft.
3)					Annual Control of the State of		
1	THE CHARLE CASE ALANKE		<del> </del>	1	OBSTRUCTIONS  Rods/Drop Plips Check Valv	e(s) 🔲 Debris 🔲 I	M D No Opamicion
:33 : ''	ZYST-YOWEERS ZEWESTER		120102	03:23	Type of Obstructions (Describe)		
	Well owner's multing address if different than property 201 4711 STREET	owner's address indica	HENI SIC		Obstructions removed? Yes	No Describo	
3	NOT ALL CIPPER				PUMP Type		•
18	ROCHESTER MK 555	<b>1</b> 04			Removed Not Present	Other	
	والمحافظة ووارد فالمرابعي والمناور والمنافض والمتابين والمتابين	HARDNESS FROM	A (	0	METHOD USED TO SEAL AMPULAR SPA	CE BETWELN 2 UNSINGS.	OR CASING AND BORE HOLE
	(2027) 7030/20 03 1 000 0		-		The Amadea Spenso Earlis [] Amenta (		
	Sanci Braux	med-c o	+-	<u>L</u> L	in from to		riorated L- Removed
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]   '''	Bilty Sand Lineston BRA	Hatist K	5	1~	7		
ļ	Silve Sancilying you Bow	HOUSE			Type of perforator		
	Finalton Ben	Hanchi		<u> 96</u>	D Copper	ه جدر اراضه را مساور شدود دا و اراضه اراضه است. هذه اراضه راضه از نشور می دارد از اراضه از این اراضه از این این از این این اراضه این این از این این این این ا	
:)  ``	_			-	GROUTING MATERIAL(S)		
1					   Grouting Material		
		ļ	- <del> </del> -	"	Bert from O	to1t	yardsbage
1				-		ftft	yardsbags
					from		yardsbags
					OTHER WELLS AND BORINGS		Fig. Van Hand
	Use a second sheet, if needed	-		+-	Other unsealed and unused well or bo		
	REMARKS, FLEVATION, SOURCE OF DATA, etc.	·			LICENSED OR REGISTERED COI		
e Casa					This well or boring was sealed in ac	cordance with Minnesota	Rules, Chapter 4725.
] '					The information contained in this re	bold it and an ina cirer or	ing Kristinessyri
ļ.,	7				BAROTT DRILLING SEF	rvices.inc.	1360 soc to
d d					Contractor Business Num	e Li	o, or Rog. Go.
					Authorized Representative Gio	inajus.	Date
				+	<del></del>		
# 	SFALING NO	HARR	13 19	7	James of Person Seeding Well or	संग्रहीत्"	
			111	-			
			H	.:	02014100	Baroft Drilling	908:20 TO ES guA
H	→ tl'd 99t0-t	78 <del>1</del> -199			290iva2	Pallind Hoyad	-00.00 20 60 -110

DOM:	,			1	Minnesota Well and Boring H258134
<b></b>	TO DORING LOCATION	MINNE	SOTA D	EPAR	MENT OF REALTH Section No.
303	ELL OR BORING LOCATION	WELLA	ND BC	RING	Observe 1031
C	ounty Name OLMSTEAD	Section No.   Fraction		CALL	Date Well or Boring Constructed
Tox	unship Name	2 NW 1	4NW	/4NW	Date Sealed 1/4
- 1	CHESIER	Minutes	Secon	ds-	Depth Before Sealing 30 12 ft
36	S LOCATION Latitude Degrees		0		AQUIFER(S) STATIC WATER LEVEL
	Latitude Degrees	(Allitates	Seconds		Measured
ુંત્રા	umerical Street Address or Fire Number and City of	Well or Boring Loca HESTER	559	04	WELL/BORING  Water Supply Well  Monit. Well  below above land surface
	ST AVE SW	Sketch ma	l	location.	Env.Boring Hole Other
Sh	low exact location of well in section grid with "X".	Showing P	roperty II	nes, j	CASING TYPE(S)
L.		roads and	buildings	S.	Steel Plastic Tile Other
	•			:	WELLHEAD COMPLETION Well House Basement Offset
					OUTSIDE: WELL MOUSE
4				:	PICIESS May
				;	Well Pit Buried
a –	CAMERICAL NAME				Buried
_	ROPERTY OWNER'S NAME TITY OF ROCHESTER				CASING Angular space initially grouted?
	Property owner's mailing address if different than we	ill ocation address i	ndicated	above.	CASING  CASING  Set In oversize hole? Annular space initially grouted?  Diameter  Depth  Set In oversize hole? Annular space initially grouted?  Diameter  Depth  Set In oversize hole? Annular space initially grouted?  Diameter  Depth  Set In oversize hole? Annular space initially grouted?  Diameter  Depth  Set In oversize hole? Annular space initially grouted?  Diameter  Depth  Set In oversize hole? Annular space initially grouted?  Diameter  Depth  Set In oversize hole? Annular space initially grouted?  Diameter  Depth  Set In oversize hole? Annular space initially grouted?  Diameter  Depth  Set In oversize hole? Annular space initially grouted?  Diameter  Depth  Set In oversize hole? Annular space initially grouted?
ີ 2	201 4TH STREET	:		!	in from to the Yes No Yes No Unknown
1	MN MN	55904		İ	SCREEN/OPEN HOLE
_1	ROCHESTER	: 53904		Ì	Screen from to ft. Open Hole from to ft.
		i.		:	OBSTRUCTIONS  Rods/Drop Pipe Check Valve(s) Debris Fill No Obstruction
1	OUNTEDIC MAJAE				Rods/Drop Pipe Check Valve(s)
(	WELLOWNER'S NAME CITY OF ROCHESTER	, addmas	Indicate	d above	Type of Obstructions (Describe)
۹.,	Weil owner's mailing address if different than proper	thiowners address	Indicate		
	201 4TH STREET			}	PUMP Type
	ROCHESTER MN 5	5904		;	Removed Not Present Luther
		HARDNESS	FROM	TO	METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS AND BORE HOLE  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS AND BORE BORE BORE BORE BORE BORE BORE BORE
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	Day	Havel		30	Type of perforator
	Cravel Bird BKN	Ttil 4	╂	<del> - -</del>	Type of perforator
					☐ Other
					GROUTING MATERIAL(S)
51					
1-4				-++	ftyards
1		1	1		tromtoftyardsbags
<b>G</b>	'				
					from to ft. yards bags
				-	
	Use a second sheet, if needed				OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?
		stc.			OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?
	Use a second sheet, if needed REMARKS ELEVATION, SOURCE OF DATA, 6	elic.			OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?  LICENSED OR REGISTERED CONTRACTOR CERTIFICATION
		itc.			OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?
		eta.			OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?  LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.  RAPOUT DRILLING SERVICES, INC. 1860
		elic.			OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?  LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.
		ofc.			OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?  LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1860  Contractor Business Name  Lic. or Reg. No.
		eic.			OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?  LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1260  Contractor Business Name Lic. or Reg. No.  Authorized Representative Signature Date
	REMARKS ELEVATION, SOURCE OF DATA, 6		2583	34	OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?  LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1860  Contractor Business Name  Lic. or Reg. No.
			2583	.34	OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?  LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1260  Contractor Business Name Lic. or Reg. No.  Authorized Representative Signature Date
	REMARKS ELEVATION, SOURCE OF DATA, 6		2581	: 34	OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?  LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1260  Contractor Business Name Lic. or Reg. No.  Authorized Representative Signature Date

					Minnesota Well and Boring	H258133
	MINNESC	TA DEF	ARTY	IENT OF HEALTH	Sealing No. Minnesota Unique No.	VP #5
WELL OR BORING LOCATION	WELLAN	BOR	ING	SEALING RECORD Chapter 1031		
County Name OLMSTEAD			illics (	Date Sealed , ,	Date Well or Boring	200
-hin Name	Section No. Fraction 2 NW 1/41	JE 1/47	ì t	4 20 12		
ROCHESTER 100		Seconds		Depth Before Sealing ZA	1/2/t	
GPS LOCATION Latitude Degrees	Millinea		-	AQUIFER(S)	STATIC WATER LI	
Zeenoo Contract		cords	1	Liolingis / iquini	Measured Measured	Estimated
Latitude Degrees  Latitude Degrees  Latitude Degrees  ROC  ROC  ROC	r Well or Boring Location	55904		WELL/BORING  ☐ Water Supply Well ☐ Moni	t.Weil fit.	below above land surface
ITOT AVENUE SW	Sketch map	e militare		☐ Env.Boring Hole Other	11.	
Show exact location of well in section grid with "X".	Showing pro	perty lines	: I	CASING TYPE(S)	PT Other	
SHOW EXCEPTION	roads and b	uildings,		Steel X Plastic Tile		
			1 1	WELLHEAD COMPLETION		Basement Offset
				O0.1.210E: [1	Well House	Well Pit
Tita					Pitiess Aup L	Buried
					Well Fit	Bulled
			+		Buried	
PROPERTY OWNER'S NAME				CASING	Total Amino A	nnular space initially grouted?
CITY OF ROCHESTER  Property owner's malling address if different than w	vell location address in	dicated ab	iove.	Diameter Depth	Set in oversize noier A	☐ Yes ☐ No ☐ Unknown ☐ Yes ☐ No ☐ Unknown
Property owner's mailing address in united the distance of the control of the con			į	in from to	n. ☐ Yes☐ No	Yes No Unknows
201 4TH STREET				CORPERNIOREN HOLE []		
MN	55904				ft. Open Hole from	toft.
ROCHESTER			İ	Screen fromlolo		n cit I No Obstruction
				Rods/Drop Pipe C	eck Valve(s) Debris	] Fill [] (40 Occurrence
WELLOW LER'S NAMESTER				Type of Obstructions (Descri	be)	
Well owner's mailing address if different than pro	perty owner's address	indicated a	above.	Obstructions removed?	Yes No Describe	
Well owner's mailing address it discount and 201 4TH STREET				PUMP		
***	do 4			Type Removed Not Pre	esent Other	TO TOPE WATER
ROCHESTER	55904				ULAR SPACE BETWEEN 2 CASIN	GS, OR CASING AND BORE HOLE
GEOLOGICAL MATERIALS COLOR	HARDNESS	FROM	10	No Armular Space Exists	Annular Space grouted with tremi	a biber come
BRN	meci	Ö	13	in. from		Perforated C3 Removed
Clay Drug		13	15		_toft. □	Perforated  Removed
BRO BRO	rel rel		-+	v t	'	
TRIV.	Horal	15	96	Type of perforator		
Jaylainchtar BRN			11	Other		
. 19					<u> </u>	
	!	<del>  -</del>		GROUTING MATERIAL(S)		1
	į.			Grouting Material	rom <u> </u>	yards
1: 24				Bert	romtott	yards
und .		+	-++		rom toff	yards
		1				
. 10				OTHER WELLS AND BOI	RINGS and well or boring on proterty?	Yes No Now Many?
Use a second sheet, if needed		<b></b>		Other unsealed and unuse	ERED CONTRACTOR CERTI	FICATION
REMARKS, ELEVATION, SOURCE OF DATA	₹, elc.		•	1		uenta Rules, Chapter 4/20.
				This well or boting was :	sealed in acuordance with Minn ed in this report is true to the be	est of my knowledge.
				The information contact	au III una raperere	1860
. In the state of				BAROTT DRILLI Contractor Bus	NG SERVICES, INC.	Lic. or Reg. No.
	N .			į į		Dair
		-		Authorized Repres	entative Signature	Date
DESIGNO	H   H	2581	33	Name of Person Sea	unig vych cz pozici	
SEALING NO.			11 1	-		
			1.1	Ŧ	arott Drilling Services	S3 07 02:29p Bs

GPS LOCATION Latitude Degrees  Latitude Degrees	WELL AND BO Minnesotr Section No. Fraction 2 NW 1/4NE Minutes Seconds Minutes Seconds	ORING S to Statutes CI 1/4NW 1/4 nds D 1/4NW 1/4 nds CI 1	ate Sealed
PROPERTY OWNER'S NAME CITY OF ROCHESTER  Property owner's mailing address if different than we 201 4TH STREET  ROCHESTER MN	bocation address indicate	d above.	CASING Diameter Depth Set In oversize hole? Annular space initially grouted? Diameter Depth In.from To Jo Jo Jo H. Yes No Yes No Unknown In.from To ft. Yes No Yes No Unknown SCREEN/OPEN HOLE Screen from To t. Open Hole from To Jt. OBSTRUCTIONS Rods/Drop Pipe Check Valve(s) Debris Fill No Obstruction
WELLOWNER'S NAME ROCHESTER  Well owner's mailing address if different than property and the street will be street.  ROCHESTER MN 5  GEOLOGICAL MATERIALS COLOR  SCHOOL SINGLAND BRN  COLOR	5904  HARDNESS FROM  Med C 0	м то	Type of Obstructions (Describe) Obstructions removed? Yes No Describe  PUMP Type Removed Okot Present Other METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE No Annular Space Exists Annular Space grouted with tremie pipe Casing Perforation/Removal
Scodisialinent BRN	Harel 1	5 1	Type of perforator  GROUTING MATERIAL(S)  Grouting Material  To from to ft. yards bag  from to ft. yards bag  from to ft. yards bag
Use a second sheet, if needed  REMARKS, ELEVATION, SOURCE OF DATA	etc.		OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?  LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES,INC. 1860  Contractor Business Name Lic. or Reg. No.  Authorized Representative Signature Date
SEALING NO.	H25	8132	Name of berson Sealing Mell or Bound decision 70 52 gut

7	·				Minnesota Well and Boring H258131
51	WELL OR BORING LOCATION :	MINNESOI	ROR	AK INC	TMENT OF HEALTH  Sealing No.  G SEALING RECORD  Minnesota Unique No.  (65 78 1)
	County Name OLMSTEAD	Minne Minne	sota St	atute	se Chapter 1031 or W-series No.  Date Well or Boring Constructed ,
128	Township Name	Section No.   Fraction 2   NW 1/4NE	1,511	NT.	Date Sealed  14 7 3 - 6 )  1 - 3 - 2-6 )
7	ROCHESTER 106 14	<u> </u>	1	1	
	GPS LOCATION Latitude Degrees	Minutes Se	dond\$		Depth Before Sealing 1. It  AQUIFER(S) STATIC WATER LEVEL
121	رد Latitude Degrees	Minutes Seco	rds		Single Applifer LiMultiaquifer III
	Numerical Street Address or Fire Number and City of	Well or Boring Location			WELL/BORING
	Numerical Street Address of the Nation and ROCI	HESTER 5	5904		Water Supply Well Wonit Well above land surface
' VE	Show exact location of well in section grid with "X".	Sketch map of v			
	2110M CYDSC (A-11)	Showing prope roads and build	nymes lihgs.	1	CASING TYPE(S)  Sleel  Plastic  Tile  Other
					WELLHEAD COMPLETION
172					OUTSIDE: Well House Basement Offset
-					Pitless Adp Well Pit
1					
TQ:				_	Well Pit Buried
	PROPERTY OWNER'S NAME				Buried
	CITY OF ROCHESTER	indicate and indicate	tod abo		CASING Diameter Depth , Set in oversize hole? Annular space initially grouted?
¥:	Property owner's mailing address if different (han well	location address indica	ileu acc		Diameter Depth Set in oversize hole? Annular space initially grouted?  Diameter Depth Set in oversize hole? Annular space initially grouted?  In from to Tet Yes No Yes No Unknown  In from to Tet Yes No Yes No Unknown
	201 4TH STREET				in.fromtoft. LI YesLI No LI Yes LI NO LI GINGLOWN
	ROCHESTER MN	55094			SCREEN/OPEN HOLE
W.	ROCHESTER				Screen fromtoft. Open Hole fromtoft.
	· <del>1</del>				OBSTRUCTIONS  OBSTRUCTIONS  OBSTRUCTIONS  OBSTRUCTIONS  OBSTRUCTIONS  OBSTRUCTIONS  OBSTRUCTIONS
	WELLOWERS NAMESTER				
	Well owner's mailing address if different than proper	ty owner's address indic	aled ab	ove.	Type of Obstructions (Describe) Obstructions removed? Yes No Describe
	201 4TH STREET				PUMP
ال:					Type
	ROCHESTER MN 55	904			Removed Not Present Other Removed Remo
	GEOLOGICAL MATERIALS COLOR	HARDNESS FRO	м	þ	METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  I No Annular Space Exists Annular Space grouted with tremis pip. Casing Perforation/Removal
[] T				14	
	Dand BRN	Med C	++	1	
	Frinchter BEN	450-11		25	in. fromtoft.
1				ĺ	
			11	1	Type of perforator
			-	+-	Other
:00			11	1	GROUTING MATERIAL(S)
					Grouting Material
				+	from 0 to 13 /2 ft bag
_;.J	<b>d</b>				fromtoftbag
					fromtotlbag
					AND OCCUPACE
1	Use a second sheet, if needed			4	OTHER WELLS AND BORINGS  Other unsealed and unused well or boring on proterty? Yes No Now Many?
	REMARKS, ELEVATION, SOURCE OF DATA, etc.	<b>5.</b>	1:		LICENSED OR REGISTERED CONTRACTOR CERTIFICATION
			1;	1	The Mark and a specified in accordance with Minnesota Rules, Chapter 4725.
,					This well or boring was sealed in accordance that the best of my knowledge.  The information contained in this report is true to the best of my knowledge.
	·				BAROTT DRILLING SERVICES,INC. 1860
			!		Contractor Business Name Lic. or Reg. No.
٦		-	1		Date
20			<u>  ;                                   </u>		Authorized Representative Signature Date
	OF AL INIO BIO	H258	313	1	Name of Person Sealing Well or Boring
,	SEALING NO.	HZ30	1	]_	

ll.q

MINNES OF EXPERIENCE SECTION  MINNES OF EXPERIENCE SECTION  COUNTY NAME OLING SEALING RECORD  MINNESON DEPARTMENT OF COUNTY OLING SEALING RECORD  MINNESON DEPARTMENT OF COUNTY OLING SEALING RECORD  MINNESON DEPARTMENT OF COUNTY OF COUNT	***************************************								Minnesota Well and Boring 1258	130
County form   County form	٦	WELL OR BORING LO	CATION						MENT OF TEXALTH	
Concestion   Name   Development   Name   Recognition   Name   N		County Name OLMS	STEAD	`:	WELI	- AND Minne	sota iSt	atutes	Chapter 1031 or W-series No.	712
CORRESTER   Degrees   Minutes   Seconds   Se		Township Name	•	- 1 BI			1/2/1	WI I	Date Scarce	
Agusties   Degrees   Minutes   Second set   Agusties   Degrees   Minutes   Second set   Address or Fin Number and City of Wall or Boding Location   Second set   Measured	į,	1								
Numerical Street Address or Fire Number and City of Well or Roring Location   SOUND   Property of the Part   Property   P	1	GPS LOCATION	Latitude	Degrees !	Minutes				AQUIFER(S) STATIC WATER LEVEL	
NOTESTER   MIN   SSOUTH   STREET   MIN   SSOUTH   STREET   MIN   SSOUTH   STREET   MIN   SSOUTH   STREET   MIN   SSOUTH   SSOUTH   MIN	्रो			203.0	· -		ds		Single Aquifer Multiaquifer Measured Estimate	d
Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Well and the section grid with "X".  Show exact location of well in section grid with "X".  Well and the section grid with "X".  Show exact location of well in section grid with "X".  Show exact location of well in section grid with "X".  Well and the section grid with "X".  Show exact location of well in section grid with "X".  Show exact location grid with "X".  Show exact location grid with "X".  Well and the section grid with "X".  Show exact location grid with "X".  Show e		Numerical Street Addre	ess or Fire Num SW	nber and City of Y ROCL	Vell of Boring LESTER	5	5904	.	Water Supply Well Wonit Well	a land autom
PROPERTY OWNER'S NAME CITY OF ROCHESTER Property owner's mailing address if different than well ocation address indicated above. PROPERTY OWNER'S MAME CITY OF ROCHESTER  Property owner's mailing address if different than well ocation address indicated above. Same from				grid with "X".					☐ Env.Boring Hole Other ft. below abov	
ABLIMIAD COMPLETION   Basement Offset   Pittless Adp   Rell Pit   Buried		Show exact location or		•	Showi mads	ng proper and buildi	y lines ings.	1 1		
PROPERTY OWNER'S NAME CITY OF ROCAESTER Property owner's mailing address if different than well ocation address indicated above. 201 4TH STREET ROCHESTER MN 55904  SCREEN/OPEN HOLE	8	,							V	
PROPERTY OWNER'S NAME CITY OF ROCIESTER Property owner's mailing address if different than well coation address indicated above.  ASING Dismeter Depth Set in oversize hole? Annular space initially grouter?  ASING Dismeter Depth Set in oversize hole? Annular space initially grouter?  ASING Dismeter Depth Set in oversize hole? Annular space initially grouter?  ASING Dismeter Depth Set in oversize hole? Annular space initially grouter?  ASING Dismeter Depth Set in oversize hole? Annular space initially grouter?  ASING Dismeter Depth Set in oversize hole? Annular space initially grouter?  ASING Dismeter Depth Set in oversize hole? Annular space initially grouter?  ASING Dismeter Depth Set in oversize hole?  ASING Dismete	8							1	OUTSIDE: Well House Basement Of	fset
PROPERTY OWNER'S NAME CITY OF ROCHESTER Property owner's mailing address if different then well location address indicated above.  201 4TH STREET  ROCHESTER  MN 55904  SCREENOPEN HOLE					•				Pitless Adp Well Pit	
Properly owner's mailing address if different than wall ocation address indicated above. 201 4TH STREET    Solid in oversize hole? Annular space initially grouted?   Self in oversize hole?   No Describe   No Nove Many?   Self in oversize hole?   No Nove Man				-					Well Pit Buried	
Care   Care		PROPERTY OWNER'	S NAME						Buried	
SCREEN/OPEN HOLE					l - ation address	an indicat	ed sho		CASING Set in puggize hole? Angular space initiz	ally grouted?
Introm   In   Introm   Intro				itterent than well	location addre	ss mulcar	Cu aco	]		Unknown
Screen from										CONKIDIKI
CBSTRUCTIONS    CROCKESTER		ROCHESTER		MN	55904					ft.
Well owner's mailing address if different than property owner's address indicated above. 201 4TH STREET  ROCHESTER  MN 55 9 0.4  Type of Obstructions (Dascribe)  Obstructions removed? Yes No Describe  PUMP  Type Removed		ĸ		`					OBSTRUCTIONS	
Well owner's mailing address if different than property  wher's address indicated above.  201 4TH STREET  ROCHESTER  MN 55\$04  MEROVED VES No Describe  PUMP  Type Removed Ves No Describe  Test No Describe  PUMP		WELL OWNER'S NAI	MESTER							- UGHOTI
ROCHESTER  MN 55\$04    PUMP   Type   Removed   Mot Present   Other				rent than property	owner's addr	ess indica	ed abo	ve.	1 **	
ROCHESTER  MN 55\$04  GEOLOGICAL MATERIALS  COLOR  HARDNESS  FROM  TO  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  CASH BRILLY  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  To Annular Space Exists  Annular Space Exists	和	201 4TH STRE	EET							
GEOLOGICAL MATERIALS  COLOR HARDNESS FROM 10		ROCHESTER		MN 559	04				Removed Not Present Other	DODE HOLE
in. from to ft. Perforated Removed  In. from ft. Perforated Removed  In. from ft. Perforated Removed  In. from ft. Perforated Removed  In. from ft. Perforated Removed  In. from ft. Perforated Removed  In. from ft. Perforated Removed  In. from ft. Perforated Removed  In. from ft. Perforated Removed  In. from ft. Perforated Removed  In. from ft. Perforated Removed  In. from ft. ft. Perforated Removed  In. from ft. ft. Perforated Removed  In. from ft. ft. Perforated Removed  In. from ft. ft. ft. ft. ft. ft. ft. ft. ft. ft.		GEOLOGICAL MATE	RIALS		HARDNESS	FROM	4 TO		METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND  AND Annular Space Exists TO Annular Space grouted with tremle pipe Casing Performance	ration/Removal
Type of perforator  Type of perforator  Type of perforator  Type of perforator  Type of perforator  Type of perforator  GROUTING MATERIAL(S)  Grouting Material  Control to 13134 yards bags  from to ft yards bags  from to ft yards bags  OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?	<b>ا</b> د د	Sand B	nim		mes	10		13		
Type of perforator  Type of perforator  Type of perforator  GROUTING MATERIAL(S)  Grouting Material  South from 0 to 13 3 4 yards bags  from to n. yards bags  from to ft yards bags  OTHER WELLS AND BORINGS  Other unsealed and unused well or boring on proterty? Yes \[ \] No Now Many?	1000	Sand Col	>1~CO)	Bruns	mes	1 13		5	in, from to ft. Perforated R	emoved
GROUTING MATERIAL(S)  GROUTING MATERIAL(S)  Grouting Material  Grouting Material  From to ft. yards bags  from to ft. yards bags  OTHER WELLS AND BORINGS  Other unsealed and unused well or boring on proterty? Yes No Now Many?		Ean Cl			Hatud	\ \ \		17	To a separate	
GROUTING MATERIAL(S)  Grouting Material  Control from to 13134, yards bags from to ft. yards bags  from to ft. yards bags  OTHER WELLS AND BORINGS Other unsealed and unused well or boring on protenty? Yes No Now Many?		Finalle				7 1		۾ ع		
Grouting Material    Constituting Material   Constitution   Consti		0.1.1.	1.1.1.1					'=		
Use a second sheet, if needed    Continue										
to ft. yards bags  from to ft. yards bags  from to ft. yards bags  OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?	1				<del> </del>	_	++	-		bags
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Use a second sheet, if needed Other unsealed and unused well or boring on proterty? Yes No Now Many?		<del></del>		i i					from to ft yards	bags
Oulei unseales und entres		Use a se	econd sheet, if	needed					OTHER WELLS AND BORINGS Other upgeded and unused well or bodge on protecty?  Yes No Now M.	any?
REMARKS, ELEVATION, SOURCE OF DATA, etc. LICENSED OR REGISTERED CONTRACTOR CERTIFICATION	9	***************************************								
This well or horing was sealed in accordance with Minnesota Rules, Chapter 4725.	30			!					This wall or horing was sealed in accordance with Minnesota Rules, Chapter	4725.
The information contained in this report is true to the best of my knowledge.	PE	•		i					The information contained in this report is true to the best of my knowledge.	
BAROTT DRILLING SERVICES, INC. 1860  Contractor Business Name Lic. or Reg. No.									DAROTT DIGEETITO CERTIFICACIONE	<u>\</u>
Contractor Business Name Lic. or Reg. No.	1	· •				-			Contractor Business, Name Lic. of Reg. No.	
Authorized Representative Signature Date						<u>·</u>			Authorized Representative Signature Date	
SEALING NO. H258130 Name of Person Sealing Well or Boring	100	SEALING	NO.	i	H	258:	130		Name of Person Sealing Well or Boring	
		<del></del>		:	<u>                                     </u>	;				. ——
01.q		01.q		1 9 <del>4-04</del> 92	8 <del>1-</del> 199		[ 1 ]	i	7 OS:28p Barott Drilling Services	0 ES guÀ

HESTER	AD wnship No 106	Range No. 14	WEL Section No.	L AND Minne Fraction NW 1/4NE	BOR sota St	atutes	MENT OF HEALTH Sealing No. Minnesota Well and Boring Sealing No. Minnesota Unique No. Or W-series No Date Sealed Of Chapter 1031 Date Sealed Depth Before Sealing Th.  Depth Before Sealing Th.  STATIC WATER LEVEL
Latitu ical Street Address o ST AVENUE SW exact location of well	r Fire Num	Degrees ber and City of Y	Minutes Well or Boring LESTER Skett	Secon Location	5904	njon.	AQUIFER(S) Single Aquifer   Multiaquifer   Measured   Estimated    WELL/BORING   Water Supply Well   Monit.Well   ft   below   above land surface    CASING TYPE(S)   Steel   Plastic   Tile   Other    WELLHEAD COMPLETION   Basement Offset    Well Pit   Buriec    Buried   Buried   Buriec    Buried   Buried   Buriec    Well Pit   Buriec    Well Pit   Buriec    Buried   Measured   Estimated    Measured   Estimated    Estimated    Measured   Estimated    Below   above land surface    Below   Basement Offset    Well Pit   Buriec    Buried   Buried    Well Pit   Buried    Well Pit   Buriec    Buried   Buried    Well Pit   Buriec    Buried   Buried    Well Pit   Buriec    Buried   Buriec    Well Pit   Buriec    Buried   Buriec    Well Pit   Buriec    Buried   Buriec    Buried   Buriec    Well Pit   Buriec    Buried   Buriec    Buried   Buriec    Buried   Buriec    Buried   Buriec    Buried   Buriec    Buriec   Buriec    Buriec   Buriec    Buried   Buriec    Buriec   Bu
PERTY OWNER'S N. Y OF ROCHES Derty owner's mailing a 1 4TH STREET THESTER	TER ddress if di	ifferent than well	ccation add		ed abo	ave.	CASING Diameter Depth Set in oversize hole? Annular space initially grouted? Diameter Depth Set in oversize hole? Annular space initially grouted? Diameter Depth Set in oversize hole? Annular space initially grouted? Diameter Depth Set in oversize hole? Annular space initially grouted?  No
I OWNERS NAME I OWNER'S MAILING ACM ATH STREET CHESTER  CHOGICAL MATERIA	ress if differ	ment than proper				ove.	Type of Obstructions (Describe) Obstructions removed? Yes No Describe  PUMP Type Removed Mot Present Other  METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE Was Annular Space Exists Annular Space grouted with tremie pipe Casing Perforation/Removal
and Bothli and Bothli andy Silty	у) С.ВЦ	Brun Brun Brun Brun	mec Hovi	y 8	-	中华华	in. fromtoft. Perforated Removedin. fromtoft. Perforated Removed
							GROUTING MATERIAL(S)  Grouting Material  BEN from to 3/2 ft. yards bags  from to ft. yards bags  from to ft. yards bags
Use a seco							OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?  LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725, The information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1860  Contractor Business Name Lic. or Reg. No.  Authorized Representative Signature Date
SEALING	NO.			H258	12	9	Services grilling Barot 982:S0 70 SS guA  Name of beasou sealing Mell of Bound

		- LEINTI	SESOT	'Y DE	PAR1	MENT OF HEALTH	Minnes	ota Well and Boring	H258124
WELL OR BORING LOCATION			AND	во	RING	SEALING RECORD	Sealing Minnes	No. ofa Unique No.	657809
County Name OLMSTED		•	Minne	sota	Statute	s Chapter 1031		ries No Date Well or Boring C	
Township Name Township ROCHESTER 101	11	Section No. Fre	ction V 1/4NE	· 1/4	AM.	Date Sealed  1/4 7 3 - 0 7		Date Well of Boiling C	
GPS LOCATION Latitude	Degrees	Minutes	Sə	conds		Depth Before Sealing	ft.		
Latitude	Degrees	Minutes	Secor	nds		AQUIFER(S)  ISingle Aquifer   Multiaqu	ifer	STATIC WATER LEVI	≣L
Numerical Street Address or Fire N	-		- 1			WELL/BORING (		Measured D	Estimated
19 1ST STREET AVENUE S	w ROO	CHESTER	]	590		Water Supply Well Monit.  Env. Boring Hole Other	.Well	ft, □ beli	ow Dabove land surface
Show exact location of well in section	n grid with "X".	Sketch r Showin	nap of 4 g proper			CASING TYPE(S)			
			nd buildi			Steel Plastic Tile	☐ Other _		
					· ·	WELLHEAD COMPLETION			
7						CUTSIDE: We	ell Hou	sse Bas	ement Offset
					]	P:	itless	Adp Wel	l Pit
<i>i</i>						%-	ell Pit	Bur	ried
PROPERTY OWNER'S NAME						B	uried		
Property owner's mailing address if	different than we	l location addres	s indicati	ed ab	dve.	CASING Diameter Depth	Set in	oversize hole? Annula	or space initially grouted?
201 4TH STREET SE						in.from 7D to 5	ろしどうけ	☐ Yes☑ No ☐	ar space initially grouted? Yes ☐ No ☐ Unknowi Yes ☐ No ☐ Unknow
ROCHESTER	MN	55904				SCREEN/OPEN HOLE			
3						Screen from 70 to	7 <u>%</u> ft. 0	pen Hole from	toft.
MALL CHAPPED MALE						│ OBSTRUCTIONS │	k Valve(s)	☐ Debris ☐ Fill	☐ No Obstruction
CITY OF ROCILESTER		<u> </u>			-	Type of Obstructions (Describe)			
Well owner's mailing address if diff 201 4TH STREET SE	ferent than prope	rty owner's addres	is indica	tea at	ove.	Obstructions removed? Yes	s No	Describe	
						PUMP Type			
ROCHESTER	MN 55	904				Removed Not Presen		Other	
GEOLOGICAL MATERIALS	COLDR	HARDNESS	FROM	1	ф	METHOD USED TO SEAL ANNULAI			
Sand	Brun	med	ြင			in, fromto			rated  Removed
Pivac Leavil	Bush	11 .	1,_		77				rated  Removed
JUL 8 6 8 24 6-108	WHET!	7-11111		_	-18-1	in, fromto		ii. 🗀 Pelio	Idded [_] Itembyed
		-	-			Type of perforator			
					-	☐ Other			
. 1						GROUTING MATERIAL(S)	•		
,						Grouting Material		1	_
						Bart from_	<u>0</u>	io <u>(oY</u> ft	yards ba
			-		-				yards be
		<u> </u>			_	from_	1	toft	yards ba
Use a second sheet,	l if needed		1			OTHER WELLS AND BORINGS Other unsealed and unused well	or boring	on protecty? Yes	No Now Many?
REMARKS, ELEVATION. SOURC	E OF DATA, etc.					LICENSED OR REGISTERED			
다 -						This well or boring was sealed	in accorda	ance with Minnesota Ru	les, Chapter 4725.
1						The information contained in th			
						BAROTT DRILLING S  Contractor Business N		ES,INC. 18	60 Reg. No.
		,				Contractor business is	taine	LIU, UI	
						Authorized Representative	a Signatur	e Da	ate
SEALING NO.		H2	581	24	Į.	Name of Person Sealing We	ll or Borin	g	
				i	:				
		-		1 }	il		_		J 8n

County Name OLMSTED  WELL AND BORING SEALING RECORD  Minnesota Unique No. Or W-series No.  Township Name Township No. Range No. Section No. Fraction ROCHESTER 106 11 2 NW 1/4 8 - P.3 - 27  GPS LOCATION Latitude Degrees Minutes Seconds Depth Before Sealing 1.	258125 651501
Minnesota Statutes Chapter 1031 or W-series No. Township Name   Township No. Range No. Section No. Fraction   Date Sealed   Date Well or Boring Construct   ROCHESTER   106   14   2   NW 144   8 - 2   7   9 - 16 - 2   7   GPS LOCATION   Latitude   Degrees   Minutes   Seconds   Depth Before Sealing   ft.	001201
ROCHESTER 106 14 2 NW 1/4 NW 1/4 8 - P.3 - D') 9 - 1/6 - 2/0/3 GPS LOCATION Latitude Degrees Minutes Seconds Depth Before Sealing	
GPS LOCATION Latitude Degrees Minutes Seconds Depth Before Sealing	
Depth belofe sealingit.	
Luttude Degree Migutes Solinde AQUIFER(S) STATIC WATER LEVEL	
Latitude Degrees withties Septims Single Aquiter Limitaguifer Septime Single Aquiter Limitaguifer Septime Sept	imated
2 219 1ST AMENUE SW ROCHESTER 35904 Water Supply Well Committeel C	
76 Sharw shadt bouldun of well in applian grid with "N". Sketch map of first liquation. 12 200 and 15 700 and	above land surfact
Showing procidity lines, CASING TYPE(S) roads and buildings   CL/Steel   Plastic   Title   Other	
*nolubed compression	
COISIDE: Well House   Basement	. Oliset
! Fitless Ado Well Fit	:
Well 218 Auried	
PHOPERTY OWNER'S NAME  CITY OF ROCHESTER  Buried	
CASING	
201 - 1'11 STREET SE   Sent Oversize Hole: Annual space   Sent Oversize Hole: Annual s	in fially grouted?  No Unknown
in.from to ft. \( \text{Yes} \sqrt{No} \text{ Yes} \)	No DUnknown
ROCHEDWEEK MN 55901 SCREEN/OPEN HOLL -	
Screen tromtotototototototo	
WELL OWNER'S NAME  Rods/Drop Pipe Check Valve(s) Debris Fill No	Obstruction
Well cwnor's making address if different than property owner's address indicated above  Type of Obstructions (Describe)	
201 47 H STREET SE	
PUMP  1 - ROCHESTER MD 55904    Pump	
THEIR CONTRACTOR OF THE CONTRA	
GEOLOGICAL MATERIALS COLOR HARDNESS FROM TO METHOD USED TO SCAL ANNULAR SHACE BETWEEN 2 CASINGS, OR CASING  ON A ATTULL SPING FAMIL ANNULAR SPING FAMIL ANNULAR SPING FAMIL ANNULAR SPING FAMILE SPING F	
Phanet Sured BIX Brun Med 5 3 In from 10 12 Perforated E	_
will close 50 nd Bruen lut M2(1 3. 5) In from to 1 Perforated	] Removed
Sand Bright Med 5 10	
Frank Rocks B. and Maryth In the	
Limes dered a Times I I I I I	
and the waterway	
Grouting Meterial  Best tom 0 to 30 tt yard	
from to ft. yard	,
from to ft, yard	
Use a second sheet, if needed	J bags
REMARKS, ELEVATION, SOURCE OF DATA, etc.	Many?
LICENSED OR REGISTERED CONTRACTOR CERTIFICATION	
This well or borning was sealed in accordance with Minnesota Rules, Chapt	
The information contained in this report is true to the best of my knowledge	<b>1.</b>
BAROTT DRILLING SERVICES, INC. 1860   Contractor Business Name   Lic. or Reg. No.	A.
	<u> </u>
Authorized Representative Signature Date	
SEALING NO. II258125 Name of Person Sealing Well or Boylog	
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	) 70 ES guA

County Name OLMSTED	Γ	WELL OR BORING LOCATION		l i		1.	1	RTMENT OF HEALTH	Minnesola Well and Boring Sealing No.	H258126
Township Name   Constitution   Charge May Section No.   Feedings   Constructed   Charge May No.   Charge M		County Name OLMSTED		WEL					Minnesota Unique No.	651504
Depth Badows Name  ROCESSTER   SS-914  Secondary Name and Rocation of wall is eaclosing and with YX  Secondary Name and Rocation of wall is eaclosing and with YX  Secondary Name and Rocation of wall is eaclosing and with YX  Secondary Name and Rocation of wall is eaclosing and with YX  Secondary Name and Rocation of wall is eaclosing and with YX  Secondary Name and Rocation of wall is eaclosing and with YX  Secondary Name and Rocation of wall is eaclosing and with YX  Secondary Name and Rocation of wall is eaclosing and with YX  Secondary Name and Rocation of wall is eaclosing and with YX  Secondary Name and Rocation of wall is eaclosing and with YX  Secondary Name and Rocation of wall is eaclosing and with YX  Secondary Name and Rocation of wall is eaclosing and with YX  Secondary Name and Rocation of wall is eaclosing and with YX  ROCED Name and Rocation of Wall is eaclosing and with YX  ROCED Name and Rocation of Wall is eaclosing and with YX  ROCED Name and Rocation of Wall is eaclosing and with YX  ROCED Name and Rocation of Wall is eaclosing and with YX  ROCED Name and Rocation of Wall is eaclosing and with YX  ROCED Name and Rocation of Wall is eaclosing and rocation of Wall is eaclosing and with YX  ROCED Name and Rocation of Wall is eaclosing and with YX  ROCED Name and Rocation of Wall is eaclosing and rocation of Wall is eaclosing and rocation of Wall is eaclosing and with YX  ROCED Name and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Wall is eaclosing and Rocation of Wall is eaclosing and Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing and Rocation of Wall is eaclosing an	זֿ			. 1		1	4VW		Date Well or Boring C	
Authorities   Degrees   Minister   Securities   Minister   Minis							-			~7000
Numbers Sines Address or Fin Numbers and Girly of Well or Boding Loads of 2012 in a Name of West Loads on the States and buildings.    Division States   Division of West   Division of West   Division probability   Division of West   Division	i	Latitude	Degrees	Minutes	Se	сопаѕ		AQUIFER(S)	STATIC MATERIEVE	īL
Show search control or well in section guid with "Ye."  Silector may of well if canton, Showing property Peters and Duffings and Duffin	Constitution of the Consti		- 1		Locatio		h <sub>4</sub>	WELL/BORING (/	Measured L	Estimated
CASING PRISE   CONTROLLER   C	} -				h map c				Well the belo	w above land surfac
Well House   Basement Offset   Well House   Basement Offset   Well Fit   Buried   Well Fit   Buried   Well Fit   Buried   Burie			_	Show	ving proj	perty Iir	es,	CASING TYPE(S)		
OUTSIDE:   Wall Bouse   Dascenot Offset								<del>                                     </del>	Other	
MOJETUS   Buried	1								11 House Base	ement Offset
Builed   B								Fi Pi	tless Adp Wel	l Pit
Surfect   Surf								We	11 Pit Bur	ied
Property owner's making address body Annular space indicated above   Dameter   Depth   Set in oversize body Annular space indicated above   Page 10   Page									ried	
ROCHESTER MN 55904  SCREENOPEN HOLE	7		if different than we	Il location addre	ess indic	ated at	ove.	Dlameter Depth	Set in oversize hole? Annular	space initially grouted?
SCREEN/OPEN HOLE	1	ZUI 4IM SINEEL SE							tro3ft.  Yes No Yes No Yes	es No Dunknown
OBSTRUCTIONS  Well owner's mailing address if different than property owner's address indicated above. 201 4TH STREET SE  ROCHESTER  MN 55904  REMARKS, ELEVATION, SOURCE OF DATA, site.  OBSTRUCTIONS  REMARKS, ELEVATION, SOURCE OF DATA, site.  OBSTRUCTIONS  OBSTRUCTIONS  Robertore of Check Valve(s)		ROCHESTER	MM	55904						· · · · · · · · · · · · · · · · · · ·
Well owner's mailing address if different than proper by owner's address indicated above.  201 4TH STREET SE  ROCHESTER MN 55904  Type of Obstructions (Describe)  Obstructions removed? Yes No Describe  PUMP  Removed QLyd Present Cother  Removed QLyd Present Cother  Removed QLyd Present Cother  METHOD USED TO SEL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  IN Annular Space Between 2 CASINGS, OR CASING AND BORE HOLE  IN Annular Space Dayle Charles Space grounder with tremite plp. Classing Perforation/Tenoved  in, from to fit Perforated Removed  Type of perforator  GROUTING MATERIAL(S)  GROUTING MATERIAL(S)  GROUTING MATERIAL(S)  GROUTING MATERIAL(S)  GROUTING MATERIAL(S)  COTHER WELLS AND BORNINGS  OTHER WELLS AND BORNINGS  OTHER WELLS AND BORNINGS  OTHER WELLS AND BORNINGS  COTHER WELLS AND BORNINGS  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725, The Information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1860  Contractor Business Name  Lic. or Reg. No.  Authorized Representative Signature  Date	- Second								ft. Open Hale from	toft.
Well owner's mailing address if different finan property owner's address indicated atlove 201 4TH STREET SE  ROCHESTER  MN 55904    PIMP   PIMP   Removed   No Describe   No Describe		WELLOWNER'S NAME CITY OF ROCHESTER					·		√alve(s) ☐ Debris ☐ Fill [	No Obstruction
ROCHESTER MN 55904    PUMP   P		Well owner's mailing address if dif	ferent than proper	ty owner's addre	ess indic	ated at	ove.			
REMARKS, ELEVATION, SOURCE OF DATA, etc.    Removed   No Personant   Other	Martin Martin Martin	201 4TH STREET SE							No Describe	
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Type of perforator    Other	L	•			i					
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Grouting Material    Conting Material   Conting Mat						╁┼		☐ Other		
REMARKS, ELEVATION, SOURCE OF DATA, etc.   SEALING NO.	-				-			GROUTING MATERIAL(S)		
	-			-		$\vdash \vdash$		! — -	<b>.</b>	
						<del>                                     </del>		from	1 toft,	yardsbags
Use a second sheet, if needed  REMARKS, ELEVATION, SOURCE OF DATA, etc.  Cither unsealed and unused well or boring on proterty? Yes No Now Many?  LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725, The information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1860  Contractor Business Name Lic. or Reg. No.  Authorized Representative Signature Date	-					<u> </u>				
LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapler 4725, The information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1860  Contractor Business Name Lic. or Reg. No.  Authorized Representative Signature Date	]	Use a second sheet, if	needed					OTHER WELLS AND BORINGS		
This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The Information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1860  Contractor Business Name Lic. or Reg. No.  Authorized Representative Signature Date	F	REMARKS, ELEVATION, SOURCE OF DATA, etc.		-		;				Now Many?
The information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1860  Contractor Business Name Lic. or Reg. No.  Authorized Representative Signature Date	Carried Section 1									
Contractor Business Name Lic. or Reg. No.  Authorized Representative Signature Date	1					!		The information contained in this re	port is true to the best of my know	Chapler 4725, wledge.
Authorized Representative Signature Date	delining and									
SEALING NO.										a. No.
SEALING NO. H258126 Name of Person Sealing Well or Boring	-					<u> </u>		Authorized Representative Sig	nature Date	
	ا 	SEALING NO.		H2.	581	26		Name of Person Sealing Well or	Boring	
	And the second									

Fig. on Formula Look		ŀ	T KEIL	UNIES	7T'A 1	DED A	RTMENT OF HEALTH Minnesota Well and Boring H258127
WELL OR BORING LOCATION					l	1	Sealing No.
County Name OLMSTED				Min	riesot		utes Chapter 1031 or W-series No.
Township Name Townsl	nip No. Range No. 24	. Se	ction No.  F	raction IW 1/41	ł	לעונאם .	Date Sealed Date Well or Boring Constructed
		†.	<del></del>		1	-	
GPS LOCATION Latitude	Degrees		Minutes	٤	ècon	ds	Depth Before Sealing 2.3 ft.
Latitude	Degrees	. M	linutes	Sec	onds		AQUIFER(S) STATIC WATER LEVEL STATIC WATER LEVEL
Numerical Street Address or Fire 219 15T AVENUE SW			ll or Baring I STER	Location	1. 559	1	WELL/BORING Measured Estimated
		Und				.	☐ Water Supply Well ☐ Monit Well ☐ H. ☐ below ☐ above land surface
Show exact location of well in sec	tion gna with "X".		Sketch Showir				CASING TYPE(S)
			roads a	and buil	dings	$\cdot$	Steel Plastic Tile Other
•							WELLHEAD COMPLETION
							OUTSIDE: Well House Basement Offset
							Pitless Adp Well Pit
							Well Pit Buried
PROPERTY OWNER'S NAME		<b></b>				1	Buried
CITY OF ROCHESTER							CASING
Property owner's mailing address 201 4TH STREET SE	if different than we	i loca	ation addres	s indica	ited a	bove.	Diameter Depth Set in oversize hole? Annular space initially grouted?
SOT AIN DIVERT OF	٠						in.from 13 to 3 455ft. I Yes No I Yes No Qunknown
ROCHESTER	MN	-	55904				SCREEN/OPEN HOLE
<i>y</i>		~	00004				
							Screen fromtoft. Open Hole fromtoft. OBSTRUCTIONS
WELLOWNER'S NAMESTER							☐ Rods/Drop Pipe ☐ Check Valve(s) ☐ Debris ☐ Fill ☐ No Obstruction
Well owner's mailing address if d	ifferent than proper	A OM	ner's addres	s indica	ted a	bove.	Type of Obstructions (Describe)
201 4TH STREET SE							Obstructions removed? Yes No Describe
ROCHESTER	MN 55	901					Type . /
<u>,                                      </u>	<u> </u>			т	-		Removed Not Present Other
GEOLOGICAL MATERIALS	COLOR	HAF	RDNESS	FROM		F <b>q</b>	METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  No Annular Space Exists  Annular Space grouted with tremie pip. Casing Perforation/Removal
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Use a second sheet,	if needed				<u> </u> ;		OTHER WELLS AND BORINGS
'EMARKS, ELEVATION, SOURC	E OF DATA, etc.				.		Other unsealed and unused well or boring on proterty? Yes No Now Many?
							LICENSED OR REGISTERED CONTRACTOR CERTIFICATION
·							This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725.  The information contained in this report is true to the best of my knowledge.
					:		BAROTT DRILLING SERVICES, INC. 1860
					:		Contractor Business Name Lic, or Reg. No.
			-				Authorized Representative Signature Date
SEAL WO NO		+			<u> </u>	+	Authorized Representative Signature Date
SEALING NO.			H25	81.	27		Name of Person Sealing Well or Boring
			-			:	

	WELL OR BORING I	LOCATION		Н м	INNES	OTA :	DEP	ARTMENT OF HEALTH Minnesota Well and Boring 3258128
1	County Name OT.M	ISTED		7 2		1'	11	ING SEALING RECORD Sealing No.
i	Township Name		in Mal Daniel		Min	hesot	a Sta	atules Chapter 1031 or W-series No. 651502
1	ROCHESTER	Townshi	1	ld. Section No.   4.   2	Fraction NW 1/4]	1 '	WIAN	Date Sealed Date Well or Boring Constructed  1/4 8 - 3 - 6 7
1	GPS LOCATION	Latitude	Degrees	Minutes	Ę	econ		Depth Before Sealingft.
		Latitude	Degrees	Minutes		qnds		AQUIFER(S)  Single Aquifer
1	Numerical Street Address 19 187 AVR SW		F3 C	PEESTER		159	1	WELL/BORING  Weasured Estimated
	Bháir aract lucation of :	ittest ni New	an gifd with "X".		a map of			
				Show ruads	ing prop and buil	aty in Ings.	* <b>(</b> :.,	CASING TYPE(S)
and the same of th						!		Steet Plastic Tile Other  VELLUCAD COMPONITION
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	PROPERTY OWNERS						1	
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	Property owner's mailing १८११ - ४९५४ - इस्ट्राह्य	g addess d ET SE	. alugiani inan Ma	ell location adores	ss rxiica	de bá ,	uve.	Diameter Depth Set in oversize boile? Appular space initially assured
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1	OCHR							SCREEN/OPEN HOLE
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- نم	VELT-ONDERES NAME	r Tairen		<del> </del>			$\vdash$	OBSTRUCTIONS  Rods/Drop Pipe Check Valve(s) Debris Fill No Obstruction
	Veli owner's mailing ad		acoust their meaning			<del>, ,  </del>		Type of Obstructions (Describe)
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	enter de la company					.		FUMP Type
_	००न हाड एहा।२			204		<u>.</u> j		Removed WNot Present Other
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.⊢ ₹Ei	MARKS, ELEVATION,					-		OTHER WELLS AND BORINGS Other unsealed and unused well of boring on proterty? Yes No Now Many?
9		COMOL (	ALIMIA, EG.					LICENSED OR REGISTERED CONTRACTOR CERTIFICATION
The state of the s								This well or boring was seeled in accordance with Minnesota Ruler. Choose 4705
					;		}	The information contained in this report is true to the best of my knowledge.
					[:		-	BAROTT DRILLING SERVICES,INC. 1860
9			,	•	l:			Contractor Business Name Lie, or Rey, No.
_	Accept on an are	· · · · · · · · · · · · · · · · · · ·			<u> </u>	$\parallel$		Authorized Representative Signature Date
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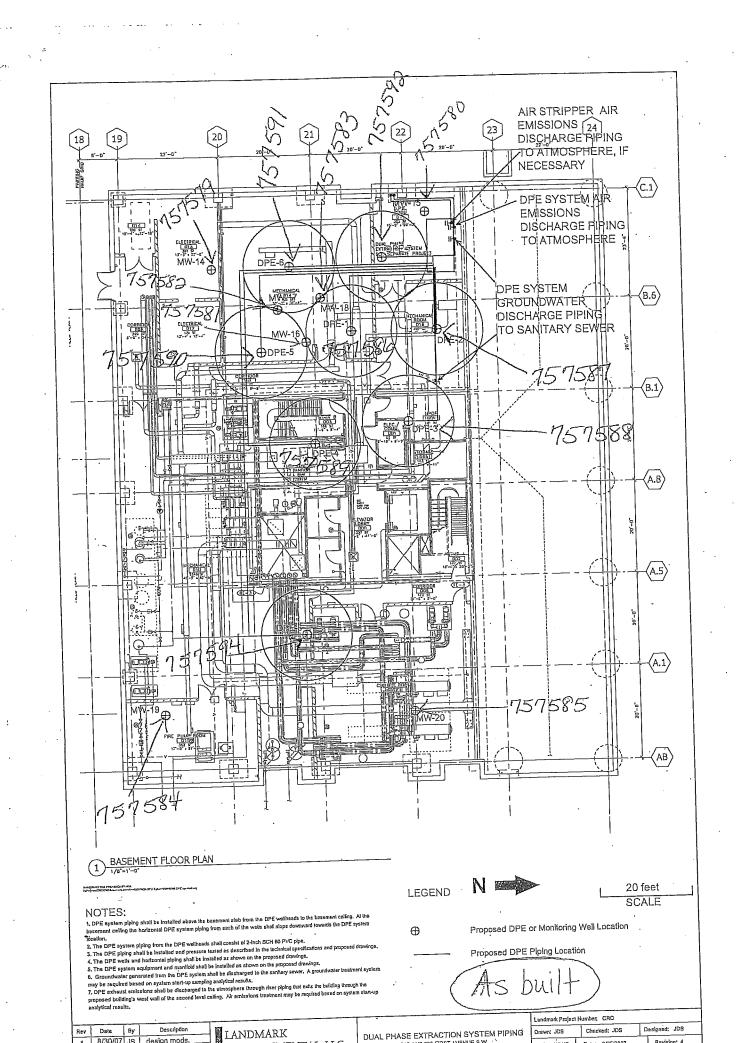
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Laifuso Degree Minutes Searchs with Vision and City of Water (Depth Continue)  Laifuso Applier Six No CCEESTER SS 94  WELLERSPRIA  WELL	CHESTER	1	1				E: 1/4	MM					
Indicate Despites of Performance of	SLOCATION	Latitude	Degrees	· M	inutes	Se	e∞nds	;	Depth Before Sealingft.				
Section of the Number and City of Well or Boring Location   Section   Sect		Latitude	Degrees	Minu	ites	Seco	onds		Tisingle Aguifer Multiaguifer				
We could continue within ending gid with "X".  Seelah map of yell location. Shouth proposity lines. Note and devisition. Shouth proposition and devisition and devisition. Shouth proposition and devisition and devisition. Shouth proposition and devisition. Shouth proposition and devisition. Shouth proposition and devisition and devisition. Shouth proposition and devisition and devisition and devisition. Shouth proposition and devisition and de									WELL/BORING Measured Estimated				
CASING TYPEIS  CONTROLLES TER	isJ			CHES.	JIII DIII.				ft below above land surface				
Description	w exact location of	well in section	n grid with "X".		ргоре	ety line	1						
OTTSIDE:   Pittless Add   Well Pit					roads and build								
Pittess Adp   Well Pit   Buried													
PERTY OWNER'S NAME													
Birriod   Birriod   Birriod   Birriod   Birriod   Birriod   ASNIG   Birriod   Birrio													
TYPE FOR ROCHESTER   Set in oversible hide? Annual apuce initially grouted?   The STREET SE   Set in oversible hide? Annual apuce initially grouted?   The STREET SE   Set in oversible hide? Annual apuce initially grouted?   Screen from   Set in oversible hide? Annual apuce initially grouted?   Screen from   Set in oversible hide? Annual apuce initially grouted?   Screen from   Set in oversible hide? Annual apuce initially grouted?   Screen from   Set in oversible hide? Annual apuce initially grouted?   Screen from   Set in oversible hide? Annual apuce initially grouted?   Screen from   Set in oversible hide? Annual apuce initially grouted?   Screen from   Set in oversible hide? Annual apuce initially grouted?   Screen from   Set in oversible hide? Annual apuce initially grouted?   Screen from   Set in oversible hide?   Set in oversible hide? Annual apuce initially grouted?   Screen from   Set in oversible hide? Annual apuce initially grouted?   Screen from   Set in oversible hide? Annual apuce initially grouted?   Screen from   Screen	DEEDTI OUNIED	DC HAME											
Section   Sect													
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Screen from	1 4TH STRE	EET SE		ľ	ľ				In.from by 12/03/11. I Yes No Yes No Dunknown				
Compared   Compared	CHESTER		MN	55	55904				SCREEN/OPEN HOLE				
Compared   Compared	70								Screen from to ft. Open Hole from 4 / \( \) to 3 2 / \( \) ft.				
Type of Distructions (Describe)    Distructions address if different than properly owner's address indicated above.								·	OBSTRUCTIONS				
Obstructions removed?   Yes   No Describe   PULP   PULP   PulP   Removed   Whot Present   Collaborate   Collaborate   Collaborat	TY OF ROCHESTER								,				
CHESTER MN 55 30 4    PUMP   Yeb				ny owne	y owner's address indicate								
Removed   Cher   Cother   Co	T 41H SIREEL BE			ŀ									
No Annular Space Exists   Annular Space grouted with tremie pips   Casing Perforation/Removal	CHESTER MN 55			904	904				Removed Not Present Other				
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In from to n. Perforated Removed  Type of perforator    Other	modlil	\	Brigo	1	ch-C	6		13					
Type of perforator    Contractor Business Name													
Type of perforator    Other	. ~	• 1		1200	CAF				in, from to ft. Perforated Removed				
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Grouting Material    Ben   to	<b></b>								GROUTING MATERIAL (S)				
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Use a second sheet, if needed  OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many?  LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1860  Contractor Business Name  Lic. or Reg. No.  Authorized Representative Signature  Date	<u> </u>	· · · · · · · · · · · · · · · · · · ·					-		fromtoftbags				
ARKS, ELEVATION, SOURCE OF DATA, etc.    Contractor Business Name   Lic. or Reg. No. Now Many?							_		fromtoft,yardsbags				
LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The Information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1860  Contractor Business Name  Lic. or Reg. No.  Authorized Representative Signature  Date													
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The information contained in this report is true to the best of my knowledge.  BAROTT DRILLING SERVICES, INC. 1860  Contractor Business Name Lic. or Reg. No.  Authorized Representative Signature Date								'					
Contractor Business Name Lic. or Reg. No.  Authorized Representative Signature Date				:				The information contained in this report is true to the best of my knowledge.					
Authorized Representative Signature Date													
								Contractor dustriess traffie Ltc. DF Keg, No.					
FALING NO. H258123 Name of Person Sealing Well or Boring					<del></del>				Authorized Representative Signature Date				
	EALING	NO.			H25	581	23	:	Name of Person Sealing Well or Boring				

Recover wen Minnesota Well and Boring H258121 MINNESOTA DEHARTMENT OF HEALTH Sealing No. WELL OR BORING LOCATION WELL AND BORING SEALING RECORD 73521.3 Minnesota Unique No. Minnesota Statutes Chapter 1031 County Name OLMSTED or W-series No. Date Well or Boring Constructed Range No. | Section No. | Fraction Date Sealed 11/10/05 Township No. Township Name 1148 10307 2 NW 1/4NE 1/4NW 1.4 106 ROCHESTER Sedonds Minutes Depth Before Sealing Latitude GPS LOCATION STATIC WATER LEVEL AQUIFER(S) ☐Single Aquifer ☐Multiaquifer Seconds Minutes Measured Estimated Latitude Degrees Numerical Street Address or Fire Number and City of Velt or Boring Location WELL/BORING 55904 ☐ Water Supply Well ☐ Monit, Well the below above land surface ROCHESTER 219 1ST AVENUE SW ☐ Env.Boring Hole Other Sketch map of well location Show exact location of well in section grid with "X". Showing property lines, CASING TYPE(S) ☑/Steel □ Plastic □ Tile □ Other roads and buildings. WELLHEAD COMPTRITION Basement Offset Well House OUTSIDE: Well Pit Pitless Adp Buried Woll Pit Buriled PROPERTY OWNER'S NAME CITY OF ROCHESTER CASING Set in oversize hole? Annular space initially grouted? Property owner's mailing address if different than well location address indicated above. Depth tl. ☐ Yes☐ No ☐ Yes ☐ No ☐ Unknown \_fl. ☐ Yes☐ No ☐ Yes ☐ No ☐ Unknown Diameter in.from\_\_\_\_ 201 4TH STREET \_in\_from\_ SCREEN/OPEN HOLE 55904 MM ROCHESTER \_ft\_ Open Hole from \_\_\_\_\_to \_\_\_ Screen from \_ OBSTRUCTIONS ☐ Rcds/Drop Pipe ☐ Check Valve(s) ☐ Debris ☐ Fill ☐ No Obstruction WELLOWNERSOLANTESTER Type of Obstructions (Describe) Well owner's mailing address if different than property owner's address indicated above. No Describe Obstructions removed? 201 ATE STREET SE PIMP ☐ Removed ☐ Not Present Mother MN 55904 ROCHESTER METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE HARDNESS FROM GEOLOGICAL MATERIALS 🖟 😽 Armiliai Sparia Exists 🔲 Annular Space grouted with tremie pip 🖳 Casing Parloration/Romovol COLOR ☐ Perforated ☐ Removed Brwa in, from to ft. med ☐ Perforated ☐ Removed in from \_\_\_\_\_\_ to \_\_\_\_\_ ft. 2 Mart Lom inesterio Other\_\_\_ GROUTING MATERIAL(S) Grouting Material from o lo 10 lt \_\_\_\_\_yards 3 bays to \_\_\_\_\_ft. \_\_\_\_\_yards \_\_\_\_\_ OTHER WELLS AND BORINGS Other unsealed and unused well or boring on proterty? Yes No Now Many? Use a second sheet, if needed REMARKS, ELEVATION, SOURCE OF DATA, etc. LICENSED OR REGISTERED CONTRACTOR CERTIFICATION This well or boring was sealed in accordance with Minnegota Rules, Chapter 4725. B117# 1 The information contained in this report is true to the best of my knowledge. 1860 BAROTT DRILLING SERVICES, INC. Lic. or Reg No. Contracto: Business Name Dale Authorized Representative Signature Name of Person Scaling Well or Boring H258121 AI ING NO.

		COVER SHEET	
Date	08/23/20	27	
To	JASON K	AMSTAD	Andrew Company
Company			
Phone	• •		
Fax#	952-887-96	i05   ·	
From	LYNN		
Company Phone	BAROTT D	RILLING SERVICES INC.	
Fax #	651-484-01 651-484-04	98 65	
OF PAGES	17		
Thereto method topicoses on the Section of the			man and the state of the state
រ៉ៃខែនទនផ្ទម	•		
JASON : HERE	ARE THE W	ELL LOGS FOR THE CITY OF ROCHESTER, CALL ME WITH	
ANY QUESTIC	NS. THANKS	LYNN 651-484-0198	
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ge 1			

# Appendix D

Well Permits and Well Records



A+P (Landmark Env)

一种十一(	_ Lari		, , , ,	EAININE	COTA D	DEPARTMENT OF HEALTH MINNESOTA UNIQUE WELL AND BORING NO.
VELL OR BORING LOCATION	N			WELL	AND	BORING RECORD 7575.86
ounty Name				Min	nesota	Statutes, Chapter 103I
Olmsted	12- 51-	Hanna Ma	Section No. Fra	ction		WELL/BORING DEPTH (completed)  DATE WORK COMPLETED
		Range No.	-	, no he	1	19 th Feb 7, 2008
200 0220 22	106N				1	DRILLING METHOD
SPS Latitude	degrees	min		conds	1	Cable Tool Driven Dug
OCATION:  Longinde  Louse Number, Street Name, Cit	degrees	min		Fire Number	-34	Auger
221 SW Lat Ave	iy, and zip coc	ನಿನಾಗಿಕಾರ್	er		<u> </u>	DRILLING FLUID WELL HYDROFRACTURED? Yes No
Show example location of well/boring	a in continu de	id with "X"	Sketch man of	f well/boring lo	cation.	water From th. To
PROPERTY OWNER'S NAME/ City of Roches Property owner's mailing addres 201 4th St SE Rochester, MN	E S S S Mile S S MILE S S I different the	ee atta	ached map	iowing propertibilitings, and directions of above.	ection.	Domestic
Kocnester, EN	33304	•				Set between 7 tt. and 19 tt. FITTINGS thread
			Ž.			12 ft. Below Above land surface Date measured 3-18-05
						PUMPING LEVEL (below land surface)
WELL OWNER'S NAME/COM						ft, afterhrs. pumping
City of ROches Well/boring owner's mailing ad-	ster	nt than propert	y owner's address in	ndicated above	e.	WELLHEAD COMPLETION
Well Double of the second of t	/					Pitless/adapter manufacturer   Model     Casing Protection 8
GEOLOGICAL MATERIA	ALS	COLOR	HARDNESS OF MATERIAL	FROM	то	SILLA SAND FORM TO 1. 1/2 Yds. XB  From TO 1. Yds. B  NEAREST KNOWN SOURCE OF CONTAMINATION
top soil	I	brown		0	4	feetdirection
						Well disinfected upon completion? ☐ Yes ☒ No
bedrock		tan		4	19	Not installed Date installed
			1			Manufacturer's name
1					-	Manufacturer's name
						Model NumberVolts
						Length of drop pipeft. Capacity
						Type: Submersible LS. Turbine Reciprocating Jet
						ABANDONED WELLS
						Does property have any not in use and not sealed well(s)? Yes 😾 No .
						VARIANCE
			•			Was a variance granted from the MDH for this well?
				<del></del>	-	WELL CONTRACTOR CERTIFICATION  This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 47. The information contained in this report is true to the best of my knowledge.
	Use a second	l sheet, if need	ed.			The information contained in this report is the to the sect of my discovering.
REMARKS, ELEVATION, SC						Stevens Drilling & Env. Svc. Inc. 2255
						Licensee Business Name  Licensee Business Name  Licensee Business Name
		•				Certified Representative Signature  Licensee Business Name  86654  Certified Rep. No.  Date
1						

Mat White

757506

MINNESOTA DEPARTMENT OF HEALTH WELL OR BORING LOCATION WELL AND BORING RECORD County Name Minnesota Statutes, Chapter 103I Olmsted DATE WORK COMPLETED WELL/BORING DEPTH (completed) Section No. Fraction Range No. Township No. Township Name Feb. 8, 2008 19 NE NW NE 14W 106N Rochester DRILLING METHOD GPS seconds Driven
Rotary Dug minutes \_ degrees \_ Cable Tool LOCATION: ☐ Jetted seconds \_ minutes Auger degrees \_ Longitude \_\_\_ z sonic House Number, Street Name, City, and Zip Code of Well Location or Fire Number WELL HYDROFRACTURED? Yes X No DRILLING FLUID 221 SW 1st Ave, Rochester \_ft. To\_ Sketch map of well/boring location. Showing property lines, roads, buildings, and direction. water Show exact location of well/boring in section grid with "X." ☐ Heating/Cooling USE Monitoring Domestic DPE-2 Environ. Bore Hole ☐ Industry/Commercial Noncommunity PWS Remedial Irrigation Community PWS x DPE Dewatering Elevator HOLE DIAM. Drive Shoe? . Yes X No CASING MATERIAL  $\epsilon_{ op}$  see attached map Threaded Steel ½ Mile ☐ Plestic CASING Diameter Specifications Weight 8 in. to 19 tl. \_\_\_\_ in. to \_\_\_\_\_ ft. \_\_\_\_\_\_lbs./ft. \_\_\_\_ 1 Mile \_\_\_\_\_ft. \_\_\_\_\_lbs./ft. \_\_\_\_\_ PROPERTY OWNER'S NAME/COMPANY NAME OPEN HOLE City of ROchester SCREEN\_ Property owner's mailing address if different than well location address indicated above. Johnson Make \_ From\_ Diam. SS 201 4th St. SE Туре \_\_ 10 \_\_\_\_ Length \_ Slot/Gauze \_ 55904 ROchester, MN \_\_\_ft\_and\_\_\_\_ft\_ FITTINGS\_\_thread Set between Z Measured from Tao STATIC WATER LEVEL 13,41 ft. X Below Above land surface Date measured PUMPING LEVEL (below land surface) WELL OWNER'S NAME/COMPANY NAME \_hrs. pumping\_ City of Rochester WELLHEAD COMPLETION Well/boring owner's mailing address if different than property owner's address indicated above. Model ☐ Pitless/adapter manufacturer

☑ Casing Protection 8<sup>t1</sup> x 4<sup>t</sup> \_\_\_ X 12 in. above grade At-grade (Environmental Well and Boring ONLY) GROUTING INFORMATION Well grouted 

Yes □ No

Grout materials ☑ Neat cement □ Bentonite □ Concrete ☑ Other Necotcoment, From 0 H.5 H. 11/2 Yds. & Bags Silica Sund From 4.5 To 5 ft. 1/2 Yds. A Bags HARDNESS OF TO FROM COLOR GEOLOGICAL MATERIALS \_\_To\_\_\_\_ MATERIAL From NEAREST KNOWN SOURCE OF CONTAMINATION 2 0 \_\_direction \_\_\_ brown feet \_ sand Well disinfected upon completion? Yes X No 2 19 PUMP tan bedrock Not installed Date installed\_\_\_\_\_ Manufacturer's name\_ \_\_\_\_ HP\_\_\_\_\_ Volts\_\_\_\_ Model Number\_\_ \_\_\_\_\_ g.p.m. tt. Capacity\_ Length of drop pipe\_\_\_ Type: Submersible LS. Turbine Reciprocating Jet \_\_\_\_ ABANDONED WELLS Does property have any not in use and not sealed well(s)? Yes 🔀 No Was a variance granted from the MDH for this well? 🛣 Yes 🗌 No TN# 4216 WELL CONTRACTOR CERTIFICATION This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge. Use a second sheet, if needed. REMARKS, ELEVATION, SOURCE OF DATA, etc. 2255 Stevens Drilling & Env. Svc. Inc. Lic. or Reg. No. Licensee Business Name Certified Rep. No. Certified Representative Signature Mat White

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THE WITH PROPERTY PAPERS

MINNESOTA UNIQUE WELL AND BORING NO. MINNESOTA DEPARTMENT OF HEALTH WELL OR BORING LOCATION WELL AND BORING RECORD 757588 County Name Minnesota Statutes, Chapter 103I DATE WORK COMPLETED Olmsted WELL/BORING DEPTH (completed) Fraction Range No. Section No. Township No. Township Name Feb. 7, 2008 16 NE NW NE 14W 106N Rochester DRILLING METHOD GPS Driven
Rotary Dug 🗌 minutes Cable Tool degrees \_ Latitude \_ LOCATION: Jetted Auger Sonic seconds \_\_\_\_ minutes degrees \_ Longitude \_ or Fire Number House Number, Street Name, City, and Zip Code of Well Location WELL HYDROFRACTURED? Yes K No DRILLING FLUID 221 SW 1st Ave, Rochester water ft. To Sketch map of well/boring location. Showing property lines, roads, buildings, and direction. From Show exact location of well/boring in section grid with "X." ☐ Monitoring Heating/Cooling Domestic DPE-3 ☐ Industry/Commercial Environ. Bore Hole Noncommunity PWS Remedial Irrigation Community PWS x DPE Dewatering Elevator HOLE DIAM. Drive Shoe? Yes X No CASING MATERIAL see attached map Threaded Welded X Steel Plastic CASING Diameter Specifications Weight 8½ in. to 16 \_\_\_ ft. \_\_\_\_ lbs./ft. in, to \_\_\_\_\_\_ ft. \_\_\_ lbs./ft. PROPERTY OWNER'S NAME/COMPANY NAME \_lbs./ft. in, to OPEN HOLE City of ROchester Property owner's mailing address if different than well location address indicated above. Johnson From SS 201 4th St. SE 10 Length \_ 55904 Slot/Gauze Rochester, MN \_\_ft. and\_\_16 fi. FITTINGS thread Set between STATIC WATER LEVEL Measured from Grad ft. X Below Above land surface Date measured PUMPING LEVEL (below land surface) WELL OWNER'S NAME/COMPANY NAME hrs. pumping ft after City of Rochester WELLHEAD COMPLETION Well/boring owner's mailing address if different than property owner's address indicated above. ☐ Pitless/adapter manufacturer

☑ Casing Protection 8<sup>11</sup> x 2<sup>1</sup> Model 🛣 12 in, above grade At-grade (Environmental Well and Boring ONLY) GROUTING INFORMATION Yes No Grout materials ☑ Neat cement ☐ Bentonite ☐ Concrete ☑ Other ☐ 1/24 ☐ neatcement From 0 To & 3 it. \_\_ 🗌 Yds. 🛣 Bags 🔼 🗌 Yds. 🗶 Bags From Silica Sand HARDNESS OF TO FROM COLOR GEOLOGICAL MATERIALS \_To\_ MATERIAL NEAREST KNOWN SOURCE OF CONTAMINATION 1.5 0 feet brown sand Well disinfected upon completion? Yes X No 1.5 16 bedrock tan Not installed Date installed\_\_\_\_ Manufacturer's name\_ \_\_\_ HP\_ Model Number\_ \_\_ ft. Capacity\_ Length of drop pipe Type: Submersible L.S. Turbine Reciprocating Jet \_\_\_ ABANDONED WELLS VARIANCE Was a variance granted from the MDH for this well? 😾 Yes 🗌 No TN# 4216 WELL CONTRACTOR CERTIFICATION This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge. Use a second sheet, if needed. REMARKS, ELEVATION, SOURCE OF DATA, etc. Stevens Drilling & Env. Svc. Inc. 2 Licensee Business Name 86654 Certified Rep. No. Certified Representative Signatur Mat White

757588

IMPORTANT - FILE WITH PROPERTY PAPERS

MINNESOTA DEPARTMENT OF HEALTH WELL OR BORING LOCATION WELL AND BORING RECORD 757589 County Name Minnesota Statutes, Chapter 103I **Olmsted** DATE WORK COMPLETED WELL/BORING DEPTH (completed) Section No. Fraction Range No. Township Name Township No. Feb. 9, 2008 17 NE NW NE 2 106N 14W Rochester DRILLING METHOD GPS Dug seconds Cable Tool Driven LOCATION: Jetted Rotary Auger degrees \_ minutes seconds Longitude . sonic or Fire Number X House Number, Street Name, City, and Zip Code of Well Location WELL HYDROFRACTURED? Yes No DRILLING FLUID 221 SW 1st Ave, Rochester water Sketch map of well/boring location. Showing property lines, roads, buildings, and direction. \_ft. To Show exact location of well/boring in section grid with "X." ☐ Heating/Cooling USE Domestic ■ Monitoring DPE-4 Industry/Commercial Environ. Bore Hole ☐ Noncommunity PWS Remedial Irrigation Community PWS X DPE Dewatering Elevator HOLE DIAM. see attached map Drive Shoe? Yes X No CASING MATERIAL Threaded X Steel Plastic CASING Diameter Specifications Weight 8½ in. to\_17 lbs./ft. \_\_\_lbs./ft. PROPERTY OWNER'S NAME/COMPANY NAME \_lbs./ft. OPEN HOLE City of Rochester Property owner's mailing address if different than well location address indicated above. Johnson \_ Diam. \_\_4# From\_ SS 201 4th St SE 10 Length \_ 55904 Slot/Gauze \_ ROchester, MN ft. FITTINGS Set between 5 \_ fl. and\_\_ STATIC WATER LEVEL Measured from C ft. Below Above land surface Date measured\_ PUMPING LEVEL (below land surface) WELL OWNER'S NAME/COMPANY NAME hrs. pumping City of Rochester WELLHEAD COMPLETION Well/boring owner's mailing address if different than property owner's address indicated above. Pitless/adapter manufacturer
Casing Protection 8<sup>11</sup> x 3<sup>1</sup> 12 in. above grade At-grade (Environmental Well and Boring ONLY) GROUTING INFORMATION Well grouted ∑ Yes □ No
Grout materials ∑ Neat cement □ Bentonite □ Concrete ∑ Other ☐ I Ca. Neat Cement From 0 \_\_ 🗌 Yds. 🕱 Bags HARDNESS OF FROM ☐ Yds. ☐ Bags COLOR GEOLOGICAL MATERIALS MATERIAL NEAREST KNOWN SOURCE OF CONTAMINATION 0 2 brown \_\_\_direction \_\_ sand Well disinfected upon completion? Yes 😾 No 2 17 tan Bedrock PUMP Not installed Date installed\_ Manufacturer's name, Model Number\_ \_ft. Capacity\_ Length of drop pipe Type: Submersible LS. Turbine Reciprocating Jet \_\_\_\_ ABANDONED WELLS Does property have any not in use and not sealed well(s)? Yes 🛣 No Was a variance granted from the MDH for this well?  $\pm$  Yes  $\Box$  No TN#  $42\overline{1}6$ WELL CONTRACTOR CERTIFICATION This well was drilled under my supervision and in accordance with Minnesofa Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge. Use a second sheet, if needed. REMARKS, ELEVATION, SOURCE OF DATA, etc. Stevens Drilling & Env. Svc. Inc. Licensee Business Name Certified Representative Signature

757589

IMPORTANT - FILE WITH PROPERTY PAPERS

Mat White

MINNESOTA UNIQUE WELL MINNESOTA DEPARTMENT OF HEALTH WELL OR BORING LOCATION WELL AND BORING RECORD 757590 County Name Minnesota Statutes, Chapter 103I **Olmsted** DATE WORK COMPLETED WELL/BORING DEPTH (completed) Range No. Section No. Fraction Township No. Township Name Feb. 9, 2008 2 NE NW, NE , 106N 14W Rochester DRILLING METHOD seconds Cable Tool Driven [ Dug LOCATION: Auger sonic \_\_ Jetted minutes seconds ☐ Rotary Longitude degrees \_\_\_\_\_ or Fire Number House Number, Street Name, City, and Zip Code of Well Location WELL REGEOFRACTURED? Yes X No DRILLING FLUID 221 SW 1st Ave, Rochester water Sketch map of well/boring location.
Showing property lines, roads, buildings, and direction. Show exact location of well/boring in section grid with "X." ☐ Heating/Cooling USE Monitoring Domestic DPE-5 ☐ Industry/Commercial Environ. Bore Hole Noncommunity PWS Remedial Community PWS Irrigation X. Dewatering Elevator HOLE DIAM. Drive Shoe? Yes X No CASING MATERIAL see attached map ☐ Welded Threaded X Steel Plastic CASING Diameter Weight Specifications 81 in. to 15 ft 5 \_\_\_\_ft. \_\_\_\_\_lbs./ft. \_\_\_\_\_\_ft. \_\_\_\_\_\_lbs./ft. PROPERTY OWNER'S NAME/COMPANY NAME City of Rochester screen Johnson Property owner's mailing address if different than well location address indicated above.  $201\ 4th\ St\ SE$ From Type 55904 Rochester, MN Lenath Slot/Gauze \_\_ ft. FITTINGS\_ thread 15 \_\_\_ ft. and\_ Set between \_\_ STATIC WATER LEVEL Measured from arad \_ft. 🔀 Below 🗌 Above land surface Date measured PUMPING LEVEL (below land surface) WELL OWNER'S NAME/COMPANY NAME \_hrs. pumping City of ROchester WELLHEAD COMPLETION Well/boring owner's mailing address if different than property owner's address indicated above. Pitless/adapter manufacturer

Casing Protection 8<sup>††</sup> x 3 <sup>†</sup> Model 🔀 12 ini, above grade At-grade (Environmental Well and Boring ONLY) GROUTING INFORMATION Well grouted 

Yes □ No

Grout materials □ Neat cement □ Bentonite □ Concrete ☑ Other □ Cancrete ☑ Other Neat Coment, From\_ 2 🗆 Yds. 🗓 Bags HARDNESS OF то FROM COLOR Yds. Bags GEOLOGICAL MATERIALS MATERIAL NEAREST KNOWN SOURCE OF CONTAMINATION 1.5 0 brown sand Well disinfected upon completion? 🗌 Yes 🛣 No 15 PUMP 1.5 tan bedrock Not installed Date installed\_ Manufacturer's name Model Number ft. Capacity Length of drop pipe\_ Type: Submersible LS. Turbine Reciprocating Jet . ABANDONED WELLS Does property have any not in use and not sealed well(s)? 🔲 Yes 🕱 No Was a variance granted from the MDH for this well?  $\overline{x}$  Yes  $\Box$  No TN# 4216WELL CONTRACTOR CERTIFICATION This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge. Use a second sheet, if needed. REMARKS, ELEVATION, SOURCE OF DATA, etc. Stevens Drilling & Env. Svc. Inc. Lic. or Reg. No. Licensee Business Name Certified Rep. No. Certified Representative Signature Mat White

757590

IMPORTANT - FILE WITH PROPERTY PAPERS

MINNESOTA UNIQUE WELL AND BORING NO. MINNESOTA DEPARTMENT OF HEALTH WELL OR BORING LOCATION WELL AND BORING RECORD 757591 County Name Minnesota Statutes, Chapter 103I Olmsted DATE WORK COMPLETED WELL/BORING DEPTH (completed) Section No. Fraction Range No. Township No. Township Name Feb. 10, 2008 17 NE NW, NE , 141 106N Rochester DRILLING METHOD GPS seconds \_ ☐ Driven ☐ Rotary minutes \_ Dug degrees \_ Cable Tool LOCATION: Jetted minutes seconds \_ \_ degrees \_ Auger Longitude \_ House Number, Street Name, City, and Zip Code of Well Location or Fire Number WELL HYDROFRACTURED? Yes X No DRILLING FLUID 221 SW 1st AVe, Rochester water Sketch map of well/boring location. Showing property lines, roads, buildings, and direction. From\_ \_ft. To\_\_ Show exact location of well/boring in section grid with "X." Heating/Cooling USE Monitoring □ Domestic DPE-6 ☐ Industry/Commercial Environ. Bore Hole Noncommunity PWS Remedial Irrigation . Community PWS DPE DPE Dewatering ☐ Elevator HOLE DIAM. Drive Shoe? Yes 🛣 No CASING MATERIAL see attached map Threaded X Steel ☐ Plastic CASING Diameter Specifications Weight 81 in to 17 it it. \_\_\_\_\_lbs./ft. \_\_\_\_ \_\_\_ in. to\_\_ PROPERTY OWNER'S NAME/COMPANY NAME City of Rochester Property owner's mailing address if different than well location address indicated above.  $201~4 \, th~St~SE$ SCREEN Make Johnson - From. SS \_\_ Diam. \_\_ Туре \_ 55904 Rochester, MN 10 Lenoth Slot/Gauze \_ \_\_ft. FITTINGS\_thread Set between \_ Measured from grade STATIC WATER LEVEL ft. Below Above land surface Date measured PUMPING LEVEL (below land surface) WELL OWNER'S NAME/COMPANY NAME hrs. pumping \_ft. after\_ City of Rochester WELLHEAD COMPLETION Well/boring owner's mailing address if different than property owner's address indicated above, Pitless/adapter manufacturer

SC Casing Protection 8" × 3" Model \_\_\_\_ X 12 in. above grade At-grade (Environmental Well and Boring ONLY) GROUTING INFORMATION Well grouted 

Yes □ No

Grout materials 

Neat cement □ Bentonite □ Concrete ♥ Other Silica Sand Neut Cement, From 0 To 84 ft. From 4 12 Yds. A Bags Silica Sand HARDNESS OF FROM TO COLOR \_\_\_ Yds. 🗌 Bags GEOLOGICAL MATERIALS MATERIAL \_To\_\_ From\_\_\_ NEAREST KNOWN SOURCE OF CONTAMINATION 2 0 brown sand \_\_direction \_\_ feet \_ Well disinfected upon completion? Yes 🕱 No 2 17 bedrock tan PUMP Not installed Date installed\_\_\_\_ Manufacturer's name\_ \_\_\_\_\_ HP\_\_\_\_\_ Volts\_\_\_\_ Model Number\_ \_ ft. Capacity\_\_\_ Length of drop pipe\_ Type: Submersible LS. Turbine Reciprocating Jet \_\_\_\_ ABANDONED WELLS Does property have any not in use and not sealed well(s)? Yes 😿 No VARIANCE Was a variance granted from the MDH for this well? 🔣 Yes 🗌 No TN#\_ WELL CONTRACTOR CERTIFICATION This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge. Use a second sheet, if needed. REMARKS, ELEVATION, SOURCE OF DATA, etc. Stevens Drilling & Env. Svc. Inc. 2255 Lic. or Reg. No. Licensee Business Name, Certified Rep. No. Certified Representative Signature

757501

PARTANT DIE WITH PROPERTY PAPERS

Jason Drabek

MINNESOTA UNIQUE WELL AND BORING NO. MINNESOTA DEPARTMENT OF HEALTH WELL OR BORING LOCATION WELL AND BORING RECORD County Name Minnesota Statutes, Chapter 103I 01msted DATE WORK COMPLETED WELL/BORING DEPTH (completed) Fraction Section No. Township No. Range No. Township Name Feb. 8, 2008 NE NW, NE 1/2 2 106N 14W Rochester DRILLING METHOD GPS minutes \_\_ Driven
Rotary □ Dua Cable Tool LOCATION: Auger Jetted seconds minutes \_ Longitude \_ degrees \_ sonic House Number, Street Name, City, and Zip Code of Well Location or Fire Number WELL HYDROFRACTURED? Yes X No DRILLING FLUID 221 SW 1st Ave, Rochester From\_\_\_ water Sketch map of well/boring location. Showing property lines, roads, buildings, and direction. Show exact location of well/boring in section grid with "X." Heating/Cooling USE Domestic DPE-7 ☐ Industry/Commercial Environ. Bore Hole ☐ Noncommunity PWS Remedial Community PWS Irrigation 区 DPE Elevator Dewatering HOLE DIAM. Drive Shoe? 🗌 Yes 🛣 No CASING MATERIAL see attached map ₹ Steel Welded Threaded Plastic CASING Diameter Weight Specifications 81 in. to 16 \_\_\_\_ ft. \_\_\_\_\_lbs./ft. \_ ft. \_\_\_\_\_\_lbs./ft. \_\_\_ PROPERTY OWNER'S NAME/COMPANY NAME in. to OPEN HOLE City of Rochester Property owner's mailing address if different than well location address indicated above. Johnson Make From\_ 201 4th St SE \_SS . Diam. Туре \_ 10 Length 55904 Rochester, MN Slot/Gauze H. FITTINGS thread Set between \_\_ Measured from Q.radl STATIC WATER LEVEL ft. Below Above land surface Date measured PUMPING LEVEL (below land surface) WELL OWNER'S NAME/COMPANY NAME ft. after\_ hrs. pumping City of ROchester WELLHEAD COMPLETION Well/boring owner's malling address if different than property owner's address indicated above. Pitless/adapter manufacturer

Casing Protection 8 x 2 t Model 🗶 12 in. above grade At-grade (Environmental Well and Boring ONLY) GROUTING INFORMATION Neat Coment, From\_ Yds. 🛣 Bags 🛕 🗌 Yds. 🕱 Bags HARDNESS OF MATERIAL TO FROM COLOR GEOLOGICAL MATERIALS From\_ NEAREST KNOWN SOURCE OF CONTAMINATION 2 0 brown \_direction sand Well disinfected upon completion? 🔲 Yes 😿 No 2 16 PUMP tan Bedrock Not installed Date installed\_ Manufacturer's name\_\_\_ Model Number \_ ft. Capacity\_ Length of drop pipe\_ Type: Submersible L.S. Turbine Reciprocating Jet \_\_\_ ABANDONED WELLS Does property have any not in use and not sealed well(s)? Yes X No VARIANCE Was a variance granted from the MDH for this well? 🕏 Yes 🗌 No TN# 4216 WELL CONTRACTOR CERTIFICATION This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge. Use a second sheet, if needed. REMARKS, ELEVATION, SOURCE OF DATA, etc. Stevens Drilling & Env. Svc. Inc. Lic. or Reg. No. Licensee Business Name 86654 Certified Rep. No. Certified Representative Signature

Mat White

757592

IMPORTANT - FILE WITH PROPERTY PAPERS

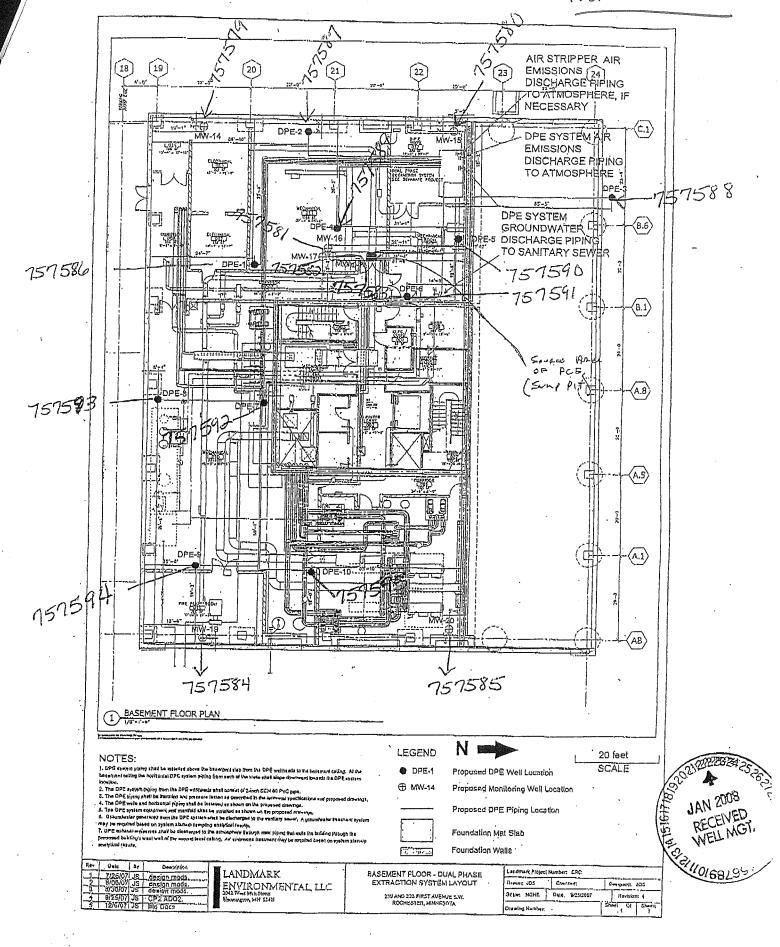
MINNESOTA DEPARTMENT OF HEALTH WELL OR BORING LOCATION WELL AND BORING RECORD 757594 County Name Minnesota Statutes, Chapter 103I Olmsted DATE WORK COMPLETED WELL/BORING DEPTH (completed) Range No. Section No. Fraction Township Name Township No. Feb. 13, 2008 14.5 2 NE NW NE 106N 14W Rochester DRILLING METHOD seconds □ Dug LOCATION: 1.atitude Cable Tool Driven \_ Jetted seconds Rotary minutes Longitude \_\_\_\_ degrees \_\_\_ x sonic WEE HYDROFRACTURED? ☐ Yes X No or Fire Number House Number, Street Name, City, and Zip Code of Well Location DRILLING FLUID 221 SW 1st Ave, Rochester Sketch map of well/boring location. water \_ft. To\_\_ Show exact location of well/boring in section grid with "X." Showing property lines, roads, buildings, and direction. USE Heating/Cooling ☐ Monitoring Domestic DPE-8 ☐ Industry/Commercial -Environ. Bore Hole Noncommunity PWS Remedial ☐ Irrigation Community PWS Dewatering DPE\_DPE Elevator HOLE DIAM. Drive Shoe? 🗌 Yes 🕱 No CASING MATERIAL see attached mpa X Threaded 🗓 Steel Plastic CASING 2.5 Specifications Weight in, to tt. \_\_\_\_\_lbs./it. ~ 1 Mile ft. \_\_\_\_\_lbs./ft. PROPERTY OWNER'S NAME/COMPANY NAME \_\_\_\_lbs./ft. City of ROchester OPEN HOLE Property owner's mailing address if different than well location address indicated above. Johnson From 201 4th St. SE Diam. Type \_\_\_\_ Rochester, MN 55904 Length Set between 2.5 ft. and 14.5 ft. FITTINGS grade STATIC WATER LEVEL Measured from \_ft. Below Above land surface Date measured\_ PUMPING LEVEL (below land surface) WELL OWNER'S NAME/COMPANY NAME hrs, pumping City of Rochester WELLHEAD COMPLETION Well/boring owner's mailing address if different than property owner's address indicated above. Pitless/adapter manufacturer

Casing Protection 8<sup>11</sup> x 1<sup>1</sup> Model \_ 🗓 12 in. above grade At-grade (Environmental Well and Boring ONLY) GROUTING INFORMATION Neat Cement From 0 To 60 115 ☐ Yds. 🔀 Bags 2 Yds. X Bags HARDNESS OF FROM COLOR GEOLOGICAL MATERIALS Yds. Bags MATERIAL NEAREST KNOWN SOURCE OF CONTAMINATION 0 1.5 brown sand direction Well disinfected upon completion? Yes 😾 No 16 1.5 tan bedrock PUMP Not installed Date installed\_\_\_\_\_ ft. Capacity\_ Length of drop pipe Type: Submersible L.S. Turbine Reciprocating Jet ... ABANDONED WELLS Was a variance granted from the MDH for this well? 文 Yes No TN# 4216 WELL CONTRACTOR CERTIFICATION This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge. Use a second sheet, if needed. REMARKS, ELEVATION, SOURCE OF DATA, etc. Stevens Drilling & Env. Svc. Inc. 2255 Lic, or Reg. No. Licensee Business Name Certified Rep. No. Certified Representative Signature

Jason Drabek

757591

IMPORTANT - FILE WITH PROPERTY PAPERS





INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111

Fax: (507) 328-7958

Permit Type:

Well / New

**Permit Number:** 

O08-0021W

Well Type:

Remedial

MN Unique Well#

757594

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

#### WORK AUTHORIZED:

PERMIT TO CONSTRUCT A REMEDIAL WELL FOR THE CITY OF ROCHESTER

### SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

### Licensed Professional:

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS

6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

#### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744

Phone: (507) 328-7111 Fax: (507) 328-7958

Permit Type:

Well / New

**Permit Number:** 

O08-0019W

Well Type:

Remedial

MN Unique Well#

757592

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

### WORK AUTHORIZED:

PERMIT TO CONSTRUCT A REMEDIAL WELL FOR THE CITY OF ROCHESTER

### SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

## Licensed Professional:

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS

6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

#### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE

ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111 Fax: (507) 328-7958

Permit Type:

Well / New

Permit Number:

O08-0020W

Well Type:

Remedial

MN Unique Well#

757593

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

#### WORK AUTHORIZED:

100

PERMIT TO CONSTRUCT A REMEDIAL WELL FOR THE CITY OF ROCHESTER

### SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

## Licensed Professional:

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS

6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

#### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111

Fax: (507) 328-7958

Permit Type:

Well / New

Permit Number:

O08-0018W

Well Type:

Remedial

MN Unique Well#

757591

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

#### WORK AUTHORIZED:

PERMIT TO CONSTRUCT A REMEDIAL WELL FOR THE CITY OF ROCHESTER

### SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

## <u>Licensed Professional:</u>

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS

6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION
2122 Campus Drive SE, Suite 100
Rochester MN 55904-4744
Phone: (507) 328-7111

Phone: (507) 328-7111 Fax: (507) 328-7958

**Permit Type:** 

Well / New

**Permit Number:** 

O08-0017W

Well Type:

Remedial

MN Unique Well#

757590

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

WORK AUTHORIZED:

PERMIT TO CONSTRUCT A REMEDIAL WELL FOR THE CITY OF ROCHESTER

### SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

## Licensed Professional:

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS

6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

#### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111 Fax: (507) 328-7958

Permit Type:

Well / New

Permit Number:

O08-0016W

Well Type:

Remedial

MN Unique Well#

757589

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

#### WORK AUTHORIZED:

PERMIT TO CONTRUCT A REMEDIAL WELL FOR THE CITY OF ROCHESTER

### SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

## Licensed Professional:

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS

6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

#### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111

Phone: (507) 328-7111 Fax: (507) 328-7958

**Permit Type:** 

Well / New

Permit Number:

O08-0015W

Well Type:

Remedial

MN Unique Well#

757588

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

### WORK AUTHORIZED:

Permit to Construct a Remedial Well for the City of Rochester

### SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel #

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

## Licensed Professional:

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING & ENVIRONMENTAL, INC.

MIKE STEVENS 6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

#### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744

Phone: (507) 328-7111 Fax: (507) 328-7958

Permit Type:

Well / New

**Permit Number:** 

O08-0014W

Well Type:

Remedial

MN Unique Well#

757587

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

WORK AUTHORIZED:

SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

<u>Licensed Professional:</u>

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS

6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111 Fax: (507) 328-7958

Permit Type:

Well / New

Permit Number:

O08-0013W

Well Type:

Remedial

MN Unique Well#

757586

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

#### WORK AUTHORIZED:

New Water Well for the City of Rochester

## SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

#### Licensed Professional:

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS

6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

CITY OF ROCHESTER

201 4TH ST SE

ROCHESTER, MN 55904

#### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111

Fax: (507) 328-7958

Permit Type:

Well / New

Permit Number:

O08-0012W

Well Type:

Monitoring

MN Unique Well#

757585

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

WORK AUTHORIZED:

## SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel #

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

### Licensed Professional:

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS

6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

#### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111 Fax: (507) 328-7958

Permit Type:

Well / New

Permit Number:

O08-0011W

Well Type:

Monitoring

MN Unique Well#

757584

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

WORK AUTHORIZED:

## SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/gg/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

#### Licensed Professional:

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS 6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

#### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111 Fax: (507) 328-7958

Permit Type:

Well / New

Permit Number:

O08-0010W

Well Type:

Monitoring

MN Unique Well#

757583

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

WORK AUTHORIZED:

SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Well Owner:

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

Licensed Professional:

Type: WELL CONTRACTOR STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS

6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

Land Owner:

CITY OF ROCHESTER 201 4TH ST SE

ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111 Fax: (507) 328-7958

Permit Type:

Well / New

Permit Number:

O08-0009W

Well Type:

Monitoring

MN Unique Well#

757582

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

WORK AUTHORIZED:

## SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

## Licensed Professional:

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING & ENVIRONMENTAL, INC.

MIKE STEVENS 6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111 Fax: (507) 328-7958

Permit Type:

Well / New

Permit Number:

W8000-80O

Well Type:

Monitoring

MN Unique Well#

757581

Jurisdiction:

Rochester TWP

**Date Issued:** 

02/01/2008

WORK AUTHORIZED:

## SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

## Licensed Professional:

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING & ENVIRONMENTAL, INC.

MIKE STEVENS 6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

#### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111 Fax: (507) 328-7958

Permit Type:

Well / New

Well Type:

Monitoring

Jurisdiction:

Rochester TWP

**Permit Number:** 

MN Unique Well#

Date Issued:

O08-0007W

757580

02/01/2008

### WORK AUTHORIZED:

New monitoring well for city of Rochester

### SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

## Licensed Professional:

Well Owner:

Type: WELL CONTRACTOR

STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS

6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904 CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904



INSPECTIONS DIVISION 2122 Campus Drive SE, Suite 100 Rochester MN 55904-4744 Phone: (507) 328-7111 Fax: (507) 328-7958

•

Permit Type:

Well / New

Permit Number:

O08-0006W

Well Type:

Monitoring

MN Unique Well#

757579

Jurisdiction:

Rochester TWP

Date Issued:

02/01/2008

### WORK AUTHORIZED:

New monitoring well for city of Rochester

### SITE INFORMATION:

Address:

221 SW 1 AVE, ROCHESTER, MN 55902

Plat Name:

ORIGINAL PLAT (CITY OF ROCH) -

Block-Lot:

003

TR/Sec/qq/PIN:

640212017854

Parcel#

017854

QQ/Sec/TWP:

Sect-02 Twp-106 Range-014

## Licensed Professional:

<u> Well Owner:</u>

Type: WELL CONTRACTOR

STEVENS DRILLING &

ENVIRONMENTAL, INC.

MIKE STEVENS 6240 HWY 12 W

MAPLE PLAIN, MN 55359-9810

## CITY OF ROCHESTER

201 4TH ST SE

ROCHESTER, MN 55904

### Land Owner:

CITY OF ROCHESTER 201 4TH ST SE ROCHESTER, MN 55904

No.

757579

County Olmsted Quad Quad ID MINNESOTA DEPARTMENT OF HEALTH

WELL AND

**Entry Date** 01/30/2009 **Update Date** 01/30/2009

BORING RECORD Received Date

			Ullaptel I	VVI	
Well Name CITY OF Township Range Dir		s Elevation ft	Well Depth	Depth Completed	Date Well Completed
106 14 W	2 ABA	Elevation	18 <b>ft</b> .	17.5 <b>ft</b> .	02/12/2008
100 14 W	Z ADA	Method	Drilling Metho	d Vibracore/rotas	sonic
Well Address 221 1ST AV SW ROCHESTER M			vvater	No From Ft. to Ft	tured?  Yes
			Use Monitor we		
<b>Geological</b>   <b>Material</b>   SAND AND	Color Hardne				hoe? ☐ Yes ☑
GRAVEL BEDROCK	TAN	2 18	Casing Diameter	Weight I	Hole Diameter
			2 in. to 7.5 ft.	lbs./ft.	6.25 in. to 18 ft.
			Open Hole fro	m ft. to ft.	
			Screen YES steel	Make JOHNSO	N <b>Type</b> stainless
			Diameter Slo	ot/GauzeLeng	thSet Between
Ì			2	10 10	7.5 ft. and 17.5 ft.
			A A SAN AND A SAN		
			Static Water Le 13.54 ft. from Measured 02/12	Land surface D	ate
				<b>EL (below land s</b> p.n.	•
			Well Head Com Pitless adapter r ☐ Casing Prote	pletion manufacturer ection	Model n. above grade s and Borings ONLY)
NO	REMARKS		Grouting Inforr	<b>nation</b> Well Gro	outed?

			No				
			Grout Material: Grout M Cement		Neat from	o 5.5 ft.	0.25 bags 1 bags
			_feet _	direction		ontaminatio	n Yes ☑
			Pump Manufac number Length o	turer's na _ HP _	me M Volts	Date Installe lodel pacity _g.p.	
			Abandor and not se				ny not in use lo
					ariance gra	inted from th	e MDH for
			<u>Steve</u>	ens Drillir	Certification og and vices, Inc.	<u>2255</u>	DRABEK, JASON
First Bedrock Last Strat	Aquifer Depth to Bedrock	ft.	License	e Busines	s Name	Lic. Or Reg. No.	Name of Driller
County We	II Index Onlin	е	757	579			5/19/2010 E-01205-07

No.

County Olmsted

757580

Quad Quad ID

**MINNESOTA DEPARTMENT OF HEALTH** 

**WELL AND BORING RECORD**  **Entry Date** 

Update Date 01/30/2009

**Received Date** 

***************************************			Name of the last o		
Well Name CITY OF I	ROCHESTER Section Subsections Ele	evation ft.	Well Depth	Depth Completed	Date Well Completed
106 14 W	2 ABA Ele	evation	18 <b>ft</b> .	18 <b>ft</b> .	02/06/2008
100 14 11	Z ADA Me	ethod	Drilling Method	d Vibracore/rotas	sonic
Well Address 221 1ST AV SW ROCHESTER M			<b>Drilling Fluid</b> Water	<b>Well Hydrofrad</b> No From Ft. to Ft	ctured? ☐ Yes ☑ 
			Use Monitor we	ell	
Geological Material SAND		0 2	Casing Type Starbon) Joint The No Above/Below	nreaded Drive S	Shoe? ☐ Yes ☑
BEDROCK	TAN		Casing Diameter	Weight	Hole Diameter
			2 in. to 8 ft.	lbs./ft.	6.5 in. to 18 ft.
			Open Hole from	m ft. to ft.	
		-	Screen YES	Make JOHNSC	N <b>Type</b> stainless
				_	<b>ythSet Between</b> 8 ft. and
			2	10 10	18 ft.
			Static Water Lev		
			13.52 ft.   from  Measured   02/06		ate
		<u> </u>	PUMPING LEVE		urface)
			ft. after hrs.	pumping g.p.r	n.
			Well Head Com Pitless adapter n  ☑ Casing Prote ☐ At-grade (En	nanufacturer ction Y 🗹 12	Model 2 in. above grade Is and Borings ONLY)
NO	REMARKS		Grouting Inform	nation Well Gro	outed? 🗹 Yes 🗆

		ſ	No			
			Grout Material: Other Grout Material Cement	: Neat from	to 6 ft.	0.25 bags 1 bags
			Nearest Known S _feet _direction Well disinfected the No	_type		es 🗹
			and the second s	Volts	del	
			Abandoned Well and not sealed well			
			Variance Was a this well? ☑ Ye	variance gran		MDH for
			Well Contractor Stevens Dril Environmental S	ling and	<u>2255</u>	WHITE, MAT
First Bedrock Last Strat	Aquifer Depth to Bedrock	ft.	License Busin	ess Name	Lic. Or Reg. No.	Name of Driller
County Wel	II Index Online		757580		Printed 5	/19/2010 -01205-07

No.

County Olmsted Quad

757581

Quad ID

**MINNESOTA DEPARTMENT OF** HEALTH

**WELL AND BORING RECORD**  **Entry Date Update Date** 01/30/2009

**Received Date** 

Well Name CITY OF F	ROCHESTER		Well Depth	Depth	Date Well
Township Range Dir S				Completed	Completed
106 14 W		Elevation Method	16 <b>ft</b> .	16 <b>ft.</b>	02/05/2008
		Method	Drilling Metho	d Vibracore/rotas	
Well Address 221 1ST AV SW ROCHESTER M	N		<b>Drilling Fluid</b> Water	<b>Well Hydrofrac</b> No From Ft. to Ft	ctured?    Yes
			<b>Use</b> Monitor w		
Geological Material SAND	BROWN	0 2			Shoe?    Yes
BEDROCK	TAN	2 16	Casing Diameter	Weight I	Hole Diameter
			2 in. to 6 ft.	lbs./ft.	6.25 in. to 16 ft.
			Open Hole fro	m ft. to ft.	Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annua
			Screen YES	Make JOHNSC	N Type stainless
			steel		, , , , , , , , , , , , , , , , , , ,
			Diameter SI	ot/GauzeLeng	thSet Between
			2	10 10	6 ft. and 16 ft.
				nama na na na na na na na na na na na na na	
			Static Water Le		Noto
			11.41 ft. from Measured 03/18		Pate
			The second secon	EL (below land s	urface)
				. pumping g.p.r	
			Well Head Com Pitless adapter ☐ Casing Prote ☑ At-grade (E	manufacturer ection 12	Model in. above grade Is and Borings ONLY)
NO	REMARKS		Grouting Inform	mation Well Gro	outed? ☑ Yes □

			No			
			Grout Material: Grout Material: Cement	: Other (		0.25 1 bags
			Nearest Known S _feet _direction Well disinfected u No	_type		′es ☑
			200 CO. C. C. C. C. C. C. C. C. C. C. C. C. C.	ame Volts	Date Installed Model Capacity _g.p.m	1
and the second s			Abandoned Well and not sealed well	•	roperty have any Yes	
			Variance Was a this well? ✓ Ye	variance g	granted from the No	MDH for
			Well Contractor  Stevens Drill Environmental Se	ing and	2255	WHITE, MAT
First Bedrock Last Strat	Aquifer Depth to Bedrock	ft.	License Busine	ess Name	Lic. Or Reg. No.	Name of Driller
County Well	I Index Onlin		757581	The second secon		5/19/2010 -01205-07

No.

757582

County Olmsted Quad Quad ID

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD Entry Date Update Date 01/30/2009

**Received Date** 

Well Name CITY OF Township Range Dir	ROCHESTER Section Subsections I	Elevation ft.	Well Depth	Depth Completed	Date Well Completed
106 14 W		Elevation	30 <b>ft</b> .	28 <b>ft.</b>	02/12/2008
100 14 00	Z ADA	Method	Drilling Metho	<b>d</b> Vibracore/rota	sonic
Well Address 221 1ST AV SW ROCHESTER N			<b>Drilling Fluid</b> Water	<b>Well Hydrofra</b> No From Ft. to F	ctured? □ Yes ☑ t.
			Use Monitor w	MANAGEMENT	
Geological Material SAND AND	Color Hardnes BROWN		Casing Type S carbon) Joint TI No Above/Belov	hreaded Drive S	/ Shoe? ☐ Yes ☑
GRAVEL BEDROCK	TAN	2 30	Casing Diameter	Weight	Hole Diameter
			2 in. to 23 ft.	lbs./ft.	6.25 in. to 30 ft.
			Open Hole fro	m ft. to ft.	
		S	Screen YES steel	Make JOHNSO	ON <b>Type</b> stainless
			Diameter Slo	ot/GauzeLenç	gthSet Between
			2	10 5	23 ft. and 28 ft.
			Static Water Le 12.56 ft. from Measured 03/18	Land surface [	Date
				<b>EL (below land s</b> pumping g.p.	
			Well Head Com Pitless adapter r ☐ Casing Prote ☑ At-grade (Er	manufacturer ection	Model in. above grade lls and Borings ONLY)
NO	REMARKS		Grouting Inform	<b>nation</b> Well Gr	outed?

			No				
			Grout Material:	Other	from 21.5	to 22 ft.	0.25 bags
			Grout Material: Cement	Neat	from to 2	21.5 ft.	3 bags
			_feet _c	Known Source directiont nfected upon o	уре		n Yes ☑
			number Length of	☐ Not Inst turer's name _ HP _ Volts f drop Pipe _ Material	Me s	odel	
		:	1	ed Wells Do aled well(s)?		•	-
			40	Was a variar  ✓ Yes			
		ı		tractor Certif			
		ļ	i —	ens Drilling an ental Services		<u>2255</u>	<u>DRABEK,</u> <u>JASON</u>
First Bedrock Last Strat	Aquifer Depth to Bedrock	ft.		e Business Na		Lic. Or Reg. No.	Name of Driller
County Wel Report	I Index Onlin	ıe	7575	582			5/19/2010 E-01205-07

No.

County Olmsted

757583

Quad **Quad ID** 

**MINNESOTA DEPARTMENT OF** HEALTH

**WELL AND BORING RECORD**  **Entry Date Update Date** 01/30/2009

**Received Date** 

Well Name CITY OF Township Range Dir	ROCHESTER Section Subsections Elev	ation ft.	Well Depth	Depth Completed	Date Well Completed
106 14 W	2 ABA Elev	ation	61 <b>ft</b> .	61 <b>ft.</b>	02/08/2008
100 14 11	Meth	nod	Drilling Metho	<b>d</b> Vibracore/rota	sonic
Well Address 221 SW AV SW ROCHESTER M			<b>Drilling Fluid</b> Water	<b>Well Hydrofra</b> No From Ft. to F	ctured? □ Yes ☑ 't.
			Use Monitor w	rell	
Geological Material SAND	Color HardnessFr	3 N	<b>.</b>	Steel (black or low hreaded Drive s w ft.	
BEDROCK	TAN 3	61	Casing Diameter	Weight	Hole Diameter
			2 in. to 56 ft.	lbs./ft.	6.25 in. to 61 ft.
		F	Open Hole fro	om ft. to ft.	
			Screen YES teel	Make JOHNSO	DN <b>Type</b> stainless
			Diameter SI	ot/GauzeLenç	gthSet Between
			2	10 5	56 ft. and 61 ft.
		F	Static Water Le	wal	
				ite Measured	
			PUMPING LEVI	EL (below land s	•
		-	ft. after hrs	. pumping g.p.i	m.
			CONTRACTOR OF THE PARTY OF THE	manufacturer ection	Model in. above grade lls and Borings ONLY)
NO	REMARKS		Grouting Inforr No	<b>nation</b> Well Gr	outed? ☑ Yes □

			Grout Material: Grout Material: Cement		from	to 54 ft.	0.25 bags 6 bags
			_feet _c	direction	Source of Cor _type pon completion		∕es ⊌
				turer's na _ HP _	ame Mo	ate Installed odel acity _g.p.m	
			Abandono and not sea		s Does prope (s)? □ Ye	•	
			this well?	✓ Yes		ted from the	MDH for
Finet De Just			Steve	ens Drillin	Certification ing and ervices, Inc.	<u>2255</u>	WHITE, MAT
First Bedrock Last Strat	Aquifer Depth to Bedrock	ft.	Licens	e Busine	ess Name	Lic. Or Reg. No.	Name of Driller
County We Report	II Index Online	е	7575	183			5/19/2010 -01205-07

Minnesota Unique Well

No.

757584

County Olmsted Quad Quad ID

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD Entry Date Update Date 01/30/2009

**Received Date** 

Minnesota Statutes Chapter 103I

						Chapter 1	031		
Well Name CIT				ons Elevation	ft.	Well Depth	Depth Completed	Date V Comple	
•	. W	2	ABA	Elevation		18 <b>ft.</b>	17.5 <b>ft.</b>	02/12/2	800
100 14	· • •	<u></u>		Method		<b>Drilling Metho</b>	d Vibracore/rota	asonic	
Well Addres 221 1ST A' ROCHEST	V SW	V				<b>Orilling Fluid</b> Water	<b>Well Hydrofra</b> No From Ft. to F		Yes ⊌
					U	<b>Use</b> Monitor we	ell		
Geological I BEDROCK	Vlateri		olorHardr AN		ca	<b>Casing Type</b> Si arbon) <b>Joint</b> Th o <b>Above/Belov</b>	readed <b>Drive</b>		′es ⊻
					1	Casing iameter	Weight	Hole Diam	eter
						2 in. to 7.5 ft.	lbs./ft.	6.25 in. to 18 ft.	O .
					1	Open Hole from	m ft. to ft.		***************************************
						Screen YES eel	Make JOHNS	ON <b>Type</b> s	stainless
						Diameter Slo	ot/GauzeLen	gthSet Bet	ween
						2	10 10	7.5 ft 17.5	
					1	Static Water Lev 12.44 ft. from l leasured 03/18/	Land surface [	Date	
						PUMPING LEVE ft. after hrs.	<b>L (below land s</b> pumping g.p.	•	
						Well Head Comp Pitless adapter m ☑ Casing Protection  ☐ At-grade (En	nanufacturer	Model 2 in. above gr lls and Boring	
	NO	REI	MARKS			Grouting Inform	<b>nation</b> Well Gr	outed? 🗹	Yes 🗌

			No				
			Grout Ma Cement Grout Material:		fron	o 5 ft.	1 bags 0.25 bags
			_feet _d	lirection		ontaminatio	n Yes ⊌
				urer's nam HP_ \	ne Ma Volts	Date Installe odel pacity _g.p.	
			Abandone and not sea			erty have ar ′es	ny not in use lo
				Was a va ✓ Yes	-	nted from the	e MDH for
Final Dading d				ns Drilling		<u>2255</u>	DRABEK, JASON
First Bedrock Last Strat	Aquifer Depth to Bedrock	ft.	License	Business	Name	Lic. Or Reg. No.	Name of Driller
County Wel Report	I Index Online	е	7575	84			5/19/2010 E-01205-07

Minnesota Unique Well

No.

County Olmsted

757585

Quad Quad ID

**MINNESOTA DEPARTMENT OF** 

HEALTH

**Entry Date** 

**WELL AND** 

**Update Date** 01/30/2009

**Received Date BORING RECORD** 

Minnesota Statutes Chapter 103I

		The state of the s		
Well Name CITY OF ROCHESTER Township Range Dir Section Subs		Well Depth	Depth Completed	Date Well Completed
106 14 W 2 ABA	Elevation	16 <b>ft</b> .	15.5 <b>ft.</b>	02/12/2008
100 14 W 2 ABA	Method	<b>Drilling Metho</b>	<b>d</b> Vibracore/rota	sonic
<b>Well Address</b> 221 1ST AV SW ROCHESTER MN		<b>Drilling Fluid</b> Water	<b>Well Hydrofra</b> No From Ft. to F	ctured? □ Yes ☑ 't.
		<b>Use</b> Monitor w		
Material SAND BROWN	0 2	Casing Type S carbon) Joint T No Above/Belov	hreaded <b>Drive</b>	v Shoe? ☐ Yes ☑
BEDROCK TAN	2 16	Casing Diameter	Weight	Hole Diameter
		2 in. to 5.5 ft.	lbs./ft.	6.25 in. to 16 ft.
		Open Hole fro	m ft. to ft.	
		Screen YES	Make JOHNS	ON <b>Type</b> stainless
		steel		
		Diameter Sle	ot/GauzeLen	gthSet Between
		2	10 10	5.5 ft. and 15.5 ft.
		Static Water Le 12.11 ft. from Measured 03/18		Date
			<b>EL (below land</b> some some some some some some some some	·
		Well Head Com Pitless adapter ✓ Casing Prote	npletion manufacturer ection Y	Model 2 in. above grade ells and Borings ONLY)
NO REMAR	KS	Grouting Infor	<b>mation</b> Well G	routed? ☑ Yes □

			No			
		ļ	Grout Material: Other Grout Material:		3.5 ft.	0.25 bags 0.5
		(	Cement		3 ft.	bags
			Nearest Known So feetdirection Well disinfected up No	_type		n Yes ☑
			AND THE RESIDENCE OF THE PROPERTY OF THE PROPE	Volts	odel	
			Abandoned Wells and not sealed well(			
			Variance Was a v this well?    ✓ Yes	ariance gran	ted from the	e MDH for
			Well Contractor C Stevens Drillir Environmental Se	ng and	<u>2255</u>	DRABEK, J.
First Bedrock Last Strat	Aquifer Depth to Bedrock	ft.	License Busines		Lic. Or Reg. No.	Name of Driller
County Wel	II Index Onlin		757585			5/19/2010 E-01205-07

# Appendix E

DPE System Documentation

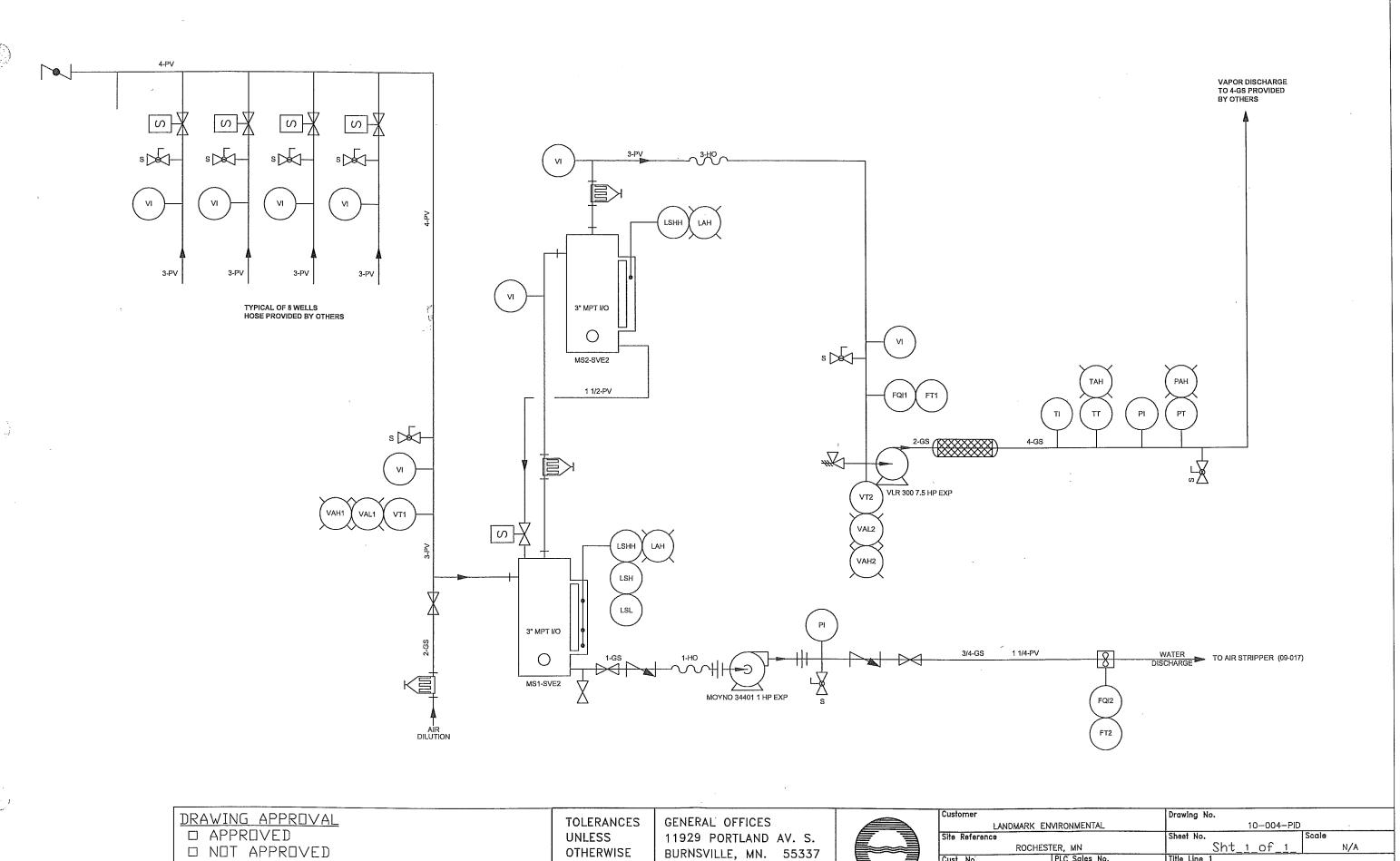
# CONTROLS WET TEST CHECKLIST

10-004 Landmark Env. 219 & 223 First Av. SW Rochester, MN

# 2/1/2010

E1172010									
AI ARM INTERL	ocks	SCH	EDUL	E: X =	DEVIC	E SHU	TDOWN	CONDITION, O=DEVICE ACTIVATION	
A Coresia III TERE CORES		_	/	//	//		4CTOWDE 1-8		NUGO 20 20 20 20 20 20 20 20 20 20 20 20 20
4	-9-1	( )	<del>- ` </del>	<u> </u>		_~_			
Switch Inputs								LAH 'MS HI Level' alarm, manual reset, or auto reset if	
MS 1 or 2 Hi Hi Level Switch	х				0		3 sec	condition clears within 6 minutes	
Air Stripper Hi Hi Level Switch	Х	Х			-		3 sec	LAH 'Stripper Low Level' alarm, manual reset	
Air Stripper Low Airflow Switch	Х	Х					10 sec	FAL 'Stripper Low Airflow' alarm, manual reset	
Floor Sump HI Level Switch	Х	Х		Х			3 sec	FAH 'Floor Sump Hi Level' alarm, manual reset	
Surge Supressor	Х	Х	Х	Х	Х	Х	2 sec	'Surge Supressor' alarm, manual reset	
Gurge Gupresser	-								
Analog Alarms									
High DPE Well Vacuum VT1	Х					<u> </u>	5 sec	VAH1 'Hi Well Vacuum' alarm, manuai reset	
ow DPE Well Vacuum VT1	Х						15 sec	VAL1 'Low Well Vacuum' alarm, manual reset	
digh DPE Vac Pump Inlet Vacuum VT2	Х						5 sec	VAH2 'Hi DPE Pump Vacuum' alarm, manual reset	
Low DPE Vac Pump Inlet Vacuum VT2	Х						15 sec	VAL2 'Low DPE Pump Vacuum' alarm,manual reset	
High DPE Vac Pump Outlet Pressure PT	Х						3 sec	PAH 'Hi DPE Pump Pressure' alarm, manual reset	
High DPE Vac Pump Outlet Temp TT	X						3 sec	TAH 'Hi DPE Pump Temp' alarm, manual reset	
Tigir Dr C Vaa'r amp Sansa 1 - mp									
Motor/Valve Faults									
DPE Vacuum Pump Overload	Х						3 sec	'DPE Pump Motor Fault' alarm, manual reset	
DPE Vacuum Pump Internal Thermal Switch	X						3 sec	'DPE Pump Motor Hi Temp' alarm, manual reset	
MS Transfer Pump Overload	X	X					3 sec	'MS Pump Motor Fault' alarm, manual reset	
Air Stripper Blower Overload	X	X	X				3 sec	'Air Stripper Blower Motor Fault' alarm, manual reset	
Air Stripper Blower Internal Thermal Switch	X	X	X		1		3 sec	'Air Stripper Blower Motor Hi Temp' alarm, manual reset	
Air Stripper Transfer Pump Overload	X	X		Х			3 sec	'Air Stripper Transfer Pump Motor Fault' alarm, manual reset	<del> </del>
All outplet transfer runip Overload	+	1	1	1	1				

To any of Organitary	
Sequence of Operation	
On power up with all switches in 'Auto' and no active alarms:	
DPE Vacuum Pump starts, begins filling Moisture Separator with water and discharging vapor.	
land 7 (4.0) havin evoling encon/close	
Atc Transfer Dump & Air Stripper Blower start when the Moisture Separator High Level Switch Decomes wer.	
MS Salapaid Valve turns on (opens) for 6 minutes when either MS LSHH becomes wet.	
Lais Stripper Transfer Pump turns on when Air Stripper High Level Switch becomes wet.	
MS Transfer Pump stops when the Moisture Separator Low Level Switch becomes dry.	
MS Solegoid Valve turns off (closes) 6 minutes after both MS LSHH become dry.	
Air Stripper Transfer Pump turns off when Air Stripper Low Level Switch becomes dry.	
7 iii Outppor (remoter)	



APPROVED WITH CHANGES.

UNLESS OTHERWISE SPECIFIED

11929 PORTLAND AV. S. BURNSVILLE, MN. 55337 Tel: 952-707-9101 Fax: 952-707-1075



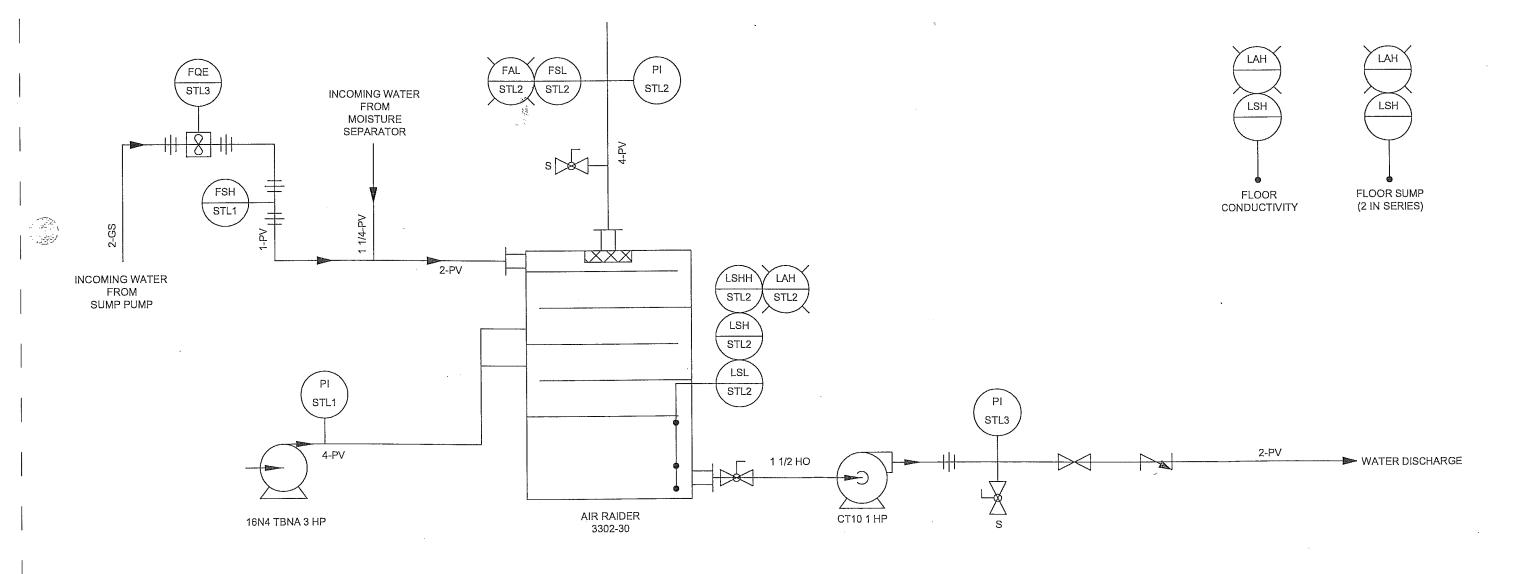
Customer		Drawing No.	
LANDMAR	K ENVIRONMENTAL	10-004-PID	v
Site Reference		Sheet No.	Scale
RO	CHESTER, MN	Sht_1_of_1_	N/A
Cust. No.	PLC Sales No.	Title Line 1	
	10-004	PROCESS & INSTRUMENTATION	TION DIAGRAM
Drawn By	Drawn Date	Title Line 2	
JWW	01/22/10	UPDATED FROM 08	-007

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	Mounted Unless Indicated																																					1408
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															_																_		$\prod$				Title Drawing No. Drawn By Drawn Date	
visia visia																																						
			Dasco 981 Series-2500BL-02B-	30VAC ASHCROFT-K1-7-M02-42-C1- VAC / 0		200		3-300C										RIETSCHLE-VLR-300 - 7.5 HP 3 PHASE EXP			400		WEISS		R17185L483-002-00-6HN31, T 440-385U-S(0-400)F	O'H'O'	ASHCROFT-K1-7-M02-42-C1-										R, MN	
	Der		Series-2	-T-K1-7-M		WATTS-2WGV SOLBERG-FS-31P-200		SOLBERG-CSL-239-300C				ifm efector-EVC002						LE-VLR-3 EXP			SOLBERG-SLCRT400		SELECTION SERVICES WEISS	CCC ZIMICO	483-002-0 1-S(0-400)	JAXXX40	FT-K1-7-	TOL	<u>1</u> 0								STEVENS DRILLING ROCHESTER, MN	08-007
1757	ran Numbe		Dasco 981	SUVAC ASHCROF VAC / 0		WATTS-2' SOLBERG	4793K2	SOLBERG	5314K42		SD-XXXX	ifm efecto						RIETSCH 3 PHASE	07727440	10 CC	SOLBERG		NICOS.	3BM25	R1T185L 440-385U	Ashcroft-	ASHCRO 0 / 30	3612X14	3634X12	A-250-A								
	i ,	SCH 80 PVC		S	BO PVC B GAL	BRONZE V STEEL/POLYES	S	STEEL/POLYE S STER	80 PVC RUBBER							80 PVC	B GAL	SCH 40 GAL		SCH 40 GAL	150 LB GAL STEEL/ABSO RBENT MEDIA	150 LB GAL	SS	2		3R,P8			SCH 40 GA1								Customer Site Reference Site Reference	PLC Sales No.
	Marerial	SCH	SCH SS/B	316 SS	SCH 120 L	STER STER	BRAS	STER	SGH	$\parallel$	_	설	$\frac{1}{1}$			SCH	1501	NO 008-	-	S	STEE STEE O RBE	150	900	200	F 0.3	20- PS/C	316 SS	STEE	Ċ							$\parallel$	Site	급
			SBM LIQUID	VISION 2		ica Prize NIPFLE, Z X CLUSE  toh VALVE, GATE, FNPT, 2", 200 WGG 125 SWP  FILTER, AIR, NLET SILENGER, DILUTION FILTER SILENGER, 2" S  MNPT-135SCPM		E LID-			FOR 3"	FITTING FOR MOUNTING ABOVE SENSOR TO 3" PVC PIPE 4-wire Micro DC connector, nickel/brass coupling nut, 22 AWG, black						each PIPE MIPPEL "2" x.CLOSM VACUUM PUMP WITH VACUUM REQUEST. ZEPHYR MULT-CLAW VACUUM PUMP WITH VACUUM REQUEST. Z" FNPT INLET, ALL PTO 212 AS In Hay! INCLUDES MOUNTED 7.5 HP 3 PHASE EXP 230/460 VAC 3600 RPM 3131°C MOTOR.	FOREST	Y INDEN	1 each REDUCINGCOUPLER, 4" FFT x 2 1/2" FFT 1 each SILENCER, ABSORPTIVE TYPE, MINIMAL PRESSURE DROP, STEDUCES HIGH FREQUENCY NOISE UP TO 304BA, LAYERED ROUND ABSORBETM MEDIA, INLET OR DISCHARGE APPLICATION, UP TO 212F, 15 PSIG, 4" MNPT I/O, 29 5/16"		THEOMOMETED FOLKERIE 2" DIAL 2 17" STEM 1/2" MAIDT CRM		1 each PYROMATION TEMPERATURE SENSOR ASSEMBLY-RTD: + 0.1%, -328-400F PRANGE, 14/** DAMETER X 2" LONG STRAIGHT 316 SS SHEATH WITH 1/2" X 1/2" MINPT HEX STREL HEAD. HEAD: CAST ALUMINUM SOREW COVER. TRANSMITTER: 100 OHM PATHUMU UPSCALE BURNOUT TRANSMITTER, 2 WIRE OHM PATHUMU UPSCALE BURNOUT TRANSMITTER, 2 WIRE	IPT CBM -	IVISION 2											
			4" MNPT C	LASS 1 D		P FILTER S		R, AIR, INLINE, 3" FNPT WITH QUICK RELEASE LID- JFM	1/2" ID		V METER	R TO 3" Proping nut, 2						A PUMP VICER, 2" F ES MOUN C MOTOR	01170 013	3/0 3 100	PRESSU TO 304BA ISCHARG		STEM 1/2	7/1 MI210	ASSEMBL X 2" LON IEX STEE! TRANS!	AL 1/4" MR	LASS 1										outh 37 om	
			2" DIAL 1/	SUCER, C		IG 125 SW	RT	ITH QUICE	1 HOSE, 3		AIR FLOY	E SENSOI brass coup		.			L	V VACUUI TH SILEN V, INCLUE	2010	Y01-107	MINIMAL MINIMAL MOISE UP LLET OR D	15 PSIG	10 1 10 110	AL 2 1/2	SENSOR.  IAMETER  I'' MNPT F  N COVER  INOUT TR	2 1/2" DI	DUCER, (			NPT							11929 Portland Ave. South Burnsville, MN 55337 www.productlevel.com	fax: 952-707-1075
			7" HG 2 1/	E TRANSI	<u> </u>	ENCER, D	MPI F PC	FNPT W	VACUUN		MERIC DI	VG ABOV tor,nickel/				SOCKET,	T x 2" FP	ISE JLTI-CLAV VALVE W 24 in. Hg\	OE WILLIAM	LOSE	4" FPT x IVE TYPE IUENCY N MEDIA, IN 212F, 15 I	5 SCFM.	10 "C 2"C	2	RATURE 3E, 1/4" D 3E, 1/4" D 3E, 1/4" D 3E, 1/2" X 1/2 3M SCREY 2ALE BUR	0-100" WC	RE TRANS	100		NER, 1/4"							929 Portla Burnsville vww.prod	fax: 952
			ER, 3" UUM, 0-30	RESSUR	PTER, 3" EE, 3" x 2'	A X CLO	RBEDSA	INLINE, 3	ER, 3" RUBBER		IES COMF	MOUNTI!	iM length.			EGREE,	ER, 3" FP	PHYR MU PHYR MU S/RELIEF CFM AND 230/460 V	CIAICIA	, 2 1/2" C	OUPLER, BSORPTI IGH FREC ORBENT I	D FOR 57	202	E-Y, 30-3	N TEMPE 30°F RANG 3TH WITH Y ALUMINU IUM UPSC	SSURE, (	PRESSUR	0.5.0. 0.ET	OLET	LING TO								
	cription	.e 10	E ADAPT JGE, VAC	CROFT F	NALE ADA	E NIPPLE VE, GATE TER, AIR, PT-135SCI	MNPT BA	FILTER, AIR, INLINE, 3" FNPT WITH QUICK RELE. 300SCFM	AVY DUTY		TRIS SER	TING FOR	C jacket,			30W, 90 L	L REDUC	E NIPPLE OWER, ZE GULATING TO 212 A ASE EXP ;		E NIPPLE	DUCINGC ENCER, A DUCES H, UND ABSI	NG, RATE	- LONGE	EKINICINIE	ROMATIO % -328-4I 5 SS SHE/ AD: CAST IM PLATIN	UGE, PRE	HCROFT	"THREAD	"THREAL	IRAL COOLING TOWER, 1/4" NPT								PRODUCT LEVEL CONTROL, INC.
	its Des	I PIPE	ch GAL	ASP E	유민	each VAL each FILT	1/4"	ch FILT	each MAI feet HEA				M	+	+	ch ELE	망망	워크 	-	5 G	ch SILL	를 한 한	4200		10.1.0 316 316 919	da GA	ich ASI	ich 1/4	1/2 1/2	ich SP		$\vdash$	+	+	$\parallel$			PRODUC
1_00	er S	Jej	2 each 2 each	2 each.	2 ead 1 ead	- G G G	- 18	1 each	1 ead 5	+	1 each	1 each	+		+	1 1	- 1 - 1	1 ead	- -	8 8	# F			2		1 65	- 68	2 ea	2 ea	2 -			$\parallel$	$\parallel$	$\pm$			-
1	Keterence No.				No.	N 0 0 0												R											ļ									
	Kefere	VI, VT	5	5		DILUTION	U.				FI/FT	F1/FT						BLOWER					F	=	E	₫	F		2	PT PI								



NOTES:

1. INSTALL FSH-STL1 WITH CORD TO ALLOW REMOVAL FOR CLEANING
2. INSTALL FQE-STL3 IN A PIPE WITH UPWARD WATER FLOW



DRAWING APPROVAL	Γ.
D APPROVED	Ι,
D NOT APPROVED	
D APPROVED WITH CHANGES	
DATE	
DAIE BI	ļ

TOLERANCES UNLESS OTHERWISE SPECIFIED GENERAL OFFICES
11929 PORTLAND AV. S.
BURNSVILLE, MN. 55337
Tel: 952-707-9101
Fax: 952-707-1075



Customer		Drawing No.
STE	VENS DRILLING	09-017-PID R2
Site Reference		Sheet No. Scale
MN BI	BUSINESS BLDG	Sht_1_of_1_ N/A
Cust. No.	PLC Sales No.	Title Line 1
•	09-017	PROCESS & INSTRUMENTATION DIAGRAM
Drawn By	Drawn Date	Title Line 2
JWW	06/11/09	FOR AIR STRIPPER REV 2

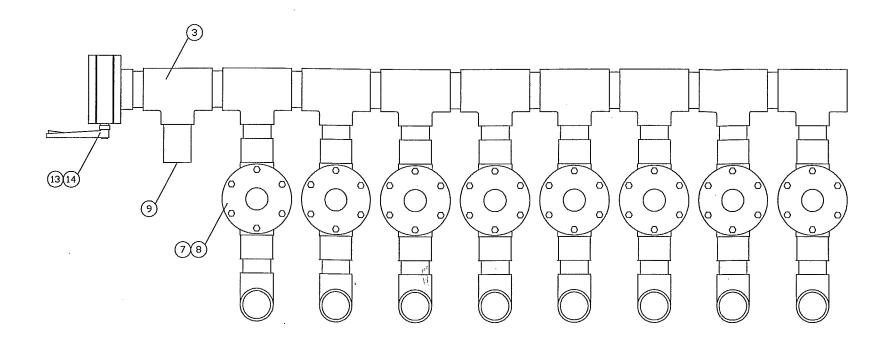
Reference No.	Qty	Units	Description	Material	Part Number			Unless	Iter No.
-	1	each	PRESSURE BLOWER WITH DAMPER, INLET SCREEN, ALUMINUM WHEEL, 4" FLANGED OUTLET, DRAIN, 400 SCFM @ 20" WC @ 1000 FASL, LESS MOTOR		16N4 TBNA, ARR 4, UPWARD DISCHARGE			Indicated	2
	1	each	MOTOR, 3 HP, 3600 RPM, 182T FRAME, 3 PHASE 60 Hz 208- 230/460 VAC, 3.59 FL AMPS AT 460 VAC, UL CLASS 1 DIVISION 1 GROUPS C AND D, TEMPERATURE CODE T4, TEFC, 1.15 SERVICE FACTOR, 104°F AMBIENT TEMPERATURE, 3300 FEET ABOVE SEA LEVEL, CLASS F INSULATION	FRAME	WEG-00336XP3E182T				3
	1	each	FLANGE GASKET, 4"	NEOPRENE					4
	1	each		SCH 80 PVC					5
	5			SCH 80 PVC					6
	2		TEE, SOCKET, 4"	SCH 80 PVC					7
	_ 1	each	END SEAL CAP, 4"		EC4				8
<u> </u>	2	each	GAUGE, PRESSURE, 0-60" WC 2 1/2" DIAL 1/4" MNPT CBM	S	WEISS DG25P3CBM060				9
	8	feet	SMOOTH BORE HOSE, 300 F, 21 PSI MAX, 4.5" I.D.	NEOPRENE / I	5499K252				10
					``				11
	-					 			12
	1	ooob	DIDE MIDDLE 2" v 8" CHT IN HALE BY DLC	SCH 80 PVC		 ·		-	13
	1	each	PIPE NIPPLE, 2" x 8", CUT IN HALF BY PLC ELBOW, 90 DEGREE, SOCKET, 2"	SCH 80 PVC					14 15
	1	each	AIR STRIPPER COVER, 3' x 3', WITH 4" AIR EFFLUENT PIPE		PLC-3300				16
	1,	5461	TANGENT EN OUVER, O A O, WITH T AMELITED ENTITLE	POLYPRO	== ====				١٥
	1	each	30 GPM AIR STRIPPER 1st STAGE, 3' x 3', WITH TABS	NATURAL	PLC-3301-30				17
				POLYPRO					<u> </u>
	1	each	30 GPM AIR STRIPPER 2nd STAGE, 3' x 3', WITH TABS	POLYPRO	PLC-3302-30				18
	1	each	AIR STRIPPER SUMP, 3' x 3', WITH TABS, WITHOUT 2" DRAIN		PLC-3305		ļ		19
			FITTING, WITHOUT LEL CHAMBER	POLYPRO					
	-	<u> </u>	*			 		_	20
	-		DEMOTED MATERIAL TM 4440 MIO ORID ONLED	304 SS				-	21
	1,	each	DEMISTER MATERIALTM-1112 W/O GRID, COILED CONSTRUCTION, 6" x 16" DIAMETER, SEG:1, 150-600 CFM	304 88					22
	12	each	LIFTING HANDLE	GALV	1647A42			<del> </del>	23
	12	eacii	LIFTING NANDLE	GALV	1047A42				24
	3	each	EZ OUT SIDE MOUNTED LEVEL SWITCH, 1 1/4" MPT, 25' CORD	PVC				LOOSE	25
	٦	Cacii	LES OUT SIDE MOUNTED EEVEL SWITCH, 1 1/4 IMI 1, 25 COND	100				LOUSE	20
	3	each	BULKHEAD FITTING, FPT x FPT, 1 1/4"	PVC	60431112		-		26
SL	1		VANE OPERATED FLOW SWITCH, 1" NPTM	PPS	V8			<del> </del>	27
	Ti-	Guoii	THE OF EIGHTEST EOVE OVER 17 TH	110				1	28
									29
									30
			PUMPOUT:						31
	1	each	BULKHEAD FITTING, FPT x FPT, 1 1/2", 16.25" MIN TANK ID	PVC	60431115				32
	1	each	PIPE NIPPLE, 1 1/2" x CLOSE	SCH 80 PVC					33
	1	each	VALVE, BALL, TRUE UNION SOCKET/FNPT, 1 1/2"	PVC/EPDM	CEPEX-21983, 89995150				34
			HOSE BARB TO MPT ADAPTER, 1 1/2"	PVC	23611015				35
	2	feet	HOSE, 1 1/2"ID X 1.81"OD, STANDARD DUTY SUCTION HOSE, CLEAR PVC WITH WHITE HELIX, 100' STANDARD PACKAGE, - 10 - 130°F, 70 PSIG AND 28"HG AT 68°F, 5" MBR	PVC	APACHE-12017006				36
	1	each	PUMP END, CENTRIFUGAL, 1 1/4" I x 1" O, LESS 1 HP 3450 RPM 56 C MOTOR		CT10-FAB				37
	1	each	MOTOR, 1HP, 208-230/460V, 3.5-3.2/1.6 AMPS, 3 PHASE EXP, 3450 RPM, 1.0 SF, 56C FOOTLESS FRAME		LEESON 111943.00				38
	1		PIPE NIPPLE, 1" x CLOSE	SCH 40 GAL					39
	11		UNION, 1"	150 LB GAL					40
	2		PIPE NIPPLE, 1" x 4"	SCH 40 GAL					4
	1		CROSS, 1"	150 LB GAL					42
	2		REDUCER BUSHING, 1" MPT x 1/4" FPT	150 LB GAL	177021604				43
	2		1/4" MNPT SPIGOT SAMPLE PORT		4793K34	 		<u> </u>	44
	[]	each	GAUGE, PRESSURE, 0-60 PSI 2 1/2" DIAL 1/4" MNPT CBM LIQUID FILLED	SS/BRASS	Dasco 980 Series-2500BL-02B 60PSIG				4
	1	each	VALVE, GATE, FNPT, 1", 200 WOG 125 SWP	BRONZE	WATTS-1WGV				4
	1		VALVE, SWING CHECK, FNPT, 1", 200 WOG 125 SWP		WATTS-100GV			<del></del>	4
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		ĺ			GVS-111			LOOSE	50
SH	1		GLOBE VALVE SWITCH, 1" FPT, 1.0-6.0 GPM RANGE, SPDT					ILUUSE	
SH .	1 8				2645K44			LOOSE	
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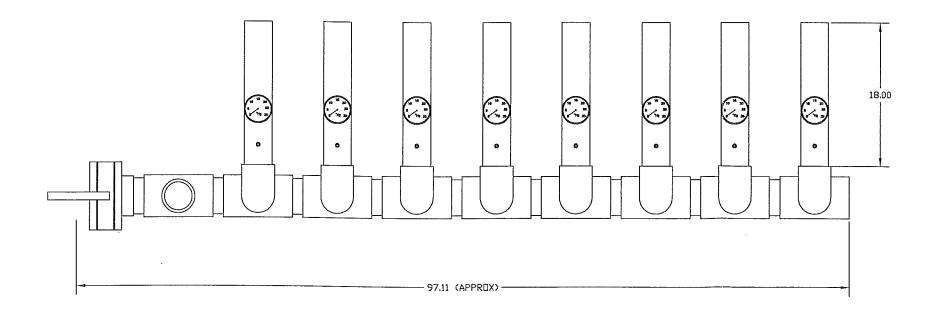
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Site Reference	MN BIO BUSINESS BLDG
Site Reference	ROCHESTER, MN
Customer No.	
PLC Sales No.	09-017

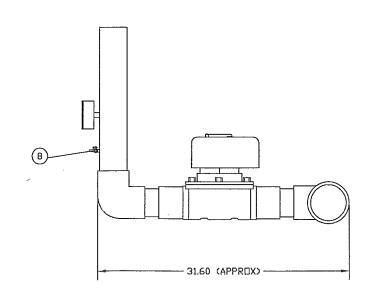
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Drawn By	JWW	Sheet
Drawn Date	05/14/09	of
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- 1. SOME ITEMS ARE NOT SHOWN IN ALL VIEWS 2. MANIFOLD TO BE SHIPPED WITH 3' LEGS ASSEMBLED BUT NOT ATTACHED AT 4' JOINTS TO ALLOW FLEXIBILITY DURING INSTALLATION





	DRAWING	APPROVAL
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- □ APPR□VED
- O NOT APPROVED
- D APPROVED WITH CHANGES

TOLERANCES UNLESS OTHERWISE SPECIFIED

± .25"

GENERAL OFFICES 11929 PORTLAND AV. S. BURNSVILLE, MN. 55337 Tel: 952-707-9101

Fax: 952-707-1075



Customer		Drawing No.	
STÉV	ENS DRILLING	08-007-DPE	MFD
Site Reference		Sheet No.	Scale
ROO	CHESTER, MN	Sht_1_of_2	1:12
Cust. No.	PLC Sales No.	Title Line 1	
	08-007	DPE MANIF	OLD
Drawn By	Drawn Date	Title Line 2	
JWW	09/05/08	·	

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# Dual Phase Extraction System Contingency Plan

MN Bio Business Center 221 lst Avenue SW Rochester, Minnesota

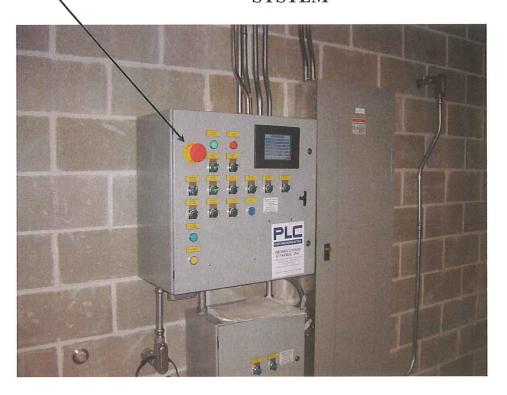
Prepared for City of Rochester

July 2009

# **EMERGENCY STOP**



EMERGENCY STOP BUTTON – PUSH IN EMERGENCY STOP
BUTTON TO SHUT DOWN ALL
COMPONENTS OF THE DPE
SYSTEM



# **EMERGENCY CONTACTS**

## CITY OF ROCHESTER SITE CONTACT

### Gary Neumann

Assistant City Administrator City of Rochester 201 4th Street SE - Room 266 Rochester MN 55904 (507) 328-2007 office 507-951-5332 cell

### CITY OF ROCHESTER ALTERNATE SITE CONTACT

### Doug Knott

Development Administrator 201 4th Street SE - Room 266 Rochester Mn 55904 (507) 328-2003

#### CONSULTANT PROJECT MANAGER

### Jason D. Skramstad, PE

Senior Environmental Engineer Landmark Environmental, LLC 2042 West 98th Street Bloomington, MN 55431 office: (952) 887-9601 x205

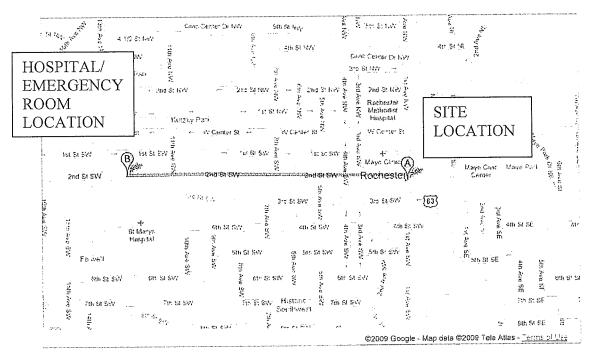
cell: (651) 717-8885

#### CONSULTANT FIELD CONTACT

#### Eric Gabrielson

Environmental Scientist Landmark Environmental, LLC 2042 West 98th Street Bloomington, MN 55431 office: (952) 887-9601 x204 cell: (952) 240-8935

# SAINT MARY'S HOSPITAL MAP – ENTIRE ROUTE



Driving directions to Saint Marys Hospital (507) 255-5123 0.9 mi – about 2 mins

A 221 1st Ave SW Rochester, MN 55902	SITE LOCATION	<b>9</b>
Head north on 1st Ave SW toward 2     Turn left at 2nd St SW	2nd St SW	😭 65 ft 👰 0.9 mi
B Saint Marys Hospital 1216 2nd St Rochester, MN 55902-1970 (507) 255-5123	HOSPITAL/EMERGENCY ROOM LOCATION	<u></u>

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data \$2009 Tele Atlas

# Dual Phase Extraction System Contingency Plan 221 First Avenue S.W. Rochester, Minnesota

## **Table of Contents**

Action Summary—Emergency Reference	]
Action Summary for Excavation and Demolition	
Notion building for Executation and Demonition	
Introduction	-
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Background	4
	,
Site Responsibilities and Coordination	4

# List of Figures

Figure 1 DPE SYSTEM LAYOUT

# **Action Summary—Emergency Reference**

Refer to this action summary in the event of an emergency.

# Action Summary for Dual Phase Extraction System Water/Air Leaks

If water or air leaks from any components of the dual phase extraction ("DPE") system such as DPE wells, overhead piping from wells or sump room, air stripper tank and fittings, moisture separator tank and fittings, transfer pump or fittings, DPE pump or fittings, air stripper blower or fittings, and any associated media transfer piping, are observed in the MN Bio Business Center Building during DPE system operation, the following actions will be taken:

- 1. SHUT DOWN THE DPE SYSTEM BY PRESSING THE EMERGENCY STOP BUTTON AND SECURE THE AREA, AS NECESSARY.
- 2. Contact the City of Rochester and Landmark Environmental, LLC ("Landmark") for further instruction.

City of Rochester: Gary Neumann (507-328-2007 [office], 507-951-5332 [cell]) or Doug Knott

(507-328-2003 [office])

Landmark: Jason Skramstad (651-717-8885 [cell]) or Eric Gabrielsen (952-240-8935

[cell])

3. Refer to the appropriate sections of this DPE Contingency Plan.

#### Introduction

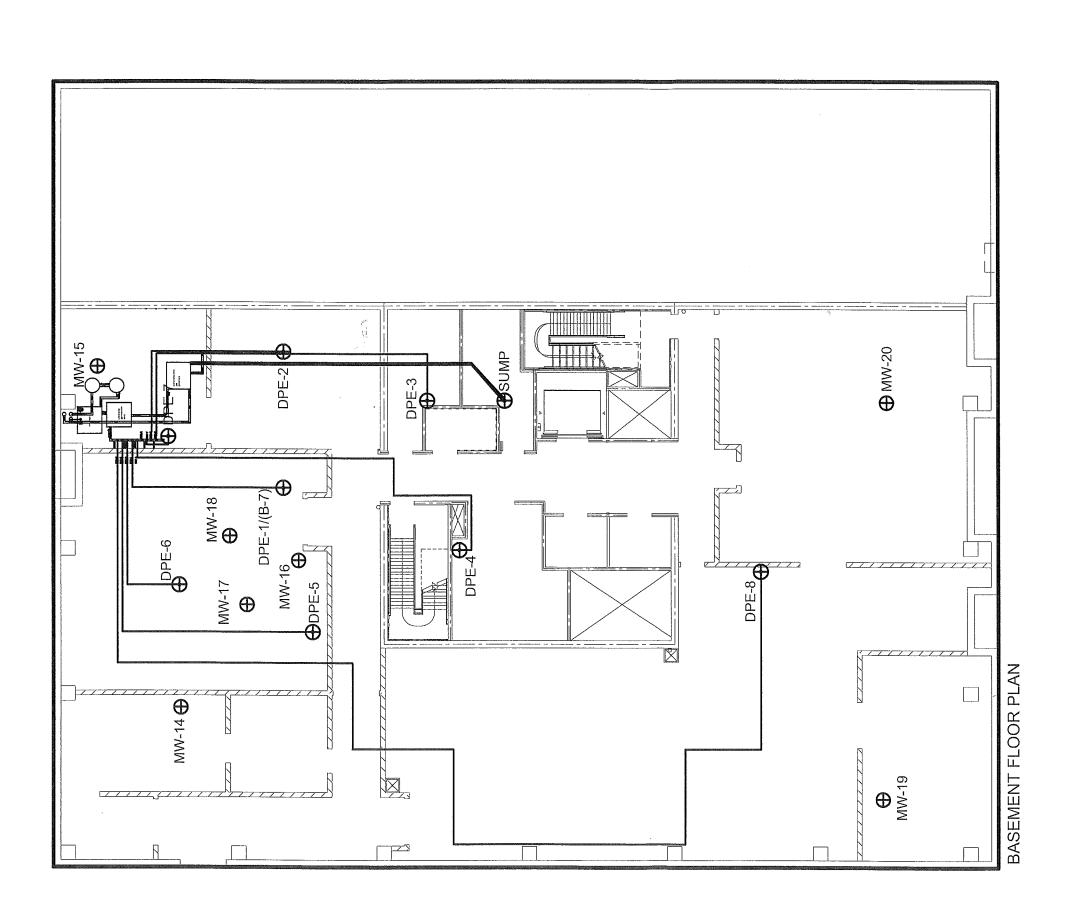
This Dual Phase Extraction System Environmental Contingency Plan ("Contingency Plan") was prepared by Landmark Environmental, LLC ("Landmark") on behalf of the City of Rochester ("the City") for the property located at 221 First Avenue Southwest in Rochester, Minnesota (the "Property"). The purpose of this Contingency Plan is to provide building maintenance personnel a protocol to follow in the event that a water or air leak is observed from the dual phase extraction ("DPE") system located in the basement of the MN Bio Business Center building.

### Background

The Property, which is currently owned by the City, historically supported two dry cleaning facilities. The historical activities likely involved the use of hazardous substances, including the common dry cleaning solvent tetrachoroethylene ("PCE"). The Property is enrolled in the MPCA VIC Program as VP#12560. Based on previous environmental investigations, response actions ("RAs") have been conducted to address reported releases of tetrachloroethene ("PCE") at the Property since 2000. The RAs currently include operation of a DPE system to remediate the groundwater and fractured bedrock at the Property. Elevated concentrations of PCE in the groundwater and subsurface vapor have been detected from operation of the current DPE system. As a result, the DPE system has the potential to leak VOC-impacted groundwater and air; therefore, the City is requiring building maintenance personnel to conduct daily visual inspections of the DPE system.

## Site Responsibilities and Coordination

Building maintenance personnel are responsible for conducting daily inspections of all components of the DPE system for groundwater and subsurface air leaks. DPE system components are shown on Figure 1. If water or air leaks from any components of the DPE system, such as DPE wells, overhead piping from wells or sump room, air stripper tank and fittings, moisture separator tank and fittings, transfer pump or fittings, DPE pump or fittings, air stripper blower or fittings, and any associated media transfer piping, are observed in the MN Bio Business Center Building during DPE system operation, building maintenance personnel shall contact the City and Landmark to report the leak. At the City's request, Landmark shall send field personnel who are safety-trained for hazardous waste operations according to the requirements of 29 CFR 1910.120 to assess the release, take the appropriate actions to clean up the release, and fix the cause of the release.



LEGEND

DPE, Monitoring Well, or Sump Location

 $\oplus$ 

Property Boundary

DPE Piping Location

2

20 feet

SCALE

BASEDRAWINGS PROVIDED BY HGA F:/Projects/CRC/CAD/Groundwater Data/20090128 Well Locations.dwg

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DPE SYSTEM LAYOUT 221 FIRST AVENUE S.W. ROCHESTER, MINNESOTA

FIGURE 1

Landmark Project Number: CRC
Drawn: JDS Checked: JC Scale:

Designed: JDS

Checked: JDS Date: 7/9/2009

Revision: Sheet Of S

# Appendix F

Groundwater Discharge Permit



# ROCHESTER



-Minnesota ---

January 9, 2008

Mr. Doug Knott City of Rochester 201-4th St. SE Rochester, MN 55904 WATER RECLAMATION PLANT 301 37th St. N.W. Rochester, MN 55901 (507) 281-6190 FAX #(507) 287-1389

RE: Industrial Discharge Permit- MN Bio-Business Center

Dear Mr. Knott;

Enclosed please find a modified Industrial Discharge Permit for the MN Bio-Business Center. Please note that the limits specified in table 2.0 include restriction on flow because of the sanitary sewer capacity in this location. Reports are due quarterly according to schedule in section 3.6. If there is enough flow, the WRP will issue a journal voucher quarterly for the quantity charges. Otherwise the quantity will be accumulated until there is enough flow to justify a voucher.

If you have any questions or comments regarding this permit, please feel free to contact me at 281-6190 ext. 3006.

Sincerely,

David C. Lane

**Environmental Coordinator** 

Enc.

CC: Jason Skramstad, Landmark Environmental

# DRAFT PERMIT

### FOR

# INDUSTRIAL USER DISCHARGE TO THE ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 30G-12

This permit is issued to:
City of Rochester.
and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:
1.0 Background Data 2.0 Discharge limits 3.0 Specific Conditions 4.0 General Conditions
This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.
This permit supersedes any previous permit.
Effective Date: day ofJanuary_, 2008
Expiration Date: 31st day of December, 2012
Issued By: Michard Freese, City Engineer Date: /2(08

#### 1.0. BACKGROUND DATA.

Company Name:

City of Rochester

Mailing Address:

201 4th St. SE Rm 266

Rochester, MN 55904

Address of Premises: 219 first Avenue SW

Rochester, MN

Contact Name:

Doug Knott

Title:
Address:

Development Administrator 201 4th St. SE Rm 266

Rochester, MN 55904

Phone:

(507) 328-2900

FAX:

(507) 328-2901

e-mail

dknott@ci.rochester.mn.us

Contact Name:

Jason Skramstad

Title:

Consultant

Address:

Landmark Environmental 2042 W. 98th Street Bloomington, MN 55431

Phone:

(952)887 - 9601

FAX:

(952)887 - 9605

e-mail

jskramstad@landmarkenv.com

#### 1.1. SIC CODE:

- 1.2. **DESCRIPTION OF PREMISES:** Tetrachloroethylene (PCE) contaminated groundwater from the sight of the former Textile Care Building.
- 1.3. **DESCRIPTION OF PROCESS FLOW:** Construction dewatering and contaminated groundwater remediation.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: Construction dewatering will be treated with activated carbon to remove VOC's. Groundwater remediation will separate VOC's with the use of a dual phase extraction system discharged through a condensate tank.

# 2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC	LIMITS	AND MONIT	ORING REQUIRED BY	THIS PERMI	Γ
PARAMETER	DAILY LIMIT	MONTHLY LIMIT	SAMPLING FREQUENCY	METHOD	SAMPLE TYPE
Flow lot 90			Continuous	Totalizer	
Flow 6am-10pm	20gpm		Continuous	Display	
Flow 10pm-6am	100gpm	Activities and the second	Continuous	Display	
TTO mg/l	2.13		Once within 7 Days of start up of duel phase extraction.	EPA 624 7 day turn around.	Grab
TTO mg/l	2.13		Once within 8- 14 days of start up of duel phase extraction	EPA 624 7 day turn around	Grab
TTO mg/l	2.13		Weekly during construction dewatering	EPA 624	Grab
TTO mg/l	2.13		Monthly during operation of duel phase extractio.n	EPA 624	Grab

Abbreviation of terms that may be found in table 2.0

TTO Total Toxic Organics

#### 3.0. SPECIFIC CONDITION

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0. of this permit beginning January 1, 2008 and lasting through December 31, 2012. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

#### 3.2. SURROGATE MONITORING: NA

- **3.3. SAMPLING LOCATION:** Samples collected in compliance with the monitoring requirements specified in Section 2.0. shall be taken at the following location(s): Prior to discharge into the sanitary sewer.
- 3.4. MONTHLY AVERAGES: NA
- 3.5. COMBINED WASTE STREAM FORMULA: NA
- 3.6. REPORTS: A self-monitoring report shall be submitted quarterly according to the following schedule:

Frequency	Period	<u>Due Date</u>
Quarterly	January 1 - March 31 April 1 - June 30 July 1 - September 30 October 1 - December 31	April 30 July 31 October 31 January 31

Reports shall include all required and any other self monitoring of discharges.

3.7 REQUIRED PRETREATMENT: Construction dewatering will be treated with activated carbon to remove VOC's.

#### 4.0. GENERAL CONDITIONS

- 4.1. NOTIFICATION The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self-monitoring.
- **4.2. COMPOSITE SAMPLES** For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected in either:
  - a. A volume consistently proportional to the flow rate at the time of collection.
  - b. A fixed volume taken at equal time intervals within the compositing period.
- All composite samples shall consist of a number of discrete samples equal to one per hour for the compositing period. All samples will be analyzed by a laboratory certified by the Minnesota Department Analytical methods and sample holding times shall of Clean Water Act. Section 304(h) the conform to self-monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. name of the analyst.
- **4.3. DISCHARGE PROHIBITIONS:** In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.
- 4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

- 4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0. of this permit whichever is lesser.
- 4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.
- 4.7. TRANSFERABILITY: This Permit is non-transferable.
- 4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.
- 4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.
- 4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit.
- 4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premise to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.
- 4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.
- **4.14. PENALTY:** In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

- 4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.
- **4.16. MODIFICATION:** The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in his permit at least 30 days prior to the effective date of change.

# Appendix G

DNR Water Appropriations Permit Documentation



# Permit Application for Appropriation of Waters of the State NON-IRRIGATION

<del></del>

NOTICE OF WARNING: All information provided on this form is considered to be public information in accordance with the Minnesota Data Privacies Act (M.S. 15.1611 to 15.1698).

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3. Authorized Agent (If applicable)		4.	Phone Numb	7 - 32	.8 - Zove	į)		
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Purpose (Explain what the water with	Temporary (1 y	ear or less)	Other _					≕
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d. Wetland, lake, or impoundment (	name)		. d. F	Ranga No	14W	<u> </u>		
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D- IMPORTANT: Submit this application and all supporting data to the DNR Office serving you (see back for addresses).

APPLICANT: KEEP A COPY FOR YOUR RECORDS.

# Water Use Report Directions

Enclosed are the 2009 Water Use Report forms for your Minnesota Department of Natural Resources water appropriation permits

Please complete these forms with all requested information and return with the appropriate fee by February 15, 2010, even if no water was used during 2009.

A condition of each water appropriation permit is the monthly measurement and yearly reporting of water use with an approved measuring device to an accuracy of 10%. A monthly water use reporting *Installation Worksheet* is printed for each active installation (well/pump station) for each permit. Fill in the monthly water used in units of whole gallons for each installation. A flow meter, flow rate meter, or timing device is required to measure water use. Only pre-approved alternate methods can be substituted.

The Fee Calculation Worksheet is used to determine your processing fee based on the amount of water used. Add the individual installation totals to make a grand total for each permit. Use the fee rate table to determine the fee and follow the instructions to calculate the amount due.

The Permit Data Verification Form is used to check compliance with the permitted water use volume and to request amendment, transfer, or termination of permits. Note the fee exemptions for amendments and transfers.

## Please note the following items related to water use reporting:

To calculate monthly water use from:

A Flow Meter: Subtract the beginning of the month readings from end of the month readings. Convert the result into gallons for each month. If meter readings are in cubic-feet, multiply by 7.4805 to convert to gallons.

**A Timing Device**: To convert to gallons: multiply the hours pumped times the pump rate (in gallons per minute) times 60 (minutes). [Example:  $150 \text{ hrs } \times 800 \text{ gpm } \times 60 \text{ min/hr} = 7,200,000 \text{ gallons}$ ]

For Irrigators:

Gallons of water per acre = Total Annual Gallons ÷ number of irrigated acres Inches of water per acre = Gallons of water per acre ÷ 27,154

Calculate the inches per acre for each crop type by installation. The total of each individual crop acres times the inches per acre, when converted into gallons, should equal the total water use for each installation.

Pay by check or money order. We are unable to accept payment by cash or credit card.

Make your check or money order payable to MN DNR Waters.

All money received goes to the State of Minnesota General Fund. Return all completed forms with payment to the address on the Fee Calculation Worksheet. You may pay for all permits using one check.

Questions? For questions on water use reporting please call (651)259-5679; for questions on permit amendments, transfers and terminations call (651)259-5678. Send email to wateruse.dnr@state.mn.us. Please include your name, permit number, telephone number, and specific questions when leaving a message. We will return your call or send you the information/forms requested.

Non-Reporting: Permits for which reports and fees are not received by February 15, 2010 are subject to termination. All active permits require reports and fees, except as noted. Permittees that do not submit the required fee will be referred to the Minnesota Department of Revenue for collection and additional collection, enforcement and interest fees will apply.

To suggest changes that you feel would make water use reporting easier or more effective, please send your comments. We welcome your ideas.

2010-0159 2009

# 2009 MN DNR - Annual Report of Water Use: Fee Calculation Worksheet

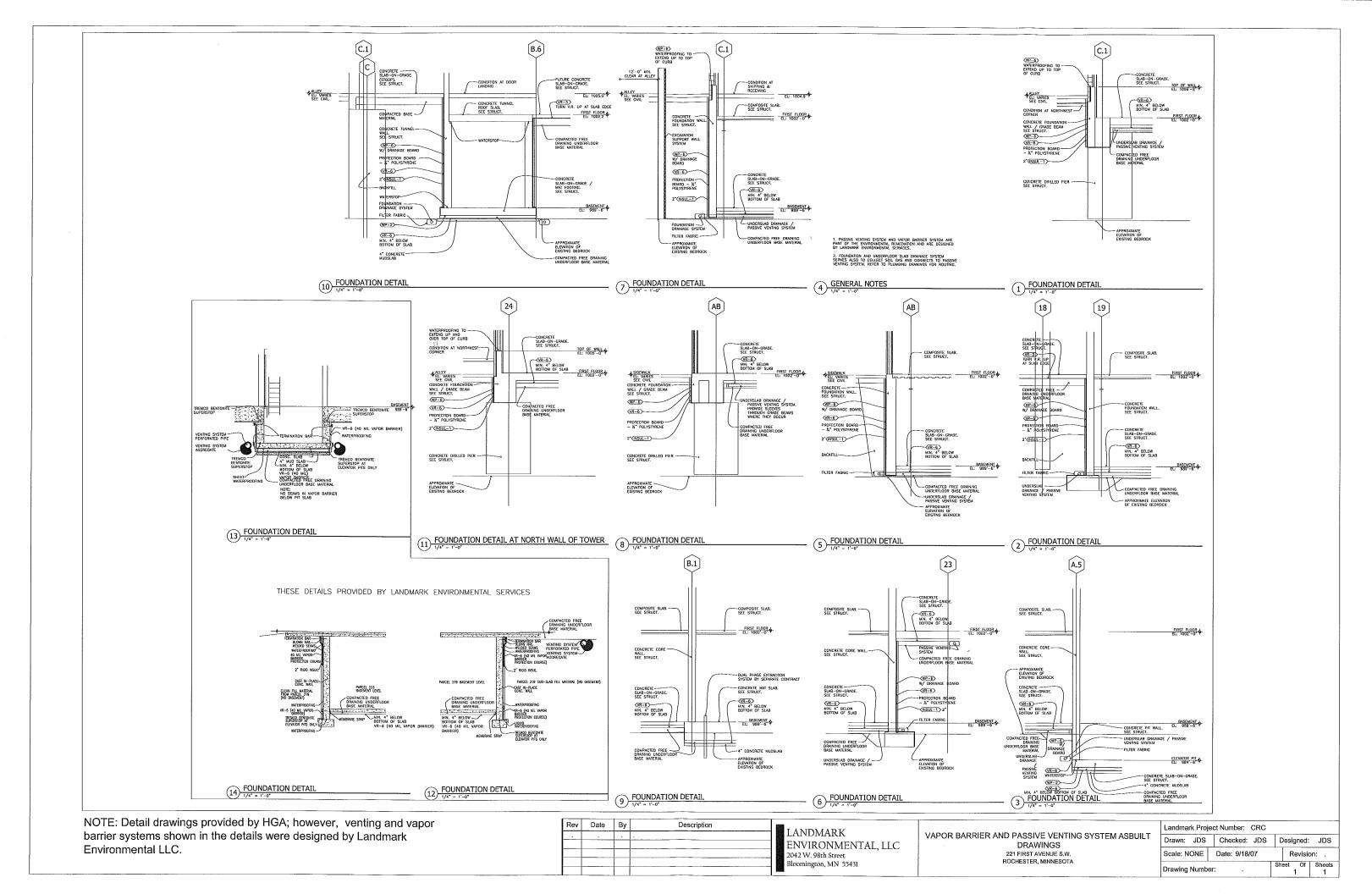
	Permit: 2010-0159 P. Use: Follution Containin	ermitled Volume (MG/Y); 1, rent	<b>1</b>	Permill	ed Installations: 1	
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	Make checks payable to: Mail forms and fees to:	"MN DNR Waters" Minneseta DNR - OMB 500 Lafayette Rd Box 10 St Paul MN 55155	r	Check Amt Check #	\$ 146	pald

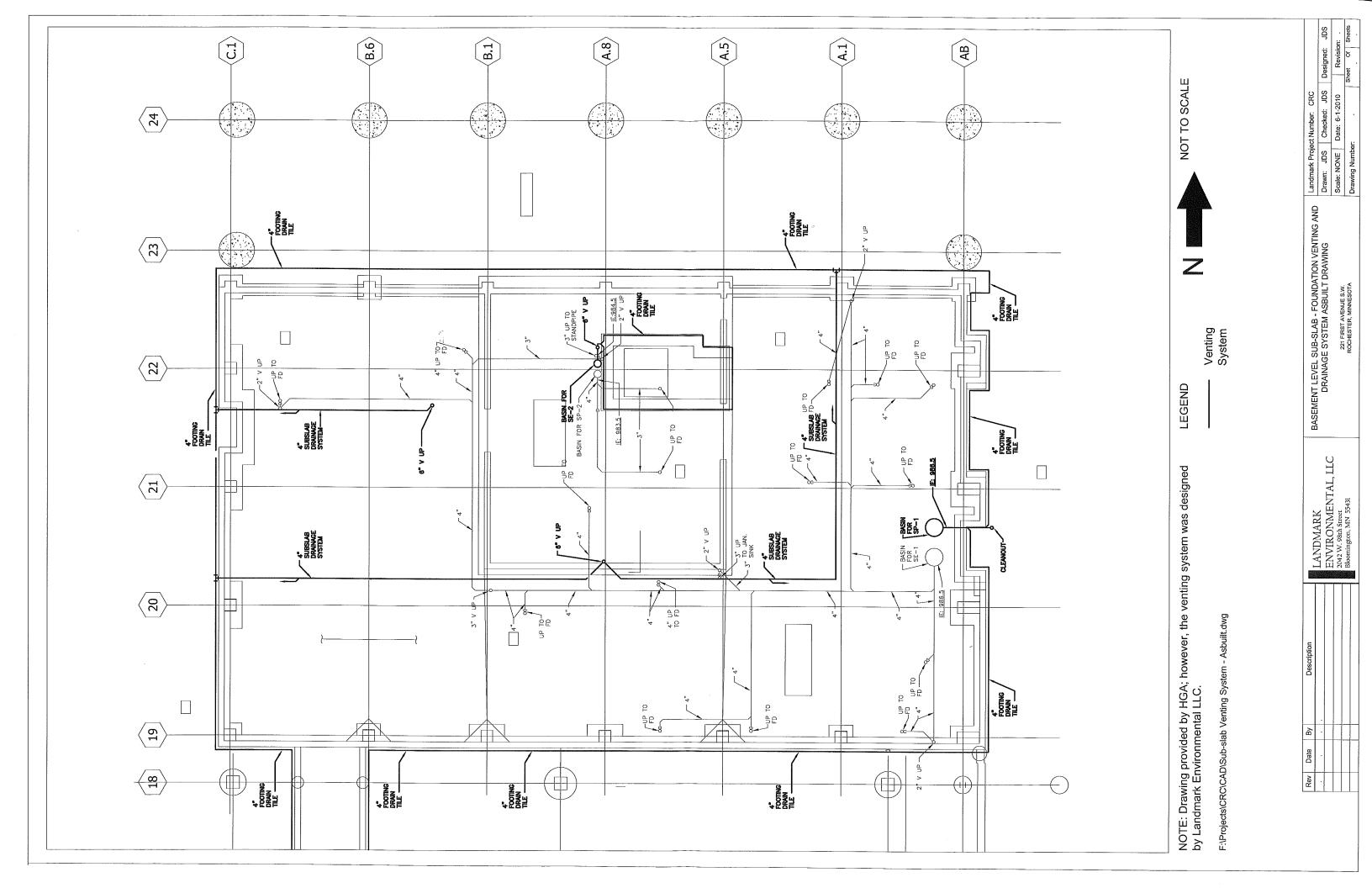
# 2009 MN DNR - Annual Report of Water Use Installation Worksheet

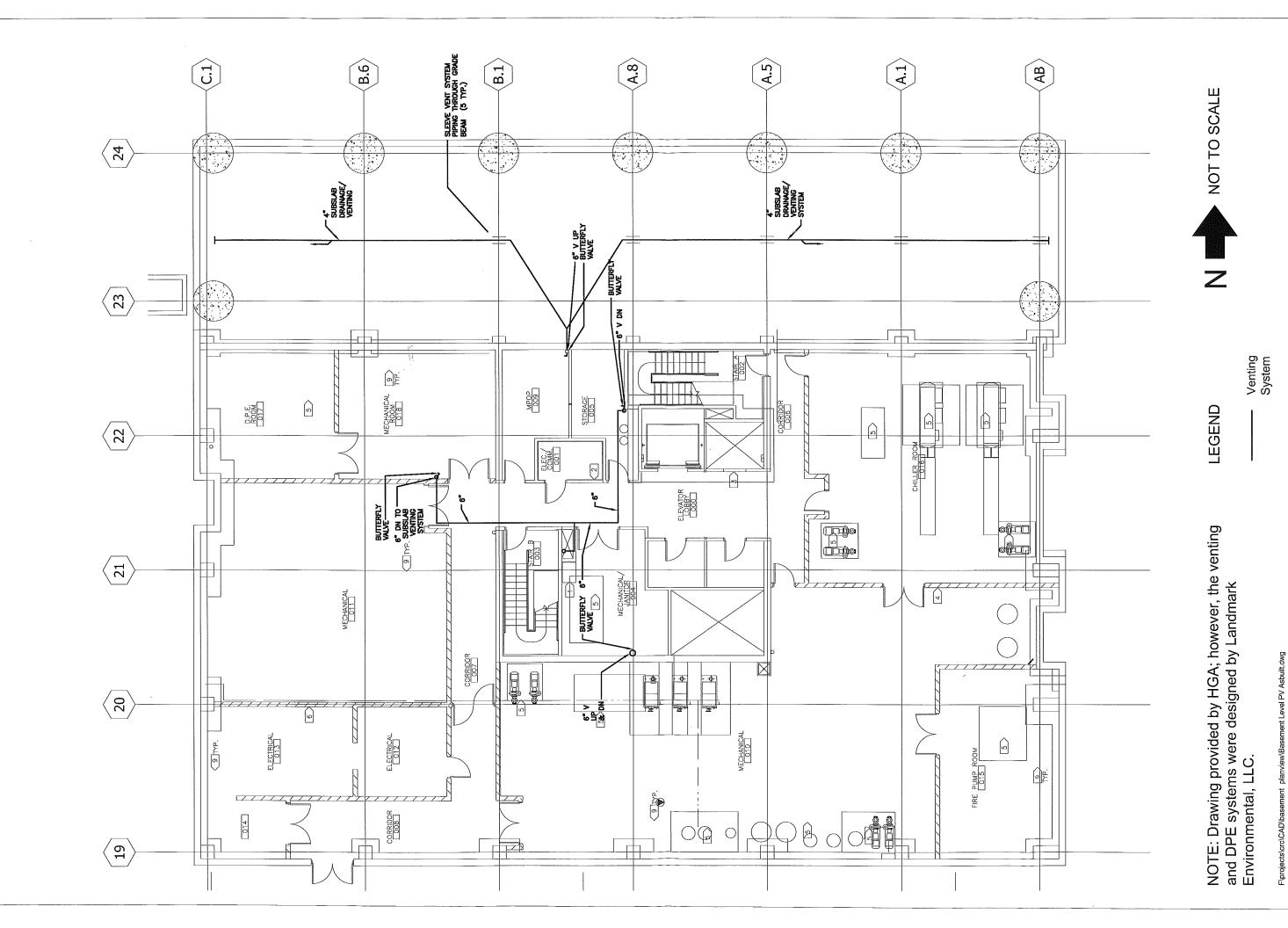
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Ngriature 0	Bug Knott	Date 3 3 1	0 Phone (507) 328.20				

# Appendix H

Vapor Barrier and Passive Venting Systems Asbuilt Drawings







 Landmark Project Number:
 CRC

 Drawn:
 JDS
 Checked:
 JDS
 Designed:
 JDS

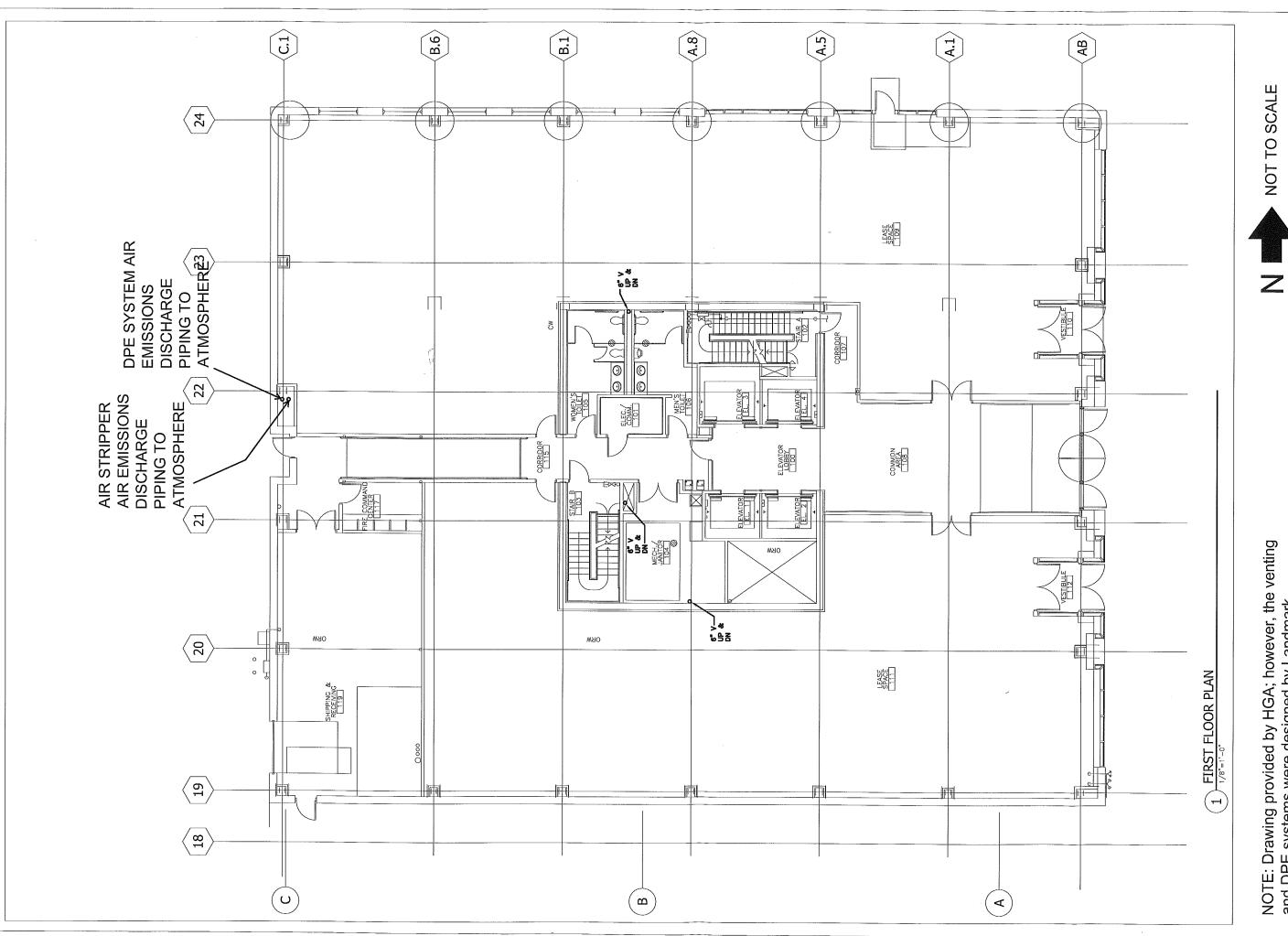
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BASEMENT LEVEL - FOUNDATION VENTING AND DRAINAGE SYSTEM ASBUILT DRAWING

221 FIRST AVENUE S.W. ROCHESTER, MINNESOTA

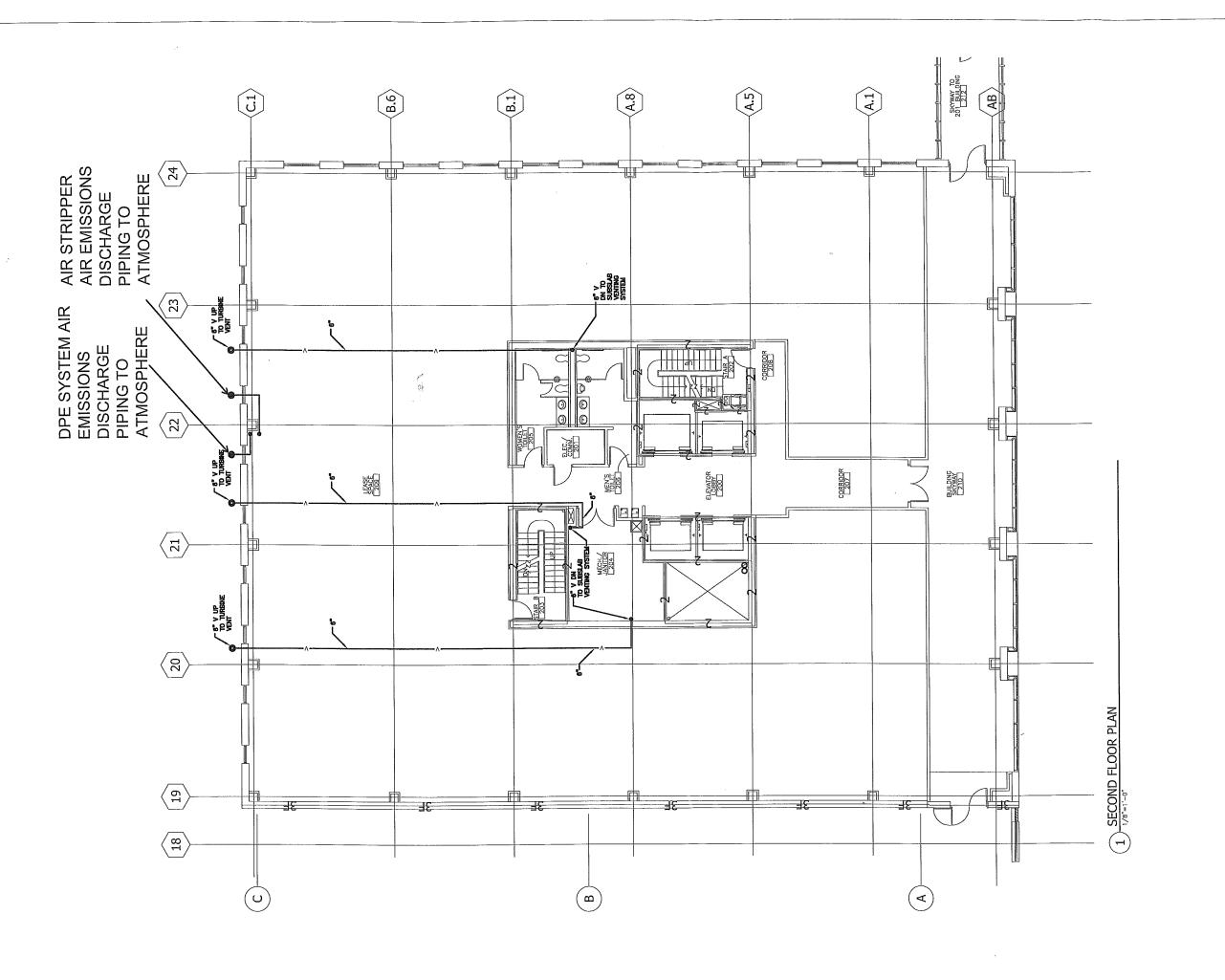
LANDMARK
ENVIRONMENTAL, LLC
2042W. 98th Street
Bloomington, MN 55431



NOTE: Drawing provided by HGA; however, the venting and DPE systems were designed by Landmark Environmental, LLC.

LANDMARK
ENVIRONMENTAL, ILC
2042 W. 98th Street
Bloomington, MN 55431

FIRST LEVEL FOUNDATION VENTING AND DPE SYSTEM ASBUILT DRAWING 221 FIRST AVENUE S.W. ROCHESTER, MINNESOTA



NOTE: Drawing provided by HGA; however, the venting and DPE systems were designed by Landmark Environmental, LLC.

LEGEND

Venting And DPE System Piping

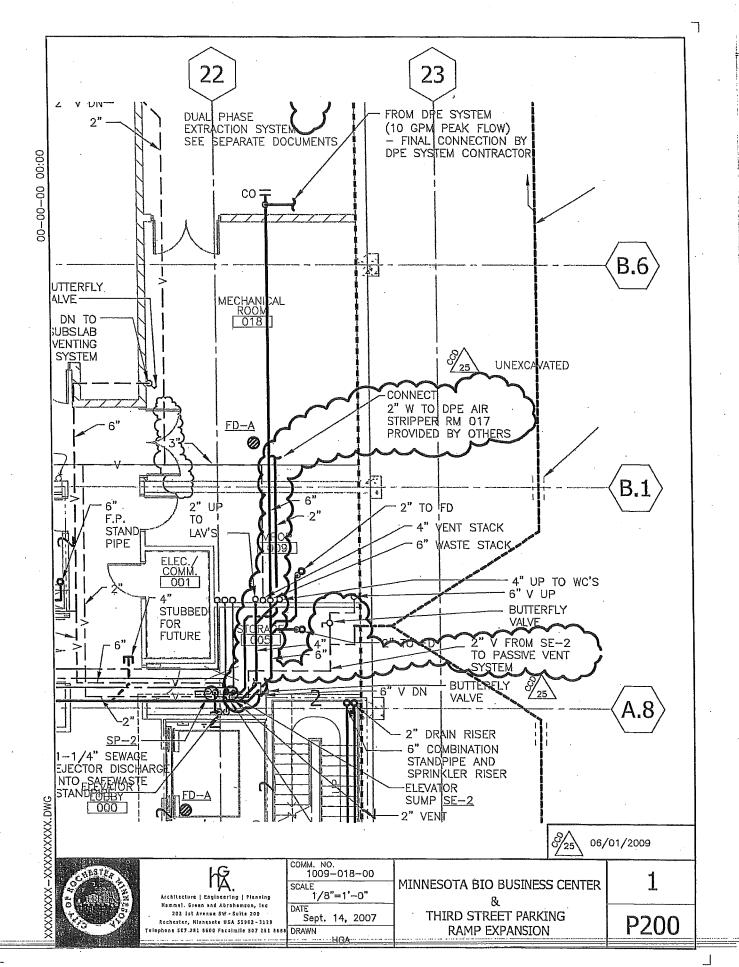
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LANDMARK
ENVIRONMENTAL, LLC
2042 W. 98th Street
Bloomington, MN 55431

SECOND FLOOR - FOUNDATION VENTING AND DPE SYSTEM ASBUILT DRAWING

221 FIRST AVENUE S.W. ROCHESTER, MINNESOTA

Designed:
Revision: 00 Landmark Project Number: CRC
Drawn: JDS Checked: .
Scale: Date: 6-1-2010



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# Appendix I

Sub-slab Venting System Monitoring Plan

# Venting System Operation and Maintenance Plan

219 and 223 First Avenue S.W. Rochester, Minnesota 55902

Prepared for City of Rochester

September 2007

#### Venting System Operation And Maintenance Plan

This Venting System Operation and Maintenance Plan (O&M Plan) describes the monitoring that will be conducted for remedial verification and long-term monitoring after the dual phase extraction system is decommissioned and Response Actions (RAs) are completed at 219 and 223 First Avenue S.W., Rochester, Minnesota ("the Property"). The purpose of this Operation and Maintenance Plan (O&M Plan) is to address the following: 1.) the air monitoring procedures; 2.) the performance of the passive venting system; and 3.) the criteria for upgrading the passive system to an active system. The procedures outlined in this O&M Plan will be implemented as part of the Voluntary Response Action Plan ("VRAP") previously submitted to the MPCA for review and approval under separate cover.

Air monitoring of the venting system will be conducted quarterly by Landmark Environmental (Landmark) for a minimum of two years following completion of the RAs. Quarterly air monitoring reports will be submitted to the MPCA on an annual basis following completion of the RAs. Air monitoring locations will include the 4 indoor suction points, which are located in the basement level of the building and designated SP-1 through SP-4, the 3 exhaust points designated R-1 through R-3 and located outside the west side of the building on the second level.

Air monitoring of organic vapors will be conducted during the long-term monitoring period. The air monitoring will involve the use of field equipment that provides a direct readout of the results. The sampling equipment to be used to measure organic vapors will be a PID (with 11.7 eV bulb). Vacuum and differential pressure measurements will be made with various equipment including magnehelic gauges, electronic digital manometer, and a digital thermo-anemometer. Vacuum and differential pressure data will be collected to determine the quantity and direction of air flow through the venting system riser piping. The air flow through the riser piping will also be evaluated quantitatively by documenting whether or not the rotary wind turbines on the venting system exhaust stacks are moving air through them. Weather data will also be collected during each monitoring event including; temperature, barometric pressure, dew point, wind speed and wind direction. Monitoring procedures are described in the indoor air monitoring standard operating procedures ("SOPs") included in Attachment 1.

Quantitative and qualitative data collected will be evaluated to determine the effectiveness of the rotary wind turbines to maintain airflow from the subsurface to the atmosphere. Quantitatively, the effectiveness of the rotary wind turbines on the passive venting system can be determined just by verifying if turbine is spinning or not. If the turbine is spinning, air is being evacuated from the subsurface of the building through the exhaust stack. If the turbine is not spinning, the monitoring data will have to be evaluated to determine if the passive venting system is operating effectively or not. Vacuum readings and differential pressure may be used to determine flow rates and direction if there is enough air flow through the pipes to obtain accurate field readings. Another way to verify that the passive venting system is working is to detect organic vapors at the venting system exhaust stacks. In-line fans will be installed in the venting system riser pipes for "active" service mode if evaluation of the quantitative and qualitative data collected indicates the passive venting system with the rotary wind turbines is not working.

# Attachment 1 Standard Operating Procedures

#### **SOPs For Venting System Air Monitoring**

Monitoring post-construction of the interior office space of the Building will include sampling for airborne concentrations of methane, hydrogen sulfide, organic vapors, carbon monoxide and oxygen. The results of the sampling will be used to measure the effectiveness of the sub-slab depressurization system.

The depressurization system monitoring will be conducted by Landmark after the post construction/remodeling is completed. The sampling equipment used to measure methane will be an Industrial Scientific MDU420 dual range methane monitor. Carbon monoxide, hydrogen sulfide, and oxygen levels will be measured using a Rae Systems MultiRae Plus four gas monitor. The sampling equipment to be used to measure organic vapors will be a PID (with 11.7 eV bulb). Vacuum measurements will be made with various equipment including; magnehelic gauges, electronic digital manometer, and a digital thermoanemometer. Weather data will be collected at the Property and may be supplemented with local media information. During each monitoring event the temperature, barometric pressure, dew points, wind speed and wind direction will be collected.

The air monitoring will involve the use of field equipment that provides a direct readout of the results. The results from the air monitoring will be used for direct sampling activities and to evaluating potential exposure or unsafe situations during construction and RA implementation activities.

The main objectives for air monitoring are to:

- 1. Identify and quantify airborne contaminants;
- 2. Evaluate the potential risk posed by the presence of airborne contaminants;
- 3. Track changes in airborne contaminants that occur during seasonal fluctuations;

The frequency of monitoring during the post construction/remodeling will be quarterly from the third quarter of 2007 through the second quarter of 2008. At a minimum, monitoring will be performed during the fall, winter, spring and summer months. Unscheduled monitoring will be conducted if conditions change at the Property or if AAA request monitoring at specific times.

The monitoring activities will be conducted in accordance with Landmark's SOPs. The SOPs were developed based on Section 8.0 (Monitoring and Sampling) of the MPCA's Risk Based Site Characterization and Sampling Guidance (Internal Review Draft, August 29, 1997).

#### **Methane Monitoring**

The following procedure will be used for methane gas monitoring with the Industrial Scientific MDU420 dual range methane monitor:

1. The calibration of this monitor will be checked in the field to determine if recalibration is required. This monitor utilizes an automatic calibration system that has the ability to detect when calibration is necessary. If necessary, the monitor will be calibrated in the field per the manufacturer's instructions.

2. This monitor provides direct readings of methane and will be used to collect data in locations discussed in the VRAP.

#### Oxygen, Hydrogen Sulfide, and Carbon Monoxide Monitoring

The following procedure will be used for oxygen, hydrogen sulfide, and carbon monoxide gas monitoring with the Rae Systems MultiRae Plus four gas monitor:

- 1. This monitor will be calibrated no less than every 30 days, or if it does not pass a fresh air reading, or if it does not pass a field verification. The sensors in this monitor will be calibrated per the manufacturer's instructions which consist of a two step process as using fresh air and span gas.
- 2. This monitor provides direct readings of oxygen, hydrogen sulfide, and carbon monoxide and will be used to collect data in locations discussed in the VRAP.

#### **Organic Vapor Monitoring**

The following procedure will be used for organic vapor monitoring with a PID (with 11.7 eV bulb):

- 1. This monitor will be calibrated in the field daily per the manufacturer's instructions which consist of a two step process as using fresh air and span gas.
- 2. This monitor provides direct readings of organic vapors and will be used to collect data in locations discussed in the VRAP.

# Appendix J

Elevator Pit Draintile Sump Documentation

#### Jason Skramstad

From:

Dave Thiel [DThiel@hga.com]

Sent:

Thursday, June 03, 2010 4:07 PM

To:

Jason Skramstad

Cc:

Knott, Doug; David Manns; Mount, Gale; Roger Nelson

Subject:

RE: elevator pit

Attachments:

City of Rochester-Minnesota Bio Business Center

Jason,

Attached is the June 1, 2009 letter that was sent by HGA to Gale Mount with Building Safety regarding the sump pumps.

As you may recall, the final Certificate of Occupancy was not being issued pending the resolution of the sump pump issue. Based on the testing documentation provided by Landmark Environmental, our letter documented that the explosion-proof motors and intrinsically-safe wiring were not required. We did note that the basin cover should be modified to a sealed type, the pump discharge should be routed to the DPE system and the basin vent should be rerouted to the building's "passive" vent system. These changes were incorporated into the sump pump system.

The issuing of the final Certificate of Occupancy served as the documentation that the recommended changes were accepted by Building Safety.

Please contact me if you have any questions.

#### Dave Thiel PE, LEED AP

Senior Associate

#### **HGA** Architects and Engineers

202 1st Avenue SW, Suite 200, Rochester, MN 55902 Direct 507.281.8616 | Fax 507.281.8688

dthiel@hga.com

Please consider the environment before printing this e-mail.

From: Jason Skramstad [mailto:jskramstad@landmarkenv.com]

**Sent:** Thursday, May 20, 2010 3:35 PM

To: Dave Thiel

**Cc:** David Manns; Knott, Doug **Subject:** RE: elevator pit

Hello Dave,

Now that all of the DPE system modifications have been completed, I am finishing up an implementation report summarizing the details of the DPE, vapor barrier, and passive venting systems installation at the MN Bio Business Center. As referenced in the email below in yellow highlights, I am trying to track down the documentation of your conversation with Gayle at Building Safety confirming that explosion proof motors and cover for the elevator sump pit are not required. I have been through my email archives and hard copy corresspondence files and can't find anything. I have to provide backup documentation to the MPCA showing we didn't have to install the explosion proof pumps, cover, etc. Will you please email me the documentation of your conversation with Gayle which confirms we did not need to install explosion proof motors and cover?

I was on site on June 1, 2009, and monitored the elevator pit drain tile sump for explosive gases. No explosive gasses were detected. My field book says I left voice mail messages for you and Doug Knott with the results.

Let me know if you have any questions, I know this was a long time ago.

Thanks.

Jason

From: Knott, Doug [mailto:dknott@rochestermn.gov]

Sent: Monday, June 01, 2009 8:59 AM

To: Neumann, Gary

Cc: David Manns; Jason Skramstad; Dave Thiel

Subject: elevator pit

I spoke with Dave Thiel this morning. This is a recap of the resolution of the elevator pit situation as I understand it. Jason will be in Rochester this morning for air quality monitoring. If there are any issues he will let Thiel and the City know. After monitoring results are available Dave will contact Gayle at Building Safety to confirm we do not need explosion proof motors and cover. This discussion will be documented in writing. HGA will issue a CCD to A-P for the work. The piping work should be complete in a matter of several days. The sealed basin cover may take up to a week to acquire and install. If I have missed anything let me know. Doug

Doug Knott Development Administrator 201 4th Streeet SE - Room 266 Rochester Mn 55904 (507) 328-2003



#### Architecture | Engineering | Planning

June 1, 2009

WRITER'S DIRECT DIAL 507-281-8616

Gale Mount Chief Plumbing Inspector City of Rochester Building Safety Department 2122 Campus Drive Southeast, Suite 300 Rochester, Minnesota 55904

Re:

Minnesota Bio Business Center Elevator Sump Pump Piping HGA Commission Number 1009-018-00

#### Dear Gale:

Per your request, this letter is to document whether or not the elevator sump pump should be provided with explosion-proof motor(s) and intrinsically-safe wiring. Based on our analysis, the minute amounts of potentially combustible materials do not present any sort of flammability hazard and do not require changes to the existing sump pump's motors or wiring. Changes to the sump installation should be limited to the rerouting of the discharge piping to the Dual-Phase Extraction (DPE) system for treatment, modification of the basin venting to connect to the building below-floor "passive" vent system and providing a sealed basin cover.

We have reviewed the elevator sump pump water sample test results that Landmark Environmental previously submitted to Building Safety (attached). The primary contaminant in the water sample, PCE, is not a combustible substance. The four contaminants in the sample that are combustible in a pure liquid form are of the noted concentrations:

- Contaminant A: 2-butanone (67 ug/L)
- Contaminant B: cis-1,2-dichloroethene (46 ug/L)
- Contaminant C: Styrene (25 ug/L)
- Contaminant D: 1,1,1-trichloroethane (40 ug/L)

Based on a review of Section 500 of the NEC, which in turn references NFPA 497, the properties for Flash Point, Auto-Ignition Temperature, Lower Explosive Limit and Upper Explosive Limit were determined. A substance is considered combustible if the Flash Point is greater or equal to 100 degrees F and flammable is less than 100 degrees F.

• Flash Point (FP) is the minimum temperature (degrees F) at which a pure liquid gives off a vapor in sufficient concentration to form an ignitable mixture.

Hammel, Green and Abrahamson, Inc. HGA Architects and Engineers, LLC HGA Architects and Engineers, LLP 202 1st Avenue SW · Suite 200 · Rochester, Minnesota USA 55902-3129

Telephone 507.281 8600 Facsimile 507.281.8688

Gale Mount May 29, 2009 Page 2

- Auto-Ignition Temperature (AIG) is the temperature (degrees F) at which the substance will self-ignite.
- Lower Explosive Limit (% LEL) is minimum percentage by weight for the substance to be combustible in air.
- Upper Explosive Limit (% UEL) is maximum percentage by weight for the substance to be combustible in air.

The values for the contaminants are:

- Contaminant A: FP = 75 deg., AIG = 761 deg., LEL = 1.7%, UEL = 9.8%
- Contaminant B: FP = 56 deg., AIG = 775 deg., LEL = 6.2%, UEL = 16%
- Contaminant C: FP = 88 deg., AIG = 490 deg., LEL = 0.9 %, UEL = 6.8%
- Contaminant D: FP = none, AIG = 997 deg., LEL = 7.5%, UEL = 7.5%

Assuming a worst case air volume within the pit basin of approximately 113 cubic feet (36" diameter x 96" deep, half full of water), the combined percentage of the contaminants in air would be less than 0.000005% assuming that vapor from all four contaminants were present, much lower than the combined LEL's. Since the temperature in the basin would be room temperature or less, the actual percentage would be lower still as the Flash Point for Contaminant C is higher than room temperature and Contaminant D has no documented Flash Point.

As the DPE system is put into service and the groundwater is removed from elevations deeper than the elevator pit and treated, the contaminant levels will be reduced further.

Landmark Environmental obtained secondary measurements on June 1, 2008 to verify the earlier sampling that was performed. Using a multi-gas meter, a zero reading was obtained for % LEL in both the basement and within the sump basin.

Based on the above information, there does not appear to be any combustibility hazard associated with the ground water removed from elevator sump pit. With the lack of the combustibility hazard, the explosion-proof motors and intrinsically-safe wiring is not required. Our recommendation is that changes to the elevator sump pump should be limited to the previously-requested rerouting of the discharge to the DPE system, venting the basin to the "passive" vent system and providing a sealed basin cover (revisions are attached for reference).

Please contact me with any questions, comments or concerns regarding the above information.

Sincerely,

Dave A. Thiel Senior Associate Gale Mount May 29, 2009 Page 3

#### Enclosure

cc: Doug Knott, City of Rochester
Gary Neumann, City of Rochester
David Manns, CPMI
Jason Skramstad, Landmark Environmental
Roger Nelson, HGA
Kevin Coyle, HGA

r:\1000\1009\018-00\communications\correspondence\dat3 elevator sump pump.doc

#### Landmark Environmental LLC

April 17, 2009

Mr. Gale Mount Chief Plumbing Inspector City of Rochester 2122 Campus Dr SE Suite 300 Rochester, MN 55904

Re: Elevator Pit Drain Tile Discharge

MN Bio Business Center, Rochester, MN

Dear Mr. Mount:

On behalf of the City of Rochester (City) Administration Department, Landmark Environmental, LLC (Landmark) has prepared this letter to request a variance allowing the elevator pit drain tile system at the Minnesota Bio Business Center to remain connected to the sanitary sewer piping network in the building as shown in Attachment 1.

Based on our conversation this morning, it is Landmark's understanding that you would prefer to have the elevator pit drain tile connected to the storm sewer, and that the elevator pit basin SE-2 may need to be modified with an air-tight seal and an explosion proof sump pump motor.

Landmark is requesting a variance for the following reasons:

1. The length of elevator pit drain tile connected to the sanitary sewer system is approximately 76 feet and does not include the entire building foundation drain tile system; therefore, the amount of groundwater generated will be minimal when compared to the building foundation drain tile system;

2. The volume of groundwater generated by the drain tile was only 4 gallons over a period of approximately 9 months. The groundwater flow generated by this drain tile system is low because it is installed in fractured bedrock which has a low groundwater yield;

3. As a result of the low volume generated by the elevator pit drain tile, the impacted groundwater will be diluted with sewage water generated from the building during full occupancy to concentrations below the sanitary sewer discharge permit limit of 2,130 ug/L total toxic organics (TTOs). Based on the dilution calculations provided in Attachment 2, the estimated concentration of TTOs at sump basin SE-1 is 0.05 ug/L, and below the sanitary sewer discharge limit. The laboratory report from the elevator drain tile sample from basin SE-2 is included in Attachment 3.

4. In addition, removal of PCE from the groundwater will also occur as the result of biodegradation from bacteria in the sewage.

In this particular case, connecting the drain tile to the storm sewer is not recommended for the following reasons:

1. When compared to the high volume of sewage water discharged from the building for mixing, less dilution of TTOs will occur from mixing with the low volume of groundwater

generated by the building foundation drain tile system, or by the roof drain system, regardless of which storm sewer connection is made.

2. Biodegradation of TTOs would not occur in the building foundation drain tile system to

assist in the removal of TTOs;

3. A Minnesota Pollution Control Agency (MPCA) National Pollution Discharge Elimination System (NPDES) permit would have to be acquired. The NPDES permit regulates individual contaminants and has much lower discharge standards compared to the sanitary sewer discharge limit. Therefore the NPDES permit would likely require pretreatment of the groundwater from the drain tile prior to discharge to the sform sewer.

4. If the basin SE-2 discharge is switched to the storm sewer and pretreatment is required, the proposed groundwater treatment system for the DPE room could be used; however, the air stripper would have to be resized to meet the lower discharge limits (e.g. the limit for PCE is 5 ug/L), and be repiped to discharge to the drain tile or roof drain piping located in the

building.

Landmark agrees that an air-tight seal for elevator pit basin SE-2 should be installed. In addition, Landmark recommends that basin SE-2 be vented to the existing passive venting system designed by Landmark. As long as the basin is air tight and vented, Landmark does not believe the concentration levels of the detected parameters in the sump sample pose a risk that would require an explosion proof sump pump motor. PCE, the primary contaminant of concern at the property, is present at the highest concentration (60,300 ug/L) and is not combustible; therefore, PCE does not pose a risk of explosion. The following secondary contaminants were detected in the sample and are combustible when in a pure liquid form: 2-butanone (67 ug/L), cis-1,2-dichloroethene (46 ug/L), styrene (25 ug/L), 1,1,1-trichloroethane (40 ug/L). However, Landmark does not believe there is a risk of explosion due to the low concentrations detected in the sump groundwater sample.

Landmark is requesting your approval, on behalf of the City, to allow the elevator pit drain tile system to remain connected to the building's sanitary sewer system, and to keep the existing sump pump, which is not explosion proof. Landmark does recommend installing an air-tight basin cover and venting the basin to the existing passive venting system.

If you have any questions or require additional information, please feel free to contact me at (952) 887-9601, extension 205.

Sincerely,

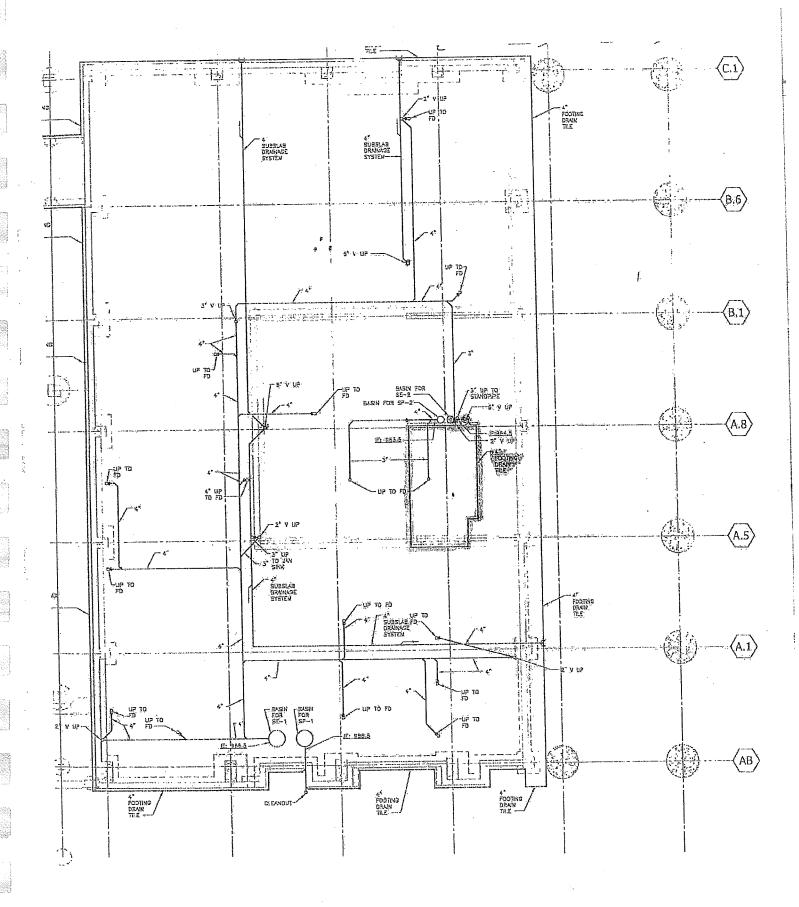
Jason D. Skramstad, P.E.

Cc: Doug Knott, City of Rochester

Ce: David Manns, CPMI

F:\Projects\Crc\Permits\Elevator Pit Foundation Draintile doc

Attachment I



1) UNDERGROUND PLUMBING PLAN

Attachment 2

SUBJECT! DILU	TION CALCULATIONS DATE: 4/16/09
MN	BIO BUS CTA   by JDS
	THIS CALCULATION ESTIMETES THE EFFECTS  OF DILUTION ON THE PCE CONTAMINATED  CADUNDWATER FROM ELEVATOR SUMP SE-Z  AFTER MIXING WITH SEWACE PECHARDE  FROM THE ENTIRE BUILDING DURING  FULL OCCUPANCY.  (SE-Z=  ENOUN INFO: TOS COME IN SE-Z = 70,768 Ag/L
	FLOW CATE FROM SETZ:  4 gallong las lkg llow  9 mosts 30dy Mins 60 min  Qser2 0.00001 gpm
	ESTIMATED INFO: FLOW PATE FROM SE-1  40 9pm MAX For SE-1 pmp  Assure 8 hrs of pmp operations  10 9al 8 hrs 60 min - 19,200 gal  min day 1 hr  day 2 Mhrs 60 min  Qs5-1- 13 gpm
	Dilution (ALC: QCC, CSC, T QSC, 2 CSC, 2 (SC-1 = QSC, 2 CSC, 2 (DSC-1) (SC-1 = (D.00001 gpm) (70,768, g/L) 13 gpm

Attachment 3



Pace Analytical Services, Inc 1700 Elm Streat - Suite 200 Minneapolis, MN 55414 (612)507-1700

April 13, 2009

Mr. Jason Skramstad Landmark Environmental 2042 W. 98th, St. Minneapolis, MN 55431

RE: Project: CRC

Pace Project No.: 1092721

Dear Mr. Skramstad:

Enclosed are the analytical results for sample(s) received by the laboratory on April 10, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carolynne That

Carolynne Trout

carolynne.trout@pacelabs.com Project Manager

Enclosures

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#### CERTIFICATIONS

Project:

CRC

Pace Project No.:

1092721

Minnesota Certification IDs
Tennessea Certification #. 02818
Wisconsin Certification #. 929407970
Washington Certification #. 929407970
Washington Certification #. 68-00563
Oregon Certification #. 68-00563
Oregon Certification #. 68-00563
North Dakota Certification #. 7036
North Carolina Certification #. 630
New York Certification #. 11647
New Jersey Certification #. 11647
Mentana Certification #. MT CERT0092
Minnesota Certification #: 027-053-137

Maine Certification #: 2007029
Louisiana Certification #: LA080009
Louisiana Certification #: LA080009
Louisiana Certification #: 03086
Kanses Certification #: 368
Illinois Certification #: 200011
Florida/NELAP Certification #: E87605
California Certification #: 01155CA
Afizona Certification #: AZ-0014
Alaska Certification #: UST-078

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#### SAMPLE SUMMARY

Project

CRC

Pace Project No.:

1092721

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1092721001	Drain Tile	Water	04/09/09 10:15	04/10/09 0B:00

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Page 3 of 16



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#### SAMPLE ANALYTE COUNT

Project:

Lab ID

1092721001

CRC

Pace Project No.:

1092721

Sample ID

Drain Tile

Method EPA 624 Analysts CNC, DJT Reported

Analytes

82

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#### ANALYTICAL RESULTS

Pace Project No.: 1092721 Sample: Drain Tile	Lab ID: 1092721001	Collected: 04/09/09 1	0:15	Received: 04/10/09 08:00 Matrix: Water
Parameters	Results Units	Report Limit D	F	Prepared Analyzed CAS No. Qual
) - Statistical C				
624 MSV	Analytical Method: EPA			elikking arisp biros 4
Acetone	ND vg/L		10	04/10/09 17:55
Acrolein	NÔ ng/L		10	
Accylonitrile	ND ug/L.	•	1.0	04/10/09 17:56 107-13-1
Allyl chloride	ND ug/L		10	04/10/09.17:56 107-05-1
Benzene	ND ug/L		10	04/10/09 17:56 71-43-2
Bromobenzene	ND ug/L		10	04/10/09 17:56 108-86-1
Bromochloromethane	ND: ug/L.	10.0	10	04/10/D9 17:56 74-97-5
	ND ug/L.	40.0	10	04/10/09 17:56 75-27-4
Bromodichloromethane	ND ug/L	0.08	10	04/10/09 17:56 75-25-2
Bromoform	ND ug/L	40.0	10	04/10/09 17:56 74-83-9
Brombmethane	67,3 ug/L	40.0	10	04/10/09 17:56 78-93-3
2-Bulanona (MEK)	ND ûg/L	100	10	04/10/09 17:56 104-51-8
n-Bulylbenzene	ND ug/L		10	04/10/09 17:56 135-98-8
sec-Bulylbénzéně		10.0	10	04/10/09 17:56 98-06-5
tert-Butylbenzene	ND ug/L	10,0	10	04/10/09 17:56 75-16-0
Carbon disulfide	ND ug/L	fg.0	10	04/10/09 17:56 56-23-5
Carbon tetrachiorida	ND ug/L	10.0	10	04/10/09 17:56 108-90-7
Chlorobenzene	ND ug/L		10	04/10/09 17:56 75-00-3
Chloroethane	ND ug/L.	10.0 100	10	04/10/09 17:56 110-75-8
2-Chloroethylvinyl ether	ĶD ug/L	•	10	04/10/09 17:56 67-66-3
Chloroform	10.8 ug/L	10.0	10	04/10/09 17:56 74-87-3
Chloromethane	ND ug/L	10.0		04/10/09 17:56 126-99-8
Chloroprene	ND ug/L	100	10	04/10/09 17:56 95-49-8
2-Chierotoluene	NO ug/L	10.0	10	04/10/09 17:56 106-43-4
4 Chlorofoluene	ND Ug/L	10.0	10	04/10/09 17:56 96-12-8
1,2-Dibromo-3-chioropropane	NĎ ug/L	40.0	10	04/10/09/17:56 124-48-1
Dibromochloromethane	ND ug/L	10.0	10	
1.2-Dibromoethane (EDB)	₹ØD ug/L	1,0,0	10	04/10/09 17:56 106-93-4
Dibromomethane	ND ug/L	10.0	10	04/10/09 17:56 74-95-3
1,2-Dichlorobenzene	ND ug/L	10.0	10	04/10/09 17:56 95-50-1
1.3-Dichlorobenzene	ND pg/L	10 <sup>-</sup> Ò.	10	04/10/09 17:56 541:73-1
1,4-Dichlorobenzene	ND pg/L.	10.0	10	04/10/09 17:56 106-46-7
Dichlorodifluoromethane	ND ug/L	10.0	10	04/10/09 17:68 75-71-8:
	ND ug/L	. 10.0	10	04/10/09 17:56 75-34-3
1,1-Dichlorpethane	ND ug/L.	10.0	10	04/10/09 17:56 107-06-2
1,2-Dichloröethane	ND ug/L	10.0	10	04/10/09 17:56 75-35-4
1,1-Dichloroethene	46.1 ug/L	10.0	10	04/10/09 17:56 156-59-2
cis-1,2-Dichloroethene	ND ug/L	10.0	10	04/10/09 17:56 156-60-5
trans-1,2-Dichloroethene	ND ug/L	10 0	10	04/10/09 17:56 75-43-4
Dichlorofleoromethane	ND ug/L	100	10	04/10/09 17:56 78-87-5
1,2-Dichloropropane	ND ug/L	100	10	04/10/09 17:56 142-28-9
1,3-Dichloropropana	ND ug/L.	10.0	10	04/10/09 17:56 594-20-7
2,2-Dichloropropana	ND na\ranger.	10 0	10	04/10/09 17:56 563-58-6
1,1 Dichloropropene	ND ug/i	40.0	10	04/10/09 17:56 10061-01-5
cis-1,3-Dichloropropene	<del>-</del>	40.0	10	
trans-1,3-Dichloropropane	ND ug/L	40.0	10	
Diethyl ether (Ethyl ether)	ND ug/L		,	01400004750 408 41 A

REPORT OF LABORATORY ANALYSIS

ND ug/L

ND ug/L

Diethyl ether (Ethyl ether)

Hexachloro-1,3-butadiene

Date: 04/13/2009 04:58 PM

Ethylbenzene

10

10

10:0

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04/10/09 17:56 100-41-4

04/10/09 17:56 87-68-3



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#### ANALYTICAL RESULTS

Project: Ci

ĊRC

Pace Project No.: 1092721

Sample: Drain Tile	Lab ID: 109	2721001	Collected: 04/09/0	9 10:15	Received: 0	M 00:80 e0/01:N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	<b>O</b> ñal
624 MSV	Analytical Me	thod: EPA 62	24					
2-Hexanone	ND u	a/L	40.0	10		04/10/09 17:58		
	ΝĎυ	~	40.0	10		04/10/09 17:56		
loomethane	ND u		10.0	10		04/10/09 17:56	98-62-8	
Isopropylbenzene (Cumene)	ND u		10.0	10		04/10/09 17:56		
p-Isopropylloluene	ND u		40.0	10		04/10/09 17:56	75-09-2	
Methylene Chloride	ND 1	_	50.0	10		04/10/09 17:55	91-57-6	
2-Methylnaphthalene	ND F		50.0	10		04/10/09 17:56	108-10-1	
4-Methyl-2-pentanone (MIBK)	ND u	_	10.0	10		04/10/09 17:56	1634-04-4	
Methyl-tert-butyl ether	ND t		40.0	10		04/10/09 17:50	91-20-3	
Naphthalene	ND 1		10.0	10		04/10/09 17:56	§ 103-65-1	
n-Propylbanzene		-	10.0	10		04/10/09 17:50	3 100-42-5	
Styrene	25,1 (	_	10.0	10		04/10/09 17:59	630-20-6	
1,1,1,2-Teirachloroeihane	ND t		10.0	10		04/10/09 17:5	5 79=34-5	
1,1,2,2-Tetrachloroethane	NÖ 1		500	500		04/13/09 14:5		
Tetrachloroethene	60300 1	-	300 100	10		04/10/09 17:5		
Tetrahydrofuran	ND I		10.0	1Q		04/10/09 17:5		
Toluene	ND I		10:0 10:0	10		04/10/09 17:5		
1,2,3-Trichlorobenzene	ND"	_	10.0			04/10/09 17:5	6 120-82-1	
1,2,4-Trichlorobenzene	NÖ	-				04/10/09 17:5	8 71-55-6	
1,1,1-Tricisloroeihane	40.3	-	10.0			04/10/09 17:5		
1,1,2-Trichloroethane	•	ug/L	40.0			04/10/09 17:5		
Trichlorgethene	79.2	_	10.0			04/10/09 17:5		
Trichlorofluoromethane		ug/L	40.0			04/10/09 17:5		
1,2,3-Trichloropropane		บg/L	10.0			04/13/09 14:5		1.2
1,1,2-Trichlorotrifluoroethane	10200	ug/L	500			04/10/09 17:		Li.La
1,2,4-Trimelhylbenzene	ND	ug/L	10,0			04/10/09 17:		
1,3,5-Trimethylbenzene	ND-	ng)L	103					
Vinyl acetate		ug/L	200				56 108-05-4	
Vinyl chloride	ND:	· vg/L	4.0			04/10/09 17:		
Xylene (Total):	ND	υg/L.	3.0.4				56 1330-20-7	
m&p-Xylene	ND	ug/L	20				56 1330-20-7	
o-Xylene	ДN	ug/L.	10.			04/10/09 17:		
Dibromofluoromethane (S)	99	%	75-12			04/10/09 17:	56 (868-53-7	
4-Bromofluorobenzene (S)	91	%	75-12				56 460-00-4	
Toluene d8 (S)	97	%	75-12				56 2037-26-5	
1,2-Dichloroethane-d4 (S)	102	. %	75-12	5 10		04/10/09 17:	56 17060-07-0	i

Date: 04/13/2009 04:58 PM

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#### QUALITY CONTROL DATA

Project:

CRC

Pace Project No.:

1092721

QC Batch:

MSV/12048

EPA 624

Analysis Method: Analysis Description: EPA 624

624 MSV

QC Batch Method: Associated Lab Samples:

1092721001

Matrix: Water

METHOD BLANK: 605666 Associated Lab Samples:

1092721001

Associatell, ren detribres: Local.		Blank	Reporting	timelypend	Qualifiers
Parameter	Units	Result	Limit	Analyzed	Stanion.
1,1,1,2-Tetrachioroethane	 ug/L	ND	1.0	04/10/09 17:34	
1,1.1-Trichleroethane	υ <mark>g/</mark> L	ND	10	04/10/09 17:34	
1,1,2,2-Tetrachloroethane	ug/L	ND	10	04/10/09:17:34	
1,1,2-Trichloroethane	ບ໘/L.	ND	4.0	04/10/09 17:34	
1,1,2-Trichlorottifluoroathana	ug/L	ND	1.0	04/10/09 17:34	
1,1-Diehloroethane	ug/L	NĎ	7.79	04/10/09 17:34	
1.1-Dichloroethene	ug/L	ND		04/10/09 17:34	
1,1-Dightorpropene	ug/L	ŊĎ	10		
1,2,3-Trichiprobenzene	úg/L	ND	<b>1</b> ∙.0		
1,2,3-Trichloropropane	ug/L	ND	10	04/10/09 17:34	
1,2,4-Trichlorobenzene	ug/L	ND	, 1.D		
1,2,4-Trimethylbenzene	ug/L	ND	1.0		
1,2,4-11meuripenzene 1,2-Dibrome-3-chloropropane	ug/L	ND.	4.0		
1,2-Dibromosthans (EDB)	ug/L	ND	1.0		
	υg/L	ND.	1.0	04/10/09 17:34	
1,2-Dichlorobenzene	ug/L	ND.	1,0	04/10/09 17:34	
1,2-Dichloroethane	ug/L.	ND	1, 0	04/10/09 17:34	
1,2-Dichloropropane	υg/L	ND:	1.0		
1,3,5-Trimethylbenzene	ug/L	ND	1.6		
1,3 Dichiorobenzene	ug/L	ND	7,0	04/10/09 17:34	
1,3-Dichloropropane	na\r na\r	ND	1,0	04/10/09 17:34	
1,4-Dichlorobenzene	ng/L ng/L	ND	1,5	04/10/09 17:34	
2,2-Dichloropropanè	_	ND	4.4	04/10/09 17:34	
2-Butanone (MEK)	υg/L. υg/L	ИD		04/10/09 17:34	
2-Chloroethylvinyl ether	_	Ν̈́Ď		0 04/10/09 17:34	
2-Chjerojojuene	ug/L.	ND		and the second s	
2-Hexanone	ug/L	ND		0 04/10/09 17:34	
2-Methylnaphthalene	ug/L.	ND		3 4 5 4 4 4 4 4 4 4 4 4 4	
4 Chlorotoluena	υ <u>ڨ</u> /L.	ND			
4-Methyl-2-pentanone (MIBK)	ug/L	ND		0 04/10/09 17:34	
Acetone	ug/L.	NE		0 04/10/09 17:34	
Acrolein	ug/L	NE			
Acrylonitrila	ug/L	NÉ		0 04/10/09 17:34	
Allyl chloride	υ <u>g/</u> L	NE		0 04/10/09 17:34	
Benzene	ugA	ΝE		0 04/10/09 17:34	
Bromobenzene	ug/L	.NI	-	.0 04/10/09 17:34	
Bromochloromethane	ug/L	N		0 04/10/09 17:34	
Bromodichloremethane	ug/L	NI		0 04/10/09 17:34	
Bromoform	ug/L	NI	-	0 04/10/09 17:34	
Bromomethane	ug/L	NI NI		.0 04/10/09 17:34	
Carbon disulfida	ug/L	N N	-	0 04/10/09 17:34	
Carbon tetrachloride	νg/L.	N	-	0 04/10/09 17:3	
Chlorobenzene	ug/L	. N		1.0 04/10/09 17:3	
Chloroethane	ug/L	14	-	CANAL SCOLO	

Date: 04/13/2009 04:58 PM

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#### QUALITY CONTROL DATA

Project:

CRC

Pace Project No :

1092721

METHOD BLANK: 605666

Matrix: Water

Associated Lab Samples: 1092721001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloroform	ug/L	ND	1.0	04/10/09 17:34	
Chloromethane	ug/L.	ND	1.0	04/10/09 17:34	
Chloroprene	ug/L	ND	1.0	04/10/09 17:34	
cis-1,2-Dichloroethene	ug/L	ND	1.0	04/10/09 17:34	
cls-1,3-Dichloropropène	ug/L	ND:	4.0	04/10/09 17:34	
Dibromochioromethane	ug/L	ND	1.0	04/10/09 17:34	
Dibromomethane	υg/L	ND	1.0	04/10/09 17:34	
Dichlorodifluoromethane	υg/L,	ND	1:0	04/10/09 17:34	
Dichlorofluoromethane	ug/L	ND:	1.0	04/10/09 17:34	
Diethyl ether (Ethyl ether)	ug/L	ND	4.0	04/10/09 17:34	
Ethylbenzene	ug/L	ND	1.0	04/10/09 17:34	
Hexachlorp-1 <sub>6</sub> 3-butadiene	υg/L	ND	4.0	04/10/09 17:34	•
logowetheve	ոնչը	ND	4.0	04/10/09 17:34	
Isopropylbenzene (Cumene)	ug/L.	QИ	1.0	04/10/09 17:34	
m&p-Xylene	ug/L	ND	2.0	04/10/09 17:34	
Methyl-lert-bulyl ether	hō\r"	ND	1.0		
Methylene Chloride	ug/L	ND	4:0	04/10/09 17:34	
· · · · · · · · · · · · · · · · · · ·	ng/L	ND	1.0	04/10/09 17:34	1.60
n-Butylbenzene	nā\r	ND	1.0	04/10/09 17:34	
n-Propylpenzene	na/j"	ND.	4.0	04/10/09 17:34	
Naphthalene	ug/L	ND	10	04/10/09 17:34	
o-Xylene	uġ/Ļ	ND		04/10/09 17:34	
p-Isopropylloluene	ug/L	, ND		04/10/09 17:34	,
šec-Butylbenzena	ug/L.	ND		04/10/09 17:34	
Styrene	ug/L.	ND		04/10/09 17:34	
tert-Butylbenzene	սը/Լ	ND		04/10/09 17:34	
Tetrachlordelhene	ug/L,	ND		04/10/09 17:34	
Tetraliydrofuran	ng/L.	ND		04/10/09 17:34	
Toluene	ug/L	ND		04/10/09 17:34	
trans-1,2-Dichloroethane	ug/L	ND		04/10/09 17:34	
Irans-1,3-Dichloropropens	ug/L	NE		04/10/09 17:34	
Trichloroethène	υg/L	NE		04/10/09 17:34	
Trichlorofluoromathane	ug/L	NE			
Vinyl acetate	ug/L	NE		04/10/09.17:34	
Vinyl chlorida	ug/L	NE		04/10/09 17:34	
Xylene (Total)	%. par-	103		5 04/10/09 17:34	
1,2-Dichloroethane-d4 (S)	/6 %	9:			
4-Bromofluorobenzene (S)	75 %	10	_		
Dibromofluoromethane (S)	%	10			
Toluene-d8 (S)	70	,0	,		

					•	
LABORATORY CONTROL SAMPLE:	605667					
		Spike	LCS	LĊS .	% Rec	
Parameler	Units	Çonc.	Result	% Rec	Limits	Qualifiers
			49 6	99	75-129	
1,1,1,2-Tetrachioroethane	ug/L	50		92	73-144	
1.1.Trichlomethane	ug/L	50	46.2	92	13-144	

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melac:



Pace Analytical Services, Inc. 1700 Elm Street - Sulte 200 Minneapolis, IAN 55414 (612)507-1700

#### QUALITY CONTROL DATA

Project:

CRC

Pace Project No.:

1092721

LABORATORY CONTROL SAMPLE:	605657	Spike	LOS	LCS	% Rec	lifiers
Parameter	Units	Conc.	Result	% Rec		imers
1,1,2,2-Tetrachloroethane	υg/L.	50	53.0	106	75-125	
.1,2-Trichloroethane	ا/بون	50	49.3	99.	75-125	
1,1,2-Trichlorottifluoroethane	υg/L	50	36,3	73	75-143.LO	
1-Dichloroethane	ug/L	50	467	- 93	75-135	
1,1-Dichloroethene	ug/L	5D	44.B	90	75-133	
1,1-Dichloropropene	ug/L	50	45.1	90	75-131	
1,2,3-Trichiorobenzene	ug/L.	50	52.4	105	73-141	
	ug/L	50	53.2	105	75-125	
1,2,3-Trichloropropane	ug/L.	50	52.7	105	70-148	
1,2,4-Trichlorobenzene	ùġ/L.	50	51,4	103	75-141	
1,2,4-Trimethylbenzene	ug/L	50	55.7	111	64-135	
1,2-Dibromo-3-chioropropane	7	50	51.4	1:03	75-125 SS	
1,2-Dibromoethane (EDB)	ug/L ug/l	50	60.9	102	75-125	
1,2-Dichlorobenzene	υ <u>σ/</u> L.	50 50	52.5	105	75-136	
1,2-Dichloroethane	ug/L	50	47.2	94	75-130	
1,2-Dichloropropane	ug/L	50 50	50.3	101	75 141	
1,3,5-Trimethylbenzene	ug/L	50 50	51.6	103	75-125	
1,3-Dighloroberizeña	ug/L	50	50.4	101	75-125	
1,3-Dichloropropane	ug/L	50	51.6	103	75-125	
1,4-Dichlorobenzene	υg/L.	50	43.9	88	50-150	
2,2-Dichioropropane	ug/L	.50	51.2	102	58-138	
2-Bulanona (MEK)	ug/t.		122	98	50-150 SS	
2-Chloroethylvinyl ether	ug/L	125	50.5	101	75-132	
2-Chlorofoluene	υg/L	50	50.5	101	65-135	
2-Hexanone	υg/L	50		121	62-150	
2-Methylnaphthalene	ng/L,	50	60.4	101	75-135	
4-Chlorotoluene	ug/L	50	50.3	104	69-137	
4-Methyl-2-pentanone (MIBK)	ug/L	50	51.B	128	52-141	
Acetone	μ <mark>ο</mark> /L.	125	160	74	50-150	
Acrolein	ug/L	500	372	96	75-130	
Acrylonitrile	ug/L	500	491	86	68-150	
Allyl chloride	ug/L ,	50	43.0	92	75-125	
Benzene	ug/L	<b>5</b> 0.			75-125 75-125	
Bromobenzene	υg/L	50	51.3	103 98	75-129 75-129	
Bromochloromethane	ug/L	50	48.9		75-142	
Bromodichloromethane	ug/L	50	51.1	102	75-142 66-135	
Bromoform	սց/Լ.	10D	107	107	57-150	
Bromomethane	ug/L	50	43.0	86		
Carbon disulfide	ug/L	50		82		
Carbon tetrachloride	ug/L	50			4 (44)	
Chlorobenzene	ug/L	50				
Chloroethene	ug/L	50				
Chloroform	υg/L.	50				
Chloromethane	ug/L	50				
Chloroprene	ug/L	50				
ds-1,2-Dichloroethene	ug/L	50				
cls-1,3-Dichloropropene	ug/L.	50				
Dibromochloromethane	ug/L.	50	52.3			
Dibromomethane	ug/L	50	50.6	101	75-127	

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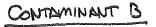




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## **NIOSH Pocket Guide to Chemical Hazards**

NPG Home   Introduction   Synonyi	ns & Trade Names	Chemical Names	S   CAS Numbers   RTECS	Numbers   Append	dices   Search
sec-Butyl alcohol		LANSSENUS SANGUETINE CANA	, , , , , , , , , , , , , , , , , , ,	CAS 7	8-92-2
CH <sub>3</sub> CH(OH)CH <sub>2</sub> CH <sub>3</sub>	o die gediegem (, das C. d.) seiner genetragenhande o Water das	r. Abourting to be product	1. 17 cf et Am.	RTEC	S E01750000
Synonyms & Trade Name 2-Butanol, Butylene hydrate, 2-H	udrava butana Math	yl ethyl carbinol		1120 12	D & Guide 29
Exposure	NIOSH REL: TWA	\ 100 ppm (305	mg/m <sup>3</sup> ) ST 150 ppm (455	mg/m <sup>3</sup> )	
Limits	OSHA PEL†: TW/	F-1-1 9-, 1009-5-9H**HR0	Publisher expression register of property and property an		
IDLH 2000 ppm See: 78922		Conversion	1 1 ppm = 3.03 mg/m <sup>3</sup>	ers o reconsequenciale Sanata.	
Physical Description Colorless liquid with a strong, ple		的 <sup>6</sup> .1.1.1 c.mpertifes <u>Ander 经营业</u> <b>实验证</b> , <b>必</b> 许可	ESC (Imperimental Control (Imperimental Cont		A ON THE PROPERTY OF THE PRO
MW: 74.1	BP: 211°F	··· . to .duto.m.e.se extensions 5 etto / ett 1	FRZ: -175°F	Sol: 16	1%
VP: 12 mmHg	IP: 10.10 eV	interpretaring of	20 10 10 10 10 10 10 10 10 10 10 10 10 10	Sp.Gr:	0.81
Fl.P: 75°F	UEL(212°F): 9.8%	6	LEL(212°F): 1.7%		AND THE PROPERTY OF THE PROPER
Class IC Flammable Liquid: Fl.P	. at or above 73°F a	nd below 100°F	4	personana monocassississis visit signisten soor igistoomidib 4/th/s/-inform	ng dia estatus ang ang ang ang ang tang ang ang ang ang ang ang ang ang ang
Incompatibilities & React Strong oxidizers, organic peroxic	des, perchloric & per	rmonosulfuric ac	cids		A constitutional library law and a law a constitution of the const
NIOSH 1405, 1450; OSHA Z See: NMAM or OSHA Methods  Personal Protection & Sa Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet (flammable Change: No recommendation		tection codes)	First Aid (See proced Eye: Irrigate immediatel Skin: Water flush promp Breathing: Respiratory s Swallow: Medical attent	ures) y itly support	
Respirator Recommenda Up to 1000 ppm:  (APF = 10) Any chemical cartric (APF = 10) Any supplied-air res Up to 2000 ppm:  (APF = 25) Any supplied-air res (APF = 25) Any powered, air-pu (APF = 50) Any chemical cartric (APF = 50) Any air-purifying, fu (APF = 50) Any self-contained i (APF = 50) Any supplied-air res Emergency or planned entry (APF = 10,000) Any self-contai pressure mode (APF = 10,000) Any supplied-a mode in combination with an au Escape: (APF = 50) Any air-purifying, fu appropriate escape-type, self-c Important additional information	ige respirator with or pirator*  pirator operated in a prifying respirator with a dge respirator with a ll-facepiece respirator preathing apparatus spirator with a full fac into unknown control into	a continuous-flor th organic vapor I full facepiece a or (gas mask) w with a full facep cepiece centrations or l ratus that has a a full facepiece d positive-press for (gas mask) w apparatus	w mode* r cartridge(s)* ind organic vapor cartridge ith a chin-style, front- or be piece IDLH conditions: full facepiece and is operate and is operated in a pressure breathing apparatus with a chin-style, front- or be	ack-mounted orgi	e-demand or other positive- other positive-pressure
Exposure Routes inhalation	on, ingestion, skin ar	nd/or eye contac	ct	e i general batter politice per en en en en en en en en en en en en en	gramma seriaria de la composición de la dec
Symptoms Irritation eyes, s	lin noon throat no	roccie		on the state of the definition of the	



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## NIOSH Pocket Guide to Chemical Hazards

PG Home   Introduction   Synonyn	ns & Trade Names   Chemical Names	nes   CAS Numbers   RTECS	S Numbers   Appendices   Search
Ethylene dichloride			CAS 107-06-2
CICH <sub>2</sub> CH <sub>2</sub> CI	RTECS KI0525000		
ynonyms & Trade Names 2-Dichloroethane; Ethylene chlo	DOT ID & Guide 1184 131		
xposure limits	NIOSH REL: Ca TWA 1 ppm (4 (Chloroethanes)	mg/m <sup>3</sup> ) ST 2 ppm (8 mg/r	n <sup>3</sup> ) <u>See Appendix A See Appendix C</u>
	OSHA PEL†: TWA 50 ppm C 1	00 ppm 200 ppm [5-minute	e maximum peak in any 3 hours]
<b>DLH</b> Ca [50 ppm] See: 107062	Conversion 1	ppm = 4.05 mg/m <sup>3</sup>	The production of the producti
busical Description	chloroform-like odor. [Note: Deco		
	- CONTRACTOR (CONTRACTOR STATE STA		Sol: 0.9%
W: 99.0	BP: 182°F	FRZ: -32°F	Sp.Gr: 1.24
P: 64 mmHg	UEL: 16%	ьет и LEL: 6.2%	ANNAMED OF THE STATE OF THE STA
I.P: 56°F	below 73°F and BP at or above		2-1. 7-2 5.6.1-6.1-1. 10.200.000 green em # 200 kg/s data associété pass (10 - A COCK) (10 - \$10.5 Green em - en seasons # 4 4 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Personal Protection & Sa Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated	nitation (See protection codes	Skin: Soap wash prom Breathing: Respiratory	ely nptly y support
Remove: When wet (flammable) Change: No recommendation Provide: Eyewash, Quick drenct		Swallow: Medical atte	ntion immediately
(APF = 10,000) Any self-contain	NOSH REL, or where there is r ned breathing apparatus that has	a full facepiece and is ope	concentration: rated in a pressure-demand or other positi essure-demand or other positive-pressure
mode in combination with an au Escape: (APF = 50) Any air-purifying, ful appropriate escape-type, self-co	ixiliary self-contained positive-pro I-facepiece respirator (gas mask ontained breathing apparatus	essure preatring apparatus	back-mounted organic vapor canister/Any
Important additional information	Action 1 1 1		to a secure of the secure of t
The second secon	n, ingestion, skin absorption, ski	ma 2m )	vomiting dermatitis: liver kidney
cardiovascular system damage	; [potential occupational carcinog	vstem depression; nausea, pen]	vomiting; dermatitis; liver, kidney,
Target Organs Eyes, skin, I	kidneys, liver, central nervous sy		
Cancer Site [in animals: fore	ectomach, mammary gland & cirr	culatory system cancer	
Oditori Otto Interminatorio	sstomach, manimary giana a one		18年来中国各种共和国共和国共和国共和国共和国共和国共和国共和国共和国共和国共和国共和国共和国共

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## **NIOSH Pocket Guide to Chemical Hazards**

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Styrene	Worden in the	n munichten jungsmennber	литер т.дуг <sub>э</sub> нг <sub>э</sub> , - Қ., - (, 31, 51, 3922 г., 51, 11) функция пункцияльных положения	<b>CAS</b> 100-42-5
accompanies and the second second	; 56m5, <b>48</b> mm <b>4</b> ····3·· ,		. I become the contract of the second	A CONTROL OF THE CONTROL STATE OF THE CONTROL OF TH
C <sub>6</sub> H <sub>5</sub> CH=CH <sub>2</sub>		A STATE OF THE STA	CONTROL CONTROL OF A A ST. CONTROL OF A ST. CONTROL OF A ST. CONTROL OF A ST. CONTROL OF A ST. CONTROL OF A ST.	RTECS <u>WL3675000</u>
Synonyms & Trade Name Ethenyl benzene, Phenylethylen	e. Styrene mon	omer, Styrol, Vinyl be		DOT ID & Guide 2055 128P (inhibited)
Exposure NIOSH REL: TWA 50 ppm (215 mg/m <sup>3</sup> ) ST 100 ppm (425 mg/m <sup>3</sup> )				tar + Continue = Cont
Limits	OSHA PEL†	: TWA 100 ppm C 20	0 ppm 600 ppm (5-minute maxim	um peak in any 3 hours)
IDLH 700 ppm See: 100425		Conversion 1 p	pm = 4.26 mg/m <sup>3</sup>	ng tree to grand annaghing ny oto and propositioner and
Physical Description Colorless to yellow, oily liquid w			To design the second of the se	COMPANIENT MERICANIA AFANCES AFTER A COMPANIANTA A TIMOS TRADITIONAS TO THE CONTRACT OF THE CO
MW: 104.2	BP: 293°F	1 . 5 :::	FRZ: -23°F	Sol: 0.03%
VP: 5 mmHg	IP: 8.40 eV	4976-14666-170-1-476-1		Sp.Gr: 0.91
FI.P: 88°F	UEL: 6.8%	20.22.22.20.04 24.00000 0000-000000-00000-0000	LEL: 0.9%	DE COME & BENEFIT COME AND AND COME COME COME COME COME COME COME COME
Class IC Flammable Liquid: FLI	at or above 7	3°F and below 100°F	p	till til desst i litter strettenenhålhetet itetstittenstir.
Measurement Methods NIOSH 1501, 3800; OSHA 9, 8 See: NMAM or OSHA Methods Personal Protection & S Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminate	9 : anitation ( <u>Se</u>	organisticae de como de consecutações de consecutações de consecutações de consecutações de consecutações de c	First Aid (See procedures) Eye: Irrigate immediately Skin: Water flush Breathing: Respiratory support	nantaulus o perda and spil assession are vivilen and a development spilote and spilote are specific as wall in the
Remove: When wet (flammable Change: No recommendation	e)	A CAST SETTINGS CASTON CONTENTS CONT. AND AND AND AND AND AND AND AND AND AND	Swallow: Medical attention imm	nediately  www.seconders.com  ww
(APF = 25) Any powered, air-r (APF = 50) Any self-contained (APF = 50) Any supplied-air (APF = 10,000) Any self-contained (APF = 10,000) Any self-contained (APF = 10,000) Any supplied-mode in combination with an air Escape: (APF = 50) Any air-purifying, appropriate escape-type, self-important additional informatic	idge respirator v spirator*  spirator operate idge respirator v ult-facepiece res urifying respira breathing appa sepirator with a r into unknowr ined breathing air respirator the auxiliary self-cor ult-facepiece re contained breath	with organic vapor can ed in a continuous-flow with a full facepiece a spirator (gas mask) we for with organic vapor iratus with a full facepiece a concentrations or apparatus that has a lat has a full facepiece intained positive-press spirator (gas mask) we thing apparatus tor selection	w mode* nd organic vapor cartridge(s) ith a chin-style, front- or back-moderatridge(s)* cartridge(s)* plece IDLH conditions: full facepiece and is operated in a stand is operated in a pressure-desure breathing apparatus	a pressure-demand or other positiv
Exposure Routes inhala		otion, ingestion, skin a		i de la companya de l
Comentante Installan avec	noce recnirator	v system; headache.	lassitude (weakness, exhaustion)	), dizziness, confusion, malaise

...

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### **NIOSH Pocket Guide to Chemical Hazards**

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Methyl chloroforn		mar, - and o 2 to amore 4 streams, and 3.4600 s		THE PARTY OF THE P	CAS 71-55-6
CH <sub>3</sub> CCI <sub>3</sub>					RTECS KJ2975000
Synonyms & Trade Nam Chlorothene; 1,1,1-Trichloroeth	ane; 1,1,1-Trichio	proethane (stabilized		・ 5年では、25.5~1 生ごないにはな田屋屋	DOT ID & Guide 2831 160
Exposure	2	C 350 ppm (1900 mg		] <u>See Appendix C</u>	(Chloroethanes)
Limits	OSHA PELT:	TWA 350 ppm (190	0 mg/m <sup>3</sup> )		
IDLH 700 ppm See: 71556	¥	Conversion 1 p	pm = 5.46 mg/m	3	
Physical Description Colorless liquid with a mild, chl				THE REAL PROPERTY OF THE PROPE	可能更加的企业的 <b>对对自己的</b> 对对,但是可以可能的企业的可以是可以发生。
MW: 133.4	BP: 165°F		FRZ: -23°F	ىرى ئىلىدى ئالىدى ئ	Sol: 0.4%
VP: 100 mmHg	IP: 11 00 eV	windowskie a we character to be be to design	ornomine in object accommunity of the contrast	nog gradens menden militide af trendsk krisciansk kriskel fri kreine bleve bri kriske	Sp.Gr: 1.34
FI.P: ?	UEL: 12.5%	de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la	LEL: 7.5%	N	11 11 11 11 11 11 11 11 11 11 11 11 11
Combustible Liquid, but burns	with difficulty.				,
Measurement Methods NIOSH 1003 See: NMAM or OSHA Method	neret kannet kommen sekanake kale (ner en elektrik di santaria kan	OF PROPERTY OF STATE	ORF /	HERMITEHHIRETEH SAMIN VENEZÄR.	
Personal Protection & S Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminate Remove: When wet or contam Change: No recommendation	ed	protection codes)		mediately	ediately
pressure mode (APF = 10,000) Any supplied mode in combination with an Escape: (APF = 50) Any air-purifying, appropriate escape-type, self Important additional informati  Exposure Routes inhala	espirator* If breathing appar If into unknown	atus with a full facep concentrations or II pparatus that has a f has a full facepiece ained positive-pressi pirator (gas mask) wi ing apparatus or selection	DLH conditions ull facepiece and and is operated ure breathing ap th a chin-style, f	in a pressure-den paratus ront- or back-mou	pressure-demand or other positive- nand or other positive-pressure inted organic vapor canister/Any em depression, poor equilibrium;
Target Organs Eyes, skir	, central nervous	ukungakan Talah di Katamanning	reconsidera a delate a con a de la se	AND THE PROPERTY OF THE PARTY O	nacon electric di trende mendemento de con les consecuencias de consecuencia de consecuencia de consecuencia d
		: 0079 See MEDIC			

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# AIA Document G714 - 2001

# Construction Change Directive

OWNER: City of Rochester — Doug Knott CONTRACTOR: Adolfson & Peterson — Carl Rinta, Tom Dykhoff, Pete Pokorny CONSULTANT: Landmark Environmental — Jason Skramstad CPMI — David Manns, Susan Jones IN-HOUSE: Hal Henderson, Roger Nelson, Kenny Horns, Sarah Jorczak, Jonathan Wacker, Kevin Coyle, Tony Staeger Dave Thiel, Dean Korstad, Jennifer Logelin

PROJECT:

**DIRECTIVE NO: 25** 

Minnesota BioBusiness Center and Third Street Parking Ramp Expansion First Avenue and Third Street Southwest

DATE: June 1, 2009

Construction Package #2

CONTRACT FOR: General Construction

TO CONTRACTOR: Adolfson & Peterson Construction 6701 West 23<sup>rd</sup> Street Minneapolis, MN 55426 CONTRACT DATED: October 29, 2007 ARCHITECT'S PROJECT NUMBER: 1009-018-00

#### PROPOSED ADJUSTMENTS

l. T	The proposed	basis of adjustment to	the Contract Sum	or Guaranteed Maxim	<del>ım Price</del> is:
------	--------------	------------------------	------------------	---------------------	-------------------------

	] Lump Sum (increase) (decrease) of \$
	] Unit Price of \$ Per
Ī	X ] as provided in Subparagraph 7.3.6 of AIA Document A201-1997 Edition
Ē	] as follows:

#### Mechanical

#### A. Drawing P200:

1. Revise discharge piping for elevator sump in Storage Room 005 to connect directly into "air stripper" (provided by DPE contractor) located in Room 017. See attached Partial Plan 1/P200.

Attachments: Partial Plan 1/P200.

THIS DOCUMENT HAS IMPORTANT LEGAL CONSEQUENCES; CONSULTATION WITH AN ATTORNEY IS ENCOURAGED WITH RESPECT TO ITS COMPLETION OR MODIFICATION. AUTHENTICATION OF THIS ELECTRONICALLY DRAFTED AIA DOCUMENT MAY BE MADE BY USING AIA DOCUMENT D401.

AIA DOCUMENT G714 - CONSTRUCTION CHANGE DIRECTIVE - 1997 EDITION - AIA - COPYRIGHT 1997 - THE AMERICAN INSTITUTE OF ARCHITECTS, 1735 NEW YORK AVENUE N W, WASHINGTON, D C. 20006-5292. WARNING: Unlicensed photocopying violates U S. copyright laws and is subject to legal prosecution. This document was produced under license number 895000147 and can be reproduced without violation.

- 2. Revise vent piping for Elevator sump in Storage Room 005 to connect into the existing 6" PVC passive vent located in the northwest corner of the room. Relocate existing valve as required to allow space for new connection. Cover for sump pump to be sealed air-tight with gasketing and seals at pipe penetrations.
- 2. This Contract Time is proposed to remain unchanged.

When signed by the Owner and Architect and received by the Contractor, this document becomes effective IMMEDIATELY as a Construction Change Directive (CCD), and the Contractor shall proceed with the change(s) described above.

ARCHITECT:
Hammel, Green and Abrahamson, Inc.
202 1st Avenue Southwest, Suite 200
Rochester, Minnesota 55902
By Rose H
Date 6.01.09
OWNER:
City of Rochester
City Hall, Room 226
201 Fourth Street Southeast
Rochester, Minnesota 55904
By
Date
•

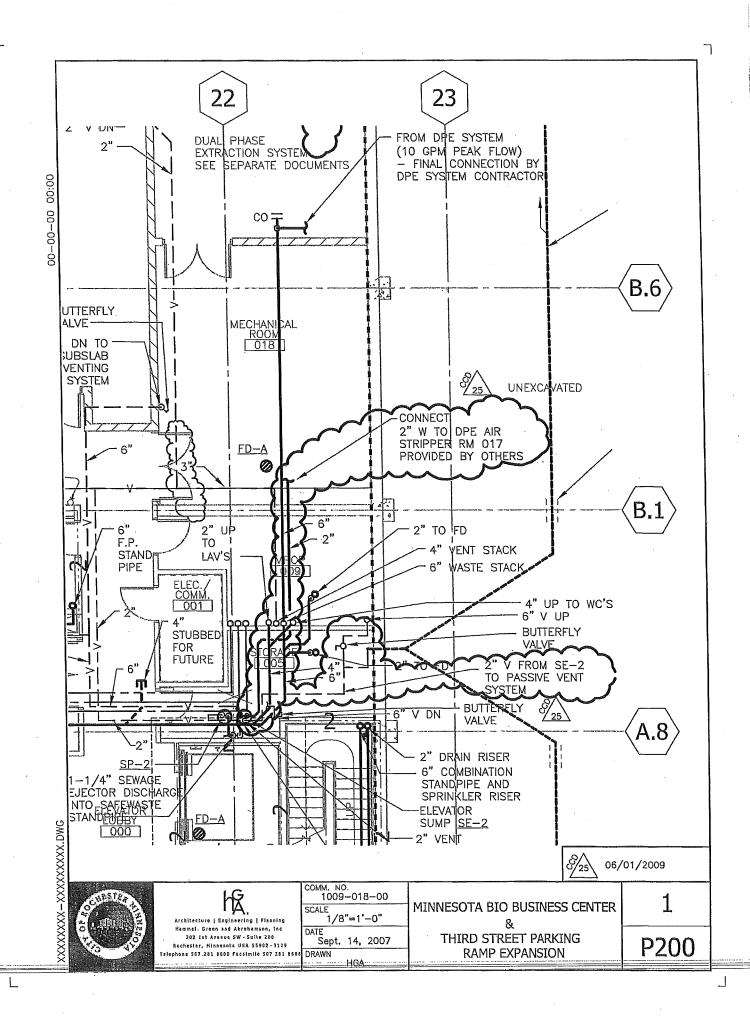
Signature by the Contractor indicates the Contractor's agreement with the proposed adjustments in Contract Sum and Contract time set forth in this Construction Change Directive.

#### CONTRACTOR:

Adolfson & Peterson Construction 6701 West 23rd Street Minneapolis, Minnesota 55426

Ву		 	 
Date			

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