April 26, 2010

Mr. Allan Timm and Ed Olson
MPCA VIC Program
520 Lafayette Road
St. Paul, MN 55155-4194

Re: Monthly Dual Phase Extraction System Effectiveness Report
MN Bio Business Center, Rochester, MN

Dear Mr. Timm and Mr. Olson:

On behalf of the City of Rochester (City) Administration Department, Landmark Environmental, LLC (Landmark) has prepared this letter to present a status update for the dual phase extraction (DPE) system installed at the above referenced property (Property), as shown in Figure 1.

Introduction

This report documents the monthly DPE system operational and analytical data from March 25, 2010. The DPE system well locations and equipment layout are provided in Figures 2 and 3, respectively. A system operation and maintenance summary table is included as Table 1.

The DPE system has continued to operate sequentially at all of the DPE system wells after being switched from continuous operation at DPE-1 on October 15, 2009. The DPE system is programmed to operate on each well for 45 minutes before switching to the next well and takes 6 hours to complete one full cycle. The air sample collection method during sequential operation of the DPE system wells consists of a composite Summa canister utilizing a 6-hour flow control valve. Therefore, air emissions from each well are collected during the 6-hour sample collection period.

System Operational Results

The volatile organic compound (VOC) and perchloroethene (PCE) concentrations from the March 25, 2010, sampling event have continued to decrease from the high concentrations observed on January 14, 2010. During this period, the DPE system removed 34 pounds of total VOCs, including 22 pounds from PCE (see Figure 4 and Table 2). Through March 25, 2010, the DPE system has removed a total of 2,868 pounds of total VOCs and 2,275 pounds of PCE.

On March 25, 2010, the concentrations of VOCs decreased from 14,613,880 micrograms per cubic meter (ug/m^3) on April 9, 2009, (the baseline emissions sampling date) to 331,284 ug/m^3 of total VOCs, a decrease of 97.7 percent (See Figure 5). PCE concentrations decreased from 11,600,000 ug/m^3 to 215,000 ug/m^3, a decrease of 98.2 percent from the baseline concentration. Emissions analytical data is provided in Table 3 and system operational data tables and field data

sheets are provided in Attachment A. The emissions analytical reports are included in Attachment B.

The Minnesota Pollution Control Agency's (MPCA's) Remediation Risk Analysis Screening Spreadsheet (RRASS) spreadsheet was used to evaluate the emissions rates from the DPE system and air stripper stacks on the Property during the DPE system sampling event. The site specific emissions rate for PCE during the March 25, 2010, sampling event was 11,182 micrograms per second (ug/s) and was below the MPCA screening emissions rate (SER) for chronic risk of 16,300 ug/s. The site specific emissions rate for PCE was also below the MPCA SER for acute risk of 5,980,000 ug/s. The RRASS emissions rates are provided in Table 4 and the RRASS spreadsheets are provided in Attachment C.

The cumulative total VOC mass removed from the DPE system groundwater discharge during air stripper operation was 0.27 pounds on March 25, 2010. The effluent groundwater discharge concentrations were below the City's Water Reclamation Plant discharge criteria of 2,130 ug/L. The total VOC concentration in the effluent sample was greater than the influent sample because of residual VOCs from the PVC glue and cement used during installation of a secondary demister moisture separator. Mass removal data from the groundwater treatment system is provided in Table 5 and the groundwater discharge analytical data is included in Table 6. The groundwater discharge analytical reports are provided in Attachment B.

The groundwater hydrographs for the DPE wells show decreasing trends in the groundwater elevations when compared to the February 22, 2010, monitoring event (Figure 6). However, the groundwater hydrographs for the monitoring wells show increasing trends during this period (Figure 7), which may be the result of a rising regional water table from an early spring thaw. Landmark's groundwater flow interpretation provided in Figure 8 indicates that the DPE system has been effective in lowering the water table on the Property. The groundwater elevation data is provided in Table 7. Well construction information is provided in Table 8.

Conclusions

After analyzing the data from the monthly DPE system operation, maintenance, and monitoring events, the following conclusions can be made:

- The DPE system is operating as designed and has removed a significant amount of VOCs in a short period of time.
    - From June 29, 2009, through March 25, 2010, the DPE system removed 2,868 pounds of total VOCs, including 2,275 pounds of PCE from the subsurface.
    - DPE system emissions concentrations of VOCs and PCE from March 25, 2010, have decreased 97.7 percent and 98.2 percent, respectively, when compared to the baseline emissions concentrations.

- The March 25, 2010, site specific emissions rate for PCE of 11,182 ug/s was below the SER for both chronic and acute risk.

- Sequential operation of all DPE system wells has effectively lowered the water table at the Property.

Recommendations

Landmark recommends continuing sequential operation of all eight DPE wells for the next couple of months, or until a significant decrease in emissions concentrations and mass removed is observed.

Additional monthly system operational, analytical, and fluid level data will be collected to better evaluate the system's effectiveness at accomplishing remedial goals, and to make adjustments as necessary to increase effectiveness. This data will be carefully monitored and analyzed, and system adjustments will be made to maintain efficient mass recovery.

Although monthly system operational, analytical, and fluid level data collection will continue, Landmark recommends reducing the MPCA reporting requirements for this information from monthly reporting to quarterly reporting. It is Landmark's opinion that enough data has been reported on a monthly basis since DPE system start up, and that at this stage of the system's operation, quarterly reporting is sufficient.

Groundwater monitoring and reporting will continue on a quarterly basis to assist in evaluating the effect of the DPE system on VOC concentrations in the groundwater.

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

Sincerely,

Jason D. Skramstad, P.E.

Cc: Terry Spaeth, City of Rochester

F:\PROJECTS\Crc \Monthly System Reports\20100310 DPE GW\20100422 Monthly System Report – Final

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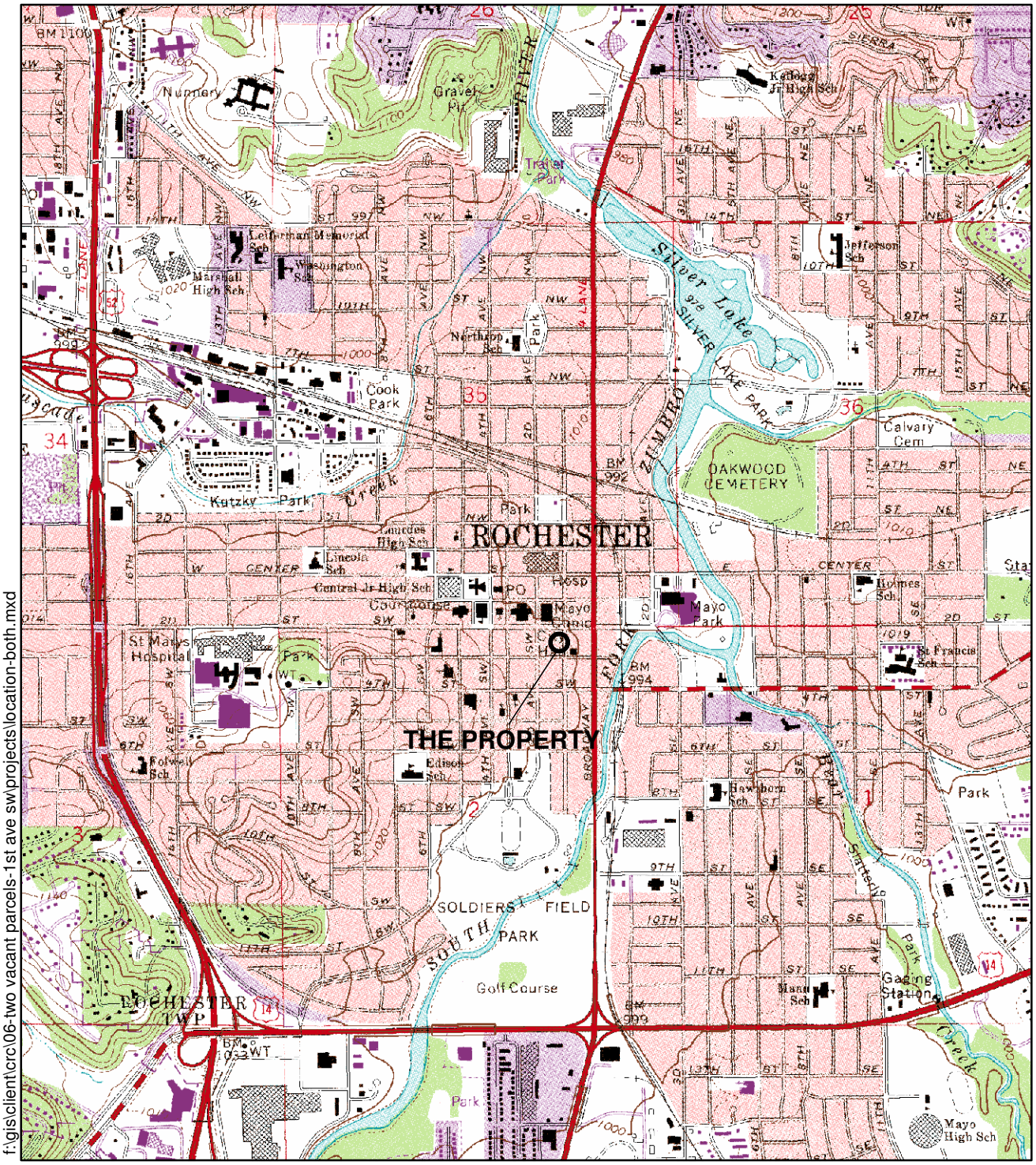
Figures



f:\gis\client\crc\06-two vacant parcels-1st ave sw\projects\location-both.mxd

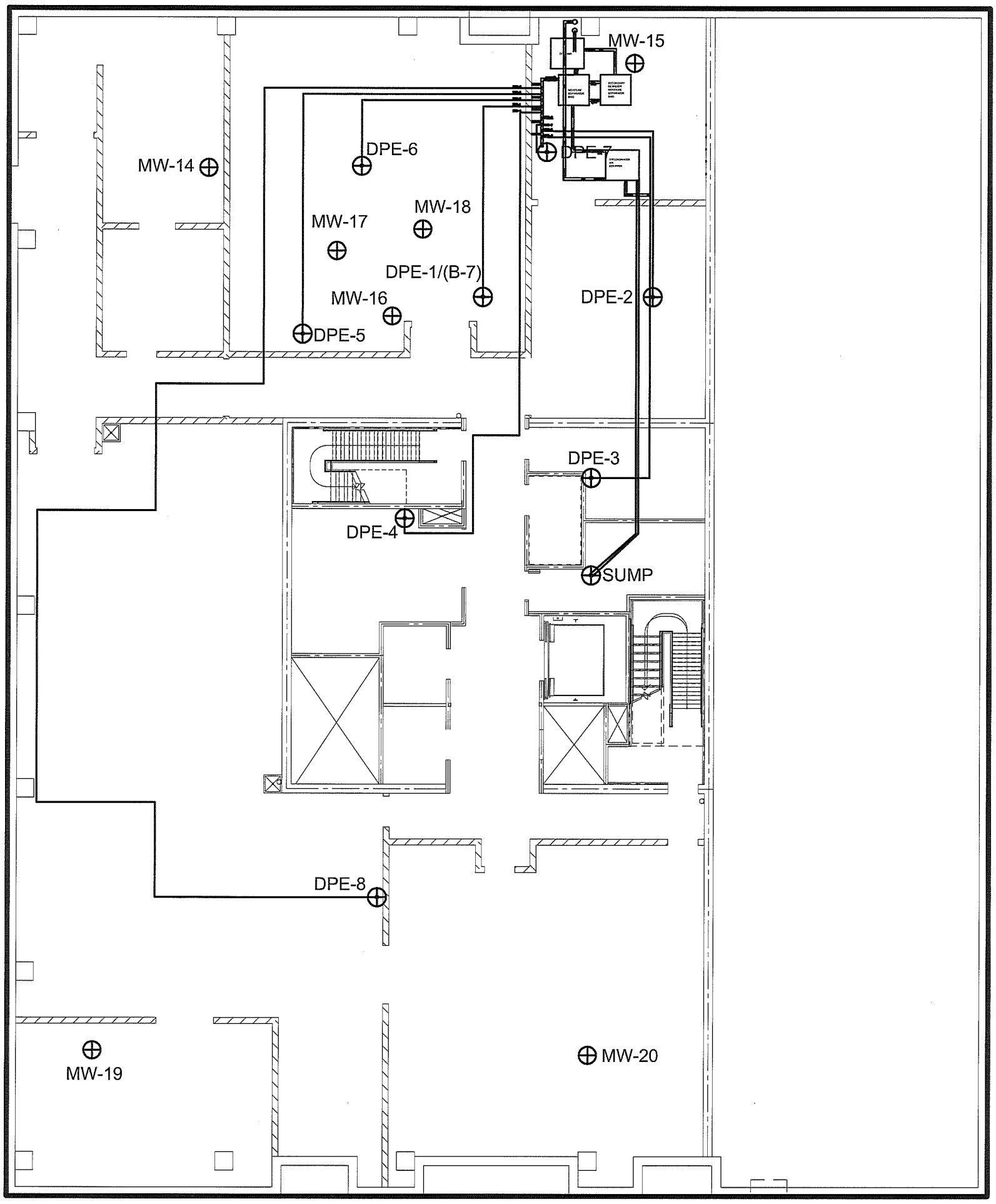
Source: Rochester, Minnesota Topographic Quadrangle, 7.5-Minute Series

N

2,000 1,000 0 2,000 Feet

FIGURE 1

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



BASEMENT FLOOR PLAN

LEGEND

⊕ DPE, Monitoring Well, or Sump Location

DPE Piping Location

Property Boundary

N

20 feet
SCALE

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

Rev	Date	By	Description

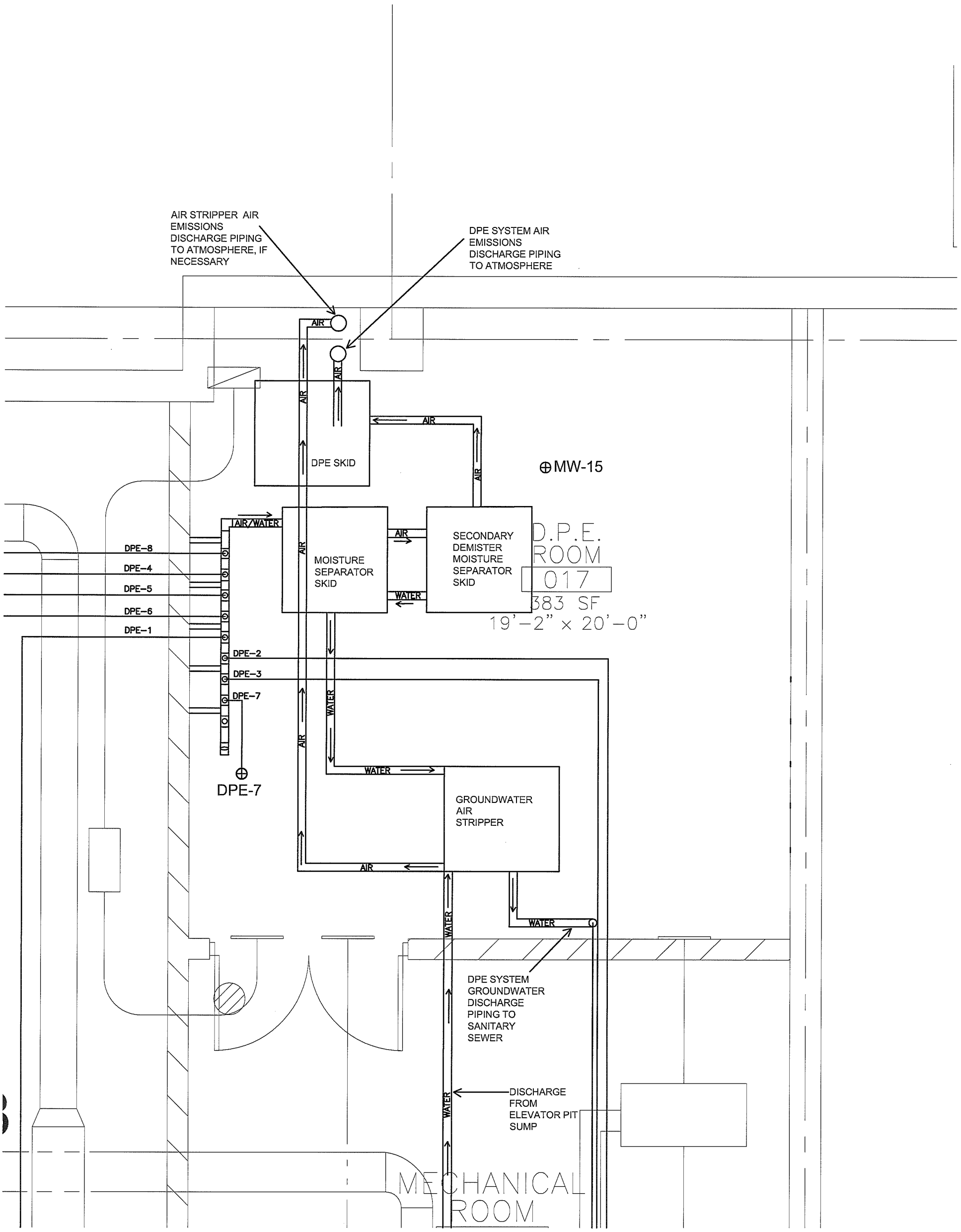
LANDMARK ENVIRONMENTAL, LLC
2042 West 98th Street
Bloomington, MN 55431

FIGURE 2

DPE SYSTEM LAYOUT

221 FIRST AVENUE S.W.
ROCHESTER, MINNESOTA

Landmark Project Number: CRC		
Drawn: JDS	Checked: JDS	Designed: JDS
Scale: .	Date: 7/9/2009	Revision:
Drawing Number: .	Sheet . Of .	Sheets .



LEGEND

Existing DPE Piping Location

AIR — Proposed Air Emissions Piping Location

WATER — Proposed Groundwater Discharge Piping Location

N

1 in = 3 ft
APPROXIMATE SCALE

BASEDRAWINGS PROVIDED BY HGA
F:/Projects/CRC/CAD/basement planview/20070829 DPE System/20100413 DPE Room.dwg

Rev	Date	By	Description

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

FIGURE 3

DPE ROOM LAYOUT

221 FIRST AVENUE S.W.
ROCHESTER, MINNESOTA

Landmark Project Number: CRC		
Drawn: JDS	Checked: JDS	Designed: JDS
Scale: 1:3	Date: 4/13/2010	Revision: .
Drawing Number: .	Sheet Of	Sheets

FIGURE 4

CUMULATIVE MASS REMOVED
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

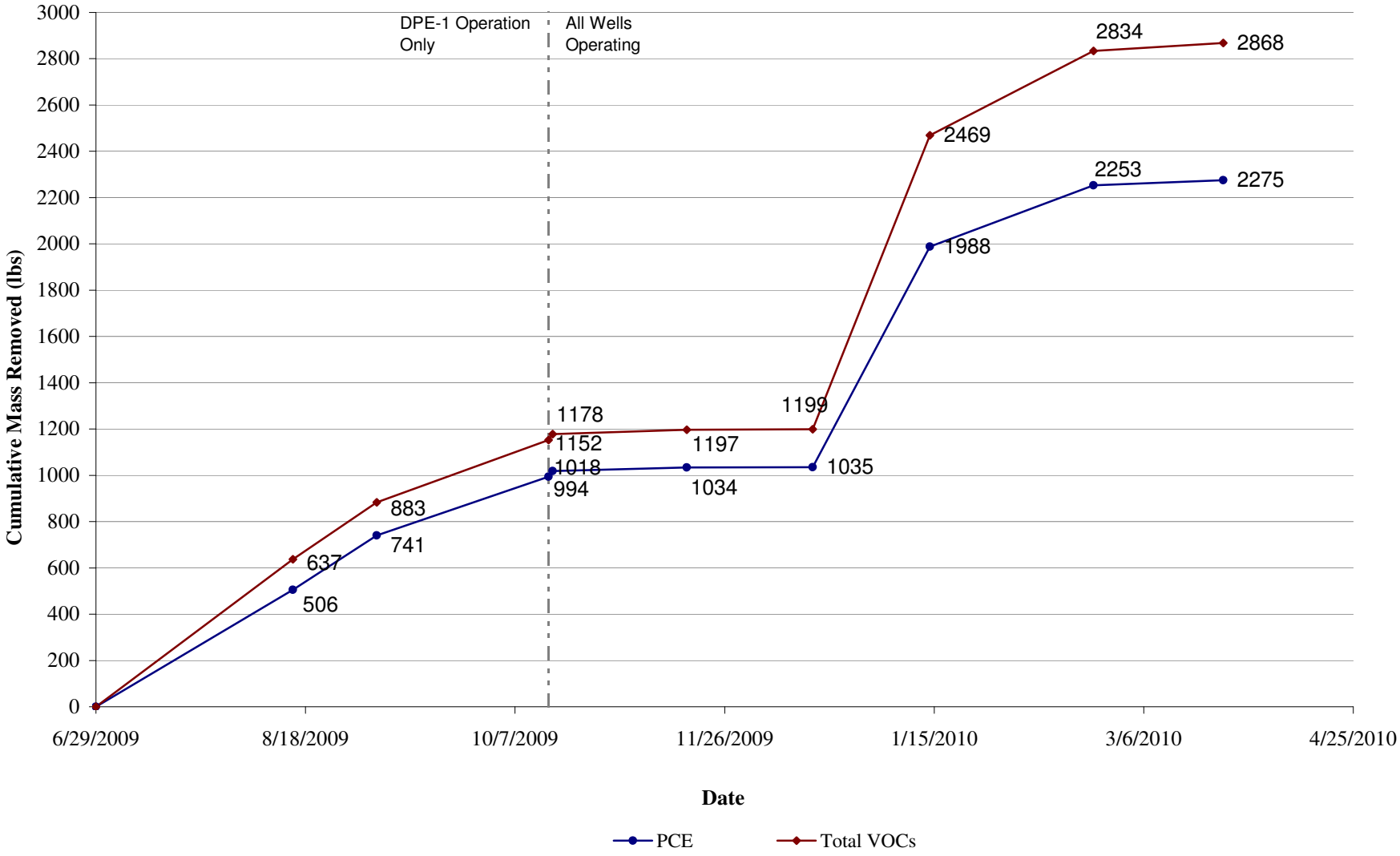


FIGURE 5

DPE EMISSIONS CONCENTRATIONS
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

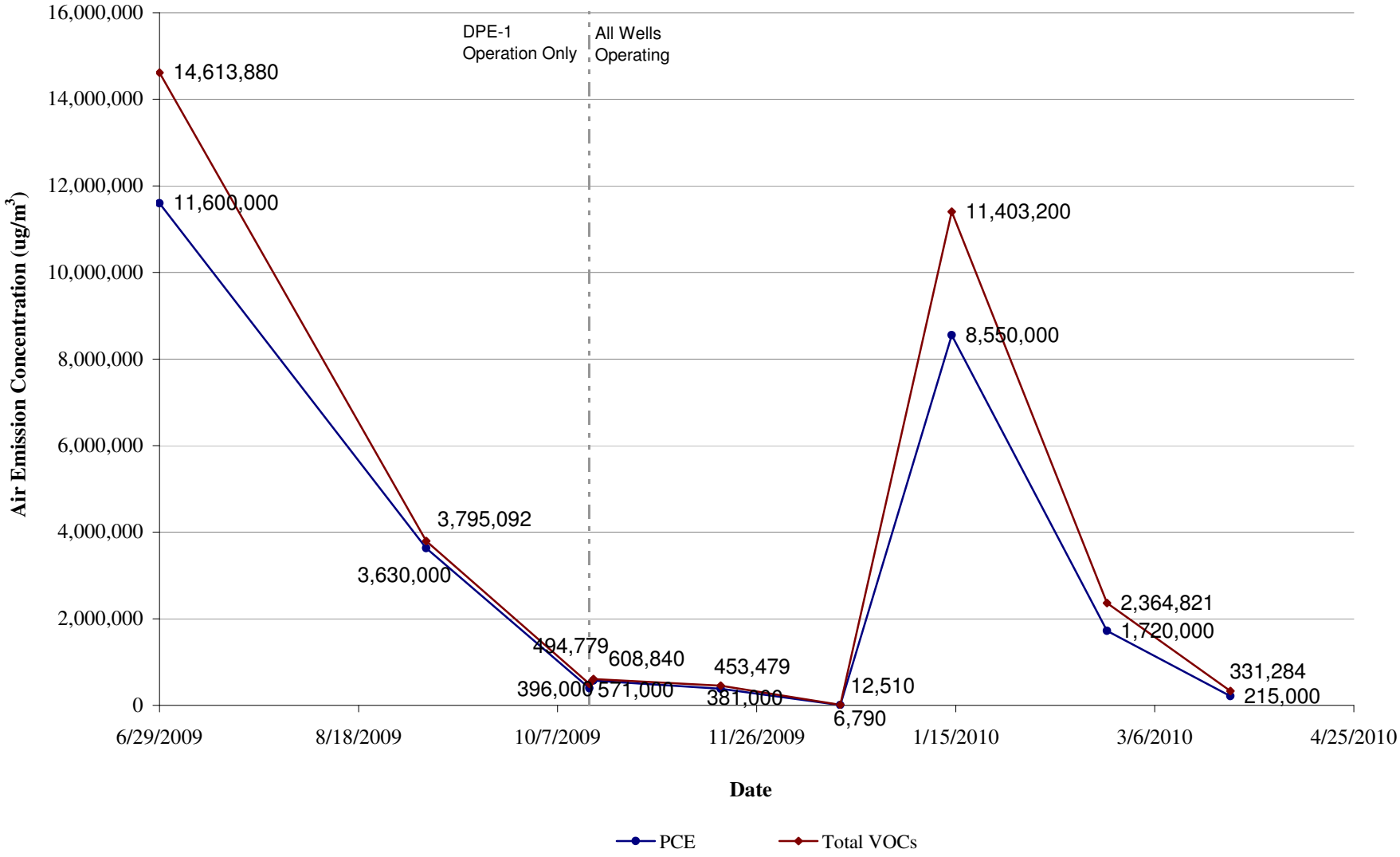


FIGURE 6

DPE WELL HYDROGRAPHS
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

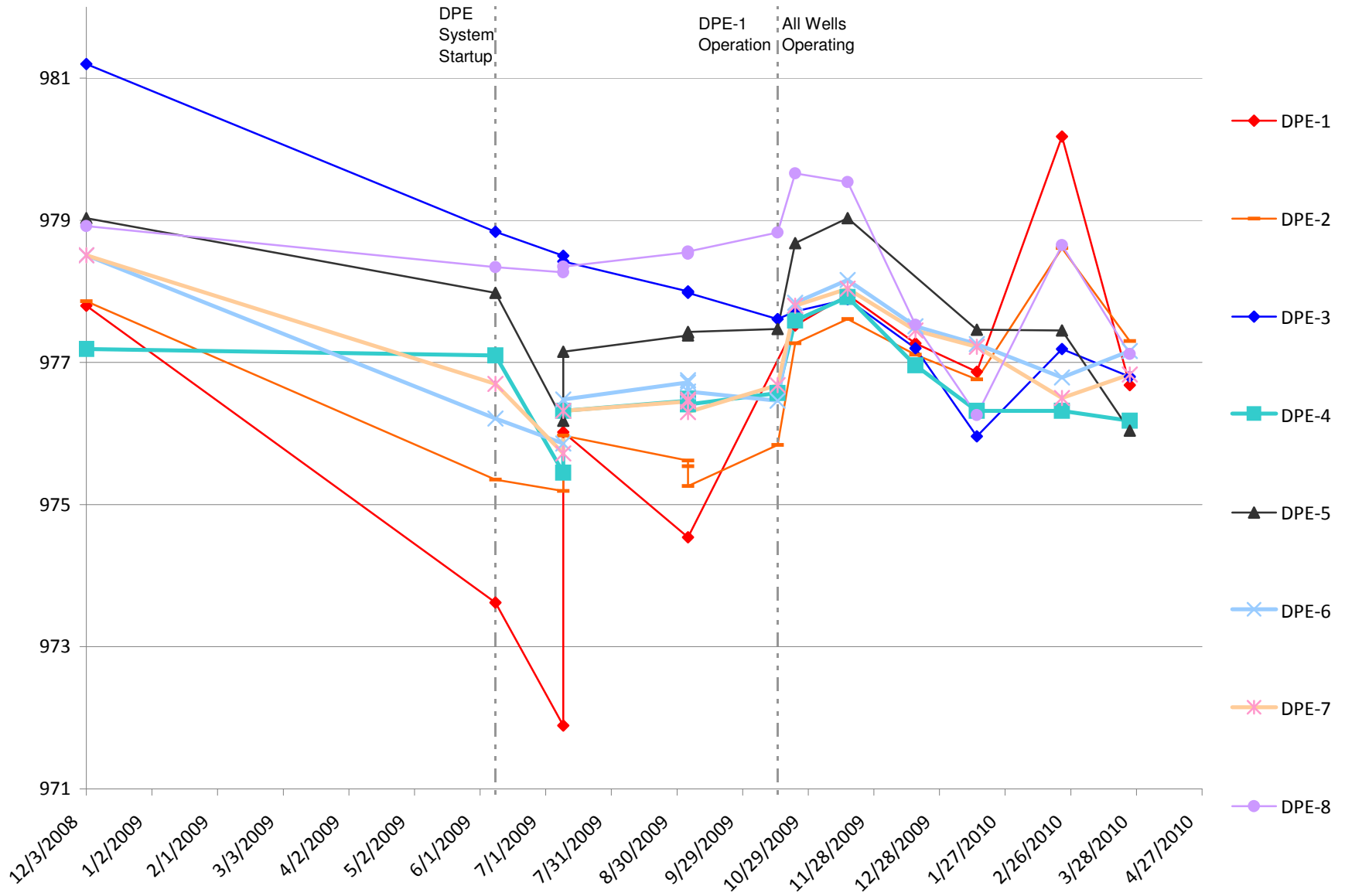
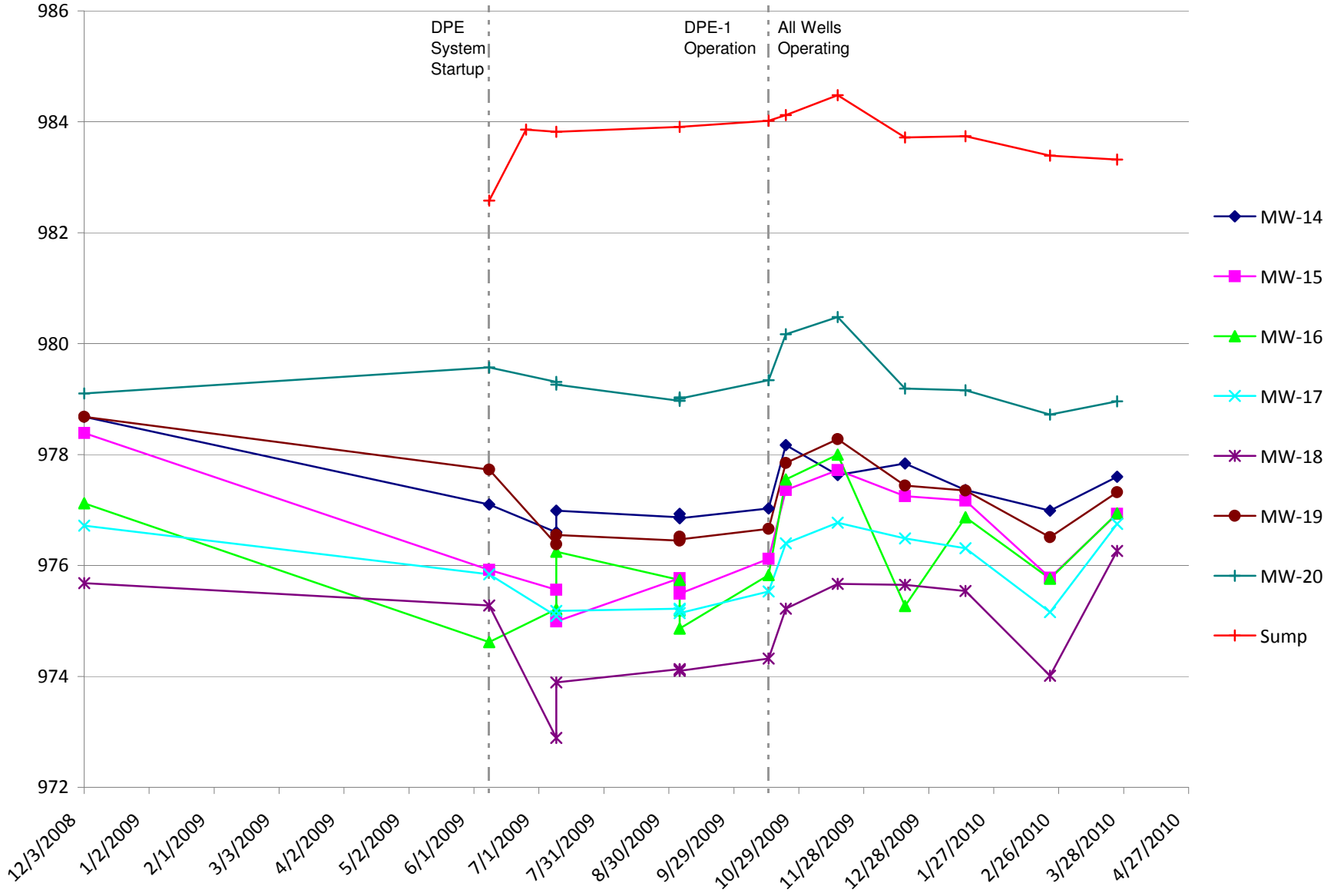
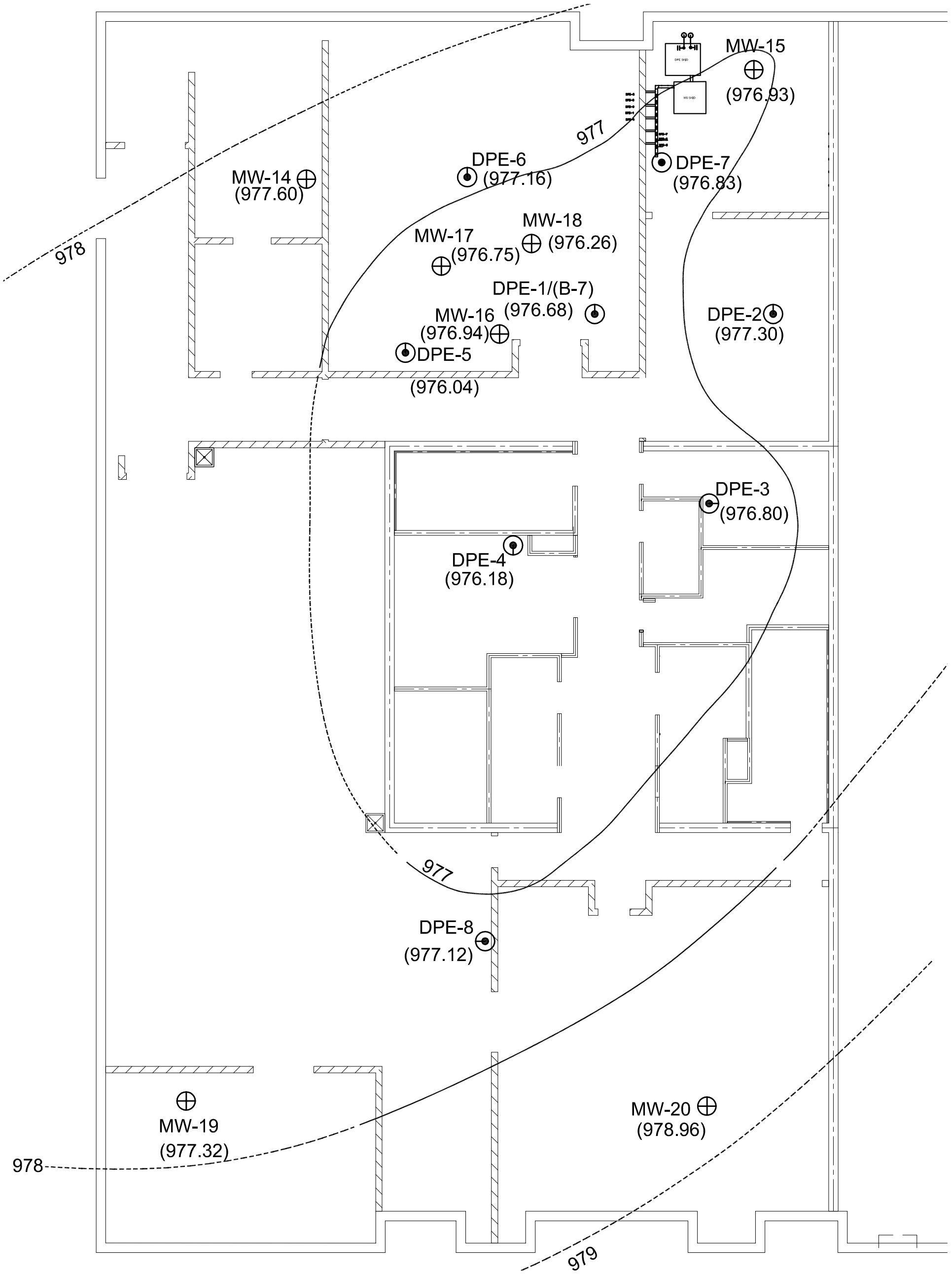


FIGURE 7

MONITORING WELL AND SUMP HYDROGRAPHS
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota





LEGEND

⊙ DPE Well Location

⊕ Monitoring Well Location

(977.32) Groundwater Elevation (feet above mean sea level)

N

10 feet
SCALE

BASE DRAWINGS PROVIDED BY HGA
F:/Projects/CRC/CAD/Groundwater Data/20100325 GW Elev Contours.dwg

Rev	Date	By	Description

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

FIGURE 8
GROUNDWATER FLOW INTERPRETATION - MARCH 2010

221 FIRST AVENUE S.W.
ROCHESTER, MINNESOTA

Landmark Project Number: CRC		
Drawn: JDS	Checked: JDS	Designed: JDS
Scale: .	Date: 4/14/2010	Revision:
Drawing Number: .	Sheet . Of .	Sheets .

Tables

TABLE 1

SYSTEM OPERATION AND MAINTENANCE SUMMARY
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Date	Approximate Time	Sensophone Call Received?	Alarm Condition	DPE System Status	Comments
9-Apr-09	NA	NA	NA	Off	DPE system temporary startup. **Sampled initial DPE groundwater discharge and air emissions.** System shut down to determine if air emissions and/or groundwater treatment were necessary.
4-Jun-09	NA	NA	NA	Off	Air stripper installed. **Air stripper air emissions and influent and effluent groundwater samples collected.**
5-Jun-09	NA	NA	NA	Off/On	Installed temporary secondary containment around DPE room door way. DPE system left on.
6-Jun-09	19:00	Y	MS High Level	On/Off	
8-Jun-09	NA	NA	NA	Off	Landmark on site to clean MS float switch assembly. DPE system left off per client request until elevator pit drain tile sump can be connected to the air stripper, a permanent secondary containment berm can be installed, and additional floor sump alarm and conductivity meter can be installed.
19-Jun-09	NA	NA	NA	Off	Landmark onsite to monitor elevator pit sump water levels and PID readings.
23-Jun-09	NA	NA	NA	Off	Landmark, SDE, and Muska on site to install permanent secondary containment berm and sump pit flow meter.
25-Jun-09	NA	NA	NA	Off	Landmark and PLC on site to terminate switches to the control panel. Noticed lower trilevel float switch is getting caught on the site tube. PLC to replace MS trilevel float assembly. Pumped 300 gallons of water from elevator drain tile sump through the air stripper. Sump appears to be recharging with water.
29-Jun-09	NA	NA	NA	Off/On	Landmark replaced MS trilevel float assembly. Bottom float still catches on site tube; therefore, Landmark installed JB-welded washers onto float assembly. Also compared flow meter readings with handheld monitor; replaced leaking air stripper hoses; recorded all system data from gauges and control panel. System restarted for permanent operation.
9-Jul-09	NA	NA	NA	On	Landmark onsite to troubleshoot low flowrate and vacuum readings observed remotely, to collect fluid level measurements at each well, to check the vacuum influence from DPE-1 operation at each DPE well head location; collect operational data during operation of DPE-1; to conduct a groundwater recovery test a DPE-1; modified the drop tube at DPE-3; and collected operational data wile operating on DPE-3. Kept system operating on DPE-1. **Sampled groundwater discharge.**
18-Jul-09	NA	No	DPE Pump Motor Fault	On/Off	
20-Jul-09	NA	NA	DPE Pump Motor Fault	Off	Received a call from Paramark stating the DPE was off and there was about 1 quart of oil leaking from the DPE pump.
22-Jul-09	NA	NA	DPE Pump Motor Fault	Off	Landmark onsite to troubleshoot DPE system shut down and determine the source of the oil leak.
24-Jul-09	NA	NA	DPE Pump Motor Fault	Off	Landmark and PLC onsite to remove DPE pump and deliver to John Henry Foster for Repair.

TABLE 1

SYSTEM OPERATION AND MAINTENANCE SUMMARY
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Date	Approximate Time	Sensophone Call Received?	Alarm Condition	DPE System Status	Comments
11-Aug-09	NA	NA	DPE Pump Motor Fault	Off/On	Landmark and PLC onsite to reinstall repaired DPE pump and restart the system. Landmark installed thermometer to monitor the ambient and max temperature in the DPE room in two different locations. Landmark swept, vacuumed, and mopped the floor several times to prevent dust from passing through the vacuum relief valve and clogging the pump inlet screen. PLC fixed the sensaphone. PLC and Landmark checked flow rate readings with blower curve. DPE system was restarted.
14-Aug-09	13:17	Y	DPE Pump High Inlet Vacuum	On/Off/On	Paramark opened all of the individual DPE well bleed valves and restarted the system.
16-Aug-09	4:34	Y	DPE Pump High Outlet Temperature	On/Off	
17-Aug-09	NA	NA	DPE Pump High Outlet Temperature	Off/On	Paramark checked max room temperature readings and all were OK. Paramark could not restart the DPE system. Landmark onsite to troubleshoot the pump and determined the inlet screen was plugged. Landmark cleaned the inlet screen, replaced the moisture separator filter, and restarted the system. The system was adjusted to run with the DPE pump bleed valve open 5% and the DPE-1 bleed valve open 20%.
18-Aug-09	4:15	Y	DPE Pump High Inlet Vacuum	On/Off	Landmark tried restarting the system remotely, but the system would not operate for more than 30 seconds. A pressure drop was observed while trying to restart the system indicating the moisture separator filter or pump inlet screen was plugged.
20-Aug-09	NA	NA	DPE Pump High Inlet Vacuum	Off/On	Landmark onsite to troubleshoot system shutdown. Landmark verified the shutdown was the result of a plugged pump intake screen. The screen was cleaned with hydrochloric acid and reinstalled. Landmark installed a pipe plug in place of the vacuum relief valve to determine if the material plugging the screen is entering through the vacuum relief valve. Landmark added slits to DPE-1 drop tube to facilitate dewatering of the well. System restarted with DPE-1 bleed air valve opened 50% and pump bleed valve closed.
22-Aug-09	5:30	Y	DPE Pump High Inlet Vacuum	On/Off	
24-Aug-09	NA	NA	DPE Pump High Inlet Vacuum	Off/On	Restarted system remotely. Directed Paramark to open DPE-1 bleed valve 100%.
4-Sep-09	NA	NA	NA	On	Landmark on site to conduct **monthly monitoring and sampling event**, install 1 micron moisture separator filter, and install new pump intake screen.

TABLE 1

SYSTEM OPERATION AND MAINTENANCE SUMMARY
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Date	Approximate Time	Sensophone Call Received?	Alarm Condition	DPE System Status	Comments
16-Sep-09	19:26	Y	DPE Pump High Inlet Vacuum	On/Off	
17-Sep-09	NA	NA	DPE Pump High Inlet Vacuum	Off/On	Restarted system remotely. Directed Paramark to open DPE-1 bleed valve 100%.
28-Sep-09	NA	NA	NA	On	Landmark on site to conduct **quarterly groundwater monitoring and sampling event**, and spray aluminum pump inlet components with dry lube to prevent corrosion.
	21:22	Y	DPE Pump High Inlet Vacuum	On/Off	
29-Sep-09	NA	NA	DPE Pump High Inlet Vacuum	Off/On	Landmark and PLC on site to troubleshoot alarm. The rubber hose between the moisture separator and the DPE pump was found to be defective. The rubber hose was replaced and the system was restarted.
30-Sep-09	6:32	Y	MS High Level	Off	
	NA	NA	MS High Level	Off/On	Landmark on site to finish **quarterly groundwater monitoring and sampling event**, and clean the float switches controlling the moisture separator transfer pump. The DPE system was restarted.
10/15/2009 and 10/16/09	NA	NA	NA	On	Landmark on site to conduct **monthly monitoring and sampling event** and modify all of the wells for sequential operation.
19-Oct-09	18:00	Y	MS High Level	On/Off	
23-Oct-09	NA	Yes	NA	Off/On	Landmark on site to clean the MS float assembly, replace MS hose with SCH 80 pipe and union, and install bleed air port on DPE-3 water level drop tube.
25-Oct-09	8:15	Y	MS High Level	On/Off	
27-Oct-09	NA	Yes	NA	Off/On	Landmark on site to clean MS float assembly, remove sediment from the MS, collect a TCLP VOC sediment sample for haz waste characterization, and modify the drop tube for DPE-3.
	14:15	Y	Hi Vacuum and Hi Inlet Vacuum	On/Off	System shut down from DPE-4's solenoid valve which was stuck in the off position.
28-Oct-09	NA	NA	Hi Vacuum and Hi Inlet Vacuum	Off/On	Under Landmark's direction, Paramark was able to get DPE-4's solenoid valve to work.
2-Nov-09	23:15	Y	Hi Vacuum and Hi Inlet Vacuum	On/Off	System shut down from high inlet vacuum while operating at DPE-8.
3-Nov-09	11:15	NA	Hi Vacuum and Hi Inlet Vacuum	Off/On	System restarted remotely by Landmark.

TABLE 1

SYSTEM OPERATION AND MAINTENANCE SUMMARY
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Date	Approximate Time	Sensophone Call Received?	Alarm Condition	DPE System Status	Comments
5-Nov-09	11:16	Y	Hi Vacuum and Hi Inlet Vacuum	On/Off	System shut down from high inlet vacuum while operating at DPE-8.
	11:36	NA	Hi Vacuum and Hi Inlet Vacuum	Off/On	System restarted remotely by Landmark. DPE-8 interval replaced by DPE-1 until Landmark is on site to modify the DPE-8's well head. Large pressure drop observed between VT1 an VT2. With Paramark's assistance, Landmark was able to determine the pressure drop was from a plugged DPE pump inlet screen.
	13:00	NA	NA	On/Off	Large pressure drop observed between VT1 an VT2 while Landmark checked the system remotely. With Paramark's assistance, Landmark was able to determine the pressure drop was from a plugged DPE pump inlet screen. System shut down by Landmark until screen could be cleaned.
6-Nov-09	NA	NA	NA	Off/On	Landmark onsite to install new inlet screen on DPE pump, tighten air stripper rods, inspect and clean inside of DPE-1 and DPE-3 aluminum solenoid valves, and restart the system.
7-Nov-09	20:15	Y	Hi Vacuum and Hi Inlet Vacuum	On/Off	System shut down from high inlet vacuum while operating at DPE-4.
9-Nov-09	10:58	NA	Hi Vacuum and Hi Inlet Vacuum	Off/On	Landmark restarted the system remotely and adjusted the high vacuum alarm setpoints to 25 in. Hg.
15-Nov-09	6:27	Y	MS High Level	On/Off	
11/16/2009 and 11/17/09	NA	NA	MS High Level	Off/On	Landmark on site to conduct **monthly monitoring and sampling event** and **quarterly groundwater monitoring event.** Removed sediment from moisture separator, and modified DPE-8 well head, and cleaned pump inlet screen.
26-Nov-09	3:45	Y	DPE Pump Hi Outlet Temperature	On/Off	
27-Nov-09	NA	NA	DPE Pump Hi Outlet Temperature	Off/On	Landmark on site to clean the pump inlet screen and restart the system.
4-Dec-09	NA	NA	NA	On/Off	Landmark on site to clean solenoid valves and apply corrosion resistant coating to valves; DPE-4 and DPE-5 well heads modified to entrain air through water level port.
7-Dec-09	NA	NA	NA	Off/On	Landmark on site to reassemble solenoid valves; raise the manifold 1 foot; clean the pump inlet screen; and restart the system.
17-Dec-09	NA	NA	NA	On	Landmark on site to **conduct monthly monitoring and sampling event,** replace pump inlet screen, clean moisture separator, and clean floats.
28-Dec-09	NA	NA	NA	On	Landmark on site to replace pump inlet screen after remote monitoring indicated it was about to shut down from being clogged.
11-Jan-10	NA	NA	NA	On/Off	Landmark shut down the system remotely after the remote data indicated the pump inlet screen was clogged and about to shut down the system.

TABLE 1

SYSTEM OPERATION AND MAINTENANCE SUMMARY
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Date	Approximate Time	Sensophone Call Received?	Alarm Condition	DPE System Status	Comments
14-Jan-10	NA	NA	NA	Off/On	Landmark on site to **conduct monthly monitoring and sampling event,** clean pump inlet screen, and clean moisture separator floats.
23-Jan-10	14:15	Y	DPE Pump High Inlet Vacuum	On/Off	
27-Jan-10	NA	NA	DPE Pump High Inlet Vacuum	Off/On	Landmark on site to clean the pump inlet screen and restart the system.
30-Jan-10	18:58	Y	MS High Level	On/Off	
3-Feb-10	NA	NA	MS High Level	Off/On	Landmark onsite to clean the transfer pump floats, clean the moisture separator, and clean the pump inlet screen.
	22:09	Y	MS High Level	On/Off	
4-Feb-10	14:50	NA	MS High Level	Off/On	Landmark directed Paramark to pour tap water through the site tube to dislodge the low level transfer pump float and restart the system.
6-Feb-10	7:22	Y	MS High Level	On/Off	
10-Feb-10	NA	NA	MS High Level	Off/On	Landmark onsite to clean the transfer pump floats, the moisture separator, the moisture separator site tube elbow, discharge pump floats, and the pump inlet screen. Landmark also restarted the system.
	16:47	Y	MS High Level	On/Off	
	18:00	NA	MS High Level	Off/On	Landmark restarted the system remotely.
	19:42	Y	MS High Level	On/Off	
11-Feb-10	10:34	NA	MS High Level	Off/On	Landmark restarted the system remotely.
	12:54	Y	MS High Level	On/Off	
12-Feb-10	NA	NA	MS High Level	Off/On	Landmark onsite to troubleshoot the MS High Level alarm. Landmark performed the following tasks: checked the MS level switch configurations; ran diagnostic tests to narrow down the cause of the MS High Level alarm; replaced the check valve upstream of the MS pump; and, took apart the MS pump head to inspect and clean the internal pump parts.
16-Feb-10	NA	NA	NA	On	System is operational; however, remote monitoring of the system showed the MS transfer pump cycling every 2 minutes. Landmark onsite to replace the MS transfer pump stator, and troubleshoot the continuous cycling issue with the transfer pump.
22-Feb-10	NA	NA	NA	On	Landmark onsite to conduct **monthly monitoring and sampling event, quarterly groundwater monitoring event,** to disabled the sensaphone sound alarm, and remove sediment from the primary moisture separator (MS1).

TABLE 1

SYSTEM OPERATION AND MAINTENANCE SUMMARY
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Date	Approximate Time	Sensophone Call Received?	Alarm Condition	DPE System Status	Comments
23-Feb-10	NA	NA	NA	On/Off/On	Landmark on site to finish the **quarterly groundwater monitoring event,** and to provide oversight while PLC installs the secondary moisture separator (MS2). MS2 level switch was determined to be faulty; however, the DPE system was restarted.
26-Feb-10	NA	NA	NA	On	Landmark and PLC were on site to replace the faulty level switch for MS2, and replace the MS1 and MS2 filters.
7-Mar-10	18:00	Y	DPE Pump High Inlet Vacuum	On/Off	
9-Mar-10	NA	NA	DPE Pump High Inlet Vacuum	Off/On	Landmark onsite to permanently remove the DPE pump inlet screen and change the oil in the DPE pump. Oil in the DPE pump was changed after 4,472 hours of operation.
25-Mar-10	NA	NA	NA	On	Landmark on site to **conduct monthly monitoring and sampling event,** and clean the air stripper by adding 1 gallon of hydrochloric acid.
26-Mar-10	5:16	Y	DPE Pump High Inlet Vacuum	On/Off/On	System shut down during operation at DPE-8. System restarted remotely by Landmark.
	11:15	Y	DPE Pump High Inlet Vacuum	On/Off/On	System shut down during operation at DPE-8. System restarted by Paramark as directed by Landmark after opening the bleed valve on DPE-8's well head.
	17:15	Y	DPE Pump High Inlet Vacuum	On/Off	System shut down during operation at DPE-8.
29-Mar-10	11:17	Y	DPE Pump High Inlet Vacuum	Off/On	System shut down during operation at DPE-8. System restarted remotely by Landmark after troubleshooting the system.
	12:36	Y	DPE Pump High Inlet Vacuum	On/Off/On	System shut down during operation at DPE-8. System restarted remotely by Landmark after troubleshooting the system.
	13:41	Y	DPE Pump High Inlet Vacuum	On/Off/On	System shut down during operation at DPE-8. System restarted remotely by Landmark after troubleshooting the system.
	13:42	Y	DPE Pump High Inlet Vacuum	On/Off/On	System shut down during operation at DPE-8. System restarted remotely by Landmark after troubleshooting the system.
	13:56	Y	DPE Pump High Inlet Vacuum	On/Off/On	System shut down during operation at DPE-8. System restarted remotely by Landmark after troubleshooting the system. To prevent system shutdown's during operation of DPE-8, Landmark modified the DPE system to allow DPE-7 to operate any time that DPE-8 is operating.
30-Mar-10	NA	NA	NA	On	Landmark on site to troubleshoot DPE-8.
8-Apr-10	NA	NA	NA	On	Landmark remote troubleshooting of DPE-8. Operated DPE-8 without DPE-7.
	11:35	Y	DPE Pump High Inlet Vacuum	On/Off/On	Landmark modified Landmark modified the DPE system to allow DPE-7 to operate any time that DPE-8 is operating.

NA: Not Applicable.
Y: Yes.
N: No.

TABLE 2

MASS REMOVAL FROM DPE EXHAUST
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Monitoring Period		DPE Well(s) Operating	DPE Pump Hours	Hours Per Period	Total Flow Rate (scfm)	Total VOCs			PCE		
Start Date	End Date					Concentration (ug/m^3)	Pounds Per Period	Cumulative pounds	Concentration (ug/m^3)	Pounds Per Period	Cumulative Pounds
---	6/29/2009		0	0	0	0	0	0	0	0	0
6/29/2009	8/15/2009	DPE-1	478.5	478.5	24.3	14,613,880	636.97	636.97	11,600,000	505.61	505.61
8/15/2009	9/4/2009	DPE-1	957	478.5	36.1	3,795,092	245.74	882.71	3,630,000	235.05	740.66
9/4/2009	---	DPE-1	1428	471	36.1	3,795,092	241.89	1,124.60	3,630,000	231.37	972.02
---	10/15/2009	DPE-1	1899	471	31.6	494,779	27.60	1,152.21	396,000	22.09	994.12
10/16/2009	---	All Wells	1899	231	48.9	608,840	25.78	1,177.99	571,000	24.18	1018.30
---	11/17/2009	All Wells	2361	231	48.9	453,479	19.20	1,197.19	381,000	16.13	1034.43
11/17/2009	12/17/2009	All Wells	2960	599	48.9	12,510	1.37	1,198.56	6,790	0.75	1035.17
12/17/2009	1/14/2010	All Wells	3568	608	48.9	11,403,200	1270.88	2,469.45	8,550,000	952.89	1988.07
1/14/2010	2/22/2010	All Wells	4161	593	69.4	2,364,821	364.82	2,834.27	1,720,000	265.34	2253.41
2/22/2010	3/25/2010	All Wells	4551	390	69.4	331,284	33.61	2,867.88	215,000	21.81	2275.23

Notes:

1. The initial concentrations of total VOCs and PCE used for estimating the mass removed during the first 478.5 hours of system operation, which was estimated to be from, June 29, 2009, through August 15, 2009.
2. The concentrations of total VOCs and PCE from the September 4, 2009, sampling event were used for estimating the mass removed during the remaining 478.5 hours of system operation, which was estimated to be from August 15, 2009, through September 4, 2009.
3. The DPE system was temporarily started on April 9, 2009, for baseling DPE emissions sampling and analysis. The analytical data from April 4, 2009, was used for the emissions calculations on the estimated DPE system start date of June 29, 2009.
4. The flow rate used for the 10/15/09 calculations was from operation at DPE-1.
5. The flow rates used for the 10/16/09, 11/17/09, 12/17/09, and 1/14/10 calculations was from averaging the flowrates on 11/17/09 from each well during sequential operation of all DPE wells.

TABLE 3

AIR EMISSIONS ANALYTICAL RESULTS
(micrograms per cubic meter)
MN Bio Business Center
221 1st Avenue SW
Rochester, MN

Sample ID	DPE EXHAUST 1316	DPE EXHAUST 1037	DPE OUTLET 1042	DPE-OUTLET 0903	DPE-OUTLET 1254
Wells Operating	All DPE Wells	All DPE Wells	All DPE Wells	All DPE Wells	All DPE Wells
Sample Collection Method	6-hr Composite	6-hr Composite	6-hr Composite	6-hr Composite	6-hr Composite
Collected Date	3/25/2010	2/22/2010	1/14/2010	12/17/2009	11/17/2009
1,1,1-Trichloroethane	**30.7**	**61**	ND	**23.9**	ND
1,1,2,2-Tetrachloroethane	<2.5	ND	ND	ND	ND
1,1,2-Trichloroethane	<2.0	ND	ND	ND	ND
1,1,2-Trichlorotrifluoroethane	**115,000**	**644,000**	**2,720,000**	**4,440**	**72,100**
1,1-Dichloroethane	<1.5	ND	ND	ND	ND
1,1-Dichloroethene	**3.0**	**7.66**	ND	ND	ND
1,2,4-Trichlorobenzene	<1.8	ND	ND	ND	ND
1,2,4-Trimethylbenzene	**12.8**	ND	ND	ND	ND
1,2-Dibromoethane (EDB)	<2.9	ND	ND	ND	ND
1,2-Dichlorobenzene	<2.2	ND	ND	ND	ND
1,2-Dichloroethane	<1.5	ND	ND	ND	ND
1,2-Dichloropropane	<1.7	**7.05**	ND	ND	ND
1,3,5-Trimethylbenzene	<4.5	ND	ND	ND	ND
1,3-Butadiene	<0.81	ND	ND	ND	ND
1,3-Dichlorobenzene	<2.2	ND	ND	ND	ND
1,4-Dichlorobenzene	<2.2	ND	ND	ND	ND
2-Butanone (MEK)	**44.2**	**12.9**	ND	ND	ND
2-Hexanone	<1.5	ND	ND	ND	ND
2-Propanol	**19.0**	NA	NA	NA	NA
4-Ethyltoluene	<4.5	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	<1.5	ND	ND	ND	ND
Acetone	**163**	**84.5**	**76,800**	**126**	**116**
Benzene	<1.2	ND	ND	**16.2**	ND
Benzyl chloride	<1.9	NA	NA	NA	NA
Bromodichloromethane	<2.5	ND	ND	ND	ND
Bromoform	<3.8	ND	ND	ND	ND
Bromomethane	<1.4	ND	ND	ND	ND
Carbon disulfide	**1.3**	ND	ND	ND	ND
Carbon tetrachloride	<2.3	ND	ND	ND	ND
Chlorobenzene	<1.7	ND	ND	ND	ND
Chloroethane	<0.97	ND	ND	ND	ND
Chloroform	**11.3**	**15.4**	ND	ND	ND
Chloromethane	<0.76	ND	ND	ND	ND
cis-1,2-Dichloroethene	**80.2**	**198**	ND	**47.2**	**118**
cis-1,3-Dichloropropene	<1.7	ND	ND	ND	ND
Cyclohexane	**2.2**	**14.3**	ND	**766**	ND
Dibromochloromethane	<3.1	ND	ND	ND	ND
Dichlorodifluoromethane	**11.0**	ND	ND	ND	ND
Dichlorotetrafluoroethane	<2.5	ND	ND	ND	ND
Ethanol	**26.1**	NA	NA	NA	NA
Ethyl acetate	<1.3	ND	ND	ND	ND
Ethylbenzene	**118**	ND	ND	ND	ND
Hexachloro-1,3-butadiene	<4.0	ND	ND	ND	ND
m&p-Xylene	**456**	ND	ND	ND	ND
Methylene Chloride	<1.3	ND	ND	**270**	ND
Methyl-tert-butyl ether	<1.3	ND	ND	ND	ND
Naphthalene	<4.9	NA	NA	NA	NA
n-Heptane	**2.7**	ND	ND	ND	ND
n-Hexane	**4.7**	**135**	ND	ND	ND
o-Xylene	**159**	ND	ND	ND	ND
Propylene	<0.63	ND	ND	ND	ND
Styrene	<1.6	ND	ND	ND	ND
Tetrachloroethene	**215,000**	**1,720,000**	**8,550,000**	**6,790**	**381,000**
Tetrahydrofuran	**58.0**	**45.6**	**56,400**	ND	**145**
Toluene	**28.4**	**124**	ND	**9.58**	ND
trans-1,2-Dichloroethene	<1.5	ND	ND	ND	ND
trans-1,3-Dichloropropene	<1.7	ND	ND	ND	ND
Trichloroethene	**43.7**	**116**	ND	**21.3**	ND
Trichlorofluoromethane	<2.0	ND	ND	ND	ND
Vinyl acetate	**8.9**	ND	ND	ND	ND
Vinyl chloride	<0.94	ND	ND	ND	ND
Total VOCs	**331,284**	**2,364,821**	**11,403,200**	**12,510**	**453,479**

Notes:
Bold: parameter detected above the reporting limit.
NA: Not Analyzed.

TABLE 3

AIR EMISSIONS ANALYTICAL RESULTS
(micrograms per cubic meter)
MN Bio Business Center
221 1st Avenue SW
Rochester, MN

Sample ID	DPE-EFFLUENT 531	DPE-EFFLUENT 253	DPE - EFFLUENT 0680	DPE EXHAUST 842
Wells Operating	All DPE Wells	DPE-1	DPE-1	DPE-1
Sample Collection Method	6-hr Composite	Grab	Grab	Grab
Collected Date	10/16/2009	10/15/2009	9/4/2009	4/9/2009
1,1,1-Trichloroethane	**81.7**	**4.2**	**127**	**4,450**
1,1,2,2-Tetrachloroethane	<2.2	<2.1	<2.1	<2480
1,1,2-Trichloroethane	<1.7	<1.6	<1.6	<1950
1,1,2-Trichlorotrifluoroethane	**172**	**97,900**	**153,000**	**2,940,000**
1,1-Dichloroethane	<1.3	<1.2	<1.2	<1450
1,1-Dichloroethene	**13.9**	<1.2	15.0	<1440
1,2,4-Trichlorobenzene	<1.5	<1.5	<1.5	<1760
1,2,4-Trimethylbenzene	<3.8	<3.7	**10.2**	<4440
1,2-Dibromoethane (EDB)	<2.5	<2.4	<2.4	<2840
1,2-Dichlorobenzene	<1.8	<1.8	<1.8	<2130
1,2-Dichloroethane	<1.3	<1.2	<1.2	<1450
1,2-Dichloropropane	<1.4	<1.4	<1.4	<1670
1,3,5-Trimethylbenzene	<3.8	<3.7	**5.0**	<4440
1,3-Butadiene	<0.69	<0.67	<0.67	<798
1,3-Dichlorobenzene	<1.8	<1.8	**6.0**	<2130
1,4-Dichlorobenzene	<1.8	<1.8	**8.6**	<2130
2-Butanone (MEK)	**12.2**	<0.89	**15.8**	<1060
2-Hexanone	<1.3	<1.2	<1.2	<1470
2-Propanol	**4.9**	<3.7	<3.7	<4440
4-Ethyltoluene	<3.8	<3.7	**6.0**	<4440
4-Methyl-2-pentanone (MIBK)	<1.3	<1.2	<1.2	<1470
Acetone	**37,000**	**501**	**7,510**	<852
Benzene	**1.1**	**1.5**	**2.3**	<1150
Benzyl chloride	NA	NA	NA	NA
Bromodichloromethane	<2.2	<2.1	<2.1	<2480
Bromoform	<3.2	<3.1	<3.1	<3730
Bromomethane	<1.2	<1.2	<1.2	<1400
Carbon disulfide	<0.97	<0.93	**5.9**	<1120
Carbon tetrachloride	<2.0	<1.9	<1.9	<2310
Chlorobenzene	<1.4	<1.4	<1.4	<1670
Chloroethane	<0.83	<0.80	<0.80	<958
Chloroform	**25.8**	<1.5	**21.5**	<1760
Chloromethane	<0.65	<0.62	<0.62	<745
cis-1,2-Dichloroethene	**257**	**21.5**	**2,620**	**36,300**
cis-1,3-Dichloropropene	<1.4	<1.4	<1.4	<1630
Cyclohexane	<1.0	<1.0	**3.5**	<1210
Dibromochloromethane	<2.6	<2.5	<2.5	<3020
Dichlorodifluoromethane	<1.5	**2.8**	<1.5	**2,230**
Dichlorotetrafluoroethane	<2.2	<2.1	<2.1	**3,400**
Ethanol	**8.9**	**8.4**	**5.7**	<3370
Ethyl acetate	<1.1	<1.1	<1.1	<1300
Ethylbenzene	**7.9**	<1.3	<1.3	<1560
Hexachloro-1,3-butadiene	<3.4	<3.3	<3.3	<3900
m&p-Xylene	**25.0**	**2.6**	**14.2**	<3120
Methylene Chloride	<1.1	**276**	<1.1	<1260
Methyl-tert-butyl ether	<1.1	<1.1	<1.1	<1300
Naphthalene	**5.6**	<4.0	**4.2**	**10,100**
n-Heptane	<1.3	<1.2	**2.6**	<1470
n-Hexane	**2.1**	**35.4**	**3.4**	<1280
o-Xylene	**7.5**	<1.3	**4.8**	<1560
Propylene	<0.54	<0.52	<0.52	<621
Styrene	<1.3	<1.3	<1.3	<1540
Tetrachloroethene	**571,000**	**396,000**	**3,630,000**	**11,600,000**
Tetrahydrofuran	**36.2**	<0.89	**31.1**	<1060
Toluene	**17.6**	**10.3**	**14.4**	<1370
trans-1,2-Dichloroethene	<1.2	<1.2	**4.2**	<1440
trans-1,3-Dichloropropene	<1.4	<1.4	<1.4	<1630
Trichloroethene	**153**	**13.6**	**1,640**	**17,400**
Trichlorofluoromethane	<1.7	**1.7**	**2.2**	<1950
Vinyl acetate	**7.4**	<1.1	**8.7**	<1260
Vinyl chloride	<0.80	<0.77	<0.77	<923
Total VOCs	**608,840**	**494,779**	**3,795,077**	**14,603,780**

Notes:
Bold: parameter detected above the repor
NA: Not Analyzed.

TABLE 4

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

Date	DPE Wells Operating	Parameter	Concentration (ug/m^3)	Emissions Rates				
				DPE (ug per sec)	AS (ug per sec)	Site Specific (ug per sec)	SER for Chronic Risk (ug per sec)	SER for Acute Risk (ug 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	6	5,946	16,300	5,980,000
10/16/2009	All Wells	Tetrachloroethylene	571,000	8,565	6	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

Notes:
SERs: MPCA Screening Emissions Rates

61,780 Emissions rate is above MPCA SER

Table 5

Mass Removal from Groundwater Treatment System
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Monitoring Period								Total VOCs					
Start Date[1]	End Date	Days per Period	Hours per Period	Flow Meter Reading (gallons)	Gallons Treated During Period	Average Flow Rate (gpm)	Average Flow Rate (liter/sec)	Influent Conc. (ug/L)	Effluent Conc. (ug/L)	% Reduction	Mass Removed per Period (lbs)	Cumulative Mass Removed (lbs)	Addition to Emission Rate (lbs/day)
4/9/2009[2]	4/9/2009	0	2	119	51	0.4	0.027	176,343	NA	NA	NA	NA	NA
6/4/2009	6/4/2009[3]	0	2	192	73	0.6	0.038	4,630	8,991	-94	NA	NA	NA
6/4/2009	7/9/2009	11	264	16,115	15,923	1.0	0.063	1,547	479	69	0.14	0.14	0.01
7/9/2009	9/4/2009	57	1368	38,299	22,184	0.3	0.017	191	20	90	0.03	0.17	0.001
9/4/2009	10/15/2009	41	984	62,643	24,344	0.4	0.026	238	0	100	0.05	0.22	0.001
10/15/2009	11/16/2009	32	768	73,800	11,157	0.2	0.015	31	0	100	0.00	0.22	0.000
11/16/2009	12/17/2009[4]	31	744	89,800	16,000	0.4	0.023	24	12	50	0.00	0.23	0.000
12/17/2009	1/14/2010	28	672	106,024	16,224	0.4	0.025	309	32	90	0.04	0.26	0.001
1/14/2010	2/22/2010	39	936	122,167	16,143	0.3	0.018	73	16	78	0.01	0.27	0.000
2/22/2010	3/25/2010[5,6]	31	744	148,206	26,039	0.6	0.037	507	764	-51	-0.06	0.27	-0.002

Notes:

1. The initial reading of the transfer pump totalizer was 68 gallons.
2. Initial sampling event to determine if groundwater treatment was necessary.
3. Increase in total VOCs was from PVC glue and cement that was used during the construction of the DPE system and air stripper.
4. Based on the PCE concentrations in the AS-Influent and AS-Effluent samples, it appears as if the samples were mislabeled or mixed up at the lab. Therefore, the influent and effluent total VOC data in this table has been changed to show the highest total VOC concentration data as the influent data and the lowest total VOC concentration as the effluent data.
5. Increase in total VOCs was from PVC glue and cement that was used during installation of the secondary demister moisture separator.
6. Flow totalizer reading switched from the analog flow meter reading to the field totalizer reading for better accuracy.

TABLE 6

GROUNDWATER DISCHARGE ANALYTICAL RESULTS
(micrograms per liter)
MN Bio Business Center
221 1st Avenue SW
Rochester, MN

Sample ID	AS-Influent	AS-Effluent	AS-Influent	AS-Effluent	AS-Influent	AS-Effluent
Collected Date	3/25/2010 8:00	3/25/2010 8:00	2/22/2010 14:30	2/22/2010 14:45	1/14/2010 9:30	1/14/2010 9:40
1,1,1,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
1,1,2-Trichlorotrifluoroethane	**1.0**	<1.0	**2.1**	<1.0	**1.3**	<1.0
1,1-Dichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromo-3-chloropropane	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
1,2-Dibromoethane (EDB)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane	<4.0	<4.0	<4.0	<4.0	<1.0	<1.0
2-Butanone (MEK)	**4.9**	**7.5**	<4.0	<4.0	**7.0**	<4.0
2-Chloroethylvinyl ether	<10.0	<10.0	<10.0	<10.0	<25.0	<25.0
2-Chlorotoluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Hexanone	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
2-Methylnaphthalene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Chlorotoluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Methyl-2-pentanone (MIBK)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	**11.2**	**29.8**	<10.0	<10.0	**14.6**	<10.0
Acrolein	<40.0	<40.0	<40.0	<40.0	<40.0	<40.0
Acrylonitrile	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Allyl chloride	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromochloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Bromoform	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Bromomethane	**37.3**	**38.0**	<4.0	<4.0	<4.0	<4.0
Carbon disulfide	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon tetrachloride	<4.0	<4.0	<4.0	<4.0	<1.0	<1.0
Chlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**380**	**644**	<4.0	<4.0	**98.5**	**31.9**
Chloroprene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	<1.0	<1.0	**1.3**	<1.0	**1.0**	<1.0
cis-1,3-Dichloropropene	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Dibromochloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorofluoromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Diethyl ether (Ethyl ether)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Hexachloro-1,3-butadiene	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Iodomethane	**17.3**	**18.9**	<4.0	<4.0	<4.0	<4.0
Isopropylbenzene (Cumene)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylene	<2.0	**3.4**	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Methyl-tert-butyl ether	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
n-Butylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene	<1.0	**1.6**	<1.0	<1.0	<1.0	<1.0
p-Isopropyltoluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
sec-Butylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	**55.5**	<1.0	**69.6**	<1.0	**157**	<1.0
Tetrahydrofuran	<10.0	**20.3**	<10.0	**15.7**	**29.4**	<10.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichlorofluoromethane	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Vinyl acetate	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
Vinyl chloride	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Xylene (Total)	<3.0	**4.9**	<3.0	<3.0	<3.0	<3.0
Total VOC Concentration	**507.2**	**763.5**	**73**	**15.7**	**308.8**	**31.9**

Bold : Parameter detected above the reporting limit.

Bold : Total VOC Concentration is above discharge limit of 2,140 ug/L.

[1]: Initial sampling event to determine if groundwater treatment was necessary.

[2]: Increase in VOCs was from PVC glue and cement from construction of the DPE system and air stripper.

[3]: Increase in VOCs was from PVC glue and cement from installation of the secondary demister moisture separator.

TABLE 6

GROUNDWATER DISCHARGE ANALYTICAL RESULTS
(micrograms per liter)
MN Bio Business Center
221 1st Avenue SW
Rochester, MN

Sample ID	AS-Influent	AS-IN Vial 2	AS-Effluent	AS-INFLUENT	AS-EFFLUENT	AS-Influent	AS-Effluent
Collected Date	12/17/2009 10:00	12/17/2009 10:00	12/17/2009 10:01	11/16/2009 10:10	11/16/2009 10:20	10/15/2009 14:50	10/15/2009 14:50
1,1,1,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
1,1,2-Trichlorotrifluoroethane	<1.0	<1.0	<1.0	<1.0	<1.0	**1.4**	<1.0
1,1-Dichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromo-3-chloropropane	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
1,2-Dibromoethane (EDB)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane	<1.0	<1.0	<1.0	<4.0	<4.0	<4.0	<4.0
2-Butanone (MEK)	<4.0	<4.0	<4.0	<4.0	<4.0	**5.4**	<4.0
2-Chloroethylvinyl ether	<25.0	<25.0	<25.0	<10.0	<10.0	<10.0	<10.0
2-Chlorotoluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Hexanone	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
2-Methylnaphthalene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Chlorotoluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Methyl-2-pentanone (MIBK)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Acrolein	<40.0	<40.0	<40.0	<40.0	<40.0	<40.0	<40.0
Acrylonitrile	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Allyl chloride	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromochloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Bromoform	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Bromomethane	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Carbon disulfide	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon tetrachloride	<1.0	<1.0	<1.0	<4.0	<4.0	<4.0	<4.0
Chlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	<1.0	<1.0	**1.3**	<4.0	<4.0	<1.0	<1.0
Chloroprene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	**1.5**	<1.0
cis-1,3-Dichloropropene	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Dibromochloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorofluoromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Diethyl ether (Ethyl ether)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Hexachloro-1,3-butadiene	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Iodomethane	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Isopropylbenzene (Cumene)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Methyl-tert-butyl ether	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
n-Butylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
p-Isopropyltoluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
sec-Butylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	<1.0	<1.0	**22.7**	**30.7**	<1.0	**214**	<1.0
Tetrahydrofuran	**11.7**	**11.5**	<10.0	<10.0	<10.0	**15.7**	<10.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichlorofluoromethane	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Vinyl acetate	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
Vinyl chloride	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Xylene (Total)	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total VOC Concentration	**11.7**	**11.5**	**24**	**30.7**	**0**	**238**	**0**

TABLE 6

GROUNDWATER DISCHARGE ANALYTICAL RESULTS
(micrograms per liter)
MN Bio Business Center
221 1st Avenue SW
Rochester, MN

Sample ID	AS-Influent	AS-Effluent	AS-INFLUENT	AS-EFFLUENT	AS INFLUENT	AS EFFLUENT[2]	DPE Discharge[1]
Collected Date	9/4/2009 10:55	9/4/2009 10:55	7/9/2009 12:20	7/9/2009 12:25	06/04/2009 17:00	06/04/2009 17:25	04/09/2009 16:35
1,1,1,2-Tetrachloroethane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,1,1-Trichloroethane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	**29.4**
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,1,2-Trichloroethane	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
1,1,2-Trichlorotrifluoroethane	**1.2**	<1.0	**10.4**	<1.0	**53.7**	<1.0	**7860**
1,1-Dichloroethane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,1-Dichloroethene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,1-Dichloropropene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,2,3-Trichlorobenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,2,3-Trichloropropane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,2,4-Trichlorobenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,2,4-Trimethylbenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	**26.0**
1,2-Dibromo-3-chloropropane	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
1,2-Dibromoethane (EDB)	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,2-Dichlorobenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,2-Dichloroethane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,2-Dichloropropane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,3,5-Trimethylbenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	**7.1**
1,3-Dichlorobenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,3-Dichloropropane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
1,4-Dichlorobenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	**7.8**
2,2-Dichloropropane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
2-Butanone (MEK)	**13.5**	**19.8**	<20.0	**82.1**	<200	**1670**	**392**
2-Chloroethylvinyl ether	<10.0	<10.0	<50.0	<10.0	<1250	<25.0	<50.0
2-Chlorotoluene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	**51.0**
2-Hexanone	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
2-Methylnaphthalene	<5.0	<5.0	<25.0	<5.0	<250	<5.0	<25.0
4-Chlorotoluene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
4-Methyl-2-pentanone (MIBK)	<5.0	<5.0	<25.0	<5.0	<250	<5.0	<25.0
Acetone	<10.0	<10.0	<50.0	**68.7**	<500	**987**	<50.0
Acrolein	<40.0	<40.0	<200	<40.0	<2000	<40.0	<200
Acrylonitrile	<10.0	<10.0	<50.0	<10.0	<500	<10.0	<50.0
Allyl chloride	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
Benzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Bromobenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Bromochloromethane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Bromodichloromethane	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
Bromoform	<8.0	<8.0	<40.0	<8.0	<400	<8.0	<40.0
Bromomethane	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
Carbon disulfide	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Carbon tetrachloride	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Chlorobenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Chloroethane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Chloroform	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Chloromethane	<1.0	<1.0	**63.3**	**76.4**	<50.0	<1.0	<5.0
Chloroprene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
cis-1,2-Dichloroethene	**1.5**	<1.0	**13.0**	<1.0	**62.9**	<1.0	**206**
cis-1,3-Dichloropropene	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
Dibromochloromethane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Dibromomethane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Dichlorodifluoromethane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Dichlorofluoromethane	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Diethyl ether (Ethyl ether)	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
Ethylbenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Hexachloro-1,3-butadiene	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
Iodomethane	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
Isopropylbenzene (Cumene)	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
m&p-Xylene	<2.0	<2.0	<10.0	<2.0	<100	<2.0	<10.0
Methylene Chloride	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
Methyl-tert-butyl ether	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Naphthalene	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
n-Butylbenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	5.0
n-Propylbenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
o-Xylene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
p-Isopropyltoluene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
sec-Butylbenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Styrene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
tert-Butylbenzene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
Tetrachloroethene	**175**	<1.0	**1460**	<1.0	**3970**	**33.8**	**167000**
Tetrahydrofuran	<10.0	<10.0	<50.0	**252**	**543**	**6300**	**600**
Toluene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
trans-1,2-Dichloroethene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	<5.0
trans-1,3-Dichloropropene	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
Trichloroethene	<1.0	<1.0	<5.0	<1.0	<50.0	<1.0	**159**
Trichlorofluoromethane	<4.0	<4.0	<20.0	<4.0	<200	<4.0	<20.0
Vinyl acetate	<20.0	<20.0	<100	<20.0	<1000	<20.0	<100
Vinyl chloride	<0.40	<0.40	<2.0	<0.40	<20.0	<0.40	<2.0
Xylene (Total)	<3.0	<3.0	<15.0	<3.0	<150	<3.0	<15.0
Total VOC Concentration	191.2	19.8	1,546.7	479.2	4,566.7	8,990.8	176,338.3

TABLE 7

GROUNDWATER ELEVATIONS
MN Bio Business Center
221 First Avenue SW
Rochester, Minnesota

Well ID	Date Measured	Top of Casing Elevation[1,2]	Depth to Groundwater (feet)	Groundwater Elevation[3]	System Status
MW-14	12/3/2008	989.50	10.82	978.68	pre-system installation
MW-14	6/8/2009	989.50	12.40	977.10	pre-system startup
MW-14	7/9/2009	989.50	12.90	976.60	DPE system on DPE-1
MW-14	7/9/2009	989.50	12.51	976.99	DPE system temporarily off
MW-14	9/4/2009	989.50	12.63	976.87	DPE system on
MW-14	9/4/2009	989.50	12.57	976.93	DPE system on after replacing inlet screen
MW-14	9/4/2009	989.50	12.65	976.85	DPE system on after replacing inlet filter
MW-14	10/15/2009	989.50	12.47	977.03	DPE system on DPE-1
MW-14	10/23/2009	989.50	11.33	978.17	DPE system off
MW-14	11/16/2009	989.50	11.87	977.63	DPE System on all wells
MW-14	12/17/2009	989.50	11.66	977.84	DPE System on all wells
MW-14	1/14/2010	989.50	12.14	977.36	DPE System on all wells
MW-14	2/22/2010	989.50	12.51	976.99	DPE System on all wells
MW-14	3/25/2010	989.50	11.90	977.60	DPE System on all wells
MW-15	12/3/2008	991.50	13.11	978.39	pre-system installation
MW-15	6/8/2009	991.50	15.58	975.92	pre-system startup
MW-15	7/9/2009	991.50	15.94	975.56	DPE system on DPE-1
MW-15	7/9/2009	991.50	16.51	974.99	DPE system temporarily off
MW-15	9/4/2009	991.50	15.73	975.77	DPE system on
MW-15	9/4/2009	991.50	15.90	975.60	DPE system on after replacing inlet screen
MW-15	9/4/2009	991.50	16.01	975.49	DPE system on after replacing inlet filter
MW-15	10/15/2009	991.50	15.38	976.12	DPE system on DPE-1
MW-15	10/23/2009	991.50	14.14	977.36	DPE system off
MW-15	11/16/2009	991.50	13.78	977.72	DPE System on all wells
MW-15	12/17/2009	991.50	14.25	977.25	DPE System on all wells
MW-15	1/14/2010	991.50	14.33	977.17	DPE System on all wells
MW-15	2/22/2010	991.50	15.72	975.78	DPE System on all wells
MW-15	3/25/2010	991.50	14.57	976.93	DPE System on all wells
MW-16	12/3/2008	989.44	12.32	977.12	pre-system installation
MW-16	6/8/2009	989.44	14.82	974.62	pre-system startup
MW-16	7/9/2009	989.44	14.23	975.21	DPE system on DPE-1
MW-16	7/9/2009	989.44	13.19	976.25	DPE system temporarily off
MW-16	9/4/2009	989.44	13.70	975.74	DPE system on
MW-16	9/4/2009	989.44	14.25	975.19	DPE system on after replacing inlet screen
MW-16	9/4/2009	989.44	14.58	974.86	DPE system on after replacing inlet filter
MW-16	10/15/2009	989.44	13.61	975.83	DPE system on DPE-1
MW-16	10/23/2009	989.44	11.89	977.55	DPE system off
MW-16	11/16/2009	989.44	11.44	978.00	DPE System on all wells
MW-16	12/17/2009	989.44	14.17	975.27	DPE System on all wells
MW-16	1/14/2010	989.44	12.57	976.87	DPE System on all wells
MW-16	2/22/2010	989.44	13.68	975.76	DPE System on all wells
MW-16	3/25/2010	989.44	12.50	976.94	DPE System on all wells

TABLE 7

GROUNDWATER ELEVATIONS
MN Bio Business Center
221 First Avenue SW
Rochester, Minnesota

Well ID	Date Measured	Top of Casing Elevation[1,2]	Depth to Groundwater (feet)	Groundwater Elevation[3]	System Status
MW-17	12/3/2008	989.53	12.81	976.72	pre-system installation
MW-17	6/8/2009	989.53	13.69	975.84	pre-system startup
MW-17	7/9/2009	989.53	14.44	975.09	DPE system on DPE-1
MW-17	7/9/2009	989.53	14.35	975.18	DPE system temporarily off
MW-17	9/4/2009	989.53	14.31	975.22	DPE system on
MW-17	9/4/2009	989.53	14.33	975.20	DPE system on after replacing inlet screen
MW-17	9/4/2009	989.53	14.39	975.14	DPE system on after replacing inlet filter
MW-17	10/15/2009	989.53	14.00	975.53	DPE system on DPE-1
MW-17	10/23/2009	989.53	13.13	976.40	DPE system off
MW-17	11/16/2009	989.53	12.76	976.77	DPE System on all wells
MW-17	12/17/2009	989.53	13.04	976.49	DPE System on all wells
MW-17	1/14/2010	989.53	13.22	976.31	DPE System on all wells
MW-17	2/22/2010	989.53	14.37	975.16	DPE System on all wells
MW-17	3/25/2010	989.53	12.78	976.75	DPE System on all wells
MW-18	12/3/2008	989.50	13.82	975.68	pre-system installation
MW-18	6/8/2009	989.50	14.22	975.28	pre-system startup
MW-18	7/9/2009	989.50	16.61	972.89	DPE system on DPE-1
MW-18	7/9/2009	989.50	15.61	973.89	DPE system temporarily off
MW-18	9/4/2009	989.50	15.37	974.13	DPE system on
MW-18	9/4/2009	989.50	15.38	974.12	DPE system on after replacing inlet screen
MW-18	9/4/2009	989.50	15.40	974.10	DPE system on after replacing inlet filter
MW-18	10/15/2009	989.50	15.18	974.32	DPE system on DPE-1
MW-18	10/23/2009	989.50	14.28	975.22	DPE system off
MW-18	11/16/2009	989.50	13.83	975.67	DPE System on all wells
MW-18	12/17/2009	989.50	13.85	975.65	DPE System on all wells
MW-18	1/14/2010	989.50	13.96	975.54	DPE System on all wells
MW-18	2/22/2010	989.50	15.49	974.01	DPE System on all wells
MW-18	3/25/2010	989.50	13.24	976.26	DPE System on all wells
MW-19	12/3/2008	991.13	12.45	978.68	pre-system installation
MW-19	6/8/2009	991.13	13.40	977.73	pre-system startup
MW-19	7/9/2009	991.13	14.75	976.38	DPE system on DPE-1
MW-19	7/9/2009	991.13	14.58	976.55	DPE system temporarily off
MW-19	9/4/2009	991.13	14.68	976.45	DPE system on
MW-19	9/4/2009	991.13	14.61	976.52	DPE system on after replacing inlet screen
MW-19	9/4/2009	991.13	14.66	976.47	DPE system on after replacing inlet filter
MW-19	10/15/2009	991.13	14.47	976.66	DPE system on DPE-1
MW-19	10/23/2009	991.13	13.28	977.85	DPE system off
MW-19	11/16/2009	991.13	12.85	978.28	DPE System on all wells
MW-19	12/17/2009	991.13	13.69	977.44	DPE System on all wells
MW-19	1/14/2010	991.13	13.78	977.35	DPE System on all wells
MW-19	2/22/2010	991.13	14.62	976.51	DPE System on all wells
MW-19	3/25/2010	991.13	13.81	977.32	DPE System on all wells

TABLE 7

GROUNDWATER ELEVATIONS
MN Bio Business Center
221 First Avenue SW
Rochester, Minnesota

Well ID	Date Measured	Top of Casing Elevation[1,2]	Depth to Groundwater (feet)	Groundwater Elevation[3]	System Status
MW-20	12/3/2008	991.50	12.40	979.10	pre-system installation
MW-20	6/8/2009	991.50	11.93	979.57	pre-system startup
MW-20	7/9/2009	991.50	12.19	979.31	DPE system on DPE-1
MW-20	7/9/2009	991.50	12.24	979.26	DPE system temporarily off
MW-20	9/4/2009	991.50	12.53	978.97	DPE system on
MW-20	9/4/2009	991.50	12.47	979.03	DPE system on after replacing inlet screen
MW-20	9/4/2009	991.50	12.49	979.01	DPE system on after replacing inlet filter
MW-20	10/15/2009	991.50	12.16	979.34	DPE system on DPE-1
MW-20	10/23/2009	991.50	11.33	980.17	DPE system off
MW-20	11/16/2009	991.50	11.02	980.48	DPE System on all wells
MW-20	12/17/2009	991.50	12.31	979.19	DPE System on all wells
MW-20	1/14/2010	991.50	12.34	979.16	DPE System on all wells
MW-20	2/22/2010	991.50	12.78	978.72	DPE System on all wells
MW-20	3/25/2010	991.50	12.54	978.96	DPE System on all wells
DPE-1	12/3/2008	991.46	13.66	977.80	pre-system installation
DPE-1	6/8/2009	992.40	18.78	973.62	pre-system startup
DPE-1	7/9/2009	992.40	20.51	971.89	DPE system on DPE-1
DPE-1	7/9/2009	992.40	16.38	976.02	DPE system temporarily off
DPE-1	9/4/2009	992.40	na		DPE system on DPE-1
DPE-1	9/4/2009	992.40	na		DPE-1 on after replacing inlet screen
DPE-1	9/4/2009	992.40	17.86	974.54	DPE-1 on after replacing inlet filter
DPE-1	10/15/2009	992.40	na		DPE system on DPE-1
DPE-1	10/23/2009	992.40	14.88	977.52	DPE system off
DPE-1	11/16/2009	992.40	14.45	977.95	DPE System on all wells
DPE-1	12/17/2009	992.40	15.13	977.27	DPE System on all wells
DPE-1	1/14/2010	992.40	15.53	976.87	DPE System on all wells
DPE-1	2/22/2010	992.40	12.22	980.18	DPE System on all wells
DPE-1	3/25/2010	992.40	15.72	976.68	DPE System on all wells
DPE-2	12/3/2008	991.46	13.60	977.86	pre-system installation
DPE-2	6/8/2009	992.80	17.45	975.35	pre-system startup
DPE-2	7/9/2009	992.80	17.61	975.19	DPE system on DPE-1
DPE-2	7/9/2009	992.80	16.83	975.97	DPE system temporarily off
DPE-2	9/4/2009	992.80	17.18	975.62	DPE system on DPE-1
DPE-2	9/4/2009	992.80	17.26	975.54	DPE-1 on after replacing inlet screen
DPE-2	9/4/2009	992.80	17.54	975.26	DPE-1 on after replacing inlet filter
DPE-2	10/15/2009	992.80	16.96	975.84	DPE system on DPE-1
DPE-2	10/23/2009	992.80	15.53	977.27	DPE system off
DPE-2	11/16/2009	992.80	15.19	977.61	DPE System on all wells
DPE-2	12/17/2009	992.80	15.69	977.11	DPE System on all wells
DPE-2	1/14/2010	992.80	16.04	976.76	DPE System on all wells
DPE-2	2/22/2010	992.80	14.19	978.61	DPE System on all wells
DPE-2	3/25/2010	992.80	15.50	977.30	DPE System on all wells

TABLE 7

GROUNDWATER ELEVATIONS
MN Bio Business Center
221 First Avenue SW
Rochester, Minnesota

Well ID	Date Measured	Top of Casing Elevation[1,2]	Depth to Groundwater (feet)	Groundwater Elevation[3]	System Status
DPE-3	12/3/2008	991.50	10.30	981.20	pre-system installation
DPE-3	6/8/2009	992.48	13.64	978.84	pre-system startup
DPE-3	7/9/2009	992.48	13.98	978.50	DPE system on DPE-1
DPE-3	7/9/2009	992.48	14.06	978.42	DPE system temporarily off
DPE-3	9/4/2009	992.48	14.48	978.00	DPE system on DPE-1
DPE-3	9/4/2009	992.48	14.49	977.99	DPE-1 on after replacing inlet screen
DPE-3	9/4/2009	992.48	14.50	977.98	DPE-1 on after replacing inlet filter
DPE-3	10/15/2009	992.48	14.87	977.61	DPE system on DPE-1
DPE-3	10/23/2009	992.48	14.76	977.72	DPE system off
DPE-3	11/16/2009	992.48	14.59	977.89	DPE System on all wells
DPE-3	12/17/2009	992.48	15.28	977.20	DPE System on all wells
DPE-3	1/14/2010	992.48	16.52	975.96	DPE System on all wells
DPE-3	2/22/2010	992.48	15.29	977.19	DPE System on all wells
DPE-3	3/25/2010	992.48	15.68	976.80	DPE System on all wells
DPE-4	12/3/2008	991.39	14.20	977.19	pre-system installation
DPE-4	6/8/2009	992.40	15.30	977.10	pre-system startup
DPE-4	7/9/2009	992.40	16.95	975.45	DPE system on DPE-1
DPE-4	7/9/2009	992.40	16.08	976.32	DPE system temporarily off
DPE-4	9/4/2009	992.40	15.94	976.46	DPE system on DPE-1
DPE-4	9/4/2009	992.40	15.91	976.49	DPE-1 on after replacing inlet screen
DPE-4	9/4/2009	992.40	15.99	976.41	DPE-1 on after replacing inlet filter
DPE-4	10/15/2009	992.40	15.83	976.57	DPE system on DPE-1
DPE-4	10/23/2009	992.40	14.81	977.59	DPE system off
DPE-4	11/16/2009	992.40	14.48	977.92	DPE System on all wells
DPE-4	12/17/2009	992.40	15.44	976.96	DPE System on all wells
DPE-4	1/14/2010	992.40	16.08	976.32	DPE System on all wells
DPE-4	2/22/2010	992.40	16.08	976.32	DPE System on all wells
DPE-4	3/25/2010	992.40	16.22	976.18	DPE System on all wells
DPE-5	12/3/2008	991.47	12.44	979.03	pre-system installation
DPE-5	6/8/2009	992.46	14.48	977.98	pre-system startup
DPE-5	7/9/2009	992.46	16.28	976.18	DPE system on DPE-1
DPE-5	7/9/2009	992.46	15.31	977.15	DPE system temporarily off
DPE-5	9/4/2009	992.46	15.08	977.38	DPE system on DPE-1
DPE-5	9/4/2009	992.46	15.04	977.42	DPE-1 on after replacing inlet screen
DPE-5	9/4/2009	992.46	15.03	977.43	DPE-1 on after replacing inlet filter
DPE-5	10/15/2009	992.46	14.99	977.47	DPE system on DPE-1
DPE-5	10/23/2009	992.46	13.78	978.68	DPE system off
DPE-5	11/16/2009	992.46	13.43	979.03	DPE System on all wells
DPE-5	12/17/2009	992.46			DPE System on all wells
DPE-5	1/14/2010	992.46	15.00	977.46	DPE System on all wells
DPE-5	2/22/2010	992.46	15.01	977.45	DPE System on all wells
DPE-5	3/25/2010	992.46	16.42	976.04	DPE System on all wells

TABLE 7

GROUNDWATER ELEVATIONS
MN Bio Business Center
221 First Avenue SW
Rochester, Minnesota

Well ID	Date Measured	Top of Casing Elevation[1,2]	Depth to Groundwater (feet)	Groundwater Elevation[3]	System Status
DPE-6	12/3/2008	991.44	12.93	978.51	pre-system installation
DPE-6	6/8/2009	992.40	16.19	976.21	pre-system startup
DPE-6	7/9/2009	992.40	16.54	975.86	DPE system on DPE-1
DPE-6	7/9/2009	992.40	15.92	976.48	DPE system temporarily off
DPE-6	9/4/2009	992.40	15.68	976.72	DPE system on DPE-1
DPE-6	9/4/2009	992.40	15.65	976.75	DPE-1 on after replacing inlet screen
DPE-6	9/4/2009	992.40	15.81	976.59	DPE-1 on after replacing inlet filter
DPE-6	10/15/2009	992.40	15.94	976.46	DPE system on DPE-1
DPE-6	10/23/2009	992.40	14.56	977.84	DPE system off
DPE-6	11/16/2009	992.40	14.24	978.16	DPE System on all wells
DPE-6	12/17/2009	992.40	14.89	977.51	DPE System on all wells
DPE-6	1/14/2010	992.40	15.14	977.26	DPE System on all wells
DPE-6	2/22/2010	992.40	15.61	976.79	DPE System on all wells
DPE-6	3/25/2010	992.40	15.24	977.16	DPE System on all wells
DPE-7	12/3/2008	991.47	12.96	978.51	pre-system installation
DPE-7	6/8/2009	993.48	16.78	976.70	pre-system startup
DPE-7	7/9/2009	993.48	17.76	975.72	DPE system on DPE-1
DPE-7	7/9/2009	993.48	17.16	976.32	DPE system temporarily off
DPE-7	9/4/2009	993.48	17.03	976.45	DPE system on DPE-1
DPE-7	9/4/2009	993.48	17.00	976.48	DPE-1 on after replacing inlet screen
DPE-7	9/4/2009	993.48	17.18	976.30	DPE-1 on after replacing inlet filter
DPE-7	10/15/2009	993.48	16.80	976.68	DPE system on DPE-1
DPE-7	10/23/2009	993.48	15.68	977.80	DPE system off
DPE-7	11/16/2009	993.48	15.44	978.04	DPE System on all wells
DPE-7	12/17/2009	993.48	16.03	977.45	DPE System on all wells
DPE-7	1/14/2010	993.48	16.26	977.22	DPE System on all wells
DPE-7	2/22/2010	993.48	16.98	976.50	DPE System on all wells
DPE-7	3/25/2010	993.48	16.65	976.83	DPE System on all wells
DPE-8	12/3/2008	991.48	12.56	978.92	pre-system installation
DPE-8	6/8/2009	992.84	14.50	978.34	pre-system startup
DPE-8	7/9/2009	992.84	14.57	978.27	DPE system on DPE-1
DPE-8	7/9/2009	992.84	14.49	978.35	DPE system temporarily off
DPE-8	9/4/2009	992.84	14.29	978.55	DPE system on DPE-1
DPE-8	9/4/2009	992.84	14.31	978.53	DPE-1 on after replacing inlet screen
DPE-8	9/4/2009	992.84	14.28	978.56	DPE-1 on after replacing inlet filter
DPE-8	10/15/2009	992.84	14.01	978.83	DPE system on DPE-1
DPE-8	10/23/2009	992.84	13.18	979.66	DPE system off
DPE-8	11/16/2009	992.84	13.30	979.54	DPE System on all wells
DPE-8	12/17/2009	992.84	15.31	977.53	DPE System on all wells
DPE-8	1/14/2010	992.84	16.58	976.26	DPE System on all wells
DPE-8	2/22/2010	992.84	14.19	978.65	DPE System on all wells
DPE-8	3/25/2010	992.84	15.72	977.12	DPE System on all wells

TABLE 7

GROUNDWATER ELEVATIONS
MN Bio Business Center
221 First Avenue SW
Rochester, Minnesota

Well ID	Date Measured	Top of Casing Elevation[1,2]	Depth to Groundwater (feet)	Groundwater Elevation[3]	System Status
Elevator Draintile Sump	6/8/2009	989.58	7.00	982.58	pre-system startup
Elevator Draintile Sump	6/25/2009	990.20	6.34	983.86	pre-system startup
Elevator Draintile Sump	7/9/2009	990.20	6.38	983.82	DPE system on DPE-1
Elevator Draintile Sump	9/4/2009	990.20	6.29	983.91	DPE system on DPE-1
Elevator Draintile Sump	10/15/2009	990.20	6.18	984.02	DPE system on DPE-1
Elevator Draintile Sump	10/23/2009	990.20	6.08	984.12	DPE system off
Elevator Draintile Sump	11/16/2009	990.20	5.72	984.48	DPE System on all wells
Elevator Draintile Sump	12/17/2009	990.20	6.48	983.72	DPE System on all wells
Elevator Draintile Sump	1/14/2010	990.20	6.46	983.74	DPE System on all wells
Elevator Draintile Sump	2/22/2010	990.20	6.81	983.39	DPE System on all wells
Elevator Draintile Sump	3/25/2010	990.20	6.88	983.32	DPE System on all wells

Notes:

1. Monitoring well top of casing elevations were surveyed by Adolfson and Peterson on 4/22/08.
2. DPE well top of casing elevations changed during DPE well head installation and were estimated from a 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.
3. Elevations are in feet above mean sea level.

TABLE 8

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

MN Bio Business Center
221 First Avenue SW
Rochester, Minnesota

Monitoring Well	Top of Casing Elevation[1,2]	Basement Floor Elevation	Top of Seal Elevation	Top of Filter Pack Elevation	Top of Well Screen Elevation	Bottom of Well Screen Elevation	Screen Interval (feet)	Depth to Bottom of Well (feet)	Bottom of Well Elevation	Well Completion
MW-14	989.50	989.50	989.50	986.00	984.00	974.00	10	17.5	972.00	flush-mounted
MW-15	991.50	989.50	990.50	987.50	985.50	975.50	10	18.0	973.50	stickup
MW-16	989.44	989.50	989.94	985.44	983.44	973.44	10	18.0	971.44	flush-mounted
MW-17	989.53	989.50	989.03	973.53	971.53	966.53	5	25.0	964.53	flush-mounted
MW-18	989.50	989.50	989.25	938.50	936.50	931.50	5	60.0	929.50	flush-mounted
MW-19	991.13	989.50	990.63	984.13	983.13	973.13	10	20.0	971.13	stickup
MW-20	991.50	989.50	992.80	988.80	986.80	976.80	10	16.7	974.80	stickup
DPE-1	992.40	989.50	989.53	984.53	982.53	970.53	12	21.9	970.53	stickup
DPE-2	992.80	989.50	990.28	986.28	984.28	972.28	12	20.5	972.28	stickup
DPE-3	992.48	989.50	990.42	989.42	987.42	975.42	12	17.1	975.42	stickup
DPE-4	992.40	989.50	990.07	987.07	985.07	973.07	12	19.3	973.07	stickup
DPE-5	992.46	989.50	990.32	987.32	986.32	974.32	12	18.1	974.32	stickup
DPE-6	992.40	989.50	989.87	986.87	984.87	972.87	12	19.5	972.87	stickup
DPE-7	993.48	989.50	990.32	984.32	983.32	971.32	12	22.2	971.32	stickup
DPE-8	992.84	989.50	990.84	989.34	987.34	975.34	12	17.5	975.34	stickup

Notes:
1. Monitoring well top of casing elevations were surveyed by Adolfson and Peterson on 4/22/08.
2. DPE well top of casing elevations changed during DPE well head installation and were estimated from a 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.

Attachments

Attachment A

Attachment A - Table 1

DPE System Operational Data
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Date	Time	Extraction Well	DPE Pump Hours	Hours per Period	Flow Rate				DPE Air Flow (scf)	Pump Inlet Vacuum (in. Hg)	Post-MS Vacuum (in. Hg)	DPE Well/Pre-MS Vacuum (in. Hg)		Pre-Manifold Vacuum (in. Hg)	DPE Well Head/Drop Tube Vacuum (in. Hg)	DPE Well Casing Vacuum (in. H_2O)	DPE Pump Outlet Pressure		DPE Pump Outlet Temp. (Deg. F)		DPE Exhaust PID (ppm)	Extraction Well Bleed Valve % Open	DPE Pump Bleed Valve % Open	Comments
					Field (scfm)	Analog (scfm)	Analog (m^3/s)	Analog (acfm)				Analog	Field				Analog (psi)	Field (in H_2O)	Analog	Field				
6/29/2009	1640	DPE-1	88.0	88.0	25	20.9	0.010	134.3	6,000	25.3	NR	25.0	24.5	24	NR	NR	0	0	229	200	NR	0	0	
9/4/2009	805	DPE-1	957.0	869.0	25	24.3	0.011	109.5	1,208,000	23.3	9.4	9.7	9.8	9.1	NR	86	0.02	0	307	310	34	100	0	DPE Pump Screen plugged
9/4/2009	946	DPE-1	957.0	0.0	40	36.1	0.017	120.5	1,209,000	21.0	21.0	20.4	21.0	20.0	NR	149	0	0	210	248	>4000	100	0	DPE & AS exhaust sampled
9/4/2009	1135	DPE-1	959.0	2.0	25	27.3	0.013	117.2	1,212,000	23.0	22.5	22.7	22.5	22.5	NR	>150	0	0	275	270	>4000	30	0	1 micron MS filter installed
10/15/2009	1120	DPE-1	1899.0	940.0	35	31.6	0.015	135.9	2,658,000	23.0	22.5	22.2	22.5	22.5	NR	>150	0	0	283	270	ND	20	0	Exhaust sampled
10/16/2009	621	DPE-1	1911.0	12.0	35	32.4	0.015	142.2	2,684,000	23.1	22.5	22.4	22.5	22.0	NR	>150	NR	0	291	299	ND	100	0	6-hr composite air sample collected
10/23/2009	922	DPE-3	1924.0	13.0	70	70.6	0.033	143.0	2,715,000	15.2	14.1	14.6	14.0	13.8	NR	90	0	NR	199	190	ND	100	0	
11/17/2009	1800	DPE-1	2361.0	437.0	30	28.6	0.013	144.2	3,992,000	24.0	23.5	23.0	23.5	23.0	NR	>150	0	0	301	300	>4000	100	0	6-hr composite air sample collected
12/17/2009	907	DPE-5	2960.0	599.0	NR	62.1	0.029	177.8	6,218,000	19.5	19.0	18.7	18.9	18.9	NR	155	0	0	247	248	850	NR	0	6-hr composite air sample collected
12/28/2009	1300	DPE-2	3228.0	268.0	60	60.7	0.029	187.9	7,333,000	20.3	17.2	17.21	17.20	17.2	NR	122	0	0	266	268	720	NR	0	
1/14/2010	923	DPE-5	3568.0	340.0	100	97.8	0.046	201.1	8,769,000	15.5	14.9	14.46	NR	14.9	NR	98	0	0	182	156	NR	NR	0	6-hr composite air sample collected
1/27/2010	NR	DPE-7	3789.0	221.0	75	88.6	0.042	215.3	9,633,000	17.7	18.0	16.87	16.00	16.0	NR	68	0	0	156	165	NR	NR	0	
2/22/2010	800	DPE-8	4161.0	372.0	105	101.5	0.048	224.8	11,221,000	16.5	15.5	15.3	14.50	14.5	NR	91	0	0	215	219	ND	NR	0	6-hr composite air sample collected
3/9/2010	NR	DPE-8	4472.0	311.0	105	103.6	0.049	226.1	12,597,000	16.3	15.8	15.6	15.10	14.8	NR	NR	0	NR	160	161	NR	NR	0	Pump inlet screen removed; DPE oil changed
3/25/2010	742	DPE-2	4551.0	79.0	110	110.1	0.052	243.2	14,285,000	16.5	16.1	15.7	15.10	14.9	NR	165	0	0	251	248	105	100	0	6-hr composite air sample collected

Notes:
NR: Not recorded.
NA: Not applicable.

Attachment A - Table 2

Moisture Separator and Sump Operational Data
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Date	Time	MS Vacuum Valve hours	MS pump Hours	MS Pump Flow Totalizer (gal)		MS Pump Flow Rate (gpm)		MS Pump Pressure (psi)	Elevator Sump Water Flow (gal)		Comments
				Analog	Field	Analog	Field		Analog	Field	
6/29/2009	1640	49	48	8,464	8,473	NR	10.2	NR	300	NR	
9/4/2009	805	49	96	38,299	38,213	NP	12.0	21.0	300	500	
10/15/2009	1120	49	131	62,643	64,283	NP	11.8	44.0	300	500	
10/16/2009	621	49	131	62,886	NR	NP	NR	NR	300	500	
10/23/2009	922	49	132	63,113	NR	NR	NR	NR	300	500	
11/17/2009	1800	49	148	73,800	75,787	11.1	11.2	28.0	300	NR	
12/17/2009	907	49	175	89,800	92,293	NR	10.3	30.8	330	NR	
12/28/2009	1300	49	187	97,028	99,694	NR	11.0	NR	330	NR	
1/14/2010	923	49	202	106,024	108,984	NR	10.7	36.0	330	NR	
1/27/2010	NR	49	210	111,633	114,661	12.9	12.2	16.0	330	NR	
2/22/2010	8:00	49	232	122,167	128,552	12.9	12.9	14.0	330	500	
3/9/2010	NR	50	255	131,361	137,839	12.9	12.9	14.0	330	NR	
3/25/2010	742	50	270	141,405	148,206	NR	12.9	15.0	330	500	

Notes:
NR: Not recorded.
NP: Not pumping

Attachment A - Table 3

Air Stripper Operational Data
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Date	Time	AS Blower Hours	AS Discharge Pump Hours	AS Blower Pressure (in. H_2O)	AS Exhaust Pressure (in. H_2O)	AS Discharge Pump Pressure (psi)	AS Exhaust PID (ppm)	Comments
6/29/2009	1640	54	4	18	12	29	NR	
9/4/2009	805	382	34	18	11	0	2140	PID was 180 ppm late in 20 min blower cycle
9/4/2009	946	383	34	18	11	31	509	
10/15/2009	1120	649	55	18	11	NR	ND	
10/16/2009	621	651	56	18	11	NR	ND	
10/23/2009	922	654	56	NR	NR	NR	NR	
11/17/2009	1800	772	65	18	12	NR	NR	
12/17/2009	902	951	78	18	11	30	71	
12/28/2009	1300	1032	84	17	11	NR	268	
1/14/2010	1800	1133	92	17	10	24	ND	
1/27/2010	NR	1188	96	18	11	24	NR	
2/22/2010	8:00	1349	103	18	11	22	ND	
3/9/2010	NR	1436	109	18	11	26	NR	
3/25/2010	742	1544	117	18	11	28	ND	

Notes:
NR: Not recorded.
NP: Not pumping.
ND: Not detected.

Attachement A - Table 4

DPE Well Casing Vacuum Data (in. H_2O)
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Date	DPE-1	DPE-2	DPE-3	DPE-4	DPE-5	DPE-6	DPE-7	DPE-8
7/9/2009	**129.0**	2.6	0.1	0.1	0.4	1.9	2.4	0.0
8/11/2009	**117.0**	0.0	0.0	0.8	0.0	2.2	2.9	0.0
9/4/2009	**86.0**	NR	NR	NR	NR	NR	NR	NR
9/4/2009	**149.0**	NR	NR	NR	NR	NR	NR	NR
9/4/2009	**>150**	NR	NR	NR	NR	NR	NR	NR
10/15/2009	**>150**	3.4	0.3	0.9	1.3	1.9	0.5	0.04
10/23/2009	0.001	0.002	**90.0**	0.001	0.002	0.002	0.003	0.001
11/17/2009	0.000	0.000	0.000	0.000	**>150**	0.000	0.000	0.000
2/22/2010	**48**	**200**	**128**	**99**	**90**	**108**	**70**	**91**
3/25/2010	**51**	**168**	**125**	**140**	**86**	**120**	**64**	**94**

Notes:
Bold indicates the current operating extraction well.

Attachement A - Table 5

DPE Well PID Readings
221 1st Avenue SW
Rochester, Minnesota

Well ID	Date	PID (ppm)	DPE Exhaust Flow Rate (scfm)	DPE Pump Inlet Vacuum (in. Hg)
DPE-1	27-Oct-09	37.0	45.0	18.00
DPE-2	27-Oct-09	50.6	40.0	19.00
DPE-3	27-Oct-09	15.7	73.0	15.00
DPE-4	27-Oct-09	23.9	35.0	22.00
DPE-5	27-Oct-09	3.8	40.0	22.00
DPE-6	27-Oct-09	ND	55.0	17.00
DPE-7	27-Oct-09	ND	60.0	16.00
DPE-8	27-Oct-09	ND	45.0	22.00
DPE-1	16-Nov-09	4,000.0	56.3	20.28
DPE-2	16-Nov-09	0.0	39.0	22.13
DPE-3	16-Nov-09	1,600.0	65.0	18.94
DPE-4	16-Nov-09	3.7	28.6	23.94
DPE-5	16-Nov-09	4,000.0	30.4	23.88
DPE-6	16-Nov-09	4,000.0	66.9	18.78
DPE-7	16-Nov-09	4,000.0	75.5	17.70
DPE-8	16-Nov-09	4,000.0	29.3	23.87
DPE-1	17-Dec-09	4,000.0	62.1	19.53
DPE-2	17-Dec-09	11.8	NR	NR
DPE-3	17-Dec-09	57.5	NR	NR
DPE-4	17-Dec-09	4,000.0	NR	NR
DPE-5	17-Dec-09	850.0	NR	NR
DPE-6	17-Dec-09	1,680.0	NR	NR
DPE-7	17-Dec-09	490.0	NR	NR
DPE-8	17-Dec-09	559.0	NR	NR
DPE-1	28-Dec-09	1,120.0	NR	NR
DPE-2	28-Dec-09	720.0	NR	NR
DPE-3	28-Dec-09	22.8	NR	NR
DPE-4	28-Dec-09	3.4	NR	NR
DPE-5	28-Dec-09	4,000.0	NR	NR
DPE-6	28-Dec-09	901.0	NR	NR
DPE-7	28-Dec-09	905.0	NR	NR
DPE-8	28-Dec-09	595.0	NR	NR
DPE-1	14-Jan-10	NR	NR	NR
DPE-2	14-Jan-10	NR	NR	NR
DPE-3	14-Jan-10	NR	NR	NR
DPE-4	14-Jan-10	NR	NR	NR
DPE-5	14-Jan-10	NR	NR	NR
DPE-6	14-Jan-10	NR	NR	NR
DPE-7	14-Jan-10	NR	NR	NR
DPE-8	14-Jan-10	NR	NR	NR

Attachement A - Table 5

DPE Well PID Readings
221 1st Avenue SW
Rochester, Minnesota

Well ID	Date	PID (ppm)	DPE Exhaust Flow Rate (scfm)	DPE Pump Inlet Vacuum (in. Hg)
DPE-1	22-Feb-10	914.0	35.0	22.5
DPE-2	22-Feb-10	27.1	45.0	21.5
DPE-3	22-Feb-10	43.4	70.0	19.5
DPE-4	22-Feb-10	13.5	60.0	20.5
DPE-5	22-Feb-10	ND	100.0	16
DPE-6	22-Feb-10	7.1	65.0	19
DPE-7	22-Feb-10	ND	80.0	17.5
DPE-8	22-Feb-10	ND	100.0	16
DPE-1	25-Mar-10	868.0	40.0	23
DPE-2	25-Mar-10	10.5	50.0	22
DPE-3	25-Mar-10	31.4	70.0	19
DPE-4	25-Mar-10	55.3	55.0	22
DPE-5	25-Mar-10	5.7	75.0	18
DPE-6	25-Mar-10	0.0	70.0	20
DPE-7	25-Mar-10	0.0	90.0	17
DPE-8	25-Mar-10	4,000.0	105.0	16

Attachement A - Table 6

DPE Well Water Level Readings
221 1st Avenue SW
Rochester, Minnesota

Location	Date	Total Well Depth (ft below TOC)	Static Water Level (ft below TOC)	Static Water Column Thickness (ft)	Static Water Volume (gallons)	Operating Depth (ft below TOC)	Operating Water Column Thickness (ft)
DPE-1	23-Oct-09	21.9	14.88	7.02	4.6	21.8	0.1
DPE-1	27-Oct-09	21.9	14.54	7.36	4.8	21.9	0.0
DPE-1	16-Nov-09	21.9	14.45	7.45	4.9	21.9	0.0
DPE-1	17-Dec-09	21.9	15.13	6.77	4.4	21.8	0.1
DPE-1	14-Jan-10	21.9	15.53	6.37	4.2	21.0	0.9
DPE-1	22-Feb-10	21.9	12.22	9.68	6.3	21.9	0
DPE-1	25-Mar-10	21.9	15.72	6.18	4.0	20.9	1
DPE-2	23-Oct-09	20.5	15.53	4.97	3.2	19.95	0.55
DPE-2	27-Oct-09	20.5	16.35	4.15	2.7	20.51	-0.01
DPE-2	16-Nov-09	20.5	15.19	5.31	3.5	20.8	-0.3
DPE-2	17-Dec-09	20.5	15.69	4.81	3.1	20.4	0.1
DPE-2	14-Jan-10	20.5	16.04	4.46	2.9	20.15	0.35
DPE-2	22-Feb-10	20.5	14.19	6.31	4.1	20.5	0
DPE-2	25-Mar-10	20.5	15.5	5	3.3	20	0.5
DPE-3	23-Oct-09	17.1	14.76	2.34	1.5	17.5	-0.4
DPE-3	27-Oct-09	17.1	14.51	2.59	1.7	17.8	-0.7
DPE-3	16-Nov-09	17.1	14.59	2.51	1.6	17.5	-0.4
DPE-3	17-Dec-09	17.1	15.28	1.82	1.2	17.2	-0.1
DPE-3	14-Jan-10	17.1	16.52	0.58	0.4	17.1	0.0
DPE-3	22-Feb-10	17.1	15.29	1.81	1.2	17.3	-0.2
DPE-3	25-Mar-10	17.1	15.68	1.42	0.9	18.3	-1.2
DPE-4	23-Oct-09	19.3	14.81	4.49	2.9	19.71	-0.41
DPE-4	27-Oct-09	19.3	14.58	4.72	3.1	19.8	-0.5
DPE-4	16-Nov-09	19.3	14.48	4.82	3.1	19.63	-0.33
DPE-4	17-Dec-09	19.3	15.44	3.86	2.5	19.3	0.0
DPE-4	14-Jan-10	19.3	16.08	3.22	2.1	19.6	-0.3
DPE-4	22-Feb-10	19.3	16.08	3.22	2.1	19.0	0.3
DPE-4	25-Mar-10	19.3	16.22	3.08	2.0	20.05	-0.75
DPE-5	23-Oct-09	18.1	13.78	4.32	2.8	18.5	-0.4
DPE-5	27-Oct-09	18.1	13.52	4.58	3.0	18.7	-0.6
DPE-5	16-Nov-09	18.1	NR	NR	NR	18.1	0.0
DPE-5	14-Jan-10	18.1	15	3.1	2.0	19.2	-1.1
DPE-5	22-Feb-10	18.1	15.01	3.09	2.0	18.2	-0.1
DPE-5	25-Mar-10	18.1	16.42	1.68	1.1	18.7	-0.6

Attachement A - Table 6

DPE Well Water Level Readings
221 1st Avenue SW
Rochester, Minnesota

Location	Date	Total Well Depth (ft below TOC)	Static Water Level (ft below TOC)	Static Water Column Thickness (ft)	Static Water Volume (gallons)	Operating Depth (ft below TOC)	Operating Water Column Thickness (ft)
DPE-6	23-Oct-09	19.5	14.56	4.94	3.2	19.8	-0.3
DPE-6	27-Oct-09	19.5	14.31	5.19	3.4	19.5	0.0
DPE-6	16-Nov-09	19.5	14.24	5.26	3.4	19.52	-0.02
DPE-6	17-Dec-09	19.5	14.84	4.66	3.0	19.8	-0.3
DPE-6	14-Jan-10	19.5	15.14	4.36	2.8	19.8	-0.3
DPE-6	22-Feb-10	19.5	15.61	3.89	2.5	19.1	0.4
DPE-6	25-Mar-10	19.5	15.24	4.26	2.8	19.5	0
DPE-7	23-Oct-09	22.2	15.68	6.52	4.3	22.2	0.0
DPE-7	27-Oct-09	22.2	15.49	6.71	4.4	22.2	0.0
DPE-7	16-Nov-09	22.2	15.44	6.76	4.4	22.17	0.03
DPE-7	17-Dec-09	22.2	16.03	6.17	4.0	22.4	-0.2
DPE-7	14-Jan-10	22.2	16.26	5.94	3.9	22.1	0.1
DPE-7	22-Feb-10	22.2	16.98	5.22	3.4	22.3	-0.1
DPE-7	25-Mar-10	22.2	16.65	5.55	3.6	22.1	0.1
DPE-8	23-Oct-09	17.5	13.18	4.32	2.8	17.3	0.2
DPE-8	27-Oct-09	17.5	13.24	4.26	2.8	17.9	-0.4
DPE-8	16-Nov-09	17.5	13.3	4.2	2.7	17.5	0.0
DPE-8	17-Dec-09	17.5	15.31	2.19	1.4	17.9	-0.4
DPE-8	14-Jan-10	17.5	16.58	0.92	0.6	17.75	-0.25
DPE-8	22-Feb-10	17.5	14.19	3.31	2.2	18.3	-0.8
DPE-8	25-Mar-10	17.5	15.72	1.78	1.2	17.8	-0.3

Attachment A - Table 7

Maintenance Schedule
MN Bio Business Center
221 1st Avenue SW
Rochester, Minnesota

Maintenance Item	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10
DPE Pump Maintenance													
- Inspect Hoses, Piping and Fittings for Oil Leaks - MONTHLY	Sep 4	Oct 15, 16	Nov 16	Dec 17	Jan 14	Feb 22	Mar 9, 25	X	X	X	X	X	X
- Check Oil Level (level should show at middle of site glass) - MONTHLY	Sep 4	Oct 15, 16	Nov 16	Dec 17	Jan 14	Feb 22	Mar 9, 25	X	X	X	X	X	X
- Change Oil - EVERY 5,000 OPERATING HOURS							Mar 9						
- Clean Pump Inlet Opening							Mar 9	X	X	X	X	X	X
- Inspect and Clean Pump Inlet Screen - EACH SITE VISIT	Sep 4	Oct 15, 16	Nov 6, 16, 27	Dec 4, 17, 28	Jan 14, 27	Feb 3, 10	NA	X	X	X	X	X	X
Moisture Separator Maintenance													
- Clean Floats - MONTHLY	Sep 4	Oct 15, 16, 23, 27	Nov 16	Dec 17	Jan 14	Feb 3, 10, 16	Mar 9, 25	X	X	X	X	X	X
- Check Sediment - MONTHLY		Oct 27	Nov 16	Dec 17	Jan 14	Feb 3, 10, 22	Mar 9, 25	X	X	X	X	X	X
- Remove Sediment - AS NEEDED		Oct 27	Nov 16			Feb 3, 10, 22							
- Replace MS#1Filter (5 micron) - If Pressure Drop Occurs						Feb 26						X	
- Replace MS#2 Filter (1 micron) - If Pressure Drop Occurs						Feb 26						X	
- Transfer Pump (Moyno 34401 1 HP) - Inspect Hoses, Piping and Fittings	Sep 4	Oct 15, 16	Nov 16	Dec 17	Jan 14	Feb 22	Mar 9	X	X	X	X	X	X
for Water Leaks - MONTHLY													
- Replace Transfer Pump Stator - SEMI-ANNUALLY						Feb 16						X	
Air Stripper Maintenance													
- Clean Air Stripper - ANNUALLY OR AS NEEDED							Mar 25						
- Clean Floats - QUARTERLY						Feb 12			X			X	
- Discharge Pump (Meyers CT10 1 HP) - Inspect Hoses, Piping and	Sep 4	Oct 15, 16	Nov 16	Dec 17	Jan 14	Feb 22	Mar 25	X	X	X	X	X	X
Fittings for Water Leaks - MONTHLY													
- Blower (16N4 TBNA 3 HP) - Inspect Hoses, Piping and Fittings for	Sep 4	Oct 15, 16	Nov 16	Dec 17	Jan 14	Feb 22	Mar 25	X	X	X	X	X	X
Leaks - MONTHLY													
Solonoid Valve Maintenance													
- Inspect - MONTHLY	Sep 4	Oct 15, 16	Nov 16	Dec 17	Jan 14	Feb 22	Mar 9, 25	X	X	X	X	X	X
- Clean - AS NEEDED		Oct 27	Nov 6	Dec 4									
- Rebuild - AS NEEDED				Dec 7									

Notes:

Sep 4: Date task completed.
X: Task to be completed during that month.
NA: Not applicable

FIELD DATA SHEET 1 of 2

CLIENT NAME: CITY OF ROCHESTER
PROJECT ID: CRC
PROJECT NAME: MN BIO BUSINESS CENTER

DATE: 3/25/10
TIME:
RECORDED BY: JEG

2009 SYSTEM STARTUP INFORMATION
Startup Date: 6/29/2009 MS Discharge Totalizer: 68 Sump Discharge Totalizer: 200

NOTES - **LEAVE VACUUM RELIEF VALVE SELECTOR SWITCH IN OFF POSITION**
LEAVE AIR STRIPPER SELECTOR SWITCHES IN AUTO POSITION

CURRENT OPERATING WELL: #2
DPE WELL BLEED VALVE % OPEN:
DPE PUMP BLEED VALVE % OPEN:

ANALOG PANEL READINGS
DPE PUMP AIR FLOW (SCFM): 110.1
DPE WELL VACUUM (IN. HG): 15.66
DPE PUMP INLET VACUUM (IN. HG): 16.45
DPE PUMP OUTLET PRESSURE (PSI): 0.02
DPE PUMP OUTLET TEMP (DEG. F): 251
MS PUMP WATER FLOW (GPM):

TOTAL PANEL READINGS
DPE VACUUM PUMP (HRS): 4551
MS PUMP (HRS): 270
MS VACUUM VALVE (HRS): 50
AIR STRIPPER BLOWER (HRS): 1544
AIR STRIPPER PUMP (HRS): 117
DPE AIR FLOW (SCF): 14285000
MS PUMP WATER FLOW (GAL): 141405
SUMP PUMP WATER FLOW (GAL): 330

STATIC WATER LEVELS

	Clean to Dirty Ranking	Well Depth below TOC (FT)	Depth to Water below TOC (FT)
MW-14	3	17.5	11.90
MW-15	4	18	14.57
MW-16	10	18	12.50
MW-17	7	25	12.78
MW-18	6	60	13.24
MW-19	1	20	13.81
MW-20	8	16.7	12.54
DPE-1	15	21.9	15.72
DPE-2	13	20.5	15.50
DPE-3	14	17.1	15.68
DPE-4	12	19.3	16.22
DPE-5	9	18.1	16.42
DPE-6	5	19.5	15.24
DPE-7	2	22.2	16.65
DPE-8	11	17.5	15.72
Sump	1	7.74	6.88

FIELD MEASUREMENTS
DPE WELL CASING VACUUM (MM HG): -165
DPE WELL HEAD (DROP TUBE) VACUUM (IN. HG): Bolwren 16.0
PRE-MANIFOLD VACUUM (IN. HG): 14.9
DPE WELL (PRE-MS) VACUUM (IN.HG): 15.1
POST-MS VACUUM (IN. HG): 16.1
DPE PUMP AIR FLOW (SCFM): 110
DPE EXHAUST PID CONC. (PPM): 10.5
DPE PUMP OUTLET PRESSURE (IN. H2O)): 0
DPE PUMP OUTLET TEMP (DEG. F): 248

MS PUMP WATER FLOWRATE (WHILE PUMPING) (GPM): 12.9
MS PUMP WATER PRESSURE (WHILE PUMPING) (PSI): 15
MS PUMP FLOW TOTALIZER READING (GAL): 148206

AS EXHAUST PRESSURE (IN. H20): 10.5
AS DISCHARGE PUMP PRESSURE (WHILE PUMPING) (PSI): 27.5
AS BLOWER PRESSURE (IN. H20): 18
AS EXHAUST PID (PPM): ND

ELEVATOR DRAIN TILE SUMP FLOW TOTALIZER (GAL): 515

OPERATING WATER LEVELS

DPE-1	20.9	
DPE-2	20.00	dry
DPE-3	18.3	dry
DPE-4	20.05	dry
DPE-5	18.7	dry
DPE-6	19.5	dry
DPE-7	22.1	dry
DPE-8	17.8	dry

SUMP ROOM PID: ND

BASEMENT PID READINGS: ND

AMBIENT ROOM TEMPERATURE
CURRENT: MAX:

COMMENTS/MAINTENANCE:

FIELD DATA SHEET 2 of 2

CLIENT NAME: CITY OF ROCHESTER
PROJECT ID: CRC
PROJECT NAME: MN BIO BUSINESS CENTER

DATE: 3/25/10
TIME: 07:30
RECORDED BY: JEG

	PID READINGS	DPE EXHAUST FLOW RATE	DPE PUMP INLET VACUUM	WELL CASING VACUUMS
DPE-1	868	40	-23	-51
DPE-2	10.5	50	-22	-168
DPE-3	31.4	70	-19	-125
DPE-4	55.3	55	-22	-140
DPE-5	5.7	75	-18	-86
DPE-6	0	70	-20	-120
DPE-7	0	90	-17	-64
DPE-8	4000	105	-16	-94

69.4 AVERAGE FLOW SCFM

1 ℓ CAN # 1316

Reg # 174

- 27.5 @ 0742
- 21 @ 09:30
- 12 @ 11:30

AS - IN 08:00

AS - out 08:10

1 sul acid · AS post sampling

MAINTENANCE CHECKLIST

MN Bio Business Center
221 1st Avenue SW
Rochester, MN

Date: 3/25/10

Field Represenative: JEG

	Check Box	OBSERVATIONS AND/OR DESCRIPTION OF MAINTENANCE PERFORMED
DPE Pump Maintenance		
- Inspect Hoses, Piping and Fittings for Oil Leaks - MONTHLY	✓	
- Check Oil Level (level should show at middle of site glass) - MONTHLY	✓	
- Change Oil - EVERY 5,000 OPERATING HOURS		
- Inspect and Clean Pump Inlet Screen - EACH SITE VISIT	—	in Shelter
Moisture Separator Maintenance		
- Clean Floats - MONTHLY	✓	
- Check Sediment - MONTHLY	✓	
- Remove Sediment - MONTHLY		- minimal
- Replace Filter - If Pressure Drop Occurs		
- Transfer Pump (Moyno 34401 1 HP) - Inspect Hoses, Piping and Fittings for Water Leaks - MONTHLY		
Air Stripper Maintenance		
- Clean Air Stripper - ANNUALLY OR AS NEEDED		added - Acid - 1g
- Discharge Pump (Meyers CT10 1 HP) - Inspect Hoses, Piping and Fittings for Water Leaks - MONTHLY	✓	
- Blower (16N4 TBNA 3 HP) - Inspect Hoses, Piping and Fittings for Leaks - MONTHLY	✓	
	✓	
Solonoid Valve Maintenance		
- Inspect - MONTHLY	✓	
- Clean - AS NEEDED		
- Rebuild - AS NEEDED		

FIELD DATA SHEET

CLIENT NAME: CITY OF ROCHESTER
PROJECT ID: CRC
PROJECT NAME: MN BIO BUSINESS CENTER

DATE: 3/3/10
RECORDED BY:

2009 SYSTEM STARTUP INFORMATION
Startup Date: 6/29/2009 MS Discharge Totalizer: 68 Sump Discharge Totalizer: 200

NOTES - LEAVE VACUUM RELIEF VALVE SELECTOR SWITCH IN OFF POSITION
LEAVE AIR STRIPPER SELECTOR SWITCHES IN AUTO POSITION

CURRENT OPERATING WELL:
DPE WELL BLEED VALVE % OPEN:
DPE PUMP BLEED VALVE % OPEN:

ANALOG PANEL READINGS
DPE PUMP AIR FLOW (SCFM): 103.6 (80)
DPE WELL VACUUM (IN. HG): 15.64
DPE PUMP INLET VACUUM (IN. HG): 16.29
DPE PUMP OUTLET PRESSURE (PSI): 0
DPE PUMP OUTLET TEMP (DEG. F): 100.4
MS PUMP WATER FLOW (GPM): 12.91

TOTAL PANEL READINGS
DPE VACUUM PUMP (HRS): 4472
MS PUMP (HRS): 255
MS VACUUM VALVE (HRS): 50
AIR STRIPPER BLOWER (HRS): 1436
AIR STRIPPER PUMP (HRS): 109
DPE AIR FLOW (SCF): 12597000
MS PUMP WATER FLOW (GAL): 131361
SUMP PUMP WATER FLOW (GAL): 330

FIELD MEASUREMENTS
DPE WELL CASING VACUUM (MM HG):
DPE WELL HEAD (DROP TUBE) VACUUM (IN. HG):
PRE-MANIFOLD VACUUM (IN. HG): 14.8
DPE WELL (PRE-MS) VACUUM (IN.HG): 15.1
POST-MS VACUUM (IN. HG): 15.8 / 16
DPE PUMP AIR FLOW (SCFM): 105
DPE EXHAUST PID CONC. (PPM): —
DPE PUMP OUTLET PRESSURE (IN. H2O)): —
DPE PUMP OUTLET TEMP (DEG. F): 161

MS PUMP WATER FLOWRATE (WHILE PUMPING) (GPM): 12.9
MS PUMP WATER PRESSURE (WHILE PUMPING) (PSI): 14
MS PUMP FLOW TOTALIZER READING (GAL): 137839

AS EXHAUST PRESSURE (IN. H20): 11
AS DISCHARGE PUMP PRESSURE (WHILE PUMPING) (PSI): 20
AS BLOWER PRESSURE (IN. H20): 18
AS EXHAUST PID (PPM): —

ELEVATOR DRAIN TILE SUMP FLOW TOTALIZER (GAL): —

WATER LEVEL MEASUREMENTS

	Clean to Dirty Ranking	Well Depth below TOC (FT)	Depth to Water below TOC (FT)
MW-14	3	17.5	
MW-15	4	18	
MW-16	10	18	
MW-17	7	25	
MW-18	6	60	
MW-19	1	20	
MW-20	8	16.7	
DPE-1	15	21.9	
DPE-2	13	20.5	
DPE-3	14	17.1	
DPE-4	12	19.3	
DPE-5	9	18.1	
DPE-6	5	19.5	
DPE-7	2	22.2	
DPE-8	11	17.5	
Sump	1	7.74	

WELL CASING VACUUMS	PID READINGS
DPE-1	DPE-1
DPE-2	DPE-2
DPE-3	DPE-3
DPE-4	DPE-4
DPE-5	DPE-5
DPE-6	DPE-6
DPE-7	DPE-7
DPE-8	DPE-8

SUMP ROOM PID:

BASEMENT PID READINGS:

AMBIENT ROOM TEMPERATURE
CURRENT: MAX:

COMMENTS/MAINTENANCE:

MAINTENANCE CHECKLIST (Revised 2/16/10)

MN Bio Business Center
221 1st Avenue SW
Rochester, MN

Date: 3/9/10

Field Represenative:

	Check Box	OBSERVATIONS AND/OR DESCRIPTION OF MAINTENANCE PERFORMED
DPE Pump Maintenance		
- Inspect Hoses, Piping and Fittings for Oil Leaks - MONTHLY	✓	
- Check Oil Level (level should show at middle of site glass) - MONTHLY	✓	
- Change Oil - EVERY 5,000 OPERATING HOURS		changed - .85L oil
- Inspect and Clean Pump Inlet Screen - EACH SITE VISIT		Removed
Moisture Separator Maintenance		
- Clean Floats - MONTHLY	✓	
- Check Sediment - MONTHLY	✓	
- Remove Sediment - MONTHLY		- Not enough
- Replace Filter - If Pressure Drop Occurs		
- Transfer Pump (Moyno 34401 1 HP) - Inspect Hoses, Piping and Fittings for Water Leaks - MONTHLY	✓	
- Replace Transfer Pump Stator - SEMI-ANNUALLY		
Air Stripper Maintenance		
- Clean Air Stripper - ANNUALLY OR AS NEEDED		
- Clean Floats - Quarterly		
- Discharge Pump (Meyers CT10 1 HP) - Inspect Hoses, Piping and Fittings for Water Leaks - MONTHLY		
- Blower (16N4 TBNA 3 HP) - Inspect Hoses, Piping and Fittings for Leaks - MONTHLY		
Solonoid Valve Maintenance		
- Inspect - MONTHLY	✓	
- Clean - AS NEEDED		
- Rebuild - AS NEEDED		

Attachment B

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 02, 2010

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

RE: Project: CRC City of Rochester
Pace Project No.: 10125114

Dear Mr. Skramstad:
Enclosed are the analytical results for sample(s) received by the laboratory on March 26, 2010. 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 Trout

Carolynne Trout

carolynne.trout@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: CRC City of Rochester
Pace Project No.: 10125114

Minnesota Certification IDs
1700 Elm Street SE, Suite 200 Minneapolis, MN 55414
Alaska Certification #: UST-078
Washington Certification #: C754
Tennessee Certification #: 02818
Pennsylvania Certification #: 68-00563
Oregon Certification #: MN200001
North Dakota Certification #: R-036
North Carolina Certification #: 530
New York Certification #: 11647
New Jersey Certification #: MN-002
Montana Certification #: MT CERT0092
Minnesota Certification #: 027-053-137
Michigan DEQ Certification #: 9909
Maine Certification #: 2007029
Louisiana Certification #: LA080009
Louisiana Certification #: 03086
Kansas Certification #: E-10167
Iowa Certification #: 368
Illinois Certification #: 200011
Florida/NELAP Certification #: E87605
California Certification #: 01155CA
Arizona Certification #: AZ-0014
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: CRC City of Rochester
Pace Project No.: 10125114

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10125114001	**AS-Influent**	Water	03/25/10 08:00	03/26/10 10:52
10125114002	**AS-Effluent**	Water	03/25/10 08:10	03/26/10 10:52

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SAMPLE ANALYTE COUNT

Project: CRC City of Rochester
Pace Project No.: 10125114

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10125114001	**AS-Influent**	EPA 624	CNC, DRE	82
10125114002	**AS-Effluent**	EPA 624	CNC, DRE	82

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ANALYTICAL RESULTS

Project: CRC City of Rochester
Pace Project No.: 10125114

Sample: AS-Influent **Lab ID: 10125114001** Collected: 03/25/10 08:00 Received: 03/26/10 10:52 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 MSV	Analytical Method: EPA 624							
Acetone	**11.2**	ug/L	10.0	1		03/29/10 17:41	67-64-1	SS
Acrolein	ND	ug/L	40.0	1		03/29/10 17:41	107-02-8	
Acrylonitrile	ND	ug/L	10.0	1		03/29/10 17:41	107-13-1	
Allyl chloride	ND	ug/L	4.0	1		03/29/10 17:41	107-05-1	
Benzene	ND	ug/L	1.0	1		03/29/10 17:41	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		03/29/10 17:41	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		03/29/10 17:41	74-97-5	
Bromodichloromethane	ND	ug/L	4.0	1		03/29/10 17:41	75-27-4	
Bromoform	ND	ug/L	8.0	1		03/29/10 17:41	75-25-2	
Bromomethane	**37.3**	ug/L	4.0	1		03/29/10 17:41	74-83-9	
2-Butanone (MEK)	**4.9**	ug/L	4.0	1		03/29/10 17:41	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		03/29/10 17:41	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		03/29/10 17:41	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		03/29/10 17:41	98-06-6	
Carbon disulfide	ND	ug/L	1.0	1		03/29/10 17:41	75-15-0	
Carbon tetrachloride	ND	ug/L	4.0	1		03/29/10 17:41	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/29/10 17:41	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/29/10 17:41	75-00-3	
2-Chloroethylvinyl ether	ND	ug/L	10.0	1		03/29/10 17:41	110-75-8	
Chloroform	ND	ug/L	1.0	1		03/29/10 17:41	67-66-3	
Chloromethane	**380**	ug/L	20.0	5		03/30/10 17:52	74-87-3	
Chloroprene	ND	ug/L	1.0	1		03/29/10 17:41	126-99-8	
2-Chlorotoluene	ND	ug/L	1.0	1		03/29/10 17:41	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		03/29/10 17:41	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		03/29/10 17:41	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		03/29/10 17:41	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		03/29/10 17:41	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		03/29/10 17:41	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		03/29/10 17:41	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		03/29/10 17:41	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		03/29/10 17:41	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		03/29/10 17:41	75-71-8	L1
1,1-Dichloroethane	ND	ug/L	1.0	1		03/29/10 17:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/29/10 17:41	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/29/10 17:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/29/10 17:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/29/10 17:41	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		03/29/10 17:41	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/29/10 17:41	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		03/29/10 17:41	142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	1		03/29/10 17:41	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		03/29/10 17:41	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		03/29/10 17:41	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		03/29/10 17:41	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		03/29/10 17:41	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		03/29/10 17:41	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	1		03/29/10 17:41	87-68-3	

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: CRC City of Rochester
Pace Project No.: 10125114

Sample: AS-Influent **Lab ID: 10125114001** Collected: 03/25/10 08:00 Received: 03/26/10 10:52 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 MSV	Analytical Method: EPA 624							
2-Hexanone	ND	ug/L	4.0	1		03/29/10 17:41	591-78-6	
Iodomethane	**17.3**	ug/L	4.0	1		03/29/10 17:41	74-88-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		03/29/10 17:41	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		03/29/10 17:41	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		03/29/10 17:41	75-09-2	
2-Methylnaphthalene	ND	ug/L	5.0	1		03/29/10 17:41	91-57-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		03/29/10 17:41	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		03/29/10 17:41	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		03/29/10 17:41	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		03/29/10 17:41	103-65-1	
Styrene	ND	ug/L	1.0	1		03/29/10 17:41	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		03/29/10 17:41	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/29/10 17:41	79-34-5	
Tetrachloroethene	**55.5**	ug/L	1.0	1		03/29/10 17:41	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		03/29/10 17:41	109-99-9	
Toluene	ND	ug/L	1.0	1		03/29/10 17:41	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		03/29/10 17:41	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		03/29/10 17:41	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/29/10 17:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	4.0	1		03/29/10 17:41	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/29/10 17:41	79-01-6	
Trichlorofluoromethane	ND	ug/L	4.0	1		03/29/10 17:41	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		03/29/10 17:41	96-18-4	
1,1,2-Trichlorotrifluoroethane	**1.0**	ug/L	1.0	1		03/29/10 17:41	76-13-1	CH,L1
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		03/29/10 17:41	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		03/29/10 17:41	108-67-8	
Vinyl acetate	ND	ug/L	20.0	1		03/29/10 17:41	108-05-4	
Vinyl chloride	ND	ug/L	0.40	1		03/29/10 17:41	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		03/29/10 17:41	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		03/29/10 17:41	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		03/29/10 17:41	95-47-6	
Dibromofluoromethane (S)	98	%	75-125	1		03/29/10 17:41	1868-53-7	
4-Bromofluorobenzene (S)	99	%	75-125	1		03/29/10 17:41	460-00-4	
Toluene-d8 (S)	98	%	75-125	1		03/29/10 17:41	2037-26-5	
1,2-Dichloroethane-d4 (S)	104	%	75-125	1		03/29/10 17:41	17060-07-0	

Sample: AS-Effluent **Lab ID: 10125114002** Collected: 03/25/10 08:10 Received: 03/26/10 10:52 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 MSV	Analytical Method: EPA 624							
Acetone	**29.8**	ug/L	10.0	1		03/29/10 17:21	67-64-1	SS
Acrolein	ND	ug/L	40.0	1		03/29/10 17:21	107-02-8	
Acrylonitrile	ND	ug/L	10.0	1		03/29/10 17:21	107-13-1	
Allyl chloride	ND	ug/L	4.0	1		03/29/10 17:21	107-05-1	
Benzene	ND	ug/L	1.0	1		03/29/10 17:21	71-43-2	

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ANALYTICAL RESULTS

Project: CRC City of Rochester
Pace Project No.: 10125114

Sample: AS-Effluent **Lab ID: 10125114002** Collected: 03/25/10 08:10 Received: 03/26/10 10:52 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 MSV	Analytical Method: EPA 624							
Bromobenzene	ND	ug/L	1.0	1		03/29/10 17:21	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		03/29/10 17:21	74-97-5	
Bromodichloromethane	ND	ug/L	4.0	1		03/29/10 17:21	75-27-4	
Bromoform	ND	ug/L	8.0	1		03/29/10 17:21	75-25-2	
Bromomethane	**38.0**	ug/L	4.0	1		03/29/10 17:21	74-83-9	M0
2-Butanone (MEK)	**7.5**	ug/L	4.0	1		03/29/10 17:21	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		03/29/10 17:21	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		03/29/10 17:21	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		03/29/10 17:21	98-06-6	
Carbon disulfide	ND	ug/L	1.0	1		03/29/10 17:21	75-15-0	
Carbon tetrachloride	ND	ug/L	4.0	1		03/29/10 17:21	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/29/10 17:21	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/29/10 17:21	75-00-3	
2-Chloroethylvinyl ether	ND	ug/L	10.0	1		03/29/10 17:21	110-75-8	P5
Chloroform	ND	ug/L	1.0	1		03/29/10 17:21	67-66-3	
Chloromethane	**644**	ug/L	20.0	5		03/30/10 18:36	74-87-3	P6
Chloroprene	ND	ug/L	1.0	1		03/29/10 17:21	126-99-8	
2-Chlorotoluene	ND	ug/L	1.0	1		03/29/10 17:21	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		03/29/10 17:21	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		03/29/10 17:21	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		03/29/10 17:21	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		03/29/10 17:21	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		03/29/10 17:21	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		03/29/10 17:21	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		03/29/10 17:21	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		03/29/10 17:21	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		03/29/10 17:21	75-71-8	L1,M0
1,1-Dichloroethane	ND	ug/L	1.0	1		03/29/10 17:21	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/29/10 17:21	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/29/10 17:21	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/29/10 17:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/29/10 17:21	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		03/29/10 17:21	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/29/10 17:21	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		03/29/10 17:21	142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	1		03/29/10 17:21	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		03/29/10 17:21	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		03/29/10 17:21	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		03/29/10 17:21	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		03/29/10 17:21	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		03/29/10 17:21	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	1		03/29/10 17:21	87-68-3	
2-Hexanone	ND	ug/L	4.0	1		03/29/10 17:21	591-78-6	
Iodomethane	**18.9**	ug/L	4.0	1		03/29/10 17:21	74-88-4	M0
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		03/29/10 17:21	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		03/29/10 17:21	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		03/29/10 17:21	75-09-2	

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ANALYTICAL RESULTS

Project: CRC City of Rochester
Pace Project No.: 10125114

Sample: AS-Effluent **Lab ID: 10125114002** Collected: 03/25/10 08:10 Received: 03/26/10 10:52 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624 MSV	Analytical Method: EPA 624							
2-Methylnaphthalene	ND	ug/L	5.0	1		03/29/10 17:21	91-57-6	M0
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		03/29/10 17:21	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		03/29/10 17:21	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		03/29/10 17:21	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		03/29/10 17:21	103-65-1	
Styrene	ND	ug/L	1.0	1		03/29/10 17:21	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		03/29/10 17:21	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/29/10 17:21	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		03/29/10 17:21	127-18-4	
Tetrahydrofuran	**20.3**	ug/L	10.0	1		03/29/10 17:21	109-99-9	
Toluene	ND	ug/L	1.0	1		03/29/10 17:21	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		03/29/10 17:21	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		03/29/10 17:21	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/29/10 17:21	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	4.0	1		03/29/10 17:21	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/29/10 17:21	79-01-6	
Trichlorofluoromethane	ND	ug/L	4.0	1		03/29/10 17:21	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		03/29/10 17:21	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		03/29/10 17:21	76-13-1	L1
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		03/29/10 17:21	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		03/29/10 17:21	108-67-8	
Vinyl acetate	ND	ug/L	20.0	1		03/29/10 17:21	108-05-4	
Vinyl chloride	ND	ug/L	0.40	1		03/29/10 17:21	75-01-4	
Xylene (Total)	**4.9**	ug/L	3.0	1		03/29/10 17:21	1330-20-7	
m&p-Xylene	**3.4**	ug/L	2.0	1		03/29/10 17:21	1330-20-7	
o-Xylene	**1.6**	ug/L	1.0	1		03/29/10 17:21	95-47-6	
Dibromofluoromethane (S)	96	%	75-125	1		03/29/10 17:21	1868-53-7	
4-Bromofluorobenzene (S)	100	%	75-125	1		03/29/10 17:21	460-00-4	
Toluene-d8 (S)	98	%	75-125	1		03/29/10 17:21	2037-26-5	
1,2-Dichloroethane-d4 (S)	97	%	75-125	1		03/29/10 17:21	17060-07-0	

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QUALITY CONTROL DATA

Project: CRC City of Rochester
Pace Project No.: 10125114

QC Batch: MSV/14135 Analysis Method: EPA 624
QC Batch Method: EPA 624 Analysis Description: 624 MSV
Associated Lab Samples: 10125114001, 10125114002

METHOD BLANK: 765878 Matrix: Water
Associated Lab Samples: 10125114001, 10125114002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	03/29/10 17:00	
1,1,1-Trichloroethane	ug/L	ND	1.0	03/29/10 17:00	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	03/29/10 17:00	
1,1,2-Trichloroethane	ug/L	ND	4.0	03/29/10 17:00	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	03/29/10 17:00	
1,1-Dichloroethane	ug/L	ND	1.0	03/29/10 17:00	
1,1-Dichloroethene	ug/L	ND	1.0	03/29/10 17:00	
1,1-Dichloropropene	ug/L	ND	1.0	03/29/10 17:00	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	03/29/10 17:00	
1,2,3-Trichloropropane	ug/L	ND	1.0	03/29/10 17:00	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	03/29/10 17:00	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	03/29/10 17:00	
1,2-Dibromo-3-chloropropane	ug/L	ND	4.0	03/29/10 17:00	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	03/29/10 17:00	
1,2-Dichlorobenzene	ug/L	ND	1.0	03/29/10 17:00	
1,2-Dichloroethane	ug/L	ND	1.0	03/29/10 17:00	
1,2-Dichloropropane	ug/L	ND	1.0	03/29/10 17:00	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	03/29/10 17:00	
1,3-Dichlorobenzene	ug/L	ND	1.0	03/29/10 17:00	
1,3-Dichloropropane	ug/L	ND	1.0	03/29/10 17:00	
1,4-Dichlorobenzene	ug/L	ND	1.0	03/29/10 17:00	
2,2-Dichloropropane	ug/L	ND	4.0	03/29/10 17:00	
2-Butanone (MEK)	ug/L	ND	4.0	03/29/10 17:00	
2-Chloroethylvinyl ether	ug/L	ND	10.0	03/29/10 17:00	
2-Chlorotoluene	ug/L	ND	1.0	03/29/10 17:00	
2-Hexanone	ug/L	ND	4.0	03/29/10 17:00	
2-Methylnaphthalene	ug/L	ND	5.0	03/29/10 17:00	
4-Chlorotoluene	ug/L	ND	1.0	03/29/10 17:00	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	03/29/10 17:00	
Acetone	ug/L	ND	10.0	03/29/10 17:00	
Acrolein	ug/L	ND	40.0	03/29/10 17:00	
Acrylonitrile	ug/L	ND	10.0	03/29/10 17:00	
Allyl chloride	ug/L	ND	4.0	03/29/10 17:00	
Benzene	ug/L	ND	1.0	03/29/10 17:00	
Bromobenzene	ug/L	ND	1.0	03/29/10 17:00	
Bromochloromethane	ug/L	ND	1.0	03/29/10 17:00	
Bromodichloromethane	ug/L	ND	4.0	03/29/10 17:00	
Bromoform	ug/L	ND	8.0	03/29/10 17:00	
Bromomethane	ug/L	ND	4.0	03/29/10 17:00	
Carbon disulfide	ug/L	ND	1.0	03/29/10 17:00	
Carbon tetrachloride	ug/L	ND	4.0	03/29/10 17:00	
Chlorobenzene	ug/L	ND	1.0	03/29/10 17:00	
Chloroethane	ug/L	ND	1.0	03/29/10 17:00	

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QUALITY CONTROL DATA

Project: CRC City of Rochester
Pace Project No.: 10125114

METHOD BLANK: 765878 Matrix: Water

Associated Lab Samples: 10125114001, 10125114002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloroform	ug/L	ND	1.0	03/29/10 17:00	
Chloromethane	ug/L	ND	4.0	03/29/10 17:00	
Chloroprene	ug/L	ND	1.0	03/29/10 17:00	
cis-1,2-Dichloroethene	ug/L	ND	1.0	03/29/10 17:00	
cis-1,3-Dichloropropene	ug/L	ND	4.0	03/29/10 17:00	
Dibromochloromethane	ug/L	ND	1.0	03/29/10 17:00	
Dibromomethane	ug/L	ND	1.0	03/29/10 17:00	
Dichlorodifluoromethane	ug/L	ND	1.0	03/29/10 17:00	
Dichlorofluoromethane	ug/L	ND	1.0	03/29/10 17:00	
Diethyl ether (Ethyl ether)	ug/L	ND	4.0	03/29/10 17:00	
Ethylbenzene	ug/L	ND	1.0	03/29/10 17:00	
Hexachloro-1,3-butadiene	ug/L	ND	4.0	03/29/10 17:00	
Iodomethane	ug/L	ND	4.0	03/29/10 17:00	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	03/29/10 17:00	
m&p-Xylene	ug/L	ND	2.0	03/29/10 17:00	
Methyl-tert-butyl ether	ug/L	ND	1.0	03/29/10 17:00	
Methylene Chloride	ug/L	ND	4.0	03/29/10 17:00	
n-Butylbenzene	ug/L	ND	1.0	03/29/10 17:00	
n-Propylbenzene	ug/L	ND	1.0	03/29/10 17:00	
Naphthalene	ug/L	ND	4.0	03/29/10 17:00	
o-Xylene	ug/L	ND	1.0	03/29/10 17:00	
p-Isopropyltoluene	ug/L	ND	1.0	03/29/10 17:00	
sec-Butylbenzene	ug/L	ND	1.0	03/29/10 17:00	
Styrene	ug/L	ND	1.0	03/29/10 17:00	
tert-Butylbenzene	ug/L	ND	1.0	03/29/10 17:00	
Tetrachloroethene	ug/L	ND	1.0	03/29/10 17:00	
Tetrahydrofuran	ug/L	ND	10.0	03/29/10 17:00	
Toluene	ug/L	ND	1.0	03/29/10 17:00	
trans-1,2-Dichloroethene	ug/L	ND	1.0	03/29/10 17:00	
trans-1,3-Dichloropropene	ug/L	ND	4.0	03/29/10 17:00	
Trichloroethene	ug/L	ND	1.0	03/29/10 17:00	
Trichlorofluoromethane	ug/L	ND	4.0	03/29/10 17:00	
Vinyl acetate	ug/L	ND	20.0	03/29/10 17:00	
Vinyl chloride	ug/L	ND	0.40	03/29/10 17:00	
Xylene (Total)	ug/L	ND	3.0	03/29/10 17:00	
1,2-Dichloroethane-d4 (S)	%	106	75-125	03/29/10 17:00	
4-Bromofluorobenzene (S)	%	98	75-125	03/29/10 17:00	
Dibromofluoromethane (S)	%	100	75-125	03/29/10 17:00	
Toluene-d8 (S)	%	99	75-125	03/29/10 17:00	

LABORATORY CONTROL SAMPLE: 765879

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	55.4	111	75-129	
1,1,1-Trichloroethane	ug/L	50	55.3	111	73-144	

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QUALITY CONTROL DATA

Project: CRC City of Rochester
Pace Project No.: 10125114

LABORATORY CONTROL SAMPLE: 765879

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,2,2-Tetrachloroethane	ug/L	50	47.4	95	75-125	
1,1,2-Trichloroethane	ug/L	50	51.6	103	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	50	74.4	149	75-143	CH,L0
1,1-Dichloroethane	ug/L	50	52.0	104	75-135	
1,1-Dichloroethene	ug/L	50	56.7	113	75-133	
1,1-Dichloropropene	ug/L	50	56.1	112	75-131	
1,2,3-Trichlorobenzene	ug/L	50	55.1	110	73-141	
1,2,3-Trichloropropane	ug/L	50	47.7	95	75-126	
1,2,4-Trichlorobenzene	ug/L	50	56.0	112	70-148	
1,2,4-Trimethylbenzene	ug/L	50	54.3	109	75-141	
1,2-Dibromo-3-chloropropane	ug/L	50	51.3	103	64-135	
1,2-Dibromoethane (EDB)	ug/L	50	54.0	108	75-125	
1,2-Dichlorobenzene	ug/L	50	52.8	106	75-125	
1,2-Dichloroethane	ug/L	50	53.8	108	75-136	
1,2-Dichloropropane	ug/L	50	52.5	105	75-130	
1,3,5-Trimethylbenzene	ug/L	50	54.5	109	75-141	
1,3-Dichlorobenzene	ug/L	50	53.9	108	75-125	
1,3-Dichloropropane	ug/L	50	52.2	104	75-125	
1,4-Dichlorobenzene	ug/L	50	53.4	107	75-125	
2,2-Dichloropropane	ug/L	50	62.5	125	50-150	
2-Butanone (MEK)	ug/L	50	50.7	101	58-138	
2-Chloroethylvinyl ether	ug/L	125	145	116	50-150	
2-Chlorotoluene	ug/L	50	52.5	105	75-132	
2-Hexanone	ug/L	50	51.9	104	65-135	
2-Methylnaphthalene	ug/L	50	58.4	117	62-150	
4-Chlorotoluene	ug/L	50	52.6	105	75-135	
4-Methyl-2-pentanone (MIBK)	ug/L	50	51.7	103	69-137	
Acetone	ug/L	125	139	111	52-141	SS
Acrolein	ug/L	500	365	73	50-150	
Acrylonitrile	ug/L	500	489	98	75-130	
Allyl chloride	ug/L	50	48.6	97	68-150	
Benzene	ug/L	50	53.3	107	75-125	
Bromobenzene	ug/L	50	53.1	106	75-125	
Bromochloromethane	ug/L	50	53.1	106	75-129	
Bromodichloromethane	ug/L	50	55.2	110	75-142	
Bromoform	ug/L	100	119	119	66-135	
Bromomethane	ug/L	50	55.2	110	57-150	
Carbon disulfide	ug/L	50	54.8	110	65-132	
Carbon tetrachloride	ug/L	50	58.2	116	75-148	
Chlorobenzene	ug/L	50	53.6	107	75-125	
Chloroethane	ug/L	50	54.2	108	66-142	
Chloroform	ug/L	50	54.4	109	75-131	
Chloromethane	ug/L	50	50.4	101	52-147	
Chloroprene	ug/L	50	59.7	119	71-147	
cis-1,2-Dichloroethene	ug/L	50	55.5	111	75-126	
cis-1,3-Dichloropropene	ug/L	50	55.4	111	69-150	
Dibromochloromethane	ug/L	50	56.3	113	73-138	
Dibromomethane	ug/L	50	51.0	102	75-127	

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QUALITY CONTROL DATA

Project: CRC City of Rochester
Pace Project No.: 10125114

LABORATORY CONTROL SAMPLE: 765879

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dichlorodifluoromethane	ug/L	50	79.5	159	50-150	CH,L0
Dichlorofluoromethane	ug/L	50	52.1	104	75-129	
Diethyl ether (Ethyl ether)	ug/L	50	55.2	110	75-126	
Ethylbenzene	ug/L	50	54.7	109	75-132	
Hexachloro-1,3-butadiene	ug/L	50	53.7	107	75-129	
Iodomethane	ug/L	50	56.8	114	73-150	
Isopropylbenzene (Cumene)	ug/L	50	56.7	113	75-142	
m&p-Xylene	ug/L	100	111	111	75-131	
Methyl-tert-butyl ether	ug/L	50	54.6	109	75-130	
Methylene Chloride	ug/L	50	50.8	102	71-125	
n-Butylbenzene	ug/L	50	54.8	110	70-148	
n-Propylbenzene	ug/L	50	52.8	106	75-136	
Naphthalene	ug/L	50	57.9	116	69-145	
o-Xylene	ug/L	50	56.7	113	75-129	
p-Isopropyltoluene	ug/L	50	55.9	112	75-132	
sec-Butylbenzene	ug/L	50	53.6	107	75-136	
Styrene	ug/L	50	56.3	113	75-125	
tert-Butylbenzene	ug/L	50	54.4	109	75-135	
Tetrachloroethene	ug/L	50	56.5	113	75-125	
Tetrahydrofuran	ug/L	500	552	110	63-144	
Toluene	ug/L	50	54.4	109	75-125	
trans-1,2-Dichloroethene	ug/L	50	54.3	109	72-135	
trans-1,3-Dichloropropene	ug/L	50	54.9	110	62-150	
Trichloroethene	ug/L	50	55.4	111	75-125	
Trichlorofluoromethane	ug/L	50	61.9	124	67-150	
Vinyl acetate	ug/L	50	46.1	92	55-150	
Vinyl chloride	ug/L	50	53.4	107	63-147	
Xylene (Total)	ug/L	150	168	112	75-130	
1,2-Dichloroethane-d4 (S)	%			94	75-125	
4-Bromofluorobenzene (S)	%			97	75-125	
Dibromofluoromethane (S)	%			101	75-125	
Toluene-d8 (S)	%			97	75-125	

MATRIX SPIKE SAMPLE: 766076

Parameter	Units	10125114002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	21.2	106	70-136	
1,1,1-Trichloroethane	ug/L	ND	20	20.6	103	68-150	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	19.1	95	75-125	
1,1,2-Trichloroethane	ug/L	ND	20	19.3	96	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	29.3	147	75-150	CH
1,1-Dichloroethane	ug/L	ND	20	18.2	91	67-143	
1,1-Dichloroethene	ug/L	ND	20	20.8	104	75-147	
1,1-Dichloropropene	ug/L	ND	20	20.7	103	75-141	
1,2,3-Trichlorobenzene	ug/L	ND	20	24.3	122	71-141	
1,2,3-Trichloropropane	ug/L	ND	20	18.7	93	75-128	
1,2,4-Trichlorobenzene	ug/L	ND	20	23.5	118	61-148	

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QUALITY CONTROL DATA

Project: CRC City of Rochester
Pace Project No.: 10125114

MATRIX SPIKE SAMPLE: 766076

Parameter	Units	10125114002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	20	21.8	109	65-145	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20.5	103	64-135	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20.2	101	75-126	
1,2-Dichlorobenzene	ug/L	ND	20	21.2	106	75-127	
1,2-Dichloroethane	ug/L	ND	20	18.5	93	70-138	
1,2-Dichloropropane	ug/L	ND	20	19.2	96	75-130	
1,3,5-Trimethylbenzene	ug/L	ND	20	21.7	109	61-150	
1,3-Dichlorobenzene	ug/L	ND	20	21.4	107	75-126	
1,3-Dichloropropane	ug/L	ND	20	19.6	98	75-125	
1,4-Dichlorobenzene	ug/L	ND	20	21.2	106	75-125	
2,2-Dichloropropane	ug/L	ND	20	24.1	120	50-150	
2-Butanone (MEK)	ug/L	7.5	20	24.6	85	50-141	
2-Chloroethylvinyl ether	ug/L	ND	50	12.1	24	50-150	P5
2-Chlorotoluene	ug/L	ND	20	20.9	104	75-137	
2-Hexanone	ug/L	ND	20	18.7	93	66-135	
2-Methylnaphthalene	ug/L	ND	20	35.8	179	62-150	M0
4-Chlorotoluene	ug/L	ND	20	20.8	104	70-144	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	20	18.6	93	62-142	
Acetone	ug/L	29.8	50	60.6	62	50-150	SS
Acrolein	ug/L	ND	200	207	104	50-150	
Acrylonitrile	ug/L	ND	200	156	78	70-135	
Allyl chloride	ug/L	ND	20	18.1	90	50-150	
Benzene	ug/L	ND	20	18.9	95	75-125	
Bromobenzene	ug/L	ND	20	21.0	105	75-125	
Bromochloromethane	ug/L	ND	20	17.8	89	73-137	
Bromodichloromethane	ug/L	ND	20	20.1	100	70-142	
Bromoform	ug/L	ND	40	43.4	108	55-135	
Bromomethane	ug/L	38.0	20	79.2	206	50-150	M0
Carbon disulfide	ug/L	ND	20	20.5	102	50-150	
Carbon tetrachloride	ug/L	ND	20	21.0	105	64-150	
Chlorobenzene	ug/L	ND	20	21.0	105	75-125	
Chloroethane	ug/L	ND	20	18.0	90	59-150	
Chloroform	ug/L	ND	20	18.7	93	75-132	
Chloromethane	ug/L	644	20	319	-1628	52-150	E,P6
Chloroprene	ug/L	ND	20	20.0	100	54-150	
cis-1,2-Dichloroethene	ug/L	ND	20	19.7	98	64-144	
cis-1,3-Dichloropropene	ug/L	ND	20	19.8	99	56-150	
Dibromochloromethane	ug/L	ND	20	21.0	105	60-138	
Dibromomethane	ug/L	ND	20	19.3	96	75-127	
Dichlorodifluoromethane	ug/L	ND	20	32.1	160	50-150	CH,M0
Dichlorofluoromethane	ug/L	ND	20	18.1	90	74-142	
Diethyl ether (Ethyl ether)	ug/L	ND	20	18.2	91	75-127	
Ethylbenzene	ug/L	ND	20	22.1	107	75-134	
Hexachloro-1,3-butadiene	ug/L	ND	20	26.2	131	63-150	
Iodomethane	ug/L	18.9	20	53.1	171	50-150	M0
Isopropylbenzene (Cumene)	ug/L	ND	20	22.1	110	69-147	
m&p-Xylene	ug/L	3.4	40	47.1	109	75-133	
Methyl-tert-butyl ether	ug/L	ND	20	18.1	91	73-131	

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QUALITY CONTROL DATA

Project: CRC City of Rochester
Pace Project No.: 10125114

MATRIX SPIKE SAMPLE: 766076

Parameter	Units	10125114002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Methylene Chloride	ug/L	ND	20	17.7	88	68-126	
n-Butylbenzene	ug/L	ND	20	22.9	115	59-150	
n-Propylbenzene	ug/L	ND	20	21.4	107	72-143	
Naphthalene	ug/L	ND	20	23.8	119	57-148	
o-Xylene	ug/L	1.6	20	22.9	107	75-131	
p-Isopropyltoluene	ug/L	ND	20	22.9	114	75-137	
sec-Butylbenzene	ug/L	ND	20	22.2	111	75-144	
Styrene	ug/L	ND	20	21.2	106	75-134	
tert-Butylbenzene	ug/L	ND	20	22.2	111	68-150	
Tetrachloroethene	ug/L	ND	20	23.4	117	75-130	
Tetrahydrofuran	ug/L	20.3	200	195	87	60-148	
Toluene	ug/L	ND	20	21.4	107	75-125	
trans-1,2-Dichloroethene	ug/L	ND	20	20.5	102	75-145	
trans-1,3-Dichloropropene	ug/L	ND	20	20.9	104	50-150	
Trichloroethene	ug/L	ND	20	20.9	104	73-132	
Trichlorofluoromethane	ug/L	ND	20	23.9	119	67-150	
Vinyl acetate	ug/L	ND	20	18.7J	93	50-150	
Vinyl chloride	ug/L	ND	20	20.2	101	63-150	
Xylene (Total)	ug/L	4.9	60	70.0	108	72-138	
1,2-Dichloroethane-d4 (S)	%				99	75-125	
4-Bromofluorobenzene (S)	%				99	75-125	
Dibromofluoromethane (S)	%				91	75-125	
Toluene-d8 (S)	%				99	75-125	

SAMPLE DUPLICATE: 766075

Parameter	Units	10125114001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1,2-Trichlorotrifluoroethane	ug/L	1.0	1.1	4	30	CH
1,1-Dichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,1-Dichloropropene	ug/L	ND	ND		30	
1,2,3-Trichlorobenzene	ug/L	ND	ND		30	
1,2,3-Trichloropropane	ug/L	ND	ND		30	
1,2,4-Trichlorobenzene	ug/L	ND	ND		30	
1,2,4-Trimethylbenzene	ug/L	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/L	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/L	ND	ND		30	
1,2-Dichlorobenzene	ug/L	ND	ND		30	
1,2-Dichloroethane	ug/L	ND	ND		30	
1,2-Dichloropropane	ug/L	ND	ND		30	
1,3,5-Trimethylbenzene	ug/L	ND	ND		30	
1,3-Dichlorobenzene	ug/L	ND	ND		30	
1,3-Dichloropropane	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: CRC City of Rochester
Pace Project No.: 10125114

SAMPLE DUPLICATE: 766075

Parameter	Units	10125114001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	ND		30	
2,2-Dichloropropane	ug/L	ND	ND		30	
2-Butanone (MEK)	ug/L	4.9	6.6	29	30	
2-Chloroethylvinyl ether	ug/L	ND	ND		30	
2-Chlorotoluene	ug/L	ND	ND		30	
2-Hexanone	ug/L	ND	ND		30	
2-Methylnaphthalene	ug/L	ND	ND		30	
4-Chlorotoluene	ug/L	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND		30	
Acetone	ug/L	11.2	12.1	7	30	SS
Acrolein	ug/L	ND	ND		30	
Acrylonitrile	ug/L	ND	ND		30	
Allyl chloride	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Bromobenzene	ug/L	ND	ND		30	
Bromochloromethane	ug/L	ND	ND		30	
Bromodichloromethane	ug/L	ND	ND		30	
Bromoform	ug/L	ND	ND		30	
Bromomethane	ug/L	37.3	ND		30	
Carbon disulfide	ug/L	ND	ND		30	
Carbon tetrachloride	ug/L	ND	ND		30	
Chlorobenzene	ug/L	ND	ND		30	
Chloroethane	ug/L	ND	ND		30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	380	372	2	30	
Chloroprene	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	ND	.55J		30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Dichlorodifluoromethane	ug/L	ND	ND		30	
Dichlorofluoromethane	ug/L	ND	ND		30	
Diethyl ether (Ethyl ether)	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Hexachloro-1,3-butadiene	ug/L	ND	ND		30	
Iodomethane	ug/L	17.3	13.9	22	30	
Isopropylbenzene (Cumene)	ug/L	ND	ND		30	
m&p-Xylene	ug/L	ND	1.1J		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
n-Butylbenzene	ug/L	ND	ND		30	
n-Propylbenzene	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
o-Xylene	ug/L	ND	ND		30	
p-Isopropyltoluene	ug/L	ND	ND		30	
sec-Butylbenzene	ug/L	ND	ND		30	
Styrene	ug/L	ND	ND		30	
tert-Butylbenzene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: CRC City of Rochester
Pace Project No.: 10125114

SAMPLE DUPLICATE: 766075

Parameter	Units	10125114001 Result	Dup Result	RPD	Max RPD	Qualifiers
Tetrachloroethene	ug/L	55.5	55.2	1	30	
Tetrahydrofuran	ug/L	ND	6.6J		30	
Toluene	ug/L	ND	ND		30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
trans-1,3-Dichloropropene	ug/L	ND	ND		30	
Trichloroethene	ug/L	ND	ND		30	
Trichlorofluoromethane	ug/L	ND	ND		30	
Vinyl acetate	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	1.6J		30	
1,2-Dichloroethane-d4 (S)	%	104	101	2		
4-Bromofluorobenzene (S)	%	99	100	1		
Dibromofluoromethane (S)	%	98	98	0		
Toluene-d8 (S)	%	98	98	0		

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QUALIFIERS

Project: CRC City of Rochester
Pace Project No.: 10125114

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results may be biased high.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
P5	The EPA or method required sample preservation degrades this compound, therefore acceptable recoveries may not be achieved in sample matrix spikes.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
SS	This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CRC City of Rochester
Pace Project No.: 10125114

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10125114001	**AS-Influent**	EPA 624	MSV/14135		
10125114002	**AS-Effluent**	EPA 624	MSV/14135		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10125114

Page: 1 of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Landmark Environmental	Report To: Jason Skramstad	Attention: Jason Skramstad
Address: 2042 W. 98th Street	Copy To: Eric Gabrielson	Company Name: Landmark Environmental, LLC
Bloomington, MN 55431		Address: 2042 W. 98th St., Bloomington, MN 55431
Email To: jskramstad@landmarkenv.com	Purchase Order No.:	Pace Quote Reference:
Phone: 952-887-9601, ext 205 / Fax: 952-887-9605	Project Name: City of Rochester	Pace Project Manager: Carolynne Trout
Requested Due Date/TAT: Normal	Project Number: CRC	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION: ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☐ OH ☐ SC ☐ WI ☐ OTHER_____

Section D Required Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Samples IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL WP
WIPE	AR
AIR	OT
OTHER	TS
TISSUE	

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	#OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis: EPA 624	Pace Project Number / Lab I.D.
1	AS-Influent	W	G	3/25/10	8:00				3									X	10125114001
2	AS-Effluent	W	G	3/25/10	8:10				3									X	002
3																			
4																			
5																			
6																			
7																			
8																			
5																			
6																			
7																			
8																			

Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
			[signature] / Pace	3/26/10	1052

SAMPLE CONDITIONS

Temp In °C	Received on Ice	Custody Sealed Cooler	Samples Intact
2.8	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Eric Gabrielson

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 3/26/10

19 of 20

Sample Condition Upon Receipt

Pace Analytical

Client Name: Landmark **Project #** 1012S114

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Commercial ☐ Pace Other ______

Optional: Proj. Due Date: Proj. Name:

Tracking #: ______

Custody Seal on Cooler/Box Present: ☐ yes ☑ no **Seals intact:** ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other ______ **Temp Blank:** Yes ✓ No ______

Thermometer Used 80344042 or (179425) **Type of Ice:** (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.8 **Biological Tissue is Frozen:** Yes No

Date and Initials of person examining contents: 3/26/10 84

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ~~☐No~~ ☐N/A 3/26/10	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: WT	☑Yes ☐No ☐N/A	12.
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☐Yes ☐No ☑N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	Samp #
Exceptions: (VOA) Coliform, TOC, Oil and Grease, WI-DRO (water)	☑Yes ☐No	Initial when completed: AH — Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☑Yes ☐No ☐N/A	15. Inf (1 vial) Eff / 3 vials
Trip Blank Present:	☐Yes ☑No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☑No ☐N/A	
Pace Trip Blank Lot # (if purchased): ______		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: ______ Date/Time: ______

Comments/ Resolution: ______

Project Manager Review: CD [signature] **Date:** 3/29/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR, Inc.
F-L213Rev.00, 05Aug2009 1700 Elm Street SE, Suite 200, Minneapolis, MN 55414

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April 06, 2010

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

RE: Project: CRC City of Rochester
Pace Project No.: 10125090

Dear Mr. Skramstad:
Enclosed are the analytical results for sample(s) received by the laboratory on March 26, 2010. 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 Trout

Carolynne Trout

carolynne.trout@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: CRC City of Rochester
Pace Project No.: 10125090

Minnesota Certification IDs
1700 Elm Street SE, Suite 200 Minneapolis, MN 55414
Alaska Certification #: UST-078
Washington Certification #: C754
Tennessee Certification #: 02818
Pennsylvania Certification #: 68-00563
Oregon Certification #: MN200001
North Dakota Certification #: R-036
North Carolina Certification #: 530
New York Certification #: 11647
New Jersey Certification #: MN-002
Montana Certification #: MT CERT0092
Minnesota Certification #: 027-053-137
Michigan DEQ Certification #: 9909
Maine Certification #: 2007029
Louisiana Certification #: LA080009
Louisiana Certification #: 03086
Kansas Certification #: E-10167
Iowa Certification #: 368
Illinois Certification #: 200011
Florida/NELAP Certification #: E87605
California Certification #: 01155CA
Arizona Certification #: AZ-0014
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: CRC City of Rochester
Pace Project No.: 10125090

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10125090001	**DPE-EXHAUST-1316**	Air	03/25/10 13:42	03/26/10 10:52

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SAMPLE ANALYTE COUNT

Project: CRC City of Rochester
Pace Project No.: 10125090

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10125090001	**DPE-EXHAUST-1316**	TO-15	LCW	61

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ANALYTICAL RESULTS

Project: CRC City of Rochester
Pace Project No.: 10125090

Sample: DPE-EXHAUST-1316 **Lab ID: 10125090001** Collected: 03/25/10 13:42 Received: 03/26/10 10:52 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**163**	ug/m3	0.86	1.8		04/01/10 21:27	67-64-1	E
Benzene	ND	ug/m3	1.2	1.8		04/01/10 21:27	71-43-2	
Benzyl chloride	ND	ug/m3	1.9	1.8		04/01/10 21:27	100-44-7	
Bromodichloromethane	ND	ug/m3	2.5	1.8		04/01/10 21:27	75-27-4	
Bromoform	ND	ug/m3	3.8	1.8		04/01/10 21:27	75-25-2	
Bromomethane	ND	ug/m3	1.4	1.8		04/01/10 21:27	74-83-9	
1,3-Butadiene	ND	ug/m3	0.81	1.8		04/01/10 21:27	106-99-0	
2-Butanone (MEK)	**44.2**	ug/m3	1.1	1.8		04/01/10 21:27	78-93-3	
Carbon disulfide	**1.3**	ug/m3	1.1	1.8		04/01/10 21:27	75-15-0	
Carbon tetrachloride	ND	ug/m3	2.3	1.8		04/01/10 21:27	56-23-5	
Chlorobenzene	ND	ug/m3	1.7	1.8		04/01/10 21:27	108-90-7	
Chloroethane	ND	ug/m3	0.97	1.8		04/01/10 21:27	75-00-3	
Chloroform	**11.3**	ug/m3	1.8	1.8		04/01/10 21:27	67-66-3	
Chloromethane	ND	ug/m3	0.76	1.8		04/01/10 21:27	74-87-3	
Cyclohexane	**2.2**	ug/m3	1.2	1.8		04/01/10 21:27	110-82-7	
Dibromochloromethane	ND	ug/m3	3.1	1.8		04/01/10 21:27	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	2.9	1.8		04/01/10 21:27	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	2.2	1.8		04/01/10 21:27	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	2.2	1.8		04/01/10 21:27	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	2.2	1.8		04/01/10 21:27	106-46-7	
Dichlorodifluoromethane	**11.0**	ug/m3	1.8	1.8		04/01/10 21:27	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		04/01/10 21:27	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.5	1.8		04/01/10 21:27	107-06-2	
1,1-Dichloroethene	**3.0**	ug/m3	1.5	1.8		04/01/10 21:27	75-35-4	
cis-1,2-Dichloroethene	**80.2**	ug/m3	1.5	1.8		04/01/10 21:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		04/01/10 21:27	156-60-5	
1,2-Dichloropropane	ND	ug/m3	1.7	1.8		04/01/10 21:27	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.7	1.8		04/01/10 21:27	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.7	1.8		04/01/10 21:27	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	2.5	1.8		04/01/10 21:27	76-14-2	
Ethanol	**26.1**	ug/m3	3.4	1.8		04/01/10 21:27	64-17-5	
Ethyl acetate	ND	ug/m3	1.3	1.8		04/01/10 21:27	141-78-6	
Ethylbenzene	**118**	ug/m3	1.6	1.8		04/01/10 21:27	100-41-4	
4-Ethyltoluene	ND	ug/m3	4.5	1.8		04/01/10 21:27	622-96-8	
n-Heptane	**2.7**	ug/m3	1.5	1.8		04/01/10 21:27	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	4.0	1.8		04/01/10 21:27	87-68-3	
n-Hexane	**4.7**	ug/m3	1.3	1.8		04/01/10 21:27	110-54-3	
2-Hexanone	ND	ug/m3	1.5	1.8		04/01/10 21:27	591-78-6	
Methylene Chloride	ND	ug/m3	1.3	1.8		04/01/10 21:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	1.5	1.8		04/01/10 21:27	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		04/01/10 21:27	1634-04-4	
Naphthalene	ND	ug/m3	4.9	1.8		04/01/10 21:27	91-20-3	
2-Propanol	**19.0**	ug/m3	4.5	1.8		04/01/10 21:27	67-63-0	
Propylene	ND	ug/m3	0.63	1.8		04/01/10 21:27	115-07-1	
Styrene	ND	ug/m3	1.6	1.8		04/01/10 21:27	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	2.5	1.8		04/01/10 21:27	79-34-5	
Tetrachloroethene	**215000**	ug/m3	6450	4608		04/03/10 00:31	127-18-4	A3

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ANALYTICAL RESULTS

Project: CRC City of Rochester
Pace Project No.: 10125090

Sample: DPE-EXHAUST-1316 **Lab ID: 10125090001** Collected: 03/25/10 13:42 Received: 03/26/10 10:52 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Tetrahydrofuran	**58.0**	ug/m3	1.1	1.8		04/01/10 21:27	109-99-9	
Toluene	**28.4**	ug/m3	1.4	1.8		04/01/10 21:27	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	1.8	1.8		04/01/10 21:27	120-82-1	
1,1,1-Trichloroethane	**30.7**	ug/m3	2.0	1.8		04/01/10 21:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	2.0	1.8		04/01/10 21:27	79-00-5	
Trichloroethene	**43.7**	ug/m3	2.0	1.8		04/01/10 21:27	79-01-6	
Trichlorofluoromethane	ND	ug/m3	2.0	1.8		04/01/10 21:27	75-69-4	
1,1,2-Trichlorotrifluoroethane	**115000**	ug/m3	7370	4608		04/03/10 00:31	76-13-1	A3
1,2,4-Trimethylbenzene	**12.8**	ug/m3	4.5	1.8		04/01/10 21:27	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	4.5	1.8		04/01/10 21:27	108-67-8	
Vinyl acetate	**8.9**	ug/m3	1.3	1.8		04/01/10 21:27	108-05-4	
Vinyl chloride	ND	ug/m3	0.94	1.8		04/01/10 21:27	75-01-4	
m&p-Xylene	**456**	ug/m3	3.2	1.8		04/01/10 21:27	1330-20-7	
o-Xylene	**159**	ug/m3	1.6	1.8		04/01/10 21:27	95-47-6	

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QUALITY CONTROL DATA

Project: CRC City of Rochester
Pace Project No.: 10125090

QC Batch: AIR/10002
QC Batch Method: TO-15
Analysis Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10125090001

METHOD BLANK: 767815
Matrix: Air
Associated Lab Samples: 10125090001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	04/01/10 12:15	
1,1,2,2-Tetrachloroethane	ug/m3	ND	1.4	04/01/10 12:15	
1,1,2-Trichloroethane	ug/m3	ND	1.1	04/01/10 12:15	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	1.6	04/01/10 12:15	
1,1-Dichloroethane	ug/m3	ND	0.82	04/01/10 12:15	
1,1-Dichloroethene	ug/m3	ND	0.81	04/01/10 12:15	
1,2,4-Trichlorobenzene	ug/m3	ND	0.99	04/01/10 12:15	
1,2,4-Trimethylbenzene	ug/m3	ND	2.5	04/01/10 12:15	
1,2-Dibromoethane (EDB)	ug/m3	ND	1.6	04/01/10 12:15	
1,2-Dichlorobenzene	ug/m3	ND	1.2	04/01/10 12:15	
1,2-Dichloroethane	ug/m3	ND	0.82	04/01/10 12:15	
1,2-Dichloropropane	ug/m3	ND	0.94	04/01/10 12:15	
1,3,5-Trimethylbenzene	ug/m3	ND	2.5	04/01/10 12:15	
1,3-Butadiene	ug/m3	ND	0.45	04/01/10 12:15	
1,3-Dichlorobenzene	ug/m3	ND	1.2	04/01/10 12:15	
1,4-Dichlorobenzene	ug/m3	ND	1.2	04/01/10 12:15	
2-Butanone (MEK)	ug/m3	ND	0.60	04/01/10 12:15	
2-Hexanone	ug/m3	ND	0.83	04/01/10 12:15	
4-Ethyltoluene	ug/m3	ND	2.5	04/01/10 12:15	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	0.83	04/01/10 12:15	
Acetone	ug/m3	ND	0.48	04/01/10 12:15	
Benzene	ug/m3	ND	0.65	04/01/10 12:15	
Bromodichloromethane	ug/m3	ND	1.4	04/01/10 12:15	
Bromoform	ug/m3	ND	2.1	04/01/10 12:15	
Bromomethane	ug/m3	ND	0.79	04/01/10 12:15	
Carbon disulfide	ug/m3	ND	0.63	04/01/10 12:15	
Carbon tetrachloride	ug/m3	ND	1.3	04/01/10 12:15	
Chlorobenzene	ug/m3	ND	0.94	04/01/10 12:15	
Chloroethane	ug/m3	ND	0.54	04/01/10 12:15	
Chloroform	ug/m3	ND	0.99	04/01/10 12:15	
Chloromethane	ug/m3	ND	0.42	04/01/10 12:15	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	04/01/10 12:15	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	04/01/10 12:15	
Cyclohexane	ug/m3	ND	0.68	04/01/10 12:15	
Dibromochloromethane	ug/m3	ND	1.7	04/01/10 12:15	
Dichlorodifluoromethane	ug/m3	ND	1.0	04/01/10 12:15	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	04/01/10 12:15	
Ethyl acetate	ug/m3	ND	0.73	04/01/10 12:15	
Ethylbenzene	ug/m3	ND	0.88	04/01/10 12:15	
Hexachloro-1,3-butadiene	ug/m3	ND	2.2	04/01/10 12:15	
m&p-Xylene	ug/m3	ND	1.8	04/01/10 12:15	
Methyl-tert-butyl ether	ug/m3	ND	0.73	04/01/10 12:15	
Methylene Chloride	ug/m3	ND	0.71	04/01/10 12:15	

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QUALITY CONTROL DATA

Project: CRC City of Rochester
Pace Project No.: 10125090

METHOD BLANK: 767815 Matrix: Air

Associated Lab Samples: 10125090001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
n-Heptane	ug/m3	ND	0.83	04/01/10 12:15	
n-Hexane	ug/m3	ND	0.72	04/01/10 12:15	
o-Xylene	ug/m3	ND	0.88	04/01/10 12:15	
Propylene	ug/m3	ND	0.35	04/01/10 12:15	
Styrene	ug/m3	ND	0.87	04/01/10 12:15	
Tetrachloroethene	ug/m3	ND	1.4	04/01/10 12:15	
Tetrahydrofuran	ug/m3	ND	0.60	04/01/10 12:15	
Toluene	ug/m3	ND	0.77	04/01/10 12:15	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	04/01/10 12:15	
trans-1,3-Dichloropropene	ug/m3	ND	0.92	04/01/10 12:15	
Trichloroethene	ug/m3	ND	1.1	04/01/10 12:15	
Trichlorofluoromethane	ug/m3	ND	1.1	04/01/10 12:15	
Vinyl acetate	ug/m3	ND	0.71	04/01/10 12:15	
Vinyl chloride	ug/m3	ND	0.52	04/01/10 12:15	

LABORATORY CONTROL SAMPLE: 767816

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	48.0	86	55-127	
1,1,2,2-Tetrachloroethane	ug/m3	69.8	69.8	100	58-128	
1,1,2-Trichloroethane	ug/m3	55.5	48.2	87	58-126	
1,1,2-Trichlorotrifluoroethane	ug/m3	77.9	67.4	86	49-134	
1,1-Dichloroethane	ug/m3	41.2	37.9	92	52-129	
1,1-Dichloroethene	ug/m3	40.3	37.4	93	50-130	
1,2,4-Trichlorobenzene	ug/m3	75.5	91.7	121	30-150	
1,2,4-Trimethylbenzene	ug/m3	50	51.9	104	53-144	
1,2-Dibromoethane (EDB)	ug/m3	78.1	73.9	95	57-137	
1,2-Dichlorobenzene	ug/m3	61.2	66.6	109	65-140	
1,2-Dichloroethane	ug/m3	41.2	39.6	96	54-125	
1,2-Dichloropropane	ug/m3	47	39.9	85	60-125	
1,3,5-Trimethylbenzene	ug/m3	50	48.3	97	54-139	
1,3-Butadiene	ug/m3	22.5	19.4	86	54-125	
1,3-Dichlorobenzene	ug/m3	61.2	61.3	100	62-140	
1,4-Dichlorobenzene	ug/m3	61.2	62.5	102	61-139	
2-Butanone (MEK)	ug/m3	30	29.1	97	47-138	
2-Hexanone	ug/m3	41.7	50.6	122	40-143	
4-Ethyltoluene	ug/m3	50	53.5	107	57-139	
4-Methyl-2-pentanone (MIBK)	ug/m3	41.7	43.5	104	54-132	
Acetone	ug/m3	24.2	19.7	82	44-147	
Benzene	ug/m3	32.5	27.8	85	60-125	
Bromodichloromethane	ug/m3	68.2	60.3	89	53-130	
Bromoform	ug/m3	105	105	100	55-125	
Bromomethane	ug/m3	39.5	34.7	88	53-132	
Carbon disulfide	ug/m3	31.7	28.0	88	57-150	
Carbon tetrachloride	ug/m3	64	54.3	85	53-125	

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QUALITY CONTROL DATA

Project: CRC City of Rochester
Pace Project No.: 10125090

LABORATORY CONTROL SAMPLE: 767816

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorobenzene	ug/m3	46.8	44.1	94	50-136	
Chloroethane	ug/m3	26.8	23.1	86	55-130	
Chloroform	ug/m3	49.7	44.4	89	56-125	
Chloromethane	ug/m3	21	18.0	86	49-127	
cis-1,2-Dichloroethene	ug/m3	40.3	36.7	91	58-127	
cis-1,3-Dichloropropene	ug/m3	46.2	44.5	96	62-135	
Cyclohexane	ug/m3	35	28.3	81	56-135	
Dibromochloromethane	ug/m3	86.6	81.0	93	48-132	
Dichlorodifluoromethane	ug/m3	50.3	42.6	85	54-130	
Dichlorotetrafluoroethane	ug/m3	71.1	59.9	84	50-125	
Ethyl acetate	ug/m3	36.6	36.6	100	70-141	
Ethylbenzene	ug/m3	44.2	42.2	96	57-135	
Hexachloro-1,3-butadiene	ug/m3	108	169	156	30-150	L3
m&p-Xylene	ug/m3	88.3	84.8	96	61-135	
Methyl-tert-butyl ether	ug/m3	36.7	34.6	94	56-130	
Methylene Chloride	ug/m3	35.3	29.6	84	49-127	
n-Heptane	ug/m3	41.7	36.7	88	57-133	
n-Hexane	ug/m3	35.8	33.6	94	55-135	
o-Xylene	ug/m3	44.2	42.8	97	60-134	
Propylene	ug/m3	17.5	14.3	82	63-147	
Styrene	ug/m3	43.3	43.7	101	58-142	
Tetrachloroethene	ug/m3	69	61.7	89	61-132	
Tetrahydrofuran	ug/m3	30	29.7	99	67-134	
Toluene	ug/m3	38.3	31.2	81	56-132	
trans-1,2-Dichloroethene	ug/m3	40.3	37.2	92	52-131	
trans-1,3-Dichloropropene	ug/m3	46.2	46.6	101	62-131	
Trichloroethene	ug/m3	54.6	46.4	85	68-150	
Trichlorofluoromethane	ug/m3	57.1	51.2	90	52-142	
Vinyl acetate	ug/m3	35.8	36.7	103	53-136	
Vinyl chloride	ug/m3	26	23.1	89	57-132	

SAMPLE DUPLICATE: 768172

Parameter	Units	5035778002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		25	
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND		25	
1,1,2-Trichloroethane	ug/m3	ND	ND		25	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	ND		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethene	ug/m3	ND	ND		25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND		25	
1,2,4-Trimethylbenzene	ug/m3	ND	ND		25	
1,2-Dibromoethane (EDB)	ug/m3	ND	ND		25	
1,2-Dichlorobenzene	ug/m3	ND	ND		25	
1,2-Dichloroethane	ug/m3	ND	ND		25	
1,2-Dichloropropane	ug/m3	ND	ND		25	
1,3,5-Trimethylbenzene	ug/m3	ND	ND		25	

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QUALITY CONTROL DATA

Project: CRC City of Rochester
Pace Project No.: 10125090

SAMPLE DUPLICATE: 768172

Parameter	Units	5035778002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,3-Butadiene	ug/m3	ND	ND		25	
1,3-Dichlorobenzene	ug/m3	ND	ND		25	
1,4-Dichlorobenzene	ug/m3	ND	ND		25	
2-Butanone (MEK)	ug/m3	ND	ND		25	
2-Hexanone	ug/m3	ND	ND		25	
2-Propanol	ug/m3	ND	ND		25	
4-Ethyltoluene	ug/m3	ND	ND		25	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	ND		25	
Acetone	ug/m3	ND	ND		25	
Benzene	ug/m3	ND	ND		25	
Benzyl chloride	ug/m3	ND	ND		25	
Bromodichloromethane	ug/m3	ND	ND		25	
Bromoform	ug/m3	ND	ND		25	
Bromomethane	ug/m3	ND	ND		25	
Carbon disulfide	ug/m3	ND	ND		25	
Carbon tetrachloride	ug/m3	ND	ND		25	
Chlorobenzene	ug/m3	ND	ND		25	
Chloroethane	ug/m3	ND	ND		25	
Chloroform	ug/m3	ND	ND		25	
Chloromethane	ug/m3	ND	ND		25	
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
cis-1,3-Dichloropropene	ug/m3	ND	ND		25	
Cyclohexane	ug/m3	ND	ND		25	
Dibromochloromethane	ug/m3	ND	ND		25	
Dichlorodifluoromethane	ug/m3	ND	ND		25	
Dichlorotetrafluoroethane	ug/m3	ND	ND		25	
Ethanol	ug/m3	ND	ND		25	
Ethyl acetate	ug/m3	ND	ND		25	
Ethylbenzene	ug/m3	ND	ND		25	
Hexachloro-1,3-butadiene	ug/m3	ND	ND		25	
m&p-Xylene	ug/m3	ND	ND		25	
Methyl-tert-butyl ether	ug/m3	ND	ND		25	
Methylene Chloride	ug/m3	ND	ND		25	
n-Heptane	ug/m3	ND	ND		25	
n-Hexane	ug/m3	ND	ND		25	
Naphthalene	ug/m3	ND	ND		25	
o-Xylene	ug/m3	ND	ND		25	
Propylene	ug/m3	ND	ND		25	
Styrene	ug/m3	ND	ND		25	
Tetrachloroethene	ug/m3	ND	ND		25	
Tetrahydrofuran	ug/m3	ND	ND		25	
Toluene	ug/m3	ND	ND		25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
trans-1,3-Dichloropropene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	ND	ND		25	
Trichlorofluoromethane	ug/m3	ND	ND		25	
Vinyl acetate	ug/m3	ND	ND		25	
Vinyl chloride	ug/m3	ND	ND		25	

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: CRC City of Rochester
Pace Project No.: 10125090

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

SAMPLE QUALIFIERS

Sample: 10125090001

[1] The Total Hydrocarbon (THC) pattern occured in the second half of the chromatogram (after toluene).

ANALYTE QUALIFIERS

A3 The sample was analyzed by serial dilution.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CRC City of Rochester
Pace Project No.: 10125090

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10125090001	**DPE-EXHAUST-1316**	TO-15	AIR/10002		

Data File: \\192.168.10.12\chem\10air7.i\040110.b\09117.D
Report Date: 02-Apr-2010 08:56

Pace Analytical Services

TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:
Lab Smp Id: 10125090001
Operator : LCW
Sample Location:
Sample Matrix: AIR
Analysis Type: VOA
Inj Date: 01-APR-2010 21:27

Client SDG: 040110.b

Sample Date:
Sample Point:
Date Received:
Level: LOW

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/KG) ppbv

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.133	9.92	J
2.		Unknown	9.849	14.0	J
3.	55429-29-3	Arsenous acid, tris(trimeth	10.177	19.6	NJ
4.	95-47-6	Benzene, 1,2-dimethyl-	11.757	165	NJ
5.		Unknown	12.183	5.09	J
6.	556-67-2	Cyclotetrasiloxane, octamet	13.892	26.5	NJ
7.	611-14-3	Benzene, 1-ethyl-2-methyl-	14.217	3.05	NJ
8.	124-18-5	Decane	14.315	6.30	NJ
9.	5989-27-5	D-Limonene	15.187	7.42	NJ
10.	1120-21-4	Undecane	16.181	2.77	NJ

Data File: \\192.168.10.12\chem\10air7.i\040110.b\09117.D
Report Date: 02-Apr-2010 08:56

Pace Analytical Services

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10air7.i\040110.b\09117.D
Lab Smp Id: 10125090001
Inj Date : 01-APR-2010 21:27
Operator : LCW Inst ID: 10air7.i
Smp Info : Sample 0
Misc Info :
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10air7.i\040110.b\TO15_089-10.m
Meth Date : 01-Apr-2010 11:09 lweinkauf Quant Type: ISTD
Cal Date : 30-MAR-2010 15:34 Cal File: 08910.D
Als bottle: 10
Dil Factor: 1.80000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14
Processing Host: AIRGROUP

Concentration Formula: Amt * DF * Uf * CpndVariable

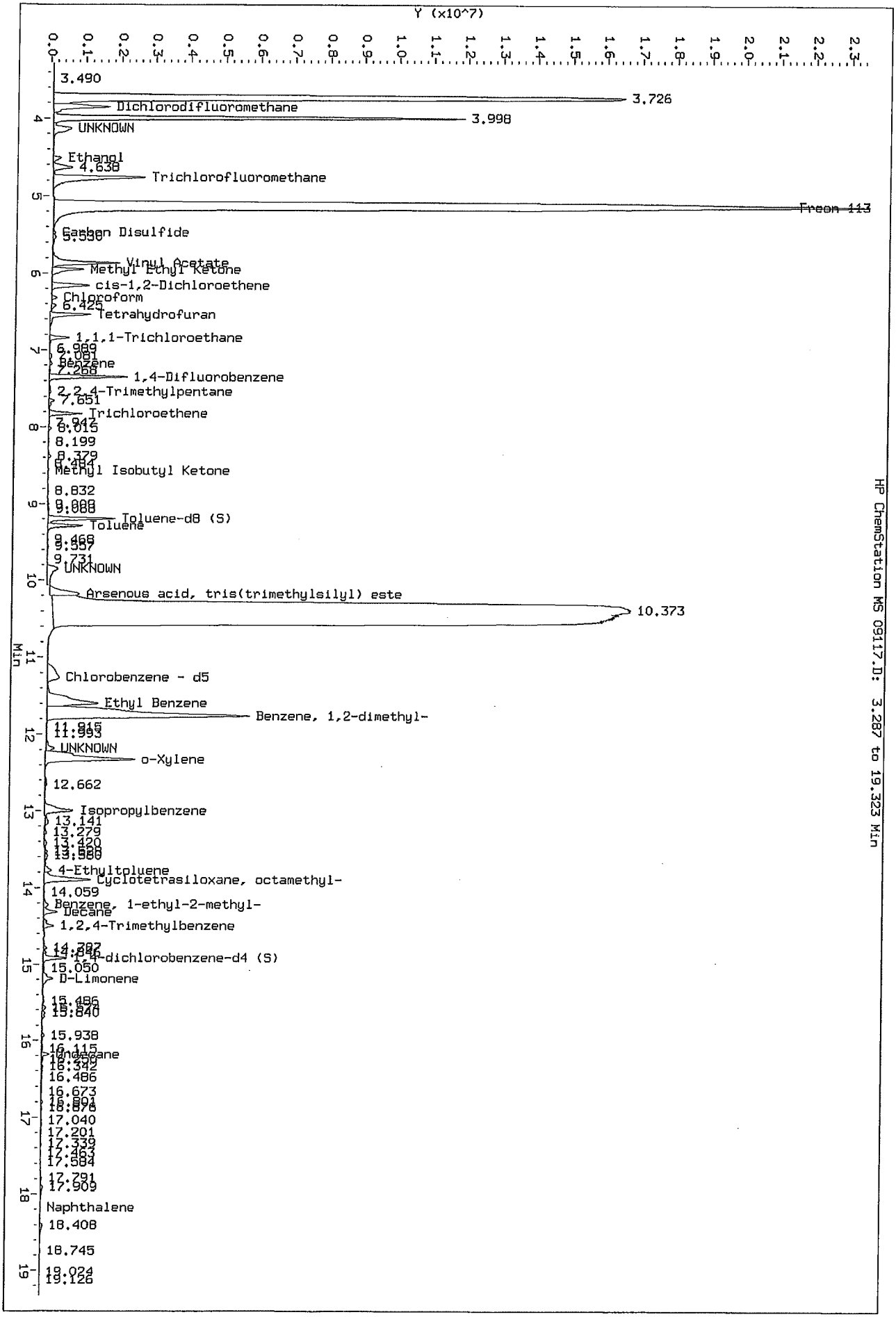
Name	Value	Description
DF	1.800	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 36 1,4-Difluorobenzene	7.350	4489522	10.000
* 53 Chlorobenzene - d5	11.265	3055653	10.000

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(ppbv)	FINAL(ppbv)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
4.133	2473644	5.50981509	9.92	0		0	36
Unknown				CAS #:			
9.849	2369174	7.75341359	14.0	0		0	53
Arsenous acid, tris(trimethylsilyl) este				CAS #: 55429-29-3			
10.177	3318873	10.8614186	19.6	72	NBS75K.l	48300	53
Benzene, 1,2-dimethyl-				CAS #: 95-47-6			
11.757	28066929	91.8524693	165	97	NBS75K.l	63707	53
Unknown				CAS #:			
12.183	864298	2.82852225	5.09	0		0	53

Data File: \\192.168.10.12\chem\10air7.i\040110.b\09117.D
Report Date: 02-Apr-2010 08:56

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(ppbv)	FINAL(ppbv)	QUAL	LIBRARY	LIB ENTRY	CPND #
Cyclotetrasiloxane, octamethyl-				CAS #: 556-67-2			
13.892	4500650	14.7289288	26.5	78	NBS75K.l	41966	53
Benzene, 1-ethyl-2-methyl-				CAS #: 611-14-3			
14.217	518480	1.69678879	3.05	92	NBS75K.l	64560	53
Decane				CAS #: 124-18-5			
14.315	1069240	3.49921981	6.30	95	NBS75K.l	66205	53
D-Limonene				CAS #: 5989-27-5			
15.187	1260124	4.12390932	7.42	93	NBS75K.l	6664	53
Undecane				CAS #: 1120-21-4			
16.181	470078	1.53838652	2.77	90	NBS75K.l	67318	53



Data File: \\192.168.10.12\chem\10air7.i\040110.b\09117.D
Injection Date: 01-APR-2010 21:27
Instrument: 10air7.i
Client Sample ID: 1012509001

Pace Analytical™
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10125090

Page: 1 of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Landmark Environmental	Report To: Jason Skramstad	Attention: Jason Skramstad
Address: 2042 W. 98th Street	Copy To: Eric Gabrielson	Company Name: Landmark Environmental, LLC
Bloomington, MN 55431		Address: 2042 W. 98th St., Bloomington, MN 55431
Email To: jskramstad@landmarkenv.com	Purchase Order No.:	Pace Quote Reference:
Phone: 952-887-9601, ext 205 Fax: 952-887-9605	Project Name: City of Rochester	Pace Project Manager: Carolynne Trout
Requested Due Date/TAT: Normal	Project Number: CRC	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☐ OH ☐ SC ☐ WI ☐ OTHER_____

Section D Required Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Samples IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	#OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Filtered (Y/N)	Requested Analysis: TO-15	Pace Project Number / Lab I.D.
1	DPE-EXHAUST-1316	A	C	3/25/10	7:42	3/25/10	13:42												X	10125090001
2																				
3																				
4																				
5																				
6																				
7																				
8																				
5																				
6																				
7																				
8																				

Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
				3/26/10	1052

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	N/A
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Eric Gabrielson

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM / DD / YY): 3/26/10

17 of 18

AIR Sample Condition Upon Receipt

Pace Analytical™ Client Name: LANDMARK Project # 10125090

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☒ Commercial ☐ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

[redacted]

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other_____

Tracking #:_____

Comments:

Date and Initials of person examining contents: 3-26-10 K

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☐Yes ☒No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Media: AIR (CAN)		11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.

Samples Received: 1 CAN, 1 FC

Canisters		Flow Controllers		Stand Alone G		Tedlar Bags	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
DPE	1316		174				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted:_____ Date/Time:_____

Comments/ Resolution:_____

Project Manager Review: CDW **Date:** 3/29/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

A106 Rev.01 (22May2009)

Attachment C

Site Data Entry Worksheet for Soil Vapor Extraction Systems

Enter site data for up to 5 SVE stacks in yellow cells.

Project Name:		Enter Height of Stack#1 (meters):	Enter Distance from Stack#1 to Nearest Receptor or Property Boundary (in meters, minimum 10):	Enter Measured Gas Flow Rate through Vent Stack#1 (m^3/sec):				
MN Bio Business Center		8	10	0.05				
Date of Emission Test:				**STACK 1**				
03/25/10				**ENTER EMISSION CONCENTRATIONS FOR STACK#1 in Column C**				
Chemical Name	**CAS or MPCA#**	Emission concentration stack#1 ug/m^3	Gas flow rate through vent stack#1 m^3/sec	Emission rate stack#1 ug/sec	Emission rate stack#1 lb/hr	Emission rate stack#1 tons/year	Total Annual Emissions (tons/year)	Cumulative Emission Rate (ug/sec)
Acetone	67-64-1	163	5.2000E-02	8.4760E+00	6.7271E-05	2.9465E-04	2.9465E-04	8.4760E+00
Carbon disulfide	75-15-0	1.3	5.2000E-02	6.7600E-02	5.3652E-07	2.3499E-06	2.3499E-06	6.7600E-02
Chloroform	67-66-3	11.3	5.2000E-02	5.8760E-01	4.6636E-06	2.0426E-05	2.0426E-05	5.8760E-01
Cyclohexane	110-82-7	2.2	5.2000E-02	1.1440E-01	9.0795E-07	3.9768E-06	3.9768E-06	1.1440E-01
Dichlorodifluoromethane (CFC-12)	75-71-8	11	5.2000E-02	5.7200E-01	4.5398E-06	1.9884E-05	1.9884E-05	5.7200E-01
Ethanol	64-17-5	26.1	5.2000E-02	1.3572E+00	1.0772E-05	4.7180E-05	4.7180E-05	1.3572E+00
Ethyl benzene	100-41-4	118	5.2000E-02	6.1360E+00	4.8699E-05	2.1330E-04	2.1330E-04	6.1360E+00
Hexane	110-54-3	4.7	5.2000E-02	2.4440E-01	1.9397E-06	8.4960E-06	8.4960E-06	2.4440E-01
Methyl ethyl ketone (2-Butanone)	78-93-3	44.2	5.2000E-02	2.2984E+00	1.8242E-05	7.9898E-05	7.9898E-05	2.2984E+00
Tetrachloroethylene (Perchloroethylene)	127-18-4	215000	5.2000E-02	1.1180E+04	8.8732E-02	3.8864E-01	3.8864E-01	1.1180E+04
Toluene	108-88-3	28.4	5.2000E-02	1.4768E+00	1.1721E-05	5.1337E-05	5.1337E-05	1.4768E+00
Trichloro-1,2,2-trifluoroethane, 1,1,2- (Freon 113)	76-13-1	115000	5.2000E-02	5.9800E+03	4.7461E-02	2.0788E-01	2.0788E-01	5.9800E+03
Trichloroethylene	79-01-6	43.7	5.2000E-02	2.2724E+00	1.8035E-05	7.8994E-05	7.8994E-05	2.2724E+00
Trimethylbenzene, 1,2,4-	95-63-6	12.8	5.2000E-02	6.6560E-01	5.2826E-06	2.3138E-05	2.3138E-05	6.6560E-01
Vinyl acetate	108-05-4	8.9	5.2000E-02	4.6280E-01	3.6731E-06	1.6088E-05	1.6088E-05	4.6280E-01
Xylenes	1330-20-7	456	5.2000E-02	2.3712E+01	1.8819E-04	8.2429E-04	8.2429E-04	2.3712E+01
Xylenes, o-	95-47-6	159	5.2000E-02	8.2680E+00	6.5620E-05	2.8742E-04	2.8742E-04	8.2680E+00
							5.9850E-01	

Site Data Entry Worksheet for Air Stripper Systems

Enter Site Data for up to 5 air strippers in yellow cells.

Site/Project Name:	**MN Bio Business Center**
Emission Test Date:	**3/25/2010**

Enter Height of Stack: (meters)	Enter Distance from Stack to Nearest Receptor or Property Boundary: (in meters, minimum 10)	Air Stripper#1 influent flow rate [IFR] (liter/sec)
8	**10**	**0.04**

		Air Stripper #1					
Chemical Name	**CAS or MPCA#**	Influent Groundwater Concentration [IGC] (ug/L)	Effluent Groundwater Concentration [EGC] (ug/L)	Removal Factor [RF] (dimension less)	Cumulative Emission Rate (ug/sec)	Total Annual Emissions (lbs/hr)	Total Annual Emissions (tons/year)
Acetone	67-64-1	1.12E+01	2.98E+01	-1.66	-6.88E-01	-5.46E-06	-2.39E-05
Methyl ethyl ketone (2-Butanone)	78-93-3	4.90E+00	7.50E+00	-0.53	-9.62E-02	-7.64E-07	-3.34E-06
Tetrachloroethylene (Perchloroethylene)	127-18-4	5.55E+01	0.00E+00	1.00	2.05E+00	1.63E-05	7.14E-05
Trichloro-1,2,2-trifluoroethane, 1,1,2- (Freon 113)	76-13-1	1.00E+00	0.00E+00	1.00	3.70E-02	2.94E-07	1.29E-06
Xylenes	1330-20-7	0.00E+00	4.90E+00	#DIV/0!	#DIV/0!	0.00E+00	0.00E+00

Screening Emission Rates (SERs) and Chronic Risk Summary
Based on site inputs provided on Soil Venting Worksheet and Air Stripper Worksheet

Site/Project Name:
MN Bio Business Center

Emission Test Date:
3/25/2010

Chemical Name	CAS # or MPCA #	Chronic Noncancer tox value (ug/m3)	Chronic Cancer tox value (ug/m3)	Annual Disp. Factor ((ug/m3)/g/s)	SER for Chronic Risk (ug/s)	Site Specific Emission Rate (ug/s)	Calculated Conc at Receptor for Chronic Risk (ug/m3)	Site HQ (Noncancer)	ELCR (Cancer)
Acetone	67-64-1	3.00E+04		1230	2.44E+07	8.48E+00	1.04E-02	0.0	
Carbon disulfide	75-15-0	7.00E+02		1230	5.69E+05	6.76E-02	8.31E-05	0.0	
Chloroform	67-66-3	1.00E+02		1230	8.13E+04	5.88E-01	7.23E-04	0.0	
Cyclohexane	110-82-7	6.00E+03		1230	4.88E+06	1.14E-01	1.41E-04	0.0	
Dichlorodifluoromethane (CFC-12)	75-71-8	2.00E+02		1230	1.63E+05	5.72E-01	7.04E-04	0.0	
Ethanol	64-17-5	1.50E+04		1230	1.22E+07	1.36E+00	1.67E-03	0.0	
Ethyl benzene	100-41-4	1.00E+03		1230	8.13E+05	6.14E+00	7.55E-03	0.0	
Hexane	110-54-3	2.00E+03		1230	1.63E+06	2.44E-01	3.01E-04	0.0	
Methyl ethyl ketone (2-Butanone)	78-93-3	5.00E+03		1230	4.07E+06	2.30E+00	2.83E-03	0.0	
Tetrachloroethylene (Perchloroethylene)	127-18-4	1.00E+02	2.00E+01	1230	1.63E+04	1.12E+04	1.38E+01	0.1	6.9E-06
Toluene	108-88-3	5.00E+03		1230	4.07E+06	1.48E+00	1.82E-03	0.0	
Trichloro-1,2,2-trifluoroethane, 1,1,2- (Freon 113)	76-13-1			1230		5.98E+03	7.36E+00		
Trichloroethylene	79-01-6	6.00E+02	3.03E+00	1230	2.46E+03	2.27E+00	2.80E-03	0.0	9.2E-09
Trimethylbenzene, 1,2,4-	95-63-6	7.00E+00		1230	5.69E+03	6.66E-01	8.19E-04	0.0	
Vinyl acetate	108-05-4	2.00E+02		1230	1.63E+05	4.63E-01	5.69E-04	0.0	
Xylenes	1330-20-7	1.00E+02		1230	8.13E+04	2.37E+01	2.92E-02	0.0	
Xylenes, o-	95-47-6	1.00E+02		1230	8.13E+04	8.27E+00	1.02E-02	0.0	
						Additive Risk:		**0.1**	**6.9E-06**

Screening Emission Rates (SERs) and Acute Risk Summary

Based on site inputs provided on Soil Venting Worksheet and Air Stripper Worksheet

Site/Project Name:
MN Bio Business Center

Emission Test Date:
3/25/2010

***Bolded chemicals are developmental toxicants. The acute toxic values are ceiling values that should not be exceeded.**

Chemical Name	CAS # or MPCA #	Acute toxcity value (ug/m3)	1-hr Disp. Factor ((ug/m3)/g/s)	SER [acute risk] (ug/s)	Site Emission Rate (ug/s)	Calculated Conc at Receptor for Acute Risk (ug/m3)	Site HQ (Noncancer) for acute risk
Acetone	67-64-1		3343		8.48E+00	1.24E-01	
Carbon disulfide	**75-15-0**	**6000**	**3343**	**1.79E+06**	**6.76E-02**	**9.90E-04**	0.0
Chloroform	**67-66-3**	**150**	**3343**	**4.49E+04**	**5.88E-01**	**8.60E-03**	0.0
Cyclohexane	110-82-7		3343		1.14E-01	1.68E-03	
Dichlorodifluoromethane (CFC-12)	75-71-8		3343		5.72E-01	8.38E-03	
Ethanol	64-17-5	180000	3343	5.38E+07	1.36E+00	1.99E-02	0.0
Ethoxyethanol, 2- (ethylene glycol monoethyl ether)	**110-80-5**	**400**	85665	**4.67E+03**			
Ethyl acetate	141-78-6	40000	85665	4.67E+05			
Ethyl benzene	**100-41-4**	**10000**	3343	**2.99E+06**	**6.14E+00**	8.98E-02	0.0
Hexane	110-54-3		3343		2.44E-01	3.58E-03	
Methyl ethyl ketone (2-Butanone)	78-93-3	10000	3343	2.99E+06	2.30E+00	3.37E-02	0.0
Tetrachloroethylene (Perchloroethylene)	127-18-4	20000	3343	5.98E+06	1.12E+04	1.64E+02	0.0
Toluene	108-88-3	37000	3343	1.11E+07	1.48E+00	2.16E-02	0.0
Trichloro-1,2,2-trifluoroethane, 1,1,2- (Freon 113)	76-13-1		3343		5.98E+03	8.76E+01	
Trichloroethylene	**79-01-6**	**2000**	**3343**	**5.98E+05**	**2.27E+00**	**3.33E-02**	0.0
Trimethylbenzene, 1,2,4-	95-63-6		85665		6.66E-01	9.75E-03	
Vinyl acetate	108-05-4		3343		4.63E-01	6.78E-03	
Xylenes	1330-20-7	43000	3343	1.29E+07	2.37E+01	3.47E-01	0.0
Xylenes, o-	95-47-6	43000	3343	1.29E+07	8.27E+00	1.21E-01	0.0
					Additive Risk:		**0.0**

Risk Evaluation Summary

RASS Version Used: RASS version number = 20060829 - RASS

This worksheet provides a summary of the results of the chronic and acute risk calculations based on site inputs from the Soil Venting and the Air Stripper worksheets. For both chronic and acute risk, an unacceptable risk is indicated in red if the Hazard Index exceeds 1. For chronic risk, an unacceptable risk is also indicated in red if the additive ELCR exceeds 10-5. This worksheet also indicates if levels of any acute developmental toxicants (which are considered ceiling values and should never be exceeded) pose an unacceptable risk.

CHRONIC RISK SUMMARY	
Number of Compounds with Hazard Quotient >1:	**0**
Number of Compounds with Cancer Risk > 10^{-5}	**0**
Noncancer Hazard Index:	**0.1**
Excess Lifetime Cancer Risk (ELCR):	**6.9E-06**

ACUTE RISK SUMMARY	
Number of Compounds with Hazard Quotient >1:	**0**
Hazard Index:	**0.0**

Ceiling Values Exceeded?	
Arsenic	**NO**
Benzene	**NO**
Carbon disulfide	**NO**
Carbon tetrachloride	**NO**
Cellosolve Acetate	**NO**
Chloroform	**NO**
Ethoxyethanol, 2-	**NO**
Ethylbenzene	**NO**
Ethyl chloride	**NO**
Mercury	**NO**
Methoxyethanol, 2-	**NO**
Propylene oxide	**NO**
Trichloroethylene	**NO**