CONESTOGA-ROVERS
& ASSOCIATES

2010 ANNUAL OPERATIONS AND MAINTENANCE REPORT

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LEWISTON, NEW YORK

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1.0 INTRODUCTION

This report summarizes the operation and maintenance (O&M) activities performed at the Stauffer Management Company LLC (SMC) Site (Site) in Lewiston, New York for the reporting period of January 1, 2010 through December 31, 2010. This report also summarizes significant modifications to remedial operations during the reporting period. Finally, this report presents data that can be used to evaluate the effectiveness of the remedial systems, provides conclusions about the data, and offers recommendations for 2011 operations.

The O&M services were provided by Conestoga-Rovers & Associates, Inc. (CRA) under contract to SMC. The O&M activities were performed in accordance with the "Operations and Maintenance Manual, Stauffer Management Company, Town of Lewiston, New York" (O&M Manual), dated April 1998.

1.1 SITE BACKGROUND

The SMC Site is located in the Town of Lewiston, New York, immediately north of the Forebay of the Robert Moses Power Plant. Figure 1.1 presents the location of the Site, and Figure 1.2 presents the layout of the Site.

The Site is a former chemical manufacturing facility owned and operated by Stauffer Chemical Company. All structures associated with the former plant were demolished in the early 1980s. Stauffer Chemical Company was divested in 1987, and Atkemix Thirty Seven, a subsidiary of Stauffer Management Company, became the Site owner. In 2000, Stauffer Management Company and Atkemix Thirty Seven restructured into a limited liability company that is now known as Stauffer Management Company LLC.

In 1995, in accordance with Consent Order #B9-0137-86-04, SMC initiated remedial construction for soil and groundwater. At that time, the Treatment Building was erected to house the Site groundwater treatment system and the soil vapor extraction (SVE) treatment system for Area A. A second SVE treatment system, Area C, was mounted in a trailer located off Site, beyond the southeast corner of the Site property. SVE operations at Area C were discontinued in May 2004, and the Area C treatment system was decommissioned in July 2004. A third SVE system at Area T-4 was also installed in 1995, operated until 2000, and decommissioned in September 2001. Dual phase well T-4 (also known as DPT-261) remains operable as a groundwater extraction well.

The major chemicals of concern in the groundwater at the Site have been identified in the Site-Specific Parameter List (SSPL) as follows:

i) carbon disulfide
ii) carbon tetrachloride
iii) chloroform
iv) methylene chloride
v) tetrachloroethene
vi) benzene
vii) chlorobenzene
viii) toluene
ix) trichloroethene

These chemicals have historically been detected at varying concentrations in the groundwater, subsurface soils, seeps, and surface water run-off in the immediate vicinity of the Site.

1.2 REMEDIAL SYSTEMS DESCRIPTIONS

The remedial systems currently being operated at the Site include:

i) the Area A SVE system
ii) the bedrock groundwater extraction and treatment system, consisting of deep bedrock and shallow bedrock extraction wells

The SVE system located in Area T-4 was decommissioned in 2001, and the SVE system located in Area C was decommissioned in 2004.

The remedial systems are briefly described in the following sections.

1.2.1 AREA A

Area A occupies approximately 136,500 square feet near the center of the property as shown on Figures 1.2 and 1.3. The remedial system at Area A is a combination of soil vapor and groundwater extraction and includes 39 SVE wells, 3 dual-phase groundwater/SVE wells, and a cover comprised of a polyvinyl chloride (PVC) geomembrane liner, a geotextile cushion, and stone.

Each SVE well is connected to one of four header pipes that each enter the Treatment Building and are connected to the vacuum blower housed in the north side of the building. The SVE piping is mounted on a uni-strut/pipe strap support system. The Area A SVE treatment system is comprised of a skid with a moisture separator tank, an in-line filter, a vacuum blower, a discharge silencer, and a condensate removal pump, all located in the Treatment Building. The heat exchanger and granular activated carbon (GAC) adsorption units are mounted separately on the concrete floor in the building.

1.2.2 AREA C

Area C occupies approximately 19,350 square feet beyond the southeast corner of the Site property, as shown on Figures 1.2 and 1.4. Area C is the location of one of the landfills previously used by Stauffer Chemical Company.

With the approval of New York State Department of Environmental Conservation (NYSDEC), operations at Area C were discontinued in May 2004, and the SVE system was decommissioned in July 2004. The SVE wells were plugged and abandoned in accordance with NYSDEC regulations in December 2004.

1.2.3 AREA T-4

Area T-4 occupies approximately 11,500 square feet and is located southwest of the Treatment Building, as shown on Figure 1.2. The Area T-4 SVE system was decommissioned in September 2001 with the approval of NYSDEC. Shallow groundwater extraction well T-4 remains operable.

1.2.4 GROUNDWATER EXTRACTION AND TREATMENT SYSTEM

The groundwater extraction network consists of two deep bedrock groundwater extraction wells (LR-66 and OW-3), three intermediate/deep bedrock extraction wells (EW-1, EW-2, EW-3), three shallow bedrock extraction wells (EW-4, EW-5, and EW-6), one shallow extraction well in Area T-4, and three shallow dual-phase wells in Area A (DPA-201, DPA-202, and DPA-203). The locations of the extraction wells are shown on Figure 1.5.

Underground forcemains with secondary containment convey recovered groundwater from the extraction wells to the Treatment Building. The groundwater treatment system is currently housed in the south side of the original Treatment Building and in the northwest addition to the building.

All groundwater from each of the extraction wells is pumped into the on-Site treatment system. The major components of the treatment system are listed below:

i) Solids Settling Tank: a 1,500-gallon cone bottom tank installed in 2009 to provide solids settling prior to the influent water entering the carbon treatment system. (Note that this tank replaced a Non-Aqueous Phase Liquid (NAPL) Separator tank that had deteriorated. Phase separation is not required at the Site, as no NAPL has been observed since beginning system operation.)

ii) Carbon Feed Tank: process tank used to accumulate water from the NAPL separator.

iii) Carbon Feed Pump: pumps water from the carbon feed tank through the rest of the treatment system.

iv) Bag Filters: groundwater is pumped through thirteen 10-micron bag filters (consisting of an eight-bag round filter vessel and a separate five-bag unit) operated in parallel to prevent solids from plugging the GAC.

v) GAC Beds: after the bag filters, the groundwater passes through two 20,000-pound GAC adsorption vessels operated in series.

The treated water from the GAC units is discharged through the outfall to the New York Power Authority (NYPA) Forebay, located south of the Site. Treated water is discharged in accordance with limits set by NYSDEC.

2.0 AREA A REMEDIAL SYSTEM O&M ACTIVITIES

2.1 SUMMARY OF AREA A OPERATIONS FOR 2010

The Area A SVE system was operated in automatic mode throughout this reporting period with several Site visits per week to perform system monitoring, inspections, and other routine O&M activities. The autodialer has been programmed to notify CRA personnel of any shutdowns or system failures. In addition, the system status is monitored remotely though a computer interface.

The Area A SVE system operated 7,057 hours during 2010 for an operating efficiency of approximately 80 percent. The 2010 operating efficiency is slightly below that of 2009 (89 percent). The Area A vacuum blower has operated reliably since the replacement of critical seals and gaskets in 2007. There were two significant maintenance activities performed on the Area A treatment system in 2010. The first activity was the replacement of the knockout pot transfer pump and the rebuild of the two diaphragm pumps that remove water from the knockout pot and the Area A "sump" pipe. These pumps allow the SVE system to keep up with groundwater entering the treatment area from the Area A well field. Secondly, the blower belts failed and had to be replaced. Routine blower maintenance (e.g., bearing work, lubrication, oil change) was performed at the same time.

In 2007, in an attempt to maximize vapor recovery from the Area A SVE field, SMC began an annual evaluation of the Area A soil vapor extraction wells (EWAs). The program has consisted of measuring influent airflows from each of the operating Area A EWAs and collecting depth-to-water measurements. Results have indicated that there is generally good airflow across the Area A field, especially in the central section (Headers #2 and #3). However, the evaluation has also indicated that there are portions of Area A that exhibit little to no airflow.

The results of the 2008 evaluations indicated that there were a number of EWAs that had significant decreases in airflow compared with 2007. These extraction wells were further evaluated in 2009, and probing indicated that there was no significant sediment accumulation that would explain reduced airflow. The 2009 evaluation also concluded that the vast majority of the EWAs with low measured airflow (<3 SCFM) had the original 1995 construction consisting of galvanized steel screens and riser pipe, whereas many of the other EWAs have been replaced with HDPE construction. In 2010, six of the galvanized wells that had exhibited low airflow (EWA-111, 112, 125, 126, 128 and 129) were evaluated with a downhole camera. The videos clearly showed that the well screens of the galvanized wells had corroded nearly shut, and that the corrosion had severely limited airflow. These six EWAs were replaced with PVC-constructed vapor extraction wells in November 2010. December 2010 attempts to measure airflow across the Area A field were hampered by inclement weather that caused any extracted groundwater and entrained moisture in the soil gas to freeze in the aboveground portion of the collection lines from the EWAs to the Area A headers

With respect to the impact of groundwater on airflow, the results of a 2009 qualitative drawdown and recovery test indicated that water levels in the EWAs generally do not recover quickly. This finding indicates that the presence of groundwater at very high levels in some wells is likely due to the accumulation of water by the Area A vacuum, and not the result of flooding or generally elevated groundwater levels. In 2010, to address this issue, drop tube assemblies were installed in seven EWAs that had exhibited elevated groundwater levels, and also had some indication of airflow. These wells included EWA-102R2, 107R2, 113, 115R2, 131R3, 133, and 135.

Finally, in 2010, SMC discontinued operating EWAs-101, 105 and 106. These wells are in areas that exhibited soils with SSPL concentration below the applicable soil cleanup levels during a confirmation soil boring program in 2005. In addition, those wells had exhibited little to no airflow in recent years.

2.2 MASS REMOVAL – 2010

The amount of organic compounds removed by the Area A SVE system is presented in Table 2.1.

The mass removal calculation is based upon an average air flow rate of 800 cubic feet per minute (cfm) and an operation time of 7,057 hours. Four operational vapor samples were collected during 2010 from the Area A SVE system and analyzed for use in the mass loading calculations. The samples were collected on a quarterly basis in February, May, August and November 2010, utilizing the sample ports in the influent header pipe system just inside the Treatment Building and before the blower. Results from the four Area A influent samples were used to develop the 2010 quarterly mass loading calculations.

As shown in Table 2.1, the total mass removed in the soil vapors from Area A in 2010 was approximately 251 pounds. Of this mass, 90 percent was carbon tetrachloride. Carbon disulfide, tetrachloroethene, chloroform, and trichloroethylene accounted for the remaining total mass removed.

The 251 pounds of organic compounds removed from Area A in 2010 represents a 143-pound increase (131 percent) compared with that removed in 2009 (108 pounds). Although the 2010 operating hours declined slightly compared with that of 2009, the influent concentrations increased significantly in 2010. The removal efficiency of Area A in 2010 (pound of VOCs recovered/operating hour) was 0.036, compared with 0.014 in 2009.

2.3 ROUTINE INSPECTION AND MAINTENANCE

The Area A SVE system is inspected at least weekly to verify proper operation. The inspected components include the blower, compressor, and heat exchanger. In addition, all aboveground piping associated with the system is inspected for integrity. The operating status and conditions of the Area A SVE system are recorded on the respective operating log and system monitoring sheets in the O&M logbook. Monitoring of the Area A SVE air influent is also performed periodically and is recorded in the Site analytical database.

2.4 OPERATIONS/MONITORING FOR 2011

The 2011 goal is to continue optimization of VOC mass removal from the Area A vadose zone and shallow groundwater. The system upgrades of the past eight years, including the new blower motor (coupled with the blower installed in 2003), the new heat exchanger core in 2006, the header replacements in 2004-2005, the replacement of the blower seals in 2007, and the rebuilding of the transfer pumps in 2008 through 2010, will continue to reduce system downtime. The revised main header configuration, with an additional length of PVC pipe serving as a sump, allows the treatment system to handle large amounts of groundwater by routing it directly to the liquid phase carbon treatment system instead of through the Area A knockout pot.

As discussed in Section 2.1, following the installation of the six replacement EWAs in November 2010, SMC was unable to collect representative airflow measurements. Therefore, a set of well-by-well airflow measurements will be collected in spring 2011 once conditions allow.

The updated 2011 airflow measurements will be used in conjunction with the results of a 2009 sampling event in which discrete Tedlar bag influent vapor samples were collected from those EWAs that had exhibited good airflow (i.e., >5 SCFM) during the 2009 measurements. Coupling the airflow and chemistry information will allow a determination of which wells are capable of achieving the greatest mass removal, such that they might be operated preferentially

In addition to performing additional airflow analyses, system progress will be evaluated by sampling the Area A influent on a quarterly basis.

3.0 AREA C REMEDIAL SYSTEM

The former Area C SVE system was decommissioned in July 2004 with the approval of NYSDEC. The SVE wells were plugged and abandoned in accordance with NYSDEC regulations in December 2004.

4.0 AREA T-4 REMEDIAL SYSTEM

The former Area T-4 SVE system was decommissioned in September 2001 with the approval of NYSDEC.

Dual phase well T-4 (also known as DPT-261) was taken out of service as a SVE well in 2001, but remains usable as a groundwater extraction well should groundwater concentrations increase in the T-4 area.

5.0 GROUNDWATER EXTRACTION SYSTEM O&M ACTIVITIES

5.1 2010 EXTRACTION SYSTEM MODIFICATIONS

There were no extraction system modifications of note in 2010. Maintenance issues associated with each of the extraction wells are discussed in the sections that follow.

5.2 SUMMARY OF OPERATIONS – 2010

The bedrock groundwater extraction system operated in automatic mode throughout the reporting period, with visits to the Site two times per week to confirm pump operation, perform piping inspections, and complete other routine O&M activities. The operational status of the groundwater extraction system is also monitored remotely by computer.

With the exception of EW-2 and OW-3, the eight bedrock groundwater extraction wells and three dual phase extraction wells generally operated reliably throughout 2010. EW-2 experienced operational problems in both the first and third quarters of the year, including the failure of its level controller and decreases in flow rate that required several pump cleanings. The pump installed in OW-3 failed prematurely in the first quarter 2010 and had to be replaced.

In addition to the above, routine pump cleaning was performed on several other extraction wells throughout the course of the year.

5.3 MASS REMOVAL – 2010

5.3.1 EXTRACTION WELLS EW-1 THROUGH EW-6

Mass removal calculations for extraction wells EW-1 through EW-6 are summarized in Tables 5.1 through 5.6, respectively.

The mass removal of VOCs from groundwater for each extraction well was calculated on a quarterly basis using flow volumes and analytical data for the quarter. The volume of groundwater pumped from the six extraction wells is summarized below.

Extraction Well	*First Quarter*	*Second Quarter*	*Third Quarter*	*Fourth Quarter*	*2010 Total*
EW-1	309,000	357,765	480,451	349,172	1,496,388
EW-2	1,167,451	982,729	401,259	1,041,321	3,592,760
EW-3	113,014	113,458	118,294	99,656	444,422
EW-4	118,632	114,905	107,513	112,696	453,746
EW-5	1,661,288	1,497,600	1,760,809	1,548,025	6,467,722
EW-6	353,551	351,751	224,001	135,854	1,065,157
Total gallons pumped	3,722,936	3,418,208	3,092,327	3,286,724	13,520,195

The total mass, in pounds, removed by the six extraction wells in 2010 is summarized below.

Extraction Well	*First Quarter*	*Second Quarter*	*Third Quarter*	*Fourth Quarter*	*2010 Total*
EW-1	69	41	184	195	489
EW-2	320	50	28	169	567
EW-3	4	7	9	6	26
EW-4	4.3	5.7	7.1	1.2	18
EW-5	22.7	99.3	11.6	10.8	144
EW-6	49.7	138.7	15.2	23.7	227
Total Pounds of VOCs Removed					1,471

The 1,471 pounds of VOCs removed from groundwater by EW-1 through EW-6 in 2010 represents a 5.5 percent increase compared with 2009 (1,393 pounds of VOCs removed). The volume of groundwater extracted by EW-1 through EW-6 in 2010 (13.5 million gallons) was 4.4 percent higher than in 2009 (12.9 million gallons), and the removal efficiency (pound of VOC recovered/1,000 gallons of groundwater extracted) of the six extraction wells as a group remained the same at 0.11 between 2009 and 2010. See Section 9.2 for a summary of mass removal by groundwater extraction on a year-to-year basis.

One extraction well was responsible for most of this increase in mass removal. The mass of VOCs extracted by EW-1 in 2010 increased from 273 pounds in 2009 to 489 pounds in 2010, an increase of 79 percent. Much of this mass increase can be explained by the fact that 2010 groundwater extraction from EW-1 increased by 287,000 gallons compared with 2009, an increase of 24 percent. The removal efficiency of EW-1 increased from 0.27 pound VOC/1,000 gallons extracted in 2009 to 0.33 pound VOC/1,000 gallons extracted in 2010.

The removal efficiency of EW-1 in 2010 is the highest in that well since 2007 (0.35 pound VOC/1,000 gallons extracted). Prior to 2010, the removal efficiency of EW-1 had decreased for two years. It was 0.17 pound VOC/1,000 gallons extracted in 2008 and 0.23 in 2009.

With the exception of 2008 (0.12 pound VOC/1,000 gallons extracted), the removal efficiency of EW-2 has remained fairly constant over the last five years (0.16 pound VOC/1,000 gallons extracted in 2010, 0.17 in 2009, 0.18 in 2007 and 0.16 in 2006).

At EW-3, the removal efficiency increased slightly between 2009 and 2010 (from 0.04 to 0.06 pound VOC/1,000 gallons extracted).

At EW-4, the removal efficiency decreased significantly between 2009 and 2010 (from 0.09 to 0.04 pound VOC/1,000 gallons extracted).

The removal efficiency remained the same between 2009 and 2010 at EW-5 at 0.02 pound VOC/1,000 gallons extracted.

The removal efficiency of EW-6 decreased from 0.27 pound VOC/1,000 gallons extracted in 2009 to 0.21 in 2010. This extraction well, which exhibited a large drop off in the amount of groundwater extracted between 2008 and 2009 (approximately 78 percent less water recovered), had a removal efficiency of 0.41 pound VOC/1,000 gallons extracted in 2008. However, beginning in 2009 and continuing into 2010, EW-6 has operated and cycled much less frequently while maintaining its predetermined set points, indicating that there is less groundwater available for recovery by the well.

Compounds removed by EW-1 through EW-6 in 2010 consisted of carbon disulfide (735 pounds, 50 percent of the total), carbon tetrachloride (501 pounds, 34 percent of the total removed), chloroform (205 pounds, 14 percent of the total), tetrachloroethene (19 pounds, 1 percent of the total), methylene chloride (8 pounds, 0.5 percent of the total), trichloroethene (3 pounds, 0.2 percent of the total), and chlorobenzene (2 pounds, 0.1 percent of the total). Section 9.2 provides historical breakdowns of the compounds removed by groundwater extraction since 1999.

For the group of six extraction wells, the mass of carbon disulfide removed in 2010 increased by 224 pounds compared with 2009, the mass of carbon tetrachloride removed in 2010 decreased by 73 pounds compared with 2009, and the mass of chloroform removed decreased by 69 pounds. The mass of chlorobenzene, tetrachloroethene, trichloroethene, and methylene chloride removed remained about the same as in 2009.

5.3.2 AREA A DUAL WELLS DPA-201, DPA-202, AND DPA-203

Mass removal calculations for VOCs removed from shallow groundwater by DPA-201, DPA-202, and DPA-203 are summarized in Tables 5.7 through 5.9, respectively.

The mass removal estimate for the dual wells is based on quarterly flow data and quarterly analytical results. The volume of groundwater pumped from the three Area A dual wells is summarized below.

Total Volume of Groundwater (Gallons) Pumped – 2010					
Well No.	*1st Quarter*	*2nd Quarter*	*3rd Quarter*	*4th Quarter*	*System Total-2010*
DPA-201	17,658	20,184	18,403	19,608	75,853
DPA-202	5,836	32,815	17,034	21,988	77,673
DPA-203	8,487	17,095	11,565	15,004	52,151
				Total Gallons Pumped	205,677

The above represents a 57 percent decrease in recovered groundwater by the dual phase wells between 2009 (480,000 gallons extracted) and 2010. DPA-203 was mainly responsible for the decrease, as the volume extracted by the well in 2010 was 83 percent less than that removed in 2009 (303,010 gallons extracted). The amount of groundwater recovered in 2010 by DPA-201 and DPA-202 both decreased by 13 percent compared with 2009 levels. All three of the DPA wells are operating normally and removing the groundwater available to them; however, they are cycling much less frequently than in the past.

The total mass removed by the three dual wells is summarized below.

Total VOCs Removed (Pounds) – 2010					
Well No.	*1st Quarter*	*2nd Quarter*	*3rd Quarter*	*4th Quarter*	*Total*
DPA-201	0	1.6	0	0	1.6
DPA-202	3.9	48	20	19.1	91
DPA-203	18.6	51.1	0	46.4	116
				Total VOCs Removed in 2010 (Pounds)	208.6

The 208.6 pounds of total VOCs recovered by DPA-201, DPA-202, and DPA-203 in 2010 represent a 65 percent decrease from 2009 (595.1 pounds recovered), and a 56 percent decrease compared with 2008 (476.5 pounds recovered). The removal efficiency of the

three dual phase extraction wells as a group also decreased, from 1.24 pounds VOC/1,000 gallons extracted in 2009 to 1.02 pounds VOC/1,000 gallons extracted in 2010. This decrease is due to reduced influent concentrations of SSPLs.

From 2009 to 2010, removal efficiency at DPA-201 increased from 0.013 to 0.02 pounds VOC/1,000 gallons extracted, DPA-202 decreased from 1.44 to 1.17 pounds VOC/1,000 gallons extracted, and DPA-203 increased from 1.53 to 2.22 pounds VOC/1,000 gallons extracted.

The major compounds removed from groundwater by the three dual wells were carbon tetrachloride (171 pounds, 82 percent of the total recovered) and chloroform (33 pounds, 16 percent of total). Approximately 4 pounds of carbon disulfide (2 percent of total) and 1 pound of tetrachloroethene (<1 percent of total) were also removed.

5.3.3 AREA T-4 EXTRACTION WELL DPT-261 (T-4)

Extraction well DPT-261 (T-4) operated very infrequently during 2010 due to a lack of recoverable water. Although there was sufficient water to sample T-4 during all of the quarterly groundwater sampling events, the automatic air-driven pump did not recover measurable amounts of water for the majority of the year. Well T-4 recovers less than 0.1 gallons per minute (GPM) when it operates. Consistent with previous years, the mass of organic compounds recovered from T-4 in 2010 was negligible, less than 1 pound for the year.

5.3.4 EXTRACTION WELL OW-3

The mass of SSPL compounds removed from groundwater by OW-3 is summarized in Table 5.10. The volume of groundwater pumped from OW-3 in 2010 was 94,274 gallons, a decrease of 33 percent from 2009. As discussed above, the OW-3 pump failed prematurely in early 2010 and had to be replaced. Also, when operable, the water level in the well remained near the pump level much of the year, and the pump cycled significantly less in 2010 compared with 2009. A total of 890 pounds of VOCs were removed from groundwater by OW-3 in 2010, an increase of 127 pounds compared with 2009 (763 pounds). This increase occurred despite the decrease in extraction rate, and is due to higher influent concentrations.

The 2010 removal efficiency of OW-3 was 9.44 pounds VOC/1,000 gallons extracted, compared with a removal efficiency of 5.38 pounds VOC/1,000 gallons extracted in

2009. The compounds removed were carbon disulfide (815 pounds, 92 percent of the total recovered), carbon tetrachloride (57 pounds, 6 percent of total), and chloroform (18 pounds, 2 percent of total).

5.3.5 EXTRACTION WELL LR-66

Former Lockport-Rochester monitoring well LR-66 was converted into a permanent groundwater extraction well in June 2005 and became operable on July 1, 2005.

The mass removal calculations for organic compounds removed from groundwater by LR-66 are summarized in Table 5.11. The volume of groundwater pumped from LR-66 in 2010 was 93,669 gallons, up 2 percent from 2009 (92,182 gallons). A total of 3 pounds of VOCs was removed from groundwater by LR-66 in 2010, compared with 5 pounds removed in 2009. The removal efficiency of LR-66 was 0.03 pound VOC/1,000 gallons extracted, a decrease from 0.05 pounds VOC/1,000 gallons extracted in 2009. The compounds removed in 2010 were carbon tetrachloride (2.6 pounds, 87 percent of total recovered), chloroform (0.4 pound, 13 percent of total), and carbon disulfide (less than 1 percent of total).

5.3.6 AREA A KNOCKOUT POT AND SUMP

Although not specifically part of the groundwater extraction system, the Area A SVE system air/water separator (i.e., knockout pot) and the 10-foot long PVC "sump" collects groundwater that is present in the SVE air stream (as entrained moisture in the soil gas) and groundwater that is removed by the drop tube assemblies and the blower. The sump is a 12-inch diameter, 10-foot long PVC pipe located at one end of the Area A header assembly, just inside the Treatment Building.

The mass of organic compounds removed from groundwater by the knockout pot and sump is summarized in Table 5.12. The sump is sampled on a quarterly basis, at the time of the groundwater sampling events.

The volume of groundwater recovered by the Area A knockout pot and the pipe sump is also summarized in Table 5.12. The volume recovered in 2010 was 446,794 gallons, a 42 percent decrease from 2009 levels. The knockout pot and sump removed less than one pound of VOCs in 2010, very similar to the amount removed in 2009.

As noted by the decreased extraction rates in the DPAs and the lower volume handled by the knockout pot and sump, the amount of groundwater brought into the SVE treatment system from Area A decreased in 2010 (likely due to lower precipitation, which totaled 36.7 inches in 2010, compared with 44.3 inches in 2009). The two rebuilt diaphragm pumps that remove water from the knockout pot and the Area A "sump" pipe continue to keep up with groundwater entering the treatment area from the Area A well field.

5.4 ROUTINE MAINTENANCE

The operational status of the extraction and dual phase wells is monitored during the weekly visits to the Site. The flows from each of the wells are recorded weekly in the O&M logbook. If the submersible pumps are not maintaining the desired drawdown, or if the dual pumps are not cycling properly, pump maintenance is performed.

All of the extraction wells have been tied into one of two leak detection systems. A leak in the forcemain of any well on either system will shut off all of the pumping associated with the system. In 2010, no leaks were detected in any forcemains.

6.0 GROUNDWATER TREATMENT SYSTEM

6.1 SUMMARY OF OPERATIONS – 2010

The groundwater treatment system operated in the automatic mode in 2010 with at least weekly visits to the Site to perform system monitoring, inspections, and other routine O&M activities. The autodialer is programmed to alert CRA personnel if the groundwater treatment system shuts down or if the Treatment Building floor sump goes to high level. In addition, the operating status of the groundwater treatment system can be monitored remotely by computer.

The groundwater treatment system operated continuously and reliably throughout 2010 with few major repairs. In January 2010, following the replacement of its variable frequency drive at the end of 2009, the carbon feed pump began performing erratically and had to be rebuilt. The new pump was completely operational in mid-March 2010.

Besides the above work, the treatment system was shut down only briefly to perform routine maintenance and carbon changes.

6.2 MAINTENANCE, INSPECTION, AND MONITORING ACTIVITIES

6.2.1 ROUTINE TREATMENT SYSTEM MAINTENANCE

Routine inspection and maintenance of the groundwater treatment system is performed weekly during visits to the Site. Routine weekly inspections and maintenance include:

i) general visual inspection of the treatment equipment for leaks, overflows, or malfunctions
ii) inspection of process-indicating instruments
iii) inspection of aboveground SVE piping
iv) recording operating conditions in logbook
v) correction of operational problems
vi) replacement of bag filters, as indicated by differential pressure across the filters
vii) repair or replacement of damaged parts

All inspections are recorded in the O&M logbook.

The treatment system is shut down periodically to perform routine maintenance on the system components. The periodic maintenance shutdowns involved cleaning and inspection of the following:

i) cone bottom tank
ii) carbon feed tank
iii) carbon feed pump
iv) bag filter housings

The carbon vessels are cleaned and inspected during routine carbon changeouts.

6.2.2 TREATMENT SYSTEM MODIFICATIONS

There were no modifications to the groundwater treatment system in 2010.

6.2.3 GROUNDWATER TREATMENT SYSTEM PROCESS MONITORING

Samples for chemical analysis are collected routinely from the groundwater treatment system. Samples are collected weekly from the carbon interstage. The groundwater influent and system effluent are sampled monthly, at a minimum. Process monitoring sample analytical results are presented in Appendix A. Influent, carbon interstage, and effluent data are summarized in Tables A-1 to A-3, respectively.

The 2010 analytical data for the monthly influent groundwater samples are presented in Table A-1. The data indicate that typically only carbon tetrachloride, carbon disulfide, and chloroform are detected in high concentrations in the influent.

The 2010 analytical data for the weekly carbon interstage groundwater samples are presented in Table A-2. The data indicate that the results are generally non-detect or indicate very low (< 5 ppb total SSPLs) except when breakthrough occurred. During 2010, a carbon changeout was scheduled when breakthrough of VOCs was detected between the lead carbon bed and the lag/polish carbon bed (interstage).

Three carbon changeouts were performed during the year:

- March 18, 2010
- April 16, 2010
- November 23, 2010

The interstage sample results returned to non-detect or very low levels (< 5 ppb total SSPLs) following the carbon bed changes.

Soon after the March 18 carbon exchange, the monthly effluent sample detected levels of SSPLs that were similar to carbon breakthrough concentrations. At the same time, the interstage sample was non-detect. Following a thorough check of valve positioning and sample verification, a second set of samples was collected and analyzed. The treatment system was shut down pending analytical results, which when received, confirmed the original results. The results indicated that the lag bed (which was the lead bed prior to having its carbon replaced during the March exchange) contained SSPLs, likely due to residual VOCs after the carbon exchange. Calgon performed another carbon exchange on April 16. Follow-up effluent samples were collected on April 20 and April 25, after the treatment system was put back into normal operating mode. These two samples were non-detect, indicating that the lag bed was clean.

Subsequent effluent samples were clean until September 2010, when very low levels of SSPLs were detected in the effluent. When concentrations increased slightly (but still below discharge limits), SMC began collecting effluent samples on a weekly basis[1]. These low level detects continued for the remainder of 2010. SMC suspects that a valve associated with the discharge is leaking, and has requested that Calgon provide a replacement set of valves.

The 2010 analytical data for effluent samples collected from the groundwater treatment system are presented in Table A-3. Effluent samples are collected and analyzed monthly, at a minimum.

6.2.4 GROUNDWATER TREATMENT SYSTEM PERFORMANCE MONITORING – 2010

All extraction wells are sampled on a quarterly basis. Sampling of the Site-wide monitoring well network is performed on a semiannual basis. The purpose of the

[1] Additional samples are collected whenever the data indicate detected concentrations of VOCs in the effluent.

groundwater monitoring is to evaluate progress of the groundwater extraction system in removing the SSPL compounds from the groundwater. The groundwater sampling data is used to determine whether trends indicate that the concentration of chemicals in the Site groundwater are increasing, decreasing, or remaining stable.

Groundwater samples are collected in accordance with established procedures and protocols. The samples are shipped to Columbia Analytical Services for analysis following Chain of Custody procedures. The laboratory sends the analytical results to CRA. The results are reviewed, collated, put into tabular form, sent to SMC for review, and included in the quarterly status reports to NYSDEC.

Groundwater sampling events were performed at the Site in 2010 as follows:

i) February 2010 (extraction wells only)
ii) May 2010 (monitoring well network and extraction wells)
iii) August 2010 (extraction wells only)
iv) November 2010 (monitoring well network and extraction wells)

The analytical results for the groundwater samples are presented in Appendix B, Tables B-1 through B-4.

6.2.5 GROUNDWATER TREATMENT SYSTEM PERFORMANCE MONITORING – 2011

The quarterly and semiannual sampling programs will continue through the year 2011 as follows:

i) Quarterly Sampling: Quarterly sampling rounds will be performed in February, May, August, and November 2011. A total of 12 extraction wells will be sampled including:

   a) Bedrock extraction wells – EW-1 through EW-6, LR-66, and OW-3
   b) Dual wells – DPA-201, DPA-202, and DPA-203
   c) T-4 (as long as sufficient water is present)

ii) <u>Semiannual Sampling:</u> During 2011, semiannual sampling will be performed in May and November. Wells to be sampled include the 12 extraction wells plus the following 47 monitoring wells:

Upper Lockport Wells	*Lower Lockport Wells*	*Lockport/ Rochester Wells*	*Rochester Wells*
OW-11	W-18L	W-19B	B-02
W-11	W-19A	LR-2	R-16
W-16	W-23B	LR-16	R-19
W-16L	W-48E	LR-67	R-68
W-17	W-50L	LR-20	R-48
W-18R	W-60L	LR-48	R-50
W-19D	W-65	LR-49	R-51
W-20	W-66L	LR-50	R-60
W-22	W-67L	LR-51	R-61
W-23C	W-70L	LR-61	R-62
W-66		LR-62	R-66
W-67		LR-69	R-67
		OW-5	

6.2.6 FACILITIES, STRUCTURES, AND GROUNDS MAINTENANCE

The facilities, structures, and grounds are inspected and maintained regularly as specified in the O&M Manual. These inspections are carried out during routine Site visits. These routine inspection tasks include checking the appearance of the grass, driveways, walkways, fencing, and lighting and containment areas. Inspections and maintenance tasks inside the Treatment Building include checking the appearance of walls, floors, ceiling, doors, walkways, emergency equipment, lights, sumps, and equipment support structures. Any problems or deficiencies are noted in the O&M logbook.

6.2.7 UNSCHEDULED MAINTENANCE

Unscheduled maintenance was performed at the Site as required in 2010. Examples of unscheduled maintenance activities performed are:

i) pump maintenance or replacement

ii) extraction well riser pipe replacement

iii) equipment repair or replacement

Section 5.2 provides an overview of the 2010 unscheduled maintenance related to the extraction wells.

6.2.8 MONITORING WELL INVENTORY

An inventory/inspection of the Site monitoring wells was performed in conjunction with the November 2010 groundwater sampling event. A copy of the well inventory is included as Appendix C. The well inventory indicates that the wells are in generally good condition, although eight monitoring wells had cracked concrete collars. The repair of the collars was performed in November 2010.

7.0 GROUNDWATER LEVEL MONITORING AND CHEMISTRY – 2010

Depth-to-groundwater measurements were recorded for all wells during the February, May, August, and November quarterly sampling events in 2010. Table 7.1 presents the measured groundwater levels for the four events. The May 2010 data were used to prepare potentiometric surface contour maps for each of the four water bearing zones (WBZs). The WBZs include the Upper Lockport, the Lower Lockport, the Lockport/Rochester, and the Rochester. In addition to the potentiometric surface contours, chemical isocontour figures were prepared for each WBZ using groundwater data obtained during the May 2010 event.

The potentiometric surface contour maps and chemical isocontour figures are discussed in the following sections.

7.1 GENERAL

7.1.1 GROUNDWATER POTENTIOMETRIC CONTOURS

Potentiometric surface contours were prepared for each WBZ based on the measured depths to groundwater in the May 2010 sampling event. Hydraulic containment was determined by evaluating the potentiometric contours, as well as considering the results of a detailed hydraulic monitoring program performed in 2000. The 2000 hydraulic monitoring program assessed the relationship between groundwater elevations in individual wells and their responses to pumping activity in the various Site WBZs using transducers installed in individual wells. The results of that program, including individual well hydrographs, were presented in the 2000 Annual Operations and Maintenance Report, March 2001.

Table 7.2 presents a summary of the monitoring wells and extraction wells classified by WBZ. The wells are classified under a specific WBZ if they are screened across or have open intervals in the specific WBZ. This classification was used to prepare the potentiometric surface contour maps for the May 2010 event.

During the preparation of potentiometric surface contours for the various WBZs, CRA noted that several monitoring wells did not appear to be hydraulically connected to the monitored WBZ. For example, well W-17 in the Upper Lockport formation, well W-23B in the Lower Lockport formation, well LR-69 in the Lockport/Rochester formation, and well R-66 in the Rochester formation exhibited anomalous water levels and, therefore, were not used to create groundwater contours. Well W-23B showed hydraulic response to Lower Lockport pumping in the 2000 hydraulic monitoring program, while W-17, LR-69, and R-66 did not show response to pumping in their respective WBZs. A review of the stratigraphic logs for the latter two wells indicates that the Rochester WBZ at R-66 and the Lockport-Rochester WBZ at LR-69 are generally less fractured than in other areas of the Site; hence, hydraulic interconnection is lower at these two deep monitoring wells. The wells that are not used for contouring are noted on the various potentiometric contour figures.

In addition, water levels for the deep bedrock extraction wells (EW-1, EW-2, and EW-3, whose open intervals span the Lower Lockport, Lockport/Rochester, and Rochester WBZs) were adjusted to levels representative of the specific WBZ. This was done when the measured water level for the deep extraction well was significantly below the base of the designated WBZ (for the Lower Lockport and Lockport/Rochester WBZs) or significantly below the water level elevations of the surrounding wells in a particular WBZ (for the Rochester WBZ). The groundwater elevations in the immediate vicinity of the deep extraction wells are assumed to be at or near the base of the respective WBZ, since the WBZs at the extraction wells are essentially dewatered. However, for generating groundwater contours, these water levels were conservatively assumed to be 5 to 10 feet lower than the lowest measured water level from the respective WBZs (but not lower than the base of the WBZ). This allows meaningful water level contours to be created for each WBZ in the regions around the deep extraction wells, while accounting for potential influences from extraction well operations and well and fracture efficiencies. These assigned values for EW-1, EW-2, and EW-3 are as follows:

Lower Lockport	545 feet mean sea level (MSL)
Lockport/Rochester	545 feet MSL
Rochester	490 feet MSL

Note that the assigned EW-1, EW-2, and EW-3 water level value for both the Lower Lockport and the Lockport/Rochester WBZs for purposes of plotting potentiometric contours is 545 feet MSL. This value reflects the fact that the lowest measured water level in both Lower Lockport and Lockport/Rochester WBZ hydraulically-connected monitoring wells was approximately 550 feet MSL.

For the Upper Lockport potentiometric contour maps, extraction wells EW-1, EW-2, and EW-3 were not used to generate contours, as these wells are not open in the Upper Lockport. Groundwater elevations for combined Upper and Lower Lockport extraction wells EW-4, EW-5, and EW-6 were adjusted to 570 feet MSL for contouring the Upper

Lockport WBZ. The 570 feet MSL is a level very near the lowest measured water level in the Upper Lockport WBZ on Site. Actual water level elevations for EW-4, EW-5, and EW-6 were used for contouring the Lower Lockport WBZ.

7.1.2 CHEMICAL ISOCONTOURS

Chemical isocontours for each WBZ were prepared using analytical data from the May 2010 semiannual groundwater monitoring event. Two figures were prepared for the May data: one for carbon disulfide concentrations, and a second for the sum of carbon tetrachloride and chloroform concentrations[2]. A logarithmic scale was utilized for the isocontour plots.

Note that the May 2010 groundwater analytical results for carbon disulfide and for the sum of carbon tetrachloride and chloroform are also shown on the Groundwater Potentiometric Surface Contour figures for the four WBZs. The analytical results are listed below each well that is monitored in the specific WBZ.

7.2 UPPER LOCKPORT WATER BEARING ZONE

The Upper Lockport WBZ is the shallowest waterbearing fracture zone at the Site. The Upper Lockport WBZ consists of the base of the overburden and approximately the top 25 feet of the Lockport bedrock. This zone is generally highly fractured. Existing Site information indicates that the Upper Lockport WBZ pinches out and is not present on the western portion of the Site. DPA-201, DPA-202, DPA-203, EW-4, EW-5, and EW-6 extract groundwater from the Upper Lockport WBZ.

7.2.1 GROUNDWATER POTENTIOMETRIC CONTOURS

Figure 7.1 presents the Groundwater Potentiometric Surface Contours for the Upper Lockport WBZ for the May 2010 event. Based upon the groundwater potentiometric surface contours, Upper Lockport groundwater flow is generally east to west through the middle of the Site. There is a slight response to pumping in Area A from the dual phase wells. There is also localized response to pumping from extraction wells EW-4, EW-5, and EW-6, which are completed in both the Upper and Lower Lockport WBZ.

[2] Chemical concentrations of carbon tetrachloride and chloroform are combined (summed) for preparation of isocontour figures because chloroform is a breakdown (daughter) product of carbon tetrachloride.

The 2010 potentiometric surface contours for the Upper Lockport WBZ are consistent with historical conditions.

7.2.2 CHEMICAL ISOCONTOURS

The chemical isocontour plots for the Upper Lockport WBZ for May 2010 are presented on Figures 7.2 and 7.3. A review of these contours indicates that the only elevated carbon disulfide concentrations exist in the groundwater around DPA-203, DPA-202 and W-17 (Figure 7.2) in Area A. Elevated levels of carbon tetrachloride and chloroform are present at both DPA-203 and DPA-202, and at W-17 and W-18R (Figure 7.3). The mass loading calculations indicate that DPA-202 and DPA-203 were responsible for removing approximately 200 pounds of VOCs in 2010, primarily carbon tetrachloride and chloroform.

Note that there were no detectable levels of carbon disulfide in Upper Lockport wells west of Area A. Four Upper Lockport monitoring wells had detectable levels of carbon tetrachloride and chloroform west of Area A. The highest (W-66) had a concentration of 1,200 ppb (sum of carbon tetrachloride and chloroform), and the others were all well below 300 ppb.

The chemical isocontour plots for the Upper Lockport WBZ illustrate that DPA-202 and DPA-203 are well-placed to address the areas of elevated concentrations of the two main Site contaminants. The mass loading data indicate that these pumping wells are effective in recovering VOCs from the Upper Lockport WBZ.

A comparison of the 2010 Upper Lockport carbon disulfide isocontours (Figure 7.2) with those of 2009 indicates that the area of carbon disulfide-impacted groundwater remained approximately the same, although the concentrations in the center of the impacted area showed some slight increases. A comparison of the 2010 Upper Lockport carbon tetrachloride plus chloroform (CTET+CHL) isocontours (Figure 7.3) with those of 2009 also indicates that the size and shape of the impacted groundwater did not change, however concentrations in DPA-202 and DPA-203 in the center of the impacted area did increase in 2010.

7.3 LOWER LOCKPORT WATER BEARING ZONE

The Lower Lockport WBZ is the second bedrock WBZ identified at the Site. The Lower Lockport WBZ generally includes groundwater in the fractured bedrock from about 50 to 75 feet below top of rock.

EW-1 through EW-6 extract groundwater from the Lower Lockport WBZ.

7.3.1 POTENTIOMETRIC SURFACE CONTOURS

Potentiometric surface contours for the Lower Lockport WBZ for May 2010 are presented as Figure 7.4.

The groundwater potentiometric contours indicate that the VOCs in the Lower Lockport WBZ are being contained, captured on Site, and recovered by the groundwater extraction system.

7.3.2 CHEMICAL ISOCONTOURS

Chemical isocontours were prepared for the Lower Lockport WBZ for carbon disulfide (Figure 7.5) and carbon tetrachloride and chloroform combined (Figure 7.6). The chemical isocontour maps for carbon disulfide indicate areas of elevated concentrations in the Lower Lockport WBZ around extraction wells EW-6 and EW-5, and monitoring well W-16L. Hydraulic monitoring data indicate that W-16L is within the capture zone of combined Upper and Lower Lockport extraction well EW-5 and deep extraction well EW-3. EW-6 is near the center of the capture zone at the Site.

The chemical isocontour map for carbon tetrachloride and chloroform combined indicates areas of elevated concentrations around EW-6, EW-5, and EW-4. Other nearby wells with elevated concentrations include W-18L, W-23B, W-67L, and W-70L. Mass loading concentrations for EW-4, EW-5, and EW-6 indicate that approximately 375 pounds of carbon tetrachloride and chloroform were recovered from these wells in 2010.

The 2000 hydraulic monitoring data indicate that Lower Lockport monitoring wells W-18L, W-23B, W-67L and W-70L respond to pumping activity at the Site. The May 2010 surface contours and chemical isocontours illustrate that the existing groundwater extraction system is effective in containing and recovering SSPLs from the Lower Lockport WBZ.

A comparison of the 2010 Lower Lockport carbon disulfide isocontours (Figure 7.5) with that of 2009 indicates no significant changes in both the carbon disulfide concentrations and the size of the impacted area. A comparison of the 2010 Lower Lockport CTET+CHL isocontours (Figure 7.6) with that of 2009 indicates that although 2010 CTET and CHL concentrations increased slightly at several of the extraction wells, there is no significant change in the size and shape of the impacted area.

7.4 LOCKPORT/ROCHESTER WATER BEARING ZONE

The Lockport/Rochester WBZ is the third WBZ encountered in the bedrock at the Site. The Lockport/Rochester WBZ is a slightly fractured WBZ at the base of the Lockport bedrock, and is at or near the contact with the Rochester shale. EW-1 through EW-3 and LR-66 extract groundwater from the Lockport/Rochester WBZ.

7.4.1 POTENTIOMETRIC SURFACE CONTOURS

Potentiometric surface contours were prepared for the Lockport/Rochester WBZ for May 2010 (Figure 7.7). A review of the contours under pumping conditions indicates that EW-1, EW-2, and EW-3 have a dramatic effect on the groundwater in this WBZ. In addition, the effect of LR-66 on groundwater recovery is evident. The direction of flow is from the Site perimeter inward toward the extraction wells. The pumping contours indicate hydraulic capture across the entire Site.

7.4.2 CHEMICAL ISOCONTOURS

Chemical isocontour maps of the Lockport/Rochester WBZ were prepared from the May 2010 groundwater sampling data. Chemical isocontours for carbon disulfide are presented on Figure 7.8. Chemical isocontours for carbon tetrachloride and chloroform combined are presented on Figure 7.9.

The chemical isocontour plot for carbon disulfide indicates an area of high concentration in groundwater around OW-5 and adjacent well LR-67. Hydraulic monitoring has shown that there is a strong inward gradient from these wells toward the middle of the

Site. Previous hydraulic monitoring activities indicate that both wells respond to pumping activity.

The chemical isocontour plot for carbon tetrachloride and chloroform indicates that an area of high concentrations exists around monitoring wells LR-61 and W-19B. Extraction well LR-66 and monitoring well LR-2 also exhibit elevated CTET+CHL concentrations. Previous hydraulic monitoring has shown that LR-61, W-19B, and LR-2 all respond to pumping activity, and are situated within the cone of depression of extraction wells EW-2 and EW-3.

The chemical isocontour maps confirm that the existing groundwater treatment system is effective at containing and recovering VOCs from the Lockport/Rochester WBZ.

A comparison of the 2010 Lockport/Rochester carbon disulfide isocontours (Figure 7.8) with that of 2009 indicates no significant changes in carbon disulfide concentrations. A comparison of the 2010 Lockport/Rochester CTET+CHL isocontours (Figure 7.9) with that of 2009 also indicates no significant changes in the concentrations of these two SSPLs.

7.5 ROCHESTER WATER BEARING ZONE

The Rochester WBZ is the fourth and deepest bedrock WBZ being remediated at the Site. EW-1 through EW-3 and OW-3 extract groundwater from the Rochester WBZ.

7.5.1 POTENTIOMETRIC SURFACE CONTOURS

The potentiometric surface contour for the Rochester WBZ is presented on Figure 7.10.

The potentiometric contours show a dramatic response to pumping with a strong inward gradient toward EW-1, EW-2, and EW-3. The pumping contours indicate that there is hydraulic containment within the Rochester WBZ across the Site.

7.5.2 CHEMICAL ISOCONTOURS

Chemical isocontour maps of the Rochester WBZ were prepared from the May 2010 groundwater sampling data.

The carbon disulfide chemical isocontour map (Figure 7.11) shows two distinct areas of elevated carbon disulfide in the Rochester WBZ Zone. The first area is around extraction well OW-3, which removed over 800 pounds of carbon disulfide in 2010. Monitoring wells nearby OW-3 with elevated carbon disulfide concentrations are R-68, R-66, B-02, and R-60. All of these wells showed a response to pumping during the 2000 hydraulic monitoring program. The second area of elevated carbon disulfide is centered around monitoring wells R-67 and R-62, and, to a lesser extent, R-61. These wells are all located relatively close to extraction well EW-3 and show a strong response to Rochester WBZ pumping.

As shown on Figure 7.12, carbon tetrachloride and chloroform are also found in very high concentrations around OW-3. OW-3 removed approximately 75 pounds of these two constituents during 2010. Other wells with high concentrations are R-68, R-66, R-19, and R-50. Each of these wells is in the capture zone, and the existing groundwater extraction has been demonstrated to be effective in removing VOCs from groundwater in the Rochester WBZ.

A comparison of the 2010 Rochester carbon disulfide isocontours (Figure 7.11) with that of 2009 indicates no significant changes in the size and shape of the impacted groundwater area, however the concentration at OW-3 did increase several fold. A comparison of the 2010 Rochester CTET+CHL isocontours (Figure 7.12) with those of 2009 indicates a significant increase in concentrations at OW-3, but a general decrease in the concentrations of these two SSPLs at other extraction and monitoring wells. The general size and shape of the impacted groundwater was unchanged.

8.0 NORTH SIDE WELL GAS AND GROUNDWATER SAMPLING

As approved by NYSDEC, the North Side well sampling program was discontinued in June 2004. However, Upper Lockport bedrock monitoring well OW-11 continues to be sampled quarterly as part of the routine groundwater monitoring program. Figure 8.1 presents the locations of the North Side wells.

9.0 SUMMARY OF MASS REMOVAL

Mass removals from groundwater and soil gas have been reported for individual wells and SVE systems in previous sections of this report. This section presents combined mass removal estimates for the groundwater and SVE systems at the Site. It also compares the total estimated mass removed for soil vapor and groundwater extraction in previous years with that of 2010.

9.1 SUMMARY OF MASS REMOVAL BY SOIL VAPOR EXTRACTION

The mass removal of organic compounds from soil vapors for SVE system Area A was discussed in Section 2.2. The total mass removed by the SVE system is summarized in Table 2.1.

As shown in Table 2.1 and discussed in Section 2.2, the total mass removed in the soil vapors from Area A in 2010 was approximately 251 pounds. The 251 pounds of organic compounds removed from Area A in 2010 represents a 132 percent increase compared with the amount removed in 2009, but a 50 percent decrease compared with the amount removed in 2008. The increase in removal between 2009 and 2010 is attributed to increased VOC concentrations in Area A influent. Note that the 2010 Area A operating time decreased by approximately 700 hours (9 percent) compared with 2009. However, the average Area A influent vapor concentration in 2010 increased by over 140 percent compared with 2009.

The removal efficiency of the Area A SVE system (pound of VOCs recovered per operating hour) over the past twelve years is shown in the following table.

Year	*Pounds of VOC Removed*	*Operating Hours*	*Removal Efficiency (pound VOC per operating hour)*
1999	1,130	3,240	0.35
2000	153	3,360	0.05
2001	154	6,264	0.02
2002	1,207	6,307	0.19
2003	937	3,573	0.26
2004	228	4,582	0.05
2005	1,954	6,425	0.30
2006	1,712	6,113	0.28
2007	2,349	7,406	0.32
2008	507	7,599	0.07
2009	108	7,811	0.01
2010	251	7,057	0.04
Total	**10,690**	**69,737**	**-**
Annual Average	**891**	**5,811**	**0.15**

The operating time for Area A is related to the condition of the blower and of the header system that conveys extracted vapor to the blower for subsequent removal in the carbon beds. The replacement of Headers No. 2 and No. 3 with HDPE in 2003 greatly improved the effectiveness of those two headers, which had experienced significant corrosion between 2000 and 2002. In 2004, the integrity of the steel header collection system just inside the Treatment Building significantly worsened due to corrosion, and the entire section was replaced with PVC pipe late in the year. The pipe installed as a "sump" during the header upgrade contributed to increased Area A blower run times beginning in 2005, and the improved vacuum provided by the new PVC header contributed to increased VOC removal. In 2005, the original steel header pipe on Header #4 had seriously deteriorated, and was replaced with HDPE. Improvements in 2006 included the replacement of the heat exchanger core and the blower motor, and in 2007, the blower seals and gaskets were replaced. In 2008 through 2010, the diaphragm pumps that route groundwater collected from Area A to the main treatment area were rebuilt and improved.

Table 9.1 compares the compound-specific removal of SSPLs by the Area A SVE system for the past twelve years. Except for 2000 and 2001, carbon tetrachloride and chloroform combined have comprised between 92 and 100 percent of the total vapor mass removed from Area A. Tetrachloroethene has typically comprised the remainder of the mass removed.

9.2 SUMMARY OF MASS REMOVAL BY GROUNDWATER EXTRACTION

The mass removal of VOCs from groundwater by the eight bedrock groundwater extraction wells (EW-1 through EW-6, LR-66, and OW-3), dual wells (DPA-201, DPA-202, and DPA-203), and the Area A air/water separator (knockout pot) was discussed in Section 5.0 of this report. The total volume of groundwater pumped from the Site in 2010 is summarized in Table 9.2. The total mass of VOCs removed from groundwater at the Site in 2010 is summarized in Table 9.3.

As Table 9.2 indicates, approximately 14.4 million gallons of groundwater were pumped from the Site and treated through the on-Site treatment system. This volume is approximately the same as that removed in 2009.

Of the 14.4 million gallons extracted by the groundwater system in 2010, the bedrock extraction wells accounted for nearly 94 percent of the total, and the overburden dual phase extraction wells (along with the Area A knockout pot/sump) accounted for 6 percent of the total. EW-5 accounted for 45 percent of the recovered groundwater, and EW-2 accounted for about 25 percent. Other significant extraction wells included EW-1 (10 percent of the total recovered), EW-6 (7 percent), EW-3 (3 percent), and EW-4 (3 percent).

As Table 9.3 indicates, the total number of pounds of VOCs recovered through groundwater extraction in 2010 was 2,575 pounds. Of this mass removed, 60 percent was carbon disulfide, 28 percent was carbon tetrachloride, and 10 percent was chloroform. Tetrachloroethene, methylene chloride, trichloroethene, and chlorobenzene combined were approximately 2 percent of the total mass removed from groundwater in 2010.

Extraction well OW-3 accounted for 35 percent of the total VOC mass removed from groundwater in 2010, EW-2 accounted for 22 percent, EW-1 accounted for 19 percent, EW-6 accounted for 9 percent, EW-5 accounted for 6 percent, DPA-203 accounted for 5 percent, and DPA-202 accounted for 3 percent. The other four extraction wells accounted for the remaining 1 percent of the total mass recovered from groundwater on Site.

The 2,575 pounds of total mass removed by groundwater extraction in 2010, compared to 2,754 pounds removed in 2009, represents a 6.5 percent decrease in the total mass removed. An increase in the mass removed by both OW-3 and EW-1 was offset by decreases in the total mass removed by DPA 203, EW-2, and EW-6. The 2010 mass removed by other extraction wells remained about the same as in 2009.

The removal efficiency (pound VOCs recovered/1,000 gallons of groundwater extracted) of the groundwater extraction system at the Site over the past twelve years is shown below:

Year	*Pounds of VOC Recovered*	*Groundwater Extracted (1,000 gallons)*	*Removal Efficiency (pound of VOC recovered per 1000 gallons extracted)*
1999	4,250	10,310	0.41
2000	6,197	14,906	0.42
2001	10,270	17,327	0.59
2002	6,374	17,515	0.36
2003	6,710	19,276	0.35
2004	4,953	15,951	0.31
2005	4,898	15,496	0.32
2006	3,517	15,370	0.23
2007	3,672	16,545	0.22
2008	4,790	17,289	0.28
2009	2,754	14,416	0.19
2010	2,575	14,360	0.18
Total	**60,960**	**188,761**	**-**
Annual Average	**5,080**	**15,730**	**0.32**

The above table illustrates that the removal efficiency of the groundwater extraction system has decreased from a high of 0.59 pound VOC recovered/1,000 gallons extracted in 2001 to its current removal efficiency of 0.18. The overall decrease is due to a general decline in groundwater concentrations over time, which indicates that the extraction system is remediating Site groundwater.

Table 9.4 compares the compound-specific removal of SSPLs by groundwater extraction for the past twelve years. Between 1999 and 2003, carbon tetrachloride and chloroform combined comprised between 63 and 80 percent of the total mass removed in groundwater. Over the same time period, carbon disulfide comprised between 20 and 33 percent of the total.

However, between 2004 and 2010, the percentage of carbon tetrachloride and chloroform combined has dropped to between 38 and 56 percent of the total mass removed by groundwater extraction, and the percentage of carbon disulfide has risen to between 43 and 60 percent. The amount of tetrachloroethene extracted in groundwater has remained constant at 1 percent of the total mass recovered.

9.3 SUMMARY OF MASS REMOVAL FOR THE SITE

The total mass removed by operation of the remedial systems at the Site in 2010 is summarized below:

Compound	*SVE*	*Groundwater Extraction*	*Site Total (pounds/year)*
Benzene	0	0	0
Carbon Disulfide	2	1,554	1,556
Carbon Tetrachloride	227	731	958
Chlorobenzene	0	2	2
Chloroform	14	257	271
Methylene chloride	0	9	9
Tetrachloroethene	7	20	27
Toluene	0	0	0
Trichloroethene	1	3	4
Total VOC Removal:	**251**	**2,575**	**2,826**

The 2,826 pounds of VOCs removed from soil and groundwater at the Site is a 1.5 percent decrease from 2009, in which a 143 pound increase in mass of VOCs removed by the SVE system was offset by a 179 pound decrease in mass removed by the groundwater extraction system.

Of the 2,826 pounds of VOCs removed from soil and groundwater at the Site, 55 percent was carbon disulfide, 34 percent was carbon tetrachloride, and 10 percent was chloroform. These three compounds account for 99 percent of the total mass of VOCs removed from the Site in 2010.

The total mass of VOCs removed by the operation of the remedial systems at the Site over the past twelve years is summarized below:

Year	*Pounds of VOC Removed by SVE*	*Pounds of VOC Removed in Groundwater*	*Total Pounds of VOC Removed per Year*
1999	1,221	4,294	5,515
2000	165	6,197	6,362
2001	154	10,269	10,423
2002	1,207	6,374	7,581
2003	937	6,710	7,647
2004	228	4,954	5,182
2005	1,954	4,899	6,853
2006	1,712	3,517	5,229
2007	2,348	3,672	6,020
2008	507	4,790	5,297
2009	108	2,754	2,862
2010	251	2,575	2,826
Totals	**10,792**	**61,005**	**71,797**

Table 9.5 presents a breakdown of the compound-specific SSPL removal (in pounds per year) for the combined Site remedial systems (SVE and groundwater extraction). The table indicates that carbon tetrachloride and chloroform combined have accounted for 64 percent of the Site-wide recovered mass between 2000 and 2010, with carbon disulfide comprising another 34 percent.

10.0 CONCLUSIONS AND RECOMMENDATIONS

This section presents conclusions regarding the 2010 O&M of the Site and presents recommendations for O&M in 2011. The conclusions and recommendations are presented for both of the active remediation systems at the Site.

10.1 AREA A SVE REMEDIAL SYSTEM

The Area A SVE system operated over 7,000 hours (80 percent of the time) in 2010, which was the fourth highest number of operating hours since tracking of operating time began in 1999. In addition, the number of pounds of SSPL organic compounds recovered by the SVE system in 2010, calculated based upon the operating hours, average system flow rate, and the influent vapor concentrations, increased by 143 pounds compared with 2009 (a 132 percent increase). The increased in mass removal is directly attributable to an increase in the average influent vapor concentrations, which increased in 2010 by approximately 140 percent compared with 2009. Note however, that despite the increase, the mass removed by the SVE system in 2010 was only half of that removed in 2008, and less than 15 percent the amount removed annually in 2005 through 2007.

In 2010, as part of the annual evaluation of the Area A extraction wells, a downhole camera was used to determine the condition of the steel EWAs that have exhibited significant decreases in airflow over the past few years (EWA-111, 112, 125, 126, 128 and 129). The camera indicated that well screens in each of the six wells were crusted over and closed, and the wells were replaced with PVC construction in November 2010. In addition, additional drop tube assemblies were installed in those wells that have had both elevated water levels and an indication of good airflow in recent years.

In early 2011, a set of well-by-well airflow readings will be collected once weather conditions allow. The results will be utilized along with the data from a Tedlar bag sampling and analyses program in 2009 that targeted those EWAs that have exhibited good airflow (i.e., >5 SCFM). Those wells with continued good airflow and significant levels of SSPLs will be operated preferentially over those that exhibit little to no airflow.

10.2 BEDROCK GROUNDWATER EXTRACTION AND TREATMENT SYSTEM

10.2.1 GROUNDWATER EXTRACTION SYSTEM

The groundwater extraction system generally operated reliably in 2010. EW-2 experienced operational problems in both the first and third quarters of the year, including the failure of its level controller and decreases in flow rate that required several pump cleanings. The pump installed in OW-3 failed prematurely in the first quarter 2010 and had to be replaced.

As discussed in Section 9.2, approximately 14.4 million gallons of groundwater were pumped from the Site for subsequent treatment and discharge. This volume was generally unchanged compared with 2009. Recovery rates increased significantly in EW-5 and EW-1, but decreased in almost all other extraction wells, mostly notably in EW-2, OW-3, and DPA-203.

The total mass removed by the groundwater extraction system in 2010 was 2,575 pounds. This represents a decrease of 6.5 percent compared with 2009 (2,754 pounds removed in groundwater). An increase in the mass removed by both OW-3 and EW-1 was offset by decreases in the total mass removed DPA 203, EW-2, and EW-6. The mass of SSPLs removed by OW-3 in 2010 increased by 127 pounds compared with 2009 (a 17 percent increase) despite extracting 33 percent less groundwater. This increase is due to higher influent concentrations.

For 2011, the groundwater extraction system will continue to operate as it has in past years, with no substantive changes planned.

10.2.2 GROUNDWATER TREATMENT SYSTEM

As discussed in Section 6.1, the groundwater treatment system operated continuously and reliably in 2010 with no major repairs. Only one component was replaced. In January 2010, following the replacement of its variable frequency drive at the end of 2009, the carbon feed pump began performing erratically and had to be rebuilt. The new pump was completely operational in mid-March 2010.

As discussed in Section 6.2.3, in the third quarter of 2010, unexplained low level detects of SSPLs began occurring in the effluent samples. Increased levels of monitoring have been performed, and indicated that the levels have stayed below discharge limits. CRA suspects that a valve associated with the discharge line may be leaking, and has requested that Calgon replace the valves.

Other than the above, there are no recommended changes to the groundwater treatment system for 2011.

10.2.3 GROUNDWATER TREATMENT SYSTEM PERFORMANCE MONITORING

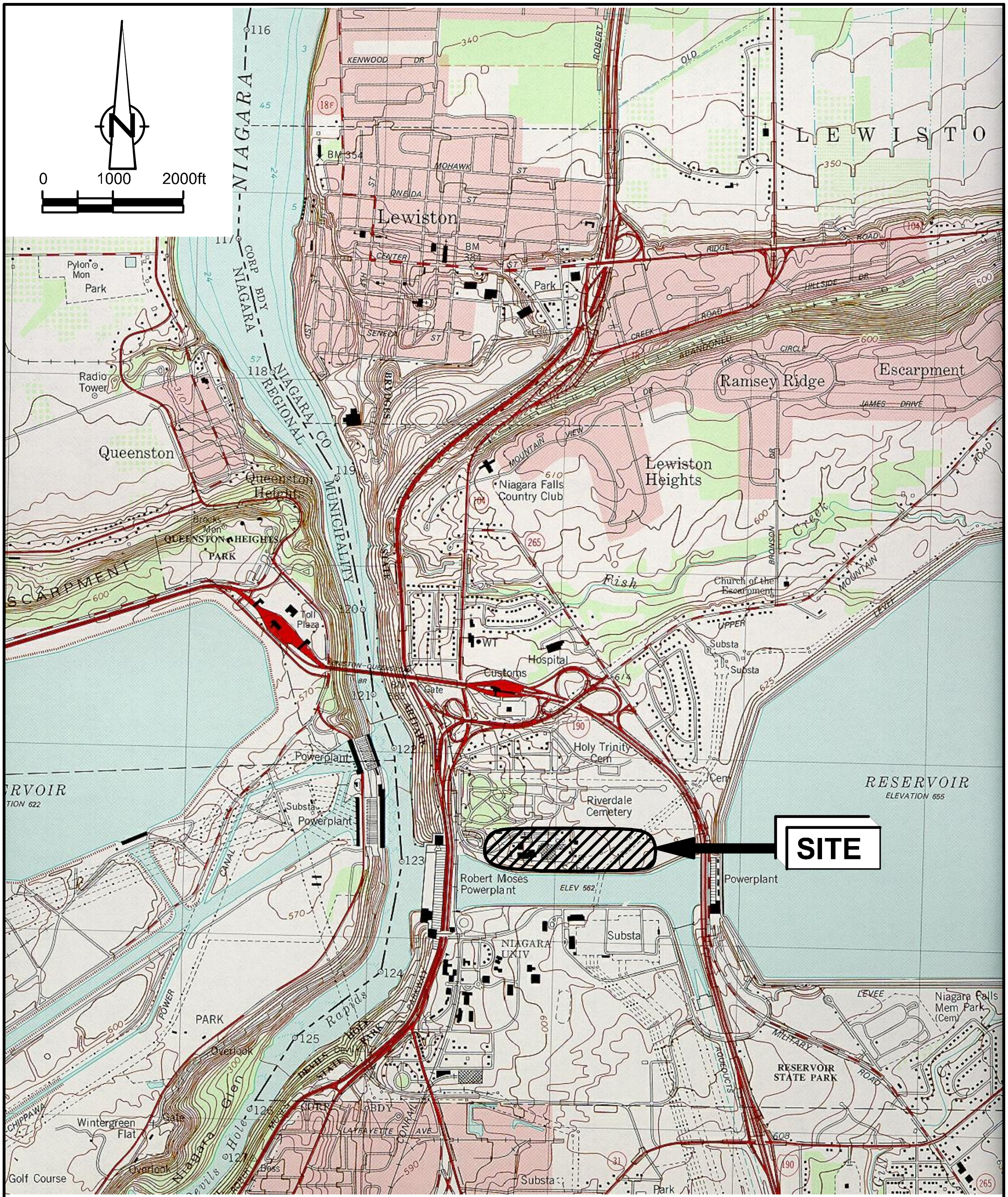
System performance monitoring includes routine sampling of Site extraction and monitoring wells. As discussed in Section 6.2.4, all extraction wells are sampled on a quarterly basis, and a Site-wide monitoring well sampling event is performed on a semiannual basis. The purpose of the groundwater monitoring is to evaluate progress of the groundwater extraction system in removing SSPL compounds from the groundwater.

Figures presenting groundwater potentiometric contours and chemical isocontours are presented in Section 7.0 for each WBZ present at the Site, and are discussed in some detail in Sections 7.2 through 7.5. The figures indicate that the Site extraction wells are properly placed to contain, capture and recover SSPLs present in the groundwater at the Site. The current configuration provides hydraulic capture across the Site.

A comparison of 2010 isocontours for carbon disulfide and carbon tetrachloride/chloroform for each of the four water bearing zones is discussed in Sections 7.2 through 7.5, and generally indicates little change in the overall concentrations and areal extent of the impacted groundwater compared with 2009.

Sampling of extraction wells and monitoring wells will continue in 2011.

FIGURES



SOURCE: USGS

figure 1.1

SITE LOCATION
STAUFFER MANAGEMENT COMPANY LLC
Lewiston, New York

06488-20(021)GN-BU001 FEB 03/2011

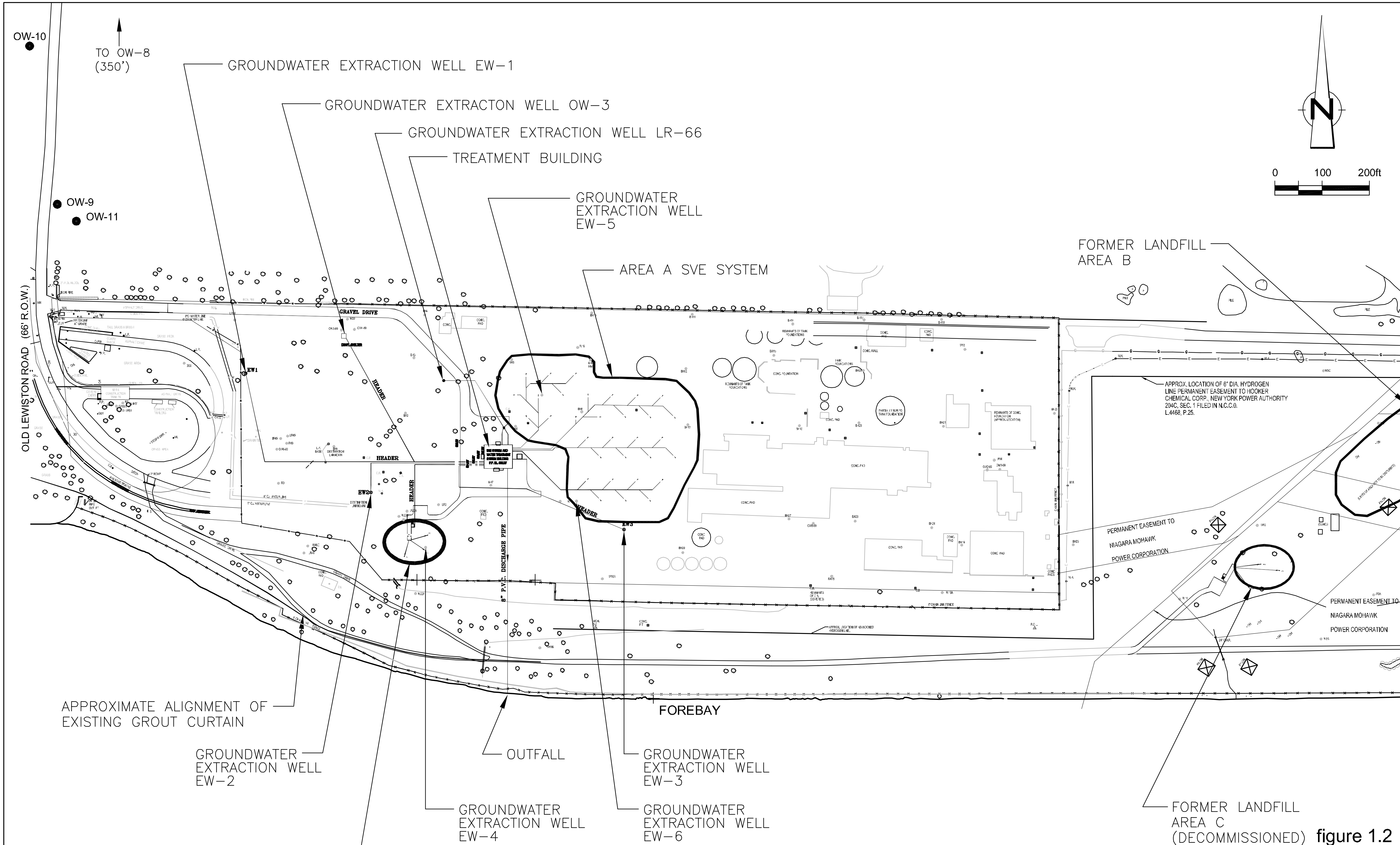
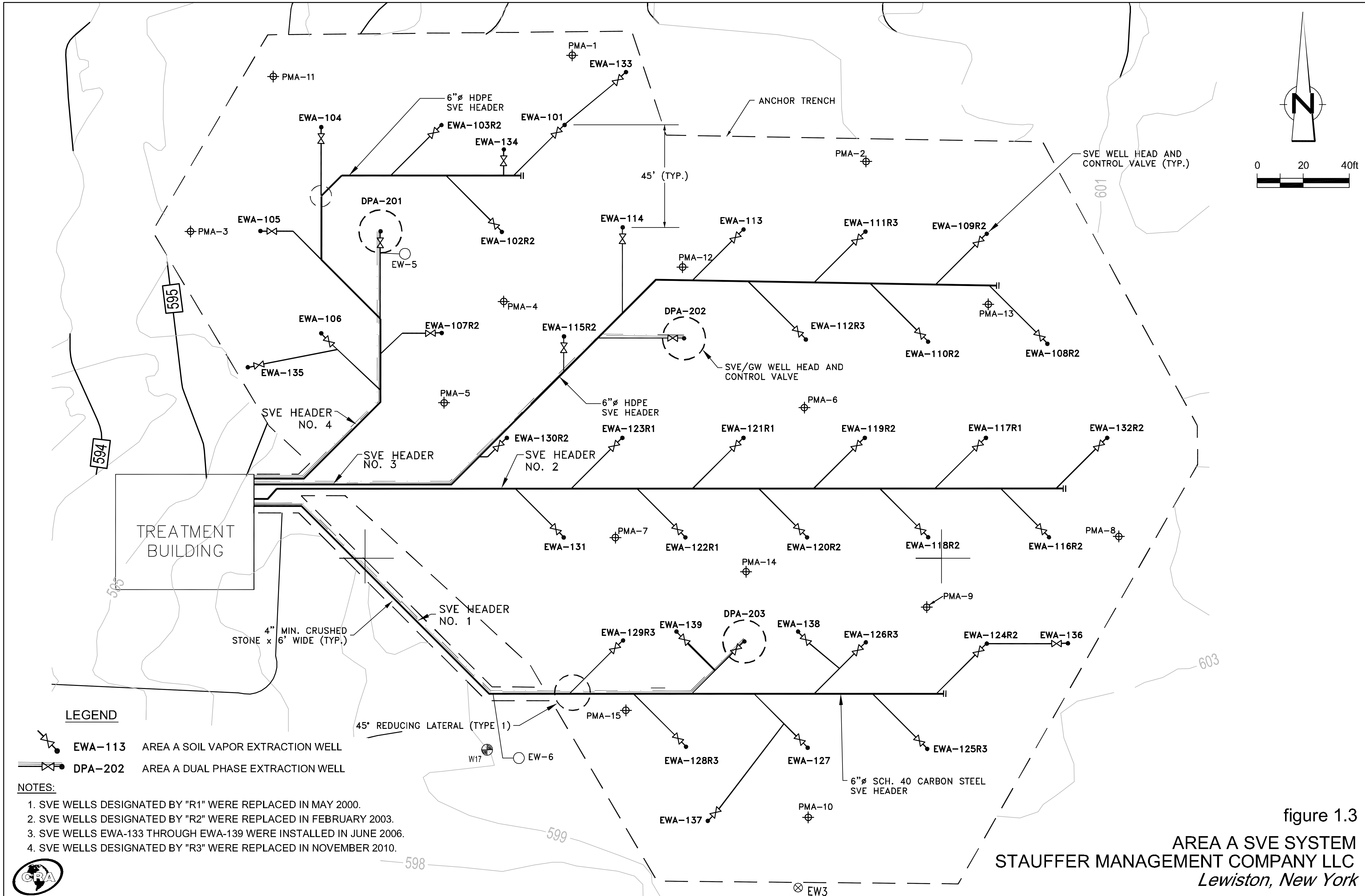


figure 1.2

SITE LAYOUT
STAUFFER MANAGEMENT COMPANY LLC
Lewiston, New York

06488-20(021)GN-BU002 FEB 03/2011



LEGEND

EWA-113 AREA A SOIL VAPOR EXTRACTION WELL

DPA-202 AREA A DUAL PHASE EXTRACTION WELL

NOTES:

1. SVE WELLS DESIGNATED BY "R1" WERE REPLACED IN MAY 2000.
2. SVE WELLS DESIGNATED BY "R2" WERE REPLACED IN FEBRUARY 2003.
3. SVE WELLS EWA-133 THROUGH EWA-139 WERE INSTALLED IN JUNE 2006.
4. SVE WELLS DESIGNATED BY "R3" WERE REPLACED IN NOVEMBER 2010.

figure 1.3

AREA A SVE SYSTEM
STAUFFER MANAGEMENT COMPANY LLC
Lewiston, New York

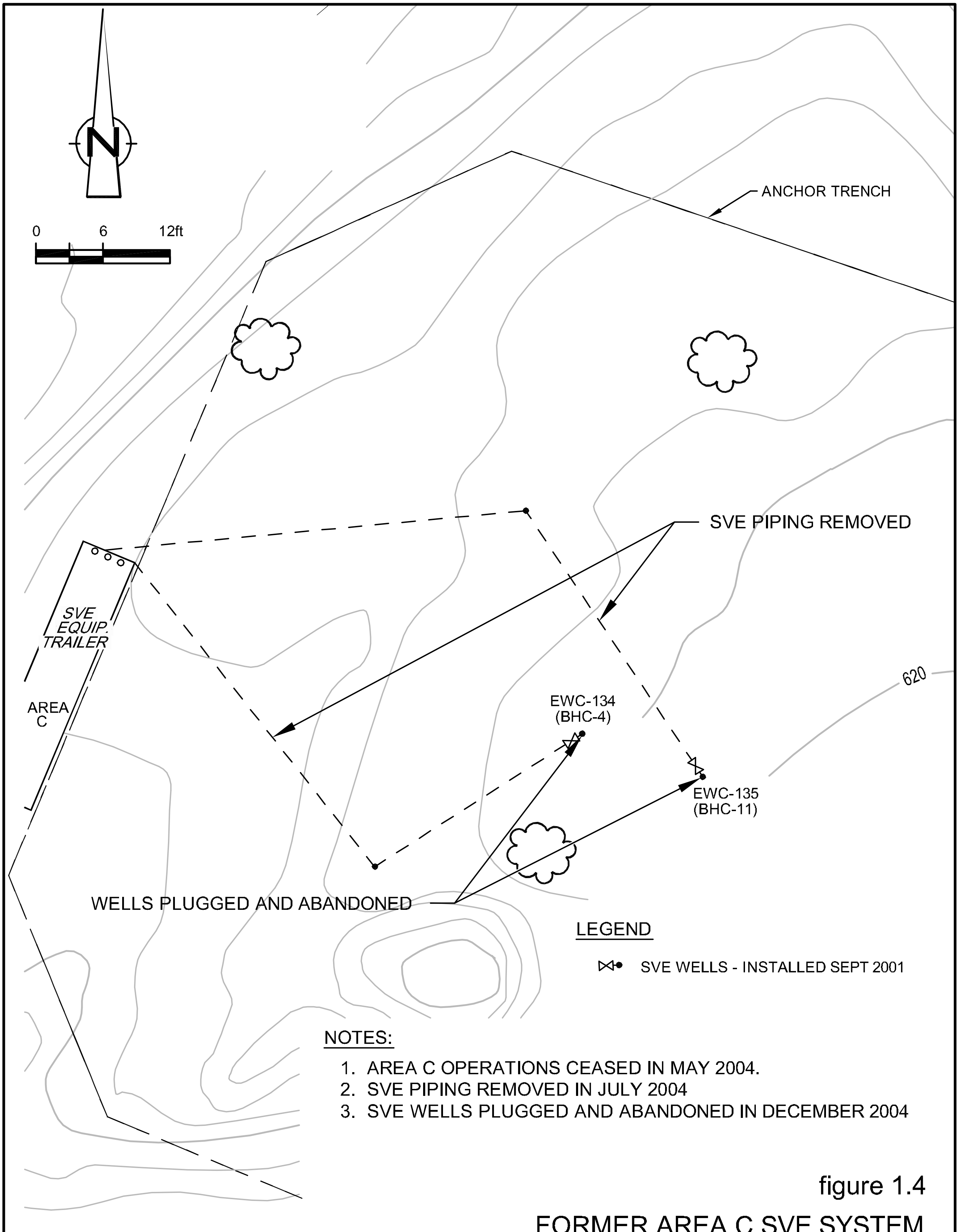


figure 1.4

FORMER AREA C SVE SYSTEM
STAUFFER MANAGEMENT COMPANY LLC
Lewiston, New York

06488-20(021)GN-BU004 FEB 03/2011

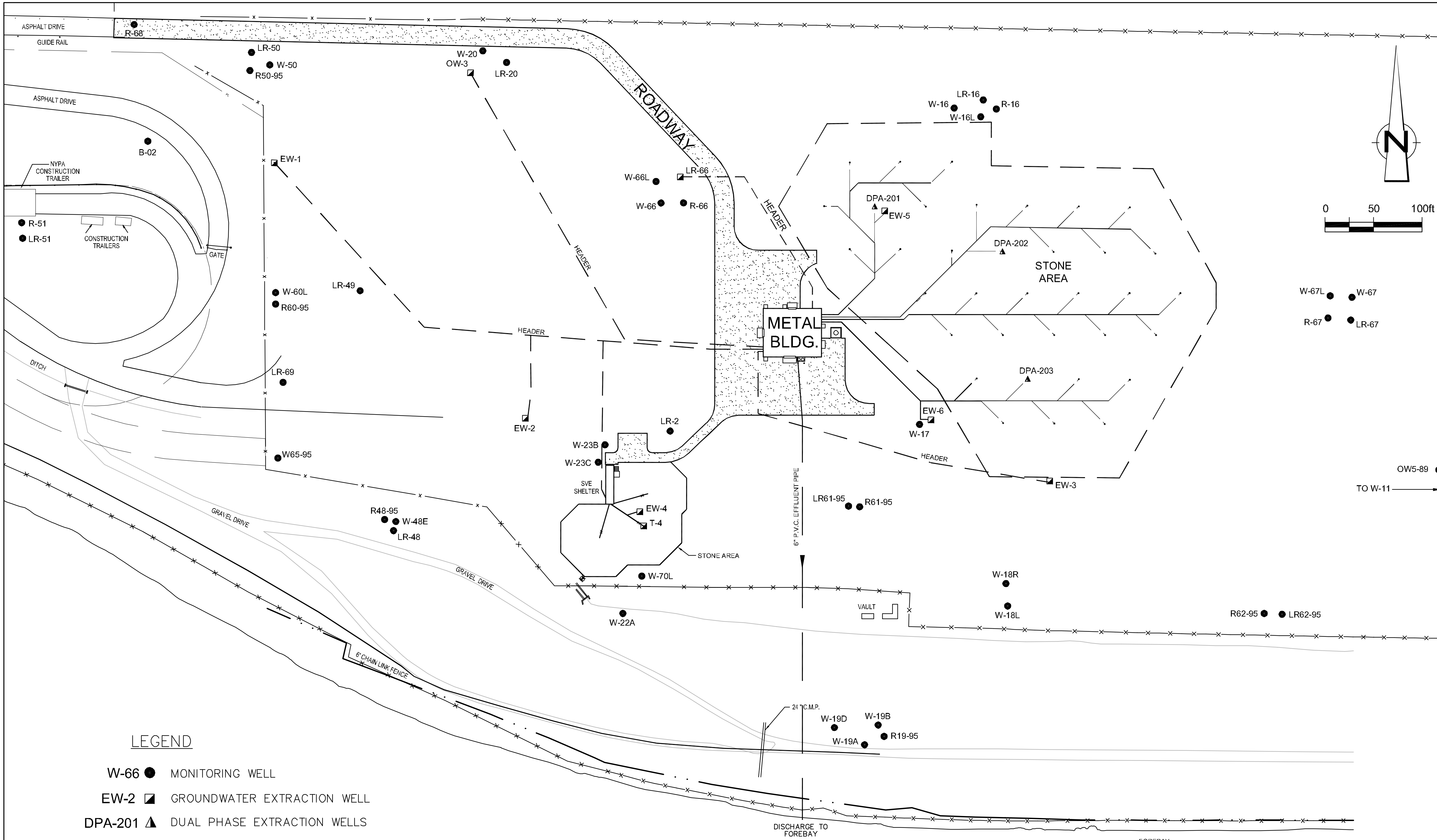
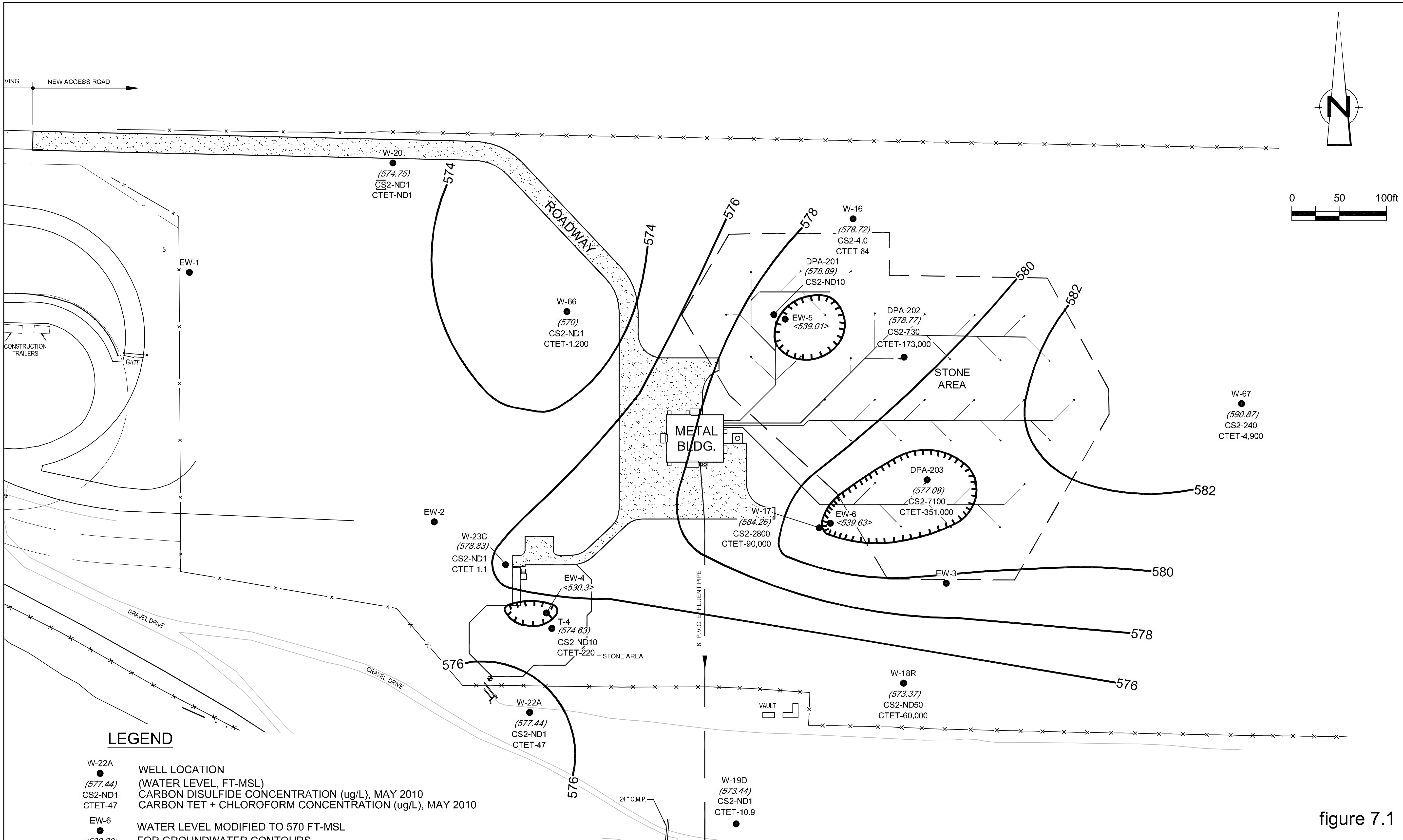


figure 1.5

EXTRACTION AND MONITORING WELLS
STAUFFER MANAGEMENT COMPANY LLC
Lewiston, New York

06488-20(021)GN-BU005 FEB 01/2010



LEGEND

W-22A (577.44) CS2-ND1 CTET-47 — WELL LOCATION (WATER LEVEL, FT-MSL) CARBON DISULFIDE CONCENTRATION (ug/L), MAY 2010 CARBON TET + CHLOROFORM CONCENTRATION (ug/L), MAY 2010

EW-6 <539.63> — WATER LEVEL MODIFIED TO 570 FT-MSL FOR GROUNDWATER CONTOURS

W-17 [584.26] — WATER LEVEL NOT USED FOR GROUNDWATER CONTOURS

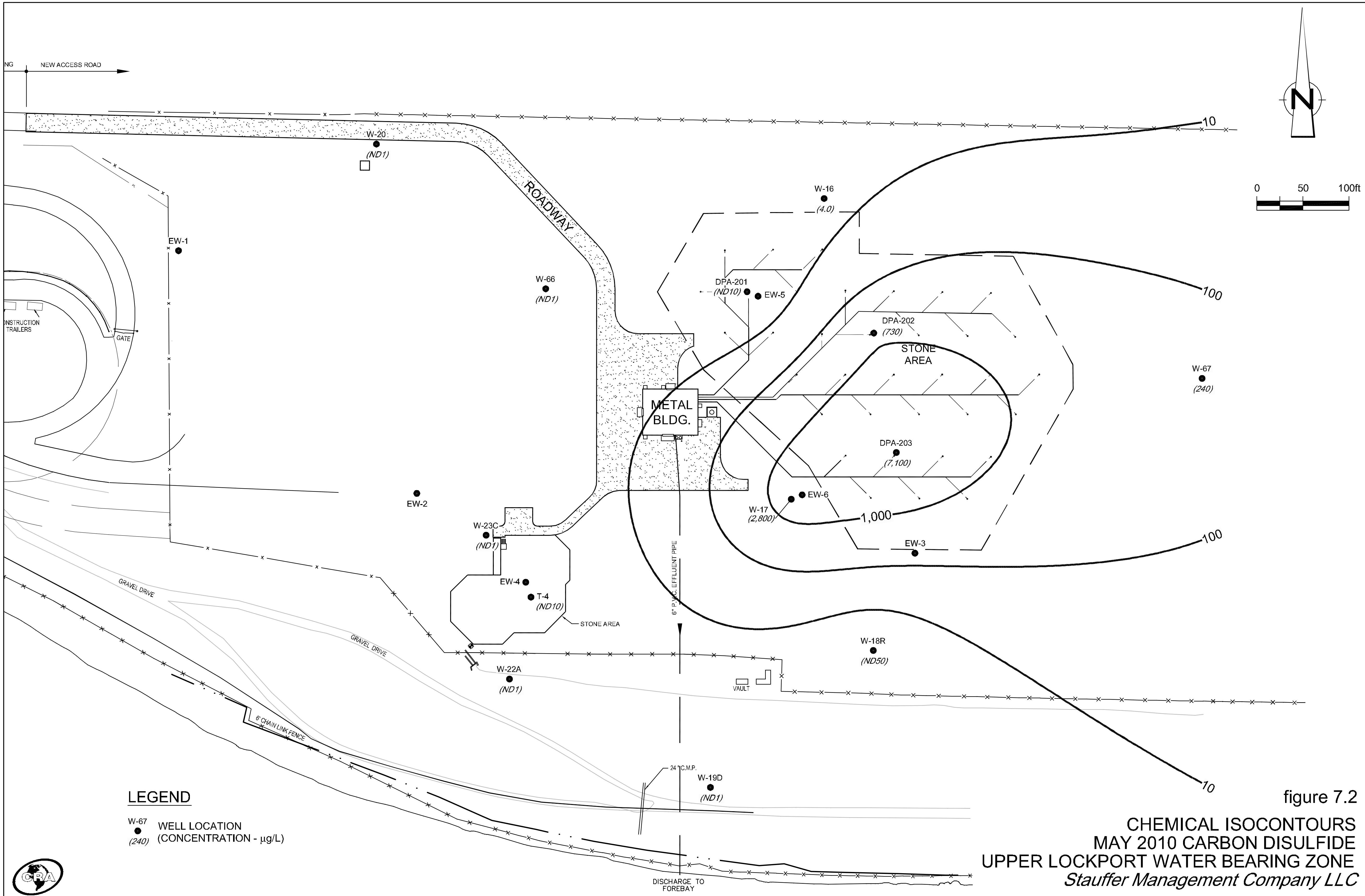
NOTE: EW-1, EW-2 AND EW-3 NOT USED FOR CONTOURING. THESE EXTRACTION WELLS ARE NOT OPEN IN THE UPPER LOCKPORT FORMATION

CRA

figure 7.1

GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS
MAY 2010
UPPER LOCKPORT WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(021)GN-BU006 FEB 07/2011



LEGEND

W-67 (240) WELL LOCATION (CONCENTRATION - µg/L)

figure 7.2

CHEMICAL ISOCONTOURS
MAY 2010 CARBON DISULFIDE
UPPER LOCKPORT WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(021)GN-BU007 FEB 07/2011

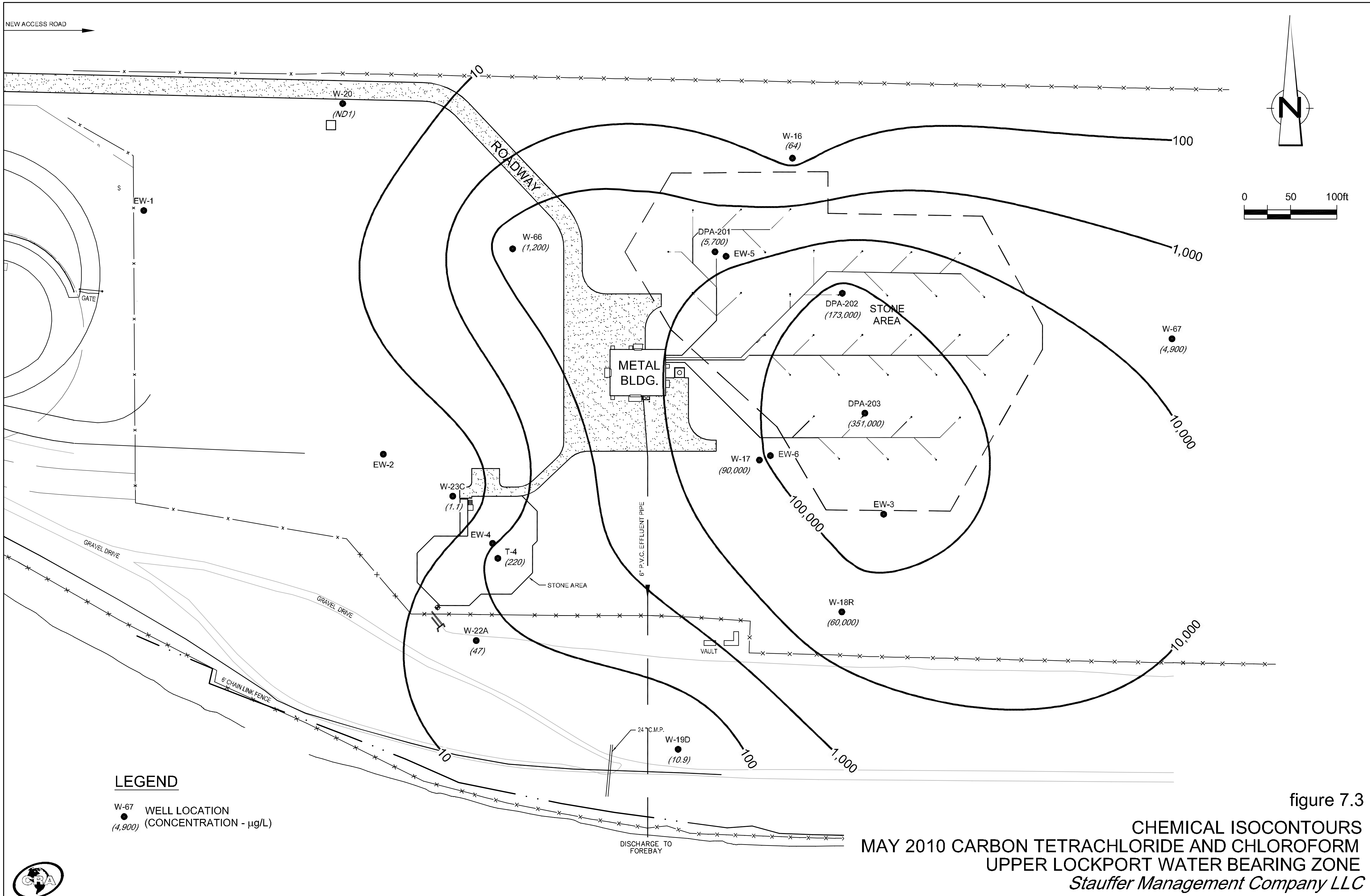
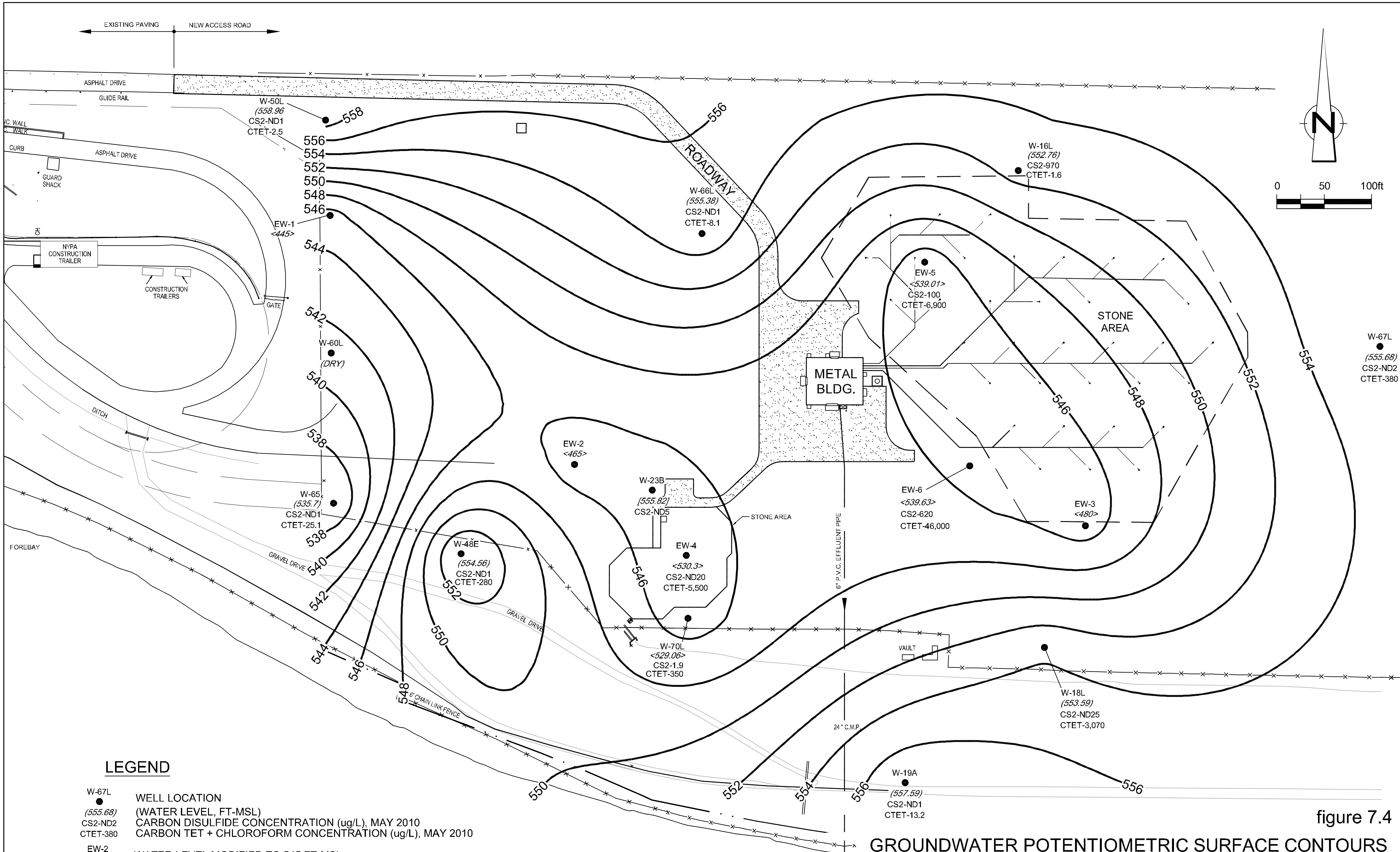


figure 7.3

CHEMICAL ISOCONTOURS
MAY 2010 CARBON TETRACHLORIDE AND CHLOROFORM
UPPER LOCKPORT WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(021)GN-BU008 FEB 07/2011



LEGEND

W-67L (555.68) CS2-ND2 CTET-380 — WELL LOCATION (WATER LEVEL, FT-MSL) CARBON DISULFIDE CONCENTRATION (ug/L), MAY 2010 CARBON TET + CHLOROFORM CONCENTRATION (ug/L), MAY 2010

EW-2 <465> — WATER LEVEL MODIFIED TO 545 FT-MSL FOR GROUNDWATER CONTOURS

W-23B [555.82] — WATER LEVEL NOT USED FOR GROUNDWATER CONTOURS

figure 7.4

GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS
MAY 2010
LOWER LOCKPORT WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(021)GN-BU009 FEB 21/2011

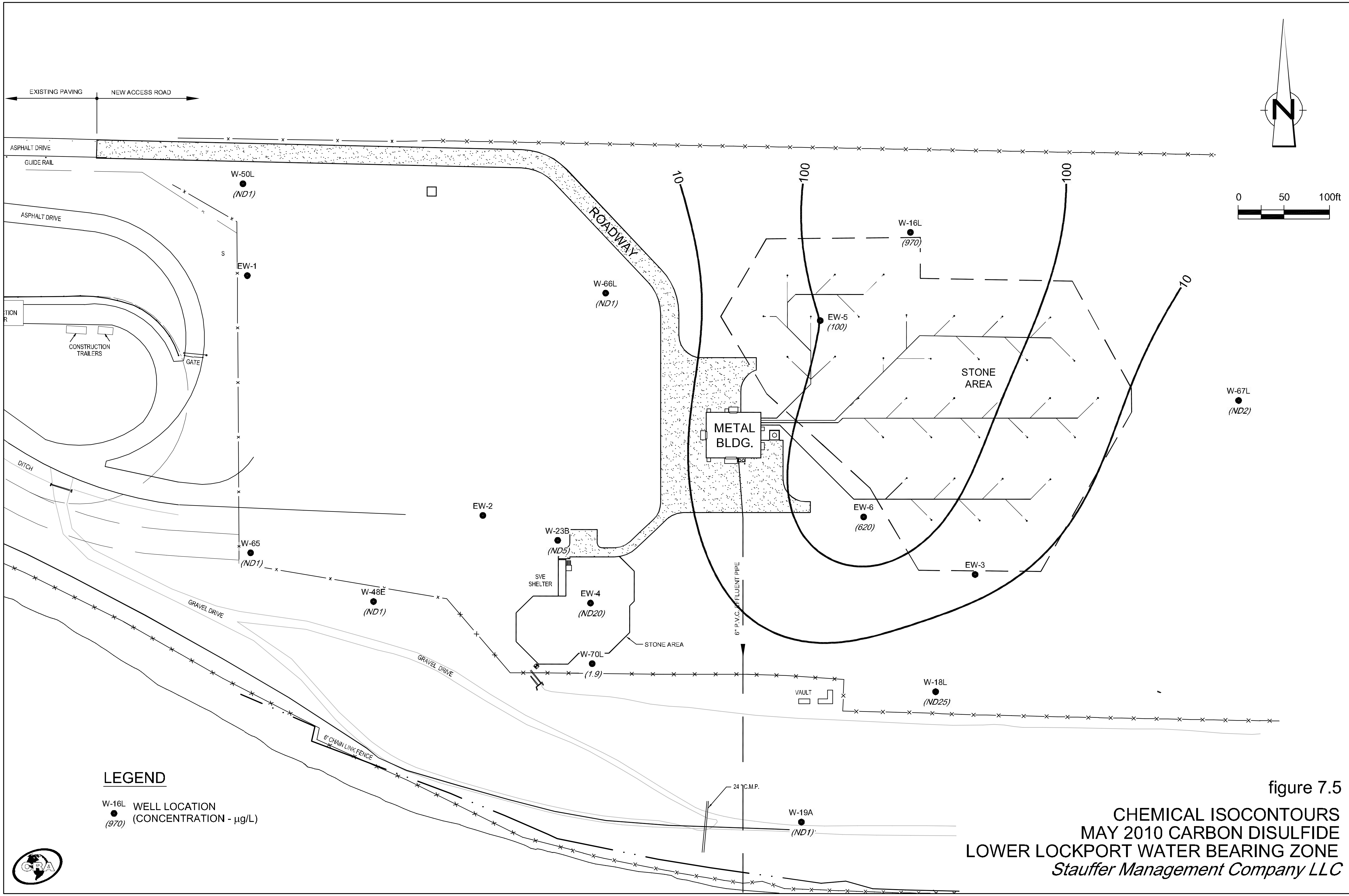


figure 7.5

CHEMICAL ISOCONTOURS
MAY 2010 CARBON DISULFIDE
LOWER LOCKPORT WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(021)GN-BU010 FEB 21/2011

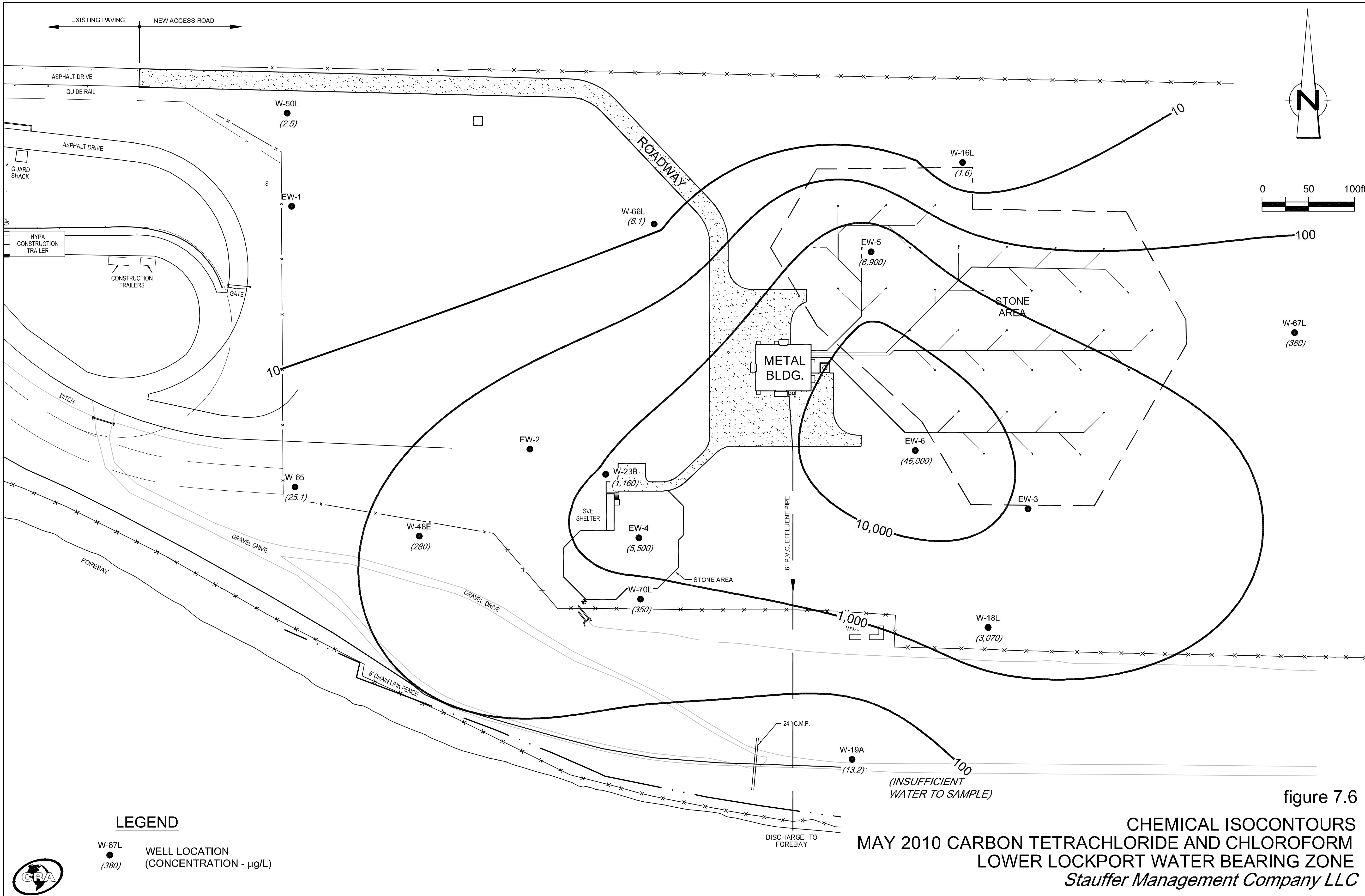
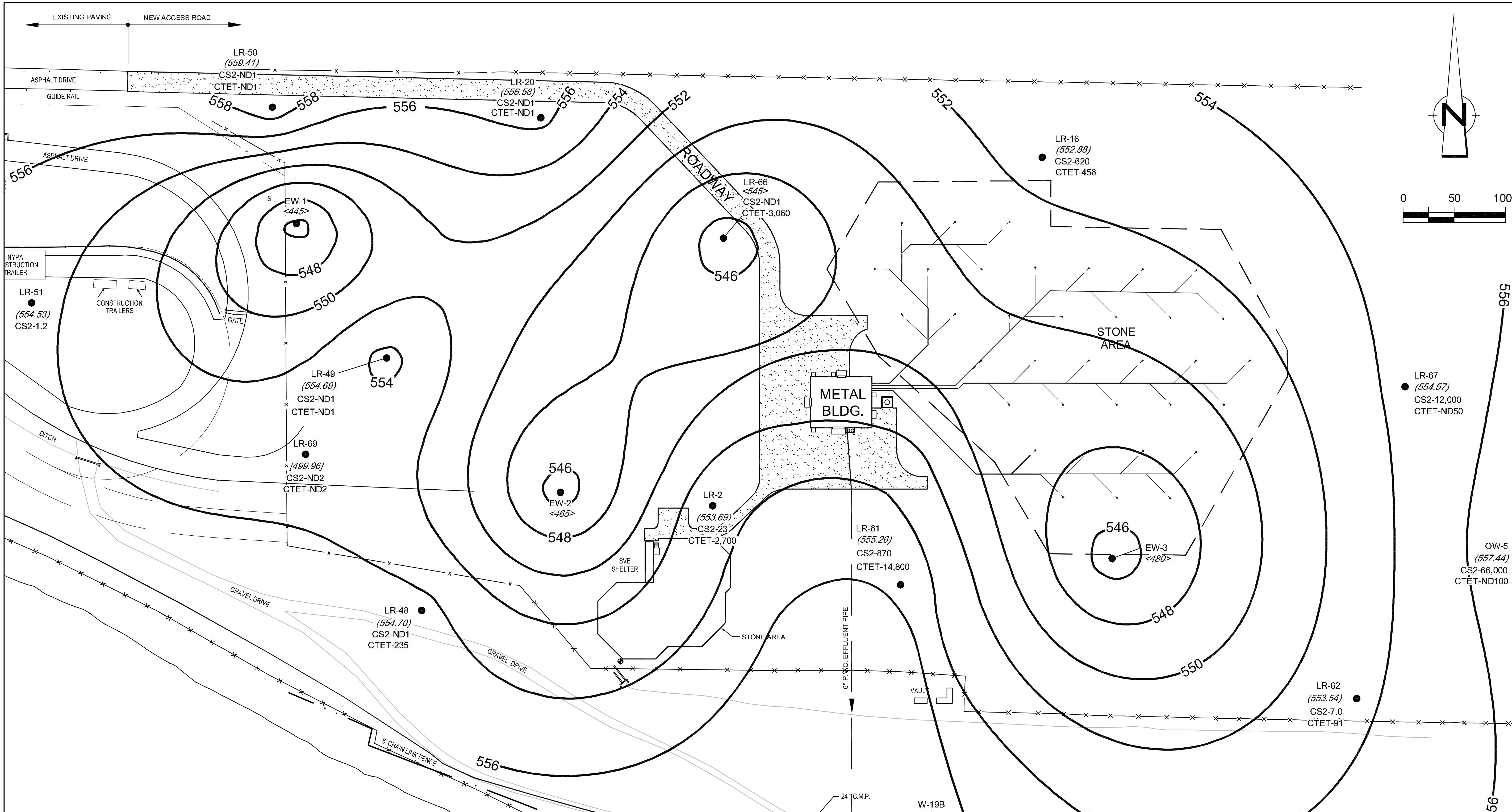


figure 7.6

CHEMICAL ISOCONTOURS
MAY 2010 CARBON TETRACHLORIDE AND CHLOROFORM
LOWER LOCKPORT WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(021)GN-BU011 FEB 07/2011



LEGEND

LR-2 (553.69) CS2-23 CTET-2,700	WELL LOCATION (WATER LEVEL, FT-MSL) CARBON DISULFIDE CONCENTRATION (ug/L), MAY 2010 CARBON TET + CHLOROFORM CONCENTRATION (ug/L), MAY 2010
EW-1 <445>	WATER LEVEL MODIFIED TO 545 FT-MSL FOR GROUNDWATER CONTOURS
LR-69 [499.96]	WATER LEVEL NOT USED FOR GROUNDWATER CONTOURS

figure 7.7

GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS
MAY 2010
LOCKPORT/ROCHESTER WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(021)GN-BU012 FEB 08/2011

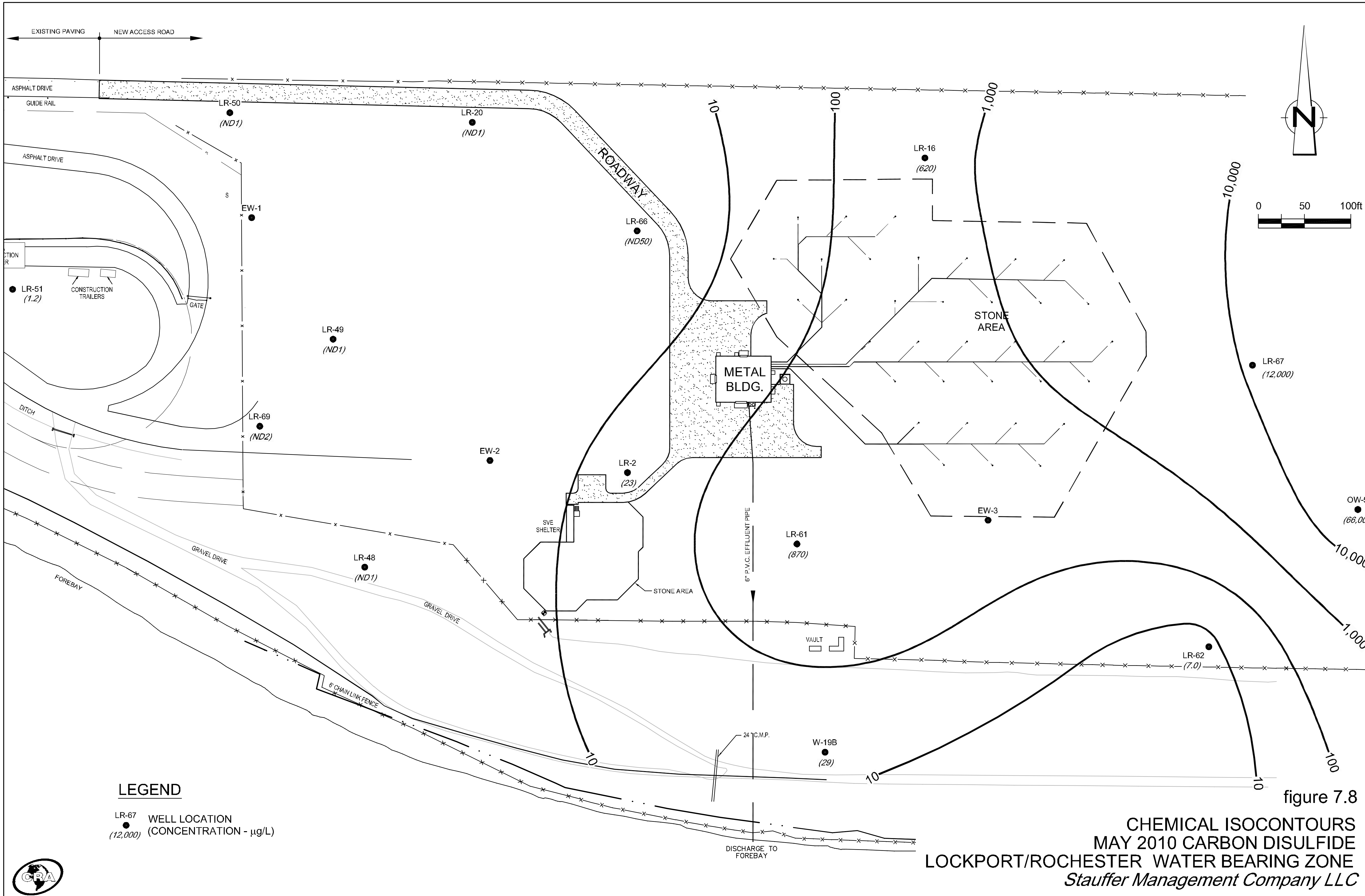


figure 7.8

CHEMICAL ISOCONTOURS
MAY 2010 CARBON DISULFIDE
LOCKPORT/ROCHESTER WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(021)GN-BU013 FEB 08/2011

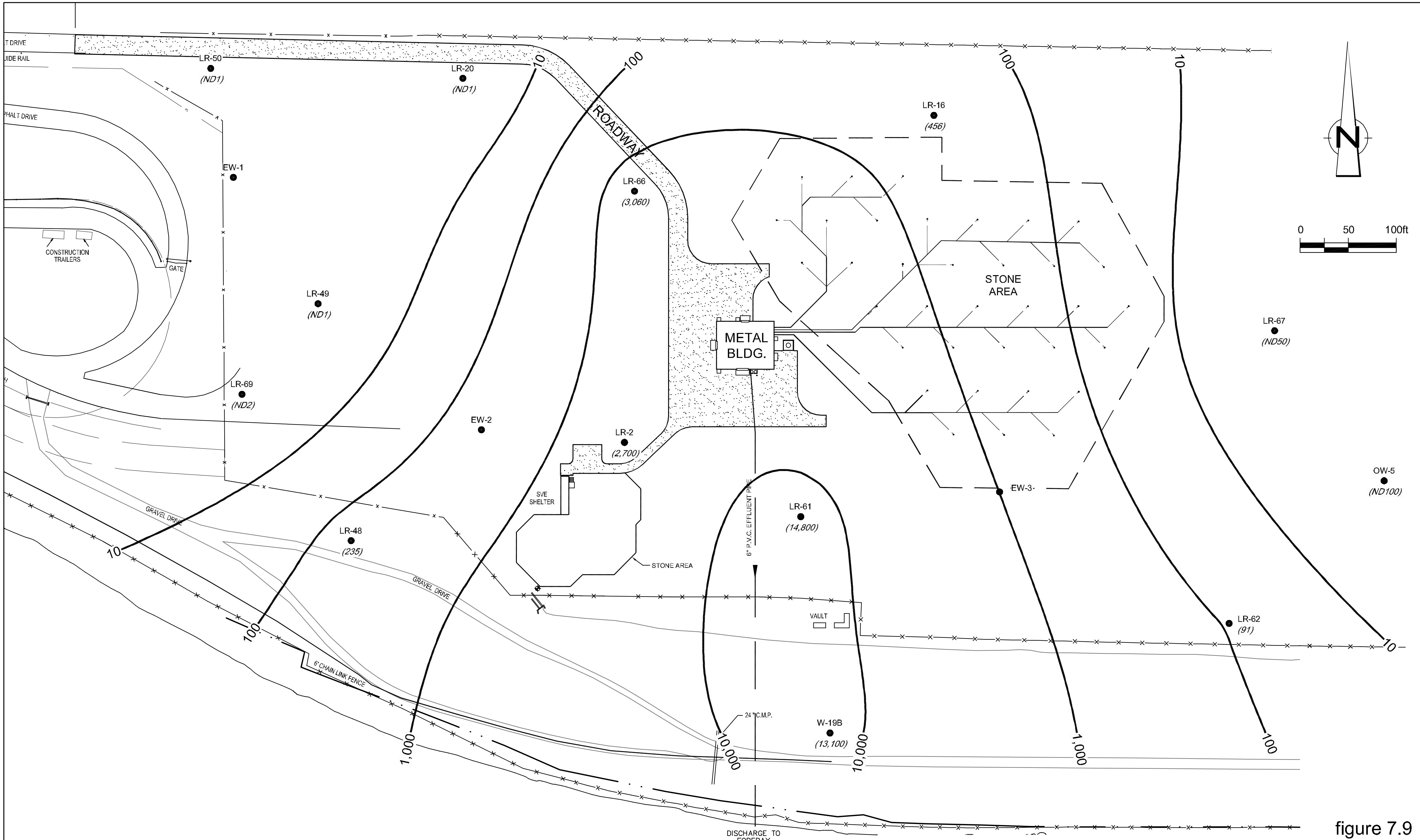


figure 7.9

LEGEND

LR-67 (ND50) WELL LOCATION (CONCENTRATION - µg/L)

CHEMICAL ISOCONTOURS
MAY 2010 CARBON TETRACHLORIDE AND CHLOROFORM
LOCKPORT/ROCHESTER WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(021)GN-BU014 FEB 07/2011

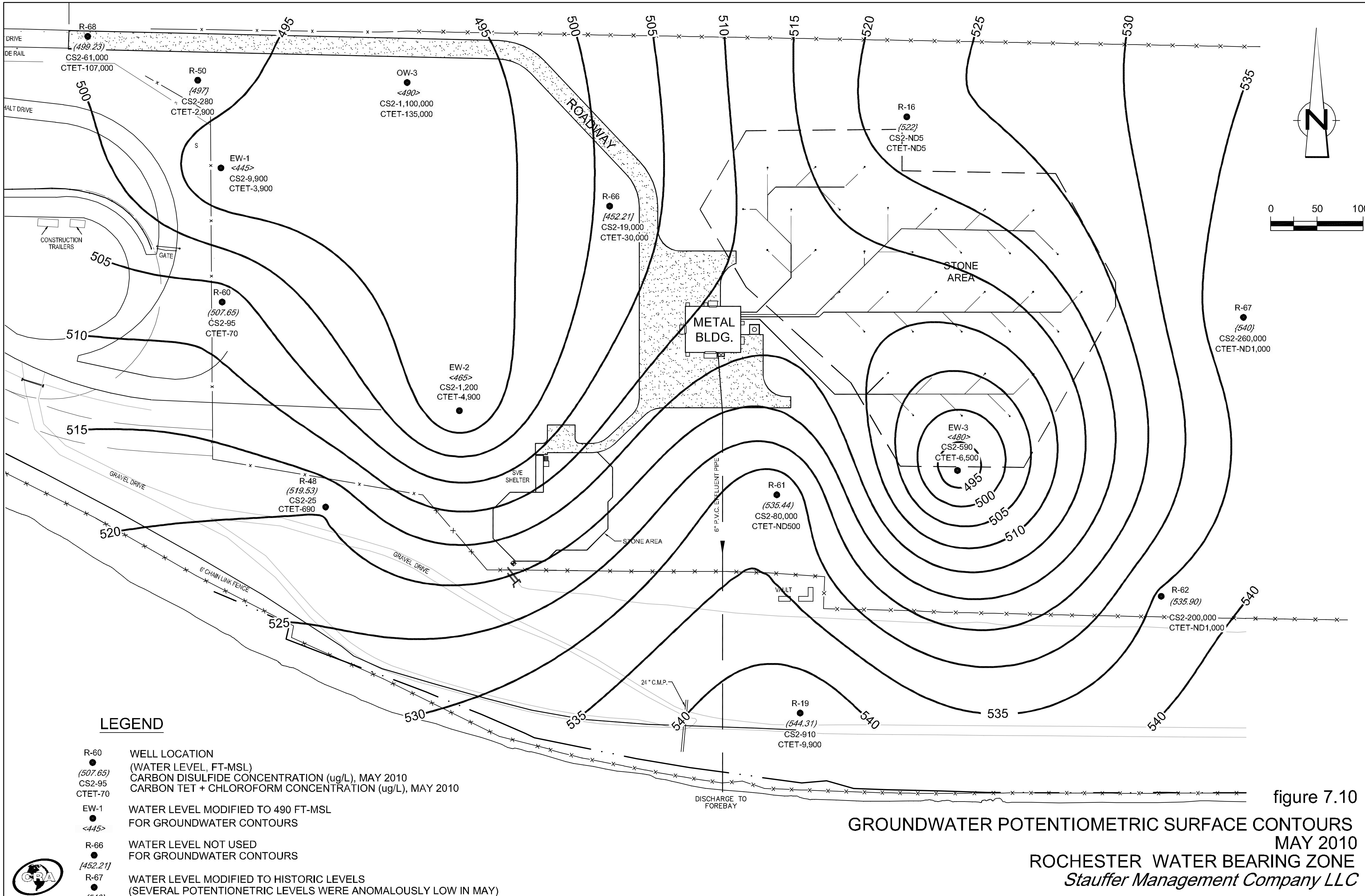


figure 7.10

GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS
MAY 2010
ROCHESTER WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(021)GN-BU015 FEB 07/2011

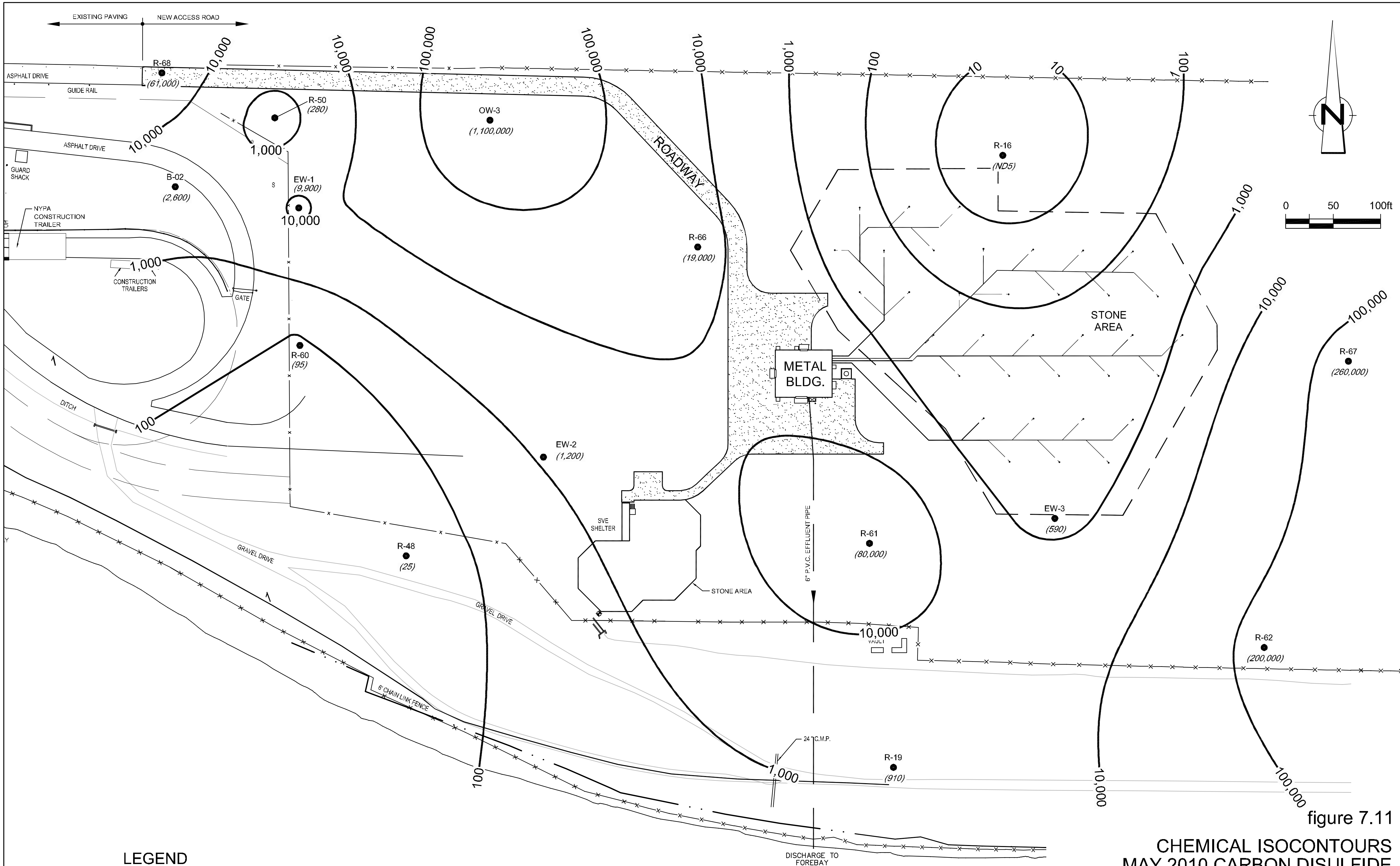


figure 7.11

CHEMICAL ISOCONTOURS
MAY 2010 CARBON DISULFIDE
ROCHESTER WATER BEARING ZONE
Stauffer Management Company LLC

LEGEND

R-67
(260,000) WELL LOCATION (CONCENTRATION - μg/L)

06488-20(021)GN-BU016 FEB 08/2011

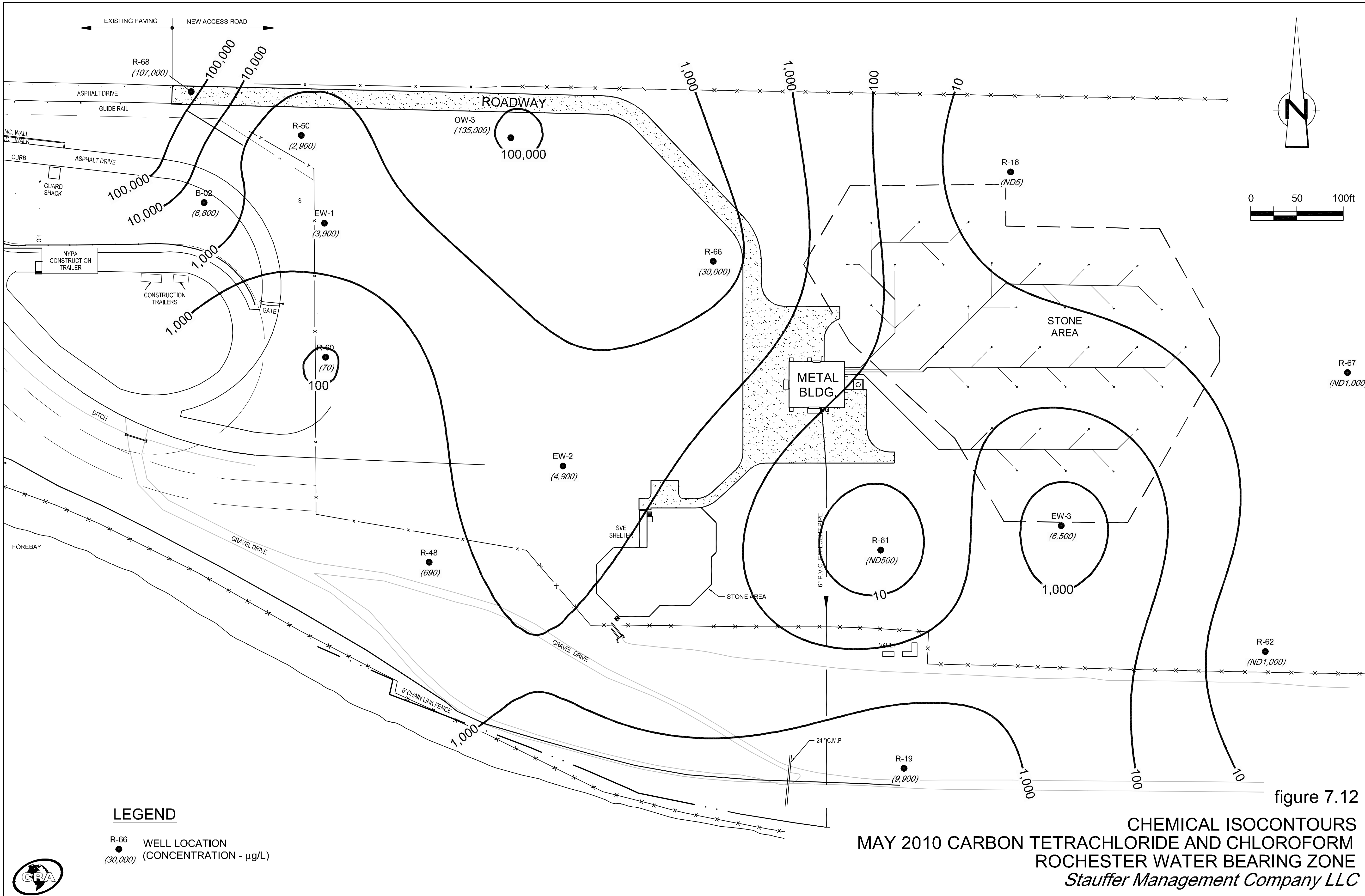
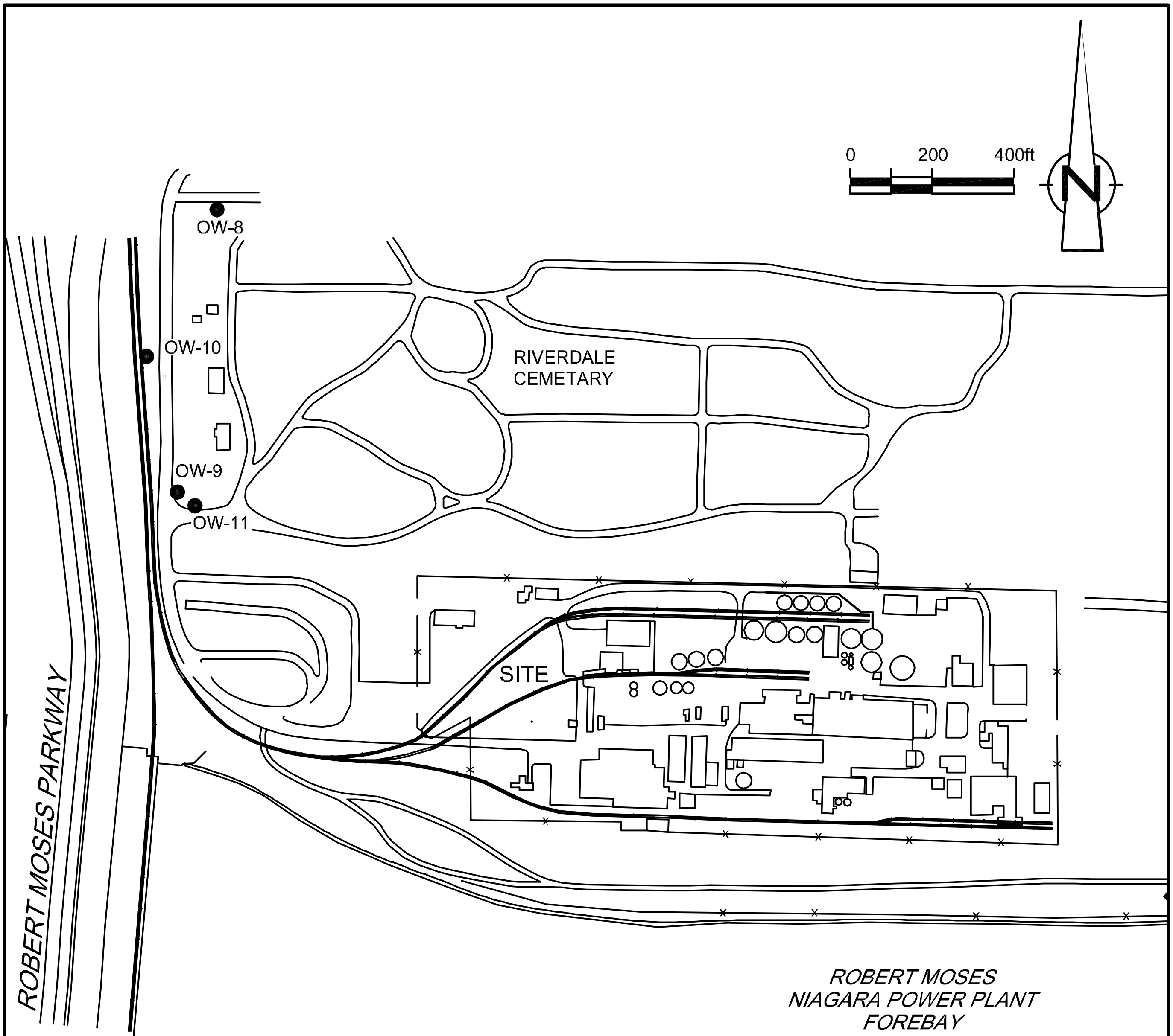


figure 7.12

CHEMICAL ISOCONTOURS
MAY 2010 CARBON TETRACHLORIDE AND CHLOROFORM
ROCHESTER WATER BEARING ZONE
Stauffer Management Company LLC

06488-20(021)GN-BU017 FEB 07/2011



LEGEND

OW-11 ● NORTH SIDE GROUNDWATER MONITORING WELL LOCATIONS

NOTE:

SAMPLING OF OVERBURDEN WELLS OW-8, OW-9 AND OW-10 WAS DISCONTINUED IN MAY 2004. BEDROCK WELL OW-11 CONTINUES TO BE SAMPLED SEMIANNUALLY.

figure 8.1

NORTH SIDE WELL LOCATIONS
STAUFFER MANAGEMENT COMPANY LLC
Lewiston, New York

06488-20(021)GN-BU018 FEB 04/2011

TABLES

TABLE 2.1

AREA A SVE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Average Air Flow Rate:		800	cfm
Est. Operating Time:	1st Quarter	1,577	hours
	2nd Quarter	1,594	hours
	3rd Quarter	1,899	hours
	4th Quarter	1,987	hours
	Total	7,057	hours/year

		1st Quarter		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass*
		Conc.	*Mass*	*Conc.*	*Mass*	*Conc.*	*Mass*	*Conc.*	*Mass*	*Removal*
Compound	*MW*	*(ppmv)*	*(lbs)*	*(ppmv)*	*(lbs)*	*(ppmv)*	*(lbs)*	*(ppmv)*	*(lbs)*	*(lbs/yr)*
Benzene	78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Carbon disulfide	76	0.021	0.3	0.0	0.0	0.0	0.2	0.067	1.2	2
Carbon tetrachloride	154	0.030	0.9	0.39	11.7	3.7	132.0	2.20	82.1	227
Chlorobenzene	112	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Chloroform	119	0.0018	0.0	0.057	1.3	0.2	5.5	0.260	7.5	14
Methylene chloride	85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Tetrachloroethene	166	0.0066	0.2	0.024	0.8	0.077	3.0	0.086	3.5	7
Toluene	92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Trichloroethene	131	0.0	0.0	0.005	0.1	0.015	0.5	0.007	0.2	1
Total VOC Removal			**1**		**14**		**141**		**95**	**251**

Notes:

cfm Cubic Feet per Minute
MW Molecular Weight
ppmv Part per Million by Volume.
VOC Volatile Organic Compound.

TABLE 5.1

EXTRACTION WELL EW-1
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Flow Rates:

1st Quarter	309,000	gallons
2nd Quarter	357,765	gallons
3rd Quarter	480,451	gallons
4th Quarter	349,172	gallons
Total	**1,496,388**	**gallons**

	1st Quarter		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass*
	Conc.	*Mass*	*Conc.*	*Mass*	*Conc.*	*Mass*	*Conc.*	*Mass*	*Removal*
Compound	*(ug/L)*	*(lbs)*	*(ug/L)*	*(lbs)*	*(ug/L)*	*(lbs)*	*(ug/L)*	*(lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	20,000	51.5	9,900	29.5	33,000	132.2	54,000	157.3	371
Carbon tetrachloride	4,400	11.3	2,800	8.4	8,800	35.3	9,400	27.4	82
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	2,400	6.2	1,100	3.3	3,700	14.8	3,200	9.3	34
Methylene chloride	220	0.6	79	0.2	320	1.3	230	0.7	3
Tetrachloroethene	0	0.0	0	0.0	52	0.2	0	0.0	0
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**69**		**41**		**184**		**195**	**489**

Notes:
VOC Volatile Organic Compound.

TABLE 5.2

EXTRACTION WELL EW-2
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Flow Rates:

1st Quarter	1,167,451	gallons
2nd Quarter	982,729	gallons
3rd Quarter	401,259	gallons
4th Quarter	1,041,321	gallons
Total	**3,592,760**	**gallons**

	1st Quarter		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass*
	Conc.	*Mass*	*Conc.*	*Mass*	*Conc.*	*Mass*	*Conc.*	*Mass*	*Removal*
Compound	*(ug/L)*	*(lbs)*	*(ug/L)*	*(lbs)*	*(ug/L)*	*(lbs)*	*(ug/L)*	*(lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	24,000	233.7	1,200	9.8	0	0.0	11,000	95.5	339
Carbon tetrachloride	7,200	70.1	3,700	30.3	410	1.4	7,100	61.7	163
Chlorobenzene	0	0.0	0	0.0	500	1.7	0	0.0	2
Chloroform	1,600	15.6	1,200	9.8	6,900	23.1	1,400	12.2	61
Methylene chloride	100	1.0	0	0.0	340	1.1	0	0.0	2
Tetrachloroethene	0	0.0	0	0.0	160	0.5	0	0.0	1
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**320**		**50**		**28**		**169**	**567**

Notes:
VOC Volatile Organic Compound.

TABLE 5.3

EXTRACTION WELL EW-3
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Flow Rates:

1st Quarter	113,014	gallons
2nd Quarter	113,458	gallons
3rd Quarter	118,294	gallons
4th Quarter	99,656	gallons
Total	**444,422**	**gallons**

Compound	*1st Quarter* *Conc. (ug/L)*	*1st Quarter* *Mass (lbs)*	*2nd Quarter* *Conc. (ug/L)*	*2nd Quarter* *Mass (lbs)*	*3rd Quarter* *Conc. (ug/L)*	*3rd Quarter* *Mass (lbs)*	*4th Quarter* *Conc. (ug/L)*	*4th Quarter* *Mass (lbs)*	*Total Mass Removal (lbs/yr)*
Benzene	10	0.0	0	0.0	12	0.0	13	0.0	0
Carbon disulfide	220	0.2	590	0.6	5,500	5.4	4,900	4.1	10
Carbon tetrachloride	880	0.8	3,300	3.1	1,100	1.1	920	0.8	6
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	2,400	2.3	3,200	3.0	1,900	1.9	1,600	1.3	8
Methylene chloride	97	0.1	200	0.2	120	0.1	100	0.1	0
Tetrachloroethene	75	0.1	110	0.1	84	0.1	73	0.1	0
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	100	0.1	190	0.2	180	0.2	210	0.2	1
Total VOC Removal		**4**		**7**		**9**		**6**	**26**

Notes:
VOC Volatile Organic Compound.

TABLE 5.4

EXTRACTION WELL EW-4
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Flow Rates:

1st Quarter	118,632	gallons
2nd Quarter	114,905	gallons
3rd Quarter	107,513	gallons
4th Quarter	112,696	gallons
Total	**453,746**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal (lbs/yr)*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	0	0.0	0	0.0	0	0.0	22	0.0	0
Carbon tetrachloride	320	0.3	900	0.9	380	0.3	0	0.0	2
Chlorobenzene	35	0.0	84	0.1	460	0.4	68	0.1	1
Chloroform	3,500	3.5	4,600	4.4	6,600	5.9	1,000	0.9	15
Methylene chloride	74	0.1	100	0.1	310	0.3	40	0.0	0
Tetrachloroethene	280	0.3	110	0.1	130	0.1	31	0.0	1
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	140	0.1	110	0.1	41	0.0	65	0.1	0
Total VOC Removal		**4.3**		**5.7**		**7.1**		**1.2**	**18**

Notes:
VOC Volatile Organic Compound.

TABLE 5.5

EXTRACTION WELL EW-5
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Flow Rates:

1st Quarter	1,661,288	gallons
2nd Quarter	1,497,600	gallons
3rd Quarter	1,760,809	gallons
4th Quarter	1,548,025	gallons
Total	**6,467,722**	**gallons**

Compound	*1st Quarter Conc. (ug/L)*	*1st Quarter Mass (lbs)*	*2nd Quarter Conc. (ug/L)*	*2nd Quarter Mass (lbs)*	*3rd Quarter Conc. (ug/L)*	*3rd Quarter Mass (lbs)*	*4th Quarter Conc. (ug/L)*	*4th Quarter Mass (lbs)*	*Total Mass Removal (lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	130	1.8	100	1.2	84	1.2	430	5.6	10
Carbon tetrachloride	1,100	15.2	5,800	72.4	350	5.1	180	2.3	95
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	210	2.9	1,100	13.7	240	3.5	180	2.3	22
Methylene chloride	0	0.0	0	0.0	13	0.2	0	0.0	0
Tetrachloroethene	180	2.5	850	10.6	87	1.3	46	0.6	15
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	21	0.3	99	1.2	17	0.2	0	0.0	2
Total VOC Removal		**22.7**		**99.3**		**11.6**		**10.8**	**144**

Notes:
VOC Volatile Organic Compound.

TABLE 5.6

EXTRACTION WELL EW-6
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Flow Rates:

1st Quarter	353,551	gallons
2nd Quarter	351,751	gallons
3rd Quarter	224,001	gallons
4th Quarter	135,854	gallons
Total	**1,065,157**	**gallons**

Compound	*1st Quarter* Conc. (ug/L)	*1st Quarter* Mass (lbs)	*2nd Quarter* Conc. (ug/L)	*2nd Quarter* Mass (lbs)	*3rd Quarter* Conc. (ug/L)	*3rd Quarter* Mass (lbs)	*4th Quarter* Conc. (ug/L)	*4th Quarter* Mass (lbs)	*Total Mass Removal (lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	700	2.1	620	1.8	520	1.0	470	0.5	5
Carbon tetrachloride	9,500	28.0	35,000	102.7	3,800	7.1	13,000	14.7	153
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	6,100	18.0	11,000	32.3	3,600	6.7	7,000	7.9	65
Methylene chloride	300	0.9	270	0.8	240	0.4	280	0.3	2
Tetrachloroethene	240	0.7	380	1.1	0	0.0	210	0.2	2
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**49.7**		**138.7**		**15.2**		**23.7**	**227**

Notes:
VOC Volatile Organic Compound.

TABLE 5.7

DUAL-PHASE AREA A WELL DPA-201
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Flow Rates:

1st Quarter	17,658	gallons
2nd Quarter	20,184	gallons
3rd Quarter	18,403	gallons
4th Quarter	19,608	gallons
Total	**75,853**	**gallons**

Compound	*1st Quarter* Conc. (ug/L)	*1st Quarter* Mass (lbs)	*2nd Quarter* Conc. (ug/L)	*2nd Quarter* Mass (lbs)	*3rd Quarter* Conc. (ug/L)	*3rd Quarter* Mass (lbs)	*4th Quarter* Conc. (ug/L)	*4th Quarter* Mass (lbs)	*Total Mass Removal (lbs/yr)*
Benzene	0	0.0	14	0.0	0	0.0	0	0.0	0.0
Carbon disulfide	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Carbon tetrachloride	970	0.0	4,400	0.7	380	0.0	1,000	0.0	0.7
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Chloroform	420	0.0	1,300	0.2	430	0.0	1,100	0.0	0.2
Methylene chloride	14	0.0	42	0.0	0	0.0	24	0.0	0.0
Tetrachloroethene	940	0.0	2,900	0.5	530	0.0	570	0.0	0.5
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0.0
Trichloroethene	410	0.0	680	0.1	400	0.0	940	0.0	0.1
Total VOC Removal		**0.0**		**1.6**		**0.0**		**0.0**	**1.6**

Notes:
VOC Volatile Organic Compound.

TABLE 5.8

DUAL-PHASE AREA A WELL DPA-202
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Flow Rates:

1st Quarter	5,836	gallons
2nd Quarter	32,815	gallons
3rd Quarter	17,034	gallons
4th Quarter	21,988	gallons
Total	**77,673**	**gallons**

	1st Quarter		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass*
	Conc.	*Mass*	*Conc.*	*Mass*	*Conc.*	*Mass*	*Conc.*	*Mass*	*Removal*
Compound	*(ug/L)*	*(lbs)*	*(ug/L)*	*(lbs)*	*(ug/L)*	*(lbs)*	*(ug/L)*	*(lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	1,300	0.1	730	0.2	1,600	0.2	580	0.1	1
Carbon tetrachloride	65,000	3.2	150,000	41.1	120,000	17.0	87,000	16.0	77
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	12,000	0.6	23,000	6.3	17,000	2.4	15,000	2.8	12
Methylene chloride	0	0.0	0	0.0	0	0.0	0	0.0	0
Tetrachloroethene	1,500	0.1	1,800	0.5	1,900	0.3	1,800	0.3	1
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**3.9**		**48.0**		**20.0**		**19.1**	**91**

Notes:
VOC Volatile Organic Compound.

TABLE 5.9

DUAL-PHASE AREA A WELL DPA-203
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Flow Rates:

1st Quarter	8,487	gallons
2nd Quarter	17,095	gallons
3rd Quarter	11,565	gallons
4th Quarter	15,004	gallons
Total	**52,151**	**gallons**

	1st Quarter		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass*
	Conc.	*Mass*	*Conc.*	*Mass*	*Conc.*	*Mass*	*Conc.*	*Mass*	*Removal*
Compound	*(ug/L)*	*(lbs)*	*(ug/L)*	*(lbs)*	*(ug/L)*	*(lbs)*	*(ug/L)*	*(lbs)*	*(lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	7,100	0.5	7,100	1.0	7,800	0.0	9,500	1.2	3
Carbon tetrachloride	210,000	14.9	300,000	42.8	250,000	0.0	280,000	35.0	93
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	45,000	3.2	51,000	7.3	60,000	0.0	81,000	10.1	21
Methylene chloride	0	0.0	0	0.0	0	0.0	0	0.0	0
Tetrachloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**18.6**		**51.1**		**0.0**		**46.4**	**116**

Notes:
VOC Volatile Organic Compound.
Dry Well dry, no sample collected

TABLE 5.10

EXTRACTION WELL OW-3
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Flow Rates:

1st Quarter	10,853	gallons
2nd Quarter	33,853	gallons
3rd Quarter	26,479	gallons
4th Quarter	23,089	gallons
Total	**94,274**	**gallons**

Compound	*1st Quarter* Conc. (ug/L)	*1st Quarter* Mass (lbs)	*2nd Quarter* Conc. (ug/L)	*2nd Quarter* Mass (lbs)	*3rd Quarter* Conc. (ug/L)	*3rd Quarter* Mass (lbs)	*4th Quarter* Conc. (ug/L)	*4th Quarter* Mass (lbs)	*Total Mass Removal (lbs/yr)*
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	580,000	52.5	1,100,000	310.6	1,000,000	220.8	1,200,000	231.1	815
Carbon tetrachloride	37,000	3.3	110,000	31.1	45,000	9.9	64,000	12.3	57
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	28,000	2.5	25,000	7.1	20,000	4.4	23,000	4.4	18
Methylene chloride	0	0.0	0	0.0	0	0.0	0	0.0	0
Tetrachloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**58.4**		**348.7**		**235.2**		**247.8**	**890**

Notes:
VOC Volatile Organic Compound.

TABLE 5.11

EXTRACTION WELL LR-66
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Flow Rates:

1st Quarter	18,806	gallons
2nd Quarter	23,670	gallons
3rd Quarter	16,884	gallons
4th Quarter	34,309	gallons
Total	**93,669**	**gallons**

Compound	*1st Quarter*		*2nd Quarter*		*3rd Quarter*		*4th Quarter*		*Total Mass Removal (lbs/yr)*
	Conc. (ug/L)	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	*Conc. (ug/L)*	*Mass (lbs)*	
Benzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Carbon disulfide	470	0.1	0	0.0	0	0.0	650	0.2	0
Carbon tetrachloride	3,800	0.6	2,700	0.5	2,400	0.3	4,000	1.1	3
Chlorobenzene	0	0.0	0	0.0	0	0.0	0	0.0	0
Chloroform	610	0.1	360	0.1	560	0.1	710	0.2	0
Methylene chloride	100	0.0	0	0.0	82	0.0	94	0.0	0
Tetrachloroethene	100	0.0	53	0.0	65	0.0	90	0.0	0
Toluene	0	0.0	0	0.0	0	0.0	0	0.0	0
Trichloroethene	0	0.0	0	0.0	0	0.0	0	0.0	0
Total VOC Removal		**0.8**		**0.6**		**0.4**		**1.6**	**3**

Notes:
VOC Volatile Organic Compound.

TABLE 5.12

AREA A KNOCKOUT POT AND SUMP
LIQUID-PHASE MASS LOADINGS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Flow Rates:

1st Quarter	105,013	gallons
2nd Quarter	171,082	gallons
3rd Quarter	71,384	gallons
4th Quarter	99,315	gallons
Total	**446,794**	**gallons**

Compound	*1st Quarter* Conc. (ug/L)	*1st Quarter* Mass (lbs)	*2nd Quarter* Conc. (ug/L)	*2nd Quarter* Mass (lbs)	*3rd Quarter* Conc. (ug/L)	*3rd Quarter* Mass (lbs)	*4th Quarter* Conc. (ug/L)	*4th Quarter* Mass (lbs)	*Total Mass Removal (lbs/yr)*
Benzene	0	0.00	0	0.00	0	0.00	0	0.00	0.0
Carbon disulfide	0	0.00	0	0.00	0	0.00	0	0.00	0.0
Carbon tetrachloride	54	0.05	27	0.04	19	0.01	22	0.02	0.1
Chlorobenzene	0	0.00	0	0.00	0	0.00	0	0.00	0.0
Chloroform	16	0.01	13	0.02	8.5	0.01	15	0.01	0.1
Methylene chloride	0	0.00	0	0.00	0	0.00	0	0.00	0.0
Tetrachloroethene	2.3	0.00	2.2	0.00	2.9	0.00	5.8	0.00	0.0
Toluene	0	0.00	0	0.00	0	0.00	0	0.00	0.0
Trichloroethene	0	0.00	0	0.00	1.4	0.00	2.3	0.00	0.0
Total VOC Removal		**0.1**		**0.1**		**0.0**		**0.0**	**0.2**

Notes:

VOC Volatile Organic Compound.

TABLE 7.1

2010 MEASURED GROUNDWATER ELEVATIONS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Well I.D.	***February 2010***	***May 2010***	***August 2010***	***November 2010***
Extraction Wells				
DPA-201	582.74	578.89	580.85	578.99
DPA-202	588.3	578.77	578.65	579.78
DPA-203	576.98	577.08	579.76	577.19
T-4	573.57	574.63	570.93	571.82
EW-1	448	445	446	444
EW-2	467	465	465	463
EW-3	465	480	476	474
EW-4	525.14	530.3	525.3976	525.04
EW-5	542.56	539.01	538.81	538.29
EW-6	544.78	539.63	539.18	547.25
OW-3	496.58	0	519.1	520.73
LR-66	NM	NM	NM	NM
Upper Lockport Wells				
W-16	578.78	578.72	577.18	577.45
W-17	585.12	584.26	583.4	583.4
W-18R	573.47	573.37	573.5	573.31
W-19D	552.67	573.44	572.18	571.86
W-20	576.89	574.75	574.03	570.23
W-22A	539.17	577.44	Dry	Dry
W-23C	579.03	578.83	577.91	579.1
W-66	570.9	570	569.41	569.47
W-67	597.55	590.87	587.68	587.2
OW-11	548.84	559.27	557.51	558.12

TABLE 7.1

2010 MEASURED GROUNDWATER ELEVATIONS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Well I.D.	*February 2010*	*May 2010*	*August 2010*	*November 2010*
Lower Lockport Wells				
W-16L	554.23	552.76	551.73	548.16
W-18L	552.8	553.59	553.17	548.52
W-19A	582.38	557.59	558.63	558.62
W-23B	555.7	555.82	555.79	555.79
W-48E	553.54	554.56	554.18	549.39
W-50	559.03	558.96	556.84	556.99
W-60L	Dry	Dry	Dry	Dry
W-65	556.34	535.7	551.37	552.09
W-66L	555.99	555.38	553.62	549.38
W-67L	557.69	555.68	554.81	551.25
W-70L	549.5	529.06	550.5	551.91
Lockport/Rochester Wells				
W-19B	566.81	556.63	556.31	551.33
LR-2	552.82	553.69	553.12	548.7
LR-16	594.36	552.88	551.86	548.27
LR-20	557.25	556.58	554.72	551.96
LR-48	571.93	554.7	554.22	549.43
LR-49	553.73	554.69	553.49	549.09
LR-50	560.99	559.41	557.39	556.72
LR-51	508.54	554.53	553.82	548.89
LR-61	554.68	555.26	554.73	550.74
LR-62	555.29	553.54	554.51	549.81
LR-67	555.65	554.57	553.48	549.28
LR-69	503.08	499.96	502.96	505.25
OW-5	558.25	557.44	555.99	551.82

TABLE 7.1

2010 MEASURED GROUNDWATER ELEVATIONS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Well I.D.	*February 2010*	*May 2010*	*August 2010*	*November 2010*
Rochester Wells				
R-16	553.51	484.57	521.42	528.26
R-19	560.03	544.31	545.74	541.58
R-48	552.81	519.53	526.59	516.84
R-50	503.89	456.89	518.05	509.78
R-60	506.69	507.65	520.16	505.47
R-61	536.09	535.44	542.38	532.12
R-62	542.47	535.9	545.17	545.77
R-66	450.62	452.21	451.61	453.27
R-67	539.78	504.61	540.81	538.87
R-68	501.29	499.23	516.02	496.96

Notes:
NM: Not measured

TABLE 7.2

MONITORING AND EXTRACTION WELLS BY WATER BEARING ZONE
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Upper Lockport	*Lower Lockport*	*Lockport/Rochester*	*Rochester*
Well ID	***Well ID***	***Well ID***	***Well ID***
OW-11	W-16L	LR-2	B-02
T-4	W-18L	LR-16	R-16
W-16	W-19A	LR-20	R-19
W-17	W-23B	LR-48	R-48
W-18R	W-48E	LR-49	R-50
W-19D	W-50	LR-50	R-51
W-20	W-60L	LR-51	R-60
W-22A	W-65	LR-61	R-61
W-23C	W-66L	LR-62	R-62
W-66	W-67L	LR-67	R-66
W-67	W-70L	LR-69	R-67
DPA-201	EW-1	OW-5	R-68
DPA-202	EW-2	W-19B	EW-1
DPA-203	EW-3	LR-66	EW-2
EW-4	EW-4	EW-1	EW-3
EW-5	EW-5	EW-2	OW-3
EW-6	EW-6	EW-3	

TABLE 9.1
COMPOUND-SPECIFIC SSPL REMOVAL
AREA A SVE SYSTEM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
1999 - 2009

SSPL Compound	*1999*		*2000*		*2001*		*2002*		*2003*		*2004*	
	Lbs. Removed	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*
Benzene	0	0	0	0	0	0	0	0	0	0	0	0
Carbon disulfide	0	0	0	0	0	0	0	0	0	0	1	0
Carbon tetrachloride	1,104	98	43	28	33	21	1,154	96	801	85	198	87
Chlorobenzene	0	0	0	0	0	0	0	0	0	0	0	0
Chloroform	16	1	11	7	16	10	43	4	68	7	18	8
Methylene chloride	0	0	13	8	0	0	0	0	0	0	0	0
Tetrachloroethene	10	1	75	49	105	68	10	1	68	7	8	4
Toluene	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	0	0	11	7	0	0	0	0	0	0	3	1
Total:	**1,130**		**153**		**154**		**1,207**		**937**		**228**	

SSPL Compound	*2005*		*2006*		*2007*		*2008*		*2009*		*2010*	
	Lbs. Removed	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*
Benzene	0	0	0	0	0	0	0	0	0	0	0	0
Carbon disulfide	1	0	3	0	0	0	0	0	1	1	2	1
Carbon tetrachloride	1,782	91	1,536	90	2,132	91	442	87	94	87	227	90
Chlorobenzene	0	0	0	0	0	0	0	0	0	0	0	0
Chloroform	95	5	98	6	93	4	32	6	7	7	14	6
Methylene chloride	0	0	2	0	0	0	0	0	0	0	0	0
Tetrachloroethene	75	4	62	4	110	5	28	6	5	5	7	3
Toluene	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	1	0	11	0	13	1	4	1	1	1	1	0
Total:	**1,954**		**1,712**		**2,349**		**507**		**108**		**251**	

TABLE 9.2

EXTRACTION WELL SUMMARY
TOTAL VOLUME OF GROUNDWATER EXTRACTED
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

	Volume Pumped by Extraction Wells (Gallons/Year)												
Period	*EW-1*	*EW-2*	*EW-3*	*EW-4*	*EW-5*	*EW-6*	*DPA-201*	*DPA-202*	*DPA-203*	*OW-3*	*LR-66*	*KO Pot*	*Site Total*
First Quarter	309,000	1,167,451	113,014	118,632	1,661,288	353,551	17,658	5,836	8,487	10,853	18,806	105,013	3,889,589
Second Quarter	357,765	982,729	113,458	114,905	1,497,600	351,751	20,184	32,815	17,095	33,853	23,670	171,082	3,716,907
Third Quarter	480,451	401,259	118,294	107,513	1,760,809	224,001	18,403	17,034	11,565	26,479	16,884	71,384	3,254,076
Fourth Quarter	349,172	1,041,321	99,656	112,696	1,548,025	135,854	19,608	21,988	15,004	23,089	34,309	99,315	3,500,037
Total Gallons:	**1,496,388**	**3,592,760**	**444,422**	**453,746**	**6,467,722**	**1,065,157**	**75,853**	**77,673**	**52,151**	**94,274**	**93,669**	**446,794**	**14,360,609**

TABLE 9.3

EXTRACTION WELL SUMMARY
TOTAL MASS REMOVAL BY GROUNDWATER EXTRACTION
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

	Total Mass Removal (Lbs/Year)												
Compound	***EW-1***	***EW-2***	***EW-3***	***EW-4***	***EW-5***	***EW-6***	***DPA-201***	***DPA-202***	***DPA-203***	***OW-3***	***LR-66***	***KO Pot***	***Site Total***
Benzene	0	0	0	0	0	0	0	0	0	0	0	0	0
Carbon disulfide	371	339	10	0	10	5	0	1	3	815	0	0	1,554
Carbon tetrachloride	82	163	6	2	95	153	1	77	93	57	3	0	731
Chlorobenzene	0	2	0	1	0	0	0	0	0	0	0	0	2
Chloroform	34	61	8	15	22	65	0	12	21	18	0	0	257
Methylene chloride	3	2	0	0	0	2	0	0	0	0	0	0	9
Tetrachloroethene	0	1	0	1	15	2	0	1	0	0	0	0	20
Toluene	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	0	0	1	0	2	0	0	0	0	0	0	0	3
Total VOC Removal	**489**	**567**	**26**	**18**	**144**	**227**	**2**	**91**	**116**	**890**	**3**	**0**	**2,575**

Notes:

VOC Volatile Organic Compound.

TABLE 9.4

COMPOUND-SPECIFIC SSPL REMOVAL
GROUNDWATER EXTRACTION SYSTEM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
1999 - 2010

SSPL Compound	*1999*		*2000*		*2001*		*2002*		*2003*		*2004*	
	Lbs. Removed	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*
Benzene	0	0	0	0	0	0	0	0	0	0	0	0
Carbon disulfide	843	20	1,815	29	3,741	36	1,481	23	2,185	33	2,311	47
Carbon tetrachloride	2,783	65	3,433	55	4,769	46	3,981	62	3,615	54	2,113	43
Chlorobenzene	1	0	6	0	3	0	1	0	3	0	1	0
Chloroform	657	15	903	15	1,707	17	874	14	835	12	482	10
Methylene chloride	0	0	0	0	0	0	0	0	8	0	6	0
Tetrachloroethene	9	0	39	1	47	0	36	1	57	1	36	1
Toluene	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	1	0	1	0	2	0	1	0	7	0	5	0
Total:	**4,250**		**6,197**		**10,269**		**6,374**		**6,710**		**4,954**	

SSPL Compound	*2005*		*2006*		*2007*		*2008*		*2009*		*2010*	
	Lbs. Removed	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*	*Lbs. Removed*	*% of Total*
Benzene	0	0	0	0	0	0	0	0	0	0	0	0
Carbon disulfide	2,611	53	1,664	47	1,954	53	2,109	44	1,182	43	1,554	60
Carbon tetrachloride	1,771	36	1,420	40	1,278	35	1,998	42	1,147	42	731	28
Chlorobenzene	2	0	1	0	1	0	2	0	7	0	2	0
Chloroform	461	9	401	11	400	11	605	13	387	14	257	10
Methylene chloride	14	0	11	0	14	0	15	0	10	0	9	0
Tetrachloroethene	33	1	17	1	20	1	42	1	18	1	20	1
Toluene	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	7	0	3	0	5	0	19	0	3	0	3	0
Total:	**4,899**		**3,517**		**3,672**		**4,790**		**2,754**		**2,575**	

TABLE 9.5
COMPOUND-SPECIFIC SSPL REMOVAL
SITE REMEDIAL SYSTEMS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2000 - 2010

Pounds Removed Per Year

SSPL Compound	*2000*		*2001*		*2002*		*2003*		*2004*		*2005*	
	SVE Systems	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*
Benzene	0	0	0	0	0	0	0	0	0	0	0	0
Carbon disulfide	0	1,815	0	3,741	0	1,481	0	2,185	1	2,311	1	2,611
Carbon tetrachloride	23	3,433	33	4,769	1,154	3,981	801	3,615	198	2,113	1,782	1,771
Chlorobenzene	0	6	0	3	0	1	0	3	0	1	0	2
Chloroform	11	903	16	1,707	43	874	68	835	18	482	95	461
Methylene chloride	13	0	0	0	0	0	0	8	0	6	0	14
Tetrachloroethene	103	39	105	47	10	36	68	57	8	36	75	33
Toluene	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	15	1	0	2	0	1	0	7	3	5	1	7
Total:	**165**	**6,197**	**154**	**10,269**	**1,207**	**6,374**	**937**	**6,710**	**228**	**4,954**	**1,954**	**4,899**

SSPL Compound	*2006*		*2007*		*2008*		*2009*		*2010*			
	SVE Systems	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*	*SVE Systems*	*GW*	*Cumulative Compound Total*	*% of Total*
Benzene	0	0	0	0	0	0	0	0	0	0	**0**	0
Carbon disulfide	3	1,664	0	1954	0	2109	1	1182	2	1554	**22,616**	34
Carbon tetrachloride	1,536	1,420	2,132	1278	442	1998	94	1147	227	731	**34,679**	52
Chlorobenzene	0	1	0	1	0	2	0	7	0	2	**29**	0
Chloroform	98	401	93	400	32	605	7	387	14	257	**7,808**	12
Methylene chloride	2	11	0	14	0	15	0	10	0	9	**101**	0
Tetrachloroethene	62	17	110	20	28	42	5	18	7	20	**946**	1
Toluene	0	0	0	0	0	0	0	0	0	0	**0**	0
Trichloroethene	11	3	13	5	4	19	1	3	1	3	**104**	0
Total:	**1,712**	**3,517**	**2,349**	**3,672**	**507**	**4,790**	**108**	**2,754**	**251**	**2,575**	**66,283**	100

Notes:
GW Groundwater extraction system.

APPENDIX A

GROUNDWATER TREATMENT SYSTEM
2010 PROCESS MONITORING DATA

TABLE A-1

GROUNDWATER INFLUENT
ANALYTICAL RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

	Sample ID:	***INF-010410-DJT***	***INF-020810-DJT***	***INF-030110-DJT***	***INF-040510-DJT***	***INF-050210-DJT***	***INF-060110-SG***
	Collection Date:	***01/05/14***	***02/09/14***	***03/02/14***	***04/06/14***	***05/03/14***	***06/02/14***
Parameters	***Units***						
Volatiles							
Benzene	µg/L	ND 50	ND 50	ND 50	ND 50	ND 50	ND 50
Carbon disulfide	µg/L	4800	5800	7000	8200	8100	8100
Carbon tetrachloride	µg/L	7600	8300	5700	7400	7600	6000
Chlorobenzene	µg/L	ND 50	ND 50	ND 50	ND 50	ND 50	ND 50
Chloroform	µg/L	2700	3100	2600	2700	2800	2400
Methylene chloride	µg/L	100	130	120	110	130	110
Tetrachloroethene	µg/L	170	170	140	160	170	120
Toluene	µg/L	ND 50	ND 50	ND 50	ND 50	ND 50	ND 50
Trichloroethene	µg/L	ND 50	ND 50	ND 50	ND 50	ND 50	ND 50

	Sample ID:	***INF-070510-DJT***	***INF-080210-DO***	***INF-090610-DJT***	***INF-100310-DJT***	***INF-110810-DJT***	***INF-120510-DJT***
	Collection Date:	***07/06/14***	***08/03/14***	***09/07/14***	***10/04/14***	***11/09/14***	***12/06/14***
Parameters	***Units***						
Volatiles							
Benzene	µg/L	ND 100	ND 25	ND 25	ND 25	ND 50	ND 100
Carbon disulfide	µg/L	11000	5000	4100	8300	13000	14000
Carbon tetrachloride	µg/L	8500	3500	3300	4400	4700	6700
Chlorobenzene	µg/L	ND 100	ND 25	ND 25	ND 25	ND 50	ND 100
Chloroform	µg/L	3200	1400	2200	2500	1800	2800
Methylene chloride	µg/L	ND 100	65	120	120	100	120
Tetrachloroethene	µg/L	210	120	93	99	64	130
Toluene	µg/L	ND 100	ND 25	ND 25	ND 25	ND 50	ND 100
Trichloroethene	µg/L	ND 100	27	41	56	ND 50	ND 100

Notes:
ND: Non-detect at the associated value.

TABLE A-2

CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Parameters	*Units*	***CBT-010410-DJT*** *01/05/14*	***CBT-011110-DJT*** *01/12/14*	***CBT-011810-DJT*** *01/19/14*	***CBT-012510-SG*** *01/26/14*	***CBT-020110-SG*** *02/02/14*	***CBT-020810-DJT*** *02/09/14*	***CBT-032210-DJT*** *03/23/14*
Volatiles								
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	18	10	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	21	5.4	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	190	130	ND 1.0
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	4.7	1.8	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Parameters	*Units*	***CBT-021510-SG*** *02/16/14*	***CBT-022210-SG*** *02/23/14*	***CBT-030110-DJT*** *03/02/14*	***CBT-030810-DJT*** *03/09/14*	***CBT-031510-SG*** *03/16/14*	***CBT-032910-DJT*** *03/20/14*	***CBT-051710-SG*** *05/18/14*
Volatiles								
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	3.4	7.5	6.1	5.1	6.1	ND 1.0	1.1
Carbon tetrachloride	µg/L	4.0	2.0	1.5	1.5	4.3	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	120	100	96	98	120	ND 1.0	1.4
Methylene chloride	µg/L	1.3	1.7	1.8	1.8	3.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND: Non-detect at the associated value.

TABLE A-2

CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

	Sample ID:	***CBT-040510-DJT***	***CBT-040810-DJT***	***CBT-042010-SG***	***CBT-042510-DJT***	***CBT-050210-DJT***	***CBT-051110-SG***
	Collection Date:	***04/06/14***	***04/09/14***	***04/21/14***	***04/26/14***	***05/03/14***	***05/12/14***
Parameters	***Units***						
Volatiles							
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	ND 1.0	2.1	1.5	ND 1.0	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	2.8	1.4	ND 1.0	4.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	4.2	3.6	3.5	2.5	1.9
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

	Sample ID:	***CBT-052210-DJT***	***CBT-060110-SG***	***CBT-060810-SG***	***CBT-061410-SG***	***CBT-062110-DJT***	***CBT-062710-DJT***
	Collection Date:	***05/23/14***	***06/02/14***	***06/09/14***	***06/15/14***	***06/22/14***	***06/28/14***
Parameters	***Units***						
Volatiles							
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	1.6	2.5	2.1	1.8	1.7	1.5
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	1.2	7.3	4.8	3.6	3.3	2.8
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND: Non-detect at the associated value.

TABLE A-2

CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

Parameters	*Units*	*Sample ID:* *Collection Date:*	*CBT-070510-DJT* *07/06/14*	*CBT-071110-DJT* *07/12/14*	*CBT-071810-DJT* *07/19/14*	*CBT-072610-SG* *07/27/14*	*CBT-080210-DO* *08/03/14*	*CBT-080910-SG* *08/10/14*	*CBT-081610-DJT* *08/17/14*
Volatiles									
Benzene	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L		1.5	1.5	1.5	1.3	1.5	1.3	1.3
Carbon tetrachloride	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L		4.4	2.8	2.6	2.1	2.5	1.9	1.5
Methylene chloride	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Parameters	*Units*	*Sample ID:* *Collection Date:*	*CBT-082310-SG* *08/24/14*	*CBT-082910-DJT* *08/30/14*	*CBT-090610-DJT* *09/07/14*	*CBT-091210-DJT* *09/13/14*	*CBT-091910-DJT* *09/20/14*	*CBT-092610-DJT* *09/27/14*	*CBT-100310-DJT* *10/04/14*
Volatiles									
Benzene	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L		2.4	1.8	1.8	2.3	1.7	1.8	2.0
Carbon tetrachloride	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L		3.3	2.6	2.7	2.4	1.8	1.7	1.5
Methylene chloride	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND: Non-detect at the associated value.

TABLE A-2

CARBON BED
INTERSTAGE RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

	Sample ID:	CBT-101010-DJT	CBT-101810-SG	CBT-102410-DJT	CBT-103110-DJT	CBT-110810-DJT	CBT-111410-DJT	CBT-112110-DJT
	Collection Date:	10/11/14	10/19/14	10/25/14	11/01/14	11/09/14	11/15/14	11/22/14
Parameters	*Units*							
Volatiles								
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	1.9	1.6	42	22	20	15	17
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	4.4	1.7	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	1.4	1.3	230	130	100	100	95
Methylene chloride	µg/L	ND 1.0	ND 1.0	3.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

	Sample ID:	CBT-112810-DJT	CBT-120510-DJT	CBT-121310-SG	CBT-122010-SG	CBT-122710-DJT
	Collection Date:	11/29/14	12/06/14	12/14/14	12/21/14	12/28/14
Parameters	*Units*					
Volatiles						
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND: Non-detect at the associated value.

TABLE A-3

GROUNDWATER EFFLUENT
ANALYTICAL RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

	Sample ID:	***EFF-010410-DJT***	***EFF-020810-DJT***	***EFF-030110-DJT***	***EFF-040510-DJT***	***EFF-040810-DJT***	***EFF-040810-DJT***
	Collection Date:	***01/04/10***	***02/08/10***	***03/01/10***	***04/05/10***	***04/08/10***	***04/10/10***
Parameters	***Units***						
Volatiles							
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	1.3	1.0	1.6	9.8	11	15
Carbon tetrachloride	µg/L	1.7	2.1	1.6	4.2	6.9	3.5
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	150	140	150
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	1.4	1.0	1.4
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

	Sample ID:	***EFF-042010-SG***	***EFF-042510-DJT***	***EFF-050210-DJT***	***EFF-060110-SG***	***EFF-070510-DJT***	***EFF-080210-DO***
	Collection Date:	***04/20/10***	***04/25/10***	***05/02/10***	***06/01/10***	***07/05/10***	***08/02/10***
Parameters	***Units***						
Volatiles							
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	1.1	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon tetrachloride	µg/L	2.1	1.1	ND 1.0	ND 1.0	ND 1.0	1.1
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

Notes:
ND: Non-detect at the associated value.

TABLE A-3

GROUNDWATER EFFLUENT
ANALYTICAL RESULTS
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
2010

	Sample ID:	EFF-090610-DJT	EFF-100310-DJT	EFF-110810-DJT	EFF-120510-DJT	EFF-121310-SG
	Collection Date:	09/06/10	10/03/10	11/08/10	12/05/10	12/13/10
Parameters	***Units***					
Volatiles						
Benzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Carbon disulfide	µg/L	1.0	1.3	1.4	3.9	3.3
Carbon tetrachloride	µg/L	ND 1.0	ND 1.0	1.9	ND 1.0	ND 1.0
Chlorobenzene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Chloroform	µg/L	ND 1.0	ND 1.0	ND 1.0	7.5	6.1
Methylene chloride	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0

	Sample ID:	EFF-122010-SG	EFF-122710-DJT
	Collection Date:	12/20/10	12/27/10
Parameters	***Units***		
Volatiles			
Benzene	µg/L	ND 1.0	ND 1.0
Carbon disulfide	µg/L	2.3	2.5
Carbon tetrachloride	µg/L	3.9	2.2
Chlorobenzene	µg/L	ND 1.0	ND 1.0
Chloroform	µg/L	5.5	4.3
Methylene chloride	µg/L	ND 1.0	ND 1.0
Tetrachloroethene	µg/L	ND 1.0	ND 1.0
Toluene	µg/L	ND 1.0	ND 1.0
Trichloroethene	µg/L	ND 1.0	ND 1.0

Notes:
ND: Non-detect at the associated value.

APPENDIX B

GROUNDWATER TREATMENT SYSTEM
2010 PERFORMANCE MONITORING DATA

TABLE B-1
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
FEBRUARY 2010

	Parameter:	*Benzene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chlorobenzene*	*Chloroform*	*Methylene chloride*	*Tetrachloroethene*	*Toluene*	*Trichloroethene*
	Units:	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Sample Location	*Collection Date*									
Extraction Wells										
DPA-201	2/5/2010	ND 10	ND 10	970	ND 10	420	14	940	ND 10	410
DPA-202	2/5/2010	ND 500	1300	65000	ND 500	12000	ND 500	1500	ND 500	ND 500
DPA-203	2/5/2010	ND 2000	7100	210000	ND 2000	45000	ND 2000	ND 2000	ND 2000	ND 2000
EW-1	2/5/2010	ND 50	20000	4400	ND 50	2400	220	ND 50	ND 50	ND 50
EW-2	2/5/2010	ND 100	24000	7200	ND 100	1600	100	ND 100	ND 100	ND 100
EW-3	2/5/2010	10	220	880	ND 10	2400	97	75	ND 10	100
EW-4	2/5/2010	ND 20	ND 20	320	35	3500	74	280	ND 20	140
EW-5	2/5/2010	ND 10	130	1100	ND 10	210	ND 10	180	ND 10	21
EW-6	2/5/2010	ND 200	700	9500	ND 200	6100	300	240	ND 200	ND 200
LR-66	2/5/2010	ND 50	470	3800	ND 50	610	100	100	ND 50	ND 50
OW-3	2/5/2010	ND 2000	580000	37000	ND 2000	28000	ND 2000	ND 2000	ND 2000	ND 2000
T-4	2/5/2010	ND 10	ND 10	11	880	ND 10	ND 10	550	ND 10	120

Notes:
ND - Not present at or above the associated value.

TABLE B-2
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
MAY 2010

Sample Location	*Collection Date*	*Benzene* ug/L	*Carbon disulfide* ug/L	*Carbon tetrachloride* ug/L	*Chlorobenzene* ug/L	*Chloroform* ug/L	*Methylene chloride* ug/L	*Tetrachloroethene* ug/L	*Toluene* ug/L	*Trichloroethene* ug/L
Extraction Wells										
DPA-201	5/12/2010	14	ND 10	4400	ND 10	1300	42	2900	ND 10	680
DPA-202	5/12/2010	ND 500	730	150000	ND 500	23000	ND 500	1800	ND 500	ND 500
DPA-203	5/12/2010	ND 2000	7100	300000	ND 2000	51000	ND 2000	ND 2000	ND 2000	ND 2000
EW-1	5/10/2010	ND 50	9900	2800	ND 50	1100	79	ND 50	ND 50	ND 50
EW-2	5/10/2010	ND 100	1200	3700	ND 100	1200	ND 100	ND 100	ND 100	ND 100
EW-3	5/10/2010	ND 10	590	3300	ND 10	3200	200	110	ND 10	190
EW-4	5/17/2010	ND 20	ND 20	900	84	4600	100	110	ND 20	110
EW-5	5/10/2010	ND 10	100	5800	ND 10	1100	ND 10	850	ND 10	99
EW-6	5/10/2010	ND 200	620	35000	ND 200	11000	270	380	ND 200	ND 200
LR-66	5/11/2010	ND 50	ND 50	2700	ND 50	360	ND 50	53	ND 50	ND 50
OW-3	5/11/2010	ND 2000	1100000	110000	ND 2000	25000	ND 2000	ND 2000	ND 2000	ND 2000
T-4	5/17/2010	ND 10	ND 10	80	520	140	ND 10	160	ND 10	71
Upper Lockport Wells										
OW-11	5/12/2010	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W-11	5/12/2010	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	11	ND 1.0	8.9
W-16	5/13/2010	2.5	4.0	42	ND 2.0	22	ND 2.0	12	ND 2.0	89
W-17	5/14/2010	ND 250	2800	71000	ND 250	19000	410	530	ND 250	ND 250
W-18R	5/12/2010	ND 50	ND 50	43000	ND 50	17000	720	670	ND 50	ND 50
W-19D	5/12/2010	ND 1.0	ND 1.0	3.4	ND 1.0	7.5	ND 1.0	12	ND 1.0	ND 1.0
W-20	5/12/2010	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W-22A	5/12/2010	ND 1.0	ND 1.0	29	ND 1.0	18	ND 1.0	8.6	ND 1.0	3.3
W-23C	5/13/2010	ND 1.0	ND 1.0	ND 1.0	ND 1.0	1.1	ND 1.0	1.4	ND 1.0	ND 1.0
W-66	5/12/2010	ND 1.0	ND 1.0	910	ND 1.0	290	3.4	57	ND 1.0	38
W-66 (Dup.)	5/12/2010	ND 1.0	ND 1.0	1100	ND 1.0	340	3.0	62	ND 1.0	42
W-67	5/12/2010	ND 50	240	2400	ND 50	2500	68	130	ND 50	ND 50

Notes:
ND - Not present at or above the associated value.

TABLE B-2
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
MAY 2010

	Parameter:	*Benzene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chlorobenzene*	*Chloroform*	*Methylene chloride*	*Tetrachloroethene*	*Toluene*	*Trichloroethene*
	Units:	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Sample Location	*Collection Date*									
Lower Lockport Wells										
W-16L	5/13/2010	ND 1.0	970	ND 1.0	ND 1.0	1.6	ND 1.0	1.8	ND 1.0	3.2
W-18L	5/12/2010	ND 25	ND 25	970	ND 25	2100	ND 25	110	ND 25	ND 25
W-18L (Dup.)	5/12/2010	ND 25	ND 25	900	ND 25	2100	ND 25	110	ND 25	ND 25
W-19A	5/12/2010	ND 1.0	ND 1.0	4.1	ND 1.0	9.1	ND 1.0	16	ND 1.0	14
W-23B	5/12/2010	ND 5.0	ND 5.0	550	ND 5.0	610	ND 5.0	790	ND 5.0	180
W-48E	5/12/2010	ND 1.0	ND 1.0	150	ND 1.0	130	ND 1.0	60	ND 1.0	12
W-50L	5/12/2010	ND 1.0	ND 1.0	2.5	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W-60L	5/12/2010	DRY								
W-65	5/12/2010	ND 1.0	ND 1.0	9.1	ND 1.0	16	ND 1.0	3.3	ND 1.0	2.9
W-66L	5/13/2010	ND 1.0	ND 1.0	4.4	ND 1.0	3.7	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W-67L	5/12/2010	ND 2.0	ND 2.0	120	ND 2.0	260	7.1	17	ND 2.0	14
W-70L	5/12/2010	2.2	1.9	ND 1.0	100	350	1.7	3.5	1.4	16
Lockport/Rochester Wells										
LR-2	5/13/2010	ND 1.0	23	1300	12	1400	120	62	ND 1.0	100
LR-2 (Dup.)	5/13/2010	ND 1.0	23	1300	12	1400	120	63	ND 1.0	100
LR-16	5/13/2010	ND 2.0	620	56	ND 2.0	400	200	24	ND 2.0	7.2
LR-20	5/13/2010	ND 1.0	ND 1.0	ND 1.0	3.4	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR-48	5/13/2010	ND 1.0	ND 1.0	150	8.2	85	ND 1.0	12	ND 1.0	4.1
LR-49	5/13/2010	ND 1.0	ND 1.0	ND 1.0	3.9	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR-50	5/12/2010	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR-51	5/13/2010	ND 1.0	1.2	ND 1.0	5.9	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR-61	5/14/2010	ND 200	870	9300	ND 200	5500	280	250	ND 200	ND 200
LR-61 (Dup.)	5/14/2010	ND 200	850	9600	ND 200	6000	310	260	ND 200	ND 200
LR-62	5/12/2010	5.5	7.0	26	ND 5.0	65	ND 5.0	8.4	ND 5.0	17
LR-67	5/13/2010	ND 50	12000	ND 50	ND 50	ND 50	ND 50	96	ND 50	ND 50
LR-69	5/14/2010	180	ND 2.0	ND 2.0	ND 2.0	ND 2.0	ND 2.0	ND 2.0	23	ND 2.0
OW-5	5/13/2010	ND 100	66000	ND 100	ND 100	ND 100	ND 100	ND 100	ND 100	ND 100
OW-5 (Dup.)	5/13/2010	ND 100	67000	ND 100	ND 100	ND 100	ND 100	ND 100	ND 100	ND 100
W-19B	5/14/2010	ND 20	29	5000	220	8100	400	310	ND 20	290

Notes:
ND - Not present at or above the associated value.

TABLE B-2
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
MAY 2010

Sample Location	*Collection Date*	*Benzene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chlorobenzene*	*Chloroform*	*Methylene chloride*	*Tetrachloroethene*	*Toluene*	*Trichloroethene*
Parameter: / *Units:*		*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Rochester Wells										
B-02	5/13/2010	ND 50	2600	2200	ND 50	4600	530	ND 50	ND 50	ND 50
R-16	5/12/2010	70	ND 5.0	ND 5.0	ND 5.0	ND 5.0	ND 5.0	ND 5.0	31	ND 5.0
R-19	5/13/2010	ND 50	910	6200	ND 50	3700	460	ND 50	ND 50	ND 50
R-48	5/12/2010	5.8	25	450	ND 5.0	240	21	ND 5.0	ND 5.0	ND 5.0
R-50	5/13/2010	66	280	1400	ND 50	1500	250	ND 50	ND 50	ND 50
R-51	5/13/2010	38	7.3	ND 1.0	ND 1.0	12	34	ND 1.0	11	ND 1.0
R-60	5/14/2010	60	95	26	ND 1.0	44	2.4	3.0	ND 1.0	1.1
R-61	5/13/2010	ND 500	80000	ND 500	ND 500	ND 500	ND 500	ND 500	ND 500	ND 500
R-62	5/13/2010	ND 1000	200000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000
R-66	5/14/2010	ND 100	19000	11000	ND 100	19000	3700	ND 100	ND 100	ND 100
R-67	5/13/2010	ND 1000	260000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000
R-68	5/13/2010	140	61000	76000	12	31000	1500	610	130	3.2

Notes:
ND - Not present at or above the associated value.

TABLE B-3
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
AUGUST 2010

Sample Location	*Collection Date*	*Parameter:* / *Units:*	*Benzene* *ug/L*	*Carbon disulfide* *ug/L*	*Carbon tetrachloride* *ug/L*	*Chlorobenzene* *ug/L*	*Chloroform* *ug/L*	*Methylene chloride* *ug/L*	*Tetrachloroethene* *ug/L*	*Toluene* *ug/L*	*Trichloroethene* *ug/L*
Extraction Wells											
DPA-201	8/10/2010		ND 10	ND 10	380	ND 10	430	ND 10	530	ND 10	400
DPA-201 (Dup.)	8/10/2010		ND 10	ND 10	430	ND 10	450	ND 10	570	ND 10	430
DPA-202	8/10/2010		ND 500	1600	120000	ND 500	17000	ND 500	1900	ND 500	ND 500
DPA-203	8/10/2010		ND 2000	7800	250000	ND 2000	60000	ND 2000	ND 2000	ND 2000	ND 2000
EW-1	8/9/2010		ND 50	33000	8800	ND 50	3700	320	52	ND 50	ND 50
EW-2	8/9/2010		ND 100	ND 100	410	500	6900	340	160	ND 100	ND 100
EW-3	8/9/2010		12	5500	1100	ND 10	1900	120	84	ND 10	180
EW-4	8/9/2010		ND 20	ND 20	380	460	6600	310	130	ND 20	41
EW-5	8/9/2010		ND 10	84	350	ND 10	240	13	87	ND 10	17
EW-6	8/9/2010		ND 200	520	3800	ND 200	3600	240	ND 200	ND 200	ND 200
LR-66	8/9/2010		ND 50	ND 50	2400	ND 50	560	82	65	ND 50	ND 50
OW-3	8/9/2010		ND 2000	1000000	45000	ND 2000	20000	ND 2000	ND 2000	ND 2000	ND 2000
T-4	8/10/2010		ND 10	ND 10	ND 10	450	190	ND 10	120	ND 10	36

Notes:
ND - Not present at or above the associated value.

TABLE B-4
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
NOVEMBER 2010

Sample Location	*Collection Date*	*Parameter:* *Units:*	*Benzene* *ug/L*	*Carbon disulfide* *ug/L*	*Carbon tetrachloride* *ug/L*	*Chlorobenzene* *ug/L*	*Chloroform* *ug/L*	*Methylene chloride* *ug/L*	*Tetrachloroethene* *ug/L*	*Toluene* *ug/L*	*Trichloroethene* *ug/L*
Extraction Wells											
DPA-201	11/9/2010		ND 10	ND 10	1000	ND 10	1100	24	570	ND 10	940
DPA-202	11/9/2010		ND 500	580	87000	ND 500	15000	ND 500	1800	ND 500	ND 500
DPA-203	11/9/2010		ND 2000	9500	280000	ND 2000	81000	ND 2000	ND 2000	ND 2000	ND 2000
EW-1	11/8/2010		ND 50	54000	9400	ND 50	3200	230	ND 50	ND 50	ND 50
EW-2	11/8/2010		ND 100	11000	7100	ND 100	1400	ND 100	ND 100	ND 100	ND 100
EW-3	11/8/2010		13	4900	920	ND 10	1600	100	73	ND 10	210
EW-4	11/9/2010		ND 20	22	ND 20	68	1000	40	31	ND 20	65
EW-5	11/8/2010		ND 20	430	180	ND 20	180	ND 20	46	ND 20	ND 20
EW-6	11/14/2010		ND 200	470	13000	ND 200	7000	280	210	ND 200	ND 200
LR-66	11/9/2010		ND 50	650	4000	ND 50	710	94	90	ND 50	ND 50
OW-3	11/9/2010		ND 2000	1200000	64000	ND 2000	23000	ND 2000	ND 2000	ND 2000	ND 2000
T-4	11/11/2010		ND 10	ND 10	11	450	110	ND 10	140	ND 10	30
Upper Lockport Wells											
OW-11	11/10/2010		ND 1.0	ND 1.0	ND 1.0	ND 1.0	3.8	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W-11	11/10/2010		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	2.0	ND 1.0	5.1
W-16	11/10/2010		ND 1.0	ND 1.0	3.8	ND 1.0	1200	ND 1.0	33	ND 1.0	190
W-16 (Dup.)	11/10/2010		ND 1.0	ND 1.0	4.7	ND 1.0	1300	ND 1.0	37	ND 1.0	160
W-17	11/9/2010		ND 200	1400	68000	ND 200	23000	450	700	ND 200	ND 200
W-18R	11/10/2010		ND 50	ND 50	18000	ND 50	15000	400	330	ND 50	ND 50
W-19D	11/10/2010		DRY								
W-20	11/10/2010		ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W-22A	11/10/2010		DRY								
W-23C	11/10/2010		ND 1.0	ND 1.0	ND 1.0	3.3	ND 1.0	ND 1.0	1.6	ND 1.0	ND 1.0
W-66	11/12/2010		ND 100	ND 100	1400	ND 100	930	ND 100	ND 100	ND 100	ND 100
W-67	11/11/2010		ND 50	2800	12000	ND 50	12000	280	390	ND 50	ND 50

Notes:
ND - Not present at or above the associated value.

TABLE B-4
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
NOVEMBER 2010

Sample Location		Collection Date	*Benzene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chlorobenzene*	*Chloroform*	*Methylene chloride*	*Tetrachloroethene*	*Toluene*	*Trichloroethene*
		Units:	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Lower Lockport Wells											
W-16L		11/10/2010	ND 1.0	1400	6.2	ND 1.0	29	3.3	3.9	ND 1.0	6.9
W-18L		11/12/2010	ND 25	ND 25	73	ND 25	1100	ND 25	110	ND 25	ND 25
W-19A		11/10/2010	ND 1.0	1.7	2.6	ND 1.0	14	2.0	7.4	ND 1.0	8.7
W-23B		11/10/2010	ND 5.0	ND 5.0	320	ND 5.0	140	ND 5.0	230	ND 5.0	40
W-48E		11/9/2010	ND 1.0	ND 1.0	29	ND 1.0	24	ND 1.0	24	ND 1.0	4.3
W-50L		11/10/2010	ND 1.0	ND 1.0	13	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W-60L		11/10/2010	DRY								
W-65		11/10/2010	ND 1.0	ND 1.0	8.3	ND 1.0	4.7	ND 1.0	3.5	ND 1.0	2.1
W-66L		11/10/2010	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W-66L	(Dup.)	11/10/2010	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
W-67L		11/12/2010	ND 2.0	15	2200	2.1	2900	48	68	ND 2.0	26
W-70L		11/11/2010	2.1	2.7	ND 1.0	78	190	ND 1.0	2.1	1.1	12
Lockport/Rochester Wells											
LR-2		11/11/2010	ND 1.0	27	1000	7.4	710	91	48	ND 1.0	44
LR-2	(Dup.)	11/11/2010	ND 1.0	26	1000	7.2	740	89	45	ND 1.0	42
LR-16		11/11/2010	ND 2.0	22000	6500	ND 2.0	5100	1800	1300	ND 2.0	26
LR-20		11/10/2010	ND 1.0	ND 1.0	ND 1.0	3.1	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR-48		11/11/2010	ND 1.0	ND 1.0	16	8.6	17	ND 1.0	7.4	ND 1.0	3.3
LR-49		11/10/2010	ND 1.0	ND 1.0	ND 1.0	4.7	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR-50		11/9/2010	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR-50	(Dup.)	11/9/2010	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR-51		11/10/2010	ND 1.0	ND 1.0	ND 1.0	6.2	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
LR-61		11/11/2010	ND 200	590	11000	ND 200	7300	270	300	ND 200	ND 200
LR-62		11/12/2010	13	40	ND 1.0	ND 1.0	51	ND 1.0	7.6	ND 1.0	22
LR-67		11/14/2010	ND 50	45000	92	ND 50	580	290	2700	ND 50	ND 50
LR-69		11/10/2010	140	ND 2.0	ND 2.0	ND 2.0	ND 2.0	ND 2.0	ND 2.0	12	ND 2.0
OW-5		11/12/2010	2.4	82000	ND 1.0	ND 1.0	17	1.4	37	1.9	22
W-19B		11/11/2010	ND 20	ND 20	290	110	1300	310	24	ND 20	230

Notes:
ND - Not present at or above the associated value.

TABLE B-4
ANALYTICAL RESULTS SUMMARY
QUARTERLY GROUNDWATER PROGRAM
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK
NOVEMBER 2010

		Parameter:	*Benzene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chlorobenzene*	*Chloroform*	*Methylene chloride*	*Tetrachloroethene*	*Toluene*	*Trichloroethene*
		Units:	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
Sample Location		*Collection Date*									
Rochester Wells											
B-02		11/13/2010	ND 50	3000	2300	ND 50	5600	590	ND 50	ND 50	ND 50
R-16		11/10/2010	94	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	35	ND 1.0
R-19		11/13/2010	ND 50	1100	5600	ND 50	3200	370	ND 50	ND 50	ND 50
R-48		11/11/2010	5.1	37	260	ND 5.0	220	18	ND 5.0	ND 5.0	ND 5.0
R-50		11/13/2010	130	ND 50	320	ND 50	180	92	ND 50	ND 50	ND 50
R-51		11/13/2010	35	8.2	ND 1.0	ND 1.0	14	30	ND 1.0	10	ND 1.0
R-60		11/14/2010	44	53	23	ND 1.0	8.2	ND 1.0	2.6	ND 1.0	1.3
R-61		11/14/2010	ND 500	76000	ND 500	ND 500	ND 500	ND 500	ND 500	ND 500	ND 500
R-62		11/14/2010	ND 1000	130000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000
R-62	(Dup.)	11/14/2010	ND 1000	130000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000
R-66		11/14/2010	ND 100	26000	13000	ND 100	22000	3600	ND 100	ND 100	ND 100
R-67		11/14/2010	ND 1000	300000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000
R-68		11/13/2010	140	83000	69000	ND 25	33000	1400	670	140	ND 25

Notes:
ND - Not present at or above the associated value.

APPENDIX C

MONITORING WELL INVENTORY

APPENDIX C

MONITORING WELL INVENTORY
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK

Date *11/8/2010*

Well No.	*Sounded Depth (Ft. BTOC)*	*Pro-Casing*	*Lock*	*Grout Seal*	*Concrete Collar*
B02	NA	Good	Yes	Good	Good
OW-3	125.14	Good	NA	Good	Good
OW-5	103.21	Good	Yes	Good	Good
OW-8	9.80	Good	NA	Good	Good
OW-9	13.87	Good	NA	Good	Good
OW-10	13.10	Good	NA	Good	Good
OW-11	28.79	Good	NA	Good	Good
W-11	32.52	Good	Yes	Good	Good
W-16	31.58	Good	Yes	Good	Good
W-16L	66.95	Good	Yes	Good	Good
W-17	29.29	Good	Yes	Good	Good
W-18R	31.72	Good	Yes	Good	Good
W-18L	74.56	Good	Yes	Good	Good
W-19A	40.88	Good	Yes	Good	Good
W-19B	82.55	Good	Yes	Good	Cracked
W-19D	24.40	Good	Yes	Good	Good
W-20	28.79	Good	Yes	Good	Good
W-22A	22.60	Good	Yes	Good	Good
W-23B	43.69	Good	Yes	Good	Good
W-23C	23.02	Good	Yes	Good	Cracked
W-48E	40.19	Good	Yes	Good	Good
W-60L	33.83	Good	Yes	Good	Good
W-65	57.50	Good	Yes	Good	Good
W-66	48.08	Good	Yes	Good	Good
W-66L	66.40	Good	Yes	Good	Good
W-67	42.59	Good	Yes	Good	Good
W-67L	71.62	Good	Yes	Good	Good
W-70L	73.95	Good	Yes	Good	Good
LR-2	90.09	Good	Yes	Good	Good
LR-16	92.92	Good	Yes	Good	Good
LR-20	87.00	Good	Yes	Good	Cracked
LR-48	68.02	Good	Yes	Good	Cracked
LR-49	75.23	Good	Yes	Good	Good
LR-50	76.26	Good	Yes	Good	Cracked
LR-51	65.78	Good	Yes	Good	Cracked
LR-61	98.92	Good	Yes	Good	Good
LR-62	104.36	Good	Yes	Good	Good
LR-66	NA	Good	NA	Good	NA
LR-67	102.54	Good	Yes	Good	Good
LR-69	87.34	Good	Yes	Good	Good
R-16	132.82	Good	Yes	Good	Good
R-19	147.13	Good	Yes	Good	Good

APPENDIX C

MONITORING WELL INVENTORY
STAUFFER MANAGEMENT COMPANY LLC
LEWISTON, NEW YORK

Date *11/8/2010*

Well No.	*Sounded Depth (Ft. BTOC)*	*Pro-Casing*	*Lock*	*Grout Seal*	*Concrete Collar*
R-48	139.85	Good	Yes	Good	Cracked
R-50	140.83	Good	Yes	Good	Cracked
R-51	NA	Good	Yes	Good	Good
R-60	139.13	Good	Yes	Good	Good
R-61	154.14	Good	Yes	Good	Good
R-62	158.62	Good	Yes	Good	Good
R-66	152.98	Good	Yes	Good	Good
R-67	140.79	Good	Yes	Good	Good
R-68	122.04	Good	Yes	Good	Good
EW-4	NA	Good	NA	Good	NA
EW-5	NA	Good	NA	Good	NA
EW-6	NA	Good	NA	Good	NA
DPA-201	23.80	Good	NA	Good	NA
DPA-202	25.70	Good	NA	Good	NA
DPA-203	30.40	Good	NA	Good	NA
W50	37.80	Good	Yes	Good	NA
EW-1	NA	Good	NA	Good	Good
EW-2	NA	Good	NA	Good	Good
EW-3	NA	Good	NA	Good	Good
T4	NA	Good	NA	Good	Good

Notes:
Ft. BTOC: Below Top of Casing
NA: Not Available