Solvents Recovery Service of New England, Inc. Superfund Site

Southington, CT

Annual State of Compliance Report # 7

October 31, 2014 through October 31, 2015

de maximis, inc.

March 2016

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A. Introduction

On October 30, 2008, the United States Environmental Protection Agency (USEPA) lodged a Consent Decree (CD) with the United States District Court for the District of Connecticut in connection with Civil Actions No. 3:08cv1509 (SRU) and No. 3:08cv1504 (WWE). The CD was entered by the Court on March 26, 2009. The CD addresses Remedial Design/Remedial Action (RD/RA) activities for the Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site in Southington, Connecticut (Site). Appendix B to the CD is a Statement of Work (SOW) that defines the required RD/RA activities and deliverables.

Section VIII.B of the SOW requires the Settling Defendants to submit an Annual State of Compliance Report one year after lodging of the CD and annually thereafter, to USEPA for approval or modification, after reasonable opportunity for review and comment by Connecticut Department of Energy and Environmental Protection (CTDEEP). Section 62.e of the CD requires a demonstration of the amounts of the Rolling Oversight Cost Cap and the Available Balance. This ***Annual State of Compliance Report #7*** (report) has been prepared on behalf of the SRSNE Site Group, an unincorporated association of Settling Defendants to the CD, to address these CD and SOW requirements. This report documents Site activities during the period of October 31, 2014 through October 30, 2015 (the “reporting period”).

As specified in SOW Section VIII.B, this report includes a comprehensive evaluation of all monitoring required by this SOW, including, but not limited to:

- compliance with the Performance Standards of the Hydraulic Containment and Treatment System and Severed Plume;

- Institutional Controls;

- construction, operation and maintenance;

- habitat restoration;

- hydraulic containment;

- the Memorandum of Agreement with Southington Water Department / Town of Southington; and

- groundwater monitoring program, including monitored natural attenuation.

Also required in the report is an assessment of the progress being made towards achieving the Performance Standards, as well as recommendations for changes to any monitoring program to address deficiencies identified during the evaluation. Proposals for reductions in monitoring, along with justifications, are provided as appropriate.

B. Background

The SRSNE Site is located on approximately 14 acres of land along Lazy Lane in Southington, Hartford County, Connecticut, approximately 15 miles southwest of the city of Hartford (Figure 1). The physical setting of the Site – including the regional geology, overburden geology, bedrock geology, hydrogeology, groundwater use and classification, drainage, and surface water use and classification – is summarized below. This information is also described in detail in prior report submittals, including the *Remedial Investigation Report* (Blasland, Bouck & Lee, Inc. [BBL] 1998) and the *Feasibility Study Report* (BBL and USEPA 2005), and the *Remedial Design Work Plan (RDWP)* (ARCADIS, November 2010).

The SRSNE Site includes portions of several properties/areas that are referred to within the RDWP consistent with terminology established in prior Site-related documents. These properties/areas include the former SRSNE Operations Area, the former Boston & Maine railroad right-of-way, the former Cianci Property, and the Town of Southington Well Field Property (Town Well Field Property). These areas are shown on Figure 2, and further described below:

- **Former SRSNE Operations Area:** The former SRSNE Operations Area comprises approximately 2.5 paved acres on a 3.7-acre lot South of Lazy Lane in the Quinnipiac River basin approximately 600 feet west of the Quinnipiac River channel. This is the area where SRSNE historically performed solvent recovery and related operations. The Operations Area is bordered on the east (downhill) by an abandoned railroad right-of-way and the former Cianci Property; to the north by commercial businesses; to the west (uphill) by private property; and to the south by private property, the Connecticut Light & Power (CL&P) electrical transmission line easement, and the Town Well Field Property.

- **Railroad Right-of-Way:** The railroad right-of-way is an approximately 50-foot wide corridor running north-south that separates the former Operations Area (to the west) from the former Cianci Property (to the east). The railroad was historically owned and operated by Boston & Maine, but is presently abandoned and the rails have been removed. CT DEP purchased the right-of-way in this area in support of extending the Farmington Canal Heritage Trail, a rails-to-trails greenway, from New Haven to the Massachusetts border (draft *Preliminary Reuse Assessment* [USEPA 2003]).

- **Former Cianci Property:** The former Cianci Property is a 10-acre parcel located immediately east of the Operations Area and railroad right-of-way. The Quinnipiac River borders the eastern edge of the former Cianci Property. Lazy Lane is to the north, and the Town Well Field Property borders the property to the south.

- **Town Well Field Property:** The Town Well Field Property consists of approximately 28 acres of undeveloped land south of the former Cianci Property and southeast of the Operations Area. The well field is bounded to the east by the Quinnipiac River and to the south by the Quinnipiac River and Curtiss Street. The railroad right-of-way and the Delahunty Property border the western perimeter of the well field. The CL&P easement runs northwest-southeast through the northern portion of the Town Well Field Property.

Town Production Wells No. 4 and 6 are approximately 2,000 and 1,400 feet south of the SRSNE Property, respectively. The Quinnipiac River divides the area between Wells No. 4 and 6. Production Well No. 6 is accessible using dirt roads originating from Lazy Lane or Curtiss Street, while Well No. 4 is only accessible from Curtiss Street. Production Well No. 4 was installed in August 1965 and provided drinking water to the Town of Southington from July 1966 to December 1977. Production Well No. 6 was installed in April 1976 and was pumped from May through October 1978, May through July 1979, and March 1980. Both wells have been inactive since that time.

Within these areas, “the Site” includes areas where Site-related constituents have come to be present in soil (including wetland soil) and groundwater at concentrations exceeding SOW-specified cleanup levels. This includes observed and interpreted non-aqueous phase liquid- (NAPL-) containing areas, impacted soils in the Operations Area, railroad right-of-way, and Cianci Property, and areas of impacted groundwater in both the overburden and bedrock zones. These areas, shown on Figures 3A (overburden) and 3B (bedrock), are generally described as follows:

- **Overburden NAPL Area:** This is the area where NAPL has been observed or inferred to exist in overburden soils based on the findings of prior investigations. The estimated extent of the Overburden NAPL Area includes portions of the Operations Area, the railroad right-of-way, and a portion of the Cianci Property, as shown on Figure 3A. This area has been further delineated in the northwest corner of the former Operations Area as component of the pre-design investigations referenced in the RDWP.

- **Overburden Groundwater Area:** The Overburden Groundwater Area is the portion of the Site where dissolved volatile organic compounds (VOC) concentrations in the overburden aquifer exceed cleanup goals. While the overburden groundwater is typically considered in three zones (each approximately one-third of the saturated thickness), the composite extent of this area is depicted on Figure 3A. The overburden groundwater VOC plume extends south to the Town Well Field Property. The extent of the overburden groundwater area, particularly to the east of the Quinnipiac River, is subject to further assessment and delineation as part of the investigations referenced in the RDWP.

- **Bedrock NAPL Area:** The Bedrock NAPL Area is the area where NAPL has been observed or is inferred to exist based on prior site investigations. This includes a majority of the former SRSNE Operations Area and Cianci Property, as shown on Figure 3B.

- **Bedrock Groundwater Area:** This includes the portion of the Site where dissolved VOC concentrations in the bedrock aquifer exceed groundwater cleanup goals (based on *Feasibility Study Report* [BBL and USEPA 2005] data). The bedrock groundwater VOC plume extends south into the central portion of the Town Well Field Property, represented in figures 10 and 11 in Attachment 3 the *Draft 2015 MNA report* (ARCADIS, January 2016)

- **Severed Plume:** The portion of the affected groundwater zone that is outside the groundwater capture zone of the Non-Time-Critical Removal Action 1 (NTCRA 1) and NTCRA 2 extraction systems (described below), which contains Site-related constituents (primarily VOCs) above detectable levels is referred to as the severed plume. The approximate location and extent of the severed plume is shown on Figure 3A.

Other key Site features referenced include the Hydraulic Containment and Treatment System (HCTS). The HCTS consists of the on-site groundwater treatment system and the two groundwater extraction systems described as follows:

- **NTCRA 1 Groundwater Extraction System:** The NTCRA 1 groundwater extraction system (“NTCRA 1 system”) is located within the NTCRA containment area on the Cianci Property east of the Operations Area (Figure 4). It consists of a steel sheet pile wall through the overburden to the top of bedrock, and 12 overburden groundwater extraction wells (RW-1 through RW-12) west (formerly upgradient) of the sheet pile wall. Groundwater is extracted from the wells to maintain hydraulic gradient reversal across the sheet pile wall. This system was installed in 1995 pursuant to Administrative Order on Consent (AOC) I-94-1045, effective October 4, 1994. Pumping from the NTCRA 1 system was initiated in July 1995.

  In December of 2009, de maximis submitted a letter to the Agencies summarizing changes to the NTCRA-1 Demonstration of Compliance Plan (DCP) as a result of the abandonment of monitoring well CPZ-9 (one of the ten NTCRA I compliance monitoring points) and decommission of recovery wells RW-5 and RW-6. Monitoring well abandonment activities at the site have been undertaken in accordance with Attachment N of the RDWP.

- **NTCRA 2 Groundwater Extraction System:** The NTCRA 2 groundwater extraction system (“NTCRA 2 system”) consists of three overburden extraction wells (RW-13, RW-14 and RW-15) and one bedrock extraction well (RW-1R) just north of the CL&P easement (Figure 4). These wells were installed pursuant to AOC 1-97-1000, effective February 18, 1997, and began operating in 1999, 2007, 2014 and 2001, respectively. This extraction well cluster is located in the Town Well Field Property north of the CL&P easement.

In 2015, the average combined NTCRA 1 and NTCRA 2 groundwater extraction systems pumping rate was 39.4 gallons per minute. The capture zones created by the NTCRA 1 and 2 groundwater extraction systems are shown on Figure 3A (overburden) and Figure 3B (bedrock). The operation of the combined NTCRA 1 and NTCRA 2 systems has successfully contained the overburden and bedrock VOC plumes, creating the severed plume within the Town Well Field Property. Approximately 20,711,000 gallons of groundwater were extracted, treated and discharged during this monitoring period.

A Supplemental Groundwater Recovery Well (RW-15) was installed in October 2014. The additional recovery well was installed to ensure that target flow (30 gpm) and the overburden target zone recovery in NCTRA 2 will continue to be maintained. RW-15 was placed into service don November 12, 2014 and drawdown/flow rate tests were conducted in December 2014. .At the time of testing, RW-15 was producing approximately 35 gpm with less than 6 feet of drawdown. Additional details can be found in Attachment 4 the *RW-15 Completion Report* (Weston, January 2015)

On-site Groundwater Treatment System: The combined operations of the extraction systems and the treatment facility were previously referred to as the "NTCRA 1 and NTCRA 2 Groundwater Extraction and Treatment System" or "NTCRA 1/2 Groundwater System." Following entry of the CD, continued operation of the NTCRA 1/2 Groundwater System became part of the ROD-specified remedial approach for groundwater, and the system is now referred to as the HCTS (SOW Section V.A).

Groundwater extracted from the NTCRA 1 and 2 systems is treated on site with a process that was originally constructed as part of the NTCRA 1 system (Figure 4). The groundwater extracted by the NTCRA-1 and 2 containment systems is pumped directly to the groundwater treatment facility. The treatment system consists of the following unit processes: metals pretreatment, filtration, ultraviolet oxidation (UV), and granular activated carbon adsorption. Vapor phase carbon adsorption is also used to capture contaminants that volatize during treatment. The system precipitates and extracts metals, reduces suspended solids, and destroys and captures volatile organic contaminants. Treated water is discharged to the Quinnipiac River in accordance with the Revised Connecticut Department of Environmental Protection (CTDEP) Substantive Requirements for Discharge of Pre-Treated Groundwater issued 6 November 1995. Approximately 17,824 pounds of VOCs have been removed from the groundwater since system startup.

C. Site Operational History

The SRSNE facility began operations in Southington in 1955 (ATSDR 1992). From approximately 1955 until the facility's closure in 1991, spent solvents were received from customers and distilled to remove impurities, and the recovered solvents were returned to the customer or sold to others for reuse. Based on a partial record of materials processed at the SRSNE facility (excluding pre-1967 operations files, which were destroyed in a fire), SRSNE handled in excess of 41 million gallons of waste solvents, fuels, paints, etc. Additional details regarding the operational history are provided in the *Remedial Investigation Report* (BBL 1998).

D. Regulatory Status

The SRSNE Site was added to the National Priorities List (NPL) on September 8, 1983. Since that time USEPA and the State of Connecticut have implemented a variety of enforcement, regulatory and response actions, culminating with the issuance of the Proposed Plan and Record of Decision (ROD) in September 2005. After issuing the ROD, the USEPA and SRSNE Site Group negotiated the terms of the CD.

Key regulatory milestones in the recent history of the Site, based on lists included on USEPA's project website (USEPA 2009) and in the fact sheet USEPA developed in support of the 2005 Proposed Plan (USEPA 2005b), are as follows:

Regulatory Milestone	Year
USEPA adds the Site to the NPL; SRSNE signs a consent decree with USEPA to install a groundwater recovery system and store/manage hazardous waste on site.	1983
USEPA and the State of Connecticut take enforcement action to require cleanup of the facility operations and the property.	1983-1988
USEPA initiates the Remedial Investigation for the Site, conducting three phases of investigation that are presented in a four-volume report (HNUS 1994).	1990
SRSNE operations cease.	1991
USEPA conducts a Time-Critical Removal Action to remove contaminated soils from the railroad grade drainage ditch and to remove some chemicals stored at the property to an off-site location.	1992
USEPA and the SRSNE Group enter into an Administrative Order on Consent (AOC) for Removal Action to construct and operate a pump and treat system to contain the principally contaminated overburden groundwater (the NTCRA 1 work). Other work conducted under this AOC included the construction of a mitigation wetland in the northeast corner of the Cianci Property, implementation of a full-scale phytoremediation study within the NTCRA 1 sheet pile wall, and extension of public water to three buildings adjacent to the Site.	1994
USEPA issues an Action Memorandum for a second NTCRA (NTCRA 2) to hydraulically contain VOC-impacted bedrock groundwater down gradient of the NTCRA 1 system.	1995
USEPA and the SRSNE Site Group enter into a second AOC for Removal Action and Remedial Investigation/Feasibility Study (RI/FS) to expand the groundwater containment system and complete site investigations. Work under this AOC resulted in the completion of	1996

the Site RI/FS, implementation of NTCRA 2, and the decontamination, demolition and removal of the remaining buildings and tanks from the Operations Area.	
SRSNE Site Group operates groundwater controls in the overburden and bedrock aquifers, completes remedial investigations, and conducts feasibility studies.	1996 - 2004
USEPA issues the Proposed Plan in June and holds two public meetings; the public comment period runs from June through August.	2005
USEPA issues the ROD for the Site, which describes the final remedy.	2005
SRSNE Site Group continues operation of the NTCRA 1 and 2 hydraulic containment and treatment systems	2005-2008
USEPA and SRSNE Site Group sign CD to implement the RD/RA activities.	2008
SRSNE Site Group continues operation of HCTS	2008 - present
Court enters CD; Remedial Design work initiated.	2009
Annual Report #1	2009
1st Five Year Review Report	2010
USEPA issues Remedial Design Work Plan Approval	2010
USEPA issues approval of PIPP 100% Design and RAWP	2010
Initiated Pre-ISTR Preparation Plan Construction Activities	2010
EPA, CTDEEP and SRSNE Site Group hold open house for public at Site	2010
Annual Report #2	2010
ISTR Conceptual Design Approval	2011
Approval of ISTR 100% Wellfield Design	2011
Annual Report #3	2011
Institutional Control Plan revisions based on March 2012 comments and May 2012 meeting	2012
Approval of the use of Hydrosleeve for interim sampling	2012
Approval for low flow screen length	2012
Completed delineation of extent of groundwater contamination	2012
Completed Pre-ISTR Preparation Plan Construction Activities	2012
Annual Report #4	2012
Initiated ISTR construction	2013
EPA, CTDEEP and SRSNE Site Group hold open house for public at Site	2013
Annual Report #5	2013
Approval of the 100% design ISTR Work Plan	2014
Issuance of final Memorandum of Agreement	2014
Submittal of the Supplemental Containment Action Plan	2014
Approval of the Supplemental Containment Action Plan	2014
ISTR initiated	2014
Approval of Technical Work Plan for NTCRA supplemental Recovery Well (RW-15)	2014
Installation of RW-15	2014
Annual Report #6	2015
ISTR completed	2015
Approval of ISTR Completion/Remedial Action Completion Report	2015

Revised Conceptual Site Model (CSM)	2015
2nd Five Year Review Report	2015

E. Selected Remedy

The overall purpose of RD/RA activities is to design and implement the selected remedial approach for the Site. The selected remedy, developed by combining components of different alternatives for source control and management of migration to obtain a comprehensive approach for Site remediation, was described in the ROD. Key elements are summarized as follows:

- Treat waste oil and solvents – where present as NAPL in the subsurface in the overburden aquifer (i.e., the Overburden NAPL Area) – using in-situ thermal treatment. Completed 2015 as described in the *In-Situ Thermal Remediation Construction Completion Report (de maximis,* September 2015)

Following in-situ thermal treatment, cap the former SRSNE Operations Area. The cap will be low-permeability and multi-layered and is to be designed, constructed, and maintained to meet the requirements of Resource Conservation and Recovery Act (RCRA) Subtitle C. As described in the "*Re-use of Excavated Material from Railroad Right of Way for ISTR Area Fill"* memorandum (*de maximis, in*c., April 29, 2010), soils excavated from the Rail Road Right of Way will be incorporated as fill material in the Thermal Treatment Zone (TTZ). Excavation of soil in a specific portion of the former railroad right-of-way to a depth of 4 feet – followed by backfill to match surrounding grade –will meet the direct exposure criteria (DEC) and pollutant mobility criteria (PMC) requirements of the Connecticut Remediation Standard Regulations with the understanding that an Activity and Use Limitation (ELUR) would subsequently be established for this area.

- Excavate soils exceeding cleanup levels from certain discrete portions of the former Cianci Property. The estimated limits of soil removal on the former Cianci Property (five discrete excavation areas) are shown on Figure G-1 of the *Post-Excavation Confirmatory Sampling Plan* (Attachment G to the RDWP); these limits are subject to modification based on additional sampling proposed as part of remedial design. Provided that concentrations of polychlorinated biphenyls (PCBs) do not warrant off-site disposal, soils excavated from the former Cianci Property (and from other areas excavated outside the cap limits as part of other RD/RA activities) may be relocated to the former SRSNE Operations Area for placement beneath the cap.

- Capture and treat (on site) groundwater in both the overburden and bedrock aquifers that exceeds applicable federal drinking water standards and risk-based levels. This will be achieved through continued operation, maintenance, and modification (as needed) of the HCTS.

- Monitored natural attenuation of the groundwater plume outside the capture zones (i.e., the severed plume, shown on Figure 3A) that exceeds cleanup levels.

- Monitor natural degradation of constituents in the groundwater plume inside the capture zones and within the Bedrock NAPL Area (shown on Figure 3B).

- Implement institutional controls (i.e., Environmental Land Use Restrictions) to minimize the potential for human exposure to Site-related constituents in the subsurface soils and to prohibit activities that might affect the performance or integrity of the cap.

- Monitor groundwater and maintain the cap over the long term.

F. Performance Standards

Section IV of the SOW establishes Performance Standards for the various affected media at the SRSNE Site. It also establishes Performance Standards for other aspects of the RD/RA, including subsurface NAPL in the overburden and bedrock aquifers, performance of the multi-layer cap, hydraulic containment and treatment, the severed plume, habitat restoration, environmental monitoring, and institutional controls. These non-media-specific Performance Standards are summarized and addressed (to the extent applicable at this point in the RD/RA process) in the various task-specific work plans summarized in the RDWP.

Performance Standards for soil, wetland soil, and groundwater have been reviewed and compared to the current applicable USEPA and CTDEP standards and guidance. Based on this review, it was concluded that none of the USEPA or CTDEP criteria for Site-related constituent have been revised since the ROD was issued. However, the CTDEP has published a lower detection limit for 1,2,4-trichlorobenzene in water (0.5 micrograms per liter [ug/L] rather than the prior value of 2 ug/L). Because the detection limit is the cleanup level for groundwater (discussed below), this modification is noted on the copy of Table L-1 from the ROD that is provided as Appendix 1 to the RDWP. No other modifications were warranted to Tables L-1 or L-2 of the ROD to reflect current published guidance and standards.

The RD/RA SOW requires a soil investigation be conducted after implementation of in situ thermal treatment to re-assess the size of the area to be capped. That sampling needs to determine the background concentrations of 2,3,7,8-tetrachlorodibenzo-pdioxin,or “2,3,7,8-TCDD”, calculated as “toxic equivalents” or (TEQ), which are the sum of seventeen 2,3,7,8-substitute dioxin and furan congeners multiplied by their respective Toxic Equivalency Factors. In Table L-2 of the ROD, EPA and CTDEEP agreed that the cleanup level for 2,3,7,8-TCDD TEQ (“dioxin”) would be “the lower of the EPA policy for residential sites (0.001mg/kg) and the background concentration which will be determined based on future field study, or another concentration consistent with the CT RSRs, but not lower than background.”

Background dioxin sampling was performed in 2010, and results found very low background levels. This suggested use of a risk-based clean up level, rather than trying to meet background. Accordingly, a draft "white paper" proposing an alternative dioxin clean up level was submitted to the Agencies on September 16, 2014, EPA provided comments and a revised memo with response to comments was submitted on December 30, 2014The "white paper" proposed 50 part per trillion soil clean up level that is consistent with EPA's residential soil standard, and was also derived using the CTDEEP RSR process to determine direct exposure and leaching based criteria. EPA approved the proposed dioxin soil cleanup level of 50 ppt on March 30, 2015. However, the 50ppt dioxin clean up level did not satisfy CTDEEP RSR criteria. An alternative risk based recreational cleanup soil level will be calculated for CTDEEPs consideration.

In anticipation of approval of a risk based recreational cleanup soil level from the CTDEEP and in support of RCRA cap design, further delineation soil sampling has been conducted.

G. Summary of Activities Completed This Reporting Period

A summary of activities completed during this reporting period is provided within the attached Table 1.

H. Updated Schedule

An updated project schedule is included as Attachment 1 to this report.

I. Hydraulic Containment & Treatment System Operations and Maintenance

The HCTS achieved compliance during this reporting period with the Demonstration of Compliance Requirements (see Attachment B to the SOW). Details of the operation are provided as Attachment 2 to this report.

The HCTS includes 10 groundwater extraction wells within the NTCRA 1 Containment Area and four downgradient groundwater extraction wells that were originally installed, operated and monitored as part of NTCRA 2. In combination, the NTCRA 1- and NTCRA 2-area extraction wells are all components of the HCTS. For clarity, they are still referred to as NTCRA 1 and NTCRA 2 extraction wells to differentiate the extraction locations and operational histories.

The NTCRA 1 containment system was installed and began operating in 1995. The system includes an approximately 700-foot-long sheet pile wall that extends through the overburden to the top of bedrock, and overburden groundwater extraction wells just west of the sheet pile wall. The purpose for the NTCRA 1 system was to physically and hydraulically control the highest concentrations of dissolved VOCs in overburden groundwater migrating downgradient from the former SRSNE Operations Area. The original NTCRA 1 system had twelve overburden extraction wells. Two wells (RW-5 and

RW-6) were abandoned in 2011 during preparation for thermal treatment system construction. Groundwater extraction rates from the NTCRA 1 wells since 1995 have typically been in the range of 5 to 15 gallons per minute (gpm), combined. Groundwater pumped from the wells is treated using metals pre-treatment, ultraviolet oxidation, and carbon polish, and then discharged to the Quinnipiac River. In addition to hydraulically controlling overburden groundwater, the NTCRA 1 overburden extraction wells produce a hydraulic response in the shallow bedrock, indicating that the overburden and shallow bedrock are hydraulically connected in this area.

The NTCRA 2 system was installed to hydraulically control bedrock groundwater downgradient of the interpreted NAPL zones in overburden and bedrock. A pumping test of well RW-13 during the FS indicated that this overburden well – which is screened from the middle overburden to the top of bedrock – has a significant hydraulic influence in the shallow bedrock and even the deep bedrock. Because the overburden and bedrock are hydraulically connected in the Town Well Field Property, and the natural groundwater flow direction is upward from bedrock to overburden in that area, the NTCRA 2 system hydraulically controls overburden and bedrock groundwater. A summary of the NTCRA 2 extraction wells is as follows:

- RW-13 began operation in July 1999 – it extracts groundwater from the middle and deep overburden with a screened interval from 35 to 75 feet bgs, and typically operates between 10 and 25 gpm.

- RW-14 began operation in October 2007 – it extracts groundwater from the middle and deep overburden with a screened interval from 31 to 71 feet bgs, and typically operates between 10 and 25 gpm.

- RW-1R began operation in September 2001 – it extracts groundwater from the shallow and deep bedrock with an open-bedrock interval from 82 to 271 feet bgs. In spite of its long open interval, well RW-1R has historically produced approximately 0.1 gpm or less.

- RW-15 was began operation in October 2014 – it also extracts groundwater from the middle and deep overburden, between 30 and 72 feet bgs; initial yield tests suggest it can sustain at least 40 gpm.

The addition of well RW-15 provided additional pumping capacity and is expected to allow two of the three overburden NTCRA 2 extraction wells to operate continuously, even when the third well is undergoing maintenance.   Groundwater pumped from the NTCRA 2 wells is also treated at the UV-OX treatment system that was constructed as part of NTCRA 1. With the exception of sporadic power outages and system maintenance, the HCTS operates nearly continuously. Weston Solutions, which operates the system, estimates that the HCTS operates over 99% of the time. The average combined pumping rates in 2015 were approximately 33.5 gpm from the NTCRA 2 extraction wells.

Map views and cross-sections to demonstrate hydraulic containment in accordance with EPA guidance from January 2008 entitled *A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems* (EPA/600/R-08/003) are provided in Figures 7 through 11 of the 2014 -*Groundwater Sampling and Monitored Natural Attenuation Report* (ARCADIS, 2014) . These figures depict groundwater elevation contours measured on June 9, 2014), and generalized overburden and bedrock capture zone boundaries for the NTCRA 2 extraction wells, which are now part of the HCTS. The estimated capture zone boundaries are based on a combination of measured water level data, historical and recent groundwater modeling results and stagnation point calculations presented in the FS Report (BBL and USEPA, May 2005; Appendix A), and updated VOC concentration data at select monitoring wells (collected in June 2014). Groundwater flow directions based on the June 2014 data are consistent with previously derived groundwater flow directions. The figures indicate that groundwater in all five hydrostratigraphic units converges in the vicinity of the Quinnipiac River, and zones of potentiometric depression were observed in the vicinity of the hydraulic containment and treatment system (HCTS) extraction wells.

Concentrations of dissolved VOCs extracted by the NTCRA 1 system, and consequently its mass removal rate, have declined from 1995 to the present. The overall decrease indicates source zone attenuation due to continued dissolution of NAPL, degradation in the dissolved phase and the completion of in-situ thermal remediation. Concentrations of VOCs pumped by the NTCRA 2 wells have also declined steadily in recent years.

VOCs above Action Levels (the more stringent of the USEPA Maximum Contaminant Levels [MCLs] or Connecticut Class GA Groundwater Protection Criteria [GWPC]) are generally contained within the previously estimated containment boundary of the hydraulic containment and treatment system (HCTS).

The SOW calls for “optimizing” the groundwater treatment system once groundwater conditions stabilize after in-situ thermal treatment. Temperatures and concentrations are currently being monitored and data indicates a decline in groundwater VOC concentration within the NTCRA 1 area due to ISTR. Conditions are expected to stabilize in 2016.

A review of the current influent data concluded that concentrations are below that required for discharge to the Publically Owned Treatment Works (POTW) under a CTDEEP General Permit. The Town of Southington to reviewed the influent data and conditionally agreed to allowed connect to the POTW as an industrial customer.

A formal request for this change was submitted to the Agencies on October 30, 2015.

J. Institutional Controls / Access Agreements

Institutional controls in the form of deed restrictions are already in place on the Operations Area and Cianci Properties that prohibit all uses except for those associated with environmental response actions, as further described in CD paragraph 26. No additional institution controls were implemented during this reporting period. In 2010, the SRSNE Site Group took control of the Voting Trusts that control the Operations Area Property and the Cianci Property, respectively, which allows the implementation of additional institutional controls on those properties when appropriate. Additional institutional controls will be implemented pursuant to the Institutional Control Plan that has been developed as required by SOW Section V.B.7. The Institutional Control Plan was revised and resubmitted in May 2013 to address comments received in December 2011 and May 2012 meeting. The revised plan includes the use of groundwater modeling to evaluate properties where future pumping may cause migration of the plume. The properties included in this “buffer zone” will be controlled with an ordinance through the local Health Department, a process that has been used by the Town of Southington in recent years. A conference call between representatives of EPA, CTDEEP, CT AG and the SRSNE Site Group on July 18, 2013 was held to discuss the IC Plan. On August 10, 2015 a meeting was held with the CT AG and CTDEEP to determine path forward with the IC Plan. In October 2015, CTDEEP requested the IC plan be revised to include the updated Environmental Land Use Restrictions that was revised in 2014 and a revised plan was submitted.

Access agreements were needed to conduct RD activities obtained from four (4) property owners during this reporting period. Access was granted to six properties in 2009; negotiations for access to the remaining four properties were obtained during 2010.

K. Construction, Operation and Maintenance Activities

HCTS operations and maintenance are discussed above in Section I. In situ thermal remediation was performed between May 2014 and March 2015, removing an estimated 210,000 kilograms (kg) of NAPL mass. During operation, ISTR operational parameters were monitored to assess operational performance and treatment progress. This included soil temperature, sub-surface vacuum levels, VOC mass extracted and extraction rate, vapor stream flammability, energy usage, and caustic usage. In addition to monitoring the ISTR operational performance, soil and groundwater sampling were also performed to assess the treatment progress. Groundwater samples were collected from seven monitoring wells (ISTR-1 through -7) located within the thermal treatment area. Samples were collected before heating commenced, and monthly during ISTR. Sampling included “progress” soil sampling performed by TerraTherm to confirm treatment progress and to help evaluate when each treatment Phase was ready for the final confirmation sampling. In total, 60 confirmation soil samples were collected from 28 locations within the Phase I area, and 83 confirmation soil samples were collected from 32 locations within the Phase II area (including supplemental samples collected by TerraTherm after initial samples from certain areas did not achieve Interim NAPL Cleanup Levels). These data were used to support shutdown in the Phase I and Phase II areas, and the associated data were used to demonstration of Attainment of INCL's. Additional details can be found in the *In-Situ Thermal Remediation Construction Completion Report* (*de maximis*, September 2015)

Three post-thermal treatment groundwater monitoring events were conducted in March, July, and October/November 2015 for select monitoring wells in the NTCRA 1 area. During these events groundwater samples and temperatures were collected. Initial results from these the monitoring events indicate generally decreasing COC concentrations and moderately to strongly reducing conditions in groundwater in the NTCRA 1 area. Samples and temperatures will continue to be collected and evaluated on a triannual basis until temperatures return to the pre-thermal levels, which is expected to occur in 2016.

L. Habitat Restoration

No habitat restoration activities were conducted during this reporting period. A pre-remediation assessment of the types, extent and condition of existing habitats on site was conducted in June 2009 pursuant to RDWP Attachment H (Habitat Restoration Work Plan). Additional details will be included in the RCRA Cap 100% Design document and the RCRA Cap RAWP.

M. Memorandum of Agreement (MOA) with Southington Water Department / Town of Southington

A draft MOA was prepared during the Annual Report #1 reporting period as required by SOW Section V.B.3. This draft MOA was submitted for EPA review on September 16, 2009 and resubmitted based upon EPA comments on June 23, 2010. EPA provided further comments on the MOA on October 28, 2011. The revised MOA was provided for further EPA review on November 15, 2011. EPA issued the final MOA on September 15, 2014. Execution of the MOA triggered finalization and submittal of the Supplementary Containment Action Plan (SCAP). The SCAP sets forth the process the Group would undertake to enhance containment of groundwater in the event SWD re-starts pumping from the Town Well Field Property. The revised SCAP was submitted on October 13, 2014, and approved by EPA on November 7, 2014.

N. Groundwater Monitoring Program

A comprehensive groundwater monitoring program was scoped in the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Work Plan; Attachment N to the Remedial Design Work Plan [RDWP]; ARCADIS 2010). A summary of the planned sampling frequency is provided in the attached Table N-1 from the RDWP. The first comprehensive groundwater sampling event occurred during May/June 2010 which supported the first Five-Year Review, submitted in 2010. This sampling event provided data for the draft 1st Monitored Natural Attenuation Report which was submitted in September 2010.

The second comprehensive groundwater sampling event was performed in June 2014 and included sampling of groundwater at 129 monitoring wells for analysis of volatile organic compounds (VOCs), 1,4-dioxane, target analyte list (TAL) metals, and/or MNA parameters in support of the USEPA's Five-Year Review. In support of the 2nd Five Year Review a revised Conceptual Site Model (CSM) was presented in April 2015. The updated CSM included an overview of site history and physical setting, remedial actions, hydrogeology, lateral and vertical groundwater plume extent, groundwater quality trends, mass removal, and progress toward groundwater remedial goals. Key findings in this document included:

- Since completion of the Remedial Investigation in 1996, approximately 525,000 kg of VOCs have been removed or degraded. The mass remaining at the site is approximately 3% of the total present in 1996.

- Indications of ongoing natural attenuation of COCs in site groundwater and overall effectiveness of the MNA remedy, including:
  - The VOC plume with constituent concentrations above drinking water standards has decreased since the RI and is completely contained within the HCTS capture zone
  - VOC concentrations are decreasing throughout the dissolved-phase plume, including near the leading edge of the plume at the MW-704 well cluster.
  - Since the RI, order of magnitude decreases in TVOC concentrations and concentrations of individual constituents have been observed at many locations. Although VOC concentrations in groundwater at some monitoring locations within deep bedrock DNAPL zones have been relatively stable with time (e.g., MW-706DR), decreasing VOC concentrations downgradient of those locations (e.g., MW-704DR) indicate that the mass flux from the bedrock DNAPL zone is decreasing.
  - Molar concentration plots for VOCs in groundwater demonstrate shifts from parent compounds to daughter products with time and with distance downgradient from source areas.
  - Groundwater redox conditions indicate moderately to strongly reducing conditions throughout the VOC plume demonstrating geochemical conditions conducive to degradation of COCs.
  - Microbial population survey results indicate robust communities capable of both full reductive dechlorination to innocuous end products, and also cometabolism of chlorinated compounds. In addition, microbes capable of

degrading aromatic compounds were detected at the two locations where the QuantArray-Petro analysis was conducted.

The 2nd Five Year Review was issued by EPA on September 24, 2015.

Figures 2 through 6 of the draft 2015 Groundwater Sampling and Monitored Natural Attenuation Report (MNA) show the locations of former Interim Monitoring and Sampling (IMS) wells that were used to monitor the VOC plume between the completion of the RI and the issuance of the ROD. These wells have the most complete data sets and concentration trends at these wells are presented in Figures 12 through 16 of the Draft 2015 MNA Report). Middle overburden well MW-03 (Figure 13-Draft 2015 MNA Report) and shallow bedrock well MW-127C (Figure 15-Draft 2015 MNA Report) are the only monitoring wells south of the Connecticut Light & Power (CL&P) easement that contained VOC concentrations above the Interim Cleanup Levels (ICLs) before the start-up of the NTCRA 2 system, but they declined to below the ICLs following NTCRA 2 system start up. As shown on Figures 12 through 16 of the Draft 2015 MNA Report, the VOC concentration trends at the former IMS wells south of the CL&P Easement are generally declining or have too many samples with no detected VOCs to support trend analysis.

In accordance with *Monitoring Well Network Evaluation and Groundwater Monitoring Program,* the 2015 annual groundwater sampling event was performed in June 2015 and included sampling of groundwater at 37 monitoring wells. The 2015 Groundwater Sampling and Monitored Natural Attenuation Report (Attachment 3) summarizes the 2015 groundwater sampling events and presents the results and interpretation of data collected in support of MNA as a remedy for groundwater that contains Site related constituents of concern (COCs) at concentrations exceeding acceptable risk levels or regulatory limits. Sampling results are discussed below:

VOCs above Action Levels (the more stringent of the USEPA Maximum Contaminant Levels [MCLs] or Connecticut Class GA Groundwater Protection Criteria [GWPC], i.e., drinking water standards) are contained within the previously estimated capture zone boundary of the hydraulic containment and treatment system (HCTS). None of the wells within the severed plume (i.e., wells with historical COC concentrations above Action Levels downgradient of the HCTS capture zone boundary) had COC concentrations above Action Levels during the 2014 or 2015 groundwater monitoring events.

Tetrachloroethene (PCE) and trichloroethene (TCE) were detected at middle overburden monitoring well PZO-2M at concentrations of 6.3 micrograms per liter (µg/L) and 4.66 µg/L, respectively, in the June 2015 sample. The PCE concentration is above the Action Level of 5.0 µg/L, while the TCE concentration has dropped below the Action Level of 5.0 µg/L (previously above the Action Level in 2013 and 2014). Concentrations of both compounds continue to decline. PCE was first detected above the Action Level at this well in June 2013, while TCE was first detected above the Action Level in June 2012.

PCE and TCE were detected at deep bedrock monitoring well MW-1003DR at concentrations of 2.95 µg/L and 40 µg/L, respectively, in the June 2015 sample. The PCE concentration dropped below the Action Level of 5.0 µg/L starting in June 2014, while the TCE concentration is above the Action Level of 5.0 µg/L (and was previously above the Action Level in 2013 and 2014). PCE and TCE were first detected above the Action Level at this well in June 2013. Concentrations of both compounds have continued to decline relative to the 2013 results.

TCE was also detected at monitoring well MW-1002R at a concentration of 19.3 µg/L above the Action Level of 5 µg/L. This is the first detection of TCE above Action Levels at this well.

As mentioned above, the 2015 sampling event included an assessment of the effectiveness of MNA as a remedial measure for COCs in groundwater in the Site. Results of these evaluations indicate:

- Detected concentrations of VOCs above Action Levels are contained within the previously estimated capture zone boundary of the HCTS.
- Groundwater total VOC concentrations are generally declining or remaining stable with time throughout the Site groundwater COC plume.
- Estimated bulk VOC attenuation rates were comparable to attenuation rates for individual COCs presented in the FS (BBL and USEPA 2005).
- Compliance monitoring data from the HCTS indicate generally stable COC mass extraction rates since the early 2000s.
- Results indicate use of MNA as a remedy for COCs in Site groundwater is supported and should continue.

O. Groundwater Containment and Treatment Optimization Studies

No optimization studies were conducted during this reporting period.

P. Costs Incurred this Reporting Period

Paragraph 62 of the CD sets forth “Additional Provisions Regarding Settling Defendants’ Payments of U.S. Oversight Costs and State Oversight Costs.” Pursuant to this paragraph, an interest bearing “Oversight Costs Payment Subaccount” of the Remedial Trust Account was established on April 27, 2009, in the amount of $5,700,000. Other defined terms in this paragraph include:

- "Rolling Oversight Cap" – defined as 15% of the total costs incurred by the Settling Defendants in performing the Work through the end of each Oversight Billing Period.
- "Available Balance" equals the Rolling Oversight Cap less the sum of all Settling Defendants prior payments for U.S Oversight Cost and State Oversight Costs.

Paragraph 62.e of the CD states that the Settling Defendants shall have the burden of calculating annually the Rolling Oversight Cap and Available Balance. The following table summarizes annually the Rolling Oversight Cap and Available Balance:

Reporting Period	Total Project Costs	Rolling Oversight Cap Amount	Oversight Costs Paid	Available Rolling Oversight Cap Amount
Annual Report #1	$1,880,301	$282,045	None paid.	
Annual Report #2	$3,446,824	$517,024	$84,290	
Annual Report #3	$4,037,109	$605,566	$30,887	
Annual Report #4	$1,421,795	$213,269	$39,939	
Annual Report #5	$3,726,911	$559,037	$18,963	
Annual Report #6	$6,618,780	$992,817	$41,320	
Annual Report #7	$5,152,682	$772,902	40,673	
Totals*:	**$26,284,402**	**$3,942,660**	**$256,073**	**$3,686,587**

* Cost Revised based on Trustee expenditure updates

The total Rolling Oversight Cap amount available is: $3,686,587

Q. References

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Acronyms and abbreviations used in this Annual Report and associated attachments:

1,1-DCE	1,1-dichloroethene
1,1,1-TCA	1,1,1-trichloroethane
1,2-DCA	1,2-dichloroethane
2,3,7,8-TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
ALEP	Action Level Exceedance Plan
AOC	Administrative Order on Consent
AQC	Air Quality Control System
ARARs	Applicable or Relevant and Appropriate Requirements
ATSDR	Agency for Toxic Substance and Disease Registry
B&M	Boston & Maine
BACT	Best Available Control Technology
BBL	Blasland, Bouck & Lee, Inc.
bgs	below ground surface
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
BTU	British Thermal Unit
°C	degrees Celsius
CA	chloroethane
CBYD	Call Before You Dig
cc	cubic centimeter
cDCE	cis-1,2-dichloroethene
CD	Consent Decree
CEMS	Continuous Emissions Monitoring System
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CH_4	methane
CL&P	Connecticut Light & Power
CO_2	carbon dioxide
COCs	Constituents of Concern
CT	carbon tetrachloride
CTDEP	Connecticut Department of Environmental Protection
CTDPH	Connecticut Department of Public Health
CVOCs	Chlorinated Volatile Organic Compounds
CWA	Clean Water Act
DCE	dichloroethene
DCM	dichloromethane
DCP	Demonstration of Compliance Plan
ddms	*de maximis* Data Management Solutions
DHC	Dehalococcoides
DNAPL	dense non-aqueous phase liquid
DO	dissolved oxygen

DQA	Data Quality Assessment
DQOs	Data Quality Objectives
DRE	Destruction/Removal Efficiency
DRO	Diesel Range Organics
EISB	Enhanced In-Situ Bioremediation
ELUR	Environmental Land Use Restriction
°F	degrees Fahrenheit
$Fe(OH)_3$	ferrous hydroxide
f_{oc}	fraction of solid organic carbon in soil
FS	Feasibility Study
FSP	Field Sampling Plan
PMC	Pollutant Mobility Criteria applicable to designated Class “GA” groundwater areas
GAC	granular activated carbon
GCTEOS	Groundwater Containment and Treatment Evaluation and Optimization Study
gpm	gallons per minute
GRO	Gasoline Range Organics
GWPC	Groundwater Protection Criteria
GWTF	Groundwater Treatment Facility
H	Henry’s Law Constant
H_2	hydrogen
H_2O	water
H_2S	hydrogen sulfide
HAP	hazardous air pollutant
HCl	hydrochloric acid
HCTS	Hydraulic Containment and Treatment System
HDPE	High-Density Polyethylene
HLVs	Hazard Limiting Values
HZ	Heated Zone
ID	inner diameter
IFT	interfacial tension
IMS	Interim Monitoring and Sampling
IQAT	Independent Quality Assurance Team
IRIS	Integrated Risk Information System
ISTD	In-Situ Thermal Desorption
ISTR	In-Situ Thermal Remediation
J&E	Johnson & Ettinger
K_d	soil-water partition coefficient
kg	kilogram
K_{oc}	chemical-specific organic carbon partition coefficient
LAER	Lowest Achievable Emission Rate
lbs	pounds
LNAPL	light non-aqueous phase liquid

MAROS	Monitoring and Remediation Optimization System
MASC	Maximum Allowable Stack Concentration
MCLs	Maximum Contaminant Levels
MCLG	Maximum Contaminant Level Goal
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MIBK	4-methyl-2-pentanone (methyl isobutyl ketone)
mL	milliliter
MNA	Monitored Natural Attenuation
MOA	Memorandum of Agreement
N_2	nitrogen
NA	Natural Attenuation
NAPL	non-aqueous phase liquid
ng/L	nanograms per liter
NH_4^+	ammonia
NOAA	National Oceanic and Atmospheric Administration
NO_2^-	nitrite
NO_3^-	nitrate
NSR	New Source Review
NTCRA	Non-Time-Critical Removal Action
O_2	oxygen
O&M	Operations and Maintenance
OD	outer diameter
OH^-	hydroxyl radical
OIS	On-Site Interceptor System
OMM	Operation, Maintenance and Monitoring
ONOGU	Observed NAPL in the Overburden Groundwater Unit
ORP	oxidation-reduction potential
OSHA	Occupational Safety and Health Administration
OSWER	Office of Solid Waste and Emergency Response
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PCDDs	polychlorinated dibenzo-p-dioxins
PCDFs	polychlorinated dibenzofurans
PCE	tetrachloroethylene
PCR	Polymerase Chain Reaction
PEL	Permissible Exposure Limit
PFD	process flow diagram
PID	photoionization detector
PIPP	Pre-ISTR Preparation Plan
PLC	Programmable Logic Controller
POP	Project Operations Plan
ppb	parts per billion
PPE	personal protective equipment

ppm	parts per million
PSD	Prevention of Significant Deterioration
psig	pounds per square inch, gauge
PVC	polyvinyl chloride
QAPP	Quality Assurance Project Plan
R^2	correlation coefficient
RAOs	Response Action Objectives
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RDWP	Remedial Design Work Plan
RD/RA	Remedial Design/Remedial Action
Redox	Reduction-Oxidation
RDEC	Residential Direct Exposure Criteria
RH	Relative Humidity
RI	Remedial Investigation
ROD	Record of Decision
RSRs	Remediation Standard Regulations
SAP	Sampling and Analysis Plan
SCAP	Supplemental Containment Action Plan
SCM	Site Conceptual Model
SO_4^{2-}	sulfate
SOP	Standard Operating Procedure
SOW	Statement of Work
SPLP	Synthetic Precipitation Leaching Procedure
SRSNE	Solvents Recovery Service of New England, Inc.
SSO	Site Safety Officer
SVOCs	semi-volatile organic compounds
SWD	Southington Water Department
SWPC	Surface Water Protection Criteria
TAL	Target Analyte List
TCE	trichloroethylene
TCH	thermal conduction heating
TCLP	Toxicity Characteristic Leaching Procedure
TEFs	Toxic Equivalency Factors
TEQ	Toxic Equivalence Quotient
TEX	Toluene, Ethylbenzene and Xylenes
TSCA	Toxic Substances Control Act
TTZ	thermal treatment zone
ug/L	micrograms per liter
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UV	ultraviolet
VC	vinyl chloride

VI	Vapor Intrusion
VOC	volatile organic compound
WHO	World Health Organization

Tables

Table 1

Summary of Activities Completed

October 30, 2008-October 31, 2015

TABLE 1.0
Summary of Activities Completed
October 31, 2014 through October 30, 2015

Document Name / Activity	Author(s)	Date Submitted	Date Approved	Type
Final RDWP and POP	ARCADIS	11/19/2010	pending	Deliverable under SOW
Response to Comments on ISTR Conceptual Design	TerraTherm	12/3/2010	7/7/2011	Deliverable under SOW
Annual State of Compliance Report #2	de maximis	12/20/2010	pending	Deliverable under SOW
PIPP Winter Stabilization Plan	de maximis	12/30/2010	pending	Deliverable under SOW
Vapor Intrusion Technical Memorandum	EPA	10/27/2010	1/19/2011	Conditional Approval
Data Comparison - Groundwater Sampling Techniques	ARCADIS	1/4/2011	N/A	Technical Memorandum
Updates to Existing MODFLOW Groundwater Flow Model	ARCADIS	1/5/2011	N/A	Technical Memorandum
Data Comparison - Groundwater Sampling Techniques	ARCADIS	2/10/2011	N/A	Technical Memorandum
Draft Institutional Controls Plan	de maximis/ARCADIS	2/18/2011	pending	Deliverable under SOW
Comments on Response to Comments on ISTR Conceptual Design	EPA	3/2/2011	7/7/2011	EPA comments
PIPP Sheetpile Wall Extension Design	ARCADIS	3/21/2011	4/22/2011	Deliverable under SOW
Data Comparison - HydraSleeve vs. Low-Flow Groundwater Sampling Techniques	ARCADIS	3/22/2011	N/A	Technical Memorandum
Response to Comments on Response to Comments on ISTR Conceptual Design	TerraTherm	4/6/2011	7/7/2011	Deliverable under SOW
Bedrock Outcrop Study	ARCADIS	4/20/2011	N/A	Technical Memorandum
Supplementary Vapor Intrusion Technical Memorandum	ARCADIS	6/6/2011	pending	Deliverable under SOW
Bedrock Modeling Memorandum	ARCADIS	6/6/2011	N/A	Technical Memorandum
Comments on Vapor Intrusion Technical Memorandum	EPA	6/15/2011	pending	EPA comments
ISTR Conceptual Design Approval	EPA	7/7/2011	7/7/2011	Approval
Technical Memorandum - Proposed Use of Hydrasleeve Sampling	ARCADIS	7/8/2011	7/8/2011	Technical Memorandum
Approval of ISTR 100% Wellfield Design	EPA	9/23/2011	9/23/2011	EPA Approval
Comments on Draft Memorandum of Agreement with Town and Southington Water Department	EPA	10/28/2011	pending	EPA comments
Annual State of Compliance Report #3	de maximis	1/12/2012	pending	Deliverable under SOW
Screen Volume Purge vs lowflow groundwater metholds	de maximis	5/11/2011	5/21/2012	Approval
Submittal for the use of hydrosleeve during interim sampling events	de maximis	1/4/2011	6/12/2012	Approval
Annual State of Compliance Report #4	de maximis	1/3/2013	pending	Deliverable under SOW
PIPP Completion Report	ARCADIS	4/3/2013	N/A	Technical Repot
Revised Institutional Controls Plan	de maximis / ARCADIS	5/21/2013	pending	Deliverable under SOW
Revised Draft ISTR work plan and POP	TerraTherm	7/8/2013	pending	Deliverable under SOW
Comments on revised Draft ISTR Work Plan and POP	EPA/CTDEEP	9/30/2013	N/A	EPA /CTDEEP comments
Response to EPA and CTDEEP comments on revised DRAFT ISTR Work Plan and POP	de maximis	10/26/2013	pending	Deliverable under SOW
Annual State of Compliance Report #5	de maximis	3/3/2013	pending	Deliverable under SOW
Approval of In Situ Thermal Remediation Final (100%) Design	de maximis	7/10/2014	4/18/2014	Deliverable under SOW
Revised Supplemental Containment Action Plan	de maximis	10/13/2014	11/5/2014	Deliverable under SOW
Draft In-Situ Thermal Remediation Construction Completion Report	de maximis	4/6/2015	N/A	Deliverable under SOW
Comments on Draft In-Situ Thermal Remediation Construction Completion Report	EPA/CTDEEP	9/10/2015	N/A	EPA /CTDEEP comments
Revised Conceptual Site Model	de maximis	4/29/2015	pending	Deliverable under SOW
Draft Soil Sampling Plan – SIP Delineation and Additional Dioxin Characterization	de maximis/ARCADIS	6/30/2015	N/A	
Final Soil Sampling Plan – SIP Delineation and Additional Dioxin Characterization	de maximis	8/24/2015	8/24/2015	
Final In-Situ Thermal Remediation Construction Completion Report	de maximis	9/18/2015	9/22/2015	Deliverable under SOW
Treatment System Optimization Request	de maximis	10/30/2015	pending	

Table 2

N-1

Groundwater Monitoring Network and Sampling Events

Table N-1.
Groundwater Monitoring Network and Sampling Events
SRSNE Superfund Site, Southington, CT

Well Group	# Wells	Sampling Period	Sampling Frequency	Analytical Parameters
"C" wells	83	first comprehensive event	1 event	VOCs, alcohols, 1,4-dioxane, TAL metals, PAHs, PCBs
"R" wells	30			VOCs, alcohols, 1,4-dioxane, TAL metals, PAHs, PCBs, MNA parameters
"N" wells	10			VOCs, alcohols, 1,4-dioxane, TAL metals, PAHs, PCBs, MNA parameters
"M" wells	5			TAL metals, MNA parameters (background)
"B" wells	3			TAL metals (background)
"C" wells	83	subsequent comprehensive events	every 5 years	VOCs, 1,4-dioxane, TAL metals
"R" wells	30			VOCs, 1,4-dioxane, TAL metals, MNA parameters
"N" wells	10			VOCs, 1,4-dioxane, TAL metals, MNA parameters
"M" wells	5			TAL metals, MNA parameters
"B" wells	3			TAL metals
"R" wells	30	after first comprehensive event	annual	VOCs
			biennial	MNA parameters
"M" wells	5	after first comprehensive event	annual	TAL metals (background)
			biennial	MNA parameters (background)
"B" wells	3	after first comprehensive event	annual	TAL metals (background)
"N" wells - overburden	8	before thermal treatment	biennial	VOCs, MNA parameters
		during thermal treatment	annual	VOCs, MNA parameters
		after thermal, before equilibrium	3x / year	VOCs, MNA parameters
		after equilibrium	annual	VOCs
			biennial	MNA parameters
"N" wells - bedrock	2	before thermal treatment	annual	VOCs, MNA parameters
		during thermal treatment	annual	VOCs, MNA parameters
		after thermal, before equilibrium	3x / year	VOCs, MNA parameters
		after equilibrium	annual	VOCs
			biennial	MNA parameters
"W" wells	35	all comprehensive events	every 5 years	Water levels only - during all comprehensive events

Notes:

1) biennial = once every two years

VOCs = Volatile Organic Compounds

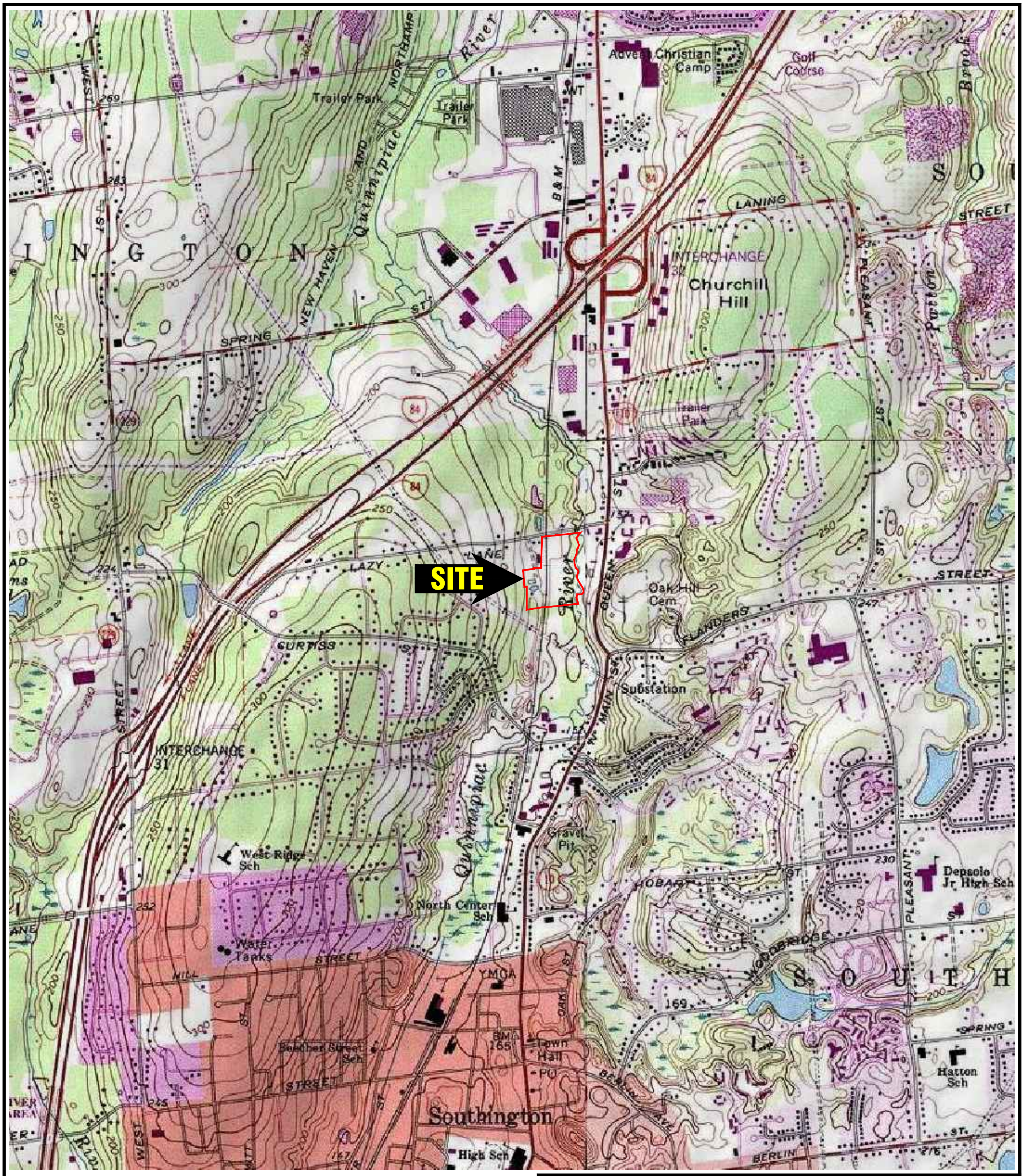
TAL = Target Analyte List

PAHs = Polycyclic Aromatic Hydrocarbons

PCBs = Polychlorinated Biphenyls

MNA = Monitored Natural Attenuation

Figures



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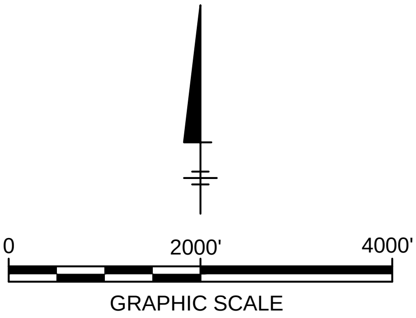
QUAD: MERIDEN, CT
DATE: 1992



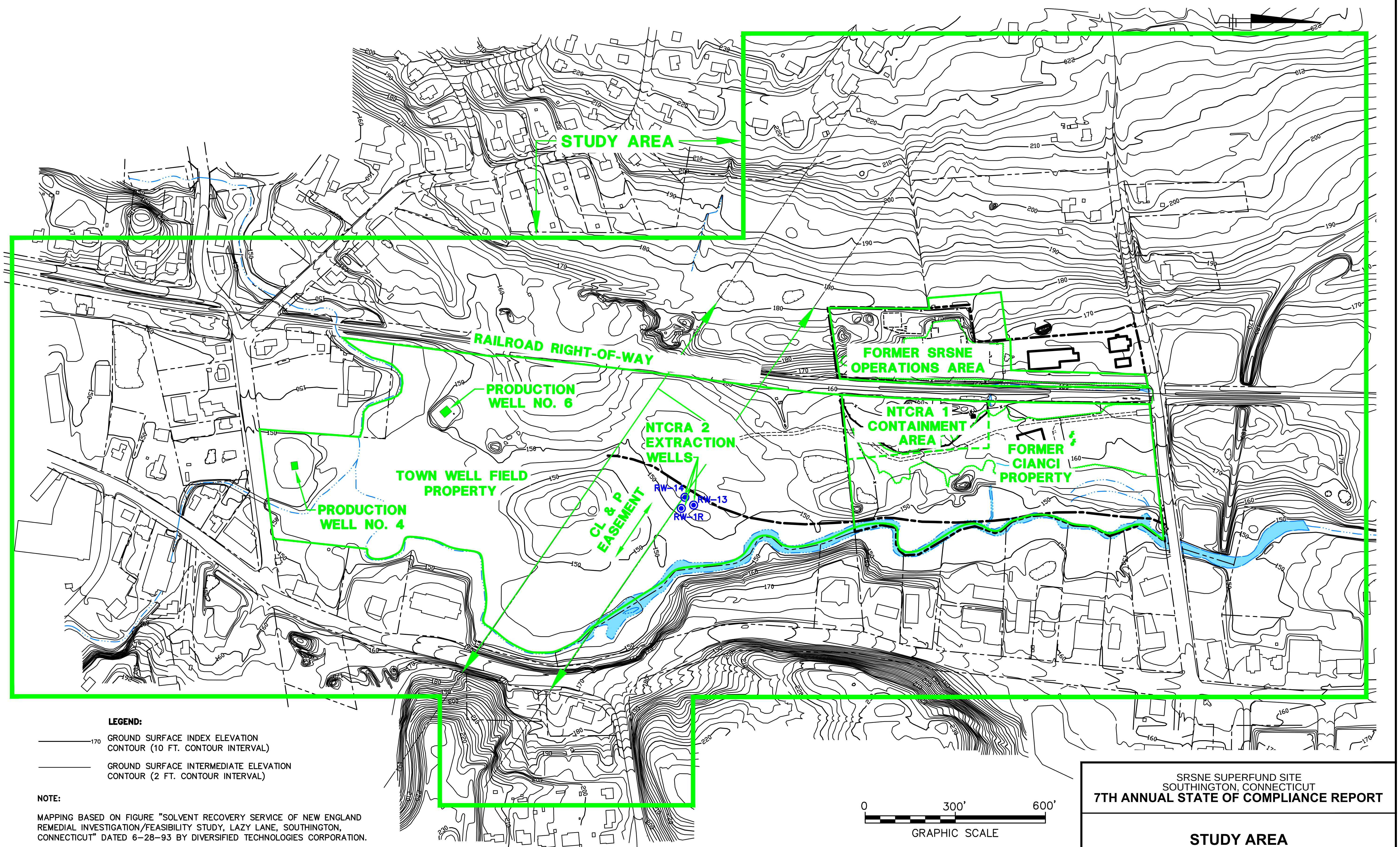
SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
7TH ANNUAL STATE OF COMPLIANCE REPORT

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1

CITY: MANCHESTER DIV/GROUP: ENVCAD DB: B.SMALL PM: TM:
G:\ENVCAD\Manchester\ACT\B0054634\0001\00100\7th Annual Report\Site Location Map.dwg LAYOUT: 1 SAVED: 3/23/2016 10:49 AM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 3/23/2016 11:08 AM BY: SMALL, BRIAN



LEGEND:

170	GROUND SURFACE INDEX ELEVATION CONTOUR (10 FT. CONTOUR INTERVAL)
	GROUND SURFACE INTERMEDIATE ELEVATION CONTOUR (2 FT. CONTOUR INTERVAL)

NOTE:

MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONNECTICUT" DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
7TH ANNUAL STATE OF COMPLIANCE REPORT

STUDY AREA

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2

CITY: SYRACUSE, NY GROUP: ENVCAD DB: P. LISTER, R. BASSETT, P. LISTER PM: M. GEFELL TR: R. STEVENSON LYR: ON=*;OFF=REF
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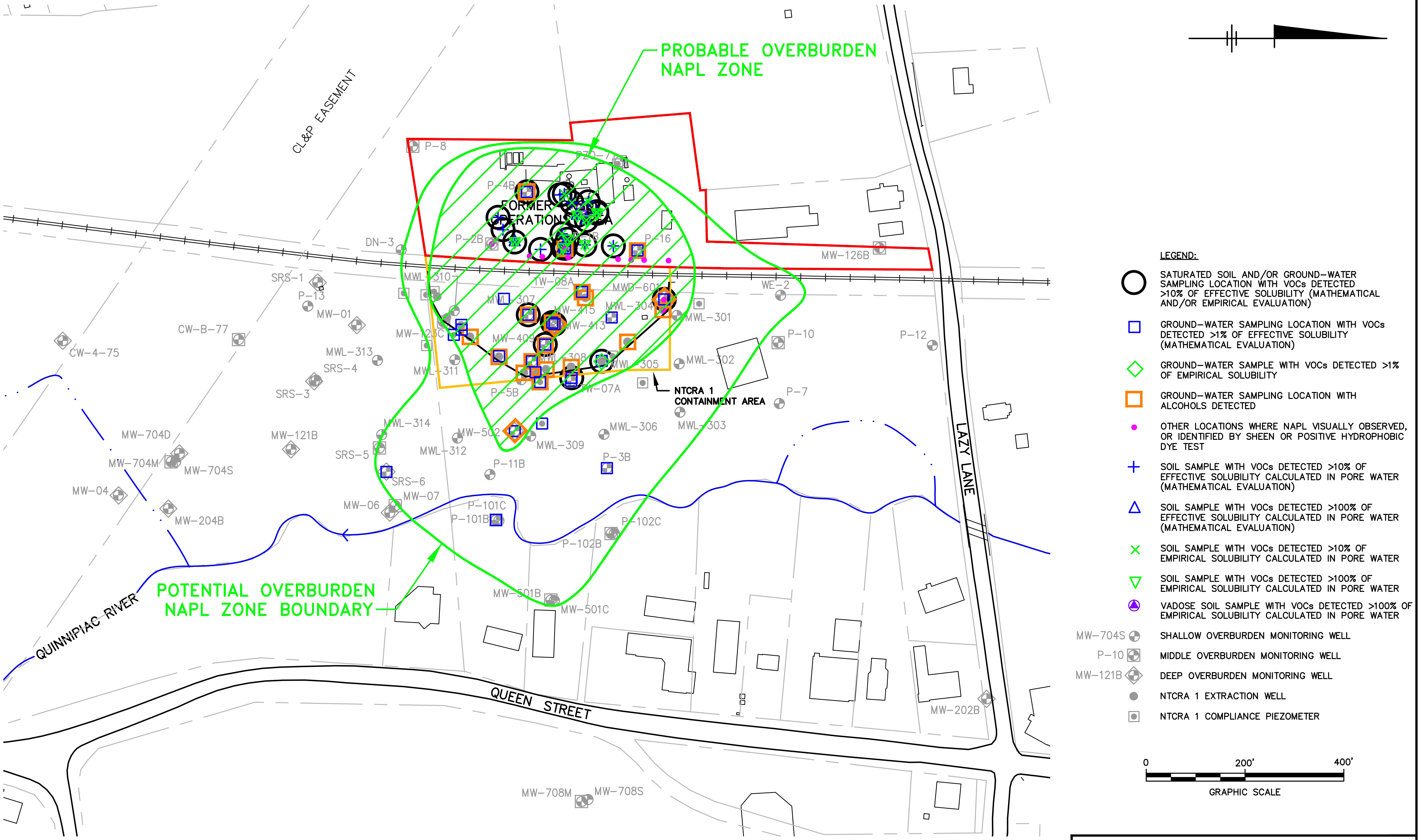

LEGEND:

○	SATURATED SOIL AND/OR GROUND-WATER SAMPLING LOCATION WITH VOCs DETECTED >10% OF EFFECTIVE SOLUBILITY (MATHEMATICAL AND/OR EMPIRICAL EVALUATION)
□	GROUND-WATER SAMPLING LOCATION WITH VOCs DETECTED >1% OF EFFECTIVE SOLUBILITY (MATHEMATICAL EVALUATION)
◇	GROUND-WATER SAMPLE WITH VOCs DETECTED >1% OF EMPIRICAL SOLUBILITY
□	GROUND-WATER SAMPLING LOCATION WITH ALCOHOLS DETECTED
●	OTHER LOCATIONS WHERE NAPL VISUALLY OBSERVED, OR IDENTIFIED BY SHEEN OR POSITIVE HYDROPHOBIC DYE TEST
+	SOIL SAMPLE WITH VOCs DETECTED >10% OF EFFECTIVE SOLUBILITY CALCULATED IN PORE WATER (MATHEMATICAL EVALUATION)
△	SOIL SAMPLE WITH VOCs DETECTED >100% OF EFFECTIVE SOLUBILITY CALCULATED IN PORE WATER (MATHEMATICAL EVALUATION)
×	SOIL SAMPLE WITH VOCs DETECTED >10% OF EMPIRICAL SOLUBILITY CALCULATED IN PORE WATER
▽	SOIL SAMPLE WITH VOCs DETECTED >100% OF EMPIRICAL SOLUBILITY CALCULATED IN PORE WATER
◉	VADOSE SOIL SAMPLE WITH VOCs DETECTED >100% OF EMPIRICAL SOLUBILITY CALCULATED IN PORE WATER
MW-704S ◉	SHALLOW OVERBURDEN MONITORING WELL
P-10 ◉	MIDDLE OVERBURDEN MONITORING WELL
MW-121B ◇	DEEP OVERBURDEN MONITORING WELL
●	NTCRA 1 EXTRACTION WELL
▣	NTCRA 1 COMPLIANCE PIEZOMETER

0 200' 400'

GRAPHIC SCALE

NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONNECTICUT" DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
7TH ANNUAL STATE OF COMPLIANCE REPORT

ESTIMATED NAPL-ZONE BOUNDARY IN OVERBURDEN

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3A

CITY: SYRACUSE, NY DIV/GROUP: 141/ENVCAD DB: LJPOSENAUER LD:(Opt) PIC: G.CAMERON PM: J.HOLDEN TM: J.HOLDEN LYR:(Opt)ON=*;OFF=*REF*
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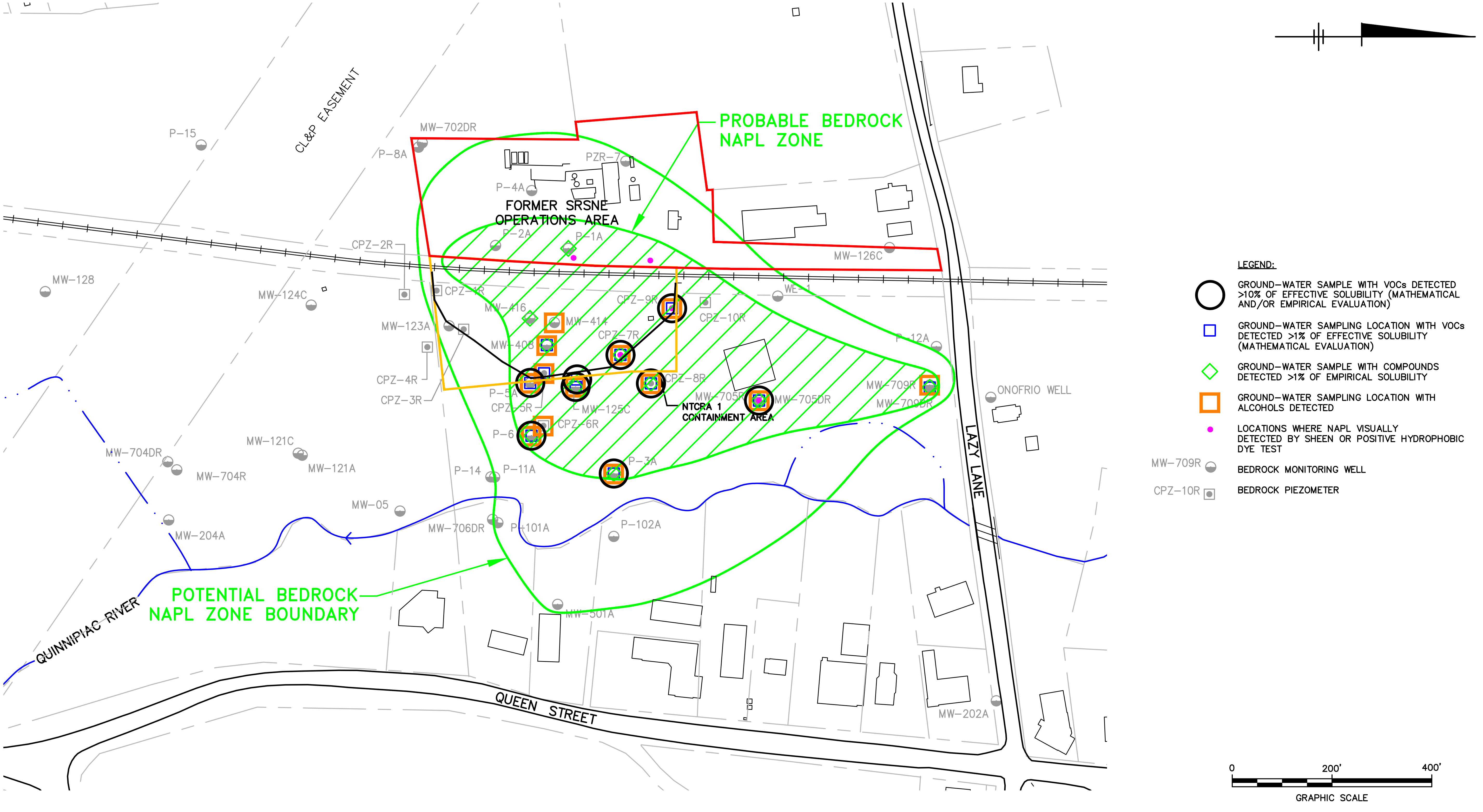

NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONNECTICUT" DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
7TH ANNUAL STATE OF COMPLIANCE REPORT

ESTIMATED NAPL-ZONE BOUNDARY IN BEDROCK

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3B

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: PGL LAF GMS LD:(Opt) PIC: G. CAMERON PM: J. HOLDEN TM: J. HOLDEN LYR: ON=*;OFF=*REF*, |CONCRETE, |FLOODPLAIN
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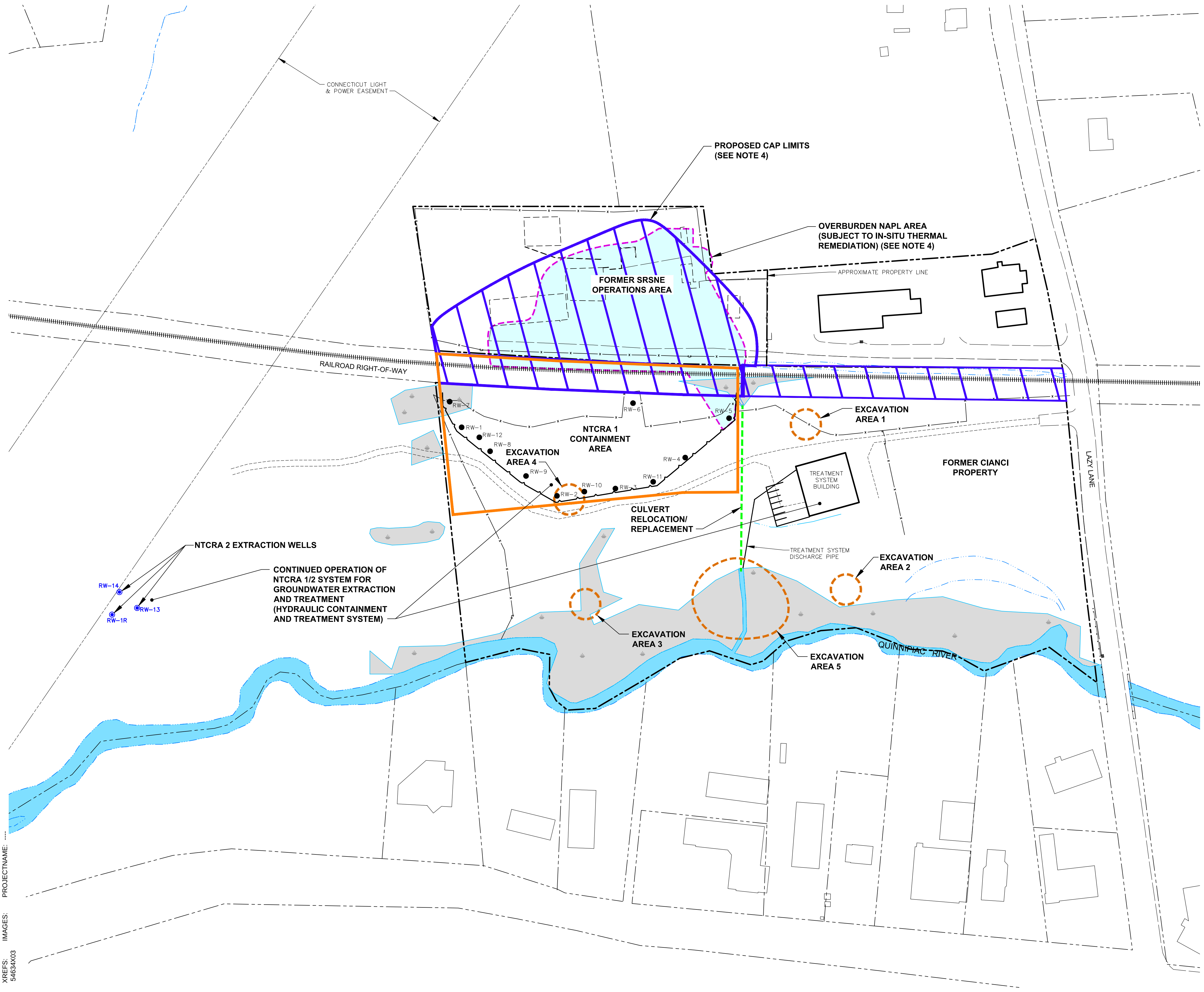


LEGEND:

- PROPERTY LINE
- PROPERTY LINE – ADJOINER
- BUILDING
- BUILDING – ADJOINER
- FORMER BUILDING
- RAILROAD
- ROAD
- GRAVEL ROAD
- DRAINAGE SWALE
- RIVER
- EASEMENT
- CHAINLINK FENCE
- AREA OF DISCRETE SOIL REMOVAL ON FORMER CIANCI PROPERTY (SEE NOTE 4)
- SHEETPILE
- WETLAND
- RW-1● NTCRA 1 OVERBURDEN EXTRACTION WELL

NOTES:

1. SITE PLAN TAKEN FROM DIVERSIFIED TECHNOLOGIES CORP., 556 WASHINGTON AVE., NORTH HAVEN, CT, DATED 6/93. TOPOGRAPHY REPORTED TO HAVE BEEN DIGITIZED FROM TOWN OF SOUTHINGTON TOPOGRAPH MAPS G–7, G–8, G–9; PHOTOGRAPHY DATED NOV. 1978, SCALE: 1"=100'. PROPERTY LINES REPORTED TO HAVE BEEN DIGITIZED AND LOT NUMBERS TAKEN FROM "PROPERTY MAP, TOWN OF SOUTHINGTON" MAPS 134 & 147, SCALE: 1"=100' BY DIVERSIFIED TECHNOLOGIES CORPORATION.
2. BENCHMARK #1 IS AT ELEVATION 164.03. PK NAIL; S'LY SIDE; POLE #9049.
3. WETLAND AREAS WERE TAKEN FROM THE FINAL REMEDIAL INVESTIGATION REPORT (HNUS 1994).
4. THE LIMITS OF REMEDIAL ACTIVITIES ARE PRELIMINARY AND ARE SUBJECT TO CONFIRMATION/MODIFICATION BASED ON REMEDIAL DESIGN ACTIVITIES.

DRAFT

0 80' 160'
GRAPHIC SCALE

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
7TH ANNUAL STATE OF COMPLIANCE REPORT

PLANNED REMEDIAL ACTIVITIES

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4

Attachments

Attachment 1

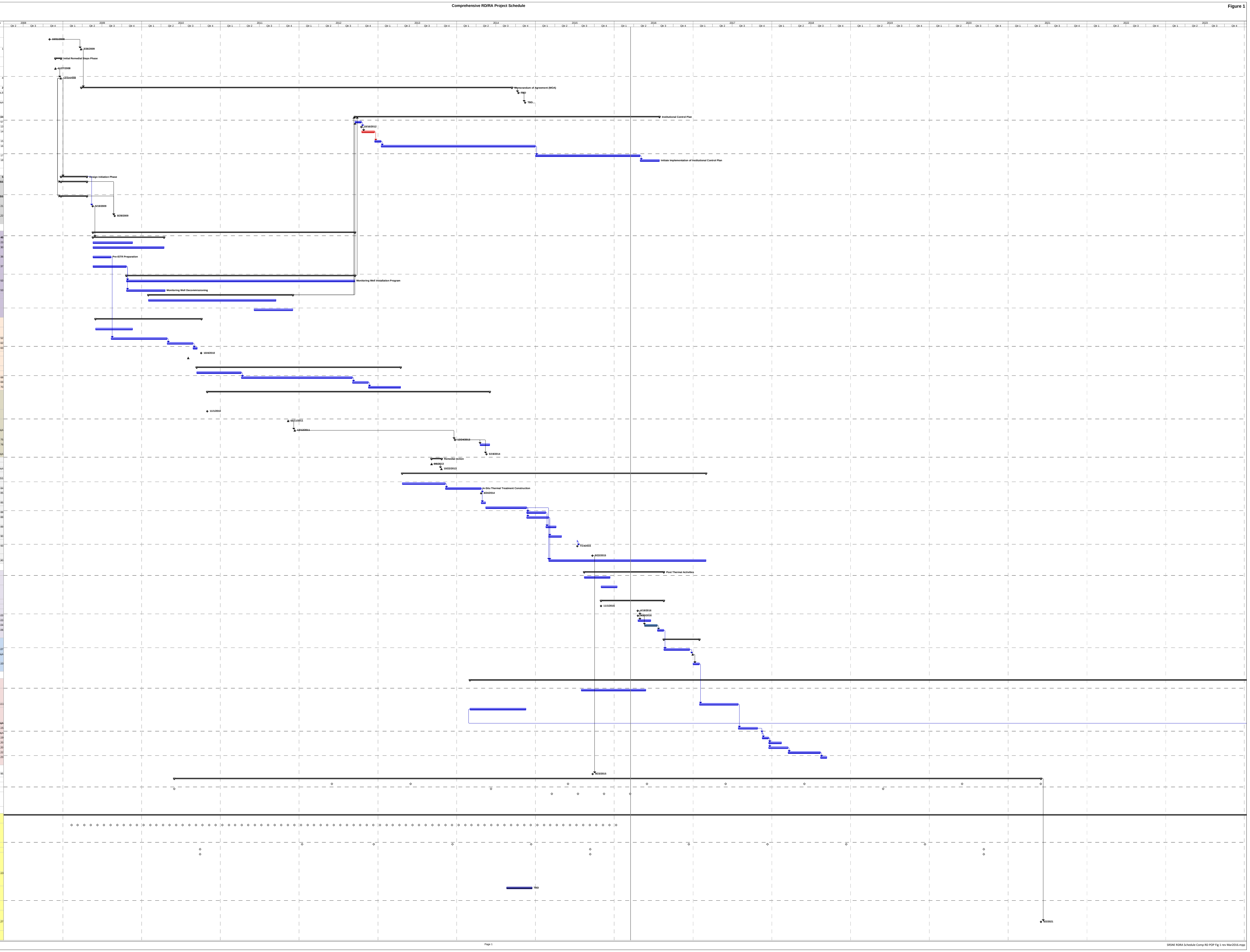
Project Schedule

de maximis, inc.

Comprehensive RD/RA Project Schedule

Figure 1

ID	Deliverable/Activity	Trigger	Time Frame	SOW Sections	Start Date	Finish Date	Duration	Predecessors
0	**RDRA Schedule**				**Sun 7/1/07**	**Fri 6/28/24**	**6208 days?**	
1	**Lodging of the Consent Decree**				Fri 10/31/08	Fri 10/31/08	1 day	
2	**Entry of the CD**				Thu 3/26/09	Thu 3/26/09	1 day	1
3	**Initial Remedial Steps Phase**	EPA Approval of Contractors		V.B	Thu 11/27/08	Mon 12/22/08	26 days	
4	**Notification of Supervising Contractor/Project Coordinator**	Lodging of the CD	Satisfied in the draft SOW.	V.B.1	Thu 11/27/08	Thu 11/27/08	1 day	
5	**Notification/Selection of a Remedial Design Contractor**	Lodging of the CD	Notification/Selection of a Remedial Design Contractor	V.B.2	Mon 12/22/08	Mon 12/22/08	1 day	4
6	**Memorandum of Agreement (MOA)**	Entry of the CD.	Within 180 days of Entry of CD	V.B.3	Fri 3/27/09	Sat 9/13/14	1997 days	2
10	**Supplemental Containment Action Plan**	EPA Approval of MOA	Within 30 days of signed MOA.	V.B.5	Tue 10/14/14	Tue 10/14/14	1 day	9FS+30 days,6
11	**Implementation of Supplemental Containment Action Plan (TBD)**	Upon notification by EPA, and consistent with the terms of the Memorandum of Agreement	As specified by EPA.	V.B.6	Fri 11/14/14	Fri 11/14/14	1 day	10FS+30 days
12	**Institutional Control Plan**	Completion of Vapor Intrusion Study	Within 30 days of completion of Vapor Intrusi	V.B.7	**Sun 9/16/12**	**Thu 7/28/16**	**1412 days?**	**57,54**
13	Develop Institutional Control Plan				Sun 9/16/12	Mon 10/15/12	30 days	57
14	Submit Institutional Control Plan				Tue 10/16/12	Tue 10/16/12	1 day	13
15	Agency Review and Comment On Institutional Control Plan				Wed 10/17/12	Sat 12/15/12	60 days	14
16	Revised Institutional Control Plan				Sun 12/16/12	Mon 1/14/13	30 days	15
17	Revised Institutional Control Plan #2				Tue 1/15/13	Wed 12/31/14	716 days	16
18	Agency Review and IC Plan Approval				Thu 1/1/15	Fri 4/29/16	485 days?	17
19	Initiate Implementation of Institutional Control Plan		Within ten (10) days of receipt of EPA's approval or modification of the INSTITUTIONAL CONTROL PLAN	V.B.8	Sat 4/30/16	Thu 7/28/16	90 days	18
20								
21	**Design Initiation Phase**			V.C	Tue 12/23/08	Tue 4/21/09	120 days?	5
22	**Remedial Design Work Plan (RDWP)**	EPA approval of RD Contractor.	Within one hundred twenty (120) days of receipt of EPA's written notice of authorization to proceed	V.C.1	Tue 12/23/08	Tue 4/21/09	120 days?	5SS
39	**Remedial Design Project Operations Plan (POP)**	EPA approval of RD Contractor.	Within 120 days of EPA approval.	V.C.2	Tue 12/23/08	Tue 4/21/09	120 days	5SS
45	**Agency Review and Comment on Accelerated Pre Design Studies**				Tue 5/19/09	Tue 5/19/09	1 day?	21
46	**Agency Review and Comment on Remedial Design Work Plan and POP**				Sat 8/29/09	Sat 8/29/09	1 day?	39FS+30 days,22
47								
48	**Pre-Design Studies**				Wed 5/20/09	Sat 9/15/12	1215 days?	
49	**Accelerated Pre-Design Studies**				**Wed 5/20/09**	**Wed 4/14/10**	**330 days**	**45**
50	Overburden NAPL Delineation Study			V.C.1.a	Wed 5/20/09	Thu 11/19/09	184 days	23
51	Habitat Restoration Study			V.C.1.h	Wed 5/20/09	Wed 4/14/10	330 days	30
52	Pre-ISTR Preparation				Wed 5/20/09	Tue 8/11/09	84 days	36
53	Groundwater Monitoring Well Network Evaluation			V.C.1.m	Wed 5/20/09	Wed 10/21/09	155 days	37
54	**Groundwater Pre-design Studies**				**Thu 10/22/09**	**Sat 9/15/12**	**1060 days**	
55	Monitoring Well Installation Program			IV.B.5.a	Thu 10/22/09	Sat 9/15/12	1060 days	53
56	Monitoring Well Decommissioning			IV.B.5.a	Thu 10/22/09	Mon 4/19/10	180 days	53
57	**Vapor Intrusion Study**			V.C.1.k	**Mon 2/1/10**	**Fri 12/2/11**	**670 days?**	
58	Follow-up Groundwater Sampling Round	6 Months Following Initial Sampling Event			Mon 2/1/10	Thu 9/15/11	592 days?	
59	Vapor Intrusion Study				Mon 6/6/11	Fri 12/2/11	180 days	
60	**Pre-ISTR Detailed Design (PIPP)**	EPA approval or modification of Conceptual Design.	Within 90 days of notice by EPA.	V.E.1	Mon 6/1/09	Mon 10/4/10	491 days	
61	NAPL Delineation Investigation Report				Mon 6/1/09	Thu 11/19/09	172 days	
62	Pre-ISTR Design Report			V.E.1.h,i	Wed 8/12/09	Wed 4/28/10	260 days	52
63	USEPA Review and Conditional Approval			V.E.1.i	Thu 4/29/10	Thu 8/26/10	120 days	62
64	Response to Final Comments				Fri 8/27/10	Wed 9/15/10	20 days	63
65	Final "For Construction" Drawings				Mon 10/4/10	Mon 10/4/10	1 day	
66	**Technical Information Meeting**	Submittal of 100% Design.		V.E.2	Thu 8/5/10	Thu 8/5/10	1 day	
67	**PIPP Construction Activities**				**Mon 9/13/10**	**Mon 4/15/13**	**946 days**	
68	Initial PIPP Work				Mon 9/13/10	Thu 4/7/11	207 days	
69	Break For Fiber Optic Relocation				Fri 4/8/11	Mon 9/3/12	515 days	68
70	Complete PIPP Work				Tue 9/4/12	Fri 11/16/12	74 days	69
71	PIPP Completion Report				Sat 11/17/12	Mon 4/15/13	150 days	70
72	**ISTR Design Process**	EPA approval or modification of RD Work Plan.	Within 120 days of EPA approval that necessary pre-design studies to be described in the RD Work Plan are complete.	V.D.1	Mon 11/1/10	Mon 6/2/14	1310 days?	
73	"75%" Design Package (including ISTR-related RDWP studies)			V.C.1.b,d,e V.D.1.a	Mon 11/1/10	Mon 7/18/11	260 days	
74	Technical Information Meeting			V.D.3	Fri 11/11/11	Fri 11/11/11	1 day	
75	Rounds of Submittals and EPA Review/Comment				Mon 12/12/11	Mon 12/23/13	743 days	74FS+30 days
76	USEPA Review, Comments, Responses				Tue 12/24/13	Fri 4/18/14	116 days	75
77	Final Design Reports Submitted, including O&M Plan, RA POP, ERP				Sat 4/19/14	Mon 6/2/14	45 days	76
78	Technical Information Meeting				Mon 5/19/14	Mon 5/19/14	1 day?	76FS+30 days
79	**Remedial Action**	EPA approval or modification of the Fir	Within 120 days of notice by EPA.	VI	Fri 9/6/13	Tue 10/22/13	47 days	
80	Pre-construction Conference(s)	EPA approval or modification of Final D	Within 30 days of notice by EPA.	VI.C	Fri 9/6/13	Fri 9/6/13	1 day	
81	Pre-construction Public Meeting(s)	EPA approval or modification of Final D	Within 45 days of notice by EPA.	VI.D	Tue 10/22/13	Tue 10/22/13	1 day	80FS+45 days
82	**ISTR**	**EPA approval or modification of Fina**	**Within 60 days of notice by EPA.**	VI.E	**Tue 4/23/13**	**Wed 3/1/17**	**1409 days?**	
83	Meetings During Construction	Start of Construction	Weekly during construction	VI.F	Tue 4/23/13	Tue 4/23/13	1 day?	84SS
84	Wellfield Installation				Tue 4/23/13	Fri 11/8/13	200 days	
85	In-Situ Thermal Treatment Construction				Sat 11/9/13	Wed 4/23/14	166 days	84
86	Thermal Final Construction Inspection	Within 60 days of notice by Settling Defendants.		VI.G	Thu 4/24/14	Thu 4/24/14	1 day?	85
87	Shakedown/Testing				Thu 4/24/14	Wed 5/14/14	21 days	85
88	Implementation of Thermal Treatment				Thu 5/15/14	Fri 11/21/14	190 edays	
89	Soil Sampling and Data Evaluation				Fri 11/21/14	Tue 2/17/15	89 days	88
90	Additional Operation of Thermal Treatment System (if required)				Fri 11/21/14	Mon 3/2/15	102 days	88
91	Demonstration of Completion		Documented request for shutdown and rationale	N/A	Wed 2/18/15	Mon 4/6/15	48 days	89
92	Demobilize				Tue 3/3/15	Fri 5/1/15	60 days	90
93	Final Construction Inspection				Mon 7/13/15	Mon 7/13/15	1 day?	
94	Submit Construction Completion Report (Draft and Final)	Draft within 30 days of Final Construction Inspection.	Within 30 Days	VI.H	Tue 7/14/15	Fri 9/18/15	67 days	93
95	Agency Approval of Completion Report				Tue 9/22/15	Tue 9/22/15	1 day?	
96	Time to Achieve Equilibrium	ISTR shutdown	estimated 2 years		Tue 3/3/15	Wed 3/1/17	730 days	88,90
97								
98	**Post Thermal Activities**				Sat 8/15/15	Wed 8/17/16	369 days	
99	Soil Investigation (SIP)	After In-Situ Thermal to re-assess the size of the area to be capped		V.C.i	Sat 8/15/15	Sat 12/12/15	120 days	
100	Vapor Control System Evaluation	After In-Situ Thermal to determine whether (or not) a vapor control system is needed below the cap.		V.C.j	Sun 11/1/15	Thu 1/14/16	75 days	
101	**Soil & RCRA C Cap Design**				**Sun 11/1/15**	**Wed 8/17/16**	**291 days**	
102	Draft Design Package				Sun 11/1/15	Thu 3/31/16	152 days	
103	Technical Information Meeting				Tue 4/19/16	Tue 4/19/16	1 day	
104	Agency Review/Comments				Wed 4/20/16	Thu 5/19/16	30 days	103
105	Address Comments and Finalize Design				Wed 4/20/16	Sat 6/18/16	60 days	103
106	Contractor Procurement				Fri 5/20/16	Mon 7/18/16	60 days	104
107	USEPA Approvals and Contractor Pre-Mobilization				Tue 7/19/16	Wed 8/17/16	30 days	106
108	**Soil & RCRA C Cap Construction (incl Cianci soils, dioxin soils, and NTCRA 1 area)**				**Thu 8/18/16**	**Sun 1/29/17**	**165 days**	
109	Field Construction				Thu 8/18/16	Thu 12/15/16	120 days	107
110	Final Construction Inspection	Settling Defendants conclude construction complete.	Within 60 days of notice by Settling Defendants.	VI.G	Fri 12/30/16	Fri 12/30/16	1 day	109FS+14 days
111	Prepare/ Submit Construction Completion Report				Sat 12/31/16	Sun 1/29/17	30 days	110
112								
113	**Groundwater Containment & Treatment Evaluation & Optimization Study (GCTEOS)**			V.C.4	**Mon 3/3/14**	**Thu 6/27/24**	**3770 days?**	
114	Change to POTW Discharge (Proposal, POTW sampling, permit application, HCTS modifications)				Sat 8/1/15	Thu 5/26/16	300 days	
115	GCTEOS	Completion of ISTR and capping		V.C.4	Mon 1/30/17	Fri 7/28/17	180 days	111
116	Optimization Studies	Need to upgrade system due to parts limitations; possible need to address in cap design	As directed by the EPA, or proposed by the Settling Defendants, no less frequently than every 10 years	V.C.6	Mon 3/3/14	Mon 11/17/14	260 days	
117	Additional Optimization Study(ies) (TBD)			V.C.6	**Thu 2/29/24**	**Thu 6/27/24**	**120 days**	**116SS+3650 days**
118	Draft Design for HCTS Modifications				Sat 7/29/17	Thu 10/26/17	90 days	115
119	Technical Information Meeting				Thu 11/16/17	Thu 11/16/17	1 day?	118FS+20 days
120	Agency Review/Comments				Fri 11/17/17	Sat 12/16/17	30 days	119
121	Address Comments and Finalize Design				Sun 12/17/17	Wed 2/14/18	60 days	120
122	Contractor Procurement				Sun 12/17/17	Fri 3/16/18	90 days	120
123	HCTS Modifications				Sat 3/17/18	Mon 8/13/18	150 days	122
124	Prepare/ Submit Construction Completion Report				Tue 8/14/18	Wed 9/12/18	30 days	123
125								
126	**Commence Operation and Maintenance**	EPA approval or modification of Constr	Immediately upon notice by EPA.	VI.I	Wed 9/23/15	Wed 9/23/15	1 day	95
127	**Compliance Monitoring (CM)**			VII.B	Tue 6/1/10	Tue 6/1/21	4019 days	
128	**Annual Groundwater Sampling Event**				**Wed 6/1/11**	**Tue 6/1/21**	**3654 days**	
138	**"Comprehensive" Sampling Events**				**Tue 6/1/10**	**Sat 6/1/19**	**3288 days**	
142	**Sampling "N" Wells during Equilibrium Period (events outside equi period coincide with annual)**				**Wed 3/18/15**	**Wed 3/15/17**	**729 days**	
150								
151	**Compliance Reporting**			VIII	Sun 7/1/07	Fri 6/28/24	6208 days?	
152	**Monthly Progress Reports**	**Lodging of the CD.**	**On the 10th day following lodging and monthly thereafter until approval of final Construction Compl Rpt.**	VIII.A	**Tue 2/10/09**	**Tue 1/10/17**	**2892 days**	
249	**Annual State of Compliance Reports**	**One Year After the Lodging of the C**	**Annually**	VIII.B	**Thu 4/15/10**	**Thu 12/12/19**	**3529 days**	
261	**Five Year Review Reports**	**Five Years after the date of the Reco**	**Every Five years**	VII.A.D	**Wed 9/29/10**	**Thu 9/10/20**	**3635 days**	
265	**Compliance Monitoring (CM) Work Plan Evaluation(s) (part of 5-year reviews)**	**No less frequently than once after implementation of the excavation and capping component, and long-term groundwater containment and treatment system.**	**As part of the five-year reviews.**	VII.B.3	**Wed 9/29/10**	**Thu 9/10/20**	**3635 days**	
269	**Interim Remedial Action Report**	EPA determination that long-term groundwater containment and treatment system is operational and functional.	Within 90 days of notice by EPA.	VIII.C	Fri 6/28/24	Fri 6/28/24	1 day	113
270	**Determination of Background Metals in Groundwater (TBD)**	Compliance with Interim Cleanup Levels for Groundwater.	No sooner than 365 days prior to submittal of Demonstration of Compliance Report.	VIII.E	Wed 8/20/14	Tue 12/16/14	119 days	
271	**Demonstration of Compliance Report (TBD)**	Compliance with cleanup levels.	As demonstrated by Settling Defendants.	VIII.F	Sun 7/1/07	Sun 7/1/07	1 day?	
272	**Risk Assessment**			IV.A.1	Sun 7/1/07	Sun 7/1/07	1 day	
273	**Site Closure (TBD)**				Wed 6/2/21	Wed 6/2/21	1 day?	127
274	**Summary of Cost Information (TBD)**	Compliance with cleanup levels.	As demonstrated by Settling Defendants.	VIII.G	Sun 7/1/07	Sun 7/1/07	1 day?	



Project: SRSNE Superfund Site
Print Date: Thu 3/17/16

SRSNE RDRA Schedule Comp RD POP Fig 1 rev Mar2016.mpp

Attachment 2

Hydraulic Containment and Treatment System, Annual Demonstration of Compliance Report No. 7, October 31, 2014 through October 30, 2015

DRAFT

Hydraulic Containment and Treatment System Annual Demonstration of Compliance Report
No. 7

31 October 2014
Through
30 October 2015

Solvents Recovery Service of New England, Inc.
Superfund Site
Southington, Connecticut

Prepared for:
SRSNE PRP Group

Prepared by:
WESTON SOLUTIONS, INC.
Suite 3B
124 Hebron Avenue
Glastonbury, CT 06033
(860) 368-3200

1 February 2016

TABLE OF CONTENTS

TABLES

Title

FIGURES

Title

FIGURES
(Concluded)

Title

1. INTRODUCTION

This Demonstration of Compliance Report (DCR) was prepared by Weston Solutions, Inc. (WESTON®) on behalf of the Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site PRP Group. The DCR documents the effectiveness of the Non-Time-Critical Removal Action No. 1 and 2 (NTCRA-1 and NTCRA-2) hydraulic containment and treatment system at the SRSNE Site in Southington, Connecticut, based on data collected during the period of 31 October 2014 through 30 October 2015. The data presented in this DCR were obtained in accordance with the United States Environmental Protection Agency (EPA) approved Demonstration of Compliance Plans (DCP) for NTCRA-1 and NTCRA-2 (BBL, June 1995 and November 1999), respectively. The data acquisition schedule, reporting, and evaluation requirements for this and future DCRs were described in these DCPs.

This is the seventh annual DCR to be issued after lodging of the consent decree and submitted in accordance with the Remedial Design/Remedial Action (RD/RA) Statement of Work (SOW). This DCR follows 60 previously submitted DCRs prepared initially on a quarterly basis and changed to annual submissions in 2003.

1.1 NTCRA-1 BACKGROUND

The NTCRA-1 hydraulic containment system is installed in the containment area (Figure 1A), which was defined in the NTCRA-1 SOW. The containment system originally included an array of 12 overburden groundwater extraction wells (RW-1 through RW-12) and a downgradient barrier (steel sheet piling) that hydraulically and physically contains overburden groundwater entering the containment area from the SRSNE operations area.

The pre-design investigation results and the designs of the hydraulic barrier wall, extraction wells, and treatment system are described in detail in the NTCRA-1 *100% Groundwater Containment and Treatment System Design Report* (*100% Design Report*, BBL, January 1994). The NTCRA-1 system was constructed between February and July 1995 and brought online in accordance with the EPA-approved schedule on 19 July 1995.

The NTCRA-1 hydraulic containment and monitoring network remained as originally constructed until November 2009 when select recovery wells, monitoring wells, and piezometers were abandoned in accordance with the Monitoring Well Network Evaluation, included as Attachment N to the *Remedial Design Work Plan* (Arcadis, April 2009). EPA was notified that the abandoned wells and piezometers would be removed from the NTCRA-1 monitoring program and DCP on 1 November 2009 (WESTON, December 2009). The second annual DCR (31 October 2009 to 30 October 2010) summarizes the recovery wells, monitoring wells, and piezometers abandoned under this program and the rationale for abandonment of each well. As indicated in the second annual DCR, all monitoring wells and piezometers were abandoned in November and December 2009, with the exception of former recovery wells RW-5 and RW-6. These recovery wells were permanently taken out of service in November 2009, but not abandoned until December 2010.

As a result of the recovery well abandonment activities discussed above, the NTCRA-1 containment system now consists of ten overburden groundwater extraction wells (RW-1 through RW-4, and RW-7 through RW-12).

1.2 NTRCA-2 BACKGROUND

The NTCRA-2 hydraulic containment system is installed south of the NTCRA-1 containment area (Figure 1A), as defined in the NTCRA-2 SOW. The NTCRA-2 containment area encompasses the majority of the northern portion of the Town of Southington well field property and includes the shallow and deep bedrock, extending to a depth of 100 feet (ft) below the top of bedrock in the northern portion of this property (Figure 1A). Further upgradient (north), the NTCRA-2 containment area extends over 170 ft below the top of bedrock and over 200 ft below ground surface (BBL, November 1999).

The NTCRA-2 hydraulic containment system initially included two groundwater extraction wells (RW-13 and RW-1R) that, in combination with the NTCRA-1 containment system, contain bedrock groundwater migrating from the SRSNE operations area (Figure 1A). The design of the overburden and bedrock extraction wells RW-13 and RW-1R, respectively, are described in the NTCRA-2 *100% Design Report* (BBL, November 1999). Overburden recovery well RW-13 has been on-line since 14 July 1999, and bedrock recovery well RW-1R has been operating since 5 September 2001.

A third groundwater extraction well (RW-14) was added to the NTCRA-2 well field (Figure 1A) to further enhance long-term hydraulic containment of the overburden and bedrock groundwater in the NTCRA-2 well field. The design of the additional overburden extraction well is described in the RW-14 *Completion Report* (WESTON, November 2007). This overburden recovery well has been operating since 24 September 2007.

A fourth groundwater extraction well (RW-15) was also added to the NCTRA-2 well field to provide additional redundancy and ensure NCTRA-2 performance objectives can be achieved with one NTCRA-2 overburden recovery well out of service in the future. The design of the additional overburden extraction well is described in the RW-15 *Completion Report* (WESTON, January 2015). This overburden recovery well has been operating since 12 November 2014. As part of the well installation work, a second electrical service was extended to the NTCRA-2 well field and one of the two installed spare NTCRA-2 force mains were connected to RW-15 and placed into service. As part of the force main extension, a Valve Vault was installed between the NTCRA-2 wells and the Treatment System. The Valve Vault allows for selection of which forcemain will be used to convey groundwater to the HCTS. It is also equipped with cleanouts to allow for maintenance on each active forcemain.

1.3 GROUNDWATER TREATMENT SYSTEM

The groundwater extracted by the NTCRA-1 and 2 containment systems is pumped directly to the groundwater treatment facility (Figure 1A). The treatment system consists of the following unit processes: influent equalization, metals pretreatment, filtration, ultraviolet oxidation (UV), and granular activated carbon adsorption. Vapor phase carbon adsorption is also used to capture contaminants that volatize during treatment. The system precipitates and extracts metals, reduces suspended solids, and destroys and captures volatile organic contaminants. Treated water is discharged to the Quinnipiac River in accordance with the Connecticut Department of Environmental Protection (CTDEP) *Revised Substantive Requirements for Discharge of Pre-Treated Groundwater* issued 6 November 1995.

1.4 REPORT ORGANIZATION

Section 2 of this report summarizes the acquisition and evaluation of field data used to verify the effectiveness of the hydraulic containment and treatment system, and Section 3 provides an overview of operations and maintenance (O&M) activities conducted at the site during this O&M period.

2. DATA ACQUISITION AND RESULTS

The data required to demonstrate the effectiveness of the hydraulic containment and treatment system were obtained in the form of hydraulic head measurements from wells and piezometers installed in the area of the containment system, flow measurements from the extraction well array, treatment system flow rates, and analytical results.

2.1 NTCRA-1 CONTAINMENT SYSTEM MONITORING

The satisfactory performance of the NTCRA-1 containment system is verified through two reversal-of-gradient tests that determine whether groundwater flow is controlled by the system. These tests are demonstrated by comparing hydraulic head measurements at several monitoring locations. The specific wells and piezometers used for these comparisons are discussed in Subsections 2.1.1 and 2.1.2. The gradient tests are:

- **Reversal of Gradient Test No. 1 (RGT-1)**: Confirms that overburden groundwater east and downgradient of the operations area is flowing in the direction of the groundwater extraction wells.

- **Reversal of Gradient Test No. 2 (RGT-2)**: Confirms that overburden groundwater flow is reversed and maintained in the direction of the groundwater extraction wells within the area enclosed by the hydraulic divide installed adjacent to the hydraulic containment system. RGT-2 is more crucial to a demonstration of compliance as it requires that overburden groundwater elevations within the barrier are at least 0.3 ft lower than those outside the wall in NTCRA-1.

2.1.1 RGT-1 Results

To confirm that overburden groundwater east and downgradient of the operations area and within the containment area is flowing in the direction of the groundwater extraction wells, hydraulic head measurements were collected at the following overburden wells/piezometers located in the vicinity of the groundwater containment system:

- Extraction Wells RW-1 through RW-4 and RW-7 through RW-12
- Monitoring Wells MW-415, MWL-304, MWL-305, MWL-307, and MWL-308

Overburden groundwater elevations were also measured at the following wells to assess the hydraulic response in the area between the hydraulic barrier wall and the Quinnipiac River:

- MWL-302, MWL-306, MWL-309, MWL-311, and TW-7A.

Monthly overburden hydraulic head data measured at the specified wells and compliance monitoring points from 31 October 2014 through 30 October 2015 are presented in Table 1. The resulting groundwater contour maps are presented as Figures 1A through 12A. The contours indicate the horizontal hydraulic gradient between the SRSNE operations area and the extraction wells was eastward toward the extraction wells, fulfilling RGT-1.

The vertical hydraulic gradient between the overburden and bedrock in the vicinity of the hydraulic containment system is also evaluated to confirm satisfactory recovery well operation. Groundwater elevations were compared between bedrock well (MW-416) and the adjacent overburden well (MWL-307) on the same dates. This comparison indicates that the vertical component of the hydraulic gradient between the bedrock and the overburden was generally downward from the overburden to the bedrock within the containment area.

Hydraulic head data is also compared at overburden compliance piezometers CPZ-1, CPZ-3, CPZ-5, CPZ-7, and CPZ-9 and adjacent bedrock piezometers CPZ-1R, CPZ-3R, CPZ-5R, CPZ-7R, and CPZ-9R. Monitoring indicates that the gradient was generally upward from the bedrock to the overburden in the vicinity of the pumping wells and the hydraulic barrier wall throughout the period covered by this DCR.

2.1.2 RGT-2 Results

To confirm that groundwater flow is reversed and maintained in the direction of the groundwater extraction wells, hydraulic head measurements were collected weekly at eight fully penetrating overburden compliance piezometers (CPZ-1 2A, 3, 4A, 5, 6, 7, and 8). Compliance piezometers (CPZ-9 and 10) were removed from RGT-2 because CPZ-9 was abandoned in December 2009. As stated in the DCP, the hydraulic gradient is considered reversed and inward across the hydraulic barrier wall when the hydraulic head data measured at each compliance piezometer located inside the hydraulic barrier wall (CPZ-1, CPZ-3, CPZ-5 and CPZ-7) is at least 0.3 ft lower than the head measured at the corresponding compliance piezometer located outside the hydraulic barrier wall (CPZ-2A, CPZ-4A, CPZ-6, and CPZ-8, respectively).

Based on weekly hydraulic head measurements, the required 0.3 ft head differential was achieved in all four pairs (CPZ-1/CPZ-2A, CPZ-3/CPZ-4A, CPZ-5/CPZ-6, and CPZ-7/CPZ-8) for 21 of the 52 weekly monitoring rounds during the monitoring period. Compliance piezometer pairs CPZ-5/CPZ-6 and CPZ-7/CPZ-8 met the 0.3 ft head differential during the entire monitoring period. Compliance piezometer pairs CPZ-1/2A and CPZ-3/CPZ-4A did not achieve the required 0.3-ft differential on 7 and 31 of the 52 weekly gauging rounds, respectively, during the monitoring period. Table 5 provides a summary of RGT-2 test results and highlights the weeks during which the required head differential was not maintained between CPZ-1/2A and CPZ-3/4A. The cause of the loss of hydraulic gradient reversal at these two compliance pairs is believed to be a result of excessively dry site conditions due to low precipitation, and a substantial localized elevation decrease in the overburden water table outside of the sheet pile wall.

During the period covered in this report, conditions as reported by The National Drought Mitigation Center worsened from Abnormally Dry to Moderate Drought in the area. Total precipitation during the period covered by this report was approximately 30% lower than typical annual precipitation.

In addition, both compliance piezometers (CPZ-1 and CPZ-3) on the inside of the hydraulic barrier wall have poor hydraulic connectivity to the adjacent recovery wells (RW-7 and RW-12, respectively), which are less than 7-feet and 11-feet, respectively, from the adjacent piezometers and have very little drawdown influence on the groundwater elevation in the piezometers.

The nearby recovery wells (RW-1, 7, 8, 9 and 12) and piezometer CPZ-3 underwent redevelopment in July and August 2015 to improve hydraulic gradient reversal and hydraulic connectivity when hydraulic gradient reversal goals were not met in the summer of 2015. Historically these activities were not successful in improving hydraulic connectivity and hydraulic gradient reversal during dry conditions. This additional redevelopment work was also unsuccessful in improving hydraulic connectivity and hydraulic gradient remained out of compliance throughout the dry period.

To verify the continuity of gradient reversal, daily hydraulic head measurements are also recorded by a data logger at compliance piezometers CPZ-5 and CPZ-6. These measurements are collected in 8-hour intervals, or three times a day. These measurements demonstrated compliance for the entire monitoring period, with the exception of 13 to 15 June 2015 when the entire HCTS system was offline for a 44-hour period due to failure of the Supervisory Control and Data Acquisition (SCADA) computer. A hydrograph of the data logger measurements from compliance pair CPZ-5 and CPZ-6 is presented as Figure 13 for the monitoring period.

A summary of NTCRA-1 non-compliance occurrences between 31 October 2014 and 30 October 2015 is presented below, along with an explanation of the cause and corrective measures taken in response to the non-compliance issue.

NTCRA-1 – Non-Compliance Summary – 31 October 2014 to 30 October 2015

Date & No. of Days	Cause	Corrective Actions
31 October to 9 December 2014 (40 days)	Hydraulic gradient reversal between compliance piezometers CPZ-3/4A was not maintained. For a portion of this period compliance piezometers CPZ-1/2A also did not demonstrate gradient reversal	No corrective action. Root cause is believed to be a result of excessively dry site conditions due to low precipitation, and a substantial localized elevation decrease in the overburden water table outside of the sheet pile wall. Compliance was restored when rain increased the overburden water table.
4 May to 30 October 2015 (180 days)	Hydraulic gradient reversal between compliance piezometers CPZ-3/4A was not maintained. For a portion of this period CPZ-1/2A also did not demonstrate hydraulic gradient reversal.	Root cause is believed to be a result of excessively dry site conditions and a substantial localized elevation decrease in the overburden water table as above. In response to the loss of hydraulic gradient reversal, the RW-1, 7, 8, 9 and 12 and CPZ-1 and 3 were redeveloped in July and August 2015.
13-15 June 2015 (3 days)	Hydraulic gradient reversal was not maintained between compliance piezometers CPZ-5/6 when the HCTS SCADA computer failed causing shutdown of the NTCRA-1 extraction system.	The SCADA computer was repaired to restore HCTS operations to normal. The HCTS system was shut down for a total of 44.5 hours, while the SCADA computer operation was being restored.

2.2 NTCRA-2 CONTAINMENT SYSTEM MONITORING

The satisfactory performance of the NTCRA-2 hydraulic containment system is verified through two containment tests that compare hydraulic head measurements in NTCRA-2. The specific locations used for hydraulic head comparisons are presented in Subsections 2.2.1 and 2.2.2. The containment tests are:

- **Containment Test Part 1 (CT-1)**: Confirms that within the NTCRA-2 containment area, bedrock groundwater east and downgradient of the operations area is flowing in the direction of the hydraulic containment system.

- **Containment Test Part 2 (CT-2)**: Confirms that bedrock groundwater flow downgradient of the NTCRA-2 extraction system within the containment area is reversed and maintained in the direction of the hydraulic containment system.

2.2.1 CT-1 Results

To confirm that VOC-impacted bedrock groundwater east and downgradient of the operations area and within the containment area is flowing in the direction of the extraction wells, hydraulic head measurements were obtained at the following pairs of wells/piezometers located upgradient of the hydraulic containment system:

- Shallow bedrock – MW-704R and MW-121A
- Deep Bedrock – MW-704DR and MW-705DR

The hydraulic gradient is considered to be towards the extraction wells when the hydraulic head measured at the shallow (MW-704R) and deep (MW-704DR) bedrock monitoring wells, located adjacent to extraction wells RW-13, RW-1R, RW-14 and RW-15, is lower than hydraulic head measurements at wells MW-121A and MW-705DR, respectively.

Monthly rounds of hydraulic head data measurements collected from 31 October 2014 to 30 October 2015 are presented in Table 1. The resulting contour maps for shallow bedrock and deep bedrock monitoring wells and piezometers are presented as contours on Figures 1B through 12B and Figures 1C through 12C, respectively. The contours indicate that groundwater flow in the shallow and deep bedrock is inward toward the NTCRA-2 extraction wells, fulfilling Containment Test Requirement No.1.

2.2.2 CT-2 Results

To confirm that bedrock groundwater flow downgradient of the extraction system within the containment area is reversed and maintained in the direction of the extraction wells, hydraulic head measurements were obtained at the following locations:

- Shallow bedrock – MW-704R, MW-204A, PZR-2R, and PZR-4R
- Deep Bedrock – MW-704DR, PZR-2DR, and PZR-4DR

The hydraulic gradient is considered reversed and inward toward the containment area when the hydraulic head measured at the shallow and deep bedrock monitoring wells MW-704R and MW-704DR, which are located adjacent to extraction wells RW-13, RW-1R, RW-14 and RW-15 is lower than the hydraulic head measurements at the remaining shallow and deep bedrock monitoring wells and piezometers listed above. Measurements taken at these locations are presented in Table 1 and as groundwater contours in Figures 1B through 12B and 1C through 12C.

To verify the continuity of gradient reversal, daily hydraulic head measurements are recorded via a data logger at the following locations:

- Shallow bedrock – MW-704R and PZR-2R
- Deep Bedrock – MW-704DR and PZR-2DR

Daily hydraulic head measurements recorded via data loggers installed in NTCRA-2 compliance pairs MW-704R and PZR-2R (shallow bedrock) and MW-704DR and PZR-2DR (deep bedrock) indicated that the NTCRA-2 containment system met CT-2 for the monitoring period, with the exception of one period of non-compliance outlined herein encompassing a total of 3 days, when the shallow bedrock did not maintain hydraulic gradient reversal standards.

Hydrographs of the data logger measurements obtained for shallow and deep bedrock compliance points between 31 October 2014 and 30 October 2015 are included as Figures 14A and 14B, respectively.

A summary of NTCRA-2 non-compliance occurrences experienced during the monitoring period is presented below, along with an explanation of the cause and corrective measures taken to correct the problem.

NTCRA-2 – Non-Compliance Summary – 31 October 2014 to 30 October 2015

Date	Cause	Corrective Actions
13-15 June 2015	Hydraulic gradient reversal was not maintained between compliance pair MW-704R and PZR-2R when the HCTS SCADA computer failed causing shutdown of the NTCRA-2 extraction system.	The SCADA computer was repaired to restore HCTS operations to normal. The HCTS system was shut down for a total of 44.5 hours, while the SCADA computer operation was being restored.

2.3 TREATMENT SYSTEM MONITORING

HCTS influent and effluent flow measurements and laboratory analytical data were obtained during the monitoring period. The flow and analytical data are presented and discussed in Subsections 2.3.1 and 2.3.2, respectively.

2.3.1 HCTS Influent and Effluent Flow Data

The influent and effluent flow rates of the groundwater treatment system were each recorded continuously using an in-line totalizing flow meter and strip chart recorder. The NTCRA-1 and NTCRA-2 recovery wells ran continuously throughout the monitoring period, with the exception of minor shutdowns during maintenance, individual recovery well failures, or HCTS alarm shutdowns. NTCRA-2 recovery wells did not require redevelopment to maintain drawdown and groundwater hydraulic control during the monitoring period.

Approximately 20,711,000 gallons of groundwater were extracted, treated, and discharged during the monitoring period. Refer to Table 2 for a summary of influent and effluent flow rates and totals. Throughout the period covered in this report, the system treated and discharged an average of 39.4 gallons per minute.

2.3.2 HCTS Influent and Effluent Analytical Data

Samples of groundwater treatment system influent and effluent were collected twice per month and analyzed for metals, VOCs, alcohols and total suspended solids. For the process effluent, the first round each month was also analyzed for total PCBs. Once every quarter, additional effluent samples were collected and tested for dioxins/furans. Analytical results from the influent and effluent sampling are summarized in Tables 3 and 4, respectively. In Table 4, the effluent sampling results are compared with the discharge limits established by the CTDEP in the Substantive Requirements for Discharge, dated 6 November 1995. As shown in Table 4, the treatment system effluent water quality was below discharge limits for the monitoring period.

In addition to the analyses discussed previously, effluent samples were collected and submitted for acute and chronic toxicity analysis in January, April, July, and October 2015. The submitted effluent samples passed the acute and chronic toxicity test for both Daphnia Pulex and fathead minnows.

Process influent and effluent sampling for 1,4-dioxane was conducted quarterly during the monitoring period to collect additional data concerning this compound. Currently, no discharge limit exists for 1,4-dioxane. Quarterly sample results for the year are presented below.

SRSNE - 1,4-Dioxane Sampling Summary

Date	Influent (ppb)	Effluent (ppb)
6-Jan-15	23.5	<5
1-Apr-15	46.0	11.0
7-Jul-15	31.0	33.0
6-Oct-15	68.0	33.0

3. HYDRAULIC CONTAINMENT AND TREATMENT SYSTEM (HCTS) OPERATIONS AND MAINTENANCE SUMMARY

The HCTS O&M summary is divided into two sections. Subsection 3.1 highlights the major O&M related activities performed between 31 October 2014 and 30 October 2015, and Subsection 3.2 discusses O&M issues that are on-going or anticipated during the future activities at the site.

3.1 OPERATIONS AND MAINTENANCE SUMMARY

The following briefly describes highlighted HCTS operations and maintenance activities or capital improvements performed during the reporting period.

1. **November 2014 – NTCRA-2 Recovery Well RW-15**: This new recovery well was installed and developed in October 2014 during the previous monitoring period. During the month of November 2014, the access vault, recovery well vault piping, recovery well pump and electrical/control equipment were installed. The new recovery well was placed into operation on 14 November 2015.

2. **December 2014 – NTCRA-1 Compliance Piezometer Redevelopment**: Although hydraulic gradient reversal was restored during the month of December 2014, all four NTCRA-1 compliance piezometers (CPZ-1, 2A, 3 and 4A) were redeveloped in response to an extended period where hydraulic gradient reversal standards were not met. This redevelopment work did not result in improved demonstration of hydraulic gradient reversal.

3. **January 2015 – In-Plant Air Quality Sampling**: Ambient and personal air monitoring was conducted inside the treatment system building to confirm air quality. Ambient and personal air monitoring had not been performed since 2003. The air quality sample results demonstrated that there were no air quality concerns in the building.

4. **February 2015 – Sand Filter Gravity Pipe Cleaning**: During the month of January 2015 it was determined that the gravity line between the clarifier and sand filter was restricted and limiting treatment system flow. This process line along with other gravity piping had been previously cleaned in September 2014 and typically does not require dismantling during scheduled maintenance to maintain acceptable operation and is cleaned using jet-rodding equipment. This line was dismantled and cleaned to restore operations to normal on 6 February.

5. **March, July and September2015 – NTCRA-2 Well Maintenance**: As indicated above, NTCRA-2 recovery well redevelopment was not required for RW-13, 14 or 15 during the monitoring period. However in order to maintain acceptable NTCRA-2 flow, the following recovery well maintenance was performed:

- 30 March 2015 – The pumps in recovery wells RW-13, 14 and 15 were removed and replaced with clean pumps to maintain acceptable yield from each well.

- 7 July 2015 – The pumps in recovery wells RW-13 and 14 were removed and replaced with clean pumps to maintain acceptable yield from both recovery wells. The motor was also replaced on RW-14.

- 15 September 2015 – The pumps in recovery wells RW-13, 14 and 15 were removed and replaced with clean pumps to maintain acceptable yield from each well.

6. **March 2015 – NTCRA-2 Flow Meter upgrade**: The existing NTCRA-2 flow meter was a displacement type water meter, requiring periodic cleaning to maintain acceptable performance. WESTON replaced the displacement flow meter with a new magnetic type meter on 31 March.

7. **April 2015 – Diaphragm Pump Maintenance**: During April 2015 both sludge transfer pumps (P-900 and P-901) experienced leaks. Both pumps were removed from the system and both the diaphragms and lower ball seats were replaced to restore operation to normal.

8. **May 2015 – HCTS Effluent pH sensor**: The HCTS effluent pH sensor was not working properly and salt bridge replacement did not allow the pH sensor to pass calibration tests. On 2 May the faulty effluent pH sensor was replaced with a new pH sensor to restore operation to normal.

9. **May 2015 – Primary and Secondary Liquid Phase Carbon Replacement**: The activated carbon in the primary and secondary carbon vessels (2000 lbs. each) was replaced with new material on 5 and 12 May 2015, respectively. The spent carbon was removed and recycled by Carbon Filtration Systems, Inc.

10. **May 2015 – SCADA Computer UPS replacement**: The existing Uninterruptable Power Supply (UPS) no longer held a charge and would not power the SCADA computer during a power outage. The UPS was replaced to restore SCADA computer operations to normal.

11. **June 2015 – SCADA Computer Repair**: On 12 June 2015 the SCADA computer motherboard failed. This computer was under warrantee, but the vendor (Dell) could not provide repair service until 15 June. WESTON operated the treatment system without the SCADA, but a subsequent alarm occurred on 13 June that shutdown the treatment system and recovery wells. All systems remained off until 15 June when the motherboard on the computer was replaced to restore its operation to normal.

12. **July and August 2015 – NTCRA-1 Recovery Well Redevelopment**: In response to loss of NTCRA-1 hydraulic gradient reversal at NTCRA-1 compliance piezometer

pair CPZ-3/4A, WESTON coordinated redevelopment of targeted NTCRA-1 recovery wells. In July and August 2015, NTCRA-1 Recovery Wells RW-1, 7, 8, 9 and 12, located at the southern end of NTCRA-1 were redeveloped. During this period, compliance piezometer CPZ-3 was also redeveloped to see if improved hydraulic connectivity could be achieved to nearby recovery well RW-12. These redevelopment activities were not successful in improving NTCRA-1 hydraulic gradient reversal.

13. **September 2015 – Recovery Well RW 9 Piping Failure**: The piping in the RW-9 recovery well vault was leaking. The recovery well was taken out of service until the piping was repaired to restore operations to normal.

14. **September 2015 – Gravity Pipe Cleaning**: In order to maintain acceptable treatment system hydraulic throughput, WESTON cleaned the metals precipitation gravity piping. All gravity piping between the clarifier feed tank and sand filter was cleaned during the event.

15. **September 2015 – Equalization Tank and Oxidation Feed Tank Mixer Cleaning**: The water levels in each tank were lowered and their respective mixers cleaned as part of scheduled preventive maintenance to ensure continued satisfactory operation.

16. **September 2015 – Clarifier Feed, Flash Mix and Flocculation Tanks and Mixer Cleaning**: Each tank was dewatered and manways removed to gain access to the tanks and mixers. Settled solids and scale were removed from both the tanks and mixers. Approximately one drum of solids was removed from the three tanks during the maintenance event.

17. **October2015 – Sludge Transfer Pump P-900**: The sludge transfer pump was leaking fluid out the exhaust. The pump diaphragms and ball seats were replaced to restore operation to normal.

18. **October 2015 – NTCRA-2 Electrical Service Repair**: Both NTCRA-2 recovery wells RW-1R and RW-15 stopped operating. Troubleshooting confirmed that the buried electrical service supplying power to these NTCRA-2 recovery wells required replacement of four watertight electrical connectors in one of the underground junction boxes between the Treatment Building and NTCRA-2 well field to restore operation to normal.

19. **Ultraviolet Oxidation System**: The following summarizes the major maintenance performed on the UV Equipment during the monitoring period:

    - Ten (10) UV lamps were replaced during the reporting period. All lamps were removed or replaced due to failure, excessive amperage draw, or excessive hours.

    - Ten (10) quartz tubes were replaced during the reporting period.

During the monitoring period, no additional UV reactor circuits failed. However, premature lamp failures occurred at a much higher frequency than normal, requiring increased maintenance and parts to maintain operation. At the end of this monitoring period, 8 of the 12 reactor circuits on UV-1 and 6 of the 12 reactor circuits on UV- 2 are functional.

3.2 FUTURE HCTS OPERATIONS AND MAINTENANCE ACTION ITEMS

- WESTON will continue to evaluate the overall HCTS and make recommendations for process improvements or modifications in the coming year. These recommendations will be summarized in the monthly O&M HCTS report submissions. Currently there are no capital improvements planned.

- The northern five NTCRA-1 recovery wells not redeveloped during this monitoring period are scheduled to be redeveloped during the fall of 2015.

- Redevelopment of three NTCRA-2 recovery wells (RW-13, RW-14 and RW-15) is scheduled to be performed during the 2015/2016 monitoring period to maintain target production.

ATTACHMENT 1

ANNUAL DEMONSTRATION OF COMPLIANCE REPORT TABLES AND FIGURES

TABLE 1
Hydraulic Head Measurements End of Month Gauging

[redacted]

Measuring Location	Location Elevation	25-Nov-14		29-Dec-14		26-Jan-15		25-Feb-15	
		Depth to Water	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*
CPZ-1	159.64	9.99	149.65	8.09	151.55	7.80	151.84	8.81	150.83
CPZ-1R	161.12	7.01	154.11	2.97	158.15	2.95	158.17	2.75	158.37
CPZ-2	158.64	9.02	149.62	4.88	153.76	5.19	153.45	6.51	152.13
CPZ-2A	158.82	8.85	149.97	4.66	154.16	4.88	153.94	6.28	152.54
CPZ-2R	160.97	6.92	154.05	1.10	159.87	1.76	159.21	1.96	159.01
CPZ-3	159.21	11.02	148.19	9.65	149.56	9.70	149.51	10.78	148.43
CPZ-3R	160.70	10.43	150.27	7.41	153.29	7.56	153.14	9.08	151.62
CPZ-4	158.80	12.70	146.10	7.99	150.81	8.37	150.43	9.77	149.03
CPZ-4A	159.44	11.70	147.74	9.15	150.29	9.35	150.09	10.44	149.00
CPZ-4R	158.76	9.38	149.38	6.11	152.65	6.08	152.68	7.37	151.39
CPZ-5	158.68	17.59	141.09	17.49	141.19	17.60	141.08	17.75	140.93
CPZ-5R	158.30	12.80	145.50	12.87	145.43	12.61	145.69	14.66	143.64
CPZ-6	154.48	5.39	149.09	4.62	149.86	4.77	149.71	5.12	149.36
CPZ-6A	158.05	9.03	149.02	8.18	149.87	8.19	149.86	8.70	149.35
CPZ-6R	154.39	7.41	146.98	5.95	148.44	6.05	148.34	6.91	147.48
CPZ-7	159.40	12.40	147.00	12.01	147.39	12.35	147.05	12.99	146.41
CPZ-7R	158.58	6.26	152.32	3.30	155.28	3.42	155.16	4.68	153.90
CPZ-8	160.11	5.78	154.33	5.79	154.32	5.82	154.29	6.02	154.09
CPZ-8R	160.62	7.56	153.06	7.09	153.53	7.25	153.37	7.73	152.89
CPZ-10	163.44	6.24	157.20	5.98	157.46	6.18	157.26	6.34	157.10
CPZ-10R	162.98	5.48	157.50	3.18	159.80	3.76	159.22	4.92	158.06
MW-121A	152.96	7.86	145.10	5.81	147.15	5.89	147.07	6.74	146.22
MW-125A	157.87	3.20	154.67	2.80	155.07	2.89	154.98	3.39	154.48
MW-125C	156.30	9.09	147.21	8.02	148.28	8.24	148.06	9.28	147.02
MW-204A	150.78	5.68	145.10	3.98	146.80	3.99	146.79	4.88	145.90
MW-415	160.75	8.96	151.79	8.01	152.74	8.32	152.43	8.97	151.78
MW-416	159.98	11.63	148.35	9.75	150.23	10.07	149.91	11.71	148.27
MW-704D	150.98	6.80	144.18	4.52	146.46	4.53	146.45	5.46	145.52
MW-704M	152.34	8.31	144.03	6.71	145.63	6.56	145.78	7.53	144.81
MW-704R	153.23	9.38	143.85	7.36	145.87	7.42	145.81	8.55	144.68
MW-704DR	152.84	65.79	87.05	65.08	87.76	64.54	88.30	64.90	87.94
MW-705DR	160.99	6.31	154.68	4.61	156.38	4.49	156.50	4.54	156.45
MWL-302	161.60	6.97	154.63	6.71	154.89	6.89	154.71	6.95	154.65
MWL-304	159.90	11.80	148.10	10.83	149.07	10.95	148.95	13.72	146.18
MWL-305	159.01	8.80	150.21	7.81	151.20	8.41	150.60	9.40	149.61
MWL-306	155.39	3.00	152.39	3.29	152.10	6.10	149.29	6.28	149.11
MWL-307	159.14	7.43	151.71	6.60	152.54	6.73	152.41	7.46	151.68
MWL-308	158.63	6.25	152.38	5.43	153.20	5.85	152.78	6.69	151.94
MWL-309	155.20	3.22	151.98	3.55	151.65	4.03	151.17	4.27	150.93
MWL-311	157.33	5.35	151.98	5.80	151.53	6.71	150.62	7.79	149.54
P-5A	157.61	10.90	146.71	9.73	147.88	9.92	147.69	11.42	146.19
P-5B	158.39	4.61	153.78	4.97	153.42	5.27	153.12	5.75	152.64
P-6	153.78	6.52	147.26	5.35	148.43	5.50	148.28	6.06	147.72
PZR-2R	153.78	8.29	145.49	6.91	146.87	6.98	146.80	7.85	145.93
PZR-2DR	154.67	9.25	145.42	7.97	146.70	8.12	146.55	8.93	145.74
PZR-4R	153.72	8.13	145.59	6.31	147.41	6.48	147.24	7.20	146.52
PZR-4DR	152.73	3.72	149.01	0.90	151.83	0.55	152.18	0.65	152.08
RW-1	157.61	17.90	139.71	17.06	140.55	15.54	142.07	18.18	139.43
RW-2	156.49	22.12	134.37	20.99	135.50	22.33	134.16	22.03	134.46
RW-3	157.35	17.94	139.41	17.94	139.41	21.78	135.57	20.46	136.89
RW-4	158.21	15.80	142.41	15.10	143.11	15.78	142.43	7.69	150.52
RW-7	157.09	17.21	139.88	17.20	139.89	15.32	141.77	15.85	141.24
RW-8	156.95	17.88	139.07	18.19	138.76	15.05	141.90	16.87	140.08
RW-9	156.72	18.26	138.46	18.21	138.51	19.11	137.61	18.22	138.50
RW-10	156.13	19.02	137.11	18.23	137.90	20.28	135.85	19.26	136.87
RW-11	157.82	17.87	139.95	18.04	139.78	19.25	138.57	18.18	139.64
RW-12	158.36	20.12	138.24	18.97	139.39	21.38	136.98	19.84	138.52
RW-13	151.64	29.91	121.73	21.99	129.65	19.69	131.95	24.34	127.30
RW-14	151.71	9.79	141.92	7.50	144.21	7.26	144.45	8.06	143.65
RW-15	151.28	7.80	143.48	6.50	144.78	6.57	144.71	7.80	143.48
RW-1R	149.77	73.05	76.72	72.66	77.11	73.14	76.63	72.16	77.61
TW-7A	158.72	6.46	152.26	6.02	152.70	6.09	152.63	6.55	152.17
MW-702DR	181.38	22.63	158.75	15.92	165.46	17.22	164.16	17.27	164.11
P-8A	181.26	22.50	158.76	15.90	165.36	17.08	164.18	17.18	164.08
MW-707D	156.09	9.82	146.27	9.22	146.87	9.27	146.82	9.86	146.23
MW-707R	156.01	10.30	145.71	9.10	146.91	9.16	146.85	9.95	146.06
MW-707DR	156.80	11.33	145.47	10.15	146.65	10.22	146.58	11.03	145.77
PZ-02D	154.14	8.34	145.80	7.16	146.98	7.24	146.90	8.02	146.12
PZ-O2M	154.77	8.88	145.89	7.70	147.07	7.77	147.00	8.68	146.09
MW-3	153.79	7.56	146.23	6.98	146.81	7.06	146.73	7.65	146.14
MW-708R	224.95	75.81	149.14	74.70	150.25	75.85	149.10	75.71	149.24
MW-708DR	224.19	75.62	148.57	74.74	149.45	75.81	148.38	75.79	148.40
PZ-906DR	155.85	5.89	149.96	3.02	152.83	5.22	150.63	5.20	150.65

TABLE 1
Hydraulic Head Measurements End of Month Gauging

Measuring Location	Location Elevation	25-Mar-15		29-Apr-15		27-May-15		29-Jun-15	
		Depth to Water	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*
CPZ-1	159.64	7.66	151.98	5.32	154.32	6.34	153.30	6.87	152.77
CPZ-1R	161.12	3.01	158.11	3.02	158.10	2.97	158.15	3.06	158.06
CPZ-2	158.64	4.54	154.10	3.30	155.34	5.35	153.29	6.05	152.59
CPZ-2A	158.82	4.12	154.70	2.82	156.00	4.98	153.84	5.59	153.23
CPZ-2R	160.97	0.00	160.97	0.00	160.97	1.30	159.67	2.88	158.09
CPZ-3	159.21	10.82	148.39	7.89	151.32	8.34	150.87	8.67	150.54
CPZ-3R	160.70	6.70	154.00	3.51	157.19	6.34	154.36	6.84	153.86
CPZ-4	158.80	7.68	151.12	6.16	152.64	8.79	150.01	9.36	149.44
CPZ-4A	159.44	8.72	150.72	7.29	152.15	9.61	149.83	9.81	149.63
CPZ-4R	158.76	5.90	152.86	4.31	154.45	6.21	152.55	6.90	151.86
CPZ-5	158.68	16.88	141.80	14.77	143.91	16.60	142.08	17.01	141.67
CPZ-5R	158.30	11.49	146.81	9.09	149.21	11.43	146.87	12.26	146.04
CPZ-6	154.48	4.22	150.26	3.63	150.85	5.02	149.46	5.01	149.47
CPZ-6A	158.05	7.58	150.47	6.75	151.30	8.11	149.94	7.99	150.06
CPZ-6R	154.39	5.50	148.89	4.63	149.76	6.21	148.18	6.28	148.11
CPZ-7	159.40	11.80	147.60	9.04	150.36	11.84	147.56	10.80	148.60
CPZ-7R	158.58	1.31	157.27	0.00	158.58	0.91	157.67	1.02	157.56
CPZ-8	160.11	5.55	154.56	5.42	154.69	5.96	154.15	5.59	154.52
CPZ-8R	160.62	6.80	153.82	6.45	154.17	7.03	153.59	7.18	153.44
CPZ-10	163.44	5.92	157.52	5.96	157.48	6.19	157.25	5.88	157.56
CPZ-10R	162.98	2.68	160.30	1.20	161.78	3.82	159.16	4.01	158.97
MW-121A	152.96	5.41	147.55	4.70	148.26	6.25	146.71	6.21	146.75
MW-125A	157.87	2.60	155.27	2.48	155.39	3.32	154.55	3.00	154.87
MW-125C	156.30	7.44	148.86	6.22	150.08	8.02	148.28	7.47	148.83
MW-204A	150.78	3.48	147.30	3.38	147.40	4.39	146.39	4.31	146.47
MW-415	160.75	7.57	153.18	3.30	157.45	5.25	155.50	5.06	155.69
MW-416	159.98	9.31	150.67	5.62	154.36	7.80	152.18	7.81	152.17
MW-704D	150.98	4.27	146.71	4.15	146.83	5.19	145.79	5.01	145.97
MW-704M	152.34	6.01	146.33	6.09	146.25	7.40	144.94	7.01	145.33
MW-704R	153.23	6.90	146.33	7.38	145.85	8.15	145.08	8.11	145.12
MW-704DR	152.84	65.08	87.76	64.58	88.26	65.68	87.16	65.78	87.06
MW-705DR	160.99	4.21	156.78	2.66	158.33	4.31	156.68	4.58	156.41
MWL-302	161.60	6.52	155.08	6.60	155.00	6.89	154.71	6.55	155.05
MWL-304	159.90	10.12	149.78	5.56	154.34	7.48	152.42	7.29	152.61
MWL-305	159.01	6.60	152.41	3.78	155.23	5.57	153.44	4.87	154.14
MWL-306	155.39	2.26	153.13	3.04	152.35	6.77	148.62	4.75	150.64
MWL-307	159.14	5.92	153.22	1.72	157.42	3.75	155.39	3.67	155.47
MWL-308	158.63	4.82	153.81	1.80	156.83	3.43	155.20	3.26	155.37
MWL-309	155.20	3.11	152.09	3.52	151.68	6.31	148.89	3.29	151.91
MWL-311	157.33	5.78	151.55	5.22	152.11	7.36	149.97	6.83	150.50
P-5A	157.61	9.02	148.59	7.88	149.73	9.59	148.02	9.61	148.00
P-5B	158.39	4.40	153.99	4.58	153.81	6.23	152.16	5.02	153.37
P-6	153.78	4.98	148.80	4.15	149.63	5.50	148.28	5.52	148.26
PZR-2R	153.78	6.65	147.13	6.21	147.57	7.32	146.46	7.26	146.52
PZR-2DR	154.67	7.71	146.96	7.20	147.47	8.34	146.33	8.20	146.47
PZR-4R	153.72	6.09	147.63	5.22	148.50	6.81	146.91	6.70	147.02
PZR-4DR	152.73	0.90	151.83	0.00	152.73	1.09	151.64	1.68	151.05
RW-1	157.61	18.72	138.89	19.56	138.05	17.96	139.65	22.61	135.00
RW-2	156.49	23.09	133.40	22.39	134.10	21.87	134.62	22.66	133.83
RW-3	157.35	14.04	143.31	19.87	137.48	19.44	137.91	18.18	139.17
RW-4	158.21	15.86	142.35	14.90	143.31	18.11	140.10	16.22	141.99
RW-7	157.09	16.56	140.53	14.51	142.58	15.88	141.21	18.92	138.17
RW-8	156.95	18.04	138.91	17.09	139.86	17.47	139.48	17.77	139.18
RW-9	156.72	18.61	138.11	18.12	138.60	18.12	138.60	18.24	138.48
RW-10	156.13	18.52	137.61	18.44	137.69	19.47	136.66	19.63	136.50
RW-11	157.82	18.36	139.46	19.26	138.56	18.08	139.74	18.87	138.95
RW-12	158.36	19.01	139.35	17.96	140.40	24.10	134.26	18.79	139.57
RW-13	151.64	16.80	134.84	33.08	118.56	29.16	122.48	30.60	121.04
RW-14	151.71	6.76	144.95	10.70	141.01	10.29	141.42	10.06	141.65
RW-15	151.28	8.61	142.67	5.58	145.70	7.86	143.42	7.02	144.26
RW-1R	149.77	71.94	77.83	75.21	74.56	72.94	76.83	72.19	77.58
TW-7A	158.72	5.69	153.03	5.22	153.50	6.24	152.48	5.90	152.82
MW-702DR	181.38	17.20	164.18	10.48	170.90	18.71	162.67	19.71	161.67
P-8A	181.26	17.18	164.08	9.90	171.36	18.57	162.69	19.61	161.65
MW-707D	156.09	9.04	147.05	8.62	147.47	9.48	146.61	9.28	146.81
MW-707R	156.01	8.86	147.15	8.42	147.59	9.60	146.41	9.32	146.69
MW-707DR	156.80	9.89	146.91	9.26	147.54	10.54	146.26	10.49	146.31
PZ-02D	154.14	6.95	147.19	6.48	147.66	7.56	146.58	7.42	146.72
PZ-O2M	154.77	7.45	147.32	7.03	147.74	8.11	146.66	7.97	146.80
MW-3	153.79	6.79	147.00	6.31	147.48	7.28	146.51	7.09	146.70
MW-708R	224.95	74.96	149.99	74.59	150.36	74.61	150.34	74.57	150.38
MW-708DR	224.19	74.90	149.29	74.72	149.47	77.74	146.45	77.04	147.15
PZ-906DR	155.85	4.77	151.08	4.34	151.51	4.59	151.26	4.06	151.79

TABLE 1
Hydraulic Head Measurements End of Month Gauging

Measuring Location	Location Elevation	27-Jul-15		31-Aug-15		28-Sep-15		30-Oct-15	
		Depth to Water	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*
CPZ-1	159.64	8.34	151.30	10.20	149.44	11.64	148.00	10.76	148.88
CPZ-1R	161.12	4.78	156.34	6.70	154.42	7.68	153.44	7.23	153.89
CPZ-2	158.64	7.65	150.99	9.11	149.53	10.10	148.54	9.70	148.94
CPZ-2A	158.82	7.19	151.63	8.96	149.86	9.90	148.92	9.62	149.20
CPZ-2R	160.97	4.80	156.17	6.70	154.27	7.71	153.26	7.25	153.72
CPZ-3	159.21	9.41	149.80	9.91	149.30	11.70	147.51	10.90	148.31
CPZ-3R	160.70	8.11	152.59	9.42	151.28	10.32	150.38	9.72	150.98
CPZ-4	158.80	10.96	147.84	12.50	146.30	13.40	145.40	13.18	145.62
CPZ-4A	159.44	11.16	148.28	12.41	147.03	13.08	146.36	12.37	147.07
CPZ-4R	158.76	8.15	150.61	9.58	149.18	10.22	148.54	9.82	148.94
CPZ-5	158.68	16.68	142.00	17.78	140.90	17.62	141.06	17.00	141.68
CPZ-5R	158.30	12.11	146.19	13.21	145.09	13.12	145.18	12.81	145.49
CPZ-6	154.48	5.98	148.50	7.18	147.30	8.38	146.10	5.61	148.87
CPZ-6A	158.05	9.10	148.95	9.78	148.27	10.08	147.97	9.03	149.02
CPZ-6R	154.39	7.41	146.98	8.25	146.14	8.72	145.67	7.80	146.59
CPZ-7	159.40	11.18	148.22	12.01	147.39	12.22	147.18	10.62	148.78
CPZ-7R	158.58	7.62	150.96	3.99	154.59	4.81	153.77	4.01	154.57
CPZ-8	160.11	6.17	153.94	6.59	153.52	6.99	153.12	5.91	154.20
CPZ-8R	160.62	7.88	152.74	8.51	152.11	9.08	151.54	8.04	152.58
CPZ-10	163.44	6.22	157.22	6.88	156.56	7.71	155.73	6.48	156.96
CPZ-10R	162.98	5.18	157.80	6.21	156.77	7.18	155.80	5.95	157.03
MW-121A	152.96	7.38	145.58	8.22	144.74	8.59	144.37	7.76	145.20
MW-125A	157.87	3.78	154.09	4.22	153.65	4.68	153.19	3.13	154.74
MW-125C	156.30	8.48	147.82	9.09	147.21	9.59	146.71	8.88	147.42
MW-204A	150.78	5.30	145.48	6.13	144.65	6.58	144.20	5.51	145.27
MW-415	160.75	6.66	154.09	7.81	152.94	8.61	152.14	8.01	152.74
MW-416	159.98	9.18	150.80	10.35	149.63	11.21	148.77	10.52	149.46
MW-704D	150.98	6.34	144.64	6.97	144.01	7.48	143.50	6.22	144.76
MW-704M	152.34	8.29	144.05	9.01	143.33	9.55	142.79	8.26	144.08
MW-704R	153.23	9.28	143.95	10.05	143.18	10.59	142.64	9.38	143.85
MW-704DR	152.84	65.70	87.14	65.10	87.74	65.17	87.67	65.70	87.14
MW-705DR	160.99	5.66	155.33	6.58	154.41	7.32	153.67	6.87	154.12
MWL-302	161.60	6.99	154.61	7.29	154.31	7.72	153.88	6.97	154.63
MWL-304	159.90	8.90	151.00	10.10	149.80	10.80	149.10	10.18	149.72
MWL-305	159.01	5.97	153.04	7.49	151.52	8.18	150.83	7.38	151.63
MWL-306	155.39	8.01	147.38	8.68	146.71	9.15	146.24	5.80	149.59
MWL-307	159.14	5.28	153.86	6.39	152.75	7.09	152.05	6.66	152.48
MWL-308	158.63	4.61	154.02	5.63	153.00	6.39	152.24	5.68	152.95
MWL-309	155.20	11.59	143.61	13.05	142.15	13.20	142.00	3.70	151.50
MWL-311	157.33	9.08	148.25	11.18	146.15	12.20	145.13	10.77	146.56
P-5A	157.61	10.60	147.01	11.12	146.49	11.62	145.99	10.95	146.66
P-5B	158.39	6.62	151.77	7.11	151.28	7.38	151.01	5.01	153.38
P-6	153.78	6.61	147.17	7.38	146.40	7.69	146.09	6.91	146.87
PZR-2R	153.78	8.36	145.42	9.02	144.76	9.35	144.43	8.31	145.47
PZR-2DR	154.67	9.35	145.32	9.50	145.17	10.31	144.36	9.16	145.51
PZR-4R	153.72	8.08	145.64	8.90	144.82	9.26	144.46	8.21	145.51
PZR-4DR	152.73	2.98	149.75	4.05	148.68	4.67	148.06	4.21	148.52
RW-1	157.61	17.90	139.71	18.40	139.21	17.26	140.35	18.04	139.57
RW-2	156.49	21.87	134.62	21.80	134.69	21.17	135.32	21.80	134.69
RW-3	157.35	18.90	138.45	18.56	138.79	18.03	139.32	17.90	139.45
RW-4	158.21	14.94	143.27	15.55	142.66	16.27	141.94	15.73	142.48
RW-7	157.09	15.67	141.42	16.01	141.08	17.74	139.35	16.12	140.97
RW-8	156.95	18.26	138.69	17.80	139.15	17.61	139.34	17.39	139.56
RW-9	156.72	18.81	137.91	18.93	137.79	17.80	138.92	17.03	139.69
RW-10	156.13	17.96	138.17	17.20	138.93	18.09	138.04	20.07	136.06
RW-11	157.82	17.89	139.93	18.08	139.74	17.90	139.92	18.26	139.56
RW-12	158.36	19.94	138.42	19.96	138.40	20.18	138.18	20.39	137.97
RW-13	151.64	31.22	120.42	35.52	116.12	36.04	115.60	35.78	115.86
RW-14	151.71	12.78	138.93	12.89	138.82	14.80	136.91	12.85	138.86
RW-15	151.28	7.81	143.47	9.42	141.86	9.03	142.25	7.16	144.12
RW-1R	149.77	73.06	76.71	72.94	76.83	74.90	74.87	73.82	75.95
TW-7A	158.72	6.73	151.99	7.27	151.45	7.68	151.04	6.62	152.10
MW-702DR	181.38	21.67	159.71	23.50	157.88	24.61	156.77	23.50	157.88
P-8A	181.26	21.70	159.56	23.52	157.74	24.52	156.74	23.55	157.71
MW-707D	156.09	10.27	145.82	11.07	145.02	10.95	145.14	9.97	146.12
MW-707R	156.01	10.40	145.61	10.71	145.30	11.40	144.61	10.30	145.71
MW-707DR	156.80	11.55	145.25	12.18	144.62	12.44	144.36	11.47	145.33
PZ-02D	154.14	8.61	145.53	9.11	145.03	9.42	144.72	8.40	145.74
PZ-O2M	154.77	9.04	145.73	9.69	145.08	9.92	144.85	8.85	145.92
MW-3	153.79	8.06	145.73	8.53	145.26	8.72	145.07	7.69	146.10
MW-708R	224.95	75.02	149.93	75.22	149.73	75.39	149.56	75.01	149.94
MW-708DR	224.19	77.26	146.93	77.30	146.89	77.44	146.75	75.99	148.20
PZ-906DR	155.85	4.51	151.34	5.11	150.74	5.60	150.25	4.66	151.19

TABLE 2

31 October 2014 through 30 October 2015

Influent and Effluent GWCT System Flow Data Summary

Date	Influent Flow Summary (NCTRA 1 and 2 Combined)			NCTRA-1 Flow Summary	NCTRA-2 Flow Summary			Effluent Flow Summary (NTCRA 1 and 2 Combined)		
	Total Cumulative Flow (gallons)	*Total Flow Since Previous (gallons)*	*Avg. Rate Since Prev. (GPM)*	*Avg. Rate Since Prev. (GPM)*	*Total Cumulative Flow (gallons)*	*Total Flow Since Previous (gallons)*	*Avg. Rate Since Prev. (GPM)*	*Total Cumulative Flow (gallons)*	*Total Flow Since Previous (gallons)*	*Avg. Rate Since Prev. (GPM)*
10/30/2014	267,545,000	1,543,000	35.7	2.5	145,864,160	1,435,100	33.2	283,326,000	1,575,000	36.5
11/29/2014	269,280,000	1,735,000	40.2	2.7	147,482,060	1,617,900	37.5	285,088,000	1,762,000	40.8
12/31/2014	271,041,000	1,761,000	38.2	3.2	149,094,160	1,612,100	35.0	286,887,000	1,799,000	39.0
1/30/2015	272,545,000	1,504,000	34.8	3.2	150,459,500	1,365,340	31.6	288,431,000	1,544,000	35.7
2/27/2015	274,050,000	1,505,000	37.3	3.5	151,824,560	1,365,060	33.9	289,958,000	1,527,000	37.9
3/31/2015	275,773,000	1,723,000	37.4	3.7	153,378,410	1,553,850	33.7	291,707,000	1,749,000	38.0
4/30/2015	277,757,000	1,984,000	45.9	9.0	154,972,550	1,594,140	36.9	293,728,000	2,021,000	46.8
5/29/2015	279,697,000	1,940,000	46.5	10.1	156,490,510	1,517,960	36.3	295,703,000	1,975,000	47.3
6/30/2015	281,500,000	1,803,000	39.1	8.2	157,917,410	1,426,900	31.0	297,570,000	1,867,000	40.5
7/31/2015	283,216,000	1,716,000	38.4	5.3	159,397,241	1,479,831	33.2	299,357,000	1,787,000	40.0
8/31/2015	284,855,000	1,639,000	36.7	3.8	160,864,510	1,467,269	32.9	301,056,000	1,699,000	38.1
9/30/2015	286,300,000	1,445,000	33.4	2.4	162,206,010	1,341,500	31.1	302,588,000	1,532,000	35.5
10/30/2015	287,733,000	1,433,000	33.2	3.4	163,491,710	1,285,700	29.8	304,037,000	1,449,000	33.5
Yearly Averages (1)			**38.4**	**4.9**			**33.5**			**39.4**
Cumulative Totals:	**287,733,000**	**20,188,000**			**163,491,710**	**17,627,550**		**304,037,000**	**20,711,000**	

Notes:

1: The average yearly flows are calculated by dividing the total cumulative annual flow by the duration in minutes.

Table 3

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	11/6/2014	**11/19/2014**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	0.39	0.10
Ethylbenzene (mg/L)	0.08	0.02
Xylenes, Total (mg/L)	0.06	0.01
Vinyl chloride (mg/L)	0.11	0.03
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.09	0.02
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	<0.01	<0.01
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.04	<0.01
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**0.77**	**0.18**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	3.31	7.23
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	12/4/2014	**12/18/2014**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	0.86	0.30
Ethylbenzene (mg/L)	0.19	0.07
Xylenes, Total (mg/L)	0.15	0.04
Vinyl chloride (mg/L)	0.29	0.12
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.18	0.07
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	<0.01	<0.01
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.04	0.04
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**1.71**	**0.64**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	5.95	7.30
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:
mg/L = Milligrams per liter unless otherwise noted.
[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.
[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

January 2015

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	1/6/2015	1/22/2015
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.05
Tetrachloroethene (mg/L)	<0.01	<0.05
Toluene (mg/L)	0.46	0.98
Ethylbenzene (mg/L)	0.10	0.24
Xylenes, Total (mg/L)	0.09	0.19
Vinyl chloride (mg/L)	0.17	0.36
1,1-Dichloroethene (mg/L)	<0.01	<0.05
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.11	0.23
1,2-Dichloroethane (mg/L)	<0.01	<0.05
1,1,1-Trichloroethane (mg/L)	<0.01	<0.05
1,1,2-Trichloroethane (mg/L)	<0.01	<0.05
Methylene chloride (mg/L)	0.08	0.10
Styrene (mg/L)	<0.01	<0.05
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**1.01**	**2.10**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	7.21	4.62
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	2/5/2015	2/19/2015
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.05	<0.01
Tetrachloroethene (mg/L)	<0.05	<0.01
Toluene (mg/L)	1.31	1.27
Ethylbenzene (mg/L)	0.33	0.32
Xylenes, Total (mg/L)	0.26	0.25
Vinyl chloride (mg/L)	0.39	0.30
1,1-Dichloroethene (mg/L)	<0.05	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.23	0.19
1,2-Dichloroethane (mg/L)	<0.05	<0.01
1,1,1-Trichloroethane (mg/L)	<0.05	<0.01
1,1,2-Trichloroethane (mg/L)	<0.05	<0.01
Methylene chloride (mg/L)	0.02	<0.01
Styrene (mg/L)	<0.05	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**2.54**	**2.33**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	5.26	9.27
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	3/5/2015	3/18/2015
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	0.53	0.19
Ethylbenzene (mg/L)	0.08	0.05
Xylenes, Total (mg/L)	0.07	0.03
Vinyl chloride (mg/L)	0.11	0.05
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.07	0.04
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	<0.01	<0.01
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	<0.01	<0.01
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**0.86**	**0.36**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	8.55	7.16
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

April 2015

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	4/1/2015	**4/14/2015**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	0.28	0.46
Ethylbenzene (mg/L)	0.05	0.09
Xylenes, Total (mg/L)	0.03	0.08
Vinyl chloride (mg/L)	0.10	0.09
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.05	0.08
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	<0.01	<0.01
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	<0.01	<0.01
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**0.51**	**0.80**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	1.51	9.15
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

May 2015

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	5/1/2015	5/20/2015
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	0.27	0.42
Ethylbenzene (mg/L)	0.13	0.05
Xylenes, Total (mg/L)	0.12	0.08
Vinyl chloride (mg/L)	0.12	0.09
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.18	0.16
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	<0.01	<0.01
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	<0.01	<0.01
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**0.82**	**0.80**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	6.18	8.27
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

June 2015

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	6/4/2015	6/18/2015
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	0.19	0.18
Ethylbenzene (mg/L)	0.02	0.03
Xylenes, Total (mg/L)	0.03	0.05
Vinyl chloride (mg/L)	0.07	0.05
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.14	0.04
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	<0.01	<0.01
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	<0.01	<0.01
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**0.45**	**0.35**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	14.0	13.2
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

July 2015

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	7/7/2015	**7/22/2015**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	0.18	0.36
Ethylbenzene (mg/L)	0.03	0.22
Xylenes, Total (mg/L)	0.03	0.24
Vinyl chloride (mg/L)	0.04	0.10
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.03	0.12
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	<0.01	<0.01
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	<0.01	<0.01
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**0.31**	**1.04**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	9.98	9.44
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	8/6/2015	8/20/2015
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	0.82	0.28
Ethylbenzene (mg/L)	0.24	0.10
Xylenes, Total (mg/L)	0.30	0.11
Vinyl chloride (mg/L)	0.15	0.08
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.13	0.12
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	<0.01	<0.01
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	<0.01	<0.01
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**1.64**	**0.69**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	1.56	1.56
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

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Table 3

September 2015

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	9/3/2015	**9/17/2015**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	0.45	0.51
Ethylbenzene (mg/L)	0.16	0.18
Xylenes, Total (mg/L)	0.17	0.20
Vinyl chloride (mg/L)	0.06	0.04
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.05	0.05
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	<0.01	<0.01
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.03	<0.01
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**0.92**	**0.98**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	1.70	18.0
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

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Table 3

October 2015

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	10/6/2015	10/15/2015
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	0.37	0.53
Ethylbenzene (mg/L)	0.12	0.18
Xylenes, Total (mg/L)	0.15	0.22
Vinyl chloride (mg/L)	0.03	0.04
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.04	0.06
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	<0.01	<0.01
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	<0.01	<0.01
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	0.78	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**1.49**	**1.03**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	6.68	10.0
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 4

November 2014

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		11/6/2014	11/19/2014
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	0.002	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.037	0.046
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	0.001	0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	0.001	0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.050	<0.050
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.050	<0.050
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.050	<0.050
Total VOCs[2]		**0.041**	**0.048**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.22 g/day	<0.01 mg/l or <2.22 g/day
Iron, Total (mg/l)	**5.0**	<0.05	0.12
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.11 g/day	<0.005 mg/l or <1.11 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <11.12 g/day	<0.05 mg/l or <11.12 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	<0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.81	6.86
Total Suspended Solids (mg/L)	**30**	<1	<1
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

Table 4

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		12/4/2014	12/18/2014
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.037	0.046
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	0.001	<0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	0.001	<0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.050	<0.050
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.050	<0.050
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.050	<0.050
Total VOCs[2]		**0.039**	**0.046**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	0.03 mg/l or 6.38 g/day	<0.01 mg/l or< 2.13 g/day
Iron, Total (mg/l)	**5.0**	<0.05	<0.05
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.06 g/day	<0.005 mg/l or< 1.06 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <10.64 g/day	<0.05 mg/l or< 10.64 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	<0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.83	6.63
Total Suspended Solids (mg/L)	**30**	2	<1
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

Table 4

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		1/6/2015	1/22/2015
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.044	0.041
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	<0.001	<0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	0.002
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.050	<0.050
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.050	<0.050
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.050	<0.050
Total VOCs[2]		**0.044**	**0.043**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <1.95 g/day	<0.01 mg/l or <1.95 g/day
Iron, Total (mg/l)	**5.0**	<0.05	0.12
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <0.97 g/day	<0.005 mg/l or <0.97 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <9.74 g/day	<0.05 mg/l or <9.74 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	<0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.57	7.08
Total Suspended Solids (mg/L)	**30**	<1	<1
Dioxins (pg/L)	**NL**	<36	NS
Furans (pg/L)	**NL**	<51	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

Table 4

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		2/5/2015	2/19/2015
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.034	0.026
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	<0.001	<0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	<0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.050	<0.050
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.050	<0.050
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.050	<0.050
Total VOCs[2]		**0.034**	**0.026**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.06 g/day	<0.01 mg/l or <2.06 g/day
Iron, Total (mg/l)	**5.0**	0.08	0.11
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.03 g/day	<0.005 mg/l or <1.03 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <10.32 g/day	<0.05 mg/l or <10.32 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	<0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	7.25	7.14
Total Suspended Solids (mg/L)	**30**	2	4
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

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Table 4

March 2015

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		3/5/2015	3/18/2015
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.027	0.027
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	<0.001	<0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	<0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.050	<0.050
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.050	<0.050
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.050	<0.050
Total VOCs[2]		**0.027**	**0.027**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.07 g/day	<0.01 mg/l or <2.07 g/day
Iron, Total (mg/l)	**5.0**	<0.05	0.06
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.03 g/day	<0.005 mg/l or <1.03 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <10.34 g/day	<0.05 mg/l or <10.34 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	<0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	7.10	6.99
Total Suspended Solids (mg/L)	**30**	<1	<1
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

Table 4

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		4/1/2015	4/14/2015
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.028	0.021
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	<0.001	<0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	<0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.050	<0.050
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.050	<0.050
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.050	<0.050
Total VOCs[2]		**0.028**	**0.021**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.55 g/day	<0.01 mg/l or <2.55 g/day
Iron, Total (mg/l)	**5.0**	0.13	0.32
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.27 g/day	<0.005 mg/l or <1.27 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <12.75 g/day	<0.05 mg/l or <12.75 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	<0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.68	6.69
Total Suspended Solids (mg/L)	**30**	<1	2
Dioxins (pg/L)	**NL**	<36	NS
Furans (pg/L)	**NL**	<51	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

Table 4

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		5/1/2015	5/20/2015
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	0.004	0.002
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.039	0.002
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	<0.001	<0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	<0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.050	<0.050
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.050	<0.050
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.050	<0.050
Total VOCs[2]		**0.043**	**0.004**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.58 g/day	<0.01 mg/l or <2.58 g/day
Iron, Total (mg/l)	**5.0**	0.40	0.64
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.29 g/day	<0.005 mg/l or <1.29 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <12.89 g/day	<0.05 mg/l or <12.89 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	<0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	7.14	7.51
Total Suspended Solids (mg/L)	**30**	<1	1
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

Table 4

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		6/4/2015	6/18/2015
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	0.014	0.016
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.002	0.007
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	<0.001	<0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	<0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.050	<0.050
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.050	<0.050
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.050	<0.050
Total VOCs[2]		**0.016**	**0.023**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.21 g/day	<0.01 mg/l or <2.21 g/day
Iron, Total (mg/l)	**5.0**	0.12	0.14
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.1 g/day	<0.005 mg/l or <1.1 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <11.04 g/day	<0.05 mg/l or <11.04 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	7.08	6.93
Total Suspended Solids (mg/L)	**30**	<1	<1
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

Table 4

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		7/7/2015	7/22/2015
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	0.006	0.005
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.011	0.017
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	<0.001	<0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	0.002
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.050	<0.050
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.050	<0.050
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.050	<0.050
Total VOCs[2]		**0.017**	**0.024**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.18 g/day	<0.01 mg/l or <2.18 g/day
Iron, Total (mg/l)	**5.0**	0.21	0.16
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.09 g/day	<0.005 mg/l or <1.09 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <10.91 g/day	<0.05 mg/l or <10.91 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	0.2	<0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.83	6.72
Total Suspended Solids (mg/L)	**30**	1	<1
Dioxins (pg/L)	**NL**	<37	NS
Furans (pg/L)	**NL**	<52	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

Table 4

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		8/6/2015	8/20/2015
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	0.003
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.026	0.030
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	<0.001	<0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	0.002	<0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.050	<0.050
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.050	<0.050
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.050	<0.050
Total VOCs[2]		**0.029**	**0.033**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.07 g/day	<0.01 mg/l or <2.07 g/day
Iron, Total (mg/l)	**5.0**	0.22	0.14
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.04 g/day	<0.005 mg/l or <1.04 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <10.37 g/day	<0.05 mg/l or <10.37 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	<0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.71	6.67
Total Suspended Solids (mg/L)	**30**	2	<1
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

Table 4

September 2015

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		9/3/2015	9/17/2015
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.023	0.021
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	<0.001	<0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	<0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.050	<0.050
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.050	<0.050
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.050	<0.050
Total VOCs[2]		**0.023**	**0.021**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <1.93 g/day	<0.01 mg/l or <1.93 g/day
Iron, Total (mg/l)	**5.0**	0.09	0.16
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <0.97 g/day	<0.005 mg/l or <0.97 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <9.66 g/day	<0.05 mg/l or <9.66 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	0.2	0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.59	6.71
Total Suspended Solids (mg/L)	**30**	<1	<1
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

Table 4

October 2015

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		10/6/2015	10/15/2015
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.023	0.020
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	<0.001	<0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	<0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.050	<0.050
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.050	<0.050
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.050	<0.050
Total VOCs[2]		**0.023**	**0.020**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <1.83 g/day	<0.01 mg/l or <1.83 g/day
Iron, Total (mg/l)	**5.0**	0.59	0.36
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <0.91 g/day	<0.005 mg/l or <0.91 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <9.14 g/day	<0.05 mg/l or <9.14 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	<0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.58	6.55
Total Suspended Solids (mg/L)	**30**	<1	<1
Dioxins (pg/L)	**NL**	<37	NS
Furans (pg/L)	**NL**	<52	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

TABLE 5

WESTON SOLUTIONS

31 October 2014 through 30 October 2015

Weekly NTCRA-1 Compliance Piezometer Pair Summary

Date	CPZ-1/CPZ-2A	CPZ-3/CPZ-4A	CPZ-5/CPZ-6	CPZ-7/CPZ-8
03-Nov-14	-0.20	-1.25	7.39	6.91
10-Nov-14	-0.11	-1.14	7.08	6.80
18-Nov-14	-0.06	-1.09	8.16	7.52
25-Nov-14	0.32	-0.45	8.00	7.33
01-Dec-14	0.76	-0.08	6.87	6.61
10-Dec-14	1.53	1.34	9.65	7.73
17-Dec-14	2.49	1.30	6.86	6.65
23-Dec-14	2.49	1.02	7.59	6.80
29-Dec-14	2.61	0.73	8.67	6.93
07-Jan-15	2.59	0.92	8.97	7.17
13-Jan-15	2.61	0.42	8.87	7.17
22-Jan-15	2.13	0.76	8.82	7.13
26-Jan-15	2.10	0.58	8.63	7.24
05-Feb-15	2.01	0.50	8.71	7.35
12-Feb-15	1.87	0.61	8.70	7.41
19-Feb-15	1.90	0.82	8.82	7.06
25-Feb-15	1.71	0.57	8.43	7.68
03-Mar-15	1.71	0.73	7.90	7.61
09-Mar-15	1.69	0.58	8.57	7.42
17-Mar-15	2.07	1.16	9.17	7.15
25-Mar-15	2.72	2.33	8.46	6.96
01-Apr-15	2.67	1.84	9.19	7.02
06-Apr-15	2.43	1.51	9.51	6.76
13-Apr-15	2.31	0.72	8.48	5.12
21-Apr-15	1.98	1.01	6.65	4.49
29-Apr-15	1.68	0.83	6.94	4.33
04-May-15	0.50	-0.09	6.67	4.33
13-May-15	0.54	-1.22	6.80	6.90
20-May-15	1.35	-0.76	6.79	6.78
27-May-15	0.54	-1.04	7.38	6.59
03-Jun-15	1.03	-0.36	6.48	5.46
09-Jun-15	0.52	-0.51	6.96	5.99
18-Jun-15	0.32	-1.18	8.06	5.22
22-Jun-15	0.33	-1.02	8.24	5.61
29-Jun-15	0.46	-0.91	7.80	5.92
09-Jul-15	-0.39	-1.13	7.16	5.64
14-Jul-15	0.68	-1.57	7.37	5.87
22-Jul-15	0.39	-1.46	6.96	5.71
27-Jul-15	0.33	-1.52	6.50	5.72
03-Aug-15	0.07	-1.57	7.18	5.95
10-Aug-15	-0.08	-1.84	6.01	6.07
18-Aug-15	-0.09	-2.04	6.16	6.13
31-Aug-15	0.42	-2.27	6.40	6.13
09-Sep-15	0.70	-1.45	4.82	6.08
16-Sep-15	0.87	-1.16	5.51	6.02
24-Sep-15	0.85	-1.13	5.20	6.17
28-Sep-15	0.92	-1.15	5.04	5.94
01-Oct-15	0.87	-1.05	5.79	6.44
06-Oct-15	0.40	-1.04	7.25	6.52
15-Oct-15	0.33	-1.18	6.57	5.86
23-Oct-15	0.30	-1.24	6.63	6.12
30-Oct-15	0.32	-1.24	7.19	5.42

Highlighted Cells - are weeks that the 0.30-foot hydraulic gradient reversal standard for a specific Compliance Piezometer Pair was not maintained during weekly gauging.

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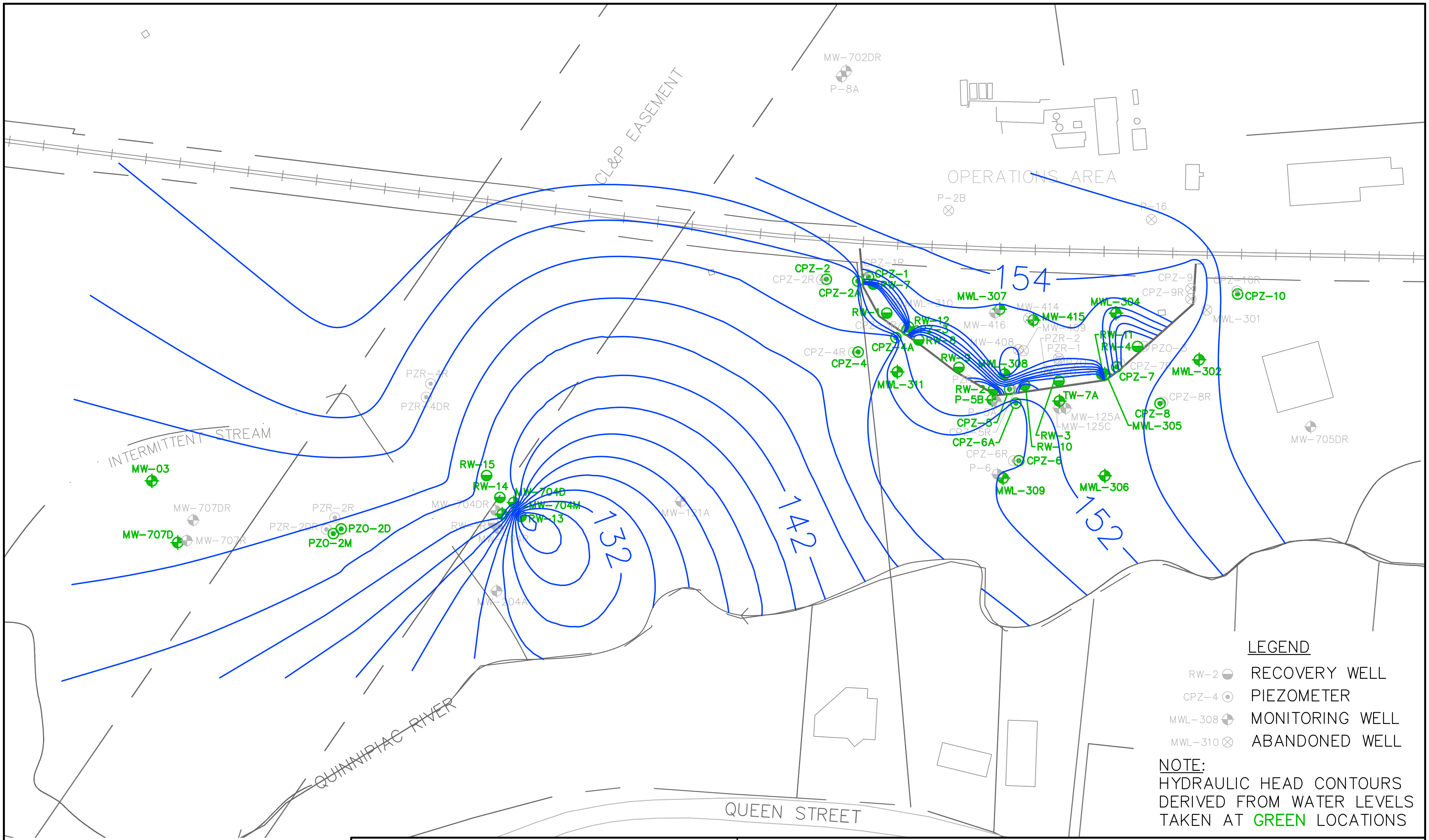

LEGEND

RW-2 ◒ RECOVERY WELL

CPZ-4 ⊙ PIEZOMETER

MWL-308 ⊕ MONITORING WELL

MWL-310 ⊗ ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN
HYDRAULIC HEAD CONTOURS
NOVEMBER 25, 2014

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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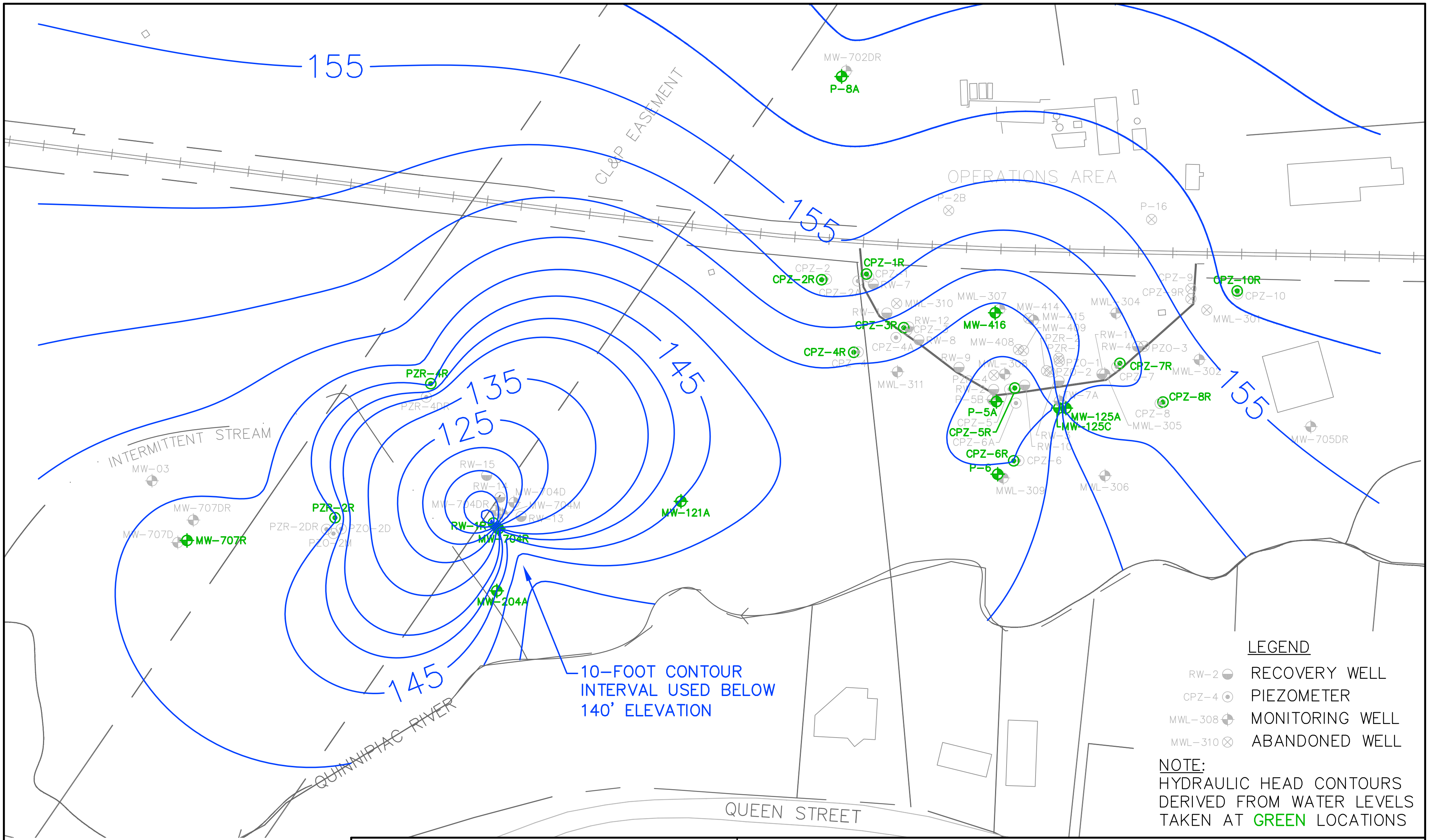
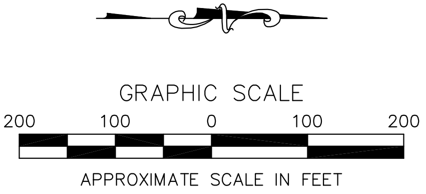


NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS



SHALLOW BEDROCK
HYDRAULIC HEAD CONTOURS
NOVEMBER 25, 2014

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

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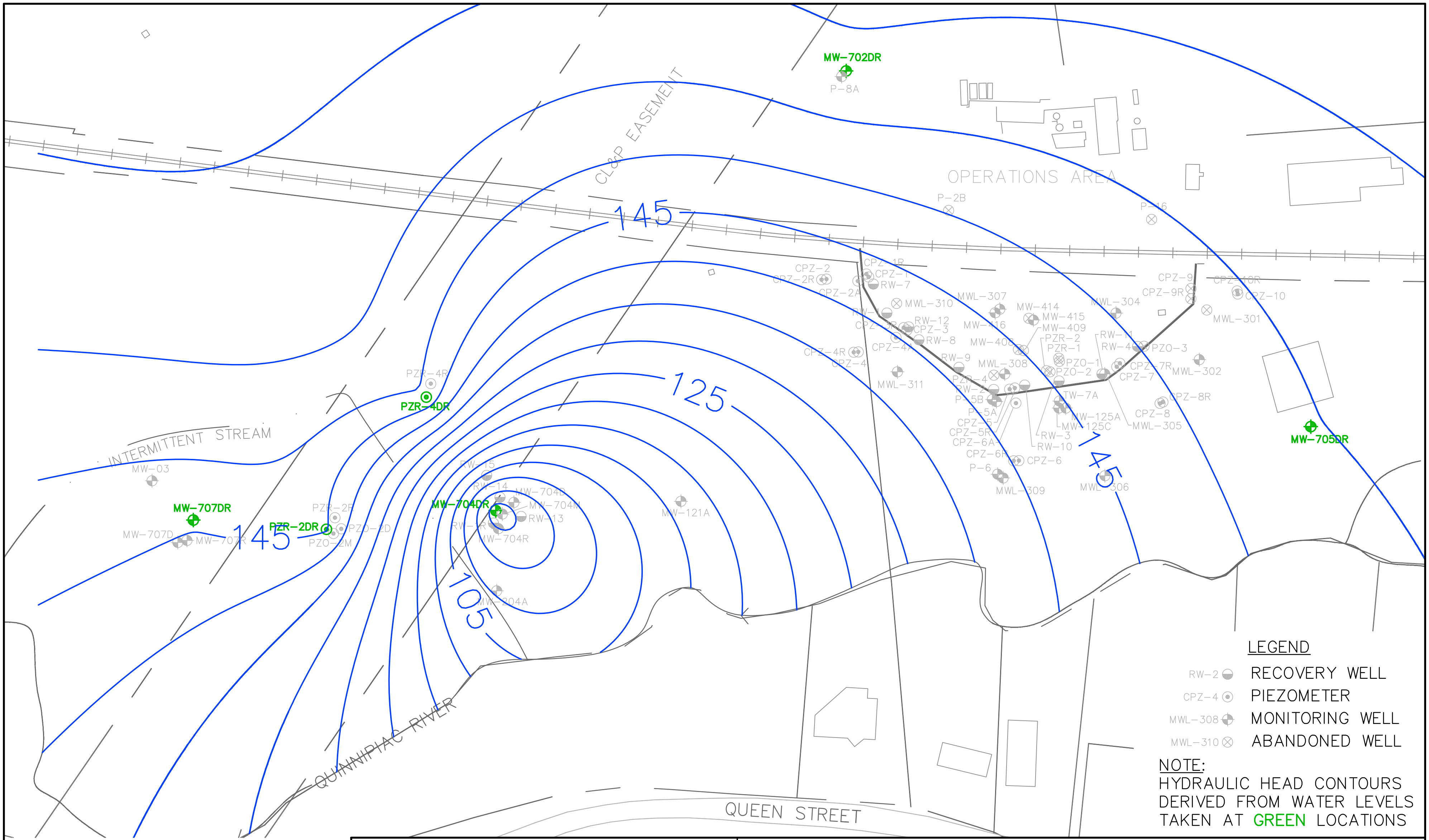

LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ◉	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

DEEP BEDROCK
HYDRAULIC HEAD CONTOURS
NOVEMBER 25, 2014

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.018
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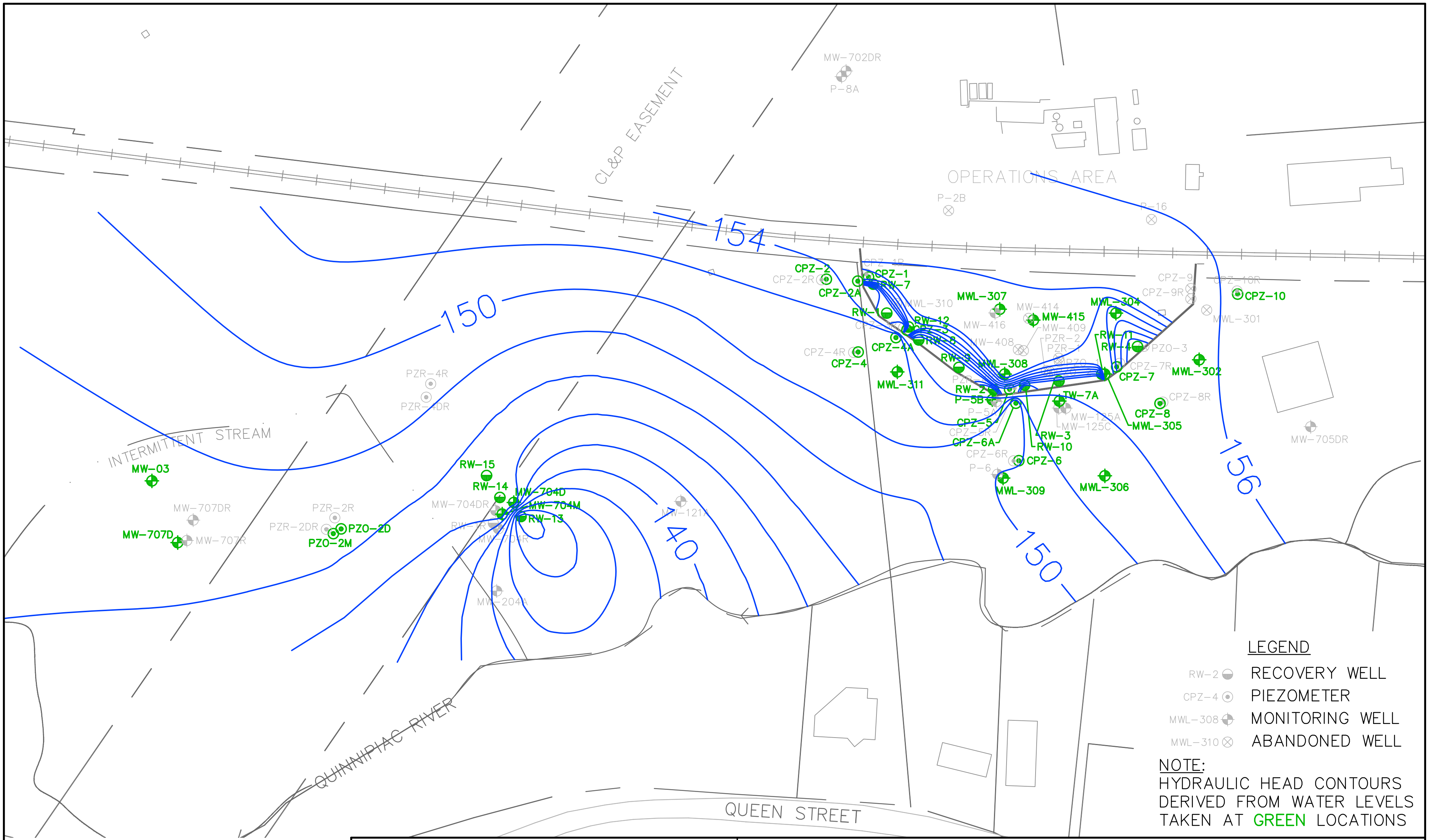


LEGEND

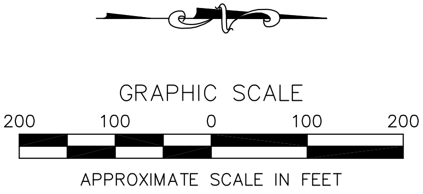
RW-2 ◒ RECOVERY WELL

CPZ-4 ⊙ PIEZOMETER

MWL-308 ⊕ MONITORING WELL

MWL-310 ⊗ ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS



OVERBURDEN HYDRAULIC HEAD CONTOURS DECEMBER 29, 2014

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

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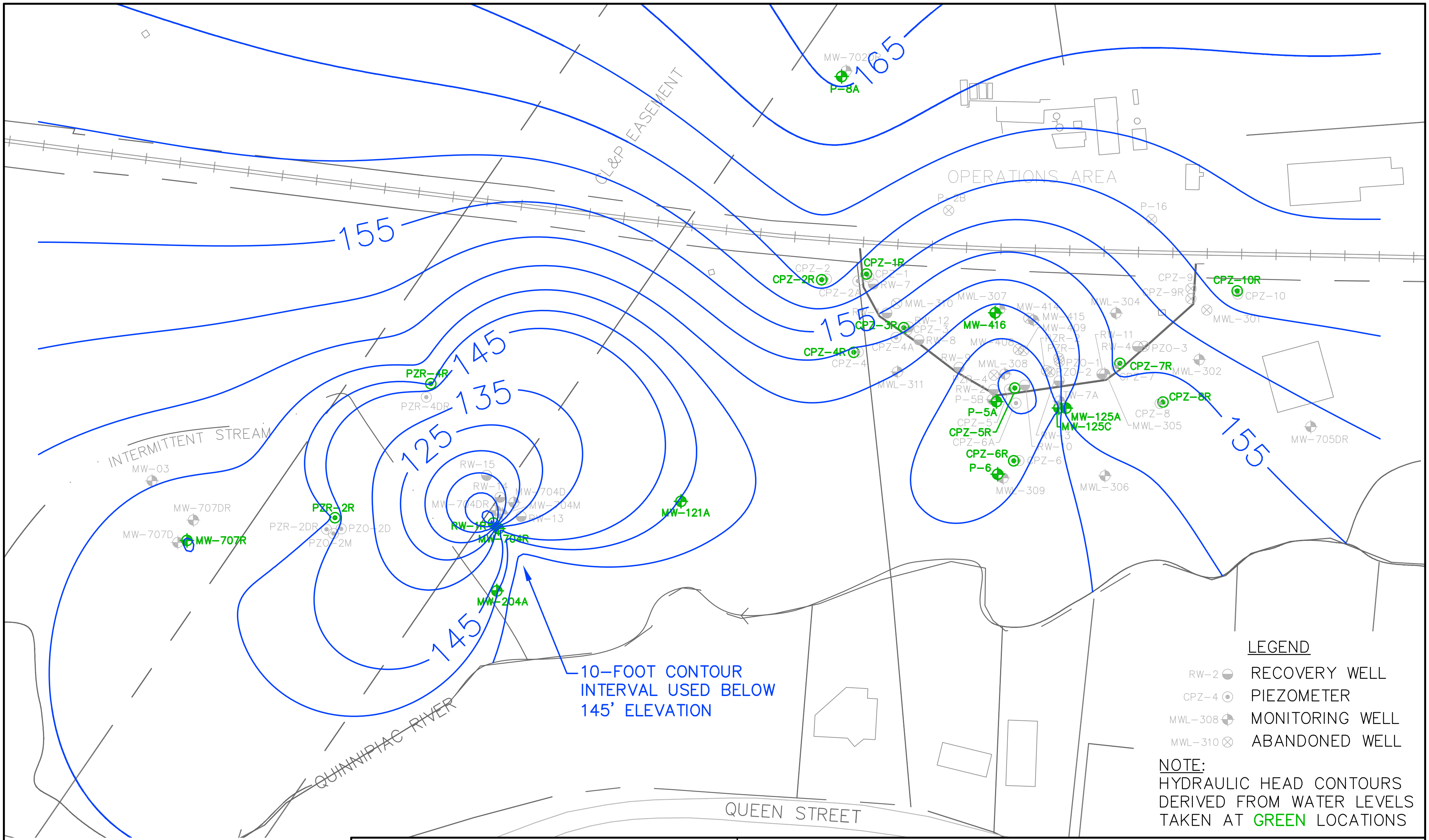

LEGEND

RW-2	RECOVERY WELL
CPZ-4	PIEZOMETER
MWL-308	MONITORING WELL
MWL-310	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK
HYDRAULIC HEAD CONTOURS
DECEMBER 29, 2014

SRSNE
SOUTHINGTON, CONNECTICUT

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 2B

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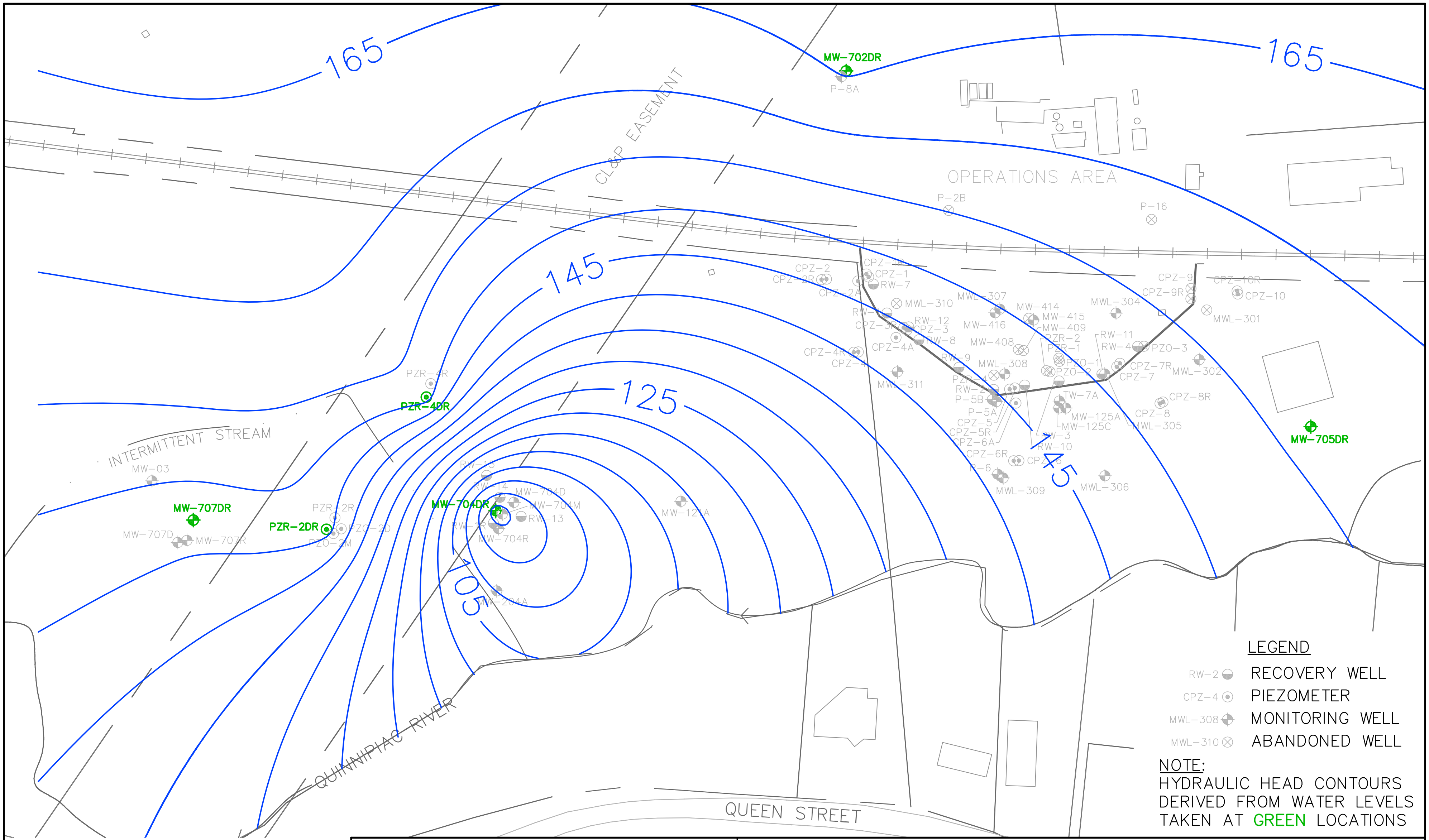

LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ⊙	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

DEEP BEDROCK
HYDRAULIC HEAD CONTOURS
DECEMBER 29, 2014

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

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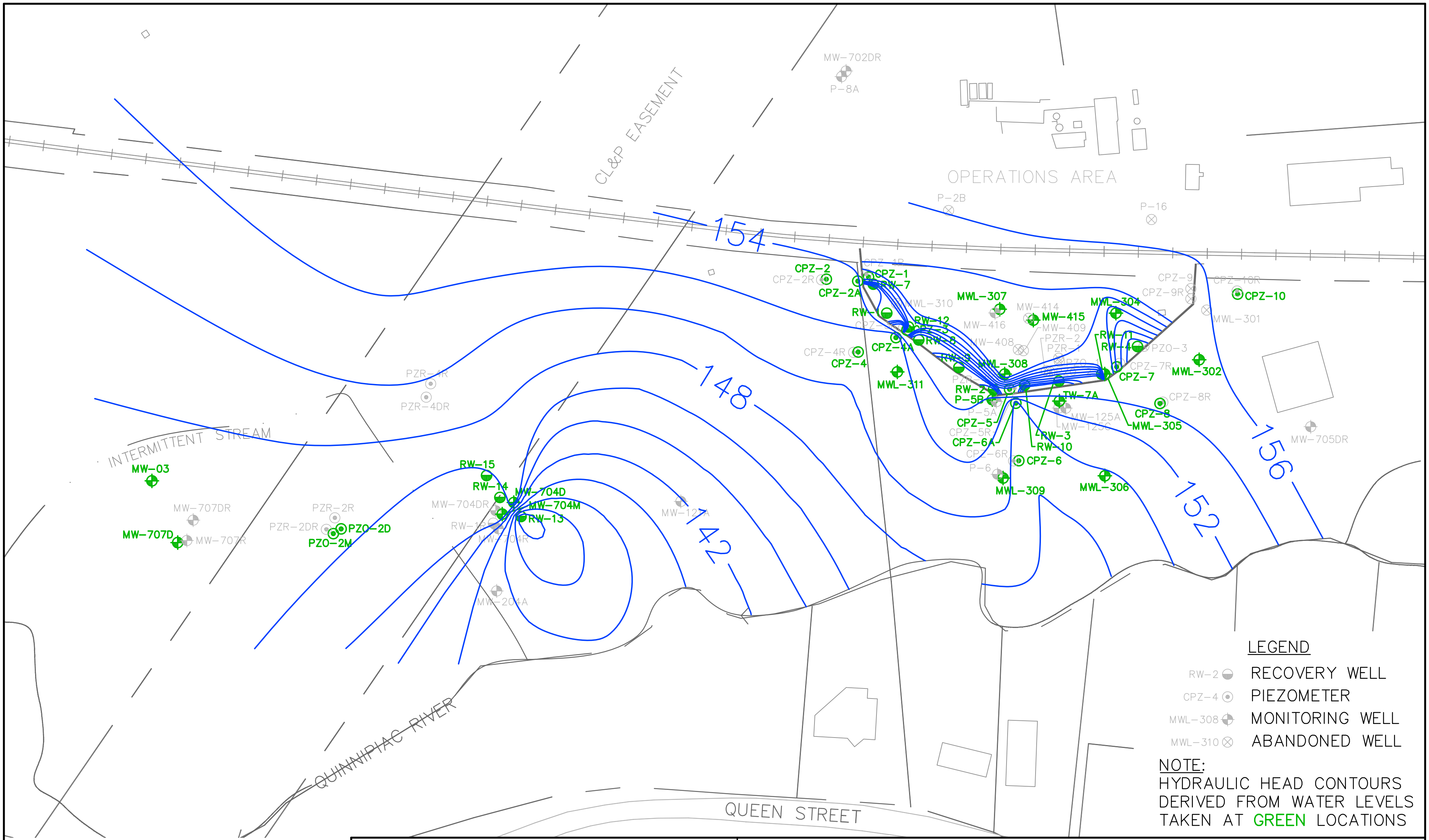

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

OVERBURDEN
HYDRAULIC HEAD CONTOURS
JANUARY 26, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN	BEG	DATE	NOV 2015	DES. ENG.		DATE		W.O. NO.	13056.001.020
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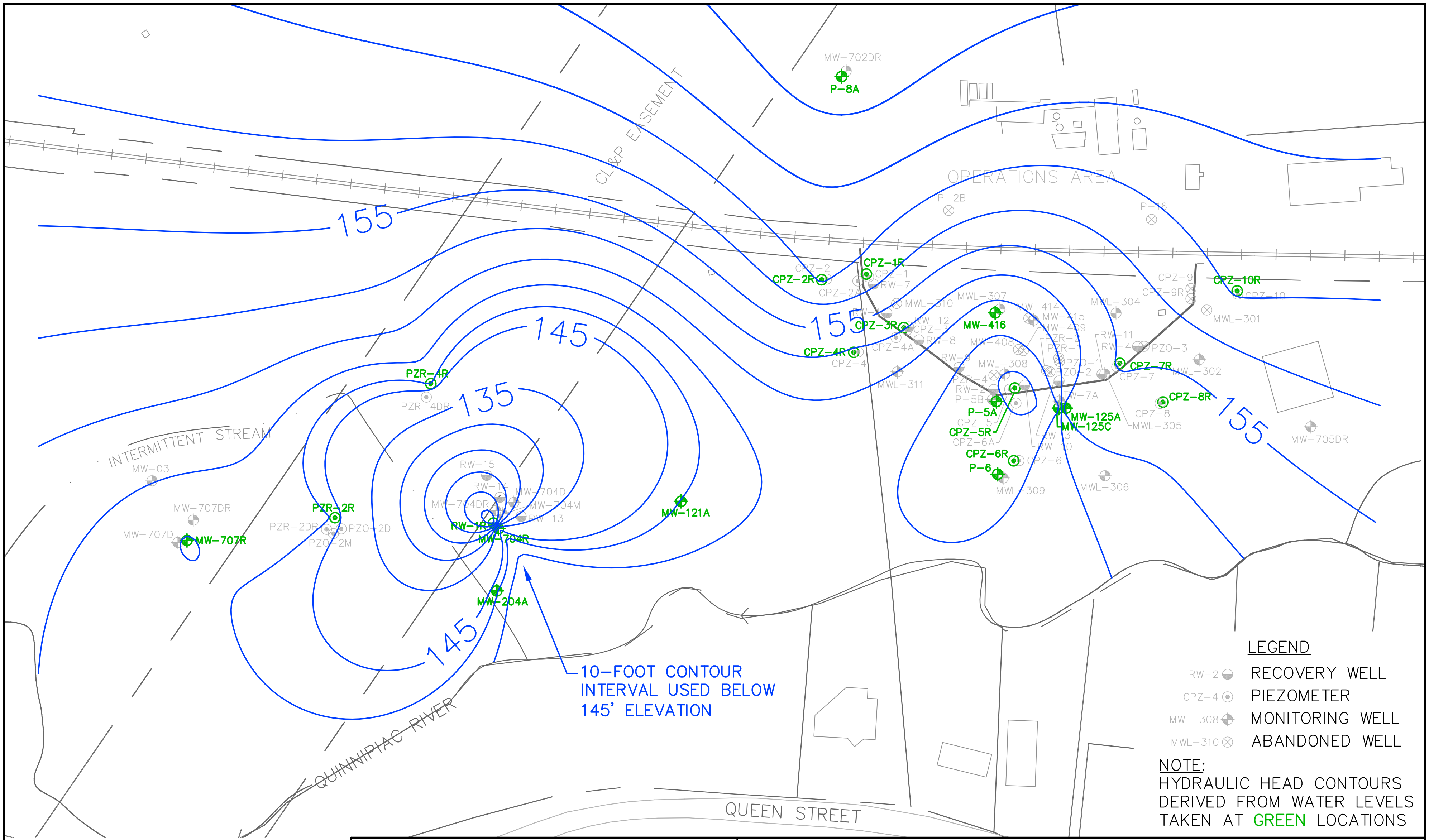
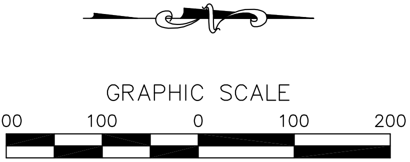


10-FOOT CONTOUR
INTERVAL USED BELOW
145' ELEVATION

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS



GRAPHIC SCALE

APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK
HYDRAULIC HEAD CONTOURS
JANUARY 26, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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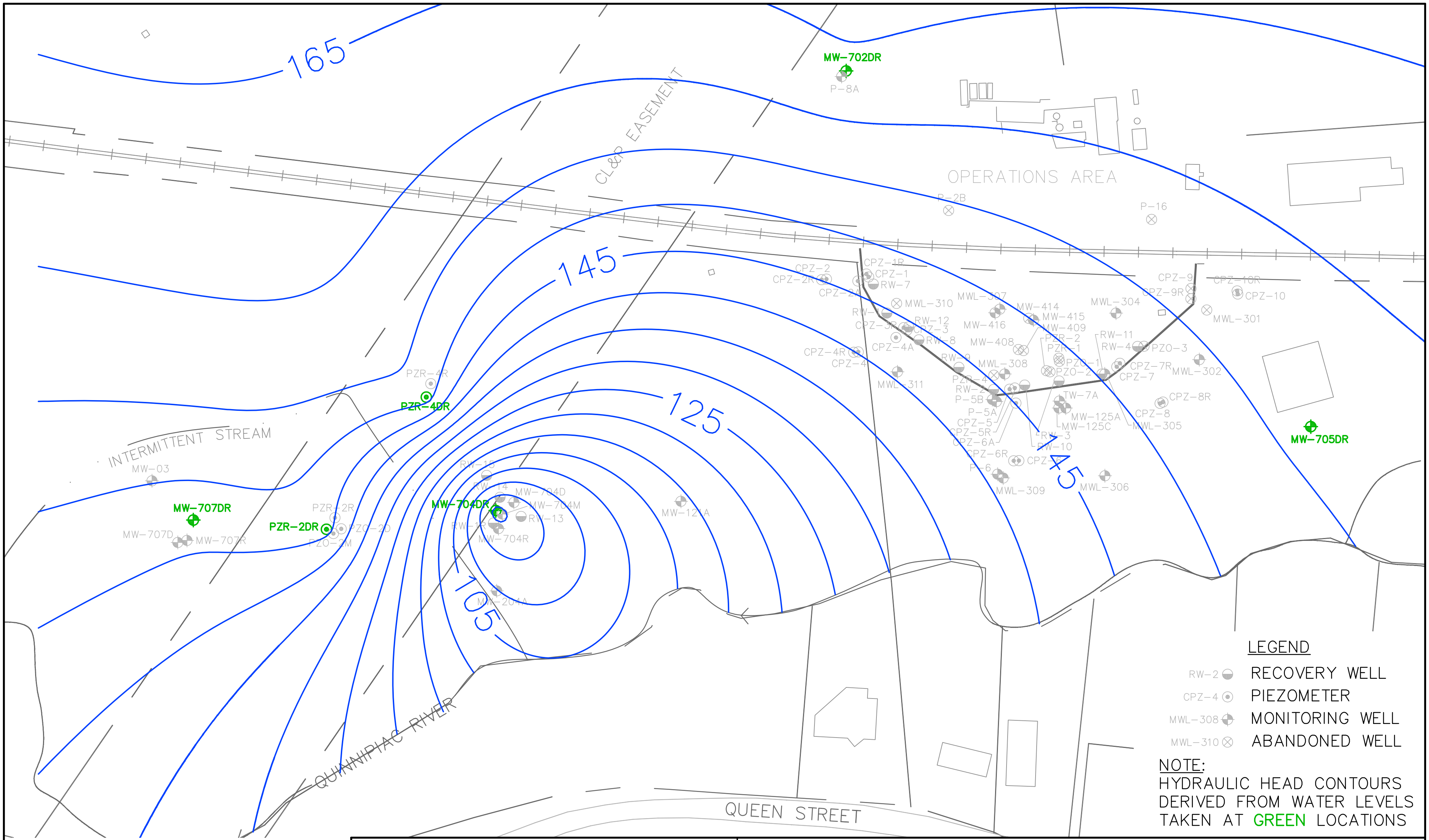

LEGEND

RW-2 ◒ RECOVERY WELL

CPZ-4 ⊙ PIEZOMETER

MWL-308 ⊕ MONITORING WELL

MWL-310 ⊗ ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

DEEP BEDROCK
HYDRAULIC HEAD CONTOURS
JANUARY 26, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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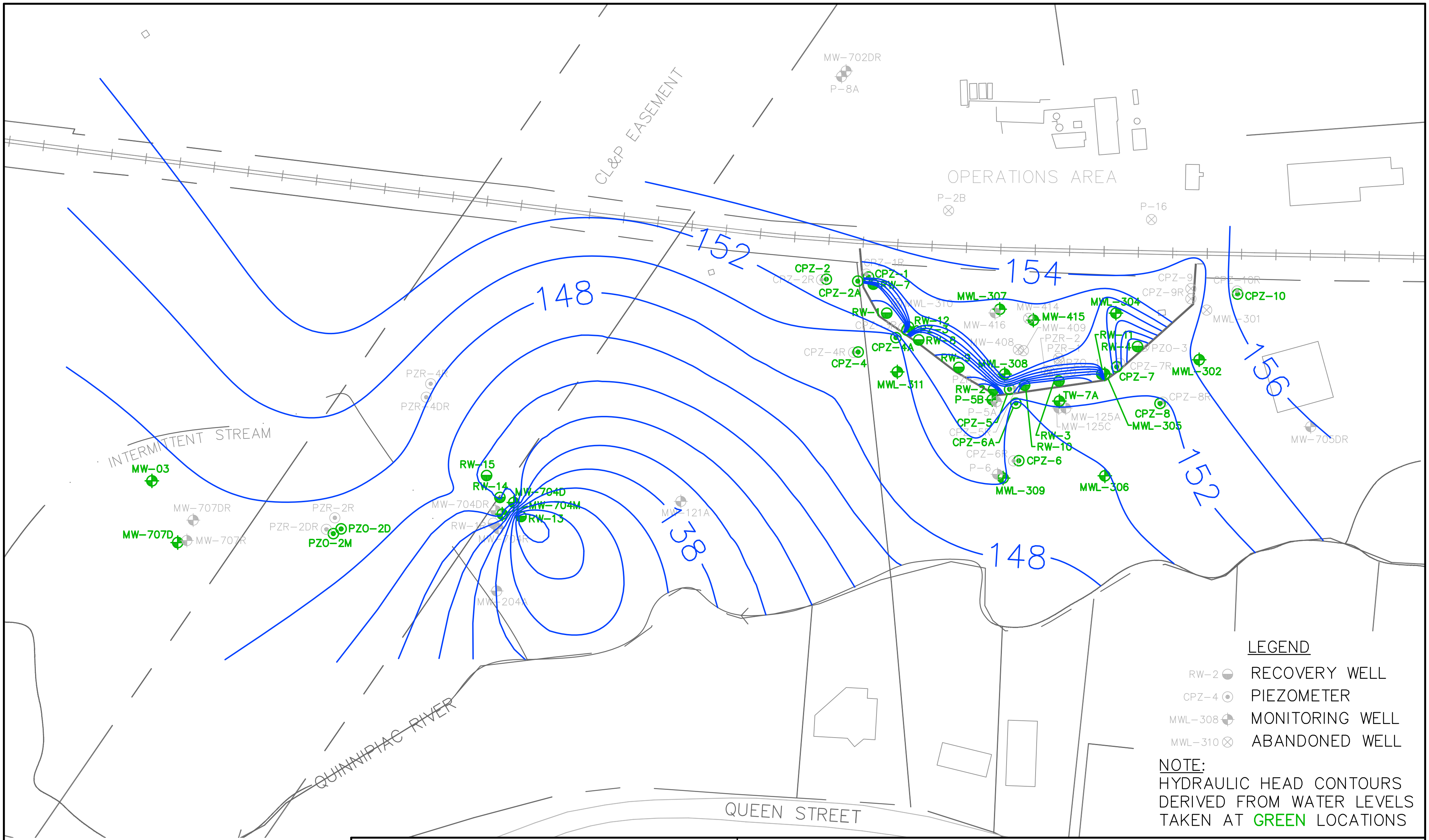

LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ⊙	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

OVERBURDEN
HYDRAULIC HEAD CONTOURS
FEBRUARY 25, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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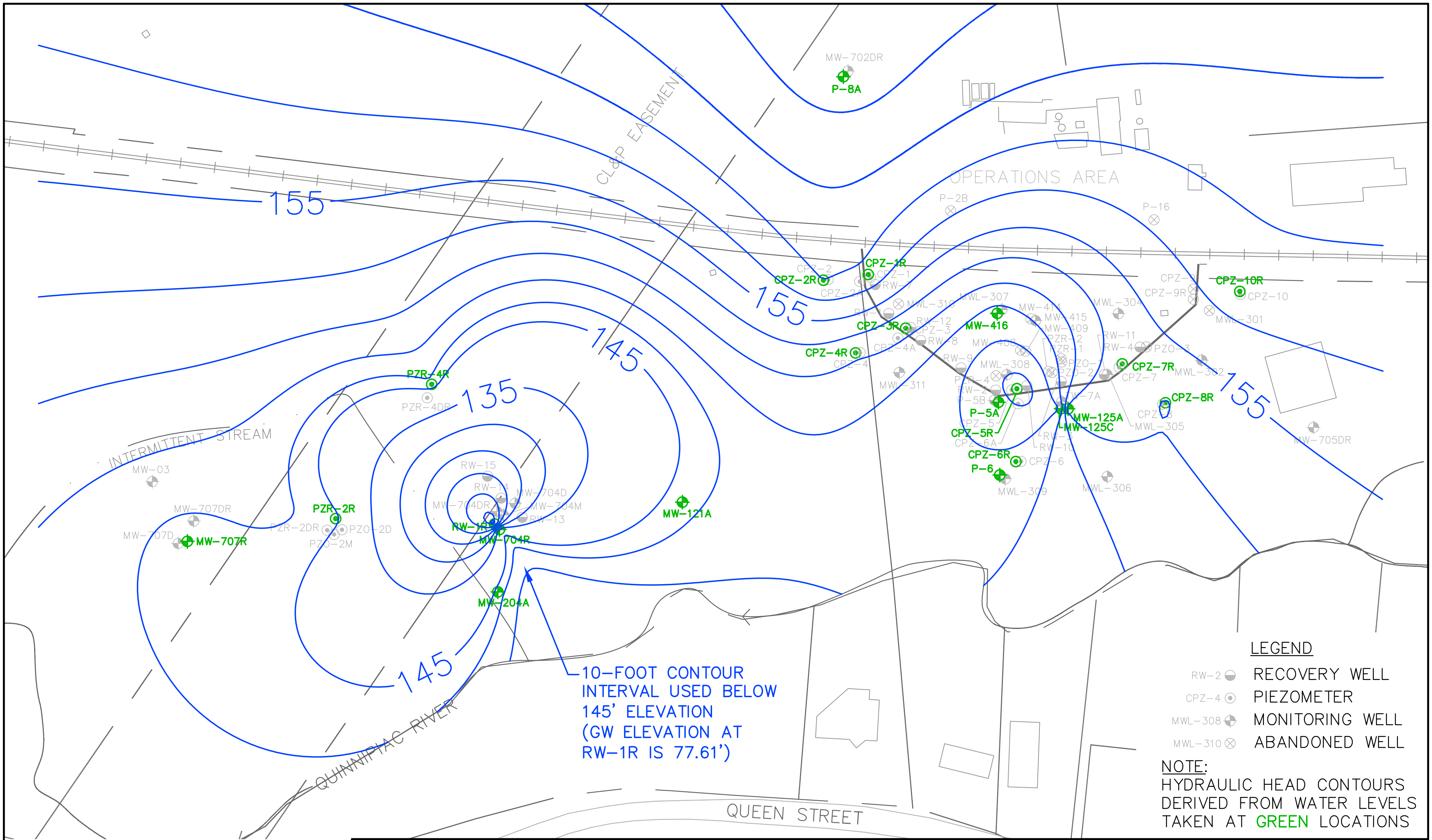

10-FOOT CONTOUR
INTERVAL USED BELOW
145' ELEVATION
(GW ELEVATION AT
RW-1R IS 77.61')

LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ⊙	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS FEBRUARY 25, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 4B

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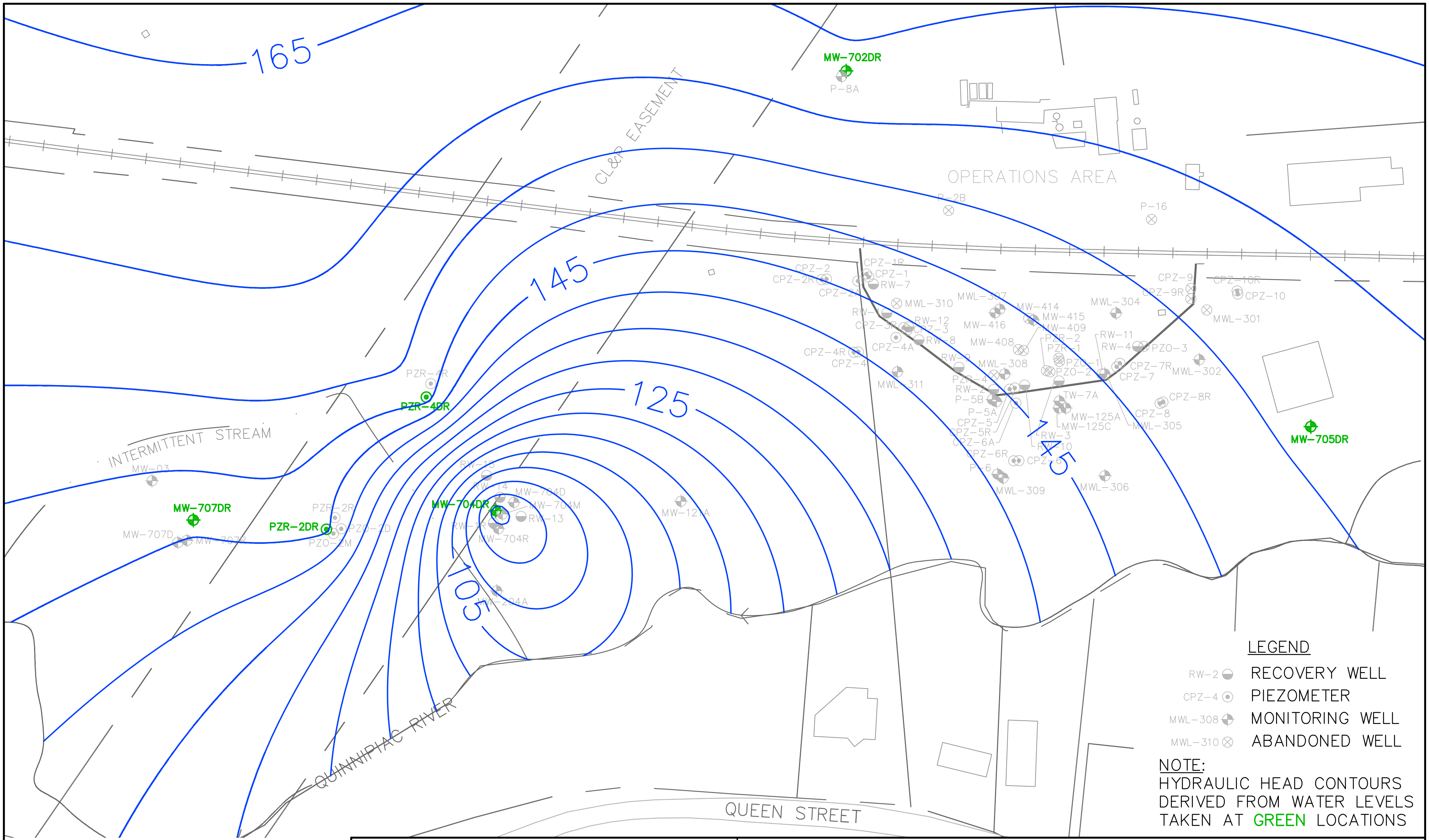
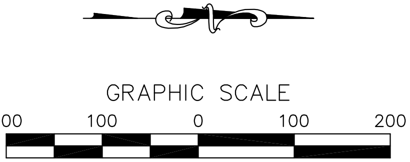


NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS



APPROXIMATE SCALE IN FEET

DEEP BEDROCK
HYDRAULIC HEAD CONTOURS
FEBRUARY 25, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 4C

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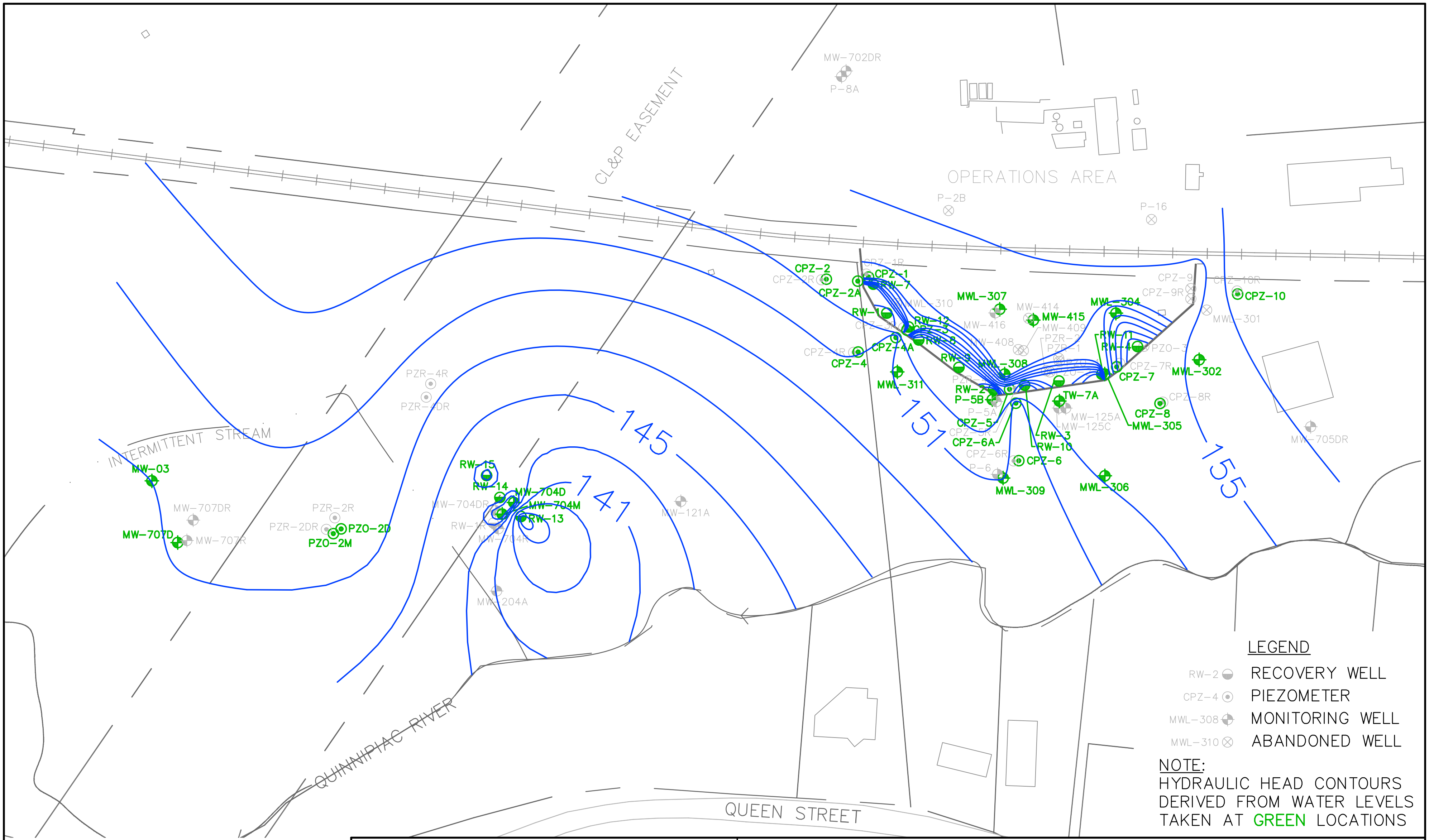

LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ⊙	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

OVERBURDEN
HYDRAULIC HEAD CONTOURS
MARCH 25, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 5A

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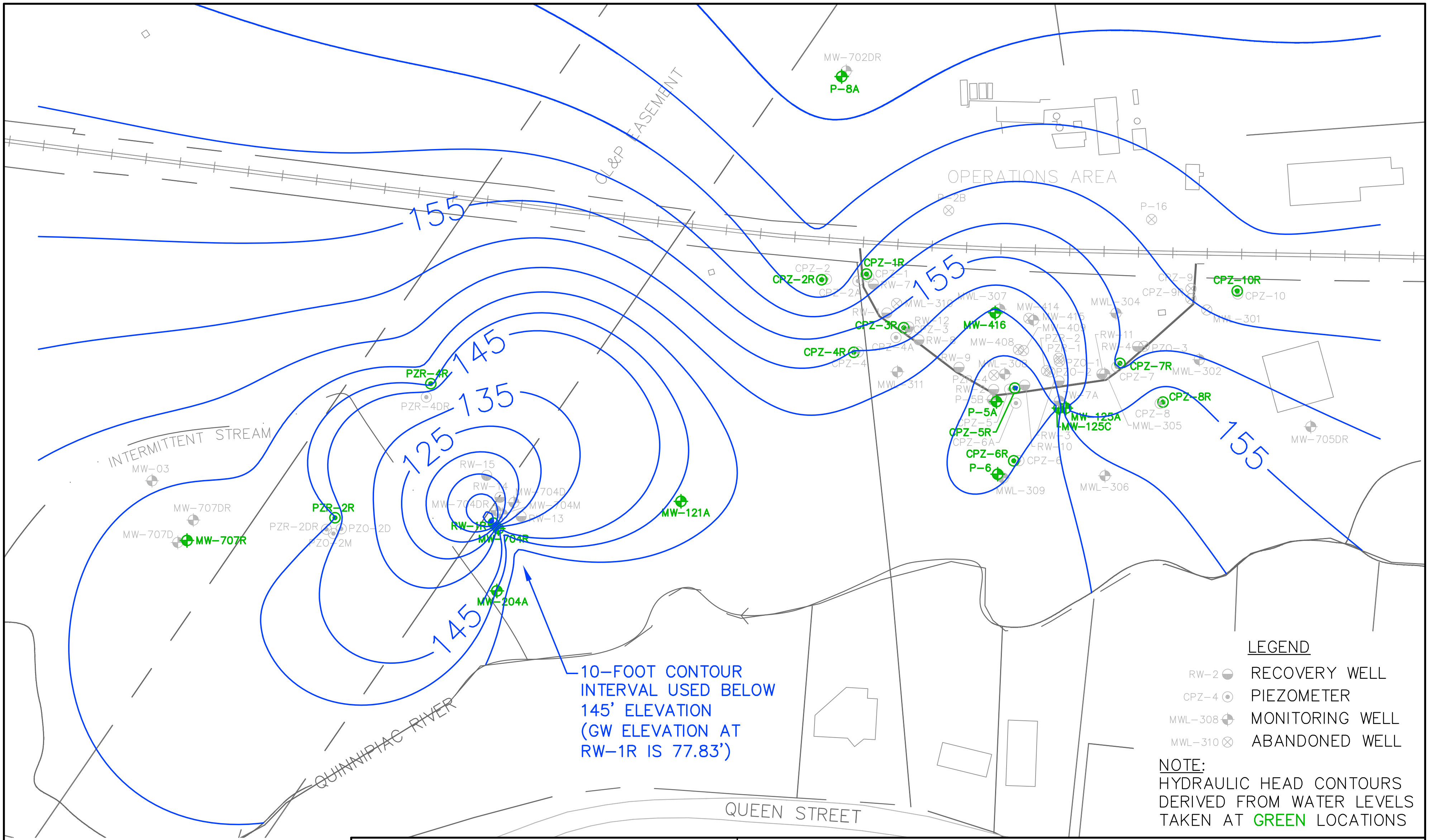

LEGEND

RW–2 ◒	RECOVERY WELL
CPZ–4 ⊙	PIEZOMETER
MWL–308 ⊕	MONITORING WELL
MWL–310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK
HYDRAULIC HEAD CONTOURS
MARCH 25, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN	BEG	DATE	NOV 2015	DES. ENG.		DATE		W.O. NO.	13056.001.020
CHECKED		DATE		SCALE	AS SHOWN	REVISION		FIGURE NO.	5B

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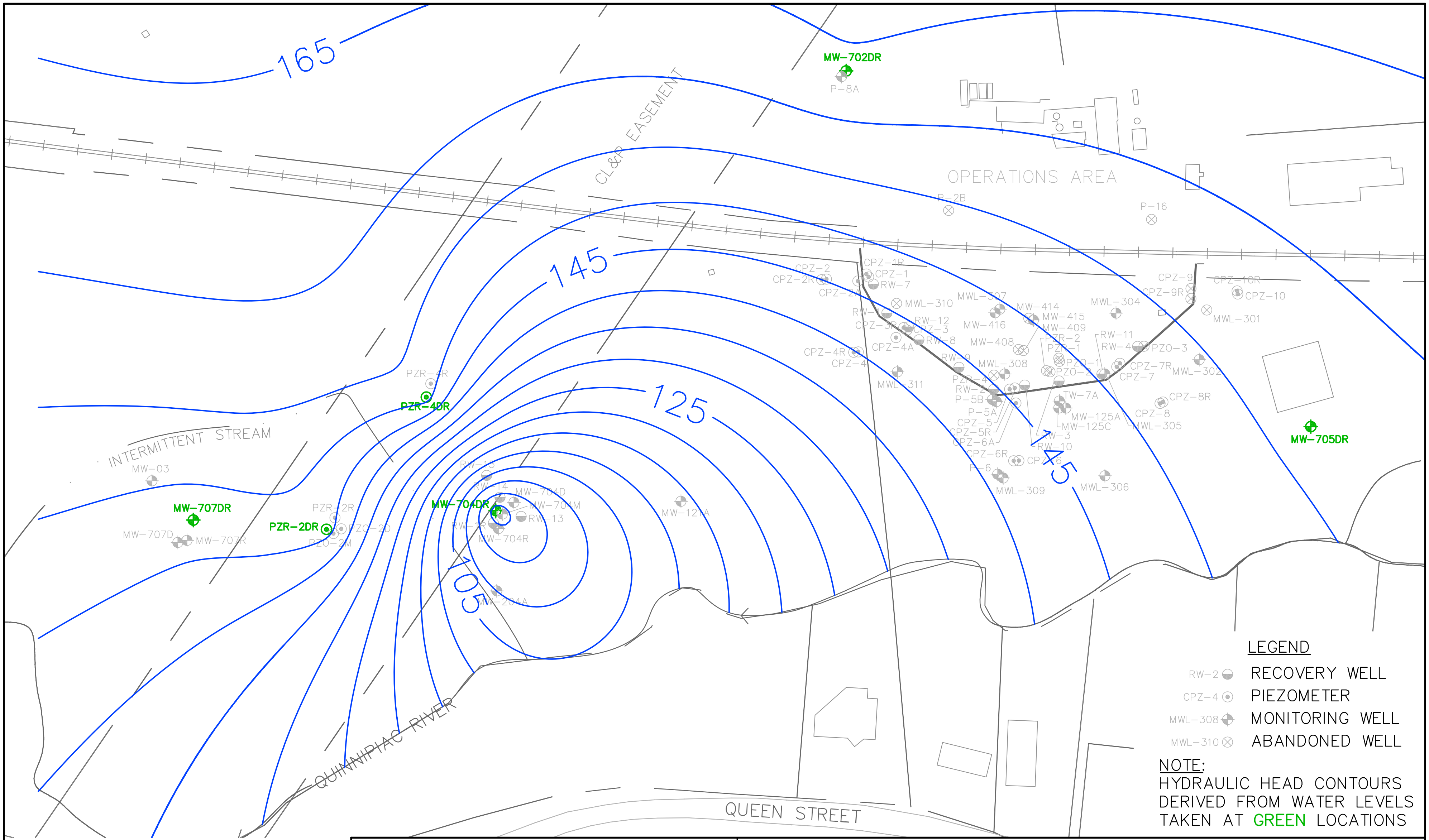

LEGEND

RW-2 ◒ RECOVERY WELL

CPZ-4 ⊙ PIEZOMETER

MWL-308 ⊕ MONITORING WELL

MWL-310 ⊗ ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

DEEP BEDROCK
HYDRAULIC HEAD CONTOURS
MARCH 25, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 5C

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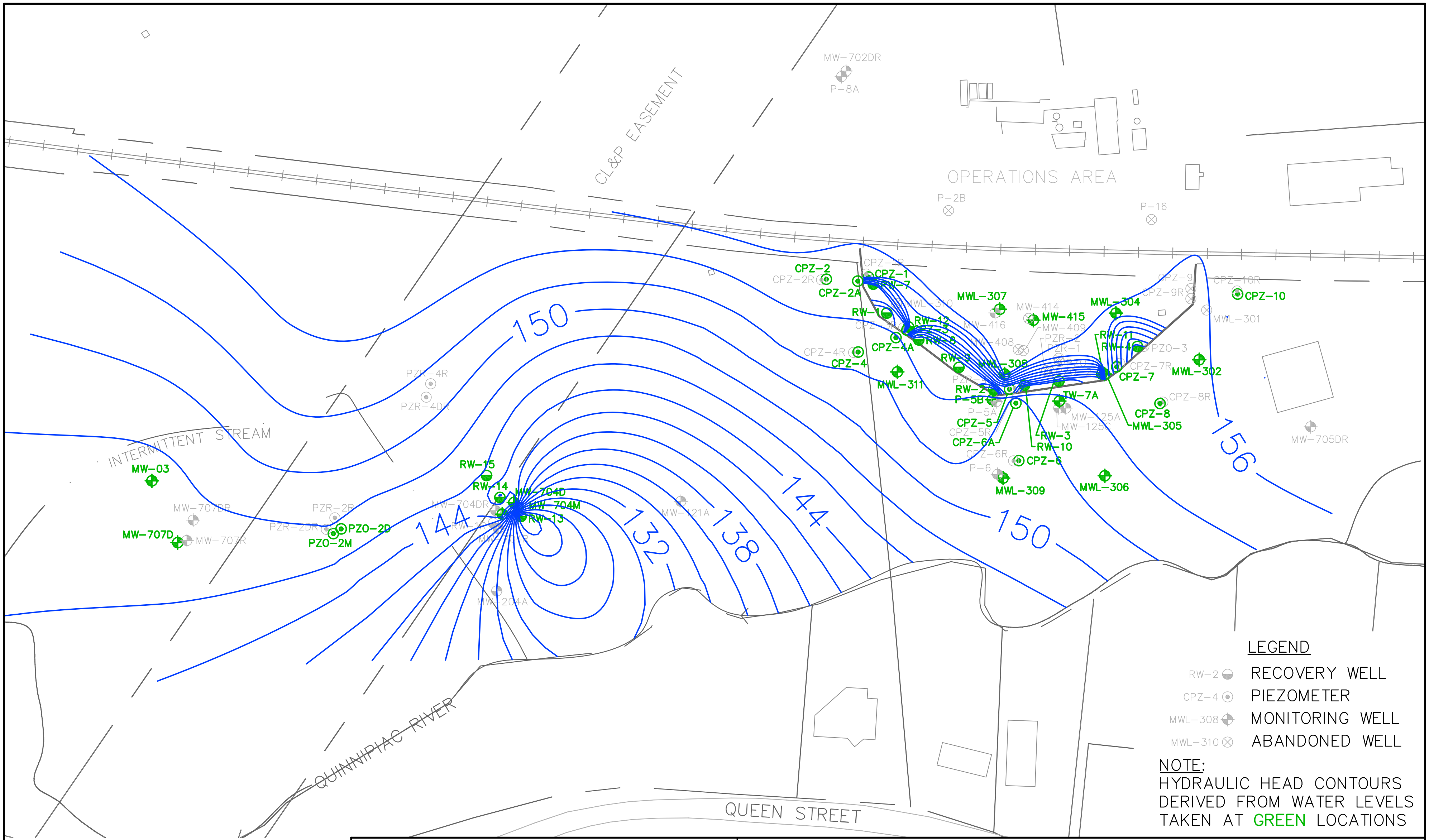

LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ⊙	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

OVERBURDEN
HYDRAULIC HEAD CONTOURS
APRIL 29, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 6A

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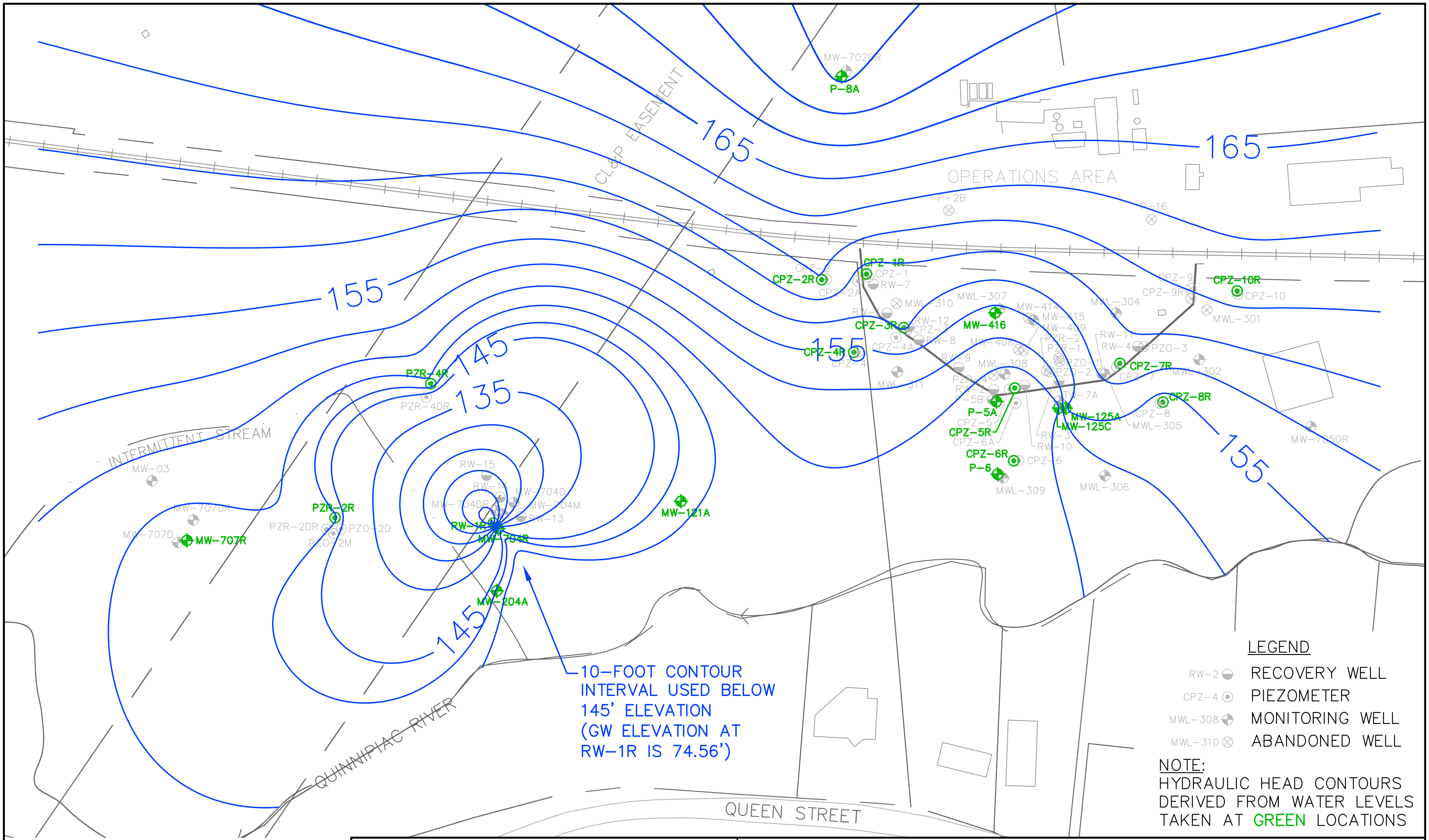

10-FOOT CONTOUR INTERVAL USED BELOW 145' ELEVATION (GW ELEVATION AT RW-1R IS 74.56')

LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ⊙	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK
HYDRAULIC HEAD CONTOURS
APRIL 29, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

CONCORD
NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 6B

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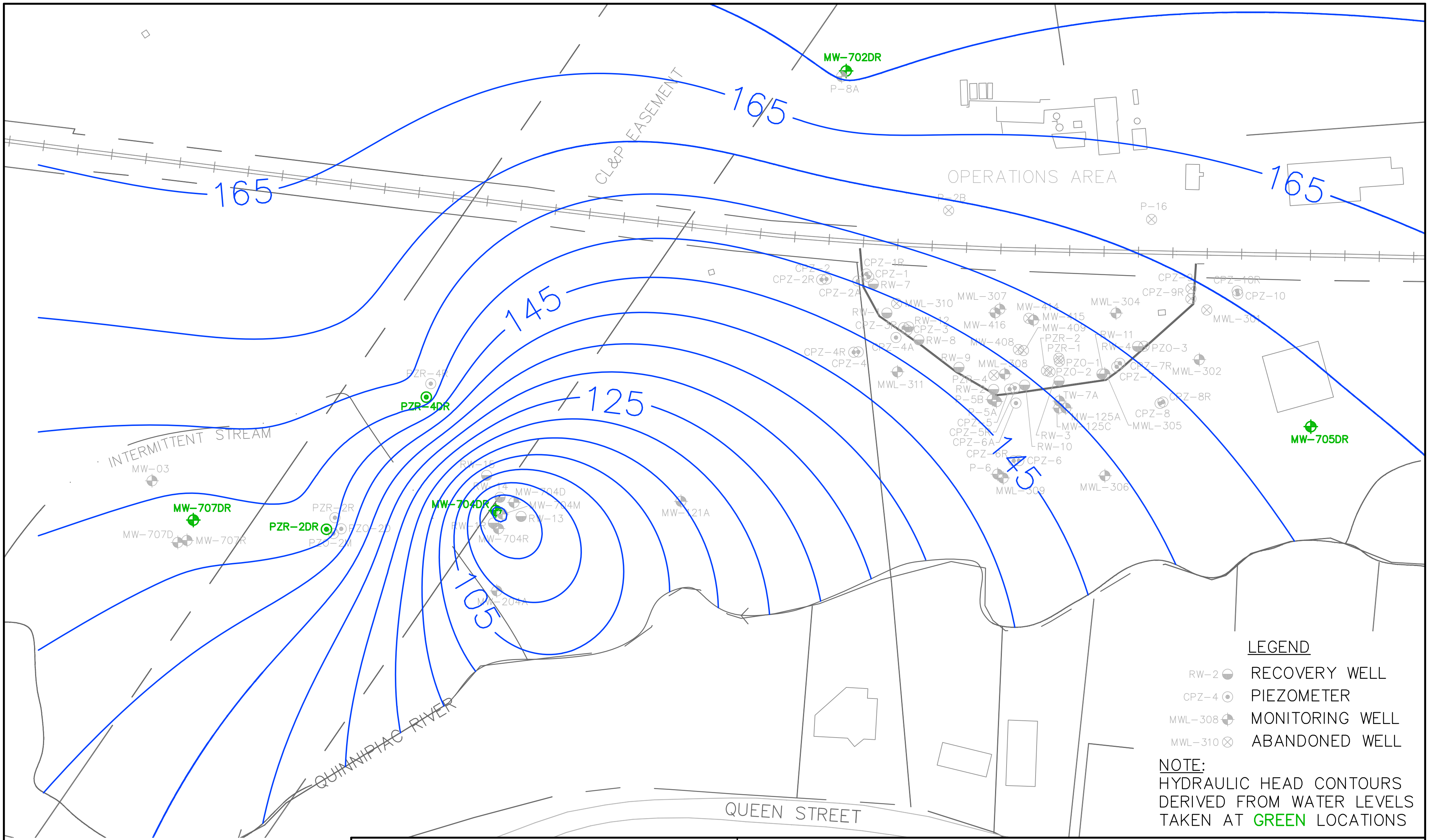

LEGEND

RW-2 ⊖ RECOVERY WELL

CPZ-4 ⊙ PIEZOMETER

MWL-308 ⊕ MONITORING WELL

MWL-310 ⊗ ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

DEEP BEDROCK
HYDRAULIC HEAD CONTOURS
APRIL 29, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 6C

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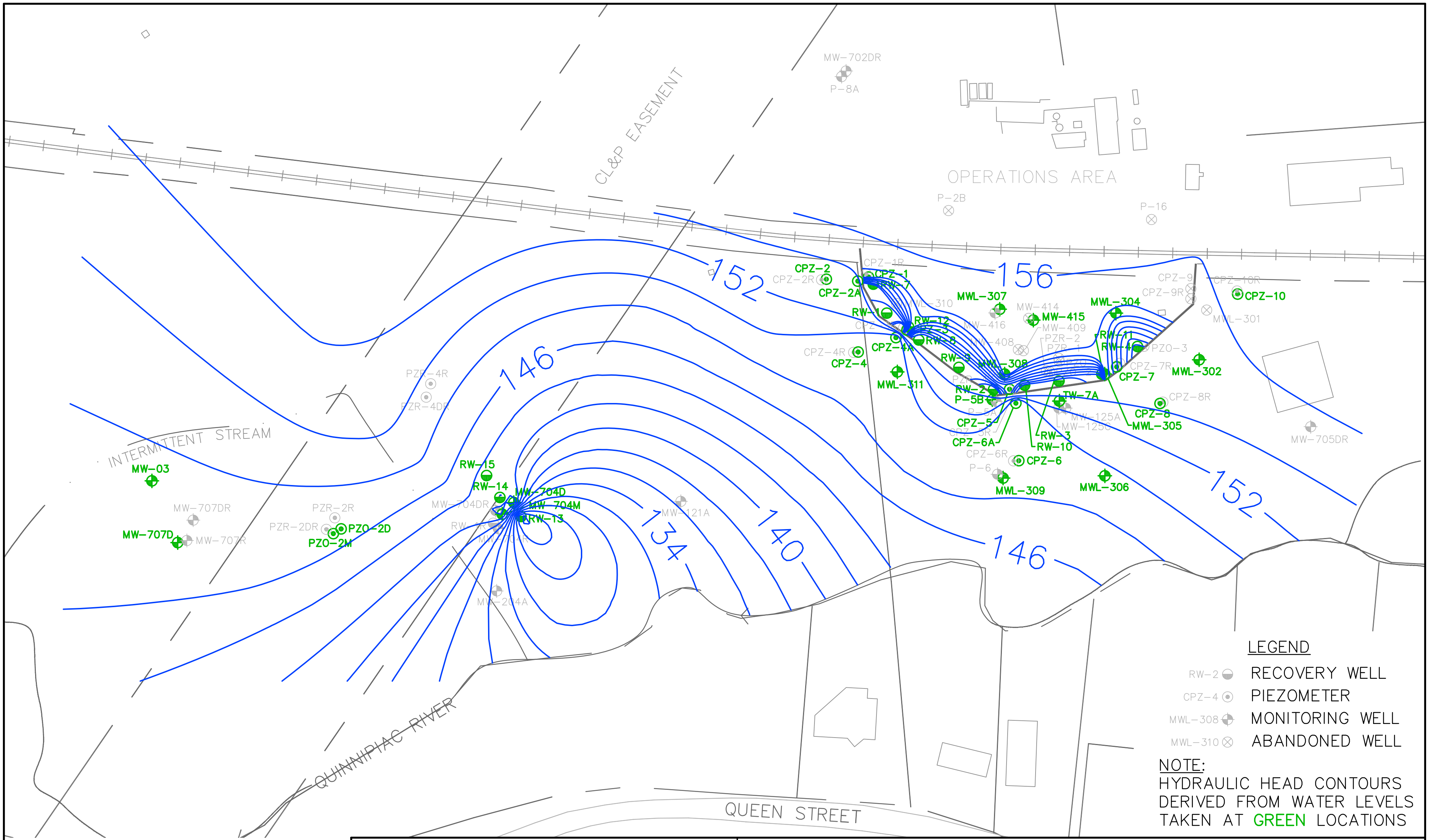
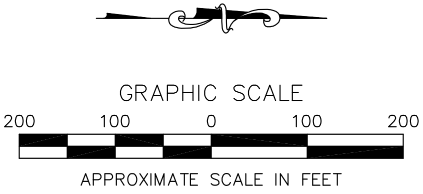


LEGEND

RW-2 ◒ RECOVERY WELL
CPZ-4 ◉ PIEZOMETER
MWL-308 ⊕ MONITORING WELL
MWL-310 ⊗ ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS



OVERBURDEN
HYDRAULIC HEAD CONTOURS
MAY 27, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

CONCORD WESTON SOLUTIONS NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 7A

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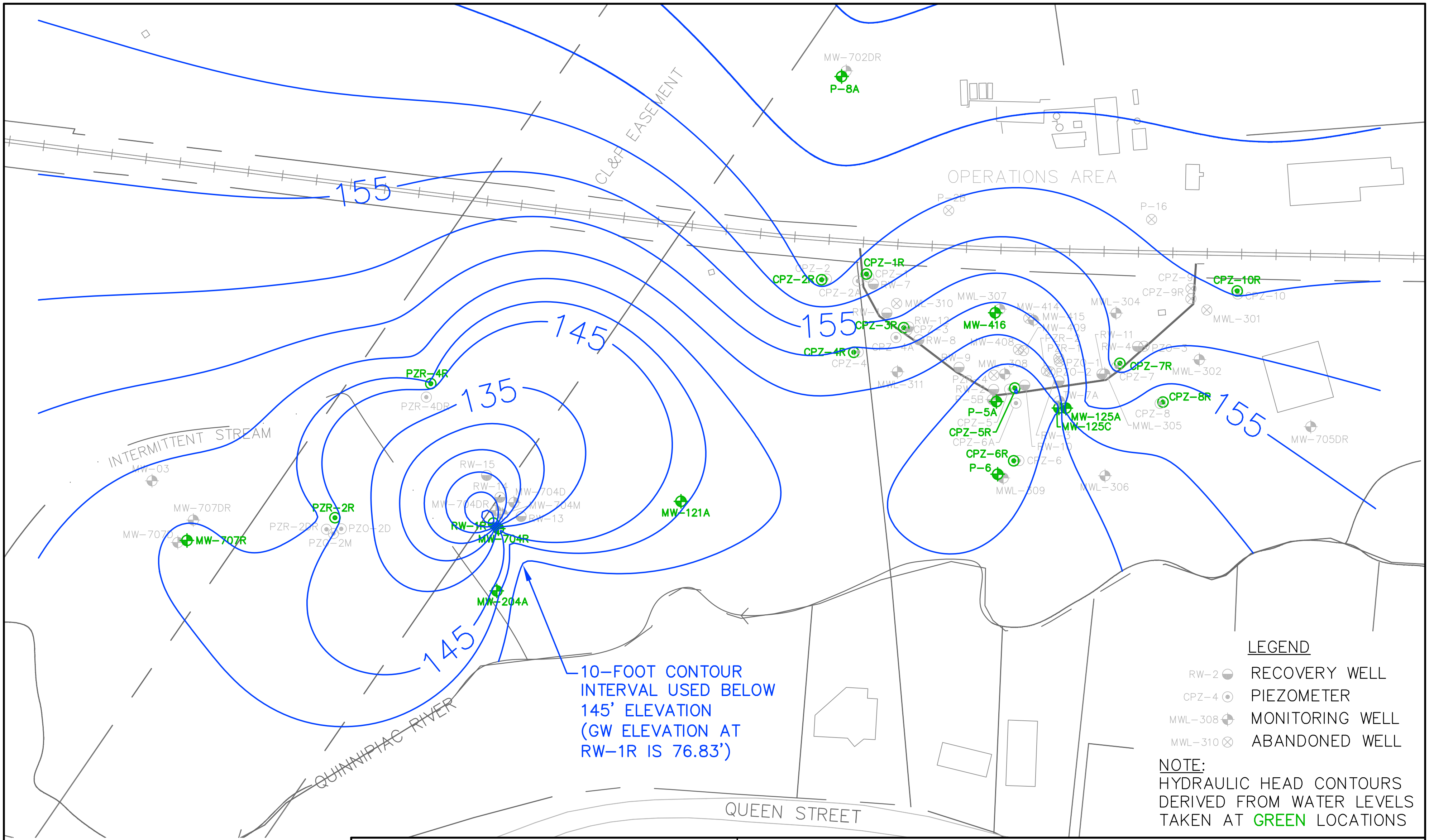
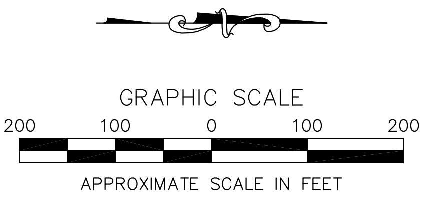


LEGEND

- RW-2 ◒ RECOVERY WELL
- CPZ-4 ⊙ PIEZOMETER
- MWL-308 ⊕ MONITORING WELL
- MWL-310 ⊗ ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS



SHALLOW BEDROCK
HYDRAULIC HEAD CONTOURS
MAY 27, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD
NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 7B

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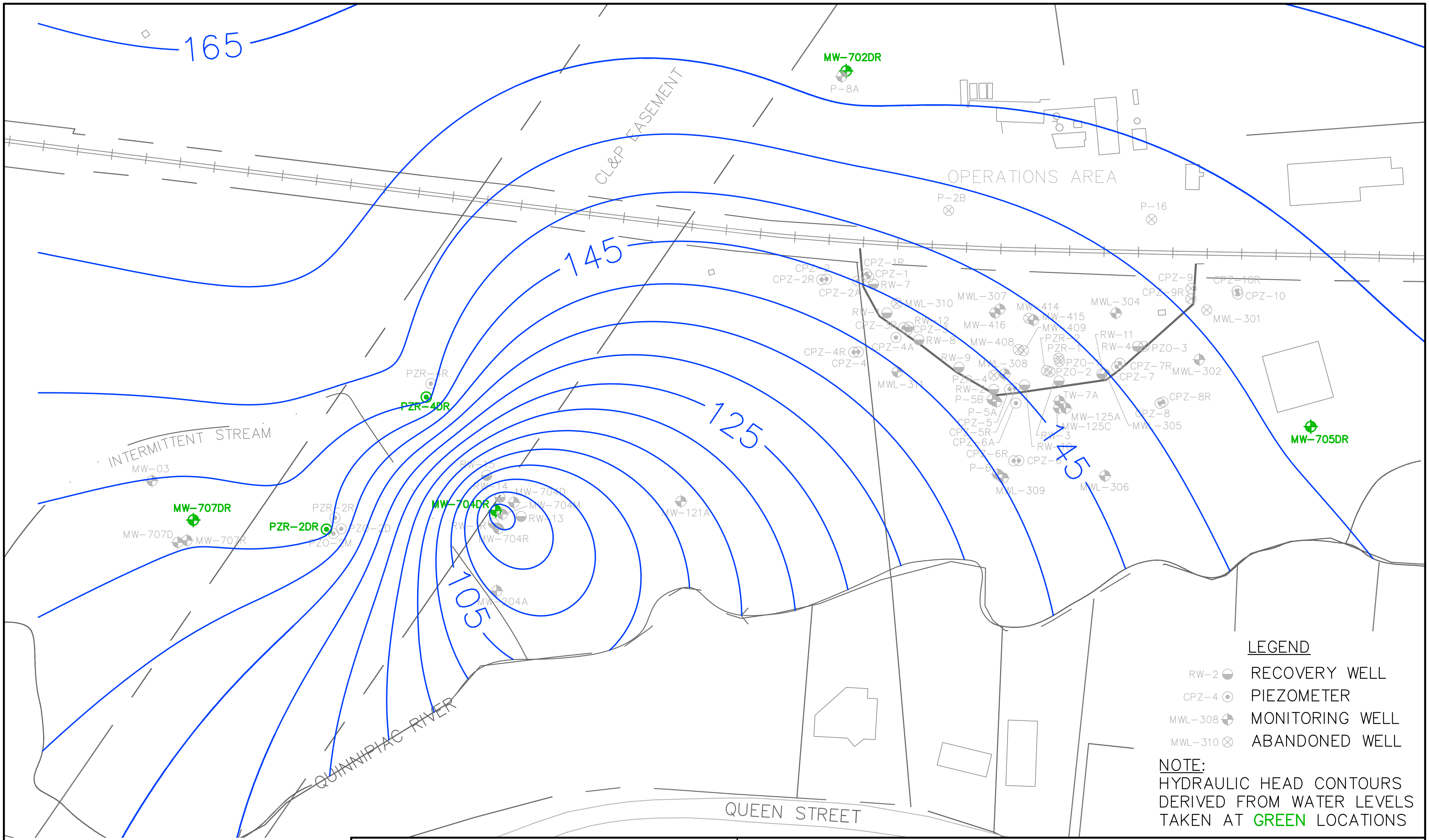

LEGEND

RW-2 ◒ RECOVERY WELL

CPZ-4 ⊙ PIEZOMETER

MWL-308 ⊕ MONITORING WELL

MWL-310 ⊗ ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

DEEP BEDROCK
HYDRAULIC HEAD CONTOURS
MAY 27, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 7C

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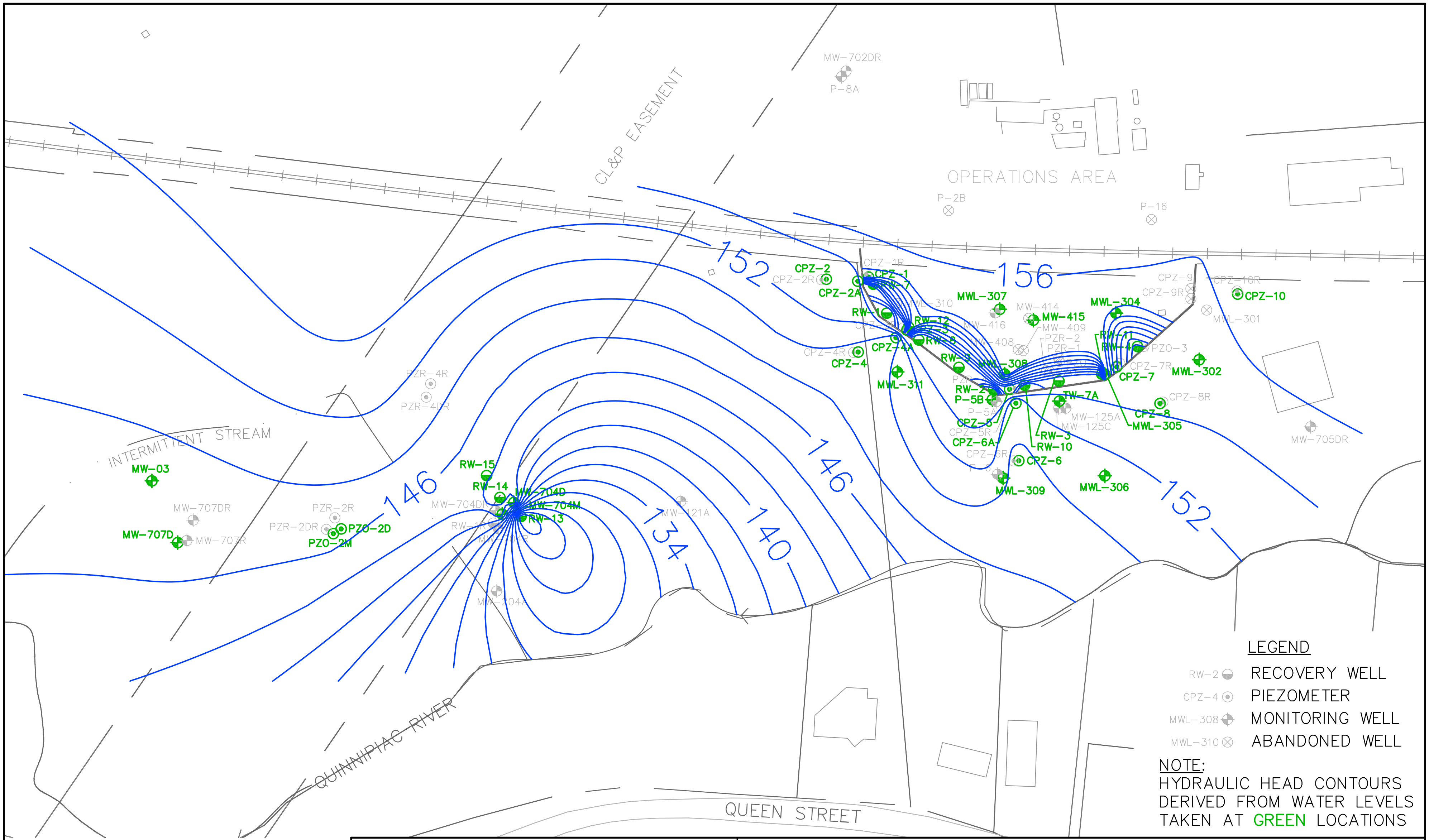

LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ⊙	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN
HYDRAULIC HEAD CONTOURS
JUNE 29, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 8A

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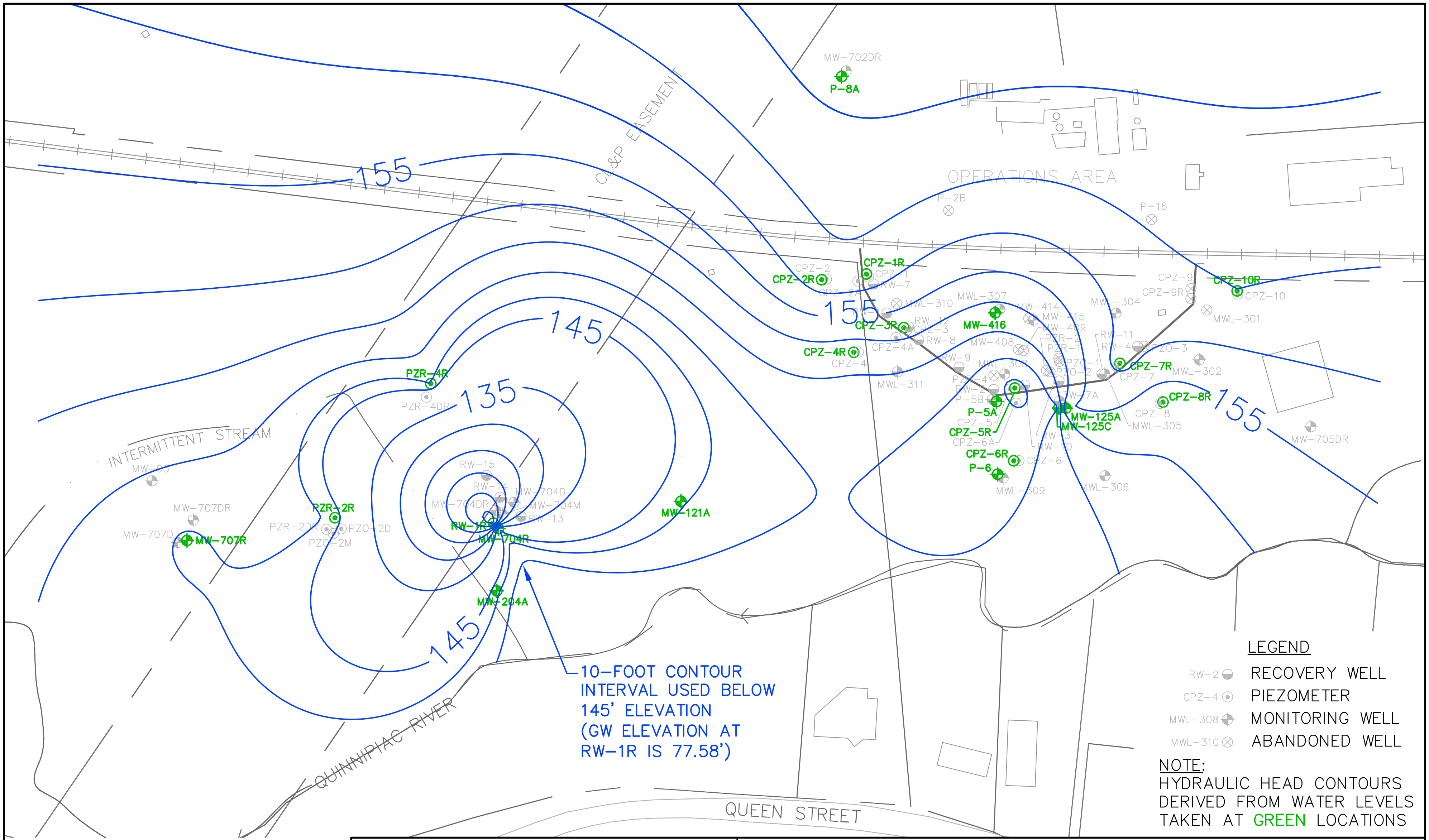

10-FOOT CONTOUR INTERVAL USED BELOW 145' ELEVATION (GW ELEVATION AT RW-1R IS 77.58')

LEGEND

RW-2	RECOVERY WELL
CPZ-4	PIEZOMETER
MWL-308	MONITORING WELL
MWL-310	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS JUNE 29, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 8B

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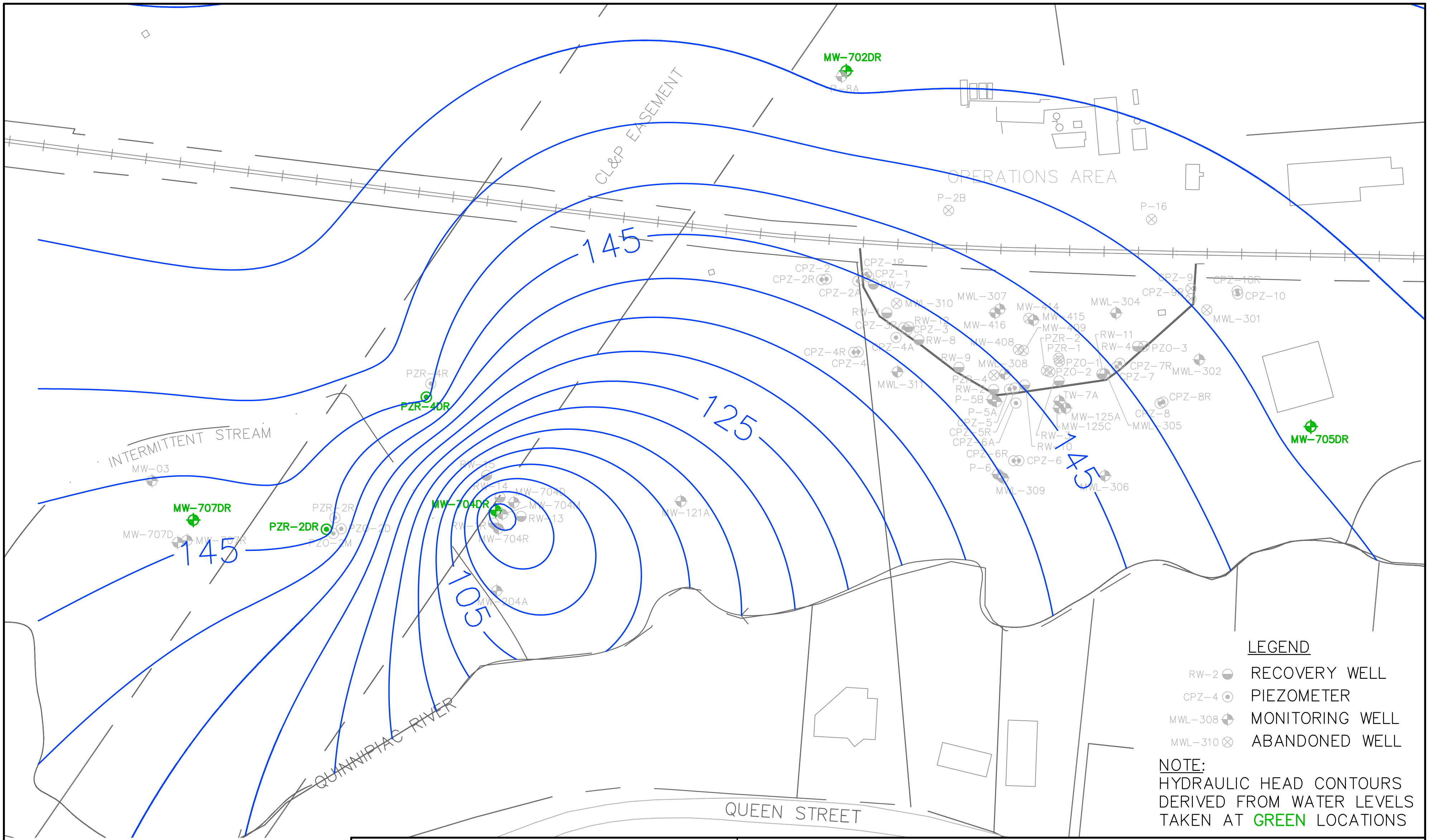

LEGEND

RW-2 ◒ RECOVERY WELL
CPZ-4 ⊙ PIEZOMETER
MWL-308 ⊕ MONITORING WELL
MWL-310 ⊗ ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

DEEP BEDROCK
HYDRAULIC HEAD CONTOURS
JUNE 29, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 8C

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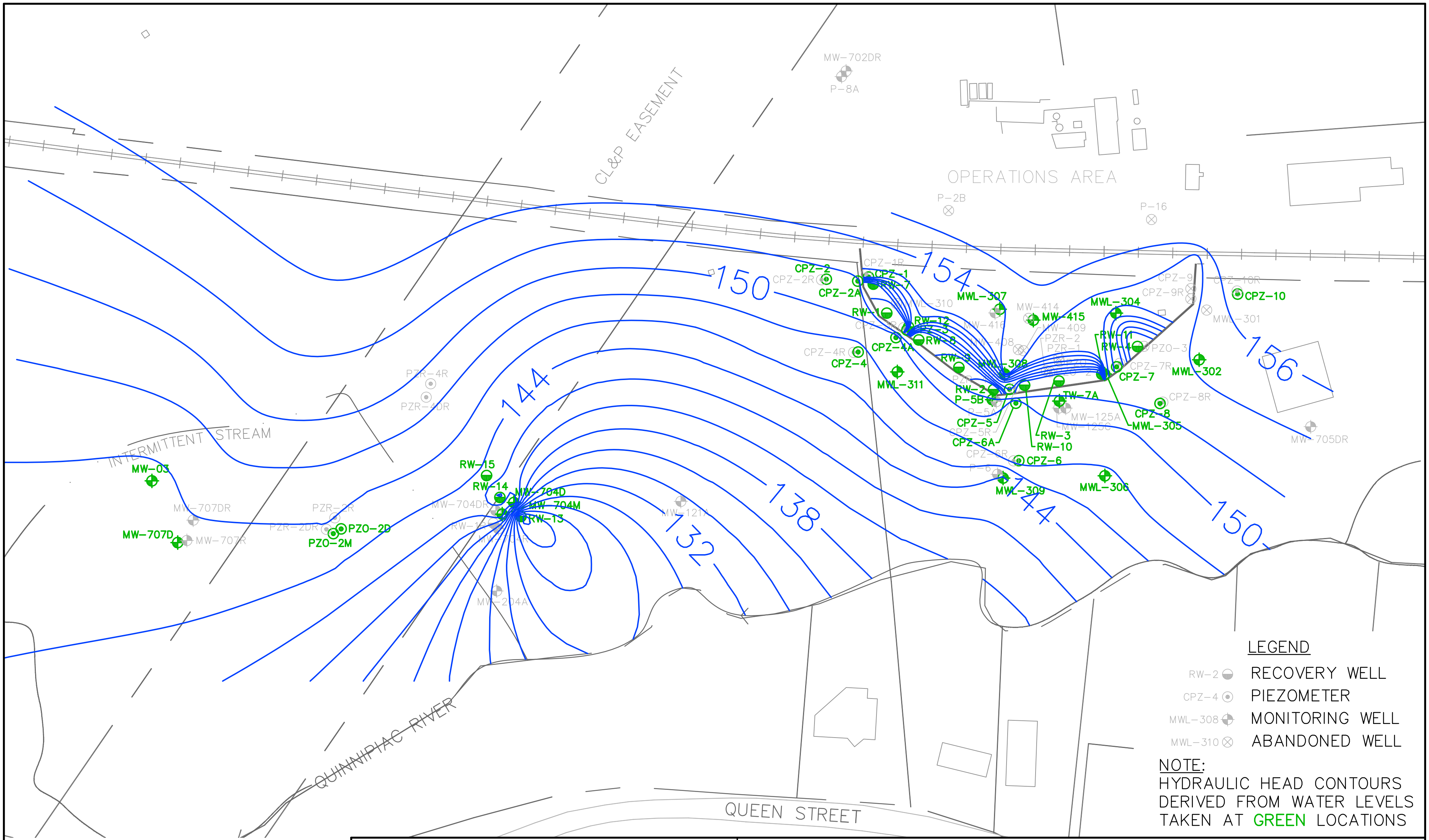

LEGEND

RW-2	RECOVERY WELL
CPZ-4	PIEZOMETER
MWL-308	MONITORING WELL
MWL-310	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

OVERBURDEN
HYDRAULIC HEAD CONTOURS
JULY 27, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 9A

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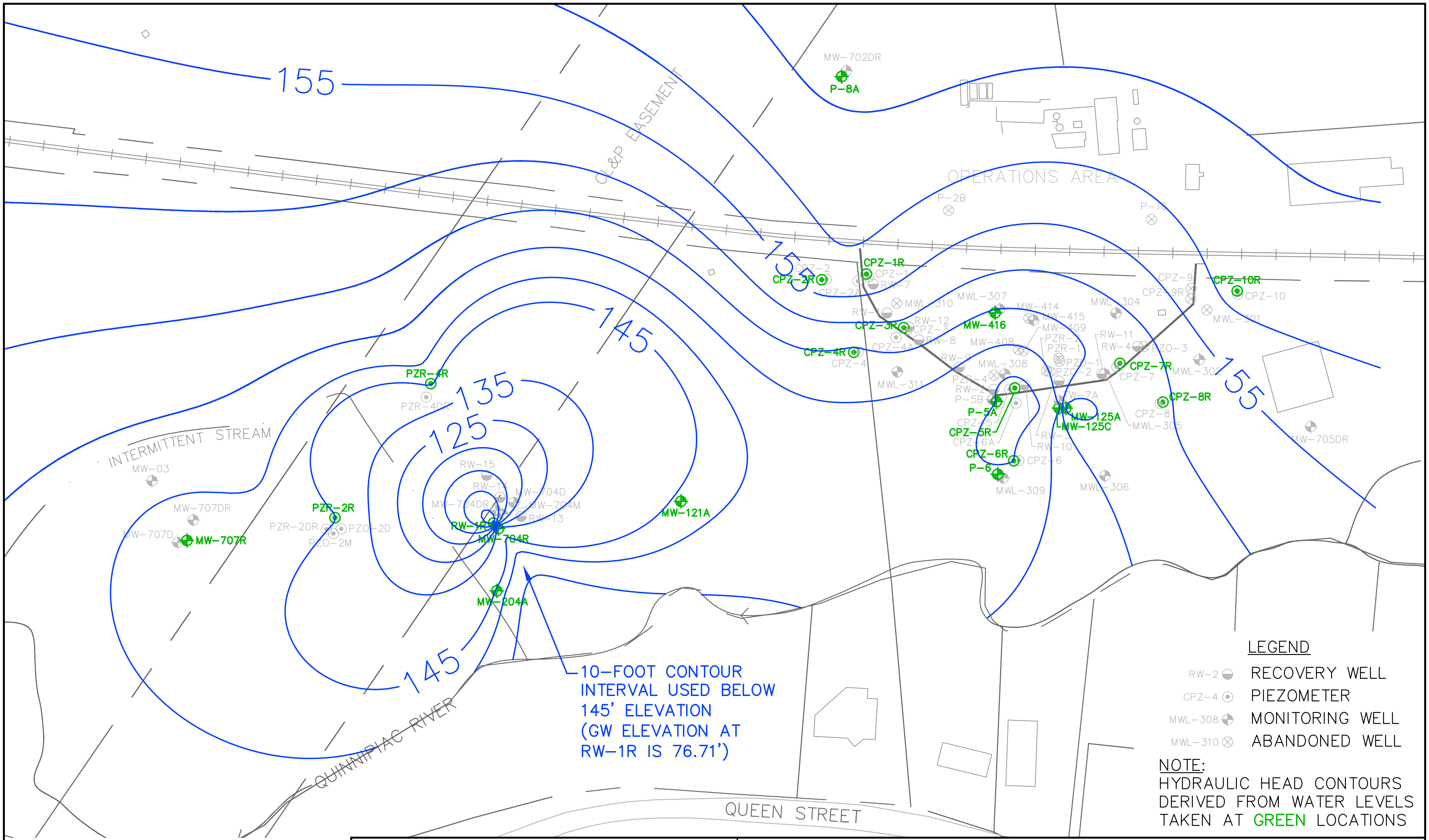

10-FOOT CONTOUR INTERVAL USED BELOW 145' ELEVATION (GW ELEVATION AT RW-1R IS 76.71')

LEGEND

RW-2	RECOVERY WELL
CPZ-4	PIEZOMETER
MWL-308	MONITORING WELL
MWL-310	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK
HYDRAULIC HEAD CONTOURS
JULY 27, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 9B

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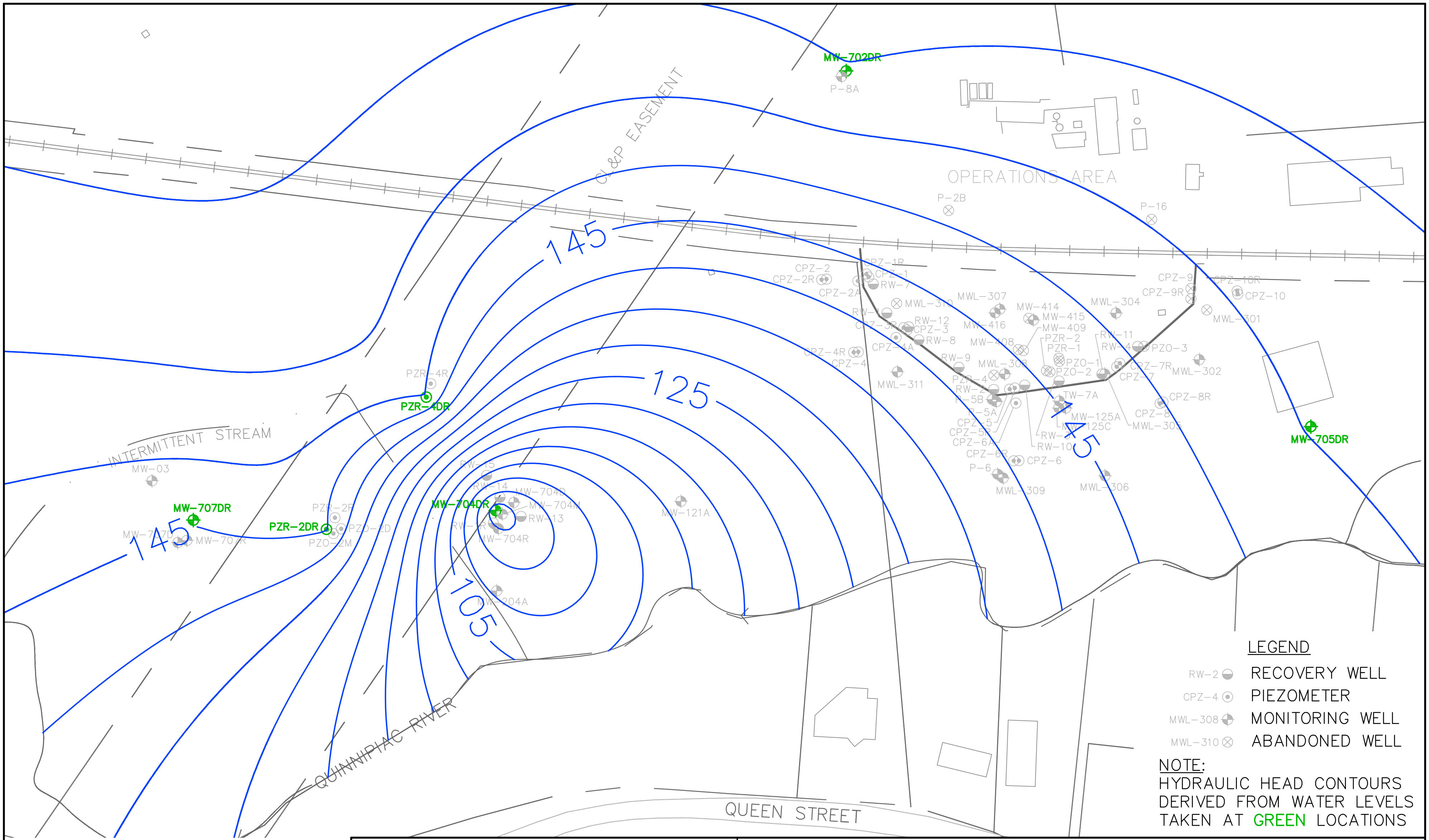

LEGEND

RW-2 ◒ RECOVERY WELL

CPZ-4 ⊙ PIEZOMETER

MWL-308 ⊕ MONITORING WELL

MWL-310 ⊗ ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

DEEP BEDROCK
HYDRAULIC HEAD CONTOURS
JULY 27, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 9C

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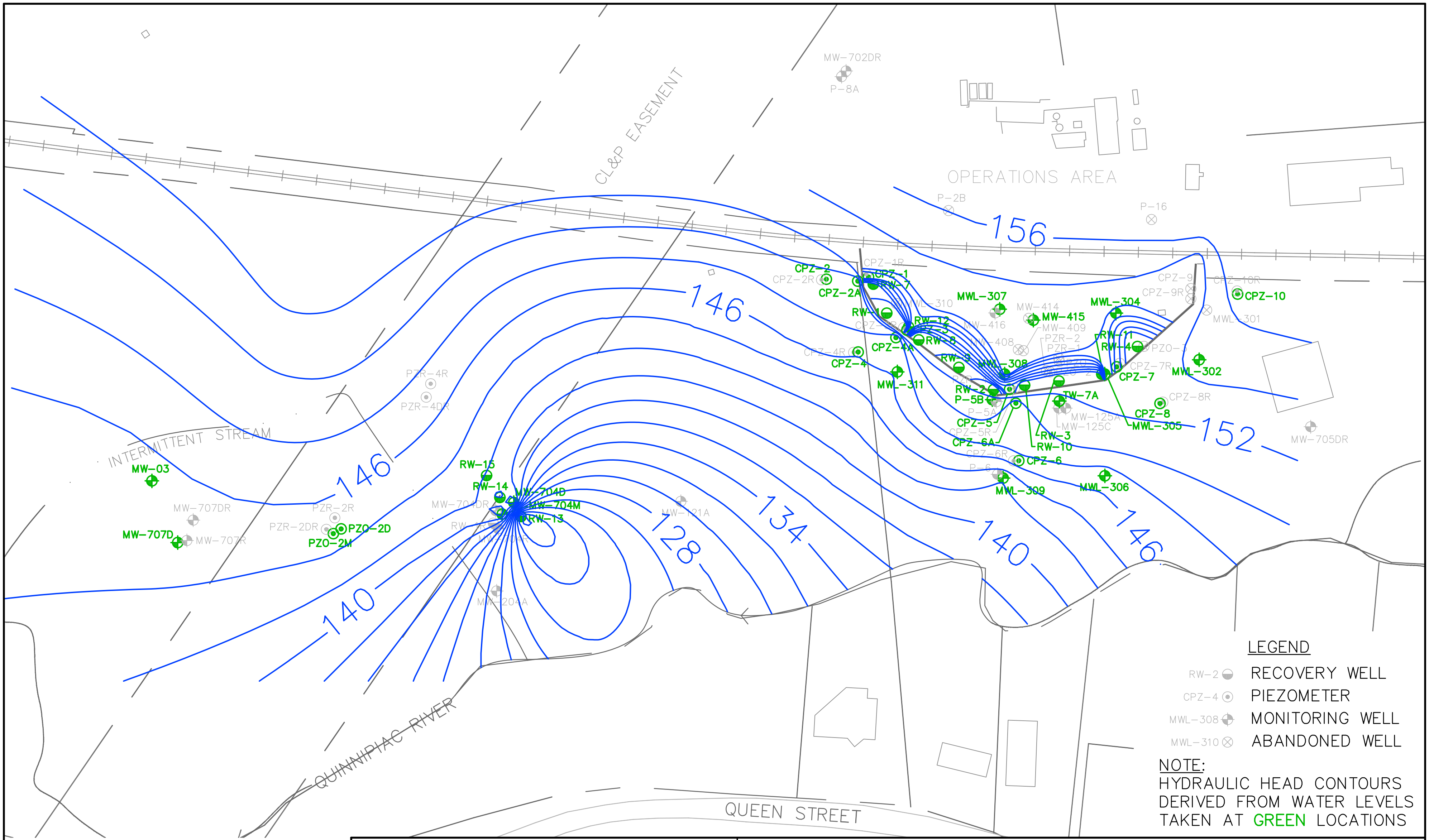
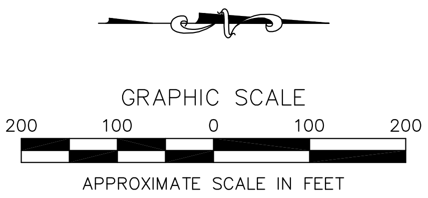


LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ⊙	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS



OVERBURDEN
HYDRAULIC HEAD CONTOURS
AUGUST 31, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN BEG
DATE NOV 2015
DES. ENG.
DATE
W.O. NO. 13056.001.020
CHECKED
DATE
SCALE AS SHOWN
REVISION
FIGURE NO. 10A

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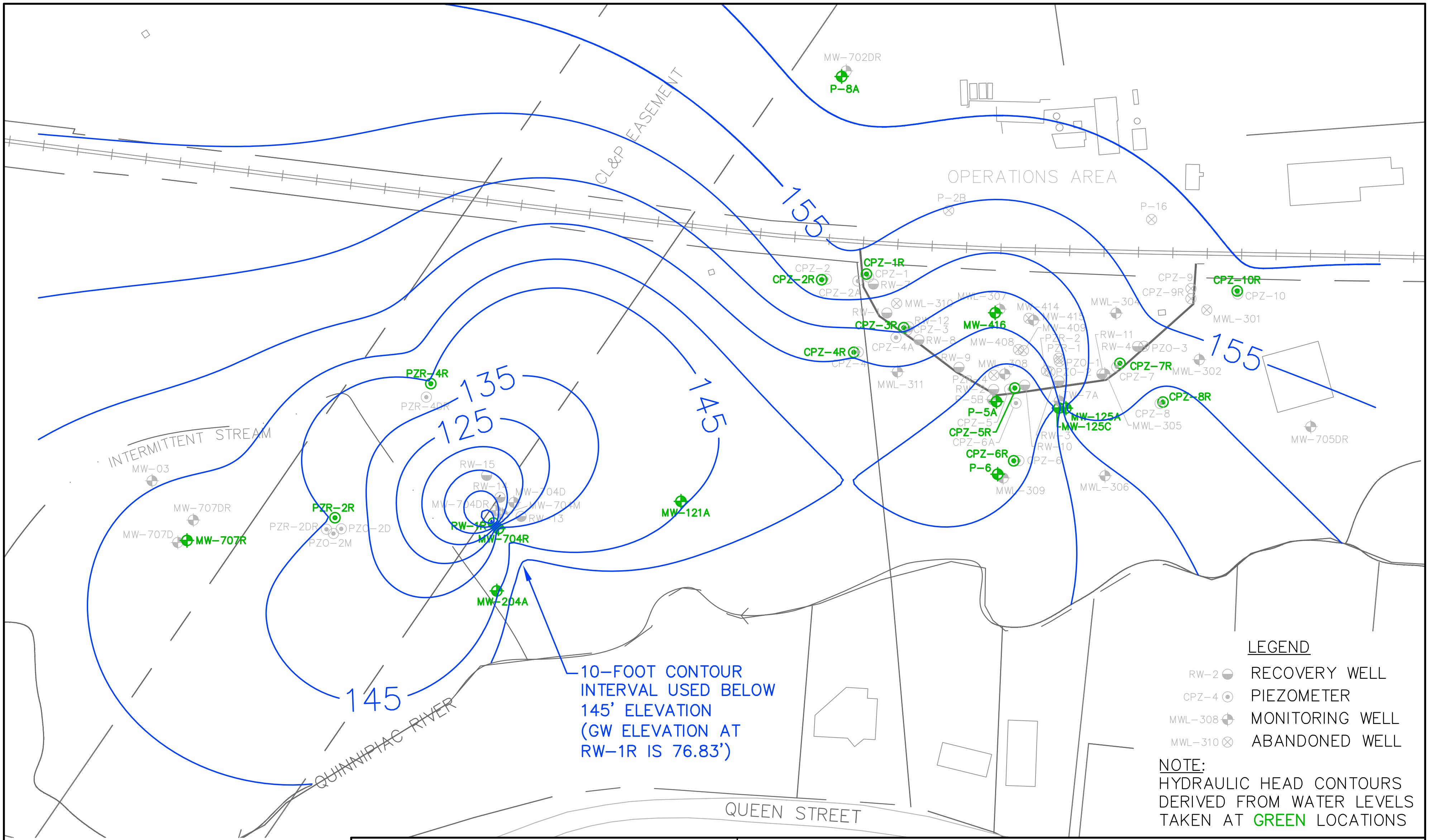
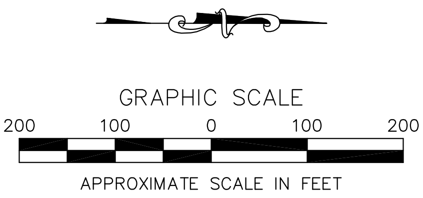


LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ⊙	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS



SHALLOW BEDROCK
HYDRAULIC HEAD CONTOURS
AUGUST 31, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 10B

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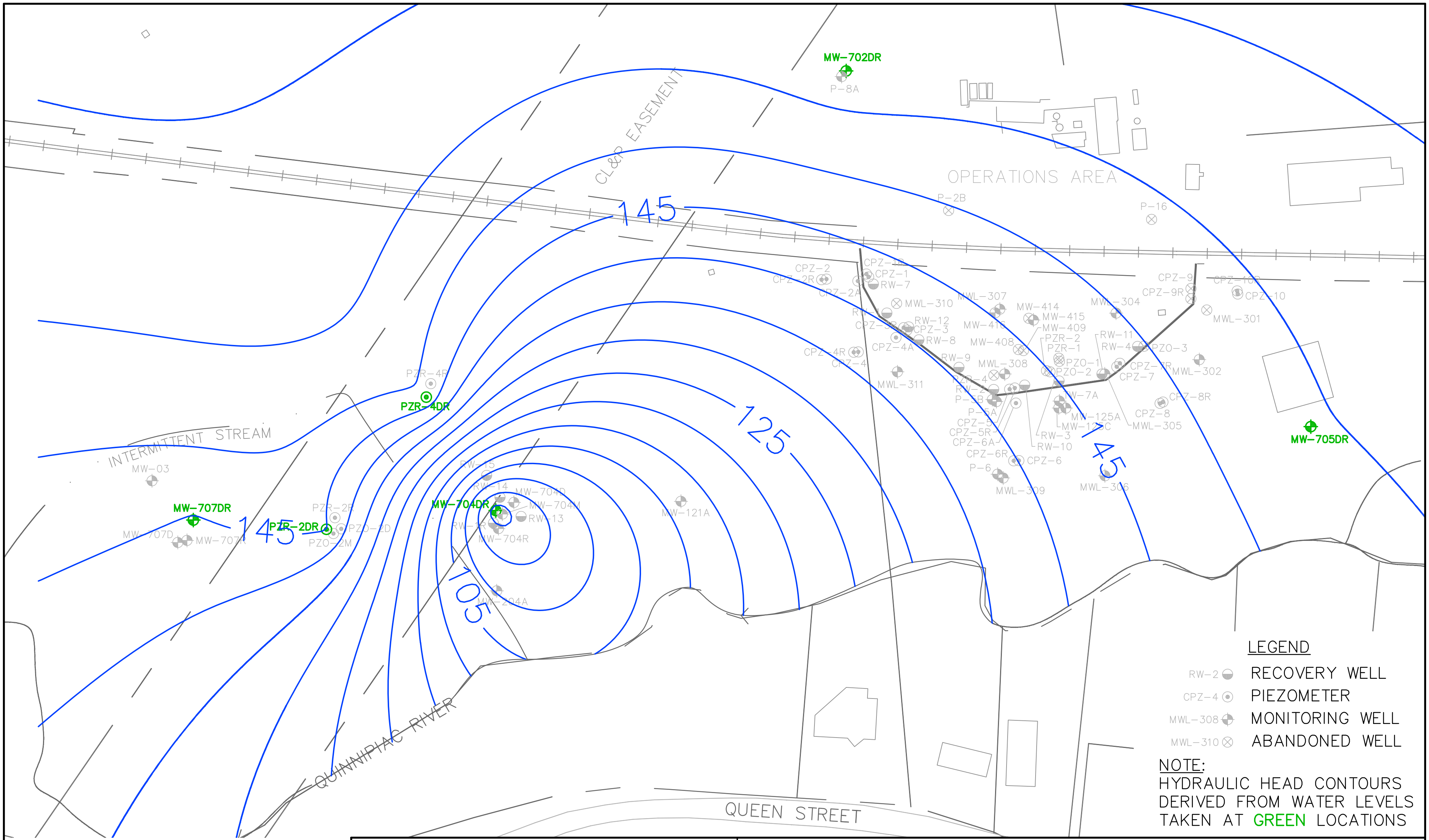


LEGEND

RW-2 ◒ RECOVERY WELL

CPZ-4 ⊙ PIEZOMETER

MWL-308 ⊕ MONITORING WELL

MWL-310 ⊗ ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

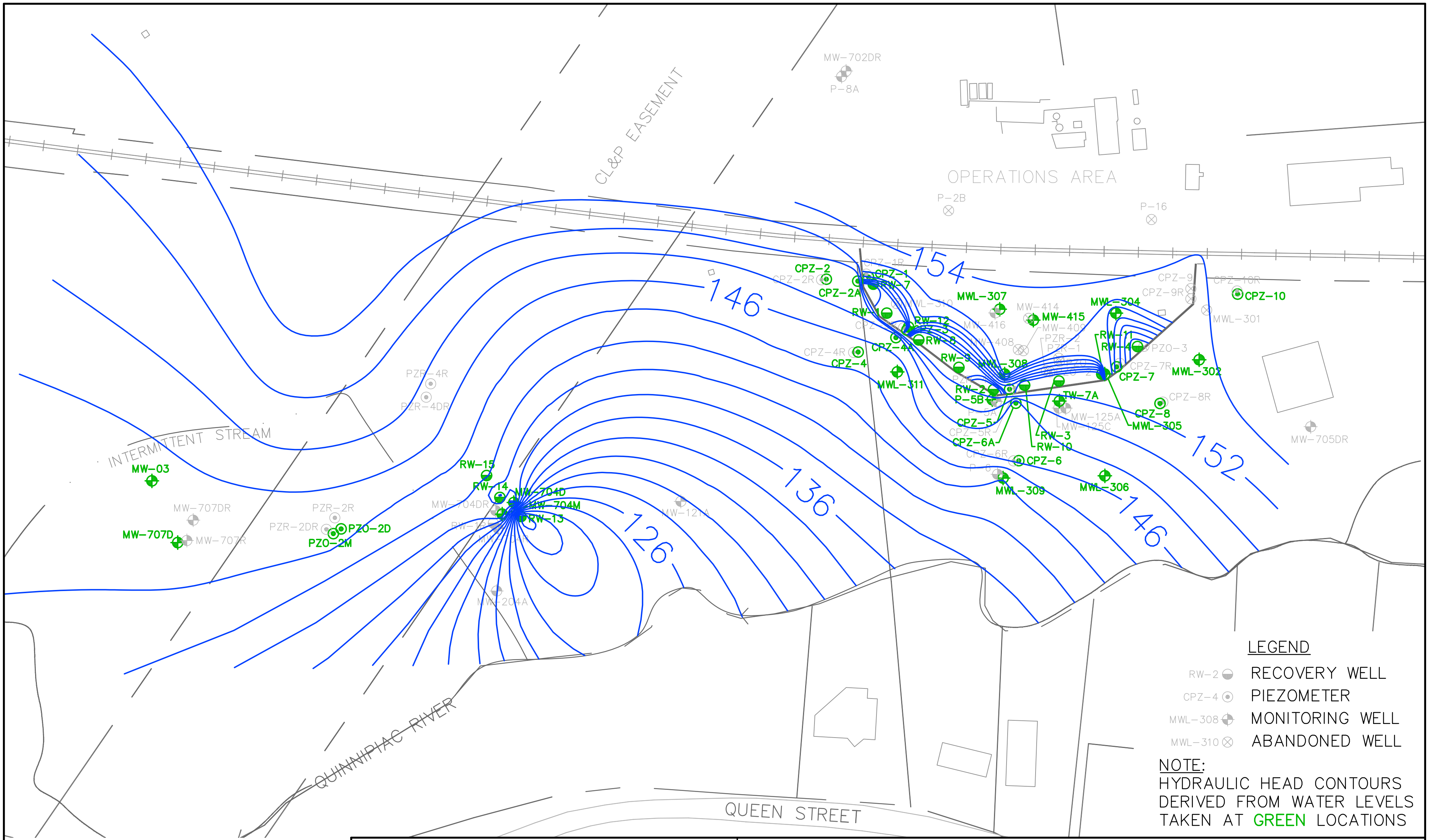
DEEP BEDROCK
HYDRAULIC HEAD CONTOURS
AUGUST 31, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	BEG	DATE	NOV 2015	DES. ENG.		DATE		W.O. NO.	13056.001.020
CHECKED		DATE		SCALE	AS SHOWN	REVISION		FIGURE NO.	10C



LEGEND

RW-2	RECOVERY WELL
CPZ-4	PIEZOMETER
MWL-308	MONITORING WELL
MWL-310	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

OVERBURDEN
HYDRAULIC HEAD CONTOURS
SEPTEMBER 28, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 11A

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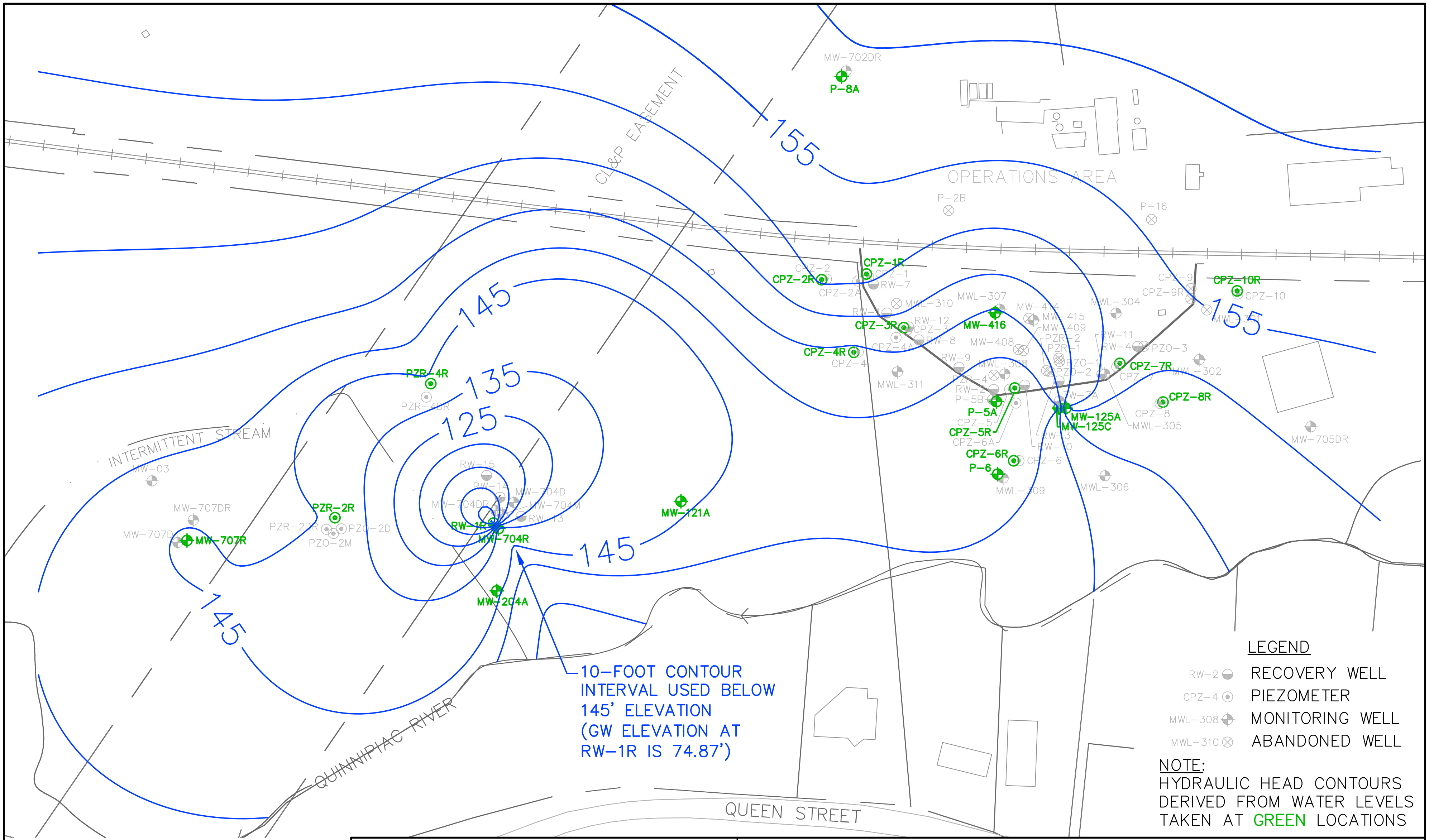
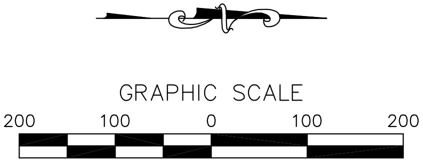


10-FOOT CONTOUR INTERVAL USED BELOW 145' ELEVATION (GW ELEVATION AT RW-1R IS 74.87')

LEGEND

RW-2 ◓	RECOVERY WELL
CPZ-4 ⊙	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS



GRAPHIC SCALE

APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK
HYDRAULIC HEAD CONTOURS
SEPTEMBER 28, 2015

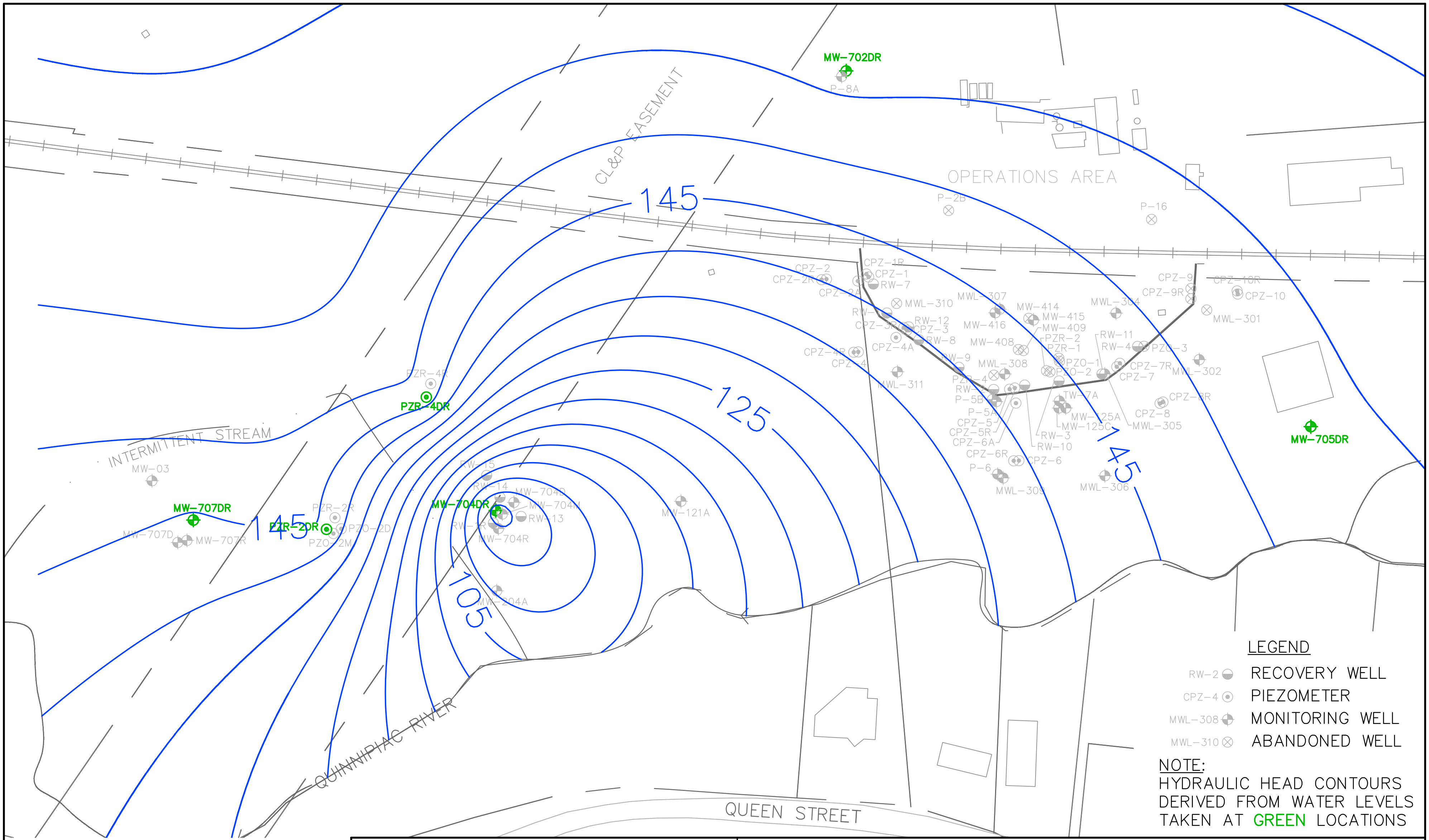
SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 11B

M:\Design\DWG\SRSNE\Sep 28 2015\deep bedrock.dwg, Layout1, 11/12/2015 1:29:16 PM, girardeb, 1:1



LEGEND

RW-2 ⊖	RECOVERY WELL
CPZ-4 ⊙	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

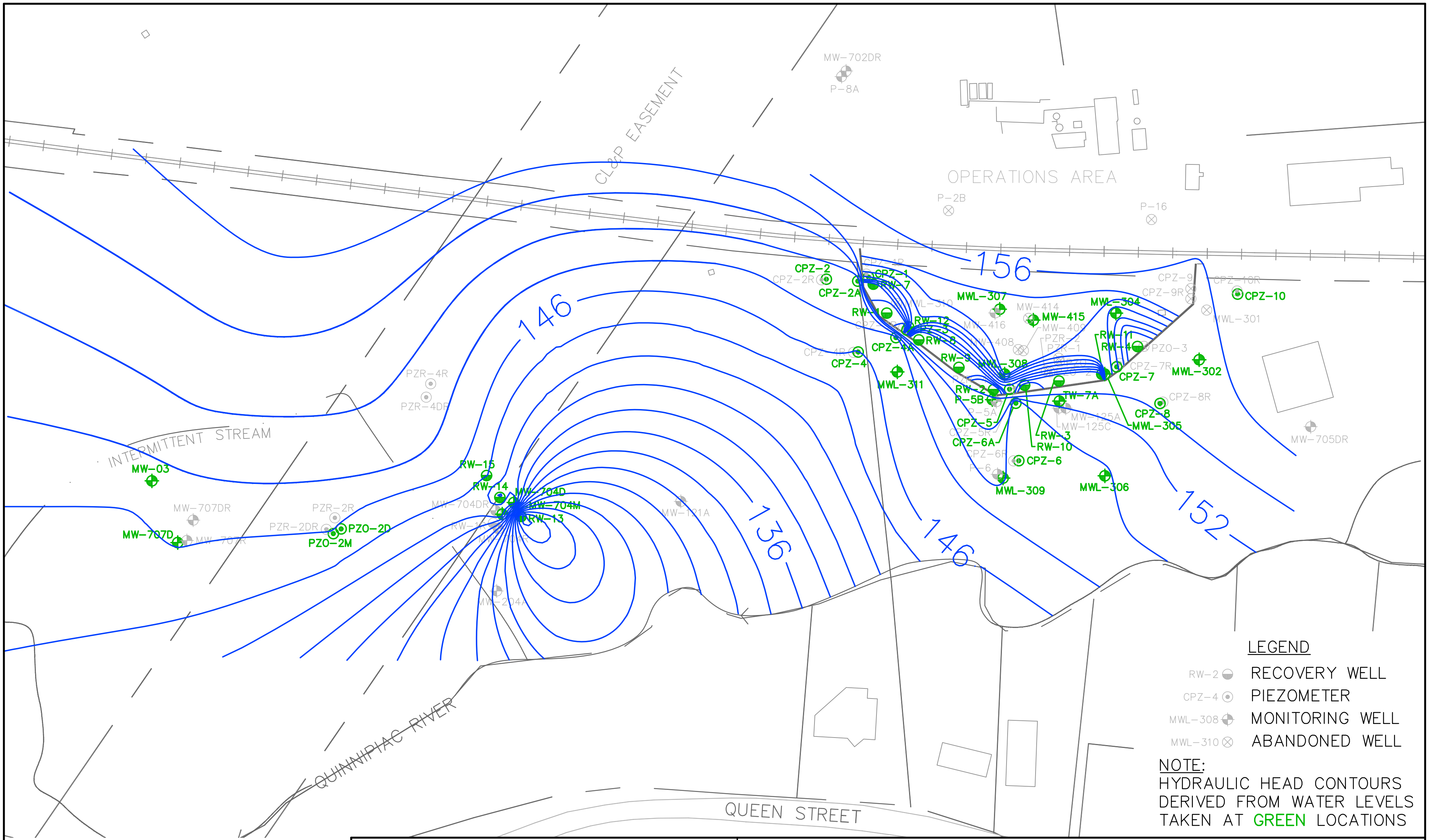
DEEP BEDROCK
HYDRAULIC HEAD CONTOURS
SEPTEMBER 28, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 11C

DRAFT



LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ◉	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN
HYDRAULIC HEAD CONTOURS
OCTOBER 30, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 12A

M:\Design\DWG\SRSNE\Oct 30 2015\shallow bedrock.dwg, Layout1, 11/12/2015 1:31:09 PM, girardeb, 1:1

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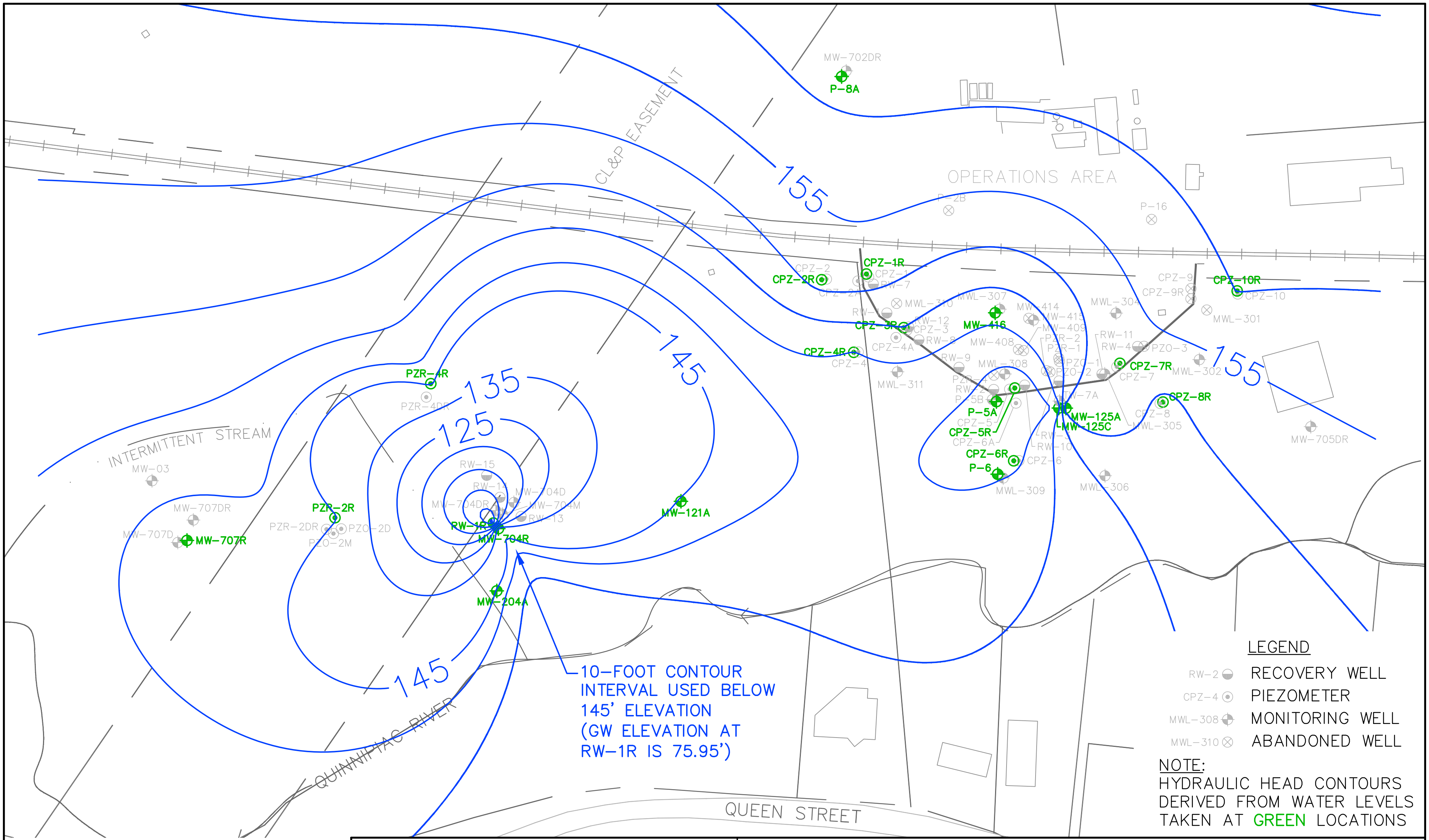

10-FOOT CONTOUR INTERVAL USED BELOW 145' ELEVATION (GW ELEVATION AT RW-1R IS 75.95')

LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ⦿	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK
HYDRAULIC HEAD CONTOURS
OCTOBER 30, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

CONCORD NEW HAMPSHIRE

DRAWN BEG	DATE NOV 2015	DES. ENG.	DATE	W.O. NO. 13056.001.020
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 12B

M:\Design\DWG\SRSNE\Oct 30 2015\deep bedrock.dwg, Layout1, 11/12/2015 1:31:58 PM, girardeb, 1:1

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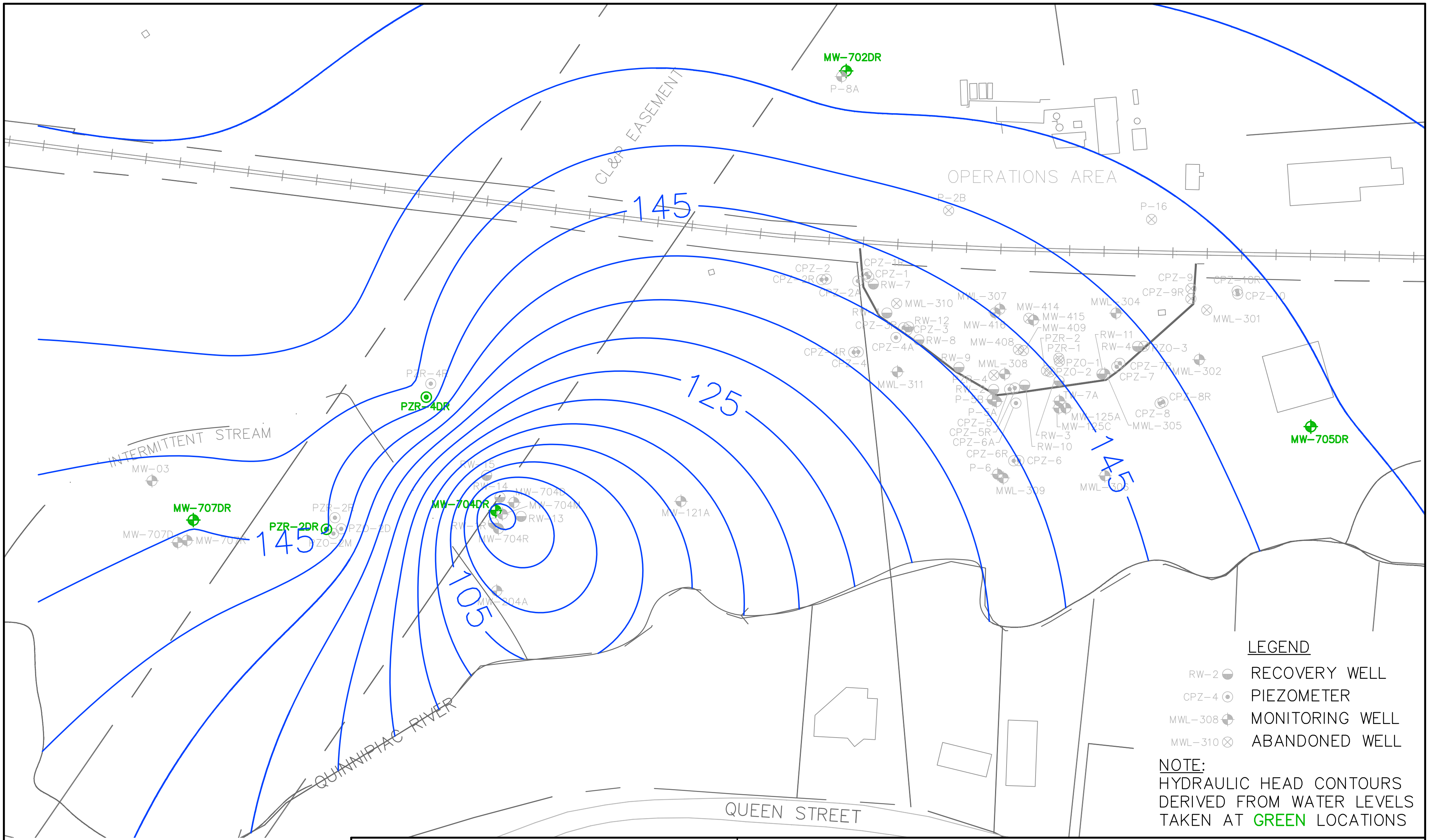

LEGEND

RW-2 ◒	RECOVERY WELL
CPZ-4 ⊙	PIEZOMETER
MWL-308 ⊕	MONITORING WELL
MWL-310 ⊗	ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS
DERIVED FROM WATER LEVELS
TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

DEEP BEDROCK
HYDRAULIC HEAD CONTOURS
OCTOBER 30, 2015

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
BEG	NOV 2015			13056.001.020
CHECKED	DATE	SCALE	REVISION	FIGURE NO.
		AS SHOWN		12C

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FIGURE 13

31 Oct. 2014 through 30 Oct. 2015

Hydraulic Gradient Between CPZ-05 and CPZ-06
NTCRA-1 Overburdern Compliance Pair

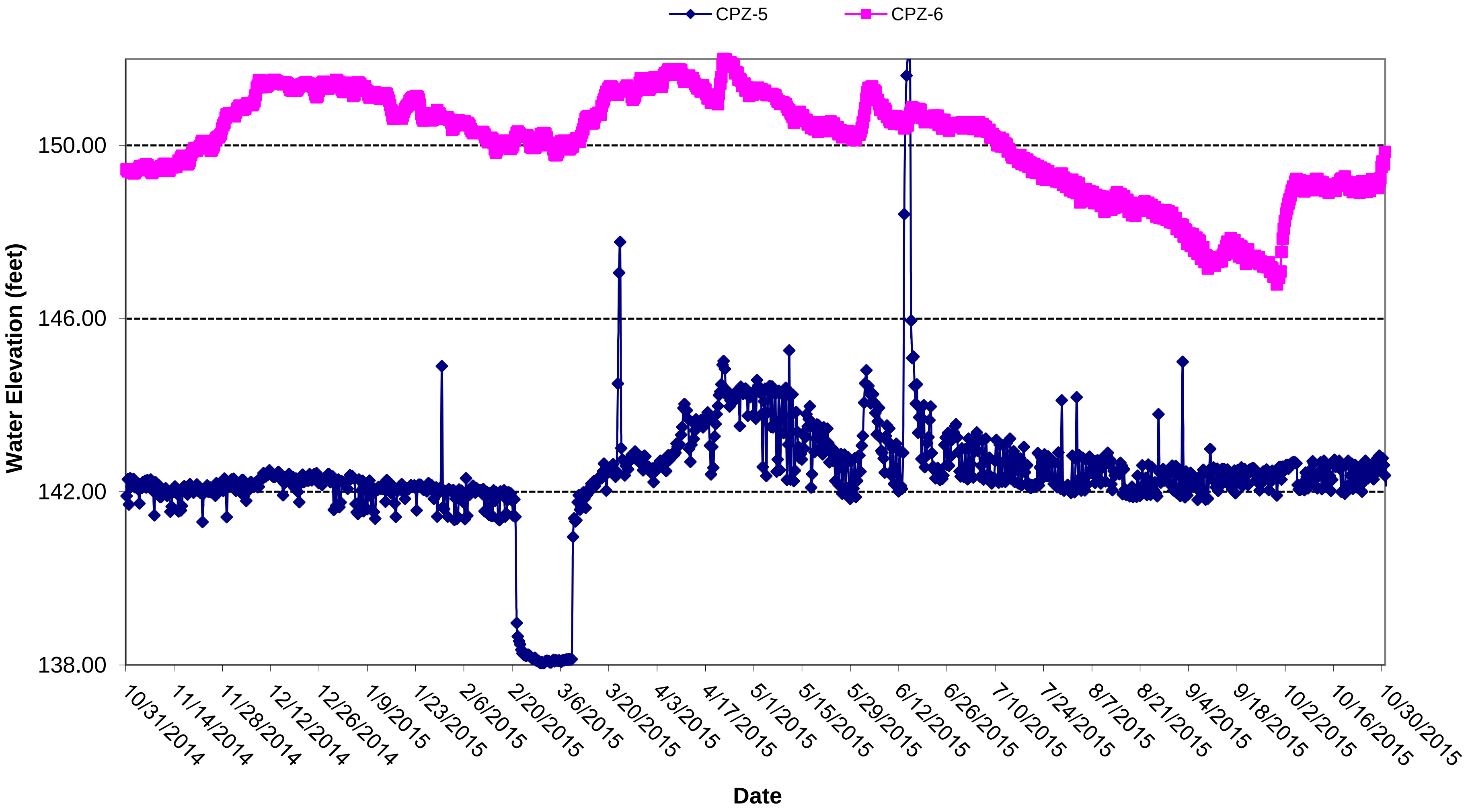

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FIGURE 14A

31 Oct. 2014 through 30 Oct. 2015

Hydraulic Gradient Between MW-704R and PZR-2R
NTCRA-2 Shallow Bedrock Compliance Pair

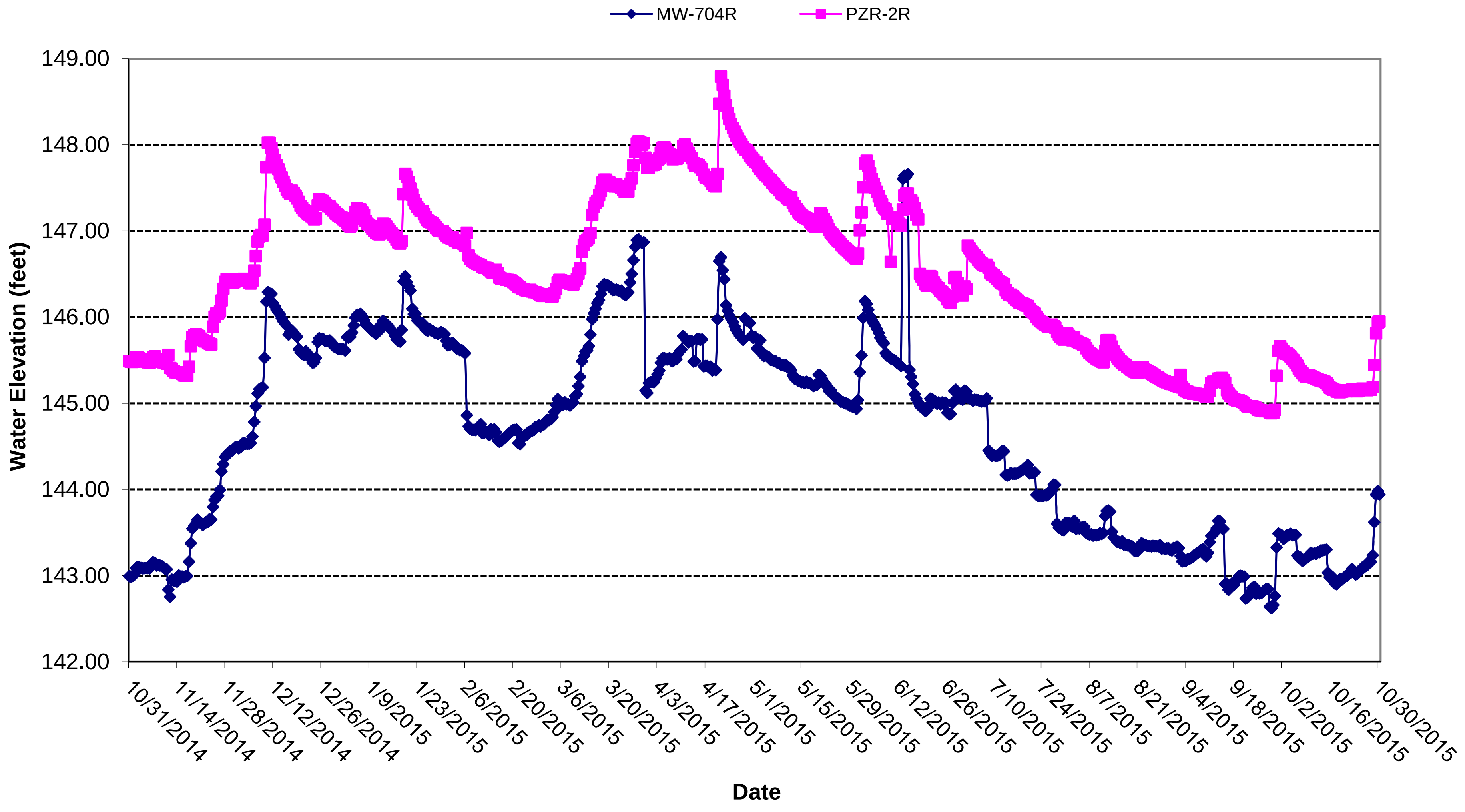

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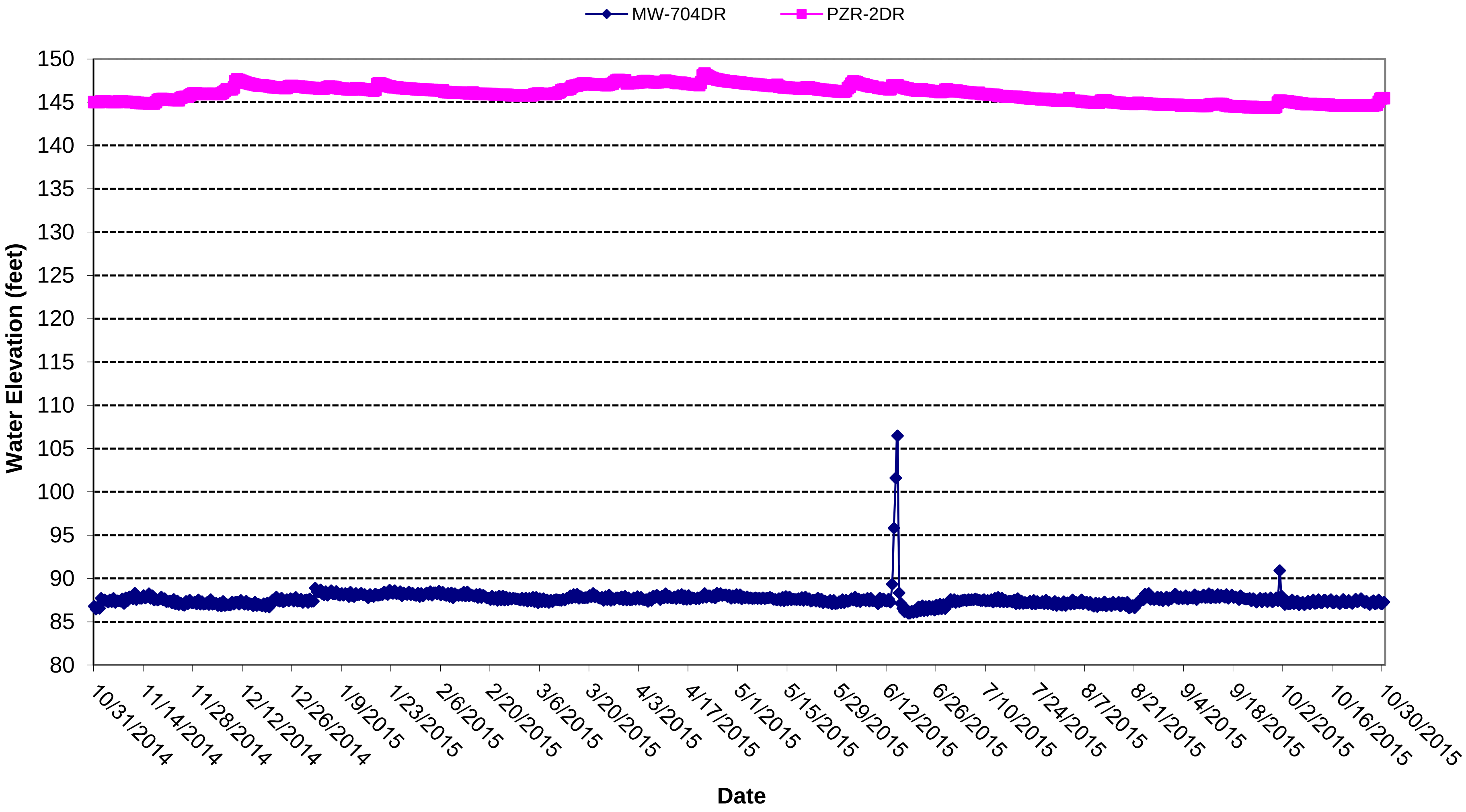
FIGURE 14B

31 Oct. 2014 through 30 Oct. 2015

Hydraulic Gradient Between MW-704DR and PZR-2DR
NTCRA-2 Deep Bedrock Compliance Pair



Attachment 3

2015 Groundwater Sampling and Monitored Natural Attenuation Report

DRAFT

SRSNE Site Group

2015 Groundwater Sampling and Monitored Natural Attenuation Report

Solvents Recovery Service of New England, Inc.
(SRSNE) Superfund Site
Southington, Connecticut

January 27, 2016

ARCADIS

DRAFT

Disclaimer: *This document is a DRAFT document prepared by the Settling Defendants under a government Consent Decree. This document has not undergone formal review by the U.S. Environmental Protection Agency (EPA) and CT Department of Energy and Environmental Protection (DEEP). The opinions, findings, and conclusions, expressed are those of the author and not those of the EPA or the CT DEEP.*

2015 Groundwater Sampling and Monitored Natural Attenuation Report

Solvents Recovery Service of
New England, Inc. (SRSNE)
Superfund Site
Southington, Connecticut

Prepared for:
SRSNE Site Group

Prepared by:
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Our Ref.:
B0054634.0001.02200

Date:
January 27, 2016

Tables

Figures

Appendices

Executive Summary

This *2015 Groundwater Sampling and Monitored Natural Attenuation Report* (MNA Report) was prepared to address certain requirements of the Statement of Work (SOW) for the Remedial Design/Remedial Action (RD/RA) activities at the Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site in Southington, Connecticut (Site). Specifically, this report summarizes the 2015 groundwater sampling event performed in accordance with the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Work Plan; Attachment N to the Remedial Design Work Plan [RDWP]; ARCADIS 2010b), and presents the results and interpretation of data collected in support of MNA as a remedy for groundwater that contains Site-related constituents of concern (COCs) at concentrations above risk levels or regulatory limits. Monitored natural attenuation is a component of the overall remedial strategy for Site groundwater as described in the United States Environmental Protection Agency's (USEPA's) 2005 Record of Decision (ROD) for the Site.

In accordance with the Work Plan, the 2015 annual groundwater sampling event was performed in June 2015 and included sampling of groundwater at 37 monitoring wells for analysis of volatile organic compounds (VOCs) or target analyte list (TAL) metals, as indicated in the Work Plan. These sampled wells were also sampled for the full suite of potential site-related constituents in 2014 as part of the second "comprehensive" event in support of the 2015 Second Five Year Review (USEPA 2015).

The June 2015 results indicate that:

- VOCs above Action Levels (the more stringent of the USEPA Maximum Contaminant Levels [MCLs] or Connecticut Class GA Groundwater Protection Criteria [GWPC], i.e., drinking water standards) are contained within the previously estimated capture zone boundary of the hydraulic containment and treatment system (HCTS). None of the wells within the severed plume (i.e., wells with historical COC concentrations above Action Levels downgradient of the HCTS capture zone boundary) had COC concentrations above Action Levels during the 2014 or 2015 groundwater monitoring events.

- Tetrachloroethene (PCE) and trichloroethene (TCE) were detected at middle overburden monitoring well PZO-2M at concentrations of 6.3 micrograms per liter (μg/L) and 4.66 μg/L, respectively, in the June 2015

sample. The PCE concentration is above the Action Level of 5.0 µg/L, while the TCE concentration has dropped below the Action Level of 5.0 µg/L (previously above the Action Level in 2013 and 2014). Concentrations of both compounds continue to decline. PCE was first detected above the Action Level at this well in June 2013, while TCE was first detected above the Action Level in June 2012.

- PCE and TCE were detected at deep bedrock monitoring well MW-1003DR at concentrations of 2.95 µg/L and 40 µg/L, respectively, in the June 2015 sample. The PCE concentration dropped below the Action Level of 5.0 µg/L starting in June 2014, while the TCE concentration is above the Action Level of 5.0 µg/L (and was previously above the Action Level in 2013 and 2014). PCE and TCE were first detected above the Action Level at this well in June 2013. Concentrations of both compounds have continued to decline relative to the 2013 results.

- TCE was also detected at monitoring well MW-1002R at a concentration (19.3 µg/L) above the Action Level of 5 µg/L. This is the first detection of TCE above Action Levels at this well.

This report also summarizes the three post-thermal treatment monitoring events performed in 2015 (March, July, and October/November), in accordance with SOW Sections IV.B.5.d and e. Results indicate that total VOC concentrations have decreased by one to three orders of magnitude in seven out of the 10 “N” wells (relative to the initial comprehensive sampling event conducted in 2010). Total VOC concentrations at three other wells (MW-902M, TW-08B, and TW-08D) have remained stable over this period.

This MNA Report fulfills the requirement set forth in Section VII.A.2 of the SOW and the reporting approach outlined in the MNA Plan that was presented as Attachment L to the RDWP (ARCADIS 2009). This MNA Report presents results of an evaluation of the effectiveness of MNA as a remedial measure for COCs in groundwater in the Site. As an extension of the prior evaluations (presented in the 2010 through 2014 MNA Reports), this evaluation considers groundwater monitoring results from the June 2015 annual groundwater monitoring event for VOCs and TAL metals at a subset of monitoring wells and presents: an evaluation of current concentration trends for total VOCs in groundwater at select monitoring locations; initial evaluation of post-thermal treatment data at the 10 “N” wells; estimates of bulk attenuation rates for total VOCs in groundwater; and HCTS COC mass extraction rates with time.

Results of these evaluations indicated:

- Detected concentrations of VOCs above Action Levels are contained within the previously estimated capture zone boundary of the HCTS.

- Groundwater total VOC concentrations are generally declining or remaining stable with time throughout the Site groundwater COC plume.

- Estimated bulk VOC attenuation rates were comparable to attenuation rates for individual COCs presented in the *Feasibility Study* (FS) (Blasland, Bouck & Lee, Inc. [BBL] and USEPA 2005).

- Compliance monitoring data from the HCTS indicate generally stable COC mass extraction rates since the early 2000s.

These results support continued use of MNA as a remedy for COCs in Site groundwater.

1. Introduction

1.1 Purpose

This *2015 Groundwater Sampling and Monitored Natural Attenuation Report* (MNA Report) was prepared on behalf of the Solvents Recovery Service of New England, Inc. (SRSNE) Site Group, an unincorporated association of Settling Defendants to a Consent Decree (CD), to address certain requirements of the Statement of Work (SOW) for the Remedial Design/Remedial Action (RD/RA) at the SRSNE Superfund Site in Southington, Connecticut (Site) (Figure 1). The CD was lodged on October 30, 2008 with the United States District Court for the District of Connecticut in connection with Civil Actions No. 3:08cv1509 (SRU) and No. 3:08cv1504 (WWE) and was entered by the Court on March 26, 2009.

This MNA Report presents the results and evaluation of data collected during the June 2015 annual groundwater monitoring event conducted in accordance with the Remedial Design Work Plan (RDWP), the MNA Plan (Attachment L to the RDWP [ARCADIS 2009]), and in fulfillment of the requirements of the SOW (Section IV.B.5.f). This report also presents the results and evaluation of data collected during the three 2015 post-thermal treatment groundwater monitoring events conducted in accordance with SOW Sections IV.B.5.d and e. These events are to be conducted three times per year until equilibrium is restored (i.e., groundwater temperatures return to approximately pre-thermal temperatures); thermal treatment was completed in early March 2015, and the post-thermal monitoring events were performed in March, July, and October/November 2015.

Section VII.A.2 of the SOW requires the submittal of annual MNA Reports as part of the Annual State of Compliance Reports. Monitored natural attenuation is a component of the overall remedial strategy set forth for the Site in the Record of Decision (ROD) (United States Environmental Protection Agency [USEPA] 2005) for groundwater containing Site-related constituents of concern (COCs) at concentrations exceeding acceptable risk levels or regulatory limits.

1.2 Scope

In accordance with the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Work Plan; Attachment N to the RDWP [ARCADIS 2010b]), the 2015 annual groundwater sampling event was performed in June 2015 and included sampling of groundwater from 30 “R”, 4 “M”, and 3 “B”-

designated monitoring wells. Post-thermal treatment groundwater sampling events included 10 “N”-designated monitoring wells. As further described in Section 3.1, the letter designations generally pertain to the locations, monitoring scope, and sampling frequency of monitoring wells.

Monitored natural attenuation refers to the reliance on natural attenuation (NA) processes, within the context of a carefully controlled and monitored site cleanup approach, to achieve site-specific remediation objectives within a time frame that is reasonable compared to that offered by more active methods. Natural attenuation is the reduction in mass or concentration of COCs in groundwater over time or distance from the source of the impact due to naturally occurring processes. Attenuation processes include nondestructive physical processes (e.g., advection, dilution, dispersion, volatilization, dissolution, and sorption) and destructive chemical and biological processes.

The MNA remedy at the Site applies to the groundwater and non-aqueous phase liquid (NAPL) and addresses the following areas of the Site, in accordance with the SOW:

- Groundwater and saturated glacial deposits (gravel, sand, silt and clay) in the “Overburden Groundwater” unit that contain COC concentrations above acceptable risk levels or regulatory criteria; and

- Groundwater and fractured rock in the “Bedrock Groundwater” unit that contain COC concentrations above acceptable risk levels or regulatory criteria.

COCs in overburden and bedrock groundwater are monitored as part of the MNA remedy. The Site COCs include VOCs such as chlorinated ethenes and ethanes, ketones, aromatic compounds, and 1,4-dioxane; TAL metals; semi-volatile organic compounds (SVOCs); and polychlorinated biphenyls (PCBs). Only VOCs and/or metals were analyzed during the June 2015 annual event, and only VOCs and MNA parameters (discussed below) were analyzed during the post-thermal treatment events.

In addition to monitoring COC concentrations, the MNA Plan specifies long-term monitoring of a suite of geochemical parameters (“MNA parameters”) to confirm geochemical evidence of NA and to verify that biochemical processes continue to support COC degradation in Site groundwater. The MNA parameters monitored at the Site include anions (sulfate, chloride, nitrate, nitrite), total organic carbon (TOC), iron (ferric, ferrous), divalent manganese, light hydrocarbons (methane, ethane, ethene), dissolved oxygen (DO), oxidation/reduction potential (ORP), pH, alkalinity, and temperature.

1.3 Document Organization

The remainder of this MNA Report is organized into the following sections:

- **Section 2 – Annual Groundwater Sampling Event – 2015:** summarizes the groundwater sampling activities performed in June 2015 and evaluates the data.

- **Section 3 – Post-Thermal Treatment Groundwater Sampling:** summarizes the groundwater sampling activities performed in March, July, and October/November 2015 and evaluates the data.

- **Section 4 – MNA Background:** describes the MNA performance monitoring program at the Site, including the Site conceptual model, MNA remedy, and performance standards.

- **Section 5 – Performance Monitoring:** describes the MNA performance monitoring program at the Site, including monitoring locations, parameters, frequency and objectives.

- **Section 6 – MNA Evaluation:** evaluates Site data based on results from the June 2015 annual sampling event, and discusses the analysis of performance monitoring data, including the data quality assessment process, data interpretation approach, and statistical procedures.

- **Section 7 – Summary:** presents a summary of conclusions from the MNA evaluation and provides recommendations for action.

- **Section 8 – References:** lists the references cited within this MNA Report.

2. Annual Groundwater Sampling Event – 2015

2.1 Scope of Work

The 2015 annual groundwater sampling event was conducted to satisfy the requirements of SOW Section IV.B.5.f, which includes annual monitoring of VOCs and biennial (i.e., every two years) monitoring of MNA parameters at a select subset of monitoring wells in the overburden and bedrock aquifers. The sampled wells are located in the area outside the NTCRA 1 sheet pile wall and referred to as “R” wells. Note that only VOCs were analyzed during this annual event.

In addition to the SOW-required sampling, the background monitoring wells – referred to as the “M” and “B” wells – were sampled for TAL metals. As outlined in SOW Section VIII.F, Interim Cleanup Levels (ICLs) for metals need to be established prior to submittal of the Demonstration of Compliance Report. To that end, metals will be analyzed on an annual basis to establish a dataset sufficient for determining the appropriate background metals concentrations at the Site.

In total, 37 monitoring wells were sampled as part of the June 2015 monitoring event. Of these, 20 were sampled using HydraSleeve^{TM} samplers, 16 with low-flow methods, and 1 with a bailer (due to insufficient water volume for low-flow sampling).

2.2 Summary of Field Activities

The 2015 annual groundwater sampling event was conducted June 8-10, 2015. Procedures used for gauging and sampling the 16 monitoring wells using low-flow methods were consistent with those outlined in the *Summary of Initial (2010) Comprehensive Groundwater Sampling Event* (ARCADIS January 2011a). HydraSleeves^{TM} were used to collect samples from 20 of the 37 wells, consistent with the approach proposed in a memorandum dated July 7, 2011, and approved by the USEPA in a letter dated May 21, 2012. In summary, the approved HydraSleeve^{TM} sampling approach included the following conditions:

- Used for “routine” samples collected for tracking changes and trends in the groundwater over time. It does not apply to samples collected for specific decision points such as evaluating remedy protectiveness for five-year reviews, capture zone analysis, confirming results of modeling, risk assessments, etc.

- To be used only for sampling of VOCs and MNA parameters.
- Used for any well that has been given an “R” or “N” designation and that contains one or more constituents at a concentration greater than or equal to ten times the ICL, or, is located within the hydraulic capture zone.

Samples were submitted to Alpha Analytical (Alpha) of Westborough, Massachusetts, for analysis of VOCs or TAL Metals. A tabular summary of the sampling event is provided below:

SOW Section	**Well Group**	**# of Wells Intended**		**# of Wells Sampled**		**Analytical Parameters**
		LF	**HS**	**LF**	**HS**	
IV.B.5.f	“R”	10	20	10	20	VOCs
VIII.F	“M”	5	--	4	--	TAL Metals
IV.B.5.f	“B”	3	--	2	--	

LF – Wells sampled using low-flow method
HS – Wells sampled using HydraSleeve^{TM} samplers

Deviations from the intended scope were based on the following:

- "M" monitoring well MW-901D was not sampled due to insufficient water in this overburden well (i.e., dry) at the time of sampling.
- “B” monitoring well MW-209B was sampled with a bailer, rather than low-flow, due to insufficient water volume for HydraSleeve^{TM} sampling.

Monitoring well locations in each of the five hydrostratigraphic zones are shown on Figures 2 through 6. Field sampling forms and equipment calibration logs from the sampling event are included in Appendices A and B, respectively.

2.3 Results

Groundwater analytical results from the June 2015 annual groundwater monitoring event are provided in Tables 1 and 2 for VOCs and TAL metals, respectively. Groundwater data were validated consistent with the procedures outlined in the *Summary of Initial (2010) Comprehensive Groundwater Sampling Event* (ARCADIS January 2011a). Any qualifiers and/or modifications made via the validation process are reflected in Tables 1 and 2.

2.3.1 Groundwater Elevations

Synoptic groundwater elevation measurements are only collected during five-year comprehensive monitoring events, and therefore were not collected during the June 2015 groundwater monitoring event. Groundwater elevation data from the most recent comprehensive event (June 2014) were included in the *2014 Groundwater Sampling and Monitored Natural Attenuation Report* (ARCADIS 2014).

2.3.2 VOCs

Groundwater VOC concentrations from the June 2015 groundwater monitoring event are provided in Table 1. Groundwater VOC concentrations were compared against USEPA Maximum Contaminant Levels (MCLs) and Connecticut Class GA Groundwater Protection Criteria (GWPC), with the lower of the two criteria, referred to as the "Action Level", used as the criterion for the comparison for each VOC. The Action Levels are intended to be protective of groundwater that could be used for drinking water purposes. Groundwater VOC concentrations that exceeded their respective Action Levels are highlighted in Table 1. For comparison, the ICLs specified in Table L-1 of the ROD (USEPA 2005) are also listed in Table 1.

Concentrations of VOCs greater than Action Levels are contained within the previously estimated capture zone boundary of the Hydraulic Containment and Treatment System (HCTS).

Tetrachloroethene (PCE) and trichloroethene (TCE) were detected at middle overburden monitoring well PZO-2M at concentrations of 6.3 micrograms per liter (μg/L) and 4.66 μg/L, respectively, in the June 2015 sample. The PCE concentration is above the Action Level of 5.0 μg/L, while the TCE concentration has dropped below the Action Level of 5.0 μg/L (previously above the Action Level in 2013 and 2014). Concentrations of both compounds continue to decline. PCE was first detected above the Action Level at this well in June 2013, while TCE was first detected above the Action Level in June 2012.

PCE and TCE were detected at deep bedrock monitoring well MW-1003DR at concentrations of 2.95 µg/L and 40 µg/L, respectively, in the June 2015 sample. The PCE concentration has been below the Action Level of 5.0 µg/L since June 2014, while the TCE concentration is above the Action Level of 5.0 µg/L. Concentrations of both compounds continue to decline. PCE and TCE were first detected above the Action Level at this well in June 2013.

TCE was also detected at monitoring well MW-1002R at a concentration (19.3 µg/L) above the Action Level of 5 µg/L. This is the first detection of PCE above Action Levels at this well.

As noted in the 2012 MNA Report, total VOC concentrations at shallow bedrock monitoring well P-11A increased notably between 2011 (583 µg/L) and 2012 (approximately 26,400 µg/L). This well is located within the bedrock NAPL zone initially delineated during the Remedial Investigation (RI; Blasland, Bouck & Lee, Inc. [BBL] June 1998), and more recently refined (based on additional data from the RD/RA activities) in the *Groundwater Conceptual Site Model Update* (ARCADIS 2015). This well is also located within the HCTS capture zone. The total VOC concentration in June 2015 decreased to approximately 1,803 µg/L; VOC concentrations at this well will continue to be monitored as part of future sampling events.

VOC Plume Delineation

Data from the 2014-2015 groundwater monitoring events were used to update the VOC plume maps, originally presented in the *Summary of Initial (2010) Comprehensive Groundwater Sampling Event* (ARCADIS January 2011a), for each of the five hydrostratigraphic units. Using the approach that was initially presented in the RI (BBL June 1998), groundwater VOC results (the most recent data available at each well) were used to derive VOC regulatory exceedance ratios by dividing detected concentrations of VOCs by the lower of the federal standard (MCL) or the state standard (GWPC), which are the ARARs-based "Action Levels"; these generally represent drinking water standards. An exceedance ratio value greater than 1.0 indicates that the detected VOC concentration exceeded the Action Level. Exceedance ratio values less than 1.0 indicate that the detected VOC concentrations were less than the Action Level. The highest (and in some cases, the two highest) VOC exceedance ratio(s) for each well, and the specific compound associated with each ratio, are summarized for each hydrostratigraphic unit on Figures 7 through 11, and these regulatory exceedance ratios were used to delineate groundwater with VOCs above Action Levels. VOCs greater than Action Levels are contained within the previously estimated capture zone boundary of the Hydraulic Containment and Treatment System (HCTS).

2.3.3 SVOCs and PCBs

SVOC data are only collected in conjunction with five-year comprehensive monitoring events, and PCB data were only collected during the initial comprehensive event; therefore, SVOCs and PCBs were not included in the June 2015 groundwater monitoring event. Previously collected SVOC and PCB data were evaluated in the *Monitored Natural Attenuation Report* (ARCADIS September 2010a) and the *2014 Groundwater Sampling and Monitored Natural Attenuation Report* (ARCADIS 2014).

2.3.4 TAL Metals

Groundwater concentrations of TAL metals during the June 2015 groundwater monitoring event are summarized in Table 2. Groundwater TAL metals concentrations were compared against the Action Levels (i.e., the lower of the MCLs and GWPCs; note that there are no Action Levels for dissolved metals). ICLs have not yet been developed for metals in groundwater because they are a function of background concentrations, which are to be established in the future based on background sampling performed through that time.

Two wells contained total metals concentrations above their respective Action Levels, as noted below:

- MW-126B – Manganese (Mn)
- MW-209B – Barium (Ba), Beryllium (Be), Cobalt (Co), Lead (Pb), and Mn

Both monitoring wells are upgradient, background wells located north and west, respectively, of the former Operations Area of the SRSNE Site.

2.3.5 MNA Parameters

Concentrations and distributions of electron acceptors, electron donors, and byproducts of microbially mediated reactions are evaluated to verify the types of geochemical and biodegradation processes active in Site groundwater. However, MNA parameters were not analyzed for during the June 2015 annual groundwater monitoring event. MNA parameters will next be evaluated based on the June 2016 data. MNA parameter data were collected as part of the post-thermal treatment groundwater sampling events, as described in Section 3.

3. Post-Thermal Treatment Groundwater Sampling

3.1 Scope of Work

As described in SOW Sections IV.B.5.d and e, groundwater monitoring is required at a select subset of monitoring wells in the overburden and bedrock in the area between the former Boston and Maine railroad tracks and the NTCRA 1 sheetpile wall (i.e., the “N” wells), with different sampling frequencies during different stages of the RD/RA process.

With the completion of in-situ thermal remediation (ISTR) on March 2, 2015, triannual (i.e., three times per year) sampling is being conducted until groundwater temperatures return to approximate pre-thermal conditions. The sampling events were conducted in March, July, and October/November 2015. The third event was split into two sampling dates in order to proactively collect data in support of related technical evaluations. Specifically, VOC and 1,4-dioxane analyses were performed on samples collected in October 2015, and MNA parameters were analyzed in samples collected in November 2015. Analysis for 1,4-dioxane is not part of the post-thermal treatment monitoring program, but was voluntarily added to the analyte list for the October 2015 samples to support de maximis and CT DEEP technical evaluations. The addition of the 1,4-dioxane analyses precluded obtaining sufficient sample volume for all three analyses during a single deployment, so the collection of sample volume was achieved over two deployments.

As further discussed below, groundwater temperatures are also being monitored at selected well locations as a basis for assessing the migration of heated groundwater from the thermal treatment zone, and to assess the point at which temperatures have returned to baseline conditions (which will trigger the completion of the triannual “N” well sampling).

3.2 Summary of Field Activities

During all three events, wells were sampled using HydraSleeves^{TM}, with the exception of TW-08B in July and October/November 2015. Upon retrieval during the July event, the HydraSleeve^{TM} ripped when it was caught on a portion of the well casing that was bent. An attempted second HydraSleeve^{TM} deployment was unsuccessful. As a result, TW-08B was sampled using standard low-flow procedures in July and October/November 2015.

Samples were submitted to Alpha for analysis of VOCs, 1,4-dioxane, and MNA parameters.

Temperature Datalogging

Temperature data have been recorded with dataloggers at the following five “N” wells every 12 hours since February 2009: shallow overburden wells MWL-304 and MWL-307; middle overburden well MW-415; deep overburden well MW-413; and shallow bedrock well MW-416. These wells are approximately 23 to 29 meters downgradient of the thermal treatment (TT) zone.

Manual Temperature Measurements

Temperature data have been measured monthly since July 2015 using a downhole temperature probe at middle overburden well TW-08A, deep overburden well TW-08B, and shallow bedrock well TW-08D, which are at the downgradient edge of the TT zone.

3.3 Results

Pre-TT temperatures at the continuously monitored wells were between approximately 5ºC and 20ºC, and fluctuated seasonally by approximately 1ºC in the shallow bedrock up to 12ºC in the shallow overburden. To filter out these seasonal effects, the average pre-TT temperature for each calendar date between February 2009 and May 15, 2014 was calculated; these average values are used as a baseline of comparison for the data collected on any given date following the startup of TT.

Fluctuations up to approximately 2ºC above and below baseline were observed throughout the thermal treatment period. These changes were not believed to be related to TT. The first indications of groundwater warming associated with TT were observed between May and July 2015, approximately 12 to 14 months after the beginning of Phase 1 heating and 10 to 12 months after the beginning of Phase 2 heating. As of October 21, 2015, the maximum temperature changes relative to baseline ranged from 3.6ºC to 10.3ºC. The temperature differences at these five wells on October 21, 2015 were between 3.6ºC to 9.6ºC above background. Of these five wells, only MWL-307 showed a possible plateau in the temperature change by October 21, 2015; the other four wells still appeared to indicate temperature increases relative to pre-TT baseline. Further monitoring will clarify these interpretations.

Temperature changes are inversely correlated with well screen midpoint depth (correlation coefficient 0.90). The two shallow overburden wells (MWL-304 and MWL-307) have shown the highest temperature increase. The other wells have shown lower temperature increases sequentially with increasing depth in the middle overburden (MW-415), deep overburden (MW-413), and shallow bedrock (MW-416). It is interpreted that the inverse relationship between groundwater warming and well depth relates to the buoyancy of the heated groundwater. Warm groundwater would be expected to rise as it migrates downgradient from the TT zone. The differences in warming at these five wells show no correlation to the hydraulic conductivity measured at each well, nor the distance of each well from the TT zone.

Temperature datalogging will continue at these five wells. These continuous data sets are considered the most appropriate for interpreting when groundwater temperatures have re-equilibrated to approximately pre-TT conditions.

VOC concentrations for post-thermal treatment groundwater samples are provided in Table 3. Relative to the initial comprehensive sampling event in 2010, total VOC concentrations have decreased by one to three orders of magnitude in seven out of the 10 “N” wells sampled. Total VOC concentrations at three other wells (MW-902M, TW-08B, and TW-08D) have remained stable over this period. Trend graphs depicting total VOC concentration trends in the “N” wells are included in Appendix C.

Groundwater samples were collected at the “N” wells in June 2014, approximately four weeks after the start of Phase 1 heating upgradient of these wells but before the first indications of warming associated with the TT remedy. Thus, June 2014 data are considered the baseline for the purpose of this assessment.

Sampling events at the “N” wells in March 2015, July 2015 and October 2015 provide a basis of comparison versus the baseline data from June 2014. Eight of the 10 “N” wells indicated lower total VOC concentrations at the end of TT in March 2015 compared to June 2014. The only exceptions were an increase from approximately 70 to 110 mg/L in total VOCs at deep overburden well TW-08D and no significant change at shallow bedrock well MW-416. Overall, these data suggest that TT had produced some degree of groundwater treatment at the “N” wells by the time the remedy concluded. However, as noted above, the first indications of groundwater warming were observed later, between May 2015 and July 2015. Therefore, if the overall decline in total VOCs observed in

March 2015 is related to TT, that would indicate that the velocity of the warm water front was slower than that of the dissolved VOCs in groundwater, as may occur due to transfer of heat from the warm groundwater to the cool soil between the TT zone and the N wells. Alternatively, the decline in total VOCs observed in March 2015 could relate to seasonal fluctuations, and some of the "N" wells showed an overall declining total VOC trend prior to TT.

If the declines observed in March 2015 were due to TT, comparing the March 2015 and the most recent data (October 2015) provides a basis to assess possible post-TT "rebound". The total VOC concentration was higher in October 2015 indicating some possible post-TT "rebound" at three of the "N" wells: shallow overburden well MWL-304; middle overburden well TW-08A; and deep overburden well MW-092D. These wells are not co-located, and the reason for the apparent rebound at these three specific wells is unknown; again these could be seasonal fluctuations. However, the absence of "rebound" at the most of the "N" wells suggests that in general the post-TT downgradient total VOC concentrations are lower than baseline conditions.

Comparing the October 2015 and the baseline data from June 2014, eight of the 10 "N" wells have indicated total VOC concentration decreases of between 20% and 89%. The only exceptions are a 1% decrease at shallow bedrock well MW-416, and 92% increase at well TW-08D. It is inferred that the increase at well TW-08D could relate to a temporary increase in solubility of VOCs due to higher temperatures in the upgradient TT zone; future sampling will clarify the longer-term changes at this well and the other "N" wells. Based on the combined results from all 10 "N" wells, total VOC concentrations have declined by an average of 39% relative to baseline conditions. However, the concentration changes varied based for different compound groups:

- Chlorinated VOCs – average concentration decrease of 57%
- Aromatic VOCs – average concentration increase of 31%
- Ketones – general increase
    - increases observed but not quantified as percentages for six "N" wells that had ketone detections in October 2015 but not in June 2014
    - the other four "N" wells indicated mixed results, two wells indicated decreases of 58% to 100% and two indicated increases of 12% to 428%

MNA parameter concentration results are provided in Table 4. As described in Attachment N to the RDWP (ARCADIS 2010b), groundwater MNA parameters were selected to confirm dominant biotransformation processes, evaluate the potential for continued transformation of COCs, and identify zones of dominant geochemical conditions. In general, MNA parameter results indicate moderately to very strongly reducing (i.e., manganese and iron reducing, sulfate reducing, and methanogenic) conditions in the NTCRA 1 area, with the exception of shallow bedrock well MW-416, which indicates mildly reducing conditions. This interpretation of MNA parameter results is based on dissolved iron and manganese concentrations greater than 1,000 μg/L, sulfate concentrations less than 20 mg/L, and methane concentrations greater than 100 μg/L at most locations sampled during post-thermal treatment groundwater sampling. TOC concentrations were greater than 5 mg/L at most locations indicating sufficient organic carbon to support microbial populations. At most locations, concentrations of alkalinity, chloride, iron, manganese, TOC, ethane, ethene, and methane increased between the March and November 2015 post-thermal treatment monitoring events, suggesting microbial populations also increased during this time. These results demonstrate robust microbial activity in the NTCRA 1 area groundwater downgradient from the thermal treatment area.

1,4-dioxane concentrations for the October 2015 post-thermal treatment groundwater samples are summarized in Table 5.

The next post-thermal treatment groundwater sampling event is anticipated to occur in March 2016.

4. NA Background

An MNA remedy requires a strong scientific basis supported by appropriate monitoring. When properly employed, MNA is an effective remedy – based on thorough analysis of site-specific data – to understand, monitor, predict, and document COC transport and NA processes.

4.1 Site Conceptual Model

For any MNA remedy to succeed, it is important to understand the Site Conceptual Model (SCM). The SCM combines available site information into a comprehensive picture of the nature and extent of the COCs and the processes controlling their transport and fate in the environment. The level of site characterization necessary to support a comprehensive evaluation of MNA can be more detailed than that needed to support active remediation.

The SCM, including information regarding the Site operational history, regulatory status, geology, hydrogeology, and surface water hydrology, and the distribution and mass of COCs in Site groundwater, including delineation of NAPL zones and dissolved-phase groundwater plume, and VOC mass estimates, was originally provided in Section 2 of the RDWP (ARCADIS 2009) to fulfill the requirements set forth in the SOW, Section V.C.1.l.

A Draft SCM Update was prepared in April 2015 (ARCADIS 2015) to reflect additional data collected and changes in Site conditions since completion of the RI (BBL 1998) and Feasibility Study (FS; BBL and USEPA 2005).

The MNA conceptual model for the Site may be described in terms of source condition, dissolved plume stability, and NA processes, and is summarized as follows:

<u>Source Condition</u>: The source of groundwater-quality impacts was extensively characterized during the RI (BBL 1998) and FS (BBL and USEPA 2005), and consists of zones containing NAPL in overburden soils and bedrock. The NAPL is a complex mixture of chlorinated and other solvents. The NAPL zones in overburden soils and bedrock contain mixtures of dissolved NAPL-related chlorinated ethenes, ethanes, and methanes, as well as aromatic hydrocarbons, ketones, phthalates, ethers, furan and alcohols. These NAPL zones are currently hydraulically contained by the NTCRA 1 sheet-pile wall and overburden groundwater extraction wells and the NTCRA 2 overburden and bedrock extraction wells. Upon entry of the CD, the NTCRA 1 and NTCRA

2 systems became known as the HCTS. The NAPL zones have formed a dissolved-phase chemical plume that has been severed by the HCTS. The Overburden NAPL zone historically contained the majority of the Site VOCs, but *in situ* thermal remediation was performed in this zone between May 2014 and March 2015, removing an estimated 210,000 kilograms (kg) of NAPL mass. This greatly diminished the source zone upgradient of the NTCRA 1 sheet-pile wall.

Dissolved Plume Stability: The dissolved-phase chemical plumes in overburden and bedrock groundwater within the source area are stable and are likely shrinking in time due to the combination of hydraulic containment and active *in situ* biodegradation processes in groundwater within the capture zone of the HCTS. *In situ* biodegradation processes within the capture zone of the HCTS were characterized as “robust” in the FS (BBL and USEPA 2005). The dissolved-phase chemical plume in overburden and bedrock groundwater in the severed portion of the plume, beyond the capture zone of the HCTS, are generally shrinking with time due to the combination of hydraulic containment of the higher concentration portions of the dissolved-phase chemical plume and NA processes. Total dissolved-phase VOC concentration trends in groundwater within the HCTS capture zone boundary and the severed plume indicate statistically significantly decreasing concentration trends. None of the wells representative of the severed plume (i.e., wells with historical COC concentrations above Action Levels downgradient of the HCTS capture zone) indicated COC concentrations above drinking-water-based standards during the 2014 or 2015 groundwater monitoring events.

NA Processes: Natural attenuation processes that have contributed to plume stabilization and shrinkage within the overburden and bedrock include *in situ* abiotic and biodegradation reactions, sorption to aquifer solids, flow path mixing, and matrix diffusion. Reductive dechlorination is a prominent removal mechanism that continues to operate at the Site, as evidenced by the production of cis-1,2-dichloroethene (cDCE), vinyl chloride (VC), 1,1-dichloroethane (1,1-DCA), ethene, ethane, and chloride, which are dechlorination (i.e., “breakdown”) products of tetrachloroethene (PCE), TCE, and 1,1,1-trichloroethane (TCA). There are also anaerobic oxidation reactions occurring that remove cDCE, VC, and ethene by oxidation to carbon dioxide (CO_2). In addition, microbial population survey results indicate robust communities capable of both full reductive dechlorination to innocuous end products, and also cometabolism of chlorinated compounds, at 11 of 12 monitoring locations evaluated using QuantArray-Chlor methodology (ARCADIS 2015). In addition, microbes capable of degrading aromatic compounds were detected at two locations where the QuantArray-Petro analysis was conducted (ARCADIS 2015).

A detailed description of the SCM is provided in the *Groundwater Conceptual Site Model Update* (ARCADIS 2015).

4.2 Selection of MNA Remedy

As a result of the demonstrated efficacy of NA for treating COCs in Site groundwater, MNA was included as a component of several remedial alternatives evaluated in the FS (BBL and USEPA 2005). Based on evaluations presented in the FS, the USEPA selected MNA as a component of the remedial approach for the Site.

The ROD for the Site was issued by the USEPA in September 2005 (USEPA 2005). The selected remedy consists of MNA of the groundwater plume, including:

- Groundwater outside the capture zone of the HCTS until groundwater cleanup levels are achieved;

- Groundwater within the capture zone of the HCTS until groundwater cleanup levels are achieved; and

- Groundwater in the NAPL area of the overburden and bedrock aquifers, until groundwater cleanup levels are achieved.

4.3 Identified Data Gaps

The SOW identified two data gaps associated with implementing the MNA remedy component at the Site. The identified data gaps and the strategies used for addressing them are as follows:

- *Incomplete plume delineation in the severed plume*. This data gap has been addressed by the installation and sampling of additional groundwater monitoring wells near the eastern edge of the severed plume, east of the Quinnipiac River and in the CL&P easement as presented in the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Attachment N to the RDWP) and subsequent discussions with USEPA. In addition to the new plume delineation wells installed prior to the start of the May–June 2010 comprehensive groundwater sampling (including MW-

903S, MW-903M, MW-903D, MW-903R, PZ-903DR, MW-904S, MW-904D, MW-906M, MW-906D, MW-906R, PZ-906DR, and MW-910S), three other well clusters (MW-1001M/MW-1001R, MW-1002DR/MW-1002R and MW-1003DR/MW-1003R) have been installed to address this data gap. Delineation of the downgradient extent of the plume is shown on Figures 7 through 11.

- *Long-term monitoring data demonstrating the effectiveness of MNA as a remedy component.* This data gap is being addressed through the preparation, submittal, approval, and implementation of the MNA Plan.

4.4 Objectives of MNA Performance Monitoring

The MNA Plan, in conjunction with the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Attachment N to the RDWP), describes the monitoring and analysis steps required to meet the following objectives of MNA performance monitoring, as specified in Section VII.A.1 of the SOW:

- Complete the delineation of COCs in groundwater in three dimensions;
- Assess the temporal and spatial variations in groundwater chemistry and geochemistry;
- Assess the progress in meeting the long-term remedial goal of groundwater restoration throughout the Site to its natural quality; and
- Evaluate the effectiveness of institutional controls.

Based on the results of MNA performance monitoring, decisions related to the MNA program, described in detail in the MNA Plan, may include:

- Continuation of the performance monitoring program without change.
- Continuation of the performance monitoring program with action.
- Modification of the institutional controls.

4.5 Performance Standards

The remedial action is being implemented in compliance with applicable or relevant and appropriate requirements (ARARs) identified in the ROD (USEPA 2005). These requirements include compliance with performance standards for the affected groundwater, soil and wetland soil, and for NAPL. The following subsections discuss performance standards applicable to MNA and the means for demonstrating compliance with these standards.

4.5.1 MNA-Related Performance Standards

Performance standards pertaining to MNA at the Site, as set forth in the SOW, are described in detail in the MNA Plan for Groundwater, NAPL outside of the Overburden NAPL Area, and the Severed Plume.

4.5.2 Demonstration of Compliance Report

As specified in Section VIII.G of the SOW, a Demonstration of Compliance Report will be prepared in accordance with the evaluation procedures defined in 40 CFR Section 264.97 when groundwater COC concentrations have remained below the ICLs for three consecutive years as outlined in 40 CFR Section 264.96(c). If the USEPA, after reasonable opportunity for review and comment by the Connecticut Department of Energy and Environmental Protection (CT DEEP), approves the Demonstration of Compliance Report and agrees that the ICLs have been achieved, a risk assessment of residual groundwater conditions will be performed.

5. MNA Performance Monitoring

5.1 Introduction

The MNA Plan specified the performance monitoring program for Site groundwater as it relates to the MNA component of the remedy, while Section IV.B.5 of the SOW set forth requirements for an environmental monitoring program to be implemented to evaluate the performance of the HCTS and the overall effectiveness of the Site remedy, including the MNA component. These groundwater MNA monitoring requirements were summarized in the MNA Plan.

The following subsections describe the MNA program monitoring locations, monitoring frequency, monitoring parameters, and data quality objectives (DQOs) designed to meet the environmental monitoring program requirements set forth in Section IV.B.5 of the SOW. Groundwater monitoring is conducted to monitor changes in groundwater COC concentrations, changes in plume size and shape, and the effectiveness of NA processes in reducing concentrations of COCs in groundwater. Groundwater samples from June 2015 were collected in accordance with the monitoring frequency outlined in the MNA Plan and represent the most recent dataset utilized for this MNA evaluation.

5.2 Groundwater Performance Monitoring Locations

Groundwater performance monitoring locations were chosen to provide robust, three-dimensional coverage of COCs in overburden and bedrock groundwater at the Site, with monitoring well cluster locations providing vertical assessment of COC concentrations and groundwater geochemistry. Monitoring locations were identified in the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Attachment N to the RDWP) and are shown on Figures 2 through 6 of this MNA Report.

In accordance with the SOW, selected MNA monitoring locations include upgradient (background) sampling locations, in-plume sampling locations (HCTS capture zones and severed plume), side-gradient sampling locations outside of plume areas, and downgradient locations. Monitoring locations are designated by well groups (e.g., “N”) to define the purpose of each sampling location. Well group designations that are relevant to MNA monitoring are summarized in the MNA Plan and shown on Figures 2 through 6.

5.3 MNA Monitoring Parameters

The primary classes of data included in the MNA monitoring program are: Site-specific groundwater COCs; groundwater MNA parameters; groundwater hydraulic information; and HCTS COC mass removal estimates. Each of these primary data classes is described below.

Site-specific COCs were identified during Site investigations and risk assessment and are required to be addressed by the response actions set forth in the ROD (USEPA 2005). Site-specific COCs for groundwater include selected VOCs, 1,4-dioxane, TAL metals, SVOCs, and PCBs.

Groundwater MNA parameters were selected to confirm dominant biotransformation processes, evaluate the potential for continued transformation of COCs, and identify zones of dominant geochemical conditions. These parameters include: iron (ferric and ferrous), divalent manganese, light hydrocarbons (methane, ethane, ethane), alkalinity, chloride, nitrate–nitrogen, nitrite–nitrogen, pH, sulfate and TOC. In addition to laboratory-analyzed MNA parameters, the following MNA parameters are collected as field measurements: pH, DO, ORP, and temperature.

The hydraulic parameter of interest is groundwater elevation. Groundwater elevations are characterized in all five groundwater depth zones, and provide a basis to assess the horizontal and vertical components of hydraulic gradients that control three-dimensional migration of COCs. Synoptic groundwater elevation measurements are only collected in conjunction with five-year comprehensive monitoring events, and therefore were not collected during the June 2015 groundwater monitoring event.

Estimates of groundwater COC mass removal from the HCTS, obtained as part of the compliance monitoring program for the HCTS operations, are used to evaluate potential trends in COC mass removal from the HCTS and can be used to evaluate future efficacy of groundwater remedies, including MNA.

5.4 Monitoring Frequency

Monitoring frequencies were designed to meet requirements of the environmental monitoring program set forth in Section IV.B.5 of the SOW and are summarized in the MNA Plan. Detailed monitoring frequency information is provided in the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Attachment N to the RDWP). Any proposed changes to the long-term monitoring program will be submitted as part of the Annual State of Compliance Report(s).

5.5 MNA Monitoring Objectives

The MNA performance monitoring program set forth in the MNA Plan was designed to evaluate the MNA monitoring objectives listed below (USEPA 1999; USEPA 2004) and described in detail in the MNA Plan.

- Provide timely warning of potential impact to receptors.
- Detect changes in plume size/concentration.
- Determine temporal variability of data.
- Detect changes in geochemistry that warn of potential changes in COC attenuation.
- Yield data necessary to reliably evaluate progress toward COC reduction objectives.

5.6 Data Quality Objectives

The DQO process is a systematic planning tool based on the scientific method that is used to establish criteria for data quality and to develop data collection designs (USEPA 1994). The DQOs for the data described in this MNA Report are provided in the *Quality Assurance Project Plan* (QAPP; [Rev. 2] ARCADIS 2012b; Attachment C to the RD Project Operations Plan [POP]).

6. MNA Evaluation

This section evaluates the effectiveness of the MNA program based on the data collected through June 2015. Data analysis, interpretation and reporting methods were completed in accordance with the following regulatory guidance documents:

- *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* (USEPA 1998)
- *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites* (USEPA 1999)
- *Performance Monitoring of MNA Remedies for VOCs in Ground Water* (USEPA 2004)

In general, data interpretation included:

- Placing the MNA performance monitoring data in the context of time, location, sampling and analytical methods.
- Applying appropriate statistical tests to detect changes and trends in COC concentrations, and attainment of remedial objectives.

These data interpretation methods and results are presented in the following sections.

6.1 Total VOC Concentration Trends

Data collected during previous sampling events (RI and Interim Monitoring Sampling [IMS] events) and presented in the MNA Plan and the 2010-2014 MNA reports indicate an overall decline in groundwater COC concentrations with time, supporting the selection of MNA as a remedial measure for COCs in groundwater at the Site. This section builds upon results of the previous MNA evaluations discussed in detail in the MNA Plan and the preceding MNA reports (2010 through 2014). Included in this section are a discussion of concentration trends for total VOCs in groundwater at select monitoring locations, estimates of bulk attenuation rates for total VOCs in groundwater at locations with decreasing concentration trends, and presentation of COC mass extraction rates and cumulative mass removal for the HCTS.

6.1.1 Trend Analysis

The final IMS Report (BBL 2005) compared groundwater VOC concentrations reported in the RI with concentrations measured at 25 IMS locations during the April 2005 (final) IMS event. Trend analyses were updated using total VOC concentration data collected at 21 IMS monitoring locations (within the NTCRA 2 portion of the HCTS, the severed plume, and the interior of the VOC plume) during the RI, IMS program, and groundwater sampling events between 2010 and 2014. These trend analyses have been updated with total VOC concentrations from the June 2015 annual groundwater monitoring event. The trend results are summarized in Table 6. Because only 11 of the monitoring locations with long-term time-concentration data sets were sampled during the June 2015 sampling event, only those trend analyses were updated. However, the previous trend results for wells that were not sampled in June 2015 are also included in Table 6. Results of the 2015 trend analyses are similar to the results of the trend analyses conducted in 2010 through 2014, which indicated that most of the IMS monitoring locations had statistically significant decreasing total VOC concentration trends.

Groundwater total VOC concentrations plotted versus time were updated for the 11 IMS monitoring locations that were sampled during the June 2015 biennial groundwater sampling event (Figures 12 through 16). As shown on the figures, total VOC concentrations are generally declining or stable at all groundwater depth intervals, consistent with previous results.

Non-parametric Mann-Kendall and Sen’s slope trend analyses and parametric linear regression trend analyses were conducted to evaluate trend direction and statistical significance of the groundwater total VOC concentration trends at the Site. The Mann-Kendall test provides a yes/no determination for the existence of a slope that is significantly different from zero, while the Sen’s slope test provides an estimate of the value for the slope. The linear regression test estimates slope and confidence level and quantifies how well the data correlate to the estimated trend line. Trend analyses were conducted with natural log (ln) normalized total VOC concentrations using all three test methods for all sampling locations.

A 90% confidence level with a corresponding p-value less than or equal to 0.10 was used to determine statistical significance for the trend analyses. Mann-Kendall and linear regression trend results with p-values greater than 0.10 were not considered to be statistically significant. The trend direction was defined as decreasing if total VOC concentrations decreased with time (negative slope), and increasing if total VOC concentrations increased with time (positive slope); however, the trend was not considered significant unless the relationship for the test was significant at a confidence level of 90%. For the linear regression analysis, the correlation coefficient, or R^2, is a measure of how well the linear regression fits the data. Values close to 1 are considered to be a good fit, while R^2 values close to 0 are considered to be a poor fit.

Results of the trend analyses indicate significant decreasing total VOC concentration trends at 18 of the 21 monitoring locations (10 of the 11 wells sampled in June 2015) based on the Mann-Kendall and/or the linear regression test. The Sen’s slope test indicates 16 (nine from June 2015) significant decreasing total VOC concentration trends of the 21 monitoring locations analyzed. Statistically significant decreasing total VOC concentration trends at monitoring well MW-707DR were found over the abbreviated evaluation period (from April 2004 through June 2015) by all three evaluation methods. Therefore this well has been included in the tally of decreasing trends, although total VOC concentrations continue to show a statistically significant increase when the full period (between December 1996 and June 2015) is considered.

Monitoring wells sampled in June 2015 that indicate statistically significant decreasing total VOC concentration trends with linear regression and/or Mann-Kendall analysis include P-13, P-101C, MW-03, P-101B, MW-502, MW-704D, MW-127C, MW-704DR, MW-706DR, and at MW-707DR over the abbreviated evaluation period (Table 6). Although total VOC concentration trends at P-13 and MW-502 are statistically significantly decreasing over the full evaluation period, it should be noted that concentrations at these wells have recently shown an increase and subsequent decrease in total VOC concentrations. Specifically, at P-13, total VOC concentrations increased between May 2010 and June 2013, and decreased between June 2013 and June 2015. At MW-502, total VOC concentrations increased between May 2010 and June 2014, and decreased during the June 2015 sampling event. Concentrations of total VOCs at both monitoring wells are below historical maxima for each monitoring well.

Monitoring well P-11A did not indicate a statistically significant concentration trend with linear regression, Mann-Kendall, or Sen’s slope analyses. A decreasing trend had previously been shown at this location; however, the total VOC concentration in June 2012 (26,400 μg/L) was higher than previous results. The total VOC concentration in June 2015 was 1,800 μg/L; more than an order of magnitude less than the June 2012 total VOC concentration.

Only one location, MW-707DR, indicates a significant increasing total VOC concentration trend based on the Mann-Kendall, Sen’s slope and linear regression tests using data between December 1996 and June 2015. This is consistent with the total VOC concentration trend results in 2010 through 2014 at this location. The maximum total VOC concentration measured at MW-707DR was 18 μg/L (April 2000) and 30% of the historical samples have been below detection for all VOC constituents, indicating generally low concentrations of VOCs in groundwater at this location. The total VOC concentration measured at MW-707DR in June 2015 was 1.31 μg/L. This total VOC concentration is lower than each previous analytical result measured above the detection limit at this well. Linear regression, Mann-Kendall, and Sen’s slope trend tests were also performed over an abbreviated period using total VOC concentrations from April 2004 to June 2015, to exclude the previous monitoring events in which VOC concentrations were below detection limits. Since April 2004, total VOC concentrations indicate a statistically significant decreasing concentration trend, indicating that groundwater quality is improving at this monitoring location.

6.1.2 Total VOC Attenuation Rate

Results from the linear regression and Sen’s slope analyses were used to estimate attenuation rates for total VOCs in groundwater at the Site. Attenuation rates were calculated in accordance with the USEPA guidance document on determining first-order attenuation rate constants for MNA studies (USEPA 2002). Following this guidance, the natural log of COC groundwater concentration versus time was used and a best-fit linear regression line was generated for total VOC concentrations for each monitoring location that had a statistically significant decreasing total VOC concentration trend. Slopes derived from the Sen’s slope test were also used to estimate attenuation rates. The slope of the linear regression line and the slope from the Sen’s slope test provide estimates of the total VOC attenuation rate constant (k_{point}) in groundwater at the respective monitoring locations.

$$k_{point} = [slope\ of\ best\text{-}fit\ regression\ line]$$

The half-life ($t_{1/2}$) for total VOC concentrations in groundwater was estimated for each sampling location from the equation:

$$t_{1/2} = 0.693 / k_{point}$$

where: 0.693 is the negative of the natural log of 0.5 (half of the starting total VOC concentration).

Estimated half-life values for total VOCs in groundwater range from 577 to 6,137 days (1.6 to 16.8 years) based on linear regression results and from 573 to 9,679 days (1.6 to 26.5 years) based on Sen's slope results. These estimated half-life values for total VOC concentrations compare well with literature values of attenuation rates presented for individual compounds in Appendix H of the FS (BBL and USEPA 2005) and indicate that overall COC concentrations in groundwater are attenuating.

6.2 Estimate of COC Mass Flux in Groundwater

As part of the compliance monitoring program, COC mass extraction rates and cumulative mass removal are monitored for the HCTS. With the exception of the severed plume and incidental discharge to surface water, the HCTS captures the entire dissolved phase groundwater COC plume at the Site. Therefore, the HCTS COC mass removal rates and cumulative mass removal data represent the total mass flux for the dissolved phase COC groundwater plume and can be used to monitor changes in groundwater total dissolved-phase COC mass flux with time.

Total VOC mass removal rates and cumulative mass removal for the HCTS were plotted for the July 1995 to June 2015 time period (Figure 17). Mass removal rates are expressed in units of pounds per day (lbs/day) and the cumulative mass removal is expressed in units of pounds. Mass removal rates have ranged between about 0.1 to 10 pounds per day and are generally declining since 1995. The overall decline in mass removal rate indicates a general decline in dissolved VOC concentrations in the water pumped by the former NTCRA 1 extraction wells. The total mass of VOCs removed by the HCTS between system startup in 1995 and June 2015 is approximately 18,000 pounds. The mass of COCs removed via the HCTS is small compared with the estimated mass removal that is occurring via *in situ* degradation. As described in detail in the FS (BBL and USEPA 2005) and summarized in the MNA Plan (ARCADIS November 2010), the quantity of TCE and degradation products being biodegraded *in situ* was calculated to be approximately 17,000 to 41,000 pounds per year within the NTCRA 1 area alone.

The mass extraction data will continue to be collected as part of the HCTS compliance monitoring program and will be periodically evaluated as part of the MNA performance monitoring program.

6.3 Distribution of VOCs in NAPL and Groundwater

An assessment of the distribution of select VOCs in NAPL and groundwater samples was conducted as part of the 2010 comprehensive MNA report to gain insight into how VOC distributions in NAPL and Site groundwater varied by location and with time. VOCs evaluated in the assessment included:

- Chlorinated ethenes (PCE, TCE, cDCE, 1,1-dichloroethene [1,1-DCE], and VC).
- Chlorinated ethanes (TCA, 1,1-DCA, and chloroethane [CA]).
- Ketones (2-butanone [MEK], 4-methyl-2-pentanone [MIBK], and acetone).
- Toluene, ethylbenzene, and xylenes (TEX).
- Methylene chloride, styrene, tetrahydrofuran (THF), and 1,4-dioxane.

Data used for assessment of distribution of VOCs in NAPL and groundwater were presented in the 2010 comprehensive MNA report. The assessment concluded that NAPL samples were composed primarily of PCE, TCE, TCA, TEX, methylene chloride, and styrene, with lesser contributions from cDCE, 1,1-DCE, and 1,1-DCA. Ketones generally were not detected in NAPL samples. 1,4-dioxane was not analyzed for these samples. Overall, the results indicated that the detected groundwater constituents are generally consistent with NAPL constituents, with the exception of ketones. The general absence of detectable ketones in the NAPL samples likely relates to the elevated detection levels associated with the NAPL samples.

Molar VOC concentration plots were also presented in the 2010 comprehensive MNA report were updated following the June 2014 comprehensive sampling event, and were included in the 2014 MNA Report. In general, constituent concentrations in groundwater were greatest in the NTCRA 1 area with consistently decreasing primary constituent (e.g., TCE, TCA, ketones, and TEX) concentrations observed in directions downgradient from the NTCRA 1 area. These results clearly demonstrate degradation of parent compounds in groundwater.

Groundwater molar VOC concentration plots for select groundwater monitoring locations with samples collected during multiple sampling events illustrate that some locations have clear declining concentration trends for most or all constituents. Shifts in the relative distribution of chlorinated VOCs (CVOCs) towards greater proportions of daughter products to parent demonstrate ongoing degradation of CVOCs in Site groundwater.

In summary, molar concentration plots of select CVOCs provide a means for readily comparing the distribution of COC concentrations in Site groundwater with distance from the source area, as well as with depth and with time at discrete locations.

6.4 Evaluation of Monitoring Objectives

6.4.1 Evaluation of Changes in Environmental Conditions that May Reduce Efficiency of MNA

MNA data will be used to evaluate potential changes in environmental conditions that may reduce the efficiency of MNA. Currently, the only anticipated environmental changes that may reduce the efficiency of MNA are within the capture zone of the Site NTCRA 1 groundwater containment system due to the addition of heat and removal of electron donors during *in situ* thermal treatment of the Overburden NAPL Area. The thermal treatment remedy was conducted between May 2014 and March 2015. As described in Section 3, two post-thermal treatment groundwater monitoring events were conducted in March and July 2015 for select monitoring wells in the NTCRA 1 area. Initial results from these two monitoring events indicate generally decreasing COC concentrations and moderately to strongly reducing conditions in groundwater in the NTCRA 1 area. The 2016 MNA Report and future MNA Reports will assess potential effects on MNA efficiency due to thermal treatment in the Overburden NAPL Area. Specifically, VOC and MNA parameter concentration data for the post-thermal treatment time period will be compared to results from the pre-thermal treatment time period to see what changes in VOC and MNA parameter concentrations may be attributable to the thermal remedy.

Changes in the composition and availability of electron donors with time may affect the efficiency of NA. As electron donors, such as ketones, aromatic compounds, and alcohols are consumed, the efficiency of NA may decline. As noted in the 2010 comprehensive MNA report, alcohols are currently only minimally detected in Site groundwater. As concentrations of these readily available electron donors decline, other electron donor sources may be available to support continued NA of COCs in Site groundwater. Other potential electron donor sources include natural organic matter in the aquifer matrix, natural organic matter in groundwater, as well as recycling of microbial biomass. The efficiency of NA for remediation of COCs in Site groundwater will continue to be monitored via the MNA remedial program using techniques set forth in the MNA Plan and in this MNA Report including, but not limited to:

- Defining changes in the VOC regulatory plume boundaries, including exceedance of MCLs and GWPC as well as exceedance of ICLs.

- Evaluation of COC concentration trends with time.

- Assessment of changes in the distribution of COCs, especially ketones, alcohols, and aromatic compounds.

- Continued monitoring of groundwater redox conditions.

If changes in the efficiency of NA result in a loss of effectiveness of MNA as a remedy for COCs in Site groundwater, contingencies will be considered, as described in the MNA Plan.

6.4.2 Evaluation of Potentially Toxic and/or Mobile Transformation Products

Potentially toxic transformation products include regulated chemical intermediates, such as cDCE, 1,1-DCE, 1,1-DCA, CA, and VC, and regulated transition metals (e.g., manganese and arsenic). Locations with concentrations of cDCE, 1,1-DCE, 1,1-DCA, CA, VC that exceed MCLs or GWPC are within the overburden and bedrock groundwater capture zone boundary. With the exception of total manganese in upgradient/background monitoring well MW-126B (1,446 µg/L), and several total metals in upgradient/background monitoring well MW-209B, metals detected in groundwater samples collected in June 2015 did not exceed Action Levels (Table 2).

6.4.3 Evaluation of Plume Stability

In terms of plume stability, a dissolved-phase chemical plume in groundwater may be characterized as a:

- Shrinking plume, in which the plume volume decreases through time.

- Stable plume, in which the plume volume does not change through time.

- Growing plume, in which the plume volume increases through time.

In general, shrinking plumes are indicated by decreasing chemical concentrations through time, growing plumes may be indicated by increasing or stable chemical concentrations through time, and stable plumes are indicated by plume volume estimates that do not change significantly through time. Currently available long-term monitoring data indicate that the plume of COCs in Site groundwater is generally shrinking or stable.

6.4.4 Evaluation of No Unacceptable Impacts to Downgradient Receptors

Groundwater and surface water monitoring data collected during the RI and the IMS program indicate that there are no potential impacts to downgradient receptors. The water supply wells within the Town Well Field Property are dormant and are beyond the zone of COC concentrations in groundwater that are above drinking water standards. Therefore, there are no receptors within the vicinity of the groundwater plume with COC concentrations above drinking water standards. Monitoring of surface water in the Quinnipiac River demonstrated that surface water is not impacted by the Site COC-impacted groundwater plume. Monitoring of groundwater within the Town Well Field will continue as part of the MNA program.

6.4.5 Evaluation of New Releases of COCs

Evaluation of new releases of COCs is not needed because potential sources of new releases have been removed from the Site, the former source area is located within the capture zone of the HCTS, and the Overburden NAPL Area (also within the capture zone) has been remediated via *in situ* thermal remediation.

6.4.6 Evaluation of Institutional Controls

The draft *Institutional Control Plan* (IC Plan), which is a remedial design submittal required by Section V.B.7 of the SOW, was initially submitted to the USEPA in February 2011. Based on comments received and further coordination with the regulatory agencies, a revised draft IC Plan was provided to the USEPA in May 2013. It describes the proposed scope and monitoring program associated with institutional controls to be implemented at the Site. Once the IC Plan is approved and institutional controls are established, any observed or pending changes in land or resource uses or ownership (e.g., property ownership change, housing developments, and well installations) will be evaluated in view of their current and possible future impact on the effectiveness of the institutional controls and the performance monitoring operations.

6.4.7 COC Mass Flux / Mass Reduction

COC mass flux and mass reduction can be conservatively evaluated by monitoring groundwater COC mass recovery from the HCTS. Because extraction of groundwater COCs by the HCTS does not account for the mass of COCs degraded *in situ*, this method of estimating mass reduction provides a minimum estimate of mass reduction. With the exception of the severed plume and de minimis discharges to surface water immediately adjacent to the river, the Site-related groundwater plume is essentially contained within the HCTS capture zone. As a result, the groundwater extracted via the HCTS represents the majority of the mass flux of COCs within the plume. Groundwater extraction rate and COC concentration information collected periodically during system operation, maintenance and monitoring (OMM) activities as part of the compliance monitoring program for the HCTS will be used to evaluate changes in COC mass flux with time. As shown on Figure 17, COC mass extraction rates declined from 1995 to the early 2000s, and were relatively stable between the early 2000s and 2013. Concentrations dropped somewhat in 2014 due to system modifications associated with ISTR preparation and implementation (including shutdown of multiple NTCRA 1 area extraction wells). Concentrations dropped further in 2015 due to reduced source contribution in the NTCRA 1 area due to ISTR implementation.

6.5 Contingency Measures

An evaluation of contingency measures will be performed if progress in meeting long-term groundwater restoration goals is inadequate, as determined by the USEPA. While the specific measures to be undertaken may depend on several factors (e.g., the nature, location, apparent source, or timeframe at which the inadequacy is identified), examples of possible contingency measures are provided in the MNA Plan. Any contingency measure considered will first be approved by USEPA, in consultation with CT DEEP, prior to implementation.

7. Summary

The 2015 annual groundwater monitoring event was conducted June 8-10, 2015, and included the sampling of 37 monitoring wells for VOCs or TAL metals. Results from the annual event indicate that:

- VOCs above Action Levels (the more stringent of the USEPA MCLs or Connecticut Class GA GWPC, i.e., drinking water standards) are contained within the previously estimated capture zone boundary of the HCTS. None of the wells within the severed plume (i.e., wells with historical COC concentrations above Action Levels downgradient of the HCTS capture zone boundary) had COC concentrations above Action Levels during the 2014 or 2015 groundwater monitoring events.

- PCE and TCE were detected at middle overburden monitoring well PZO-2M at concentrations of 6.3 μg/L and 4.66 μg/L, respectively, in the June 2015 sample. The PCE concentration is above the Action Level of 5.0 μg/L, while the TCE concentration has dropped below the Action Level of 5.0 μg/L (previously above the Action Level in 2013 and 2014). Concentrations of both compounds continue to decline. PCE was first detected above the Action Level at this well in June 2013, while TCE was first detected above the Action Level in June 2012.

- PCE and TCE were detected at deep bedrock monitoring well MW-1003DR at concentrations of 2.95 μg/L and 40 μg/L, respectively, in the June 2015 sample. The PCE concentration dropped below the Action Level of 5.0 μg/L starting in June 2014, while the TCE concentration is above the Action Level of 5.0 μg/L (and was previously above the Action Level in 2013 and 2014). PCE and TCE were first detected above the Action Level at this well in June 2013. Concentrations of both compounds have continued to decline relative to the 2013 results.

- TCE was also detected at monitoring well MW-1002R at a concentration (19.3 μg/L) above the Action Level of 5 μg/L. This is the first detection of TCE above Action Levels at this well.

- As noted in the 2012 MNA Report, total VOC concentrations at shallow bedrock monitoring well P-11A increased notably between 2011 (583 μg/L) and 2012 (approximately 26,400 μg/L). This well is located within the bedrock NAPL zone initially delineated during the Remedial Investigation (RI; Blasland, Bouck & Lee, Inc. [BBL] June 1998), and more recently refined (based on additional data from the RD/RA activities) in the *Groundwater Conceptual Site Model Update* (ARCADIS 2015). This well is also located within the HCTS capture zone. The total VOC concentration in June 2015 decreased significantly (to approximately 1,803 μg/L) relative to the June 2012, though concentrations remain elevated. VOC concentrations at this well will continue to be monitored as part of future sampling events.

This report also summarizes the three post-thermal treatment monitoring events performed in 2015 (March, July, and October/November), in accordance with SOW Sections IV.B.5.d and e. Results indicate that total VOC concentrations have decreased by one to three orders of magnitude in seven out of the 10 “N” wells (relative to the initial comprehensive sampling event conducted in 2010). Total VOC concentrations at three other wells (MW-902M, TW-08B, and TW-08D) have remained stable over this period.

Section 5 presents an evaluation of the effectiveness of MNA as a remedial measure for COCs in groundwater in the Site, including presentation of groundwater monitoring results from the June 2015 annual groundwater monitoring event; evaluation of concentration trends for total VOCs in groundwater at select monitoring locations; estimates of bulk attenuation rates for total VOCs in groundwater; and presentation of HCTS COC mass extraction rates with time. Results of these evaluations indicate:

- Detected concentrations of VOCs above Action Levels are contained within the previously estimated capture zone boundary of the HCTS.

- Groundwater total VOC concentrations are generally declining or remaining stable with time throughout the Site groundwater COC plume.

- Estimated bulk VOC attenuation rates were comparable to attenuation rates for individual COCs presented in the FS (BBL and USEPA 2005).

- Compliance monitoring data from the HCTS indicate generally stable COC mass extraction rates since the early 2000s.

These results support continued use of MNA as a remedy for COCs in Site groundwater.

8. References

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Tables

Table 1 – VOCs – Annual Groundwater Sample Results – June 2015
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

				Sample Location	CPZ-4A		CPZ-8R		MW-03		MW-1002DR		MW-1002R		MW-1003DR		MW-1003R		MW-121B		MW-121C		MW-121M		MW-124C	
				Sample Date	6/10/2015 14:15		7/10/2015 15:10		6/8/2015 11:20		6/9/2015 11:15		6/10/2015 13:10		6/9/2015 10:30		6/10/2015 15:15		6/9/2015 13:45		6/9/2015 13:30		6/9/2015 14:00		6/8/2015 14:40	
				Field Sample ID	CPZ-4A-HS-06102015		CPZ-8R-HS-07102015		MW-03-06082015		W-1002DR-HS-0609201		MW-1002R-06102015		W-1003DR-HS-0609201		MW-1003R-06102015		MW-121B-HS-06092015		MW-121C-HS-06092015		MW-121M-HS-0609201		MW-124C-06082015	
				Well Group	R		R		R		R		R		R		R		R		R		R		R	
				HydroStratZone(s)	SOB, MOB		SBR		MOB		DBR		SBR		DBR		SBR		DOB		SBR		MOB		SBR	
Analyte	**CAS No.**	**Unit**	**Action Level**	**ICL**																						
VOCs																										
1,1,1,2-Tetrachloroethane	630-20-6	ug/L	1	0.5	0.5	U	500	U	0.5	U	5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	71-55-6	ug/L	200	0.5	0.5	U	**6760**	--	0.5	U	5	U	0.5	U	**0.765**	--	0.5	U	0.5	U	0.5	U	0.5	U	**4.87**	--
1,1,2-Trichloroethane	79-00-5	ug/L	5	0.5	0.75	U	750	U	0.75	U	7.5	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U
1,1-Dichloroethane	75-34-3	ug/L	70	0.5	**2.29**	--	750	U	0.75	U	7.5	U	0.75	U	**0.37**	J	0.75	U	0.75	U	**0.249**	J	0.75	U	**1.63**	--
1,1-Dichloroethene	75-35-4	ug/L	7	0.5	**0.53**	J	**1440**	--	0.5	U	**5.28**	--	0.5	U	**0.199**	J	0.5	U	0.5	U	0.5	U	0.5	U	**4.9**	--
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	2	2.5	U	2500	U	2.5	U	25	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,2-Dichlorobenzene	95-50-1	ug/L	600	0.5	2.5	U	2500	U	2.5	U	25	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,2-Dichloroethane	107-06-2	ug/L	1	0.5	0.5	U	500	U	0.5	U	5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	106-46-7	ug/L	75	0.5	2.5	U	2500	U	2.5	U	25	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
2-Butanone (MEK)	78-93-3	ug/L	400	5	10	U	5000	U	5	U	50	UJ	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2-Hexanone	591-78-6	ug/L	140	5	5	U	5000	U	5	U	50	UJ	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	350	5	5	U	5000	U	5	U	50	UJ	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	ug/L	700	5	**4.91**	--	10000	U	10	U	100	UJ	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzene	71-43-2	ug/L	1	0.5	**2.03**	--	**235**	J	0.5	U	5	U	0.5	U	**0.747**	--	**0.977**	--	**8.26**	--	**5.73**	--	**1.18**	--	0.5	U
Bromomethane	74-83-9	ug/L	9.8	0.5	1	U	1000	UJ	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon disulfide	75-15-0	ug/L	700	0.5	5	U	5000	U	5	U	50	U	5	U	**3.11**	J	**6.69**	--	5	U	5	U	5	U	5	U
Carbon tetrachloride	56-23-5	ug/L	5	0.5	0.5	U	500	U	0.5	U	5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	108-90-7	ug/L	100	0.5	**0.972**	--	500	U	0.5	U	5	U	0.5	U	0.5	U	0.5	U	**6.76**	--	**4.06**	--	**0.732**	--	0.5	U
Chloroethane	75-00-3	ug/L	12.1	0.5	**20.7**	J	1000	U	1	U	10	U	1	U	**0.236**	J	1	U	**28.7**	--	**13.5**	--	**11**	--	1	U
Chloroform	67-66-3	ug/L	6	0.5	0.75	U	750	U	0.75	U	7.5	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	**0.175**	J
Chloromethane	74-87-3	ug/L	2.7	0.5	2.5	U	2500	UJ	2.5	U	25	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
cis-1,2-Dichloroethene	156-59-2	ug/L	70	0.5	**1.22**	--	**164000**	--	0.5	U	**31.7**	--	**0.295**	J	0.5	U	**0.684**	--	0.5	U	**0.361**	J	0.5	U	**4.48**	--
Ethylbenzene	100-41-4	ug/L	700	0.5	0.5	U	**6460**	--	0.5	U	5	U	0.5	U	**0.559**	--	**0.171**	J	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	87-68-3	ug/L	0.45	0.45	0.6	U	600	U	0.6	U	6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
Methylene chloride	75-09-2	ug/L	5	0.5	5	U	5000	U	5	U	50	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Naphthalene	91-20-3	ug/L	280	0.5	2.5	U	2500	U	2.5	U	25	UJ	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Styrene	100-42-5	ug/L	100	0.5	1	U	**441**	J	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	ug/L	5	0.5	0.5	U	**10700**	--	0.5	U	**22.1**	--	**0.388**	J	**2.95**	--	0.5	U	0.5	U	0.5	U	0.5	U	**1.09**	--
Tetrahydrofuran	109-99-9	ug/L	4.6	0.5	**36.5**	--	5000	U	5	U	50	UJ	5	U	5	U	5	U	**87.9**	--	**8.98**	--	**7.28**	--	5	U
Toluene	108-88-3	ug/L	1000	0.5	0.75	U	**27600**	--	0.75	U	7.5	U	**0.195**	J	**5.34**	--	**1.51**	--	0.75	U	0.75	U	0.75	U	0.75	U
trans-1,2-Dichloroethene	156-60-5	ug/L	100	0.5	0.75	U	750	U	0.75	U	7.5	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U
trans-1,3-Dichloropropene	10061-02-6	ug/L	0.5	0.5	0.5	U	500	U	0.5	U	5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	79-01-6	ug/L	5	0.5	**1.86**	--	**90300**	--	**0.31**	J	**517**	--	**19.3**	--	**40**	--	**0.769**	--	0.5	U	0.5	U	0.5	U	**3.8**	--
Vinyl chloride	75-01-4	ug/L	2	0.5	1	U	**4010**	--	1	U	10	U	1	U	1	U	1	U	1	U	**0.314**	J	1	U	1	U
Xylenes, Total	1330-20-7	ug/L	530	0.5	**4.32**	--	**16800**	--	1	U	10	U	1	U	**2.07**	J	**0.595**	J	**1.1**	--	1	U	1	U	1	U

Notes:

U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
ug/L = micrograms per liter
VOCs = volatile organic compounds
Action Level = the lower of the USEPA Maximum Contaminant Level (MCL) and the Connecticut Class GA Groundwater Protection Criteria (GWPC)
ICL = Interim Cleanup Level based on Table L-1 from Record of Decision Summary, September 2005
Bold = Analyte detected above the laboratory reporting limit
Shaded Cell = Analyte detected above the Action Level
SOB = Shallow Overburden
MOB = Middle Overburden
DOB = Deep Overburden
SBR = Shallow Bedrock
DBR = Deep Bedrock

Table 1 – VOCs – Annual Groundwater Sample Results – June 2015
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

Sample Location					MW-127C		MW-502		MW-704D		MW-704DR		MW-704M		MW-704M		MW-705DR		MW-706DR		MW-707DR		MW-907D		MW-907DR	
Sample Date					6/10/2015 12:35		6/10/2015 10:00		6/9/2015 13:15		6/9/2015 13:00		6/10/2015 10:40		6/10/2015 0:00		6/10/2015 14:50		6/10/2015 13:10		6/10/2015 14:15		6/9/2015 14:30		6/9/2015 14:30	
Field Sample ID					MW-127C-06102015		MW-502-HS-06102015		MW-704D-HS-06092015		MW-704DR-HS-0609201		MW-704M-06102015		DUP-06102015-1		MW-705DR-HS-0610201		MW-706DR-HS-0610201		MW-707DR-06102015		MW-907D-HS-06092015		MW-907DR-HS-0609201	
Well Group					R		R		R		R		R		R		R		R		R		R		R	
HydroStratZone(s)					SBR		DOB		DOB		DBR		MOB		MOB		DBR		DBR		DBR		DOB		DBR	
Analyte **VOCs**	**CAS No.**	**Unit**	**Action Level**	**ICL**																						
1,1,1,2-Tetrachloroethane	630-20-6	ug/L	1	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	500	U	5	U	0.5	U	0.5	U	500	U
1,1,1-Trichloroethane	71-55-6	ug/L	200	0.5	**1.74**	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**23600**	--	5	U	0.5	U	0.5	U	**972**	--
1,1,2-Trichloroethane	79-00-5	ug/L	5	0.5	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	750	U	7.5	U	0.75	U	0.75	U	750	U
1,1-Dichloroethane	75-34-3	ug/L	70	0.5	**4.28**	--	0.75	U	**0.426**	J	**2.2**	--	0.75	U	0.75	U	750	U	7.5	U	**0.999**	--	**0.392**	J	750	U
1,1-Dichloroethene	75-35-4	ug/L	7	0.5	**1.63**	J	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**3860**	J	**13.8**	J	0.5	U	0.5	U	**322**	J
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	2	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2500	U	25	U	2.5	U	2.5	U	2500	U
1,2-Dichlorobenzene	95-50-1	ug/L	600	0.5	2.5	U	**0.29**	J	2.5	U	2.5	U	2.5	U	2.5	U	2500	U	25	U	2.5	U	**0.276**	J	2500	U
1,2-Dichloroethane	107-06-2	ug/L	1	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	500	U	5	U	0.5	U	0.5	U	500	U
1,4-Dichlorobenzene	106-46-7	ug/L	75	0.5	2.5	U	**0.236**	J	2.5	U	2.5	U	2.5	U	2.5	U	2500	U	25	U	2.5	U	**0.348**	J	2500	U
2-Butanone (MEK)	78-93-3	ug/L	400	5	10	U	10	U	5	U	5	UJ	5	U	5	U	**33400**	--	100	U	10	U	5	U	5000	UJ
2-Hexanone	591-78-6	ug/L	140	5	5	U	5	U	5	U	5	UJ	5	U	5	U	5000	U	50	U	5	U	5	U	5000	UJ
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	350	5	5	U	**20**	--	5	U	5	UJ	5	U	5	U	**30800**	--	50	U	5	U	5	U	5000	UJ
Acetone	67-64-1	ug/L	700	5	10	U	10	U	10	U	10	UJ	10	U	10	U	**3160**	--	**22.2**	J	10	U	10	U	10000	UJ
Benzene	71-43-2	ug/L	1	0.5	0.5	U	**62.8**	--	**0.208**	J	**0.851**	--	**0.195**	J	**0.197**	J	**563**	--	5	U	**0.312**	J	**26.2**	--	500	U
Bromomethane	74-83-9	ug/L	9.8	0.5	1	U	1	U	1	U	1	U	1	U	1	U	1000	U	**23.3**	--	1	U	1	U	1000	U
Carbon disulfide	75-15-0	ug/L	700	0.5	5	U	5	U	5	U	5	U	5	U	5	U	5000	U	50	U	5	U	5	U	5000	U
Carbon tetrachloride	56-23-5	ug/L	5	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	500	U	5	U	0.5	U	0.5	U	500	U
Chlorobenzene	108-90-7	ug/L	100	0.5	0.5	U	**24.1**	--	**2.42**	--	**0.55**	--	**2.15**	--	**2.26**	--	500	U	5	U	0.5	U	**13.3**	--	500	U
Chloroethane	75-00-3	ug/L	12.1	0.5	1	U	**54.1**	J	**7.72**	--	**11.2**	--	**2.3**	J	**2.83**	J	1000	U	10	U	1	U	**53.5**	--	1000	U
Chloroform	67-66-3	ug/L	6	0.5	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	750	U	7.5	U	0.75	U	0.75	U	750	U
Chloromethane	74-87-3	ug/L	2.7	0.5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2500	U	25	U	2.5	U	2.5	U	2500	U
cis-1,2-Dichloroethene	156-59-2	ug/L	70	0.5	**1.46**	--	0.5	U	0.5	U	**1.19**	--	**0.203**	J	**0.205**	J	**27000**	--	**264**	--	0.5	U	0.5	U	**1050**	--
Ethylbenzene	100-41-4	ug/L	700	0.5	0.5	U	**93.8**	--	0.5	U	**0.813**	--	0.5	U	0.5	U	**3860**	--	5	U	0.5	U	0.5	U	**470**	J
Hexachlorobutadiene	87-68-3	ug/L	0.45	0.45	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	600	U	6	U	0.6	U	0.6	U	600	U
Methylene chloride	75-09-2	ug/L	5	0.5	5	U	**0.363**	J	5	U	5	U	5	U	5	U	**18900**	--	**7.8**	J	5	U	5	U	5000	U
Naphthalene	91-20-3	ug/L	280	0.5	2.5	U	**1.32**	J	2.5	U	2.5	UJ	2.5	U	2.5	U	2500	U	25	U	2.5	U	2.5	U	2500	UJ
Styrene	100-42-5	ug/L	100	0.5	1	U	1	U	1	U	1	U	1	U	1	U	**1080**	--	10	U	1	U	1	U	1000	U
Tetrachloroethene	127-18-4	ug/L	5	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**32100**	--	**49.3**	--	0.5	U	0.5	U	**5080**	--
Tetrahydrofuran	109-99-9	ug/L	4.6	0.5	5	U	**2980**	--	**5.93**	--	**5.71**	J	**5.24**	--	**4.94**	J	**8170**	--	50	U	5	U	**371**	--	5000	UJ
Toluene	108-88-3	ug/L	1000	0.5	0.75	U	**5.49**	--	0.75	U	0.75	U	0.75	U	0.75	U	**43700**	--	**39**	--	0.75	U	0.75	U	**4010**	--
trans-1,2-Dichloroethene	156-60-5	ug/L	100	0.5	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	750	U	7.5	U	0.75	U	0.75	U	750	U
trans-1,3-Dichloropropene	10061-02-6	ug/L	0.5	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	500	U	5	U	0.5	U	0.5	U	500	U
Trichloroethene	79-01-6	ug/L	5	0.5	**0.737**	--	0.5	U	0.5	U	**0.286**	J	0.5	U	0.5	U	**580000**	--	**1660**	--	0.5	U	0.5	U	**58200**	--
Vinyl chloride	75-01-4	ug/L	2	0.5	1	U	1	U	1	U	**2.65**	--	**0.119**	J	**0.103**	J	**624**	J	10	U	1	U	1	U	1000	U
Xylenes, Total	1330-20-7	ug/L	530	0.5	1	U	**277**	--	1	U	1	U	1	U	1	U	**10200**	--	10	U	1	U	**0.756**	J	**1540**	J

Notes:

U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
ug/L = micrograms per liter
VOCs = volatile organic compounds
Action Level = the lower of the USEPA Maximum Contaminant Level (MCL) and the Connecticut Class GA Groundwater Protection Criteria (GWPC)
ICL = Interim Cleanup Level based on Table L-1 from Record of Decision Summary, September 2005
Bold = Analyte detected above the laboratory reporting limit
Shaded Cell = Analyte detected above the Action Level
SOB = Shallow Overburden
MOB = Middle Overburden
DOB = Deep Overburden
SBR = Shallow Bedrock
DBR = Deep Bedrock

Table 1 – VOCs – Annual Groundwater Sample Results – June 2015
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

				Sample Location	MW-907M		MWL-309		MWL-309		P-101B		P-101C		P-11A		P-13		PZO-2D		PZO-2M		PZR-2R	
				Sample Date	6/9/2015 14:15		6/10/2015 10:30		6/10/2015 0:00		6/10/2015 14:00		6/10/2015 13:40		6/10/2015 11:00		6/9/2015 11:30		6/9/2015 14:28		6/9/2015 10:50		6/9/2015 15:30	
				Field Sample ID	MW-907M-HS-0609201		MWL-309-HS-06102015		DUP-06102015-2		P-101B-HS-06102015		P-101C-HS-06102015		P-11A-HS-06102015		P-13-06092015		PZ0-2D-06092015		PZ0-2M-HS-06092015		PZR-2R-06092015	
				Well Group	R		R		R		R		R		R		R		R		R		R	
				HydroStratZone(s)	MOB		SOB		SOB		MOB		SOB		SBR		SOB		DOB		MOB		SBR	
Analyte **VOCs**	**CAS No.**	**Unit**	**Action Level**	**ICL**																				
1,1,1,2-Tetrachloroethane	630-20-6	ug/L	1	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	71-55-6	ug/L	200	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	5	U	**2.96**	--	0.5	U	**0.216**	J	0.5	U
1,1,2-Trichloroethane	79-00-5	ug/L	5	0.5	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	7.5	U	0.75	U	0.75	U	0.75	U	0.75	U
1,1-Dichloroethane	75-34-3	ug/L	70	0.5	0.75	U	**0.777**	--	**1.08**	--	**0.722**	J	**1.07**	--	7.5	U	**1.17**	--	**0.675**	J	0.75	U	0.75	U
1,1-Dichloroethene	75-35-4	ug/L	7	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**9.41**	J	**0.417**	J	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	2	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	25	U	2.5	U	2.5	U	2.5	U	2.5	U
1,2-Dichlorobenzene	95-50-1	ug/L	600	0.5	**0.442**	J	2.5	U	2.5	U	2.5	U	2.5	U	25	U	2.5	U	2.5	U	2.5	U	2.5	U
1,2-Dichloroethane	107-06-2	ug/L	1	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	106-46-7	ug/L	75	0.5	**0.579**	J	2.5	U	2.5	U	2.5	U	2.5	U	25	U	2.5	U	2.5	U	2.5	U	2.5	U
2-Butanone (MEK)	78-93-3	ug/L	400	5	5	U	5	U	5	U	10	U	10	U	100	U	5	U	5	U	5	UJ	5	U
2-Hexanone	591-78-6	ug/L	140	5	5	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	5	UJ	5	U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	350	5	5	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	5	UJ	5	U
Acetone	67-64-1	ug/L	700	5	10	U	10	U	10	U	10	U	10	U	100	U	10	U	10	U	10	UJ	10	U
Benzene	71-43-2	ug/L	1	0.5	**48.9**	--	0.5	U	0.5	U	**0.315**	J	**3.53**	--	**9.75**	--	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	74-83-9	ug/L	9.8	0.5	1	U	1	U	1	U	1	U	1	U	10	U	1	U	1	U	1	U	1	U
Carbon disulfide	75-15-0	ug/L	700	0.5	5	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	5	U	5	U
Carbon tetrachloride	56-23-5	ug/L	5	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	108-90-7	ug/L	100	0.5	**23**	--	0.5	U	0.5	U	0.5	U	**1.4**	--	5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	75-00-3	ug/L	12.1	0.5	**98.4**	--	1	U	1	U	1	UJ	**8.22**	--	10	U	1	U	1	U	1	U	1	U
Chloroform	67-66-3	ug/L	6	0.5	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	7.5	U	0.75	U	0.75	U	0.75	U	0.75	U
Chloromethane	74-87-3	ug/L	2.7	0.5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	25	U	2.5	U	2.5	U	2.5	U	2.5	U
cis-1,2-Dichloroethene	156-59-2	ug/L	70	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**1100**	--	**1.32**	--	**0.581**	--	0.5	U	0.5	U
Ethylbenzene	100-41-4	ug/L	700	0.5	**0.245**	J	0.5	U	0.5	U	0.5	U	0.5	U	**114**	--	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	87-68-3	ug/L	0.45	0.45	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	6	U	0.6	U	0.6	U	0.6	U	0.6	U
Methylene chloride	75-09-2	ug/L	5	0.5	**0.503**	J	5	U	5	U	5	U	5	U	50	U	5	U	5	U	5	U	5	U
Naphthalene	91-20-3	ug/L	280	0.5	**0.484**	J	2.5	U	2.5	U	2.5	U	2.5	U	25	U	2.5	U	2.5	U	2.5	UJ	2.5	U
Styrene	100-42-5	ug/L	100	0.5	1	U	1	U	1	U	1	U	1	U	10	U	1	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	ug/L	5	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**7.35**	--	**0.564**	--	0.5	U	**6.3**	--	0.5	U
Tetrahydrofuran	109-99-9	ug/L	4.6	0.5	**3210**	--	5	U	5	U	5	U	**2.25**	J	50	U	5	U	**1.17**	J	5	UJ	5	U
Toluene	108-88-3	ug/L	1000	0.5	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	**106**	--	0.75	U	0.75	U	0.75	U	0.75	U
trans-1,2-Dichloroethene	156-60-5	ug/L	100	0.5	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	7.5	U	0.75	U	0.75	U	0.75	U	0.75	U
trans-1,3-Dichloropropene	10061-02-6	ug/L	0.5	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	79-01-6	ug/L	5	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**24.5**	--	**0.426**	J	**1.51**	--	**4.66**	--	0.5	U
Vinyl chloride	75-01-4	ug/L	2	0.5	1	U	1	U	1	U	**0.336**	J	**0.872**	J	**373**	--	1	U	1	U	1	U	1	U
Xylenes, Total	1330-20-7	ug/L	530	0.5	**3.05**	J	1	U	1	U	1	U	**0.37**	J	**59.4**	J	1	U	1	U	1	U	1	U

Notes:
- **U** = Analyte not detected above the laboratory reporting limit
- **J** = Analyte result is estimated
- **ug/L** = micrograms per liter
- **VOCs** = volatile organic compounds
- **Action Level** = the lower of the USEPA Maximum Contaminant Level (MCL) and the Connecticut Class GA Groundwater Protection Criteria (GWPC)
- **ICL** = Interim Cleanup Level based on Table L-1 from Record of Decision Summary, September 2005
- **Bold** = Analyte detected above the laboratory reporting limit
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- **SOB** = Shallow Overburden
- **MOB** = Middle Overburden
- **DOB** = Deep Overburden
- **SBR** = Shallow Bedrock
- **DBR** = Deep Bedrock

Table 2 – Metals – Annual Groundwater Sample Results – June 2015
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

Sample Location				MW-126B		MW-126C		MW-209A		MW-209B		MW-701DR		MW-901R		MW-901R		P-12	
Sample Date				6/9/2015 9:35		6/9/2015 10:55		6/8/2015 14:35		6/9/2015 8:20		6/8/2015 10:35		6/9/2015 11:55		6/9/2015 0:00		6/10/2015 16:30	
Field Sample ID				MW-126B-06092015		MW-126C-06092015		MW-209A-06082015		MW-209B-06092015		MW-701DR-06082015		MW-901R-06092015		DUP-06092015		P-12-06102015	
Well Group				M		B		B		B		M		M		M		M	
HydroStratZone(s)				MOB		SBR		SBR		DOB		DBR		SBR		SBR		SOB	
Analyte **Metals (6020)**	**CAS No.**	**Unit**	**Action Level**																
Aluminum (Dissolved)	7429-90-5	ug/L	--	10	U	10	U	**3.79**	J	**35.2**	--	**3.11**	J	10	U	10	U	**135**	--
Aluminum (Total)	7429-90-5	ug/L	--	10.3	UJ	28.6	UJ	**14.1**	--	**18900**	J	**13.8**	--	**2640**	J	**2210**	J	**1380**	--
Antimony (Dissolved)	7440-36-0	ug/L	--	2	U	2	U	3	U	2	U	3	U	2	U	2	U	2	U
Antimony (Total)	7440-36-0	ug/L	6	2	U	2	U	0.5	U	2	U	0.5	U	2	U	2	U	0.5	U
Arsenic (Dissolved)	7440-38-2	ug/L	--	0.5	U	**0.1724**	J	0.5	U	**0.2378**	J	**1.032**	--	**0.3212**	J	**0.3526**	J	**0.1612**	J
Arsenic (Total)	7440-38-2	ug/L	10	**0.1922**	J	**0.2281**	J	0.5	U	**7.965**	--	**1.121**	--	**1.728**	--	**1.452**	--	**0.7051**	--
Barium (Dissolved)	7440-39-3	ug/L	--	**677.1**	--	**436.5**	--	**236.3**	--	**116.2**	--	**86.41**	--	**309.8**	--	**301.7**	--	**227.2**	--
Barium (Total)	7440-39-3	ug/L	1000	**721.1**	--	**441.9**	--	**233.1**	--	**1412**	--	**88.33**	--	**380.7**	--	**391.2**	--	**256.4**	--
Beryllium (Dissolved)	7440-41-7	ug/L	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Beryllium (Total)	7440-41-7	ug/L	4	0.5	U	0.5	U	0.5	U	**4.197**	--	0.5	U	**0.514**	--	**0.4584**	J	0.5	U
Cadmium (Dissolved)	7440-43-9	ug/L	--	**0.0694**	J	0.5	U	0.5	U	**0.0593**	J	0.5	U	0.5	U	0.5	U	0.5	U
Cadmium (Total)	7440-43-9	ug/L	5	**0.0788**	J	0.5	U	0.5	U	**1.606**	--	0.5	U	**0.1465**	J	**0.0897**	J	0.5	U
Chromium (Dissolved)	7440-47-3	ug/L	--	**0.8331**	J	**0.4228**	J	**0.634**	--	**1.129**	--	**0.838**	--	**0.549**	J	**0.6236**	J	1.374	UJ
Chromium (Total)	7440-47-3	ug/L	100	1	UJ	1	UJ	0.61	U	**33.61**	J	0.857	U	**4.587**	J	**3.399**	J	**2.676**	J
Cobalt (Dissolved)	7440-48-4	ug/L	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**0.162**	J
Cobalt (Total)	7440-48-4	ug/L	10	0.5	U	0.5	U	0.5	U	**21.39**	--	0.5	U	**1.569**	--	**1.266**	--	**1.048**	--
Copper (Dissolved)	7440-50-8	ug/L	--	**3.918**	--	**3.787**	J	3.159	U	**4.862**	--	**2.581**	J	**0.6103**	J	**0.3425**	J	**1.368**	--
Copper (Total)	7440-50-8	ug/L	1300	**1.313**	--	**0.4963**	J	1	U	**89.76**	--	**1.738**	J	**5.196**	--	**6.269**	--	**2.255**	--
Iron (Dissolved)	7439-89-6	ug/L	--	**12.2**	J	50	U	50	U	**53.7**	--	50	U	50	U	50	U	**175**	--
Iron (Total)	7439-89-6	ug/L	--	**26.7**	J	**40.3**	J	**18**	J	**25600**	J	**14.2**	J	**2590**	J	**1700**	J	**1540**	--
Lead (Dissolved)	7439-92-1	ug/L	--	1	U	1	U	0.5	U	**0.2992**	J	0.5	U	1	U	1	U	**0.1642**	J
Lead (Total)	7439-92-1	ug/L	15	1	U	1	U	0.5	U	**41.96**	--	**2.106**	--	**4.355**	--	**3.562**	--	**0.9078**	--
Manganese (Dissolved)	7439-96-5	ug/L	--	**922.2**	--	0.6672	U	**0.803**	J	**9.719**	--	**0.886**	J	**11.52**	--	**12.09**	--	**7.713**	--
Manganese (Total)	7439-96-5	ug/L	500	**1446**	J	**4.204**	J	**1.761**	--	**2608**	J	**0.724**	J	**188.4**	J	**162.1**	J	**44.55**	--
Nickel (Dissolved)	7440-02-0	ug/L	--	**5.817**	--	0.5	U	0.568	U	**1.61**	--	0.707	U	**0.2772**	J	0.5	U	2.007	UJ
Nickel (Total)	7440-02-0	ug/L	100	**7.358**	--	**0.5**	J	0.5	U	**62.24**	--	0.5	U	**4.415**	--	**5.756**	--	**3.116**	J
Silver (Dissolved)	7440-22-4	ug/L	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Silver (Total)	7440-22-4	ug/L	36	0.5	U	0.5	U	0.5	U	**0.1394**	J	0.5	U	0.5	U	0.5	U	0.5	U
Thallium (Dissolved)	7440-28-0	ug/L	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Thallium (Total)	7440-28-0	ug/L	2	0.5	U	0.5	U	0.5	U	**0.2571**	J	0.5	U	**0.0793**	J	**0.0601**	J	0.5	U
Vanadium (Dissolved)	7440-62-2	ug/L	--	5	UJ	**0.7977**	J	**0.807**	J	**0.9605**	J	**10.12**	--	**0.866**	J	**0.5686**	J	**1.166**	J
Vanadium (Total)	7440-62-2	ug/L	50	5	U	**0.8562**	J	**0.634**	J	**47.35**	--	**11.07**	--	**11.15**	--	**8.343**	--	**5.914**	--
Zinc (Dissolved)	7440-66-6	ug/L	--	**7.964**	J	**6.136**	J	**5.617**	--	**8.094**	J	**5.791**	--	10	U	10	U	**4.429**	J
Zinc (Total)	7440-66-6	ug/L	5000	**8.175**	J	10	U	**8.081**	--	**168.4**	--	**7.224**	--	**57.6**	--	**68.66**	--	**11.2**	--

Notes:

U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
ug/L = micrograms per liter
Action Level = the lower of the USEPA Maximum Contaminant Level (MCL)
and the Connecticut Class GA Groundwater Protection Criteria (GWPC)
Bold = Analyte detected above the laboratory reporting limit
Shaded Cell = Analyte detected above the Action Level
SOB = Shallow Overburden
MOB = Middle Overburden
DOB = Deep Overburden
SBR = Shallow Bedrock
DBR = Deep Bedrock

Table 3 – Post-Thermal Treatment Groundwater Sample Results – VOCs
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

Sample Location					MW-413		MW-413		MW-413		MW-413		MW-415		MW-415		MW-415		MW-416		MW-416		MW-416		MW-902D		MW-902D		MW-902D	
Sample Date					3/18/2015 0:00		3/18/2015 14:30		7/17/2015 11:10		10/23/2015 9:45		3/18/2015 14:45		7/17/2015 11:45		10/23/2015 9:00		3/18/2015 15:12		7/17/2015 14:17		10/23/2015 10:40		3/18/2015 15:43		7/17/2015 13:40		10/23/2015 10:15	
Field Sample ID					DUPLICATE-GW-03182015		MW-413-HS-03182015		MW-413-HS-07172015		MW-413-HS-10232015		MW-415-HS-03182015		MW-415-HS-07172015		MWL-415-HS-10232015		MW416-HS-03182015		MW-416-HS-07172015		MW-416-HS-10232015		MW-902D-HS-03182015		MW-902D-HS-07172015		MW-902D-HS-10232015	
Well Group					N		N		N		N		N		N		N		N		N		N		N		N		N	
HydroStratZone(s)					DOB		DOB		DOB		DOB		MOB		MOB		MOB		SBR		SBR		SBR		DOB		DOB		DOB	
Analyte	**CAS No.**	**Unit**	**Action Level**	**ICL**																										
VOCs																														
1,1,1,2-Tetrachloroethane	630-20-6	ug/L	1	0.5	50	U	20	U	10	U	25	U	0.5	U	0.5	U	5	U	2.5	U	1.25	U	2.5	U	10	U	10	U	50	U
1,1,1-Trichloroethane	71-55-6	ug/L	200	0.5	50	U	20	U	10	UJ	25	U	0.5	U	**1.13**	J	5	U	**66.9**	--	**45.1**	J	**42**	--	10	U	10	UJ	50	U
1,1,2-Trichloroethane	79-00-5	ug/L	5	0.5	75	U	30	U	15	U	37.5	U	0.75	U	0.75	U	7.5	U	3.75	U	**0.414**	J	3.75	U	15	U	15	U	75	U
1,1-Dichloroethane	75-34-3	ug/L	70	0.5	**23.7**	J	**20.9**	J	**11.8**	J	37.5	U	0.75	U	**4.78**	J	**14.4**	--	**18.5**	--	**14.6**	J	**15.4**	--	**81.2**	--	**64.2**	J	**27.8**	J
1,1-Dichloroethene	75-35-4	ug/L	7	0.5	50	U	20	U	10	UJ	25	U	0.5	U	**0.864**	J	5	U	**38.7**	--	**30.7**	J	**34**	--	10	U	10	UJ	50	U
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	2	250	U	100	U	50	U	125	U	2.5	U	2.5	U	25	U	12.5	U	6.25	U	12.5	U	50	U	50	U	250	U
1,2-Dichlorobenzene	95-50-1	ug/L	600	0.5	250	U	100	U	50	U	125	U	2.5	U	2.5	U	25	U	12.5	U	6.25	U	12.5	U	50	U	50	U	250	U
1,2-Dichloroethane	107-06-2	ug/L	1	0.5	50	U	20	U	10	U	25	U	0.5	U	0.5	U	5	U	2.5	U	1.25	U	2.5	U	10	U	10	U	50	U
1,4-Dichlorobenzene	106-46-7	ug/L	75	0.5	250	U	100	U	50	U	125	U	2.5	U	2.5	U	25	U	12.5	U	6.25	U	12.5	U	50	U	50	U	250	U
2-Butanone (MEK)	78-93-3	ug/L	400	5	886	U	340	U	**1090**	J	**164**	J	5	U	**44.3**	J	50	U	25	U	12.5	U	25	U	205	U	**47.8**	J	**1090**	--
2-Hexanone	591-78-6	ug/L	140	5	500	U	200	U	100	U	250	U	5	U	5	U	50	U	25	U	12.5	U	25	U	100	U	100	U	500	U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	350	5	500	U	200	U	**128**	J	250	U	5	U	**4.32**	J	50	U	25	U	12.5	U	25	U	100	U	100	U	500	U
Acetone	67-64-1	ug/L	700	5	10000	UJ	4000	UJ	**2120**	J	**348**	--	100	UJ	**97.5**	J	**50.7**	--	500	UJ	12.5	U	25	U	20000	UJ	200	UJ	**1720**	--
Benzene	71-43-2	ug/L	1	0.5	**17.5**	J	**17.5**	J	10	U	**16.9**	J	0.5	U	0.5	U	**8.05**	--	2.5	U	1.25	U	2.5	U	**9.3**	J	10	U	**21**	J
Bromomethane	74-83-9	ug/L	9.8	0.5	100	U	40	U	20	UJ	50	U	1	U	1	UJ	10	U	5	U	2.5	UJ	5	U	20	U	20	UJ	100	U
Carbon disulfide	75-15-0	ug/L	700	0.5	500	U	200	U	100	U	250	U	**0.607**	J	5	U	**4.64**	J	25	U	12.5	U	**1.87**	J	**89.9**	J	**227**	--	**99.6**	J
Carbon tetrachloride	56-23-5	ug/L	5	0.5	50	U	20	U	10	U	25	U	0.5	U	0.5	U	5	U	2.5	U	1.25	U	2.5	U	10	U	10	U	50	U
Chlorobenzene	108-90-7	ug/L	100	0.5	**45.6**	J	**44.1**	--	**13.7**	--	25	U	0.5	U	0.5	U	5	U	2.5	U	1.25	U	2.5	U	10	U	**5.9**	J	**22**	J
Chloroethane	75-00-3	ug/L	12.1	0.5	**73.5**	J	**66.7**	--	**4.01**	J	**24.7**	J	1	U	**2.16**	--	**8.54**	J	**1.32**	J	2.5	U	5	U	**172**	--	**35.4**	--	**537**	--
Chloroform	67-66-3	ug/L	6	0.5	75	U	30	U	15	U	37.5	U	0.75	U	0.75	U	7.5	U	3.75	U	1.88	U	3.75	U	15	U	15	U	75	U
Chloromethane	74-87-3	ug/L	2.7	0.5	250	U	100	U	50	U	125	U	2.5	U	2.5	U	25	U	12.5	U	6.25	U	12.5	U	50	U	50	U	250	U
cis-1,2-Dichloroethene	156-59-2	ug/L	70	0.5	50	U	20	U	**69.2**	J	**14.9**	J	**0.586**	--	**57.1**	J	**2.24**	J	**361**	--	**320**	J	**373**	--	**263**	--	10	UJ	50	U
Ethylbenzene	100-41-4	ug/L	700	0.5	**1210**	--	**1220**	--	**504**	J	**514**	--	0.5	U	3.13	UJ	**59.4**	--	2.5	U	1.25	UJ	2.5	U	**878**	--	**367**	J	**1570**	--
Hexachlorobutadiene	87-68-3	ug/L	0.45	0.45	60	U	24	U	12	U	30	U	0.6	U	0.6	U	6	U	3	U	1.5	U	3	U	12	U	12	U	60	U
Methylene chloride	75-09-2	ug/L	5	0.5	500	U	200	U	100	U	250	U	5	U	**0.766**	J	50	U	25	U	12.5	U	25	U	**6.52**	J	100	U	500	U
Naphthalene	91-20-3	ug/L	280	0.5	250	U	100	U	50	U	**31.9**	J	2.5	U	2.5	U	25	U	12.5	U	6.25	U	12.5	U	**8.71**	J	50	U	250	U
Styrene	100-42-5	ug/L	100	0.5	100	U	40	U	20	U	50	U	1	U	1	U	**3.82**	J	5	U	2.5	U	5	U	20	U	20	U	100	U
Tetrachloroethene	127-18-4	ug/L	5	0.5	50	U	20	U	10	UJ	25	U	0.5	U	0.5	UJ	5	U	**12.6**	--	**9.92**	J	**10.8**	--	**7.85**	J	10	UJ	50	U
Tetrahydrofuran	109-99-9	ug/L	4.6	0.5	**125**	J	**114**	J	**55.1**	J	**43**	J	5	U	**3.04**	J	**24.3**	J	25	U	**7.52**	J	**7.5**	J	**87.7**	J	**77**	J	**179**	J
Toluene	108-88-3	ug/L	1000	0.5	**3900**	--	**3870**	--	1330	UJ	**1800**	--	0.75	U	15.8	UJ	**379**	--	3.75	U	1.88	UJ	3.75	U	**1990**	--	1510	UJ	**5790**	--
trans-1,2-Dichloroethene	156-60-5	ug/L	100	0.5	75	U	30	U	**4.92**	J	**47.8**	--	0.75	U	**1**	--	**134**	--	3.75	U	**0.734**	J	3.75	U	**8.54**	J	**5.11**	J	**16.7**	J
trans-1,3-Dichloropropene	10061-02-6	ug/L	0.5	0.5	50	U	20	U	10	U	25	U	0.5	U	0.5	U	5	U	2.5	U	1.25	U	2.5	U	10	U	10	U	50	U
Trichloroethene	79-01-6	ug/L	5	0.5	50	U	20	U	10	U	25	U	0.5	U	**0.674**	--	5	U	**244**	--	**199**	--	**212**	--	10	U	10	U	50	U
Vinyl chloride	75-01-4	ug/L	2	0.5	100	U	40	U	**49.7**	J	**8.13**	J	**0.203**	J	**11.8**	J	**55.5**	--	**3.15**	J	**4**	J	**10.7**	--	**592**	--	20	UJ	100	U
Xylenes, Total	1330-20-7	ug/L	530	0.5	**2780**	--	**2870**	--	1100	UJ	**1020**	--	1	U	7	UJ	**49.9**	--	5	U	2.5	UJ	5	U	**1500**	--	710	UJ	**2520**	--
Halogenated VOCs Total	THVO	ug/L	--	--	**142.8**	--	**131.7**	--	**153.33**	--	**127.43**	--	**0.789**	--	**80.274**	--	**218.5**	--	**746.17**	--	**624.468**	--	**697.9**	--	**1139.82**	--	**110.61**	--	**603.5**	--
Non-Halogenated VOCs Total	TNHVO	ug/L	--	--	**7907.5**	--	**7977.5**	--	**3842**	--	**3862.9**	--	0	--	**146.12**	--	**547.05**	--	0	--	0	--	0	--	**4377.3**	--	**414.8**	--	**12711**	--
Total Volatile Organics L-1 GW	TVO	ug/L	--	--	**8175.3**	--	**8223.2**	--	**4050.43**	--	**4033.33**	--	**1.396**	--	**229.434**	--	**794.49**	--	**746.17**	--	**631.988**	--	**707.27**	--	**5694.72**	--	**829.41**	--	**13593.1**	--

Notes:

U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
ug/L = micrograms per liter
VOCs = volatile organic compounds
Action Level = the lower of the USEPA Maximum Contaminant Level (MCL)
and the Connecticut Class GA Groundwater Protection Criteria (GWPC)
ICL = Interim Cleanup Level based on Table L-1 from Record of Decision
Summary, September 2005
Bold = Analyte detected above the laboratory reporting limit
Shaded Cell = Analyte detected above the Action Level
MOB = Middle Overburden
DOB = Deep Overburden
October 2015 Data are unvalidated

Table 3 – Post-Thermal Treatment Groundwater Sample Results – VOCs

Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

Sample Location					MW-902M		MW-902M		MW-902M		MWL-304		MWL-304		MWL-304		MWL-307		MWL-307		MWL-307		TW-08A		TW-08A		TW-08A	
Sample Date					3/18/2015 16:03		7/17/2015 12:20		10/23/2015 10:00		3/18/2015 12:27		7/17/2015 8:50		10/22/2015 14:45		3/18/2015 15:15		7/17/2015 14:55		10/23/2015 11:00		3/18/2015 13:54		7/17/2015 10:05		10/22/2015 15:20	
Field Sample ID					MW-902M-HS-03182015		MW-902M-HS-07172015		MW-902M-HS-10232015		MWL-304-HS-03182015		MWL-304-HS-07172015		MWL-304-HS-10222015		MWL-307-HS-03182015		MWL-307-HS-07172015		MWL-307-HS-10232015		TW-08A-HS-03182015		TW-08A-HS-07172015		TW-08A-HS-10222015	
Well Group					N		N		N		N		N		N		N		N		N		N		N		N	
HydroStratZone(s)					MOB		MOB		MOB		SOB		SOB		SOB		SOB		SOB		SOB		MOB		MOB		MOB	
Analyte	**CAS No.**	**Unit**	**Action Level**	**ICL**																								
VOCs																												
1,1,1,2-Tetrachloroethane	630-20-6	ug/L	1	0.5	50	U	20	U	25	U	0.5	U	1.25	U	5	U	0.5	U	2.5	U	2.5	U	0.5	U	20	U	10	U
1,1,1-Trichloroethane	71-55-6	ug/L	200	0.5	50	U	20	UJ	25	U	0.5	U	**7.35**	J	5	U	**1.08**	--	2.5	UJ	2.5	U	0.5	U	20	UJ	10	U
1,1,2-Trichloroethane	79-00-5	ug/L	5	0.5	75	U	30	U	37.5	U	0.75	U	1.88	U	7.5	U	0.75	U	3.75	U	3.75	U	0.75	U	30	U	15	U
1,1-Dichloroethane	75-34-3	ug/L	70	0.5	**21.2**	J	**26.1**	J	**12.9**	J	**13.3**	--	**88.5**	J	**31.5**	--	**4.2**	--	**2.91**	J	**6.06**	--	0.75	U	30	UJ	15	U
1,1-Dichloroethene	75-35-4	ug/L	7	0.5	50	U	20	UJ	25	U	**1.29**	--	1.25	UJ	5	U	0.5	U	2.5	UJ	2.5	U	**0.407**	J	**38.6**	J	**120**	--
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	2	250	U	100	U	125	U	2.5	U	6.25	U	25	U	2.5	U	12.5	U	**2.33**	J	**0.58**	J	100	U	50	U
1,2-Dichlorobenzene	95-50-1	ug/L	600	0.5	250	U	100	U	125	U	2.5	U	**1.18**	J	**2.6**	J	2.5	U	12.5	U	12.5	U	2.5	U	100	U	50	U
1,2-Dichloroethane	107-06-2	ug/L	1	0.5	50	U	20	U	25	U	0.5	U	1.25	U	5	U	0.5	U	2.5	U	2.5	U	0.5	U	20	U	10	U
1,4-Dichlorobenzene	106-46-7	ug/L	75	0.5	250	U	100	U	125	U	2.5	U	6.25	U	25	U	2.5	U	12.5	U	12.5	U	2.5	U	100	U	50	U
2-Butanone (MEK)	78-93-3	ug/L	400	5	504	U	200	U	250	U	5	U	12.5	U	50	U	5	U	**113**	J	**121**	--	52	U	**1600**	J	**399**	--
2-Hexanone	591-78-6	ug/L	140	5	500	U	200	U	250	U	5	U	12.5	U	50	U	5	U	**21.6**	J	**8.43**	J	5	U	200	U	100	U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	350	5	500	U	200	U	250	U	5	U	12.5	U	50	U	5	U	**257**	J	**279**	--	**19.5**	--	**240**	J	**277**	--
Acetone	67-64-1	ug/L	700	5	10000	UJ	200	U	**74**	J	100	UJ	16.2	UJ	**21.4**	J	100	UJ	133	U	**277**	--	100	UJ	2050	UJ	**564**	--
Benzene	71-43-2	ug/L	1	0.5	**23.4**	J	20	U	**15.6**	J	**3.31**	--	26.2	U	**35.5**	--	**0.169**	J	5.49	U	**13.6**	--	**1.07**	--	20	U	**26.7**	--
Bromomethane	74-83-9	ug/L	9.8	0.5	100	U	40	UJ	50	U	1	U	2.5	UJ	10	U	1	U	5	UJ	5	U	1	U	40	UJ	20	U
Carbon disulfide	75-15-0	ug/L	700	0.5	500	U	200	U	250	U	5	U	**4.11**	J	50	U	**2.06**	J	25	U	**38.3**	--	5	U	**27.3**	J	**23**	J
Carbon tetrachloride	56-23-5	ug/L	5	0.5	50	U	20	U	25	U	0.5	U	1.25	U	5	U	0.5	U	2.5	U	2.5	U	0.5	U	20	U	10	U
Chlorobenzene	108-90-7	ug/L	100	0.5	50	U	20	U	25	U	0.5	U	1.25	U	**2.81**	J	0.5	U	2.5	U	2.5	U	**0.294**	J	20	U	10	U
Chloroethane	75-00-3	ug/L	12.1	0.5	**1920**	--	**1970**	--	**1640**	--	1	U	2.5	U	**27.2**	--	**1.12**	--	**5.59**	--	**20.1**	--	1	U	40	U	20	U
Chloroform	67-66-3	ug/L	6	0.5	75	U	30	U	37.5	U	0.75	U	1.88	U	7.5	U	0.75	U	3.75	U	3.75	U	0.75	U	30	U	15	U
Chloromethane	74-87-3	ug/L	2.7	0.5	250	U	100	U	125	U	2.5	U	6.25	U	25	U	2.5	U	12.5	U	12.5	U	2.5	U	100	U	50	U
cis-1,2-Dichloroethene	156-59-2	ug/L	70	0.5	50	U	**15.2**	J	25	U	**209**	--	**22**	J	**2.48**	J	**17.5**	--	**55.3**	J	**2.93**	--	**34.8**	--	**3330**	J	**6840**	--
Ethylbenzene	100-41-4	ug/L	700	0.5	**2650**	--	**1620**	J	**942**	--	**0.323**	J	**161**	J	**217**	--	**12.4**	--	47.5	UJ	**129**	--	**25.3**	--	178	UJ	**503**	--
Hexachlorobutadiene	87-68-3	ug/L	0.45	0.45	60	U	24	U	30	U	0.6	U	1.5	U	6	U	0.6	U	3	U	3	U	0.6	U	24	U	12	U
Methylene chloride	75-09-2	ug/L	5	0.5	**38**	J	**41.6**	J	250	U	5	U	12.5	U	50	U	5	U	25	U	25	U	5	U	200	U	100	U
Naphthalene	91-20-3	ug/L	280	0.5	**26.1**	J	100	U	125	U	2.5	U	6.25	U	25	U	**0.377**	J	12.5	U	**6.87**	J	**1.29**	J	100	U	**15.2**	J
Styrene	100-42-5	ug/L	100	0.5	100	U	40	U	50	U	1	U	2.5	U	10	U	1	U	**2.23**	J	**5.69**	--	**1.93**	--	**16.7**	J	**30.1**	--
Tetrachloroethene	127-18-4	ug/L	5	0.5	50	U	20	UJ	25	U	**0.412**	J	1.25	UJ	5	U	**0.477**	J	2.5	UJ	2.5	U	**0.424**	J	20	UJ	10	U
Tetrahydrofuran	109-99-9	ug/L	4.6	0.5	**139**	J	**133**	J	**109**	J	**3.65**	J	**12.8**	--	**9.87**	J	**1.29**	J	**106**	J	**69.4**	--	**3.88**	J	**61.8**	J	100	U
Toluene	108-88-3	ug/L	1000	0.5	**6060**	--	3890	UJ	**2810**	--	**6.1**	--	**333**	J	**800**	--	**52.1**	--	267	UJ	**448**	--	**54.5**	--	1000	UJ	**2700**	--
trans-1,2-Dichloroethene	156-60-5	ug/L	100	0.5	75	U	30	U	37.5	U	**3.01**	--	**5.26**	--	7.5	U	**2.85**	--	**3.07**	J	**62.4**	--	**0.362**	J	**63.2**	--	**805**	--
trans-1,3-Dichloropropene	10061-02-6	ug/L	0.5	0.5	50	U	20	U	25	U	0.5	U	1.25	U	5	U	0.5	U	2.5	U	2.5	U	0.5	U	20	U	10	U
Trichloroethene	79-01-6	ug/L	5	0.5	50	U	20	U	25	U	**0.353**	J	**1.18**	J	5	U	**0.288**	J	2.5	U	2.5	U	**1.86**	--	20	U	10	U
Vinyl chloride	75-01-4	ug/L	2	0.5	100	U	**22.9**	J	**17**	J	**224**	--	**106**	J	**3.65**	J	**3.44**	--	**74.6**	J	**2.42**	J	**76.8**	--	**472**	J	**740**	--
Xylenes, Total	1330-20-7	ug/L	530	0.5	**1250**	--	1030	UJ	**696**	--	**4.24**	--	193	UJ	**388**	--	**40.7**	--	42.8	UJ	**173**	--	**19.4**	--	423	UJ	**1100**	--
Halogenated VOCs Total	THVO	ug/L	--	--	**2005.3**	--	**2075.8**	--	**1669.9**	--	**451.365**	--	**231.47**	--	**70.24**	--	**31.332**	--	**143.7**	--	**108.8**	--	**118.747**	--	**3920.5**	--	**8550.3**	--
Non-Halogenated VOCs Total	TNHVO	ug/L	--	--	**9983.4**	--	**1620**	--	**4537.6**	--	**13.973**	--	**494**	--	**1461.9**	--	**105.369**	--	**391.6**	--	**1449.03**	--	**119.77**	--	**1840**	--	**5569.7**	--
Total Volatile Organics L-1 GW	TVO	ug/L	--	--	**12127.7**	--	**3828.8**	--	**6316.5**	--	**468.988**	--	**742.38**	--	**1542.01**	--	**140.051**	--	**641.3**	--	**1665.53**	--	**242.397**	--	**5849.6**	--	**14143**	--

Notes:

U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
ug/L = micrograms per liter
VOCs = volatile organic compounds
Action Level = the lower of the USEPA Maximum Contaminant Level (MCL) and the Connecticut Class GA Groundwater Protection Criteria (GWPC)
ICL = Interim Cleanup Level based on Table L-1 from Record of Decision Summary, September 2005
Bold = Analyte detected above the laboratory reporting limit
Shaded Cell = Analyte detected above the Action Level
MOB = Middle Overburden
DOB = Deep Overburden
October 2015 Data are unvalidated

Table 3 – Post-Thermal Treatment Groundwater Sample Results – VOCs
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

Sample Location					TW-08B		TW-08B		TW-08B		TW-08B		TW-08D		TW-08D		TW-08D		TW-08D	
Sample Date					3/18/2015 13:22		7/17/2015 12:00		10/22/2015 0:00		10/22/2015 11:50		3/18/2015 12:48		7/17/2015 0:00		7/17/2015 9:22		10/22/2015 15:00	
Field Sample ID					TW-08B-HS-03182015		TW-08B-HS-07172015		DUP-1-10222015		TW-08B-10222015		TW-08D-HS-03182015		DUP-GW-07172015		TW-08D-HS-07172015		TW-08D-HS-10222015	
Well Group					N		N		N		N		N		N		N		N	
HydroStratZone(s)					SBR		SBR		SBR		SBR		DOB		DOB		DOB		DOB	
Analyte **VOCs**	**CAS No.**	**Unit**	**Action Level**	**ICL**																
1,1,1,2-Tetrachloroethane	630-20-6	ug/L	1	0.5	500	U	1000	U	2500	U	2500	U	250	U	25	U	250	U	500	U
1,1,1-Trichloroethane	71-55-6	ug/L	200	0.5	500	U	**4000**	J	2500	U	2500	U	250	U	25	UJ	**894**	J	500	U
1,1,2-Trichloroethane	79-00-5	ug/L	5	0.5	750	U	1500	U	3750	U	3750	U	375	U	37.5	U	375	U	750	U
1,1-Dichloroethane	75-34-3	ug/L	70	0.5	750	U	**2280**	J	3750	U	3750	U	375	U	**103**	J	**407**	J	750	U
1,1-Dichloroethene	75-35-4	ug/L	7	0.5	**2330**	--	**1830**	J	**1910**	J	2500	U	**640**	--	**60.7**	J	**261**	J	**1290**	--
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	2	2500	U	5000	U	12500	U	12500	U	1250	U	125	U	1250	U	2500	U
1,2-Dichlorobenzene	95-50-1	ug/L	600	0.5	2500	U	5000	U	12500	U	12500	U	1250	U	125	U	1250	U	2500	U
1,2-Dichloroethane	107-06-2	ug/L	1	0.5	500	U	1000	U	2500	U	2500	U	250	U	25	U	250	U	500	U
1,4-Dichlorobenzene	106-46-7	ug/L	75	0.5	2500	U	5000	U	12500	U	12500	U	1250	U	125	U	1250	U	2500	U
2-Butanone (MEK)	78-93-3	ug/L	400	5	6890	U	10000	U	25000	U	25000	U	2500	U	250	U	2500	U	5000	U
2-Hexanone	591-78-6	ug/L	140	5	5000	U	10000	U	25000	U	25000	U	2500	U	250	U	2500	U	5000	U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	350	5	5000	U	10000	U	25000	U	25000	U	2500	U	250	U	2500	U	5000	U
Acetone	67-64-1	ug/L	700	5	100000	UJ	10000	U	25000	U	25000	U	50000	UJ	250	U	2500	U	5000	U
Benzene	71-43-2	ug/L	1	0.5	**497**	J	1000	U	2500	U	2500	U	**79.9**	J	25	U	250	U	**174**	J
Bromomethane	74-83-9	ug/L	9.8	0.5	1000	U	2000	UJ	5000	U	5000	U	500	U	50	UJ	**156**	J	1000	U
Carbon disulfide	75-15-0	ug/L	700	0.5	5000	U	10000	U	25000	U	25000	U	2500	U	250	U	2500	U	5000	U
Carbon tetrachloride	56-23-5	ug/L	5	0.5	500	U	1000	U	2500	U	2500	U	250	U	25	U	250	U	500	U
Chlorobenzene	108-90-7	ug/L	100	0.5	500	U	1000	U	2500	U	2500	U	250	U	25	U	250	U	500	U
Chloroethane	75-00-3	ug/L	12.1	0.5	**890**	J	**558**	J	5000	U	5000	U	500	U	50	U	500	U	1000	U
Chloroform	67-66-3	ug/L	6	0.5	750	U	1500	U	3750	U	3750	U	375	U	37.5	U	375	U	750	U
Chloromethane	74-87-3	ug/L	2.7	0.5	2500	U	5000	U	12500	U	12500	U	1250	U	125	U	1250	U	2500	U
cis-1,2-Dichloroethene	156-59-2	ug/L	70	0.5	**381000**	--	**289000**	J	**289000**	--	**299000**	--	**80600**	--	**7360**	J	**32300**	J	**86100**	--
Ethylbenzene	100-41-4	ug/L	700	0.5	**3990**	--	3140	UJ	**3640**	--	**3760**	--	**3440**	--	123	UJ	1740	UJ	**3610**	--
Hexachlorobutadiene	87-68-3	ug/L	0.45	0.45	600	U	1200	U	3000	U	3000	U	300	U	30	U	300	U	600	U
Methylene chloride	75-09-2	ug/L	5	0.5	**917**	J	**872**	J	25000	U	25000	U	2500	U	250	U	2500	U	5000	U
Naphthalene	91-20-3	ug/L	280	0.5	2500	U	5000	U	12500	U	12500	U	1250	U	125	U	1250	U	2500	U
Styrene	100-42-5	ug/L	100	0.5	**390**	J	2000	U	5000	U	5000	U	500	U	50	U	500	U	1000	U
Tetrachloroethene	127-18-4	ug/L	5	0.5	**7200**	--	**6120**	J	**6630**	--	**7270**	--	**201**	J	**28.9**	J	**198**	J	500	U
Tetrahydrofuran	109-99-9	ug/L	4.6	0.5	5000	U	10000	U	25000	U	25000	U	2500	U	250	U	2500	U	5000	U
Toluene	108-88-3	ug/L	1000	0.5	**44900**	--	38300	UJ	**40000**	--	**41000**	--	**15200**	--	652	UJ	7490	UJ	**21600**	--
trans-1,2-Dichloroethene	156-60-5	ug/L	100	0.5	750	U	1500	U	3750	U	3750	U	375	U	37.5	U	375	U	750	U
trans-1,3-Dichloropropene	10061-02-6	ug/L	0.5	0.5	500	U	1000	U	2500	U	2500	U	250	U	25	U	250	U	500	U
Trichloroethene	79-01-6	ug/L	5	0.5	**159000**	--	**136000**	--	**165000**	--	**172000**	--	250	U	25	U	250	U	**427**	J
Vinyl chloride	75-01-4	ug/L	2	0.5	**16000**	--	**12000**	J	**12200**	--	**12800**	--	**3140**	--	**185**	J	**1100**	J	**9100**	--
Xylenes, Total	1330-20-7	ug/L	530	0.5	**9030**	--	7560	UJ	**8710**	J	**8910**	J	**7930**	--	304	UJ	4170	UJ	**9050**	--
Halogenated VOCs Total	THVO	ug/L	--	--	**567727**	--	**452660**	--	**474740**	--	**491070**	--	**84581**	--	**7737.6**	--	**35316**	--	**96917**	--
Non-Halogenated VOCs Total	TNHVO	ug/L	--	--	**58417**	--	0	--	**52350**	--	**53670**	--	**26649.9**	--	0	--	0	--	**34434**	--
Total Volatile Organics L-1 GW	TVO	ug/L	--	--	**626144**	--	**452660**	--	**527090**	--	**544740**	--	**111230.9**	--	**7737.6**	--	**35316**	--	**131351**	--

Notes:

U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
ug/L = micrograms per liter
VOCs = volatile organic compounds
Action Level = the lower of the USEPA Maximum Contaminant Level (MCL)
and the Connecticut Class GA Groundwater Protection Criteria (GWPC)
ICL = Interim Cleanup Level based on Table L-1 from Record of Decision
Summary, September 2005
Bold = Analyte detected above the laboratory reporting limit
Shaded Cell = Analyte detected above the Action Level
MOB = Middle Overburden
DOB = Deep Overburden
October 2015 Data are unvalidated

Table 4 - Post-Thermal Treatment Groundwater Sample Results – MNA Parameters - November 2015
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

Sample Location			MW-413		MW-413		MW-413		MW-413		MW-415		MW-415		MW-415		MW-416		MW-416		MW-416		MW-902D		MW-902D		MW-902D	
Sample Date			3/18/2015 0:00		3/18/2015 14:30		7/17/2015 11:10		11/23/2015 10:00		3/18/2015 14:45		7/17/2015 11:45		11/23/2015 10:15		3/18/2015 15:12		7/17/2015 14:17		11/23/2015 11:15		3/18/2015 15:43		7/17/2015 13:40		11/23/2015 11:00	
Field Sample ID			DUPLICATE-GW-03182015		MW-413-HS-03182015		MW-413-HS-07172015		MW-413-HS-11232015		MW-415-HS-03182015		MW-415-HS-07172015		MW-415-HS-11232015		MW-416-HS-03182015		MW-416-HS-07172015		MW-416-HS-11232015		MW-902D-HS-03182015		MW-902D-HS-07172015		MW-902D-HS-11232015	
Well Group			N		N		N		N		N		N		N		N		N		N		N		N		N	
HydroStratZone(s)			DOB		DOB		DOB		DOB		MOB		MOB		MOB		SBR		SBR		SBR		DOB		DOB		DOB	
Analyte	**CAS No.**	**Unit**																										
MNA																												
Alkalinity	ALK	mg/L	**345**	J	**345**	J	**438**	--	**291**	--	**27.8**	J	**63.2**	--	**266**	--	**107**	J	**112**	--	**108**	--	**168**	J	**173**	--	**433**	--
Chloride	16887-00-6	mg/L	**84.1**	--	**81.2**	--	**740**	--	**219**	--	**1.22**	--	**225**	--	**129**	--	**11.5**	--	**15.1**	--	**15.3**	--	**74.3**	--	**65**	--	**776**	--
Iron (Dissolved)	7439-89-6	ug/L	**37**	J	**71000**	--	**180000**	--	**62000**	--	**34**	J	**22000**	J	**13000**	--	**38**	J	**100**	--	**32**	J	**37000**	--	**36000**	--	**210000**	--
Manganese (Dissolved)	7439-96-5	ug/L	**282**	--	**15200**	--	**39700**	J	**11400**	--	**284**	--	**4160**	J	**2080**	--	**7.8**	J	**29.7**	--	**17.9**	--	**7040**	--	**5940**	--	**33400**	--
Nitrate as N	14797-55-8	mg/L	0.5	UJ	0.5	UJ	0.1	U	**0.063**	J	**0.142**	J	0.04	U	**0.019**	J	**0.554**	J	**0.675**	--	**0.664**	--	0.5	UJ	0.1	U	0.1	U
Nitrite as N	14797-65-0	mg/L	**0.097**	--	**0.114**	--	**0.148**	--	**0.053**	--	0.05	U	**0.07**	--	**0.021**	J	0.05	U	0.05	U	**0.026**	J	0.072	U	0.057	U	**0.154**	--
Sulfate	14808-79-8	mg/L	**0.207**	J	**0.099**	J	**3.54**	--	**2.97**	--	**7.09**	--	**33.6**	--	**26.2**	--	**97.6**	--	**85**	--	**90.7**	--	**0.529**	J	**30.2**	--	**4.63**	--
Total Organic Carbon	TOC	mg/L	**220**	J	**220**	J	**490**	J	**87**	--	**1.4**	J	**16**	J	**46**	--	**1.9**	J	1.4	UJ	**0.8**	J	**56**	J	**64**	J	**270**	--
Ethane	74-84-0	ug/L	**200**	--	**230**	--	**220**	--	**680**	--	0.015	U	**0.11**	J	**18**	--	0.18	U	**0.027**	J	**0.45**	--	**7.6**	--	**5.2**	--	**110**	--
Ethene	74-85-1	ug/L	**1900**	J	**2200**	J	**140**	--	**2.3**	--	0.054	U	**4.8**	--	**91**	--	0.084	U	0.2	U	**0.54**	--	**1300**	J	**980**	--	**1600**	--
Methane	74-82-8	ug/L	**2000**	--	**2300**	--	**3000**	J	**14000**	--	0.3	UJ	**42**	J	**1200**	--	**4.9**	J	1.6	UJ	**55**	--	**290**	--	**280**	J	**12000**	--

Notes:
- **U** = Analyte not detected above the laboratory reporting limit
- **J** = Analyte result is estimated
- **ug/L** = micrograms per liter
- **mg/L** = milligrams per liter
- **Bold** = Analyte detected above the laboratory reporting limit
- **Shaded Cell** = Analyte detected above the Action Level
- **SOB** = Shallow Overburden
- **MOB** = Middle Overburden
- **DOB** = Deep Overburden
- **SBR** = Shallow Bedrock

Table 4 - Post-Thermal Treatment Groundwater Sample Results – MNA Parameters - November 2015
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

Sample Location			MW-902M		MW-902M		MW-902M		MWL-304		MWL-304		MWL-304		MWL-307		MWL-307		MWL-307		TW-08A		TW-08A		TW-08A	
Sample Date			3/18/2015 16:03		7/17/2015 12:20		11/23/2015 10:30		3/18/2015 12:27		7/17/2015 8:50		11/23/2015 9:00		3/18/2015 15:15		7/17/2015 14:55		11/23/2015 11:30		3/18/2015 13:54		7/17/2015 10:05		11/23/2015 9:45	
Field Sample ID			MW-902M-HS-03182015		MW-902M-HS-07172015		MW-902M-HS-11232015		MWL-304-HS-03182015		MWL-304-HS-07172015		MWL-304-HS-11232015		MWL-307-HS-03182015		MWL-307-HS-07172015		MWL-307-HS-11232015		TW-08A-HS-03182015		TW-08A-HS-07172015		TW-08A-HS-11232015	
Well Group			N		N		N		N		N		N		N		N		N		N		N		N	
HydroStratZone(s)			MOB		MOB		MOB		SOB		SOB		SOB		SOB		SOB		SOB		MOB		MOB		MOB	
Analyte	**CAS No.**	**Unit**																								
MNA																										
Alkalinity	ALK	mg/L	**321**	J	**300**	--	**318**	--	**108**	J	**374**	--	**295**	--	**69.8**	J	**219**	--	**425**	--	**85.8**	J	**255**	--	**301**	--
Chloride	16887-00-6	mg/L	**151**	--	**108**	--	**139**	--	**2840**	--	**417**	--	**119**	--	**18.5**	--	**984**	--	**780**	--	**70**	--	**630**	--	**221**	--
Iron (Dissolved)	7439-89-6	ug/L	**48000**	--	**31000**	--	**30000**	--	**7800**	--	**64000**	--	**53000**	--	**11000**	--	**23000**	--	**78000**	--	**4500**	--	**78000**	--	**33000**	--
Manganese (Dissolved)	7439-96-5	ug/L	**9880**	--	**6450**	--	**6380**	--	**16100**	--	**12200**	--	**11900**	--	**4130**	--	**6540**	--	**18400**	--	**1470**	--	**18500**	--	**7350**	--
Nitrate as N	14797-55-8	mg/L	0.5	UJ	0.034	U	**0.054**	J	**0.21**	J	0.1	U	**0.022**	J	0.1	UJ	0.1	U	**0.111**	--	0.1	UJ	0.1	U	**0.176**	--
Nitrite as N	14797-65-0	mg/L	**0.09**	--	0.05	U	**0.03**	J	**0.05**	--	0.055	U	**0.022**	J	0.05	U	0.05	U	**0.063**	--	0.05	U	**0.086**	--	**0.056**	--
Sulfate	14808-79-8	mg/L	1	U	**8.9**	--	**2.39**	--	**19.9**	--	**20.7**	--	**4.09**	--	**12.8**	--	**2.7**	--	**10.2**	--	**16.1**	--	**4.9**	--	**4.93**	--
Total Organic Carbon	TOC	mg/L	**85**	J	**56**	J	**41**	--	**6.8**	J	**22**	J	**27**	--	**11**	J	**230**	J	**120**	--	**23**	J	**320**	J	**87**	--
Ethane	74-84-0	ug/L	**780**	--	**590**	--	**920**	--	**2.8**	--	**99**	--	**1300**	--	**2**	--	**0.23**	--	**270**	--	**1.3**	--	**0.49**	--	**12**	--
Ethene	74-85-1	ug/L	**640**	--	**870**	--	**12**	--	**200**	--	**1100**	--	**620**	--	**100**	--	**25**	--	**790**	--	**14**	--	**35**	--	**98**	--
Methane	74-82-8	ug/L	**21000**	--	**14000**	J	**13000**	--	**1400**	--	**1900**	J	**10000**	--	**110**	--	**2100**	J	**12000**	--	**9100**	--	**1100**	J	**7900**	--

Notes:
U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
ug/L = micrograms per liter
mg/L = milligrams per liter
Bold = Analyte detected above the laboratory reporting limit
Shaded Cell = Analyte detected above the Action Level
SOB = Shallow Overburden
MOB = Middle Overburden
DOB = Deep Overburden
SBR = Shallow Bedrock

Table 4 - Post-Thermal Treatment Groundwater Sample Results – MNA Parameters - November 2015
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

Sample Location			TW-08B		TW-08B		TW-08B		TW-08B		TW-08D		TW-08D		TW-08D		TW-08D	
Sample Date			3/18/2015 13:22		7/17/2015 12:00		11/23/2015 0:00		11/23/2015 14:00		3/18/2015 12:48		7/17/2015 0:00		7/17/2015 9:22		11/23/2015 9:30	
Field Sample ID			TW-08B-HS-03182015		TW-08B-HS-07172015		DUPLICATE-GW-11232015		TW-08B-11232015		TW-08D-HS-03182015		DUP-GW-07172015		TW-08D-HS-07172015		TW-08D-HS-11232015	
Well Group			N		N		N		N		N		N		N		N	
HydroStratZone(s)			SBR		SBR		SBR		SBR		DOB		DOB		DOB		DOB	
Analyte	**CAS No.**	**Unit**																
MNA																		
Alkalinity	ALK	mg/L	**250**	J	**236**	--	**241**	--	**241**	--	**146**	J	**232**	--	**134**	--	**192**	--
Chloride	16887-00-6	mg/L	**195**	--	**182**	--	**182**	--	**185**	--	**61.1**	--	**186**	--	**50.5**	--	**75.4**	--
Iron (Dissolved)	7439-89-6	ug/L	**11000**	--	**4900**	--	**4300**	--	**4500**	--	**5100**	--	**5200**	--	**3300**	--	**5100**	--
Manganese (Dissolved)	7439-96-5	ug/L	**7880**	--	**4980**	--	**4370**	--	**4500**	--	**3200**	--	**4940**	--	**2210**	--	**3540**	--
Nitrate as N	14797-55-8	mg/L	0.5	UJ	0.1	U	**0.023**	J	**0.023**	J	0.5	UJ	0.019	U	0.1	U	0.1	U
Nitrite as N	14797-65-0	mg/L	0.05	U	0.05	U	**0.027**	J	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Sulfate	14808-79-8	mg/L	**1.68**	--	**1.79**	--	**5.62**	--	**6.02**	--	**1.78**	--	**1.99**	--	**0.973**	J	**2.64**	--
Total Organic Carbon	TOC	mg/L	**24**	J	**26**	J	**31**	--	**28**	--	**8.2**	J	**26**	J	**5.1**	J	**23**	--
Ethane	74-84-0	ug/L	**66**	--	**58**	--	**68**	--	**62**	--	**64**	--	**14**	--	**17**	--	**32**	--
Ethene	74-85-1	ug/L	**1900**	J	**1600**	J	**1300**	--	**1200**	--	**680**	--	**150**	--	**180**	--	**240**	--
Methane	74-82-8	ug/L	**2700**	--	**2000**	J	**2200**	--	**2000**	--	**1400**	--	**270**	J	**340**	J	**1300**	--

Notes:
U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
ug/L = micrograms per liter
mg/L = milligrams per liter
Bold = Analyte detected above the laboratory reporting limit
Shaded Cell = Analyte detected above the Action Level
SOB = Shallow Overburden
MOB = Middle Overburden
DOB = Deep Overburden
SBR = Shallow Bedrock

Table 5 – Post-Thermal Treatment Groundwater Sample Results – 1,4-Dioxane
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

Sample Location				MW-413		MW-415		MW-416		MW-902D		MW-902M		MWL-304		MWL-307		TW-08A		TW-08B		TW-08B		TW-08D	
Sample Date				10/23/2015 9:45		10/23/2015 9:00		10/23/2015 10:40		10/23/2015 10:15		10/23/2015 10:00		10/22/2015 14:45		10/23/2015 11:00		10/22/2015 15:20		10/22/2015 0:00		10/22/2015 11:50		10/22/2015 15:00	
Field Sample ID				MWL-413-HS-10232015		MWL-415-HS-10232015		MW-416-HS-10232015		MW-902D-HS-10232015		MW-902M-HS-10232015		MWL-304-HS-10222015		MWL-307-HS-10232015		TW-08A-HS-10222015		DUP-1-10222015		TW-08B-10222015		TW-08D-HS-10222015	
Well Group				N		N		N		N		N		N		N		N		N		N		N	
HydroStratZone(s)				DOB		MOB		SBR		DOB		MOB		SOB		SOB		MOB		SBR		SBR		DOB	
Analyte	**CAS No.**	**Unit**	**Action**																						
1,4-Dioxane	123-91-1	ug/L	20	**28.6**	--	**13.5**	--	**6.48**	--	**70.2**	--	**41.7**	--	**11.2**	--	**64.5**	--	**27.6**	--	**160**	--	**140**	--	**51.7**	--

Notes:
ug/L = micrograms per liter
Action Level = the lower of the USEPA Maximum Contaminant Level (MCL) and the Connecticut Class GA Groundwater Protection Criteria (GWPC)
Bold = Analyte detected above the laboratory reporting limit
Shaded Cell = Analyte detected above the Action Level
MOB = Middle Overburden
DOB = Deep Overburden
October 2015 Data are unvalidated

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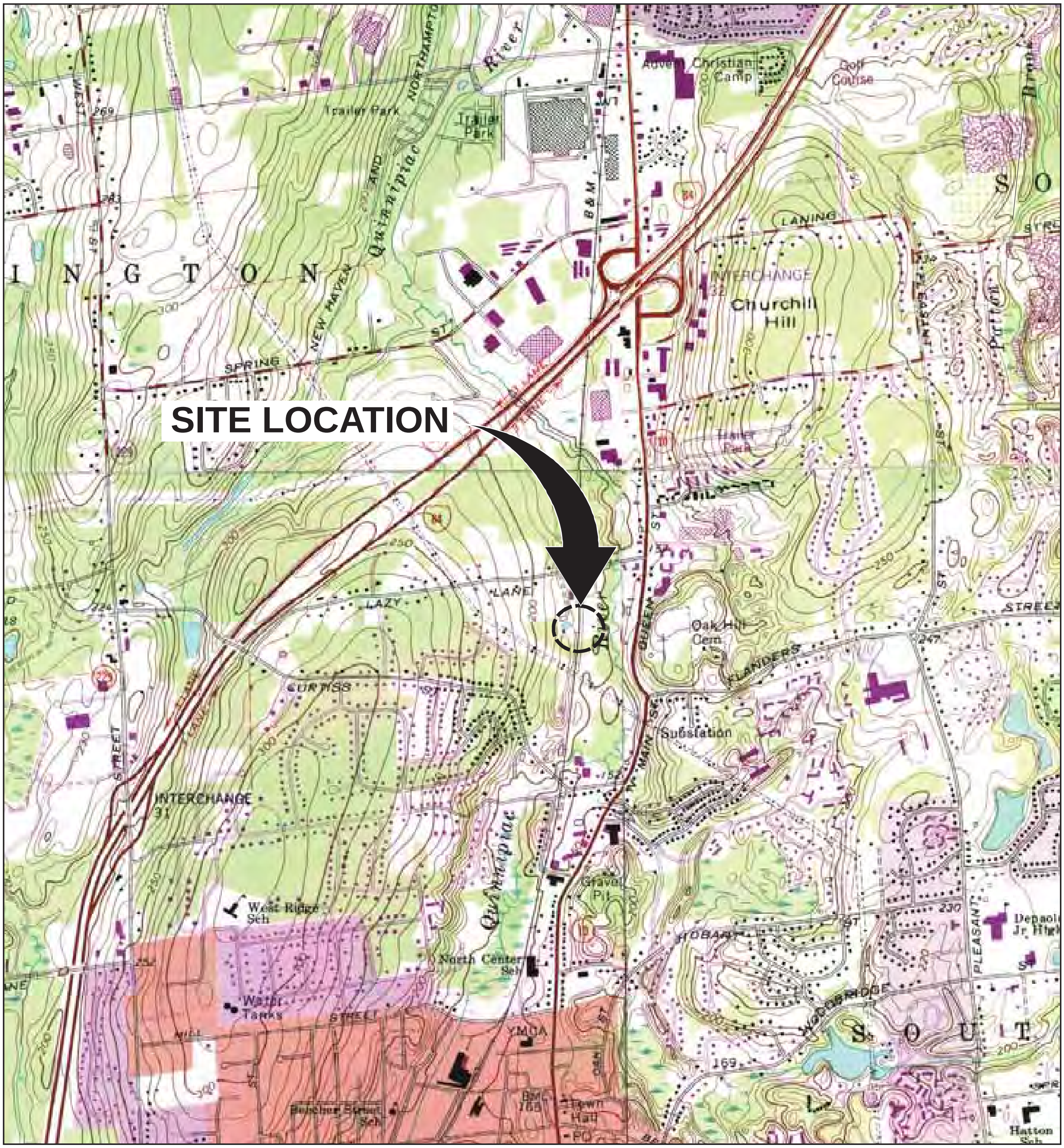
Table 6 - Statistical Summary of Groundwater Total VOC Concentration Trends

Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

		Data Range					Linear Regression Analysis						Mann-Kendall Analysis			Sen's Slope Analysis	
Well	Constituent	Minimum Concentration (µg/L)	Maximum Concentration (µg/L)	% of Data Below Laboratory Minimum Detection Limit	Start Date	End Date	Correlation Coefficient, R^2	p-value of Correlation	Estimated Attenuation Half-life (days)	Trend Direction (slope of trend line)	Trend Significant?	Comments	p-value of Correlation	Trend Direction	Trend Significant?	Estimated Attenuation Half-life (days)	Trend Direction
Shallow Overburden Wells																	
P-13	Total VOCs	2.4	69	0	3/28/1995	6/9/2015	0.44	0.001	2,725	Decreasing	Yes		<0.001	Decreasing	Yes	2,235	Decreasing
MWL-312	Total VOCs	<0.5	49	72	3/27/1995	6/10/2014	0.17	0.09	1,936	Decreasing	Yes	72% of results below detection	0.050	Decreasing	Yes	NA	No Trend
P-101C	Total VOCs	8.0	479	0	3/27/1995	6/10/2015	0.76	<0.001	1,820	Decreasing	Yes		<0.001	Decreasing	Yes	1,873	Decreasing
Middle Overburden Wells																	
MW-03	Total VOCs	0.3	120	0	12/5/1996	6/8/2015	0.35	0.005	1,434	Decreasing	Yes		0.010	Decreasing	Yes	1,216	Decreasing
MW-205B	Total VOCs	<0.5	24	11	3/23/1995	6/12/2014	0.44	0.003	1,447	Decreasing	Yes		0.002	Decreasing	Yes	1,359	Decreasing
P-101B	Total VOCs	1	187,400	0	3/27/1995	6/10/2015	0.79	<0.001	577	Decreasing	Yes		<0.001	Decreasing	Yes	573	Decreasing
MW-127B	Total VOCs	<0.5	22	11	3/23/1995	6/11/2014	0.33	0.01	1,648	Decreasing	Yes		0.018	Decreasing	Yes	1,777	Decreasing
MW-501B	Total VOCs	1.8	65	0	3/24/1995	6/11/2014	0.50	<0.001	1,369	Decreasing	Yes		<0.001	Decreasing	Yes	1,118	Decreasing
Deep Overburden Wells																	
MW-204B	Total VOCs	<0.5	87	17	3/28/1995	6/9/2014	0.21	0.05	1,703	Decreasing	Yes		0.001	Decreasing	Yes	924	Decreasing
MW-502	Total VOCs	630	118,160	0	3/21/1995	6/10/2015	0.73	<0.001	1,199	Decreasing	Yes		<0.001	Decreasing	Yes	1,650	Decreasing
MW-704D	Total VOCs	7.0	665	0	12/18/1996	6/9/2015	0.16	0.07	3,132	Decreasing	Yes		0.051	Decreasing	Yes	3,465	Decreasing
MW-707D	Total VOCs	<0.5	21	53	12/6/1996	6/10/2014	<0.001	0.93	NA	No Trend	No	53% of results below detection	0.223	Decreasing	No	NA	No Trend
Shallow Bedrock Wells																	
MW-127C	Total VOCs	9.85	147	0	3/23/1995	6/10/2015	0.65	<0.001	2,802	Decreasing	Yes		<0.001	Decreasing	Yes	3,013	Decreasing
MW-128	Total VOCs	2.2	15	0	3/23/1995	6/11/2014	0.62	<0.001	2,966	Decreasing	Yes		<0.001	Decreasing	Yes	2,390	Decreasing
MW-204A	Total VOCs	0.9	682	0	3/28/1995	6/9/2014	0.62	<0.001	872	Decreasing	Yes		<0.001	Decreasing	Yes	762	Decreasing
MW-501A	Total VOCs	9	118	0	3/24/1995	6/11/2014	0.85	<0.001	1,795	Decreasing	Yes		<0.001	Decreasing	Yes	1,690	Decreasing
P-11A	Total VOCs	223	26,400	0	3/27/1995	6/10/2015	0.1	0.13	NA	No Trend	No	Changed from decreasing in 2011	0.500	Decreasing	No	NA	NS
Deep Bedrock Wells																	
MW-703DR	Total VOCs	<0.5	8.0	76	12/9/1996	6/10/2014	0.005	0.79	NA	No Trend	No	76% of results below detection	0.401	Decreasing	No	NA	No Trend
MW-704DR	Total VOCs	11	455	0	12/17/1996	6/9/2015	0.56	<0.001	2,599	Decreasing	Yes		<0.001	Decreasing	Yes	3,147	Decreasing
MW-706DR	Total VOCs	2,079	11,240	0	12/10/1996	6/10/2015	0.31	0.01	6,137	Decreasing	Yes		0.055	Decreasing	Yes	9,679	NS
MW-707DR	Total VOCs	<0.5	18	30	12/30/1996	6/10/2015	0.16	0.06	NA	Increasing	Yes		0.051	Increasing	Yes	NA	NA
MW-707DR	Total VOCs	1.31	16.86	0	4/20/2004	6/10/2015	0.33	0.06	2,379	Decreasing	Yes	Using data starting in April 2004	0.043	Decreasing	Yes	2,077	Decreasing

Notes and Assumptions:
µg/L = micrograms per liter
NS = no significant trend
NA = not applicable due to increasing trend or non-significant trend

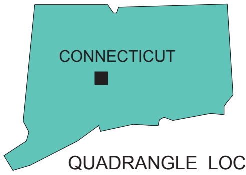
Figures



REFERENCE: SOUTHINGTON, CONN. USGS QUAD. 1968 PR 1992, MERIDEN, CONN. USGS QUAD. 1966 PR 1984, NEW BRITAIN, CONN. USGS QUAD. 1966 PR 1984, & BRISTOL, CONN. USGS QUAD 1967 PR 1984

2000' 0 2000'

APPROX. SCALE: 1" = 2000'



QUADRANGLE LOCATION

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1

09/16/2010 SYRACUSE, NY-ENV/CAD DJHOWES, LJPOSENAUER
B0054634\0000\02200\CDR\54634N01.CDR

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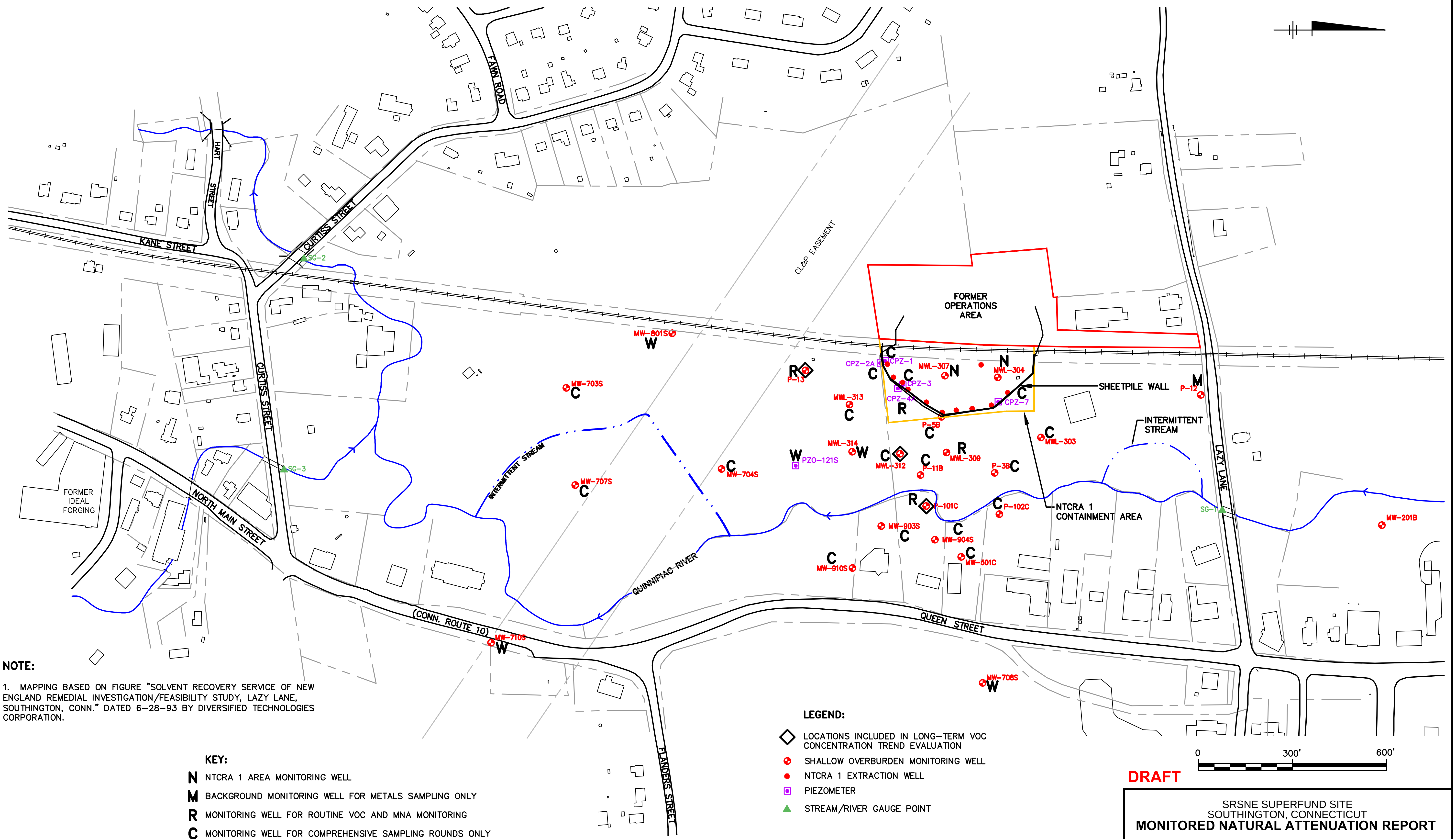

NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

KEY:

N	NTCRA 1 AREA MONITORING WELL
M	BACKGROUND MONITORING WELL FOR METALS SAMPLING ONLY
R	MONITORING WELL FOR ROUTINE VOC AND MNA MONITORING
C	MONITORING WELL FOR COMPREHENSIVE SAMPLING ROUNDS ONLY
W	MONITORING WELL FOR WATER LEVEL MEASUREMENT ONLY

LEGEND:

◇	LOCATIONS INCLUDED IN LONG-TERM VOC CONCENTRATION TREND EVALUATION
⊕	SHALLOW OVERBURDEN MONITORING WELL
●	NTCRA 1 EXTRACTION WELL
▣	PIEZOMETER
▲	STREAM/RIVER GAUGE POINT

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SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER MONITORING LOCATIONS SHALLOW OVERBURDEN

ARCADIS

FIGURE
2

CITY: SYRACUSE, NY GROUP: ENVCAD DB: P. LISTER PM: M. GEFELL TM: M. GEFELL TR: R. STEVENSON LYR: ON=*;OFF=REF, (FRZ)
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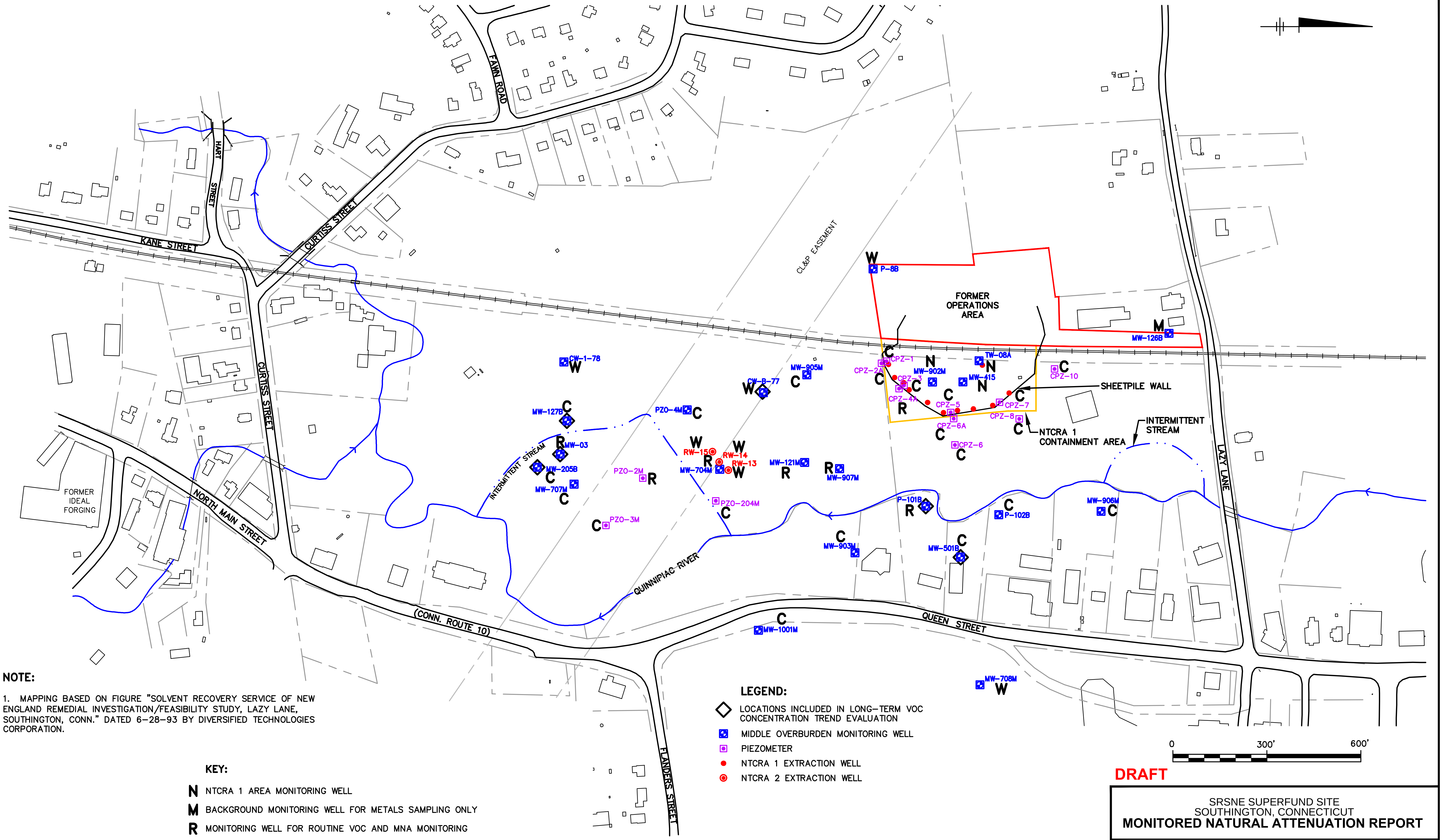

NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

KEY:

N NTCRA 1 AREA MONITORING WELL
M BACKGROUND MONITORING WELL FOR METALS SAMPLING ONLY
R MONITORING WELL FOR ROUTINE VOC AND MNA MONITORING
C MONITORING WELL FOR COMPREHENSIVE SAMPLING ROUNDS ONLY
W MONITORING WELL FOR WATER LEVEL MEASUREMENT ONLY

LEGEND:

◇ LOCATIONS INCLUDED IN LONG-TERM VOC CONCENTRATION TREND EVALUATION
▣ MIDDLE OVERBURDEN MONITORING WELL
▣ PIEZOMETER
● NTCRA 1 EXTRACTION WELL
◉ NTCRA 2 EXTRACTION WELL

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SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER MONITORING LOCATIONS MIDDLE OVERBURDEN

ARCADIS

FIGURE
3

CITY: SYRACUSE, NY GROUP: ENVCAD DB: P. LISTER PM: M. GEFELL TM: M. GEFELL TR: R. STEVENSON LYR: ON=*;OFF=REF, (FRZ)
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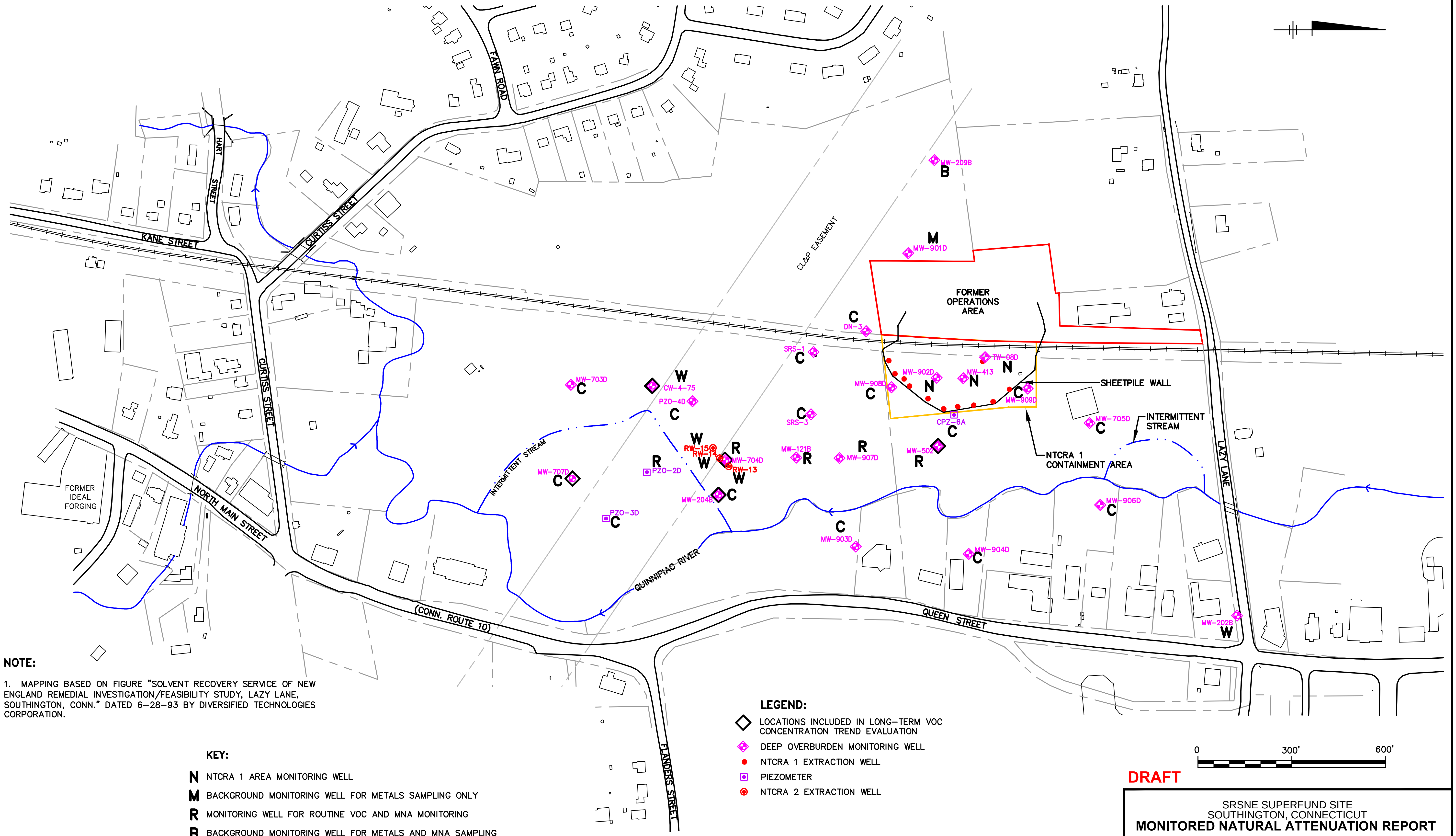

NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

KEY:

N	NTCRA 1 AREA MONITORING WELL
M	BACKGROUND MONITORING WELL FOR METALS SAMPLING ONLY
R	MONITORING WELL FOR ROUTINE VOC AND MNA MONITORING
B	BACKGROUND MONITORING WELL FOR METALS AND MNA SAMPLING
C	MONITORING WELL FOR COMPREHENSIVE SAMPLING ROUNDS ONLY
W	MONITORING WELL FOR WATER LEVEL MEASUREMENT ONLY

LEGEND:

◇	LOCATIONS INCLUDED IN LONG-TERM VOC CONCENTRATION TREND EVALUATION
◈	DEEP OVERBURDEN MONITORING WELL
●	NTCRA 1 EXTRACTION WELL
▣	PIEZOMETER
◉	NTCRA 2 EXTRACTION WELL

0 300' 600'

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SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER MONITORING LOCATIONS DEEP OVERBURDEN

ARCADIS

FIGURE
4

CITY: SYRACUSE, NY GROUP: ENVCAD DB: P. LISTER PM: M. GEFELL TM: M. GEFELL TR: B. STEVENSON LYR: ON=*;OFF=REF (FRZ)
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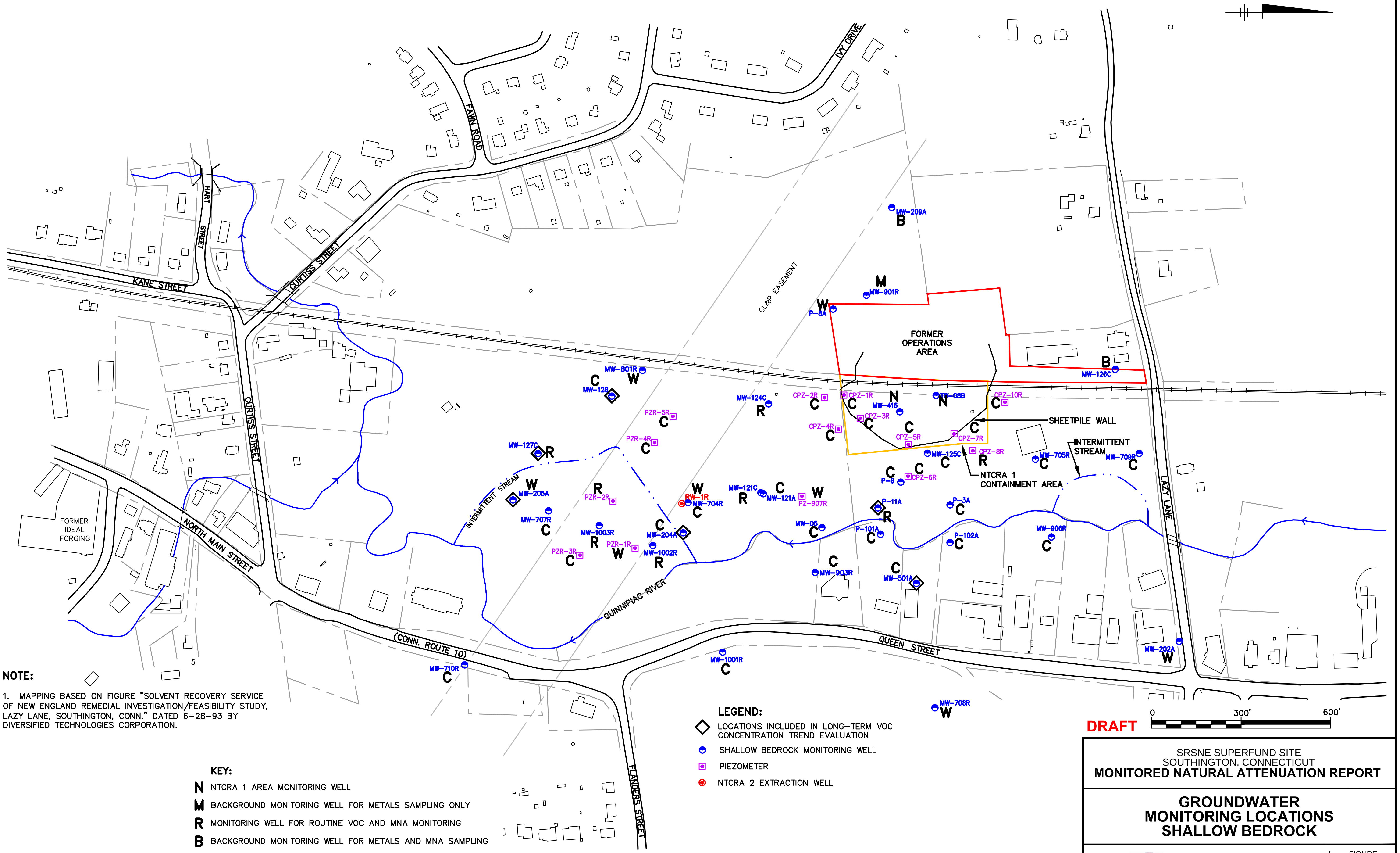

NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

KEY:

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M	BACKGROUND MONITORING WELL FOR METALS SAMPLING ONLY
R	MONITORING WELL FOR ROUTINE VOC AND MNA MONITORING
B	BACKGROUND MONITORING WELL FOR METALS AND MNA SAMPLING
C	MONITORING WELL FOR COMPREHENSIVE SAMPLING ROUNDS ONLY
W	MONITORING WELL FOR WATER LEVEL MEASUREMENT ONLY

LEGEND:

◇	LOCATIONS INCLUDED IN LONG-TERM VOC CONCENTRATION TREND EVALUATION
●	SHALLOW BEDROCK MONITORING WELL
▣	PIEZOMETER
◉	NTCRA 2 EXTRACTION WELL

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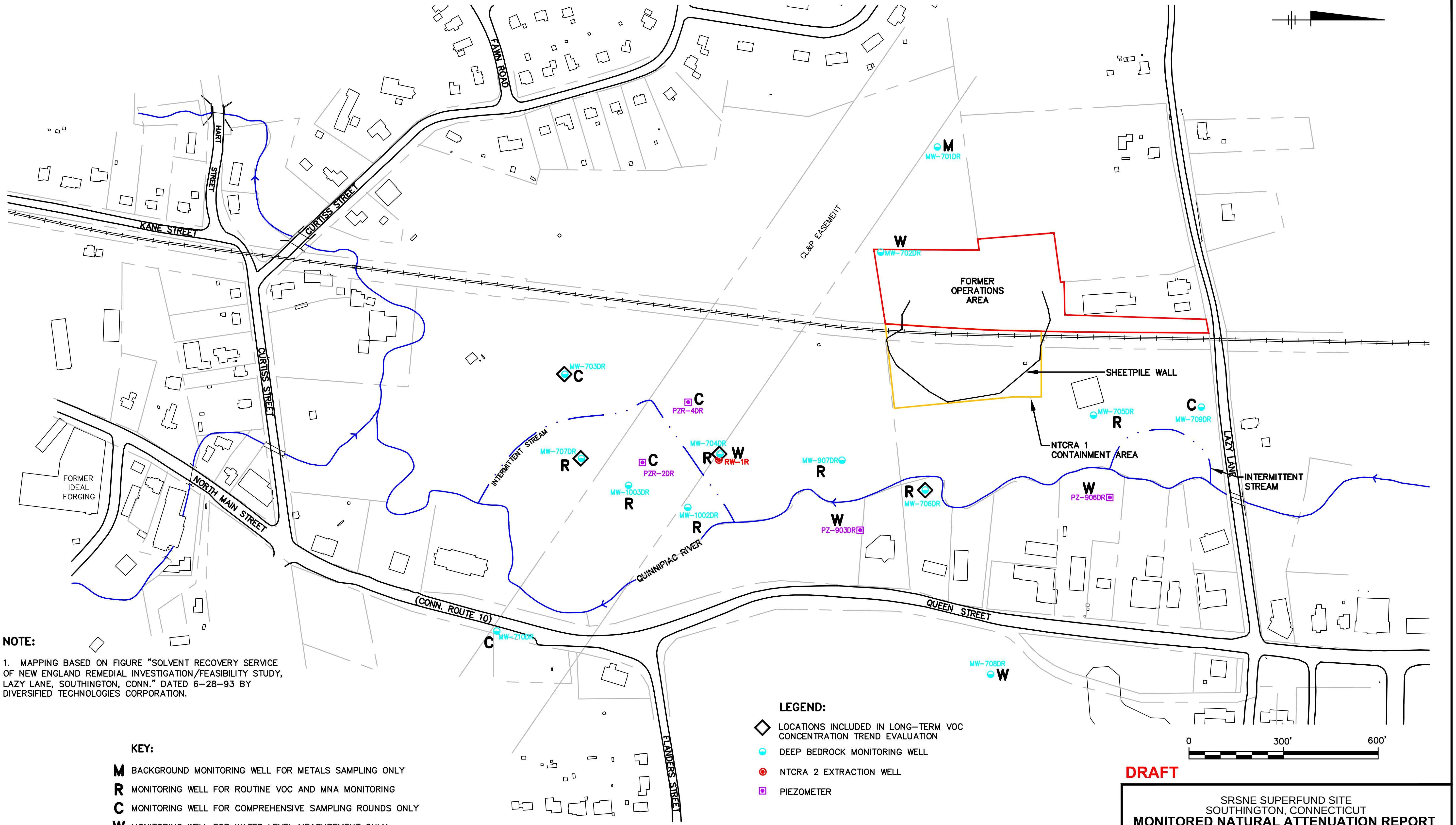
SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER MONITORING LOCATIONS SHALLOW BEDROCK

ARCADIS

FIGURE
5



NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

KEY:

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R MONITORING WELL FOR ROUTINE VOC AND MNA MONITORING
C MONITORING WELL FOR COMPREHENSIVE SAMPLING ROUNDS ONLY
W MONITORING WELL FOR WATER LEVEL MEASUREMENT ONLY

LEGEND:

◇ LOCATIONS INCLUDED IN LONG-TERM VOC CONCENTRATION TREND EVALUATION
◒ DEEP BEDROCK MONITORING WELL
◉ NTCRA 2 EXTRACTION WELL
▣ PIEZOMETER

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SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER
MONITORING LOCATIONS
DEEP BEDROCK

ARCADIS

FIGURE
6

CITY: SYRACUSE, NY DIV/GROUP: ENV/IM-DV DB: P. LISTER PM: J. HOLDEN TM/TR: R. STEVENSON LYR: ON=*;OFF=REF (FRZ) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 10/26/2015 3:13 PM BY: SMALL, BRIAN
G:\ENVCAD\Manchester\ACT\B0054634\0001\02200\MNA\54634C06.DWG LAYOUT: 6 SAVED: 10/26/2015 3:04 PM ACADVER: 19.1S (LMS TECH)
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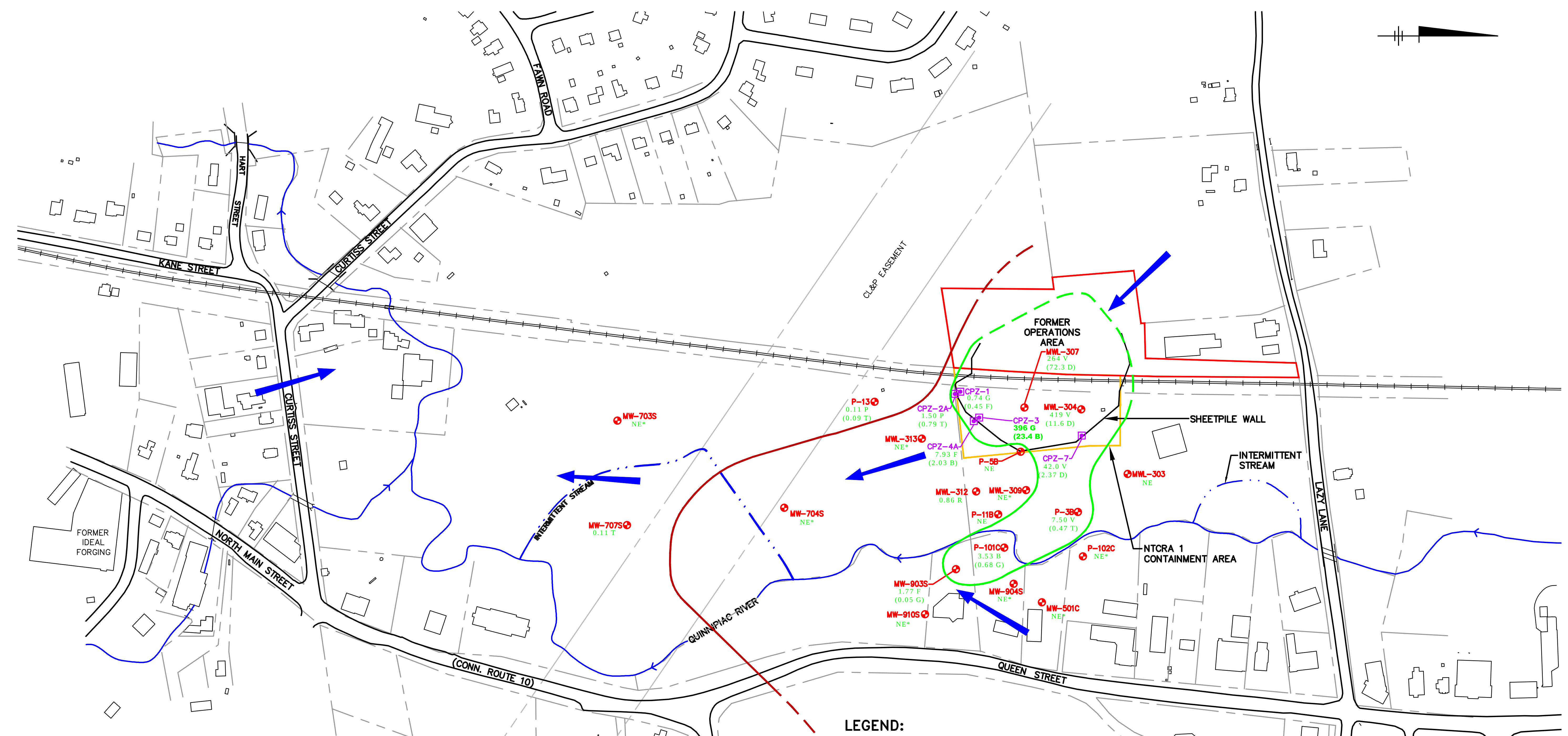

CITY: SYRACUSE, NY DIV/GROUP: ENV/IM-DV DB: P. LISTER PM: J. HOLDEN TM/TR: R. STEVENSON LYR: ON=*;OFF=REF, (FRZ)
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XREFS: 54634X01 IMAGES: PROJECTNAME: ----

NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

2. POSTED DATA ARE THE LATEST SAMPLING RESULTS AT EACH WELL, AS OF JUNE 2015.

KEY:

B	BENZENE
D	CIS-1,2-DICHLOROETHENE
F	TETRAHYDROFURAN
G	CHLOROETHANE
N	ACETONE
P	TETRACHLOROETHENE
R	TRANS-1,3-DICHLOROPROPENE
T	TRICHLOROETHENE
V	VINYL CHLORIDE
NE	EXCEEDANCE RATIO LESS THAN 0.10

LEGEND:

⊕	SHALLOW OVERBURDEN MONITORING WELL
▣	PIEZOMETER
🟩	ESTIMATED EXTENT OF GROUNDWATER VOC EXCEEDANCES OF MCLs OR CT DEEP CLASS GA GWPCs (2014–2015 SAMPLING RESULTS) (DASHED WHERE INFERRED)
🟥	ESTIMATED NTCRA 2 CAPTURE ZONE BOUNDARY
←	GENERALIZED GROUNDWATER FLOW DIRECTION
⊕P-101C 3.53 B (0.68 G)	WELL WITH REGULATORY EXCEEDANCE RATIO. NUMBERS >1.0 INDICATE GROUNDWATER REGULATORY LIMIT EXCEEDED. NUMBERS <1.0 INDICATE EXCEEDANCE RATIO FOR COMPOUNDS DETECTED BELOW REGULATORY LIMIT. FIRST NUMBER INDICATES MAXIMUM MULTIPLE OF A DETECTED VOC OVER REGULATORY LIMIT (e.g., 130 INDICATES 130 x LIMIT). LETTER INDICATES COMPOUND WITH INDICATED EXCEEDANCE RATIO (e.g., P = TETRACHLOROETHENE). NUMBERS IN PARENTHESES INDICATE OTHER EXCEEDANCE RATIOS FOR SELECT COMPOUNDS AND WELLS. COMPOUNDS DETECTED IN BLANK(S) ARE NOT INCLUDED IN THIS EVALUATION.
*	NO DETECTIONS ABOVE INTERIM CLEANUP LEVELS (ICLs) AT THIS LOCATION.

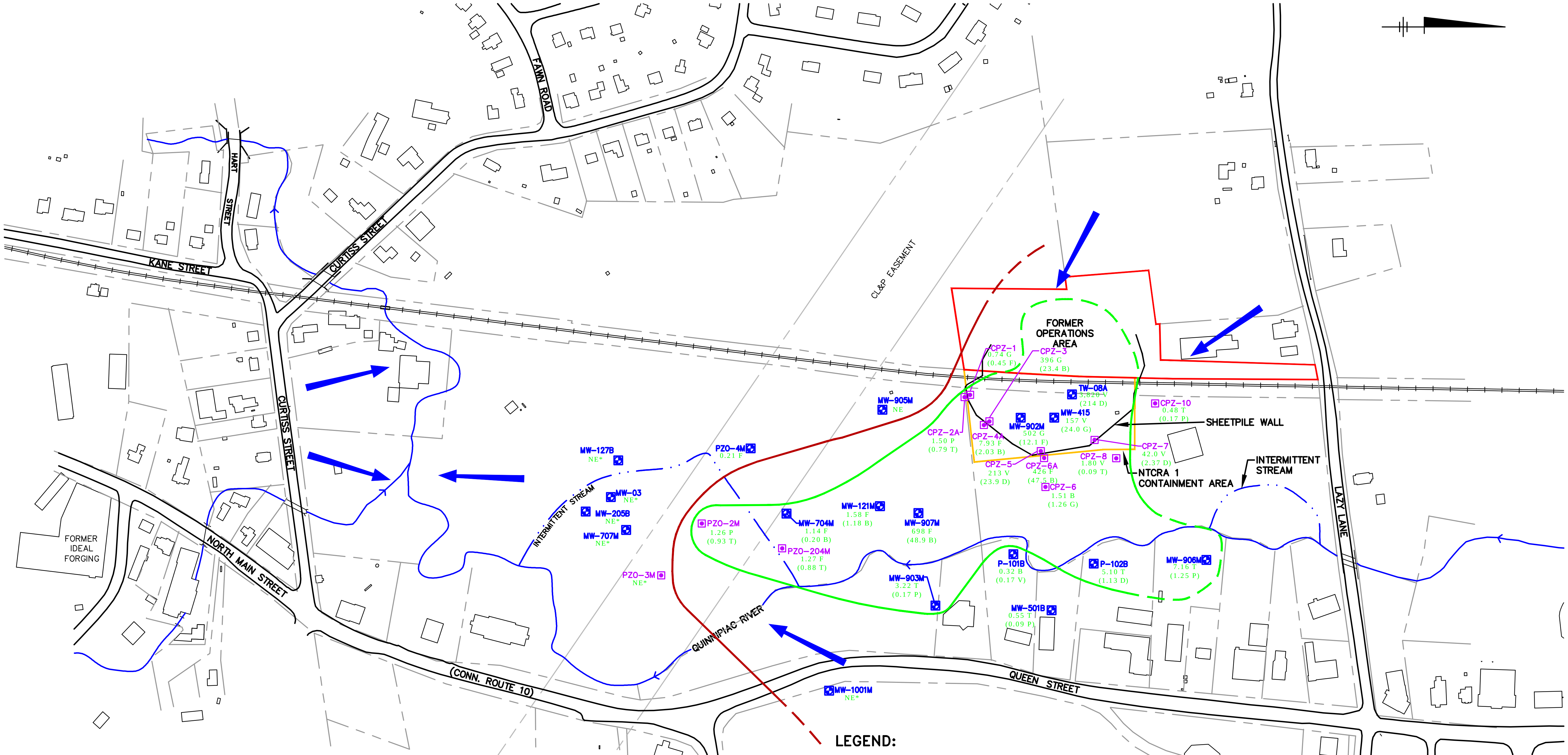
DRAFT

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

VOC EXCEEDANCE PLUME SHALLOW OVERBURDEN

ARCADIS

FIGURE
7



NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

2. POSTED DATA ARE THE LATEST SAMPLING RESULTS AT EACH WELL, AS OF JUNE 2015.

KEY:

B	BENZENE
D	CIS-1,2-DICHLOROETHENE
F	TETRAHYDROFURAN
G	CHLOROETHANE
P	TETRACHLOROETHENE
T	TRICHLOROETHENE
V	VINYL CHLORIDE
NE	EXCEEDANCE RATIO LESS THAN 0.10

LEGEND:

⊕	MIDDLE OVERBURDEN MONITORING WELL
⊡	PIEZOMETER
🟩	ESTIMATED EXTENT OF GROUNDWATER VOC EXCEEDANCES OF MCLs OR CT DEEP CLASS GA GWPCs (2014–2015 SAMPLING RESULTS) (DASHED WHERE INFERRED)
🟥	ESTIMATED NTCRA 2 CAPTURE ZONE BOUNDARY
←	GENERALIZED GROUNDWATER FLOW DIRECTION
⊕ MW-903M 3.22 T (0.17 P)	WELL WITH REGULATORY EXCEEDANCE RATIO. NUMBERS >1.0 INDICATE GROUNDWATER REGULATORY LIMIT EXCEEDED. NUMBERS <1.0 INDICATE EXCEEDANCE RATIO FOR COMPOUNDS DETECTED BELOW REGULATORY LIMIT. FIRST NUMBER INDICATES MAXIMUM MULTIPLE OF A DETECTED VOC OVER REGULATORY LIMIT (e.g., 130 INDICATES 130 x LIMIT). LETTER INDICATES COMPOUND WITH INDICATED EXCEEDANCE RATIO (e.g., P = TETRACHLOROETHENE). NUMBERS IN PARENTHESES INDICATE OTHER EXCEEDANCE RATIOS FOR SELECT COMPOUNDS AND WELLS. COMPOUNDS DETECTED IN BLANK(S) ARE NOT INCLUDED IN THIS EVALUATION.
*	NO DETECTIONS ABOVE INTERIM CLEANUP LEVELS (ICLs) AT THIS LOCATION.

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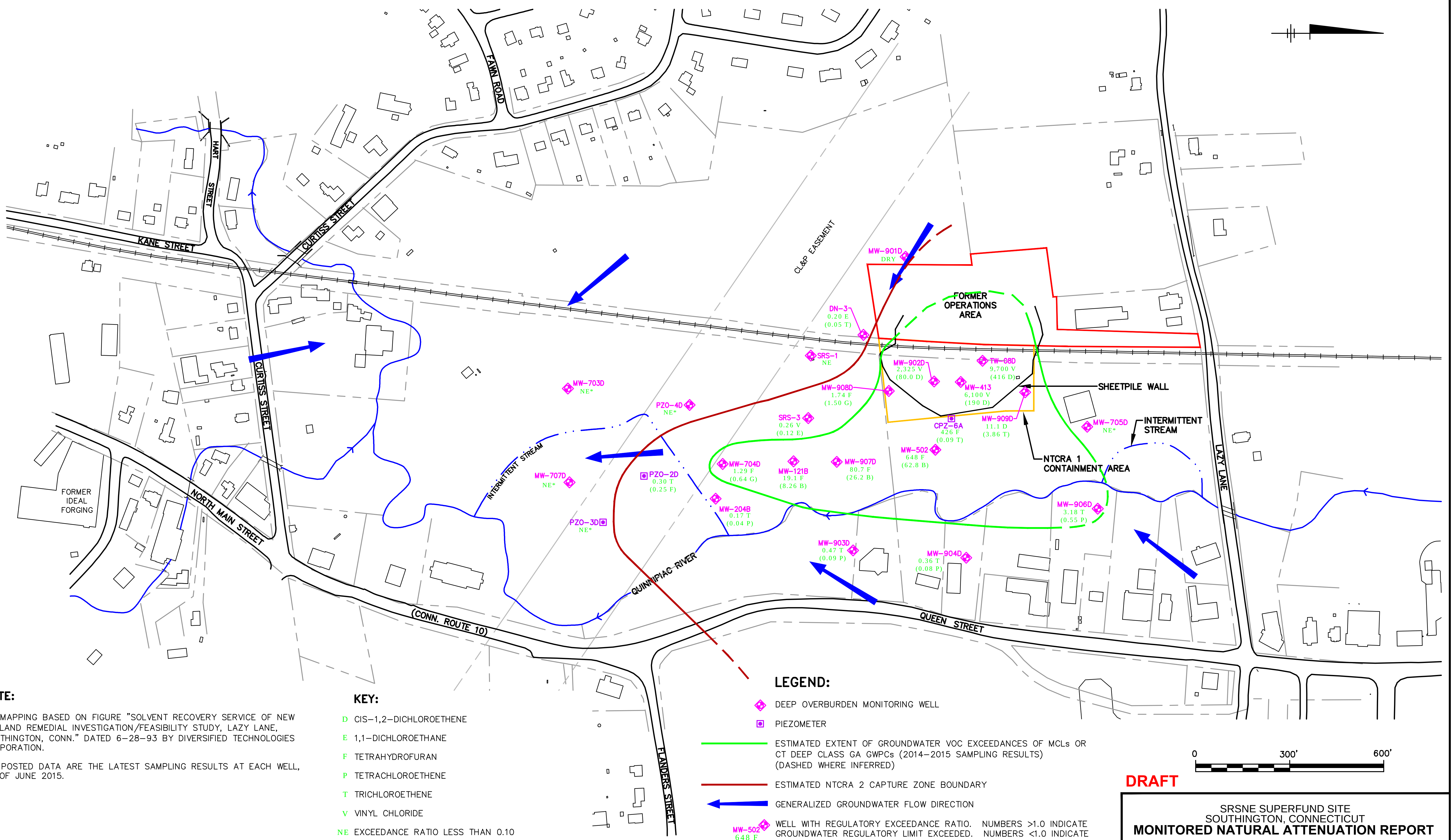
SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

VOC EXCEEDANCE PLUME
MIDDLE OVERBURDEN

ARCADIS

FIGURE
8

CITY: SYRACUSE, NY DIV/GROUP: ENV/IM-DV DB: P. LISTER PM: J. HOLDEN TM/TR: R. STEVENSON LYR: ON=*;OFF=REF, (FRZ)
G:\ENVCAD\Manchester\ACT\B0054634\0001\02200\MNA\54634C08.DWG LAYOUT: 8 SAVED: 8/28/2015 7:52 AM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 10/26/2015 3:13 PM BY: SMALL, BRIAN
XREFS: IMAGES: PROJECTNAME: ----
54634X01



NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

2. POSTED DATA ARE THE LATEST SAMPLING RESULTS AT EACH WELL, AS OF JUNE 2015.

KEY:

D	CIS-1,2-DICHLOROETHENE
E	1,1-DICHLOROETHANE
F	TETRAHYDROFURAN
P	TETRACHLOROETHENE
T	TRICHLOROETHENE
V	VINYL CHLORIDE
NE	EXCEEDANCE RATIO LESS THAN 0.10

LEGEND:

◈	DEEP OVERBURDEN MONITORING WELL
▣	PIEZOMETER
🟩	ESTIMATED EXTENT OF GROUNDWATER VOC EXCEEDANCES OF MCLs OR CT DEEP CLASS GA GWPCs (2014-2015 SAMPLING RESULTS) (DASHED WHERE INFERRED)
🟥	ESTIMATED NTCRA 2 CAPTURE ZONE BOUNDARY
←	GENERALIZED GROUNDWATER FLOW DIRECTION
MW-502 ◈ 648 F (62.8 B)	WELL WITH REGULATORY EXCEEDANCE RATIO. NUMBERS >1.0 INDICATE GROUNDWATER REGULATORY LIMIT EXCEEDED. NUMBERS <1.0 INDICATE EXCEEDANCE RATIO FOR COMPOUNDS DETECTED BELOW REGULATORY LIMIT. FIRST NUMBER INDICATES MAXIMUM MULTIPLE OF A DETECTED VOC OVER REGULATORY LIMIT (e.g., 130 INDICATES 130 x LIMIT). LETTER INDICATES COMPOUND WITH INDICATED EXCEEDANCE RATIO (e.g., P = TETRACHLOROETHENE). NUMBERS IN PARENTHESES INDICATE OTHER EXCEEDANCE RATIOS FOR SELECT COMPOUNDS AND WELLS. COMPOUNDS DETECTED IN BLANK(S) ARE NOT INCLUDED IN THIS EVALUATION.
*	NO DETECTIONS ABOVE INTERIM CLEANUP LEVELS (ICLs) AT THIS LOCATION.

DRAFT

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

VOC EXCEEDANCE PLUME
DEEP OVERBURDEN

ARCADIS

FIGURE
9

CITY: SYRACUSE, NY GROUP: ENVCAD DB: P. LISTER PM: M. GEFELL TM: M. GEFELL TR: R. STEVENSON LYR: ON=*;OFF=REF, (FRZ) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 10/26/2015 3:12 PM BY: SMALL, BRIAN
G:\ENVCAD\Manchester\ACT\B0054634\0001\02200\MNA\54634C09.DWG LAYOUT: 9 SAVED: 10/26/2015 3:07 PM ACADVER: 19.1S (LMS TECH)
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G:\ENVCAD\Manchester\ACT\B0054634\0001\02200\MNA\54634C10.DWG LAYOUT: 10 SAVED: 10/26/2015 3:08 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 10/26/2015 3:12 PM BY: SMALL, BRIAN
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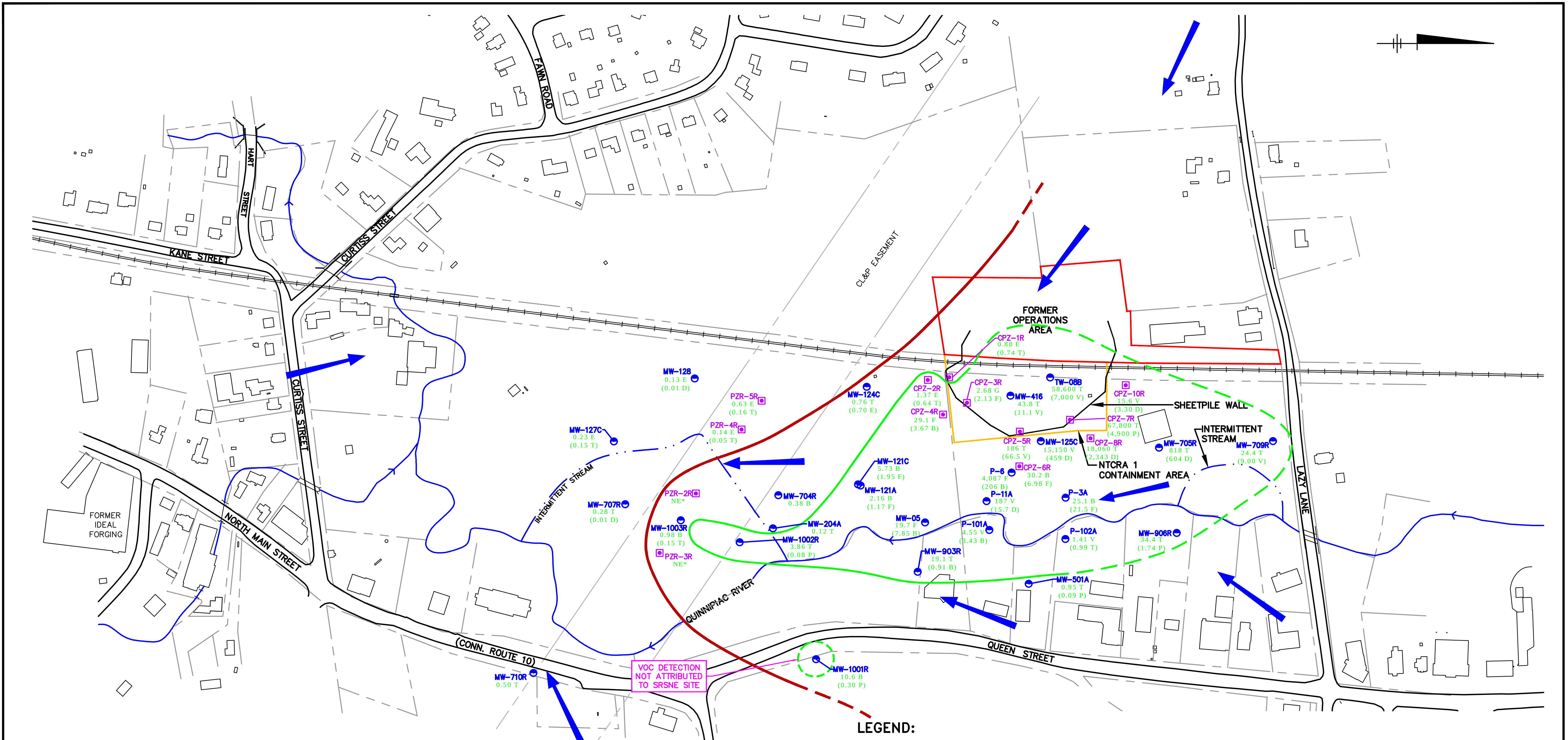


NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

2. POSTED DATA ARE THE LATEST SAMPLING RESULTS AT EACH WELL, AS OF JUNE 2015.

KEY:

B	BENZENE
D	CIS-1,2-DICHLOROETHENE
E	1,1-DICHLOROETHENE
F	TETRAHYDROFURAN
G	CHLOROETHANE
P	TETRACHLOROETHENE
T	TRICHLOROETHENE
V	VINYL CHLORIDE
NE	EXCEEDANCE RATIO LESS THAN 0.10

LEGEND:

◓	SHALLOW BEDROCK MONITORING WELL
▣	PIEZOMETER
🟩	ESTIMATED EXTENT OF GROUNDWATER VOC EXCEEDANCES OF MCLs OR CT DEEP CLASS GA GWPCs (2014–2015 SAMPLING RESULTS) (DASHED WHERE INFERRED)
🟥	ESTIMATED NTCRA 2 CAPTURE ZONE BOUNDARY
←	GENERALIZED GROUNDWATER FLOW DIRECTION
◓P-11A 187 V (15.7 D)	WELL WITH REGULATORY EXCEEDANCE RATIO. NUMBERS >1.0 INDICATE GROUNDWATER REGULATORY LIMIT EXCEEDED. NUMBERS <1.0 INDICATE EXCEEDANCE RATIO FOR COMPOUNDS DETECTED BELOW REGULATORY LIMIT. FIRST NUMBER INDICATES MAXIMUM MULTIPLE OF A DETECTED VOC OVER REGULATORY LIMIT (e.g., 130 INDICATES 130 x LIMIT). LETTER INDICATES COMPOUND WITH INDICATED EXCEEDANCE RATIO (e.g., P = TETRACHLOROETHENE). NUMBERS IN PARENTHESES INDICATE OTHER EXCEEDANCE RATIOS FOR SELECT COMPOUNDS AND WELLS. COMPOUNDS DETECTED IN BLANK(S) ARE NOT INCLUDED IN THIS EVALUATION.
*	NO DETECTIONS ABOVE INTERIM CLEANUP LEVELS (ICLs) AT THIS LOCATION.

DRAFT

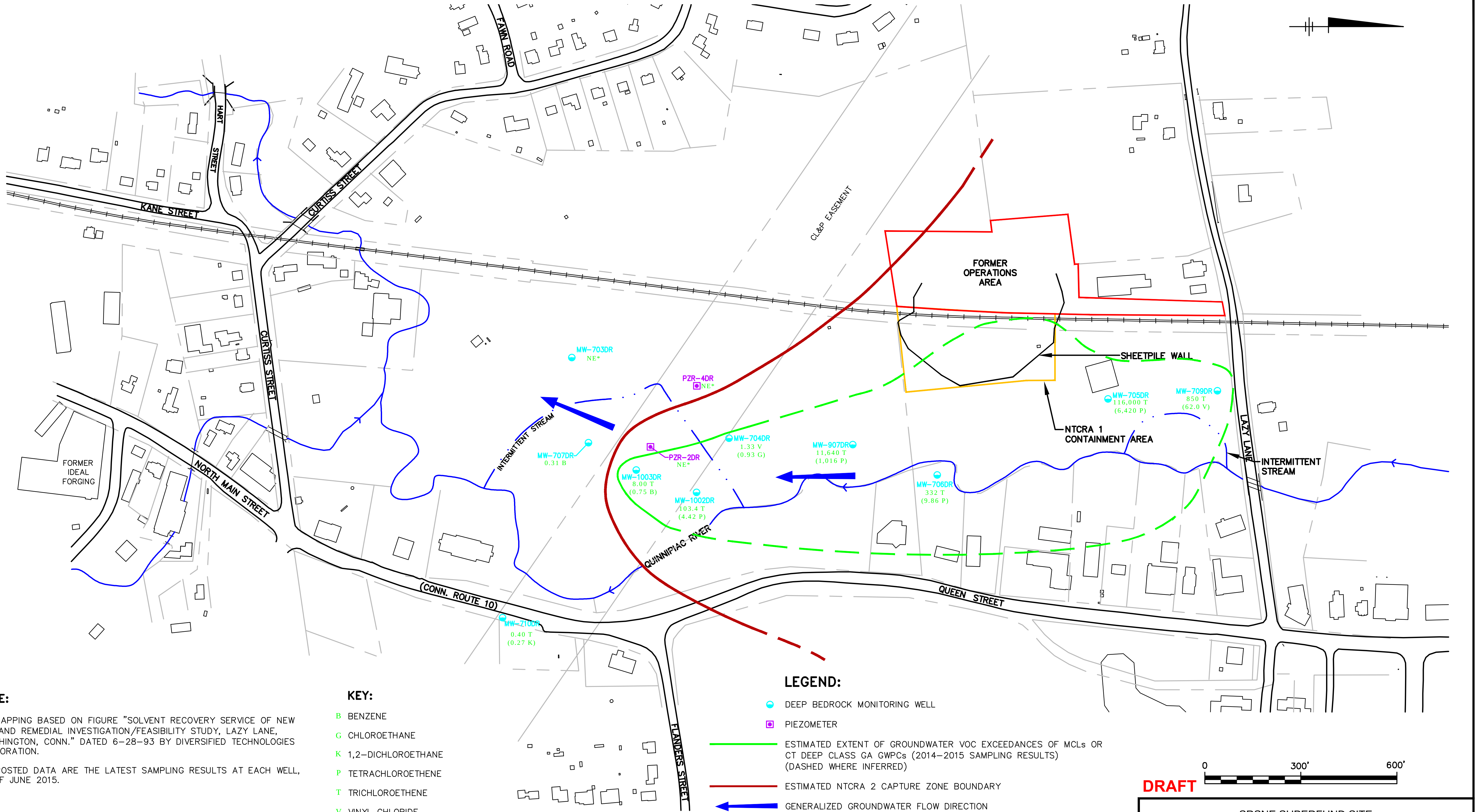
0 300' 600'

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

VOC EXCEEDANCE PLUME
SHALLOW BEDROCK

ARCADIS

FIGURE
10



NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

2. POSTED DATA ARE THE LATEST SAMPLING RESULTS AT EACH WELL, AS OF JUNE 2015.

KEY:

B	BENZENE
G	CHLOROETHANE
K	1,2-DICHLOROETHANE
P	TETRACHLOROETHENE
T	TRICHLOROETHENE
V	VINYL CHLORIDE
NE	EXCEEDANCE RATIO LESS THAN 0.10

LEGEND:

◒	DEEP BEDROCK MONITORING WELL
▣	PIEZOMETER
🟩	ESTIMATED EXTENT OF GROUNDWATER VOC EXCEEDANCES OF MCLs OR CT DEEP CLASS GA GWPCs (2014-2015 SAMPLING RESULTS) (DASHED WHERE INFERRED)
🟥	ESTIMATED NTCRA 2 CAPTURE ZONE BOUNDARY
←	GENERALIZED GROUNDWATER FLOW DIRECTION
MW-907DR◒ 11,640 T (1,016 P)	WELL WITH REGULATORY EXCEEDANCE RATIO. NUMBERS >1.0 INDICATE GROUNDWATER REGULATORY LIMIT EXCEEDED. NUMBERS <1.0 INDICATE EXCEEDANCE RATIO FOR COMPOUNDS DETECTED BELOW REGULATORY LIMIT. FIRST NUMBER INDICATES MAXIMUM MULTIPLE OF A DETECTED VOC OVER REGULATORY LIMIT (e.g., 130 INDICATES 130 x LIMIT). LETTER INDICATES COMPOUND WITH INDICATED EXCEEDANCE RATIO (e.g., P = TETRACHLOROETHENE). NUMBERS IN PARENTHESES INDICATE OTHER EXCEEDANCE RATIOS FOR SELECT COMPOUNDS AND WELLS. COMPOUNDS DETECTED IN BLANK(S) ARE NOT INCLUDED IN THIS EVALUATION.
*	NO DETECTIONS ABOVE INTERIM CLEANUP LEVELS (ICLs) AT THIS LOCATION.

0 300' 600'

DRAFT

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

VOC EXCEEDANCE PLUME
DEEP BEDROCK

ARCADIS

FIGURE
11

CITY: SYRACUSE, NY DIV/GROUP: ENV/IM-DV DB: P. LISTER PM: J. HOLDEN TM/TR: R. STEVENSON LYR: ON=*;OFF=REF, (FRZ)
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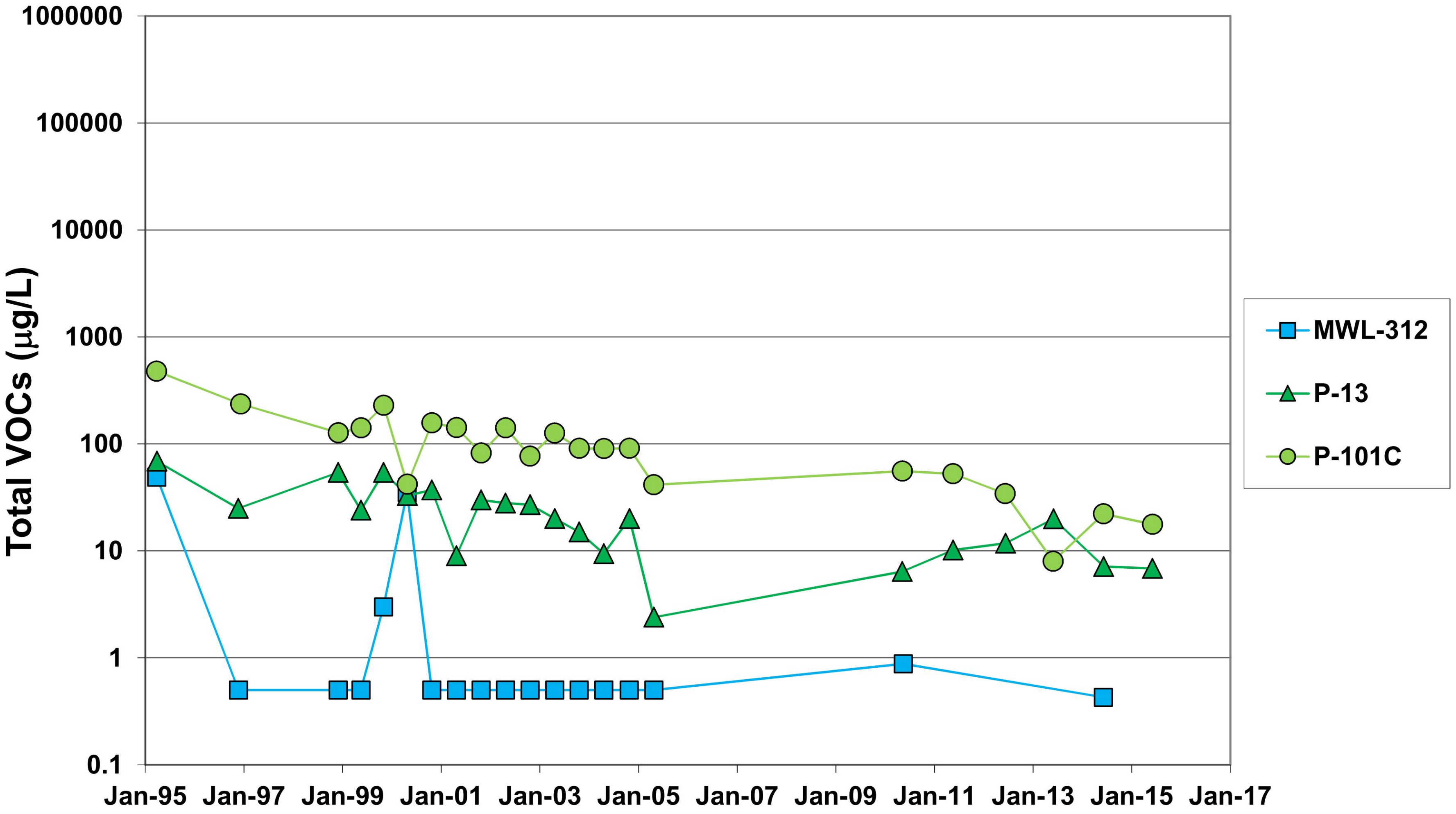
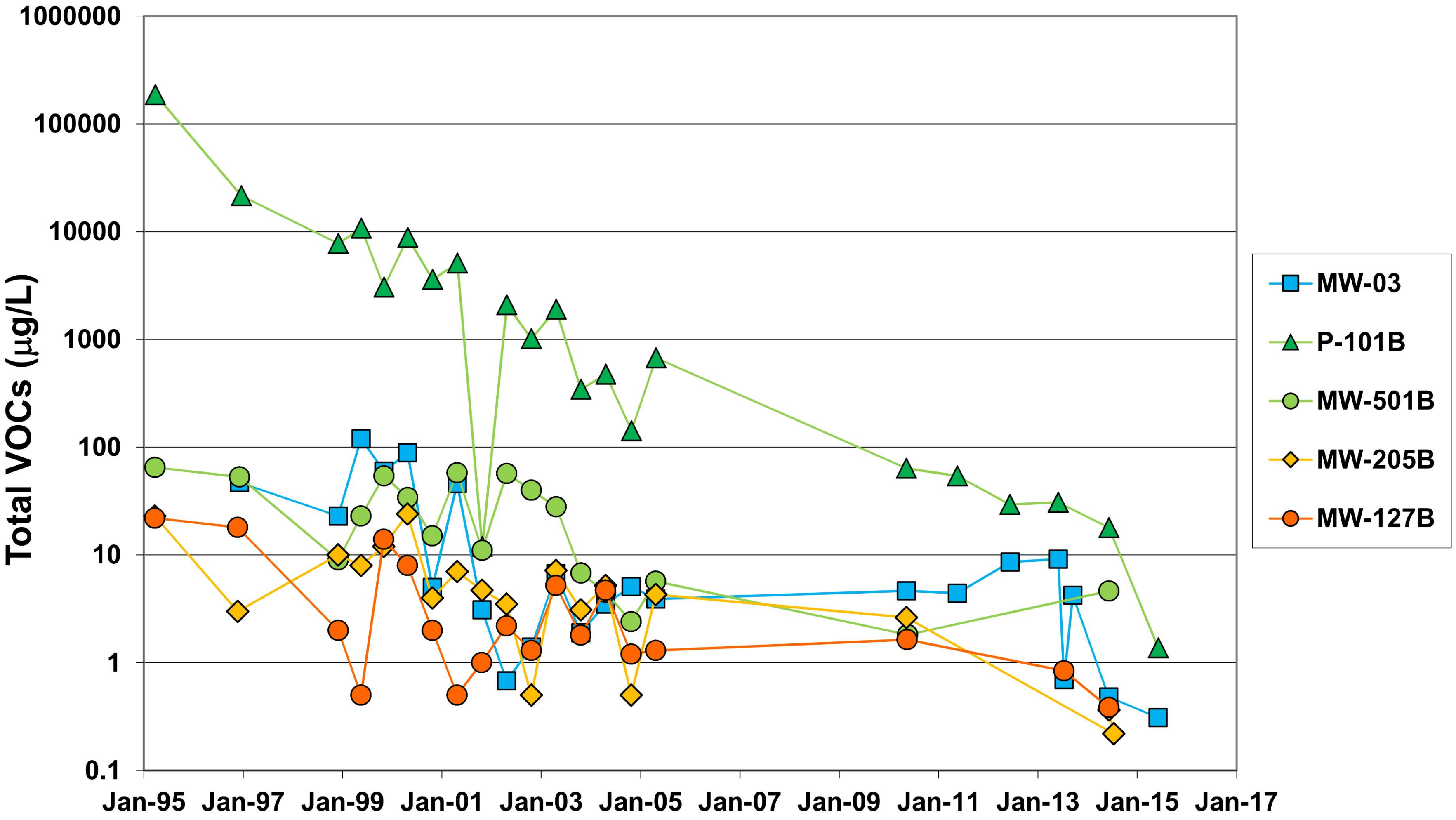


SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER TOTAL VOC CONCENTRATIONS WITH TIME SHALLOW OVERBURDEN

ARCADIS

FIGURE
12

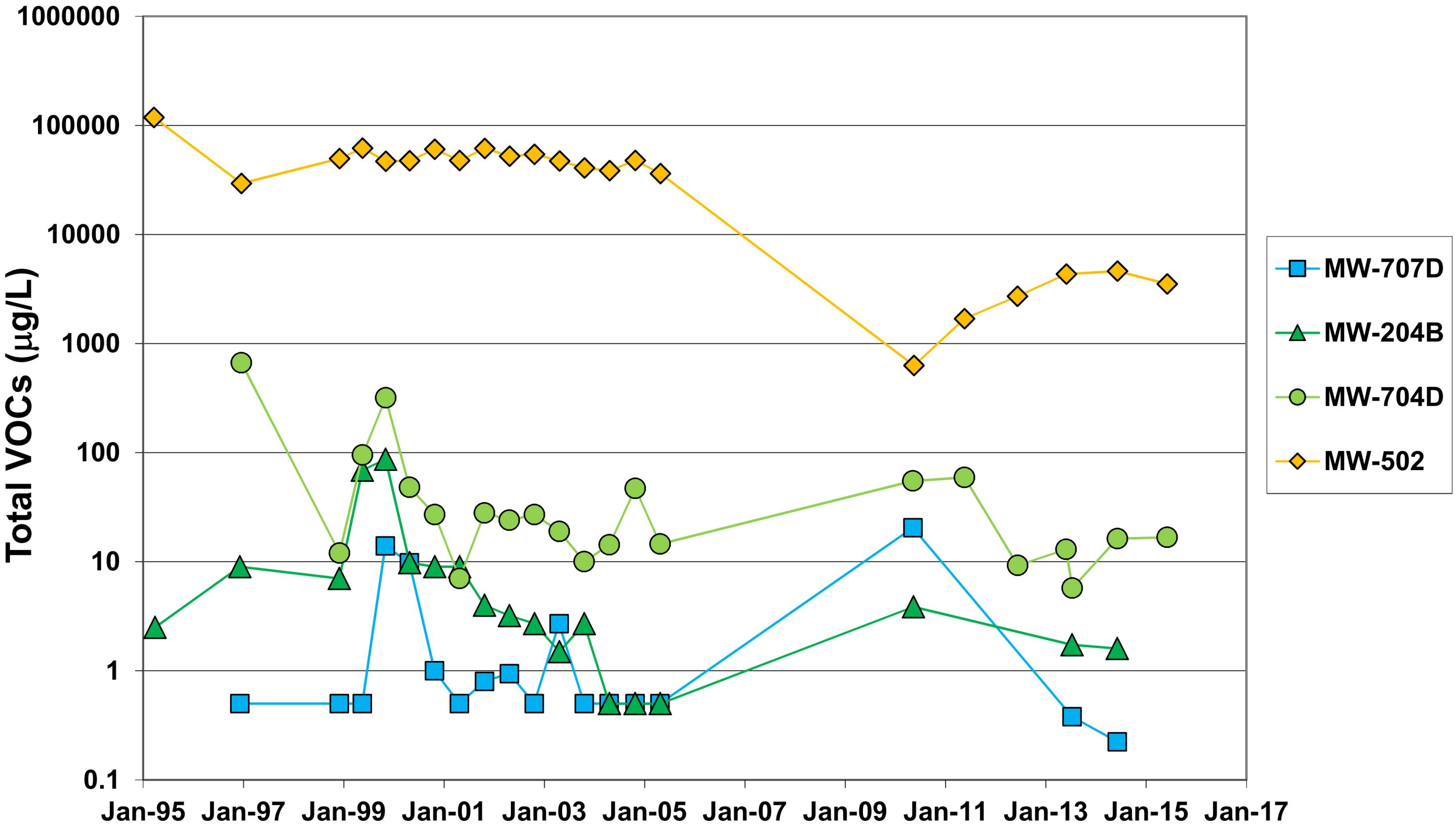


SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER TOTAL VOC CONCENTRATIONS WITH TIME MIDDLE OVERBURDEN

ARCADIS

FIGURE
13

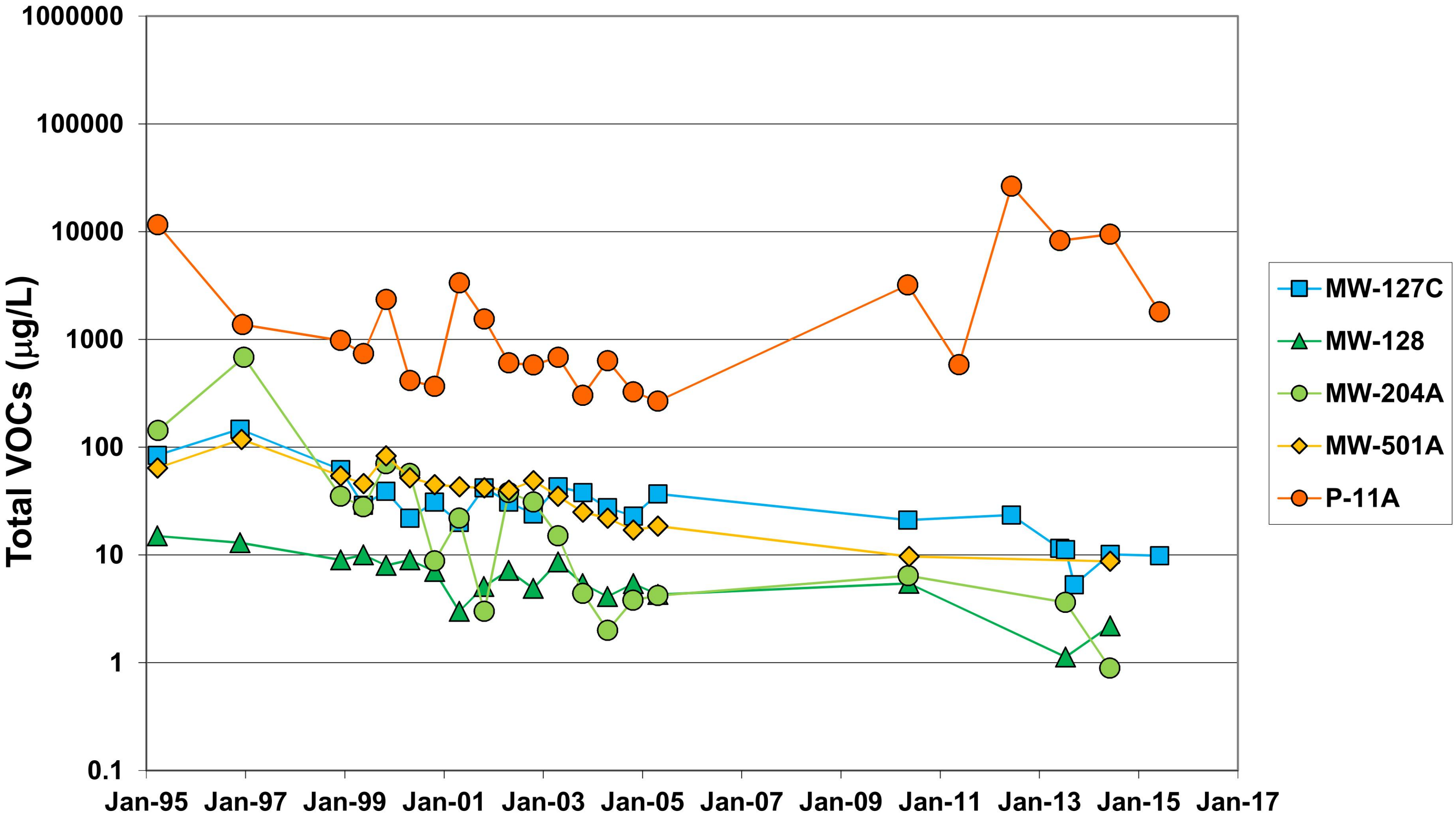


SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER TOTAL VOC CONCENTRATIONS WITH TIME DEEP OVERBURDEN

ARCADIS

FIGURE
14

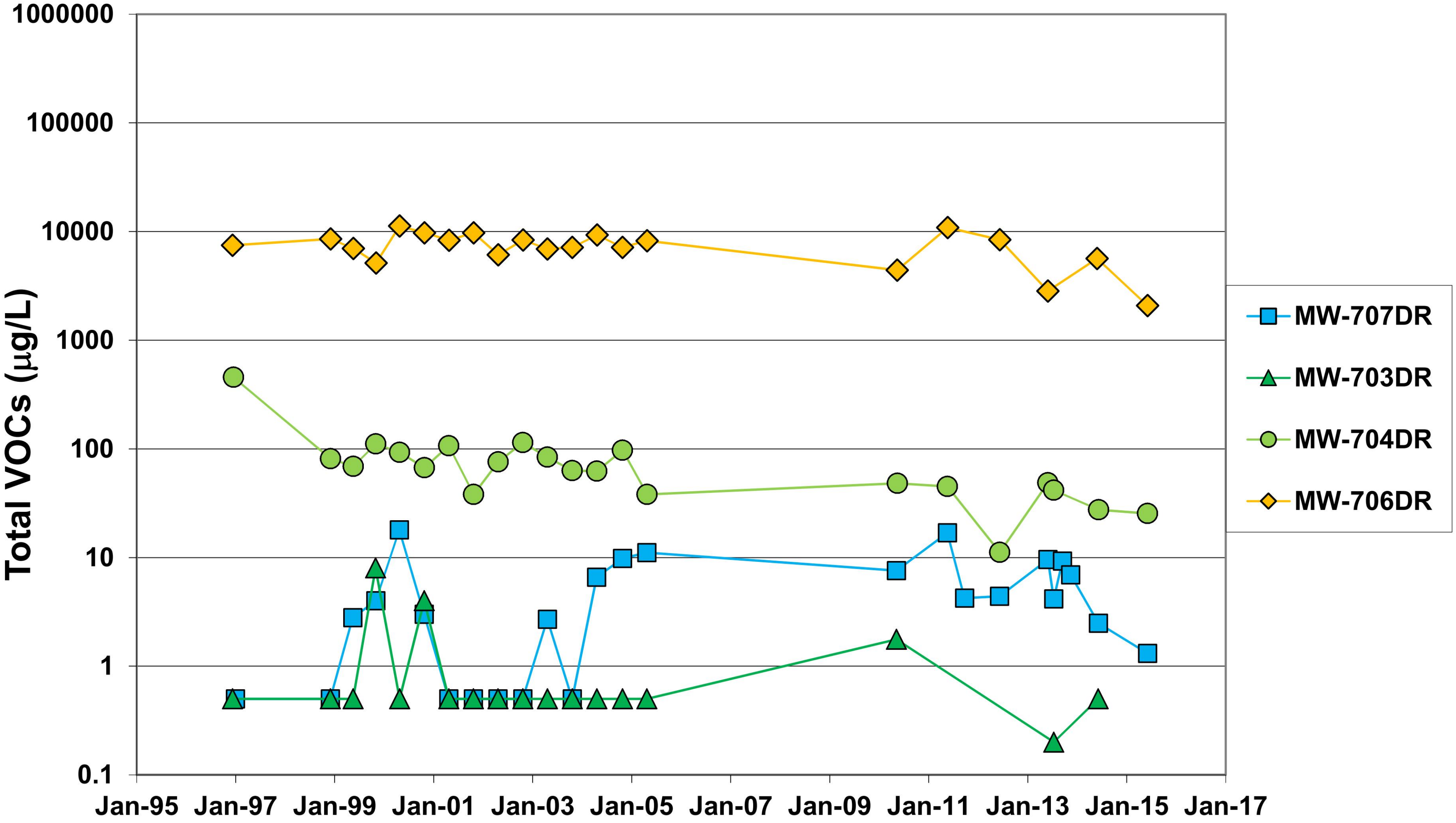


SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER TOTAL VOC CONCENTRATIONS WITH TIME SHALLOW BEDROCK

ARCADIS

FIGURE
15

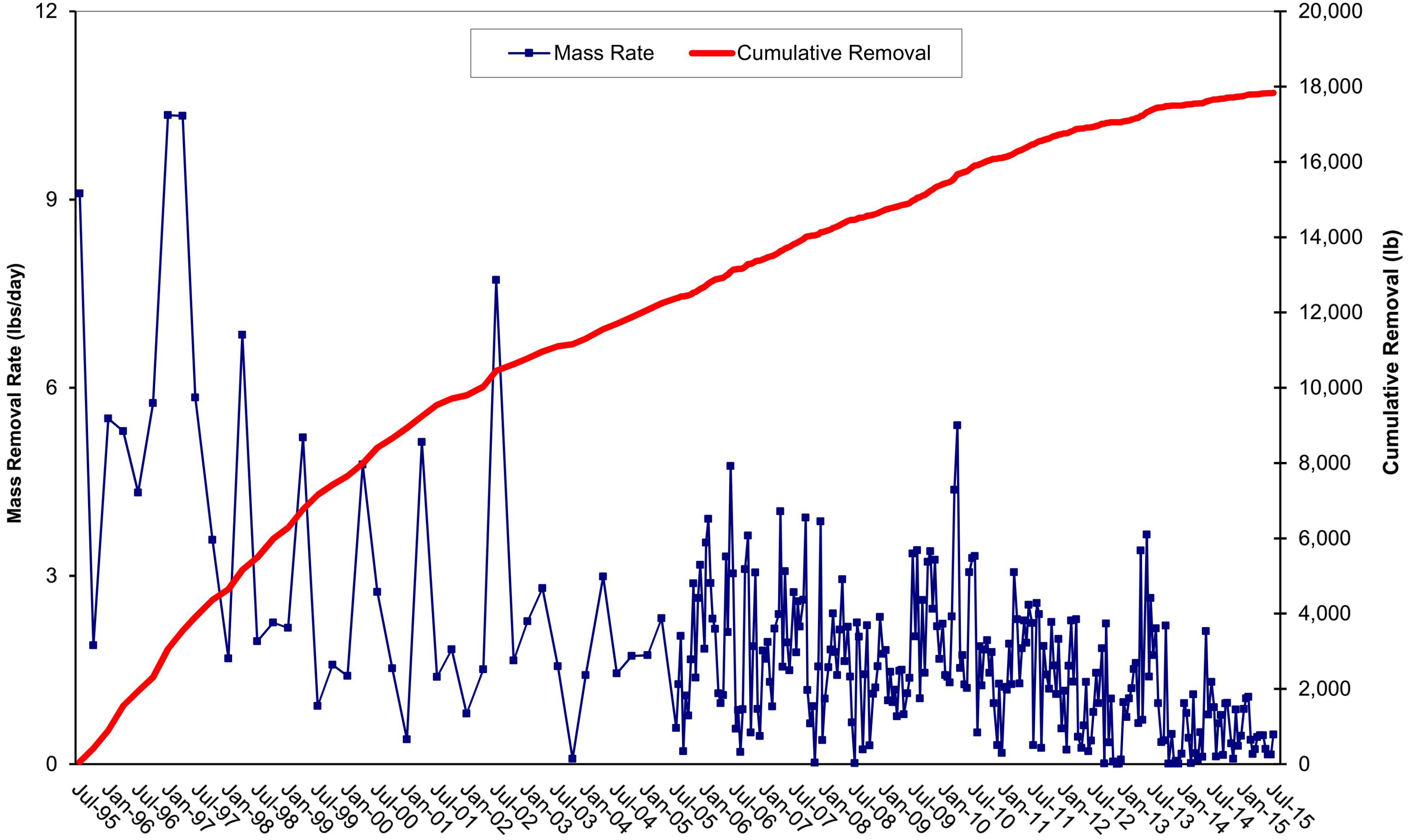


SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER TOTAL VOC CONCENTRATIONS WITH TIME DEEP BEDROCK

ARCADIS

FIGURE
16



SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT

MONITORED NATURAL ATTENUATION REPORT

TOTAL MASS OF VOCs REMOVED BY NTCRA 1 AND NTCRA 2 GROUNDWATER EXTRACTION WELLS

ARCADIS

FIGURE
17

Appendices

ARCADIS

Appendix A

Field Sampling Forms

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: CP2-4A

Well Type: ● [✓ Monitoring] ● Other:
Well Finish: ● [✓ Stick-Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 8.3 - 23.3
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/8/15 Time: 1455
Weather Conditions: Sunny 70°
Depth to groundwater at time of deployment: 9.04
Total well depth at time of deployment: 2336
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 16'

Retrieval

Date and Time of Retrieval: Date: 6/10/15 Time: 1415
Total # of days deployed: 1 day
Weather Conditions: sunny ± 75°F
Depth to groundwater at time of retrieval: 9.32
Total well depth at time of retrieval: 2336
Downhole Field Parameters Upon Retrieval:
Temp: 18.14 **(°C)** **ORP:** 56.8 **(mV)** **Water quality meter:** 650 MDS
pH: 7.13 **DO:** 7.91 **(mg/L)** **Serial #:** 01M0524AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company
Name Company

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: CPZ-3R

Well Type: ● [✓ Monitoring] ● Other: ________
Well Finish: ● [✓ Stick Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify): ________
Total Depth As Constructed (ftbgs): ________ **Screened Interval (ftbgs):** 20
Well Casing: Diameter: ________ Material: ________
Well Screen: Diameter: ________

Deployment

Date and Time of Deployment: Date: 7/9/15 Time: 9:00
Weather Conditions: Sunny
Depth to groundwater at time of deployment: ________
Total well depth at time of deployment: ________
Dimensions of HydraSleeve™: Length (in.) 28 in Diameter (in.) 2 in
Deployment Method/Position of Weight:

● [✓ Top-Down:] Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): ________

Retrieval

Date and Time of Retrieval: Date: 7/10/15 Time: 15:00
Total # of days deployed: 1
Weather Conditions: Sunny
Depth to groundwater at time of retrieval: 7.698 ft
Total well depth at time of retrieval: ________
Downhole Field Parameters Upon Retrieval: Turbidity: 33.7 NTU
Temp: 36.0 **(°C)** **ORP:** ________ **(mV)** **Water quality meter:** YSI 6920
pH: ________ **DO:** ________ **(mg/L)** **Serial #:** 18896

Notes/Observations:

Slight sheen / smear on outside of Hydrasleeve

Field Sampling Technician: Name(s) and Company

Name	Company
Rowan Thompson	de maximis, inc.

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number MW-03 Date 6.8.15
Field Personnel MM
Sampling Organization ARCADIS
Identify MP

Depth to [illegible] / ____ of screen
(below MP) top bottom
PID: —
Pump Intake at (ft. below MP) 69
Purging Device; (pump type) Bladder
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
10:40	6.95		100	0.5	13.45	185	6.98	61.7	3.27	8.36	
10:45	6.95		100	1.0	13.12	184	6.76	68.3	2.60	10.00	
10:50	6.95		100	1.5	12.96	184	6.62	81.7	2.37	11.57	
10:55	6.95		100	2.0	12.69	183	6.62	94.8	2.26	11.31	
11:00	6.95		100	2.5	12.46	181	6.64	102.9	2.17	12.07	
11:05	6.95		100	3.0	12.45	182	6.69	107.5	2.18	11.87	
11:10	6.95		100	3.5	12.37	182	6.74	110.4	2.19	10.97	
11:15	6.95		100	4.0	12.44	182	6.78	112.0	2.18	11.20	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 6.95
Depth to Bottom: 82

Comments: Sampled @ 11:20

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-124B

Well Type: ● [✓ Monitoring] ● Other:
Well Finish: ● [✓ Stick Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):

Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 42-52
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/8/15 Time: 1310
Weather Conditions: Cloudy 70°
Depth to groundwater at time of deployment: 5.68
Total well depth at time of deployment: 52.71
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 47

Retrieval

Date and Time of Retrieval: Date: 6/9/15 Time: 1345
Total # of days deployed: 1 day
Weather Conditions: Sunny 72°
Depth to groundwater at time of retrieval: 5.80
Total well depth at time of retrieval: 52.73
Downhole Field Parameters Upon Retrieval:
Temp: 17.67 **(°C)** **ORP:** -55.8 **(mV)** **Water quality meter:** 650 MDS
pH: 6.91 **DO:** 6.51 **(mg/L)** **Serial #:** 01M0524 AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name Company

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-121C

Well Type: [✓ Monitoring] ● Other:
Well Finish: [✓ Stick Up] ● Flush Mount
Measuring Pt: [✓ Top of Casing] ● Other (specify): 58.7-68.7
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 58.7 - 68.7
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/8/15 Time: 1140
Weather Conditions: Rain 70°
Depth to groundwater at time of deployment: 5.62
Total well depth at time of deployment: 68.75
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 63.7

Retrieval

Date and Time of Retrieval: Date: 6/9/15 Time: 1330
Total # of days deployed: 1 day
Weather Conditions: 72 degree Sunny
Depth to groundwater at time of retrieval: 5.70
Total well depth at time of retrieval: 68.75
Downhole Field Parameters Upon Retrieval:
Temp: 15.61 **(°C)** **ORP:** -53.7 **(mV)** **Water quality meter:** 650 MDS
pH: 7.31 **DO:** 4.76 **(mg/L)** **Serial #:** 01M0524 AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name Company

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-121M
Well Type: ● [✓ Monitoring] ● Other:
Well Finish: ● [✓ Stick Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 21-31
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/8/15 Time: 1320
Weather Conditions: Cloudy 70°
Depth to groundwater at time of deployment: 6.12
Total well depth at time of deployment: 31.47
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 26'

Retrieval

Date and Time of Retrieval: Date: 6/9/15 Time: 1400
Total # of days deployed: 1 day
Weather Conditions: Sunny 72°
Depth to groundwater at time of retrieval: 6.16
Total well depth at time of retrieval: 31.50
Downhole Field Parameters Upon Retrieval:
Temp: 15.65 **(°C)** **ORP:** -46.3 **(mV)** **Water quality meter:** 650 MDS
pH: 7.30 **DO:** 7.51 **(mg/L)** **Serial #:** 01M0524 AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name Company

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number MW-124C Date 6-8-5
Field Personnel MM
Sampling Organization ARCADIS
Identify MP

Depth to 41 / _____ of screen
(below MP) top bottom
Pump Intake at (ft. below MP)
Purging Device; (pump type) Bladder
Total Volume Purged

PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
13:40	6.03		100	0.5	11.96	223	7.55	121.8	9.91	10.65	
13:45	6.26		100	1.0	12.03	224	7.40	130.7	8.74	11.11	
13:50	6.78		100	1.5	11.65	222	7.40	134.1	6.86	13.34	
13:55	7.12		100	2.0	11.54	221	7.43	135.3	6.15	12.17	
14:00	7.10		100	2.5	12.91	227	7.46	135.1	5.46	10.10	
14:05	7.11		100	3.0	13.13	230	7.47	137.3	5.30	9.97	
14:10	7.13		100	3.5	13.07	231	7.47	139.8	5.31	9.60	
14:5	7.13		100	4.0	13.16	231	7.46	141.3	5.19	4.13	
14:20	7.12		100	4.5	13.26	232	7.45	142.4	5.09	8.39	
14:25	7.13		100	5.0	13.47	233	7.45	143.2	4.98	5.94	

Stabilization Criteria				3%	3%	±0.1	± 10 mv	10%	10%
14:30		100	5.5	13.60	23.4	7.46	143.0	4.99	4.38
14:35	7.12	100	6.0	13.51	233	7.45	143.3	5.01	4.55

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 6.30

Depth to Bottom: _________

Comments: Sampled @ 14:40

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number MW-126B Date 6.9.15
Field Personnel MM
Sampling Organization ARCADIS
Identify MP

Depth to 2.5 / 5 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 10.
Purging Device; (pump type) Bladder
Total Volume Purged
PID: —

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
8:50	2.89		100	0.5	13.91	341	6.35	188.2	9.04	5.85	
8:55	2.89		100	1.0	14.10	369	6.29	176.3	4.49	6.20	
9:00	2.89		100	1.5	14.27	378	6.32	168.4	3.34	4.11	
9:05	2.89		100	2.0	13.90	381	6.33	161.0	2.25	5.79	
9:10	2.89		100	2.5	13.92	385	6.33	156.8	1.81	5.60	
9:15	2.89		100	3.0	13.67	386	6.34	152.9	1.59	4.82	
9:20	2.89		100	3.5	14.18	396	6.34	149.4	1.40	2.01	
9:25	2.89		100	4.0	13.97	396	6.35	147.3	1.35	4.46	
9:30	2.89		100	4.5	14.04	398	6.35	146.2	1.25	3.80	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 2.89

Depth to Bottom:

Comments:
Sampled @ 9:35

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number MW-126C Date 6-9-15
Field Personnel MM
Sampling Organization ARCADIS
Identify MP

Depth to 5 / 10 of screen
(below MP) top bottom
PID: —
Pump Intake at (ft. below MP) 29
Purging Device; (pump type) Bladder
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
10:00	1.87		100	0.5	12.86	282	6.90	1986	5.8	15.10	
10:05	1.87		100	1.0	13.16	287	6.85	187.1	5.03	13.68	
10:10	1.87		100	1.5	13.13	287	6.80	183.6	4.95	11.99	
10:15	1.87		100	2.0	13.35	288	6.83	177.8	4.85	11.05	
10:25	1.87		100	3.0	13.70	290	6.82	174.9	4.78	8.13	
10:35	1.87		100	4.0	13.80	289	6.81	171.5	4.82	8.94	
10:40	1.87		100	4.5	13.52	286	6.81	170.8	4.81	4.88	
10:45	1.87		100	5.0	13.72	286	6.81	170.9	4.76	4.34	
10:50	1.87		100	5.5	13.33	283	6.80	171.1	4.80	3.63	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 1.87
Depth to Bottom: 34

Comments: Sampled @ 10:55

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number MW-127C Date 6.10.15
Field Personnel MM
Sampling Organization ARCADIS
Identify MP

Depth to 5 / 10 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 96
Purging Device; (pump type) Bladder
Total Volume Purged

PID: —

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
10:15	—		100	0.5	15.67	266	7.64	189.0	12.25	44.69	
10:20	—		100	1.0	14.60	246	7.45	181.0	9.89	28.74	
10:25	-		100	1.5	14.50	246	7.53	170.7	9.23	19.94	
10:30	—		100	2.0	14.81	247	7.58	161.8	8.52	16.47	
10:35	—		100	2.5	14.35	244	7.61	156.5	8.25	67 97	
10:40	—		100	3.0	14.24	244	7.66	152.5	7.89	21.65	
10:45	—		100	3.5	14.40	245	7.67	151.2	7.53	18.33	
10:50	—		100	4.0	14.02	242	7.65	152.3	7.49	22.17	
10:55	—		100	4.5	13.84	241	7.66	150.4	7.31	20.69	
11:00	—		100	5.0	14:18	243	7.66	149.1	6.95	14.74	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

Sampled @ 12:35

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 3.20

Depth to Bottom: 101.5

Comments: Bees nest in well. Set up equipment away from well as the bees were swarming around well.

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WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SES
Well Number MW-127C Date 6.10.5
Field Personnel MM
Sampling Organization ARCADIS
Identify MP

Depth to 5/10 of screen
(below MP) top bottom
PID: —
Pump Intake at (ft. below MP) 96
Purging Device; (pump type) Bladder
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
11:05	—		100	5.5	14.52	245	7.70	1457	6.59	13.37	
11:15	—		100	6.5	14.10	243	7.73	141.9	6.25	12.00	
11:20	—		100	7.0	13.97	243	7.73	142.1	6.09	14.89	
11:25	—		100	7.5	just ran out of gas - changed out canisters						
11:45	—		100	7.5	13.02	2.37	7.68	166.7	5.34	20.71	
11:50	—		100	8.0	14.33	244	7.72	158.2	4.75	15.28	
11:55	—		100	8.5	14.25	244	7.76	151.4	4.41	12.27	
12:00	—		100	9.0	14.25	245	7.75	150.5	4.23	13.94	
12:05	—		100	9.5	13.34	240	7.75	145.1	4.26	11.49	
12:10	—		100	10.0	16.04	256	7.75	137.2	3.75	8.12	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 3.21

Depth to Bottom: 101.5

Comments:

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WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number MW.127C Date 6.10.5
Field Personnel MM
Sampling Organization ARCADIS
Identify MP

Depth to (below MP) 5 / 10 of screen
top bottom
Pump Intake at (ft. below MP) 96
Purging Device; (pump type) Bladder
Total Volume Purged
PID: —

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
12:15	—		100	10.5	15.06	250	7.75	1337	3.89	7.38	
12:20	—		100	11.0	15.30	251	7.75	131.2	3.85	5.73	
12:25	—		100	11.5	15.40	252	7.75	128.7	3.81	5.89	
12:30	—		100	12.0	14.97	249	7.75	1275	3.85	4.85	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 3.20

Depth to Bottom: 101.5

Comments: Bees still swarming around well during breakdown of equipment.

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WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-209A Date 6/8/15
Field Personnel Mike Redman
Sampling Organization Alcadis
Identify MP

Depth to (below MP) 18 top / 38 bottom of screen
Pump Intake at (ft. below MP) 9' @ 27 PID: 0.0
Purging Device; (pump type)
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
13:46	21.76		100	0.5	10.84	162.3	5.82	222.2	3.28	2.62	
13:50	21.77		100	1.0	10.81	162.1	5.77	241.5	3.20	4.12	
13.55	21.77		100	1.5	11.16	163.6	5.94	247.0	3.13	0.0	
14:00	21.77		100	2.0	11.20	164.5	6.98	248.1	3.13	5.15	
14:05	21.77		100	2.5	11.37	164.2	6.01	246.7	3.14	2.45	
14:10	21.77		100	3.0	11.44	164.9	5.96	250.3	3.14	2.94	
14:15	21.77		100	3.5	11.26	164.2	5.95	251.8	3.14	2.99	
14:20	21.76		100	4.0	11.40	164.7	5.96	252.0	3.13	2.91	
14:25	21.77		100	4.5	11.29	164.2	5.97	252.2	3.12	2.85	
14:30	21.77		100	5.0	11.33	165.5	5.98	253.7	3.09	2.80	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

Sample @ 14:35

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 21.82
Depth to Bottom: 39.40

Comments: Sample @ 14:30

15
Dissolved is filtered

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS NE
Well Number MW-209B Date 6/8/2015 sample on 6/9/15
Field Personnel Mike Redman
Sampling Organization Arcadis
Identify MP

Depth to 13 / 15 of screen
(below MP) top bottom
Pump Intake at (ft. below MP)
Purging Device; (pump type)
Total Volume Purged

PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
11:00	16.61										Pump well dry w/ bladder pump. will perform a grab sample w/ bailer
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 16.61
Depth to Bottom: 17.02

Comments: Dry well, left bailer in well over night to gather ground water. Sample in am. Sample on 6/9/15 Sample @ 8:20

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-502

Well Type: [✓ Monitoring] ● Other:
Well Finish: [✓ Stick Up] ● Flush Mount
Measuring Pt: [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 15-35
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/8/15 Time: 1525
Weather Conditions: Sunny 72°
Depth to groundwater at time of deployment: 6.84
Total well depth at time of deployment: 34.95
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 25'

Retrieval

Date and Time of Retrieval: Date: 6/10/15 Time: 1000
Total # of days deployed: 1 day
Weather Conditions: Sunny 75°F
Depth to groundwater at time of retrieval: 7.11
Total well depth at time of retrieval: 34.95
Downhole Field Parameters Upon Retrieval:
Temp: 15.92 **(°C)** **ORP:** -68.2 **(mV)** **Water quality meter:** 650 MDS
pH: 6.74 **DO:** 5.97 **(mg/L)** **Serial #:** 01M0524AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company
Name Company

70DR
107.8

1 of 2

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-701DR Date 6/3/2015
Field Personnel Mike Redman
Sampling Organization Arcadis
Identify MP

Depth to 97.8 / 107.8 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 100.3
Purging Device; (pump type) Bladder
Total Volume Purged

PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	3% Temp. °C	3% Spec. Cond.[2] µS/cm	0.1 pH	3% ORP[3] mv	3% DO mg/L	10%>1 Turb-idity NTU	Comments
9:25	17.45		100	0.5	11.23	128.6	6.64	101.2	2.61	18.93	
9:30	17.48		100	1.0	11.16	128.2	6.49	82.1	1.44	5.60	
9:35	17.87		100	1.5	11.84	133.1	6.50	63.6	0.71	2.94	
9:40	17.55		100	2.0	12.40	136.0	6.69	46.6	0.57	1.49	
9:45	17.51		100	2.5	12.38	139.6	6.86	36.2	0.52	0.51	
9:50	17.49		100	3.0	12.13	146.2	6.89	53.9	0.43	0.00	
9:55	17.45		100	3.5	12.01	151.6	6.90	88.9	0.57	0.00	
10:00	17.49		100	4.0	11.99	154.2	6.96	97.3	0.72	0.00	
10:05	17:54		100	4.5	11.99	155.3	6.97	100.0	0.78	0.00	
10:10	17.54		100	5.0	11.98	157.2	7.05	105.7	1.06	0.00	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 16.95

Depth to Bottom: 108.1

Comments: Sample @ 10:55

2 of 2

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-701DR Date 6/8/2015
Field Personnel Mike Redman
Sampling Organization Arcadis
Identify MP

Depth to 92.8 / 107.8 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 100.3
Purging Device; (pump type) Bladder
Total Volume Purged
PID:

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turbidity NTU	Comments
10:15	17.52		100	5.5	1.83	158.1	7.12	112.9	1.37	0.00	
10:20	17.50		100	6.0	11.70	158.1	7.13	115.0	1.49	0.00	
10:25	17.49		100	6.5	11.68	157.9	7.14	116.8	1.55	0.00	
10:35	17.51		100	7.0	11.65	158.3	7.15	119.7	1.51	0.00	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 16.95
Depth to Bottom: 108.1

Comments:
Sample @ 10:35

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-704D

Well Type: ● [✓ Monitoring] ● Other:
Well Finish: ● ~~Stick Up~~ ● [✓ Flush Mount]
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 53-63
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/08/15 Time: 1130
Weather Conditions: Rain 70°
Depth to groundwater at time of deployment: 4.50
Total well depth at time of deployment: 63.19
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 58

Retrieval

Date and Time of Retrieval: Date: 6/9/15 Time: 1315
Total # of days deployed: 1 day
Weather Conditions: Sunny 75°
Depth to groundwater at time of retrieval: 4.70
Total well depth at time of retrieval: 63.19
Downhole Field Parameters Upon Retrieval:
Temp: 17.57 **(°C)** **ORP:** -7.2 **(mV)** **Water quality meter:** 650 MDS
pH: 7.26 **DO:** 3.62 **(mg/L)** **Serial #:** 01M0528 AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name Company

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-704 DR
Well Type: [✓ Monitoring] ● Other:
Well Finish: [✓ Stick Up] ● Flush Mount
Measuring Pt: [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 102-132
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/8/15 Time: 1120
Weather Conditions: Rain
Depth to groundwater at time of deployment: 65.7
Total well depth at time of deployment: 132.43
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:
PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 117

Retrieval

Date and Time of Retrieval: Date: 6/9/15 Time: 1300
Total # of days deployed: 1 day
Weather Conditions: Sunny
Depth to groundwater at time of retrieval: 65.32
Total well depth at time of retrieval: 132.43
Downhole Field Parameters Upon Retrieval:
Temp: 17.40 **(°C)** **ORP:** -50.0 **(mV)** **Water quality meter:** 650 MDS
pH: 7.99 **DO:** 2.99 **(mg/L)** **Serial #:** 01M0524 AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company
Name Company

1of2

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-704M Date 6/10/2015
Field Personnel Mike Ledmus
Sampling Organization Arcadis
Identify MP

Depth to 37 / 47 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 42
Purging Device; (pump type) Bladder
Total Volume Purged

PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
9:15	6.75		100	0.5	12.03	292	7.02	-24.0	~~8.7~~ 1.71	61.97	
9:20	6.73		100	1.0	13.06	290	7.03	-41.2	0.86	79.76	
9:25	6.72		100	1.5	11.65	290	7.11	-51.9	0.50	47.31	
9:30	6.70		100	2.0	11.46	290	7.13	-55.2	0.49	18.47	
9:35	6.70		100	2.5	11.20	289	7.16	-59.2	0.42	15.07	
9:40	6.73		100	3.0	11.36	290	7.18	-61.3	0.40	34.01	
9:45	6.74		100	3.5	11.26	293	7.18	-62.1	0.38	32.94	
9:50	6.75		100	4.0	11.69	292	7.19	-64.0	0.32	32.88	
9:55	6.76		100	4.5	13.08	291	7.18	-63.3	0.33	24.59	
10:00	6.76		100	5.0	13.90	295	7.17	-63.4	0.40	21.59	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 6.38
Depth to Bottom: 48.50

Comments:

2 of 2

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-704 M Date 6/20/2015 June 10, 2015
Field Personnel Mike Redman
Sampling Organization Arcadis
Identify MP

Depth to 37 / 47 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 42
Purging Device; (pump type) Bladder
Total Volume Purged

PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
10:05	6.77		100	5.5	13.99	298	7.16	-63.5	0.34	14.08	
10:10	6.78		100	6.0	14.18	295	7.16	-63.7	0.32	11.45	
10:15	6.81		100	6.5	14.24	296	7.16	-62.9	0.37	10.41	
10:20	6.81		100	7.0	14.61	294	7.17	-63.4	0.13	6.15	
10:25	6.81		100	7.5	14.49	295	7.17	-63.6	0.28	4.38	
10:30	6.82		106	8.0	14.56	294	7.17	-63.6	0.29	3.97	
10:35	6.81		100	8.5	14.64	294	7.16	-63.9	0.30	3.20	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 6.38

Depth to Bottom: 48.50

Comments: Perform sample @ 10:40
additional sampling performed
MS/MSD aka. LS/LSD
Duplicate-01

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-705DR

Well Type: ● [✓ Monitoring] ● Other:
Well Finish: ● [✓ Stick Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 90-100
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/8/15 Time: 1540
Weather Conditions: Sunny 72°
Depth to groundwater at time of deployment: 420
Total well depth at time of deployment: 99.50
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 95

Retrieval

Date and Time of Retrieval: Date: 6-10-15 Time: 1450
Total # of days deployed: ~~Sunny 80°F~~ 1 day
Weather Conditions: Sunny 75°F
Depth to groundwater at time of retrieval: 4.21
Total well depth at time of retrieval: 99.50
Downhole Field Parameters Upon Retrieval:
Temp: 20.53 **(°C)** **ORP:** 2.0 **(mV)** **Water quality meter:** 650 MDS
pH: 7.92 **DO:** 5.25 **(mg/L)** **Serial #:** 41M0527AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company
Name Company

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-706DR

Well Type: ● [✓ Monitoring] ● Other:
Well Finish: ● [✓ Stick Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 116.5-126.5
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/9/15 Time: 825
Weather Conditions: Cloudy 68°
Depth to groundwater at time of deployment: 1.60
Total well depth at time of deployment: 126.45
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 121.5

Retrieval

Date and Time of Retrieval: Date: 6-10-15 Time: 1310
Total # of days deployed: Sunny 80°F
Weather Conditions: Sunny 75°F
Depth to groundwater at time of retrieval: 1.65
Total well depth at time of retrieval: 126.45
Downhole Field Parameters Upon Retrieval:
Temp: 20.08 **(°C)** **ORP:** 271.8 **(mV)** **Water quality meter:** 650 MDS
pH: 7.61 **DO:** 7.72 **(mg/L)** **Serial #:** 01M0524AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company
Name Company

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number MW.707D2 Date 6.10.15
Field Personnel MM
Sampling Organization ARCADIS
Identify MP

Depth to 15 / 30 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 179
Purging Device; (pump type) Bladder
Total Volume Purged

PID:

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
13.15	9.10		100	0.5	13.84	415	7.80	-151.2	6.64	21.59	
13:20	10.92		100	1.0	11.60	393	7.50	-205.4	4.38	19.61	
13:30	11.55		100	2.0	12.35	400	7.50	-217.4	3.70	16.17	
13:40	11.98		100	3.0	12.11	397	7.51	-225.9	2.74	9.57	
13:50	12.31		100	4.0	11.99	395	7.48	-229.7	2.37	7.54	
13:55	12.55		100	4.5	12.09	397	7.50	-232.5	2.25	6.82	
14:00	12.60		100	5.0	11.96	396	7.49	-234.8	2.20	6.20	
14:05	12.78		100	5.5	11.80	394	7.49	-235.0	2.19	6.55	
14:10	12.95		100	6.0	11.67	393	7.50	-236.0	2.17	6.94	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 10.62

Depth to Bottom: 194.2

Comments: Sampled @ 14:15

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number GMW-901D Date 6/9/15
Field Personnel Mike Redman
Sampling Organization Arcadis
Identify MP

Depth to 8 / 13 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 10.5
Purging Device; (pump type) Bladder
Total Volume Purged
PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: —
Depth to Bottom: 14.81

Comments: Dry well

1 of 4

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRCNE
Well Number MW-901R Date 6/9/15
Field Personnel Mike Reedmer
Sampling Organization Arcadis
Identify MP

Depth to 25 / 40 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 32.5
Purging Device; (pump type) Bladder
Total Volume Purged

PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
11:20	18.01		100	16.0	16.10	256	6.36	168.0	6.31	261.1	
11:25	18.01		100	16.5	16.23	256	6.35	169.2	6.24	234.7	
11:30	18.01		100	17.0	16.24	256	6.35	169.3	6.29	259.2	
11:35	18.01		100	17.5	16.24	256	6.35	169.5	6.34	218.0	
11:40	18.06		100	18.0	16.29	255	6.35	169.5	6.30	225.0	
11:45	18.01		100	18.5	16.37	255	6.35	169.8	6.47	205.4	
11:50	18.01		100	19.0	16.46	255	6.35	170.0	6.22	221.3	

Stabilization Criteria 3% 3% ±0.1 ± 10 mv 10% 10%

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 17.99
Depth to Bottom: 42.46

Comments: Sample @ 11:55

~~Samples~~ Turbidity fluxuated for 5 readings
Sample per CG instructions

244.8

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number MW-707D2 Date 6.10.15
Field Personnel MM
Sampling Organization ARCADIS
Identify MP

Depth to 15 / 30 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 179
Purging Device; (pump type) Bladder
Total Volume Purged

PID:

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
13.15	9.10		100	0.5	13.84	415	7.80	-151.2	6.64	21.59	
13:20	10.92		100	1.0	11.60	393	7.50	-205.4	4.38	19.61	
13:30	11.55		100	2.0	12.35	400	7.50	-217.4	3.70	16.17	
13:40	11.98		100	3.0	12.11	397	7.51	-225.9	2.74	9.57	
13:50	12.31		100	4.0	11.99	395	7.48	-229.7	2.37	7.54	
13:55	12.55		100	4.5	12.09	397	7.50	-232.5	2.25	6.82	
14:00	12.60		100	5.0	11.96	396	7.49	-234.8	2.20	6.20	
14:05	12.78		100	5.5	11.80	394	7.49	-235.0	2.19	6.55	
14:10	12.95		100	6.0	11.67	393	7.50	-236.0	2.17	6.94	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 10.62

Depth to Bottom: 194.2

Comments: Sampled @ 14:15

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE

Well Number MW-901D Date 6/9/15

Field Personnel Mike Redman

Sampling Organization Arcadis

Identify MP

Depth to (below MP) 8 top / 13 bottom of screen

Pump Intake at (ft. below MP) 10.5

Purging Device; (pump type) Bladder

Total Volume Purged

PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: —

Depth to Bottom: 14.81

Comments: Dry well

1 of 4

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRcNE
Well Number MW-901R Date 6/9/15
Field Personnel Mike Reedmer
Sampling Organization Arcadis
Identify MP

Depth to 25 / 40 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 32.5
Purging Device; (pump type) Bladder
Total Volume Purged

PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turbidity NTU	Comments
11:20	18.01		100	16.0	16.10	256	6.36	168.0	6.31	261.1	
11:25	18.01		100	16.5	16.23	256	6.35	169.2	6.24	234.7	
11:30	18.01		100	17.0	16.24	256	6.35	169.3	6.29	259.2	
11:35	18.01		100	17.5	16.24	256	6.35	169.5	6.34	218.0	
11:40	18.06		100	18.0	16.29	255	6.35	169.5	6.30	225.0	
11:45	18.01		100	18.5	16.37	255	6.35	169.8	6.47	205.4	
11:50	18.01		100	19.0	16.46	255	6.35	170.0	6.22	221.3	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 17.99
Depth to Bottom: 42.46

Comments: Sample @ 11:55

~~Samples~~ Turbidity fluxuated for 5 readings
Sample per CG instructions

244.8

2 of 4

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-901R Date 6/9/15
Field Personnel Mike Kelman
Sampling Organization Arcadis
Identify MP

Depth to 25 / 40 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 32.5
Purging Device; (pump type) Bladder
Total Volume Purged
PID: —

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
10:30	18.01		100	11.0	15.84	267	6.44	162.5	6.01	377.6	Drained flow through cell
10:35	18.01		100	11.5	16.47	260	6.55	165.3	9.93	375.9	
10:40	18.01		100	12.0	16.34	263	6.42	165.1	6.50	338.6	
10:45	18.01		100	12.5	16.32	262	6.41	165.3	6.35	332.2	
10:50	18.01		100	13.0	16.23	262	6.40	165.7	6.38	301.2	
10:55	18.01		100	13.5	16.25	260	6.39	166.5	6.39	299.1	
11:00	18.01		100	14.0	16.11	259	6.38	167.4	6.39	309.2	
11:05	18.01		100	14.5	16.17	258	6.36	168.3	6.39	303.8	
11:10	18.01		100	15.0	16.16	257	6.36	168.4	6.37	297.0	
11:15	18.01		100	15.5	16.12	257	6.36	168.8	6.51	288.0	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 17.99

Depth to Bottom: 42.46

Comments:

3 of 4

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-901R Date
Field Personnel Mike Redmain
Sampling Organization Arcadis
Identify MP

Depth to 25 / 40 of screen
(below MP) top bottom
Pump Intake at (ft. below MP)
Purging Device; (pump type) Bladder
Total Volume Purged

PID: —

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
9:40	18.01		100	6.0	14.80	275	6.53	154.1	6.76	771.9	
9:45	18.01		100	6.5	15.13	276	6.52	154.8	6.55	623.7	
9:50	18.01		100	7.0	15.18	276	6.52	155.2	6.44	616.6	
9:55	18.01		100	7.5	15.17	275	6.51	156.0	6.50	624.3	
10:00	18.01		100	8.0	15.22	274	6.50	156.9	6.44	597.3	
10:05	18.01		100	8.5	15.22	274	6.44	160.5	6.46	564.5	
10:10	18.01		100	9.0	15.38	272	6.48	154.0	6.48	494.5	
10:15	18.01		100	9.5	15.44	272	6.48	159.4	6.54	498.2	
10:20	18.01		100	10.0	15.44	270	6.47	160.1	6.31	456.2	
10:25	18.01		100	10.5	15.55	268	6.46	161.4	6.34	445.6	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 17.99

Depth to Bottom: 4246

Comments:

4 of 4

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number W901R Date 6/9/15
Field Personnel Mike Redman
Sampling Organization Arcadis
Identify MP

Depth to 40.25 / 40 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 32.5
Purging Device; (pump type) Bladder
Total Volume Purged 19.0 L
PID: —

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
8:50	18.06		100	0.5	12.43	267	6.55	123.6	14.31	266.6	
8:55	18.01		100	1.6	13.12	268	6.70	132.6	10.15	510.6	
9:00	18.01		100	1.5	12.59	269	6.52	135.2	8.20	839.9	
9:05	18.01		100	2.0	11.46	270	6.53	139.3	7.99	[illegible]	
9:10	18.01		100	2.5	13.15	266	6.68	143.3	8.90	842.6	
9:15	18.01		100	3.0	13.62	273	6.55	145.7	7.21	819.8	
9:20	18.01		100	4.0	13.74	274	6.55	147.8	7.14	770.9	
9:25	18.01		100	4.5	13.88	267	6.55	150.1	6.99	737.4	
9:30	18.01		100	5.0	14.03	276	6.54	151.1	6.96	792.3	
9:35	18.01		100	5.5	14.17	275	6.53	153.1	6.84	823.3	Turn pump rate down to decrease turbidity
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 17.99
Depth to Bottom: 42.46

Comments: Did MS/MSD + Dup on this well

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington
Well ID: MW-907D
Well Type: ● [✓ Monitoring] ● Other:
Well Finish: ● [✓ Stick Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 40-50
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/8/15 Time: 1345
Weather Conditions: Cloudy 70°
Depth to groundwater at time of deployment: 7.31
Total well depth at time of deployment: 50.31
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 45

Retrieval

Date and Time of Retrieval: Date: 6/9/15 Time: 1430
Total # of days deployed: 1 day
Weather Conditions: Sunny 72°
Depth to groundwater at time of retrieval: 7.41
Total well depth at time of retrieval: 50.31
Downhole Field Parameters Upon Retrieval:
Temp: 16.88 **(°C)** **ORP:** -623 **(mV)** **Water quality meter:** 650 MDS
pH: 6.90 **DO:** 2.85 **(mg/L)** **Serial #:** 01M0524 AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company
Name Company

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-967DR

Well Type: ● [✓ Monitoring] ● Other:
Well Finish: ● [✓ Stick Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 154.2 - 174.2
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/08/15 Time: 1900
Weather Conditions: Cloudy 70°
Depth to groundwater at time of deployment: 0.00
Total well depth at time of deployment: 174.2
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:
PID (ppm): 0.0
● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.
● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.
Deployment Depth (Top of HydraSleeve™) (ftbgs): 164

Retrieval

Date and Time of Retrieval: Date: 6/9/15 Time: 1430
Total # of days deployed: 1 day
Weather Conditions: Sunny 92°
Depth to groundwater at time of retrieval: 0.20
Total well depth at time of retrieval: 174.2
Downhole Field Parameters Upon Retrieval:
Temp: 16.00 **(°C)** **ORP:** -198.1 **(mV)** **Water quality meter:** 650 MDS
pH: 7.97 **DO:** 5.27 **(mg/L)** **Serial #:** 01MO 524 AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company
Name Company

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNF
Location: Southington, CT
Well ID: MW-907M

Well Type: ● [✓ Monitoring] ● Other:
Well Finish: ● [✓ Stick Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): Screened Interval (ftbgs): 28.1 - 38.1
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/8/14 Time: 1335
Weather Conditions: Cloudy
Depth to groundwater at time of deployment: 4.61
Total well depth at time of deployment: 38.43
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 33

Retrieval

Date and Time of Retrieval: Date: 6/9/15 Time: 1415
Total # of days deployed: 1 day
Weather Conditions: Sunny 72°
Depth to groundwater at time of retrieval: 6.81
Total well depth at time of retrieval: 38.43
Downhole Field Parameters Upon Retrieval:
Temp: 16.48 **(°C)** **ORP:** -57.5 **(mV)** **Water quality meter:** 650 MDS
pH: 6.75 **DO:** 2.50 **(mg/L)** **Serial #:** 01M0524 AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name Company

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE

Location: Southington, CT

Well ID: MW-1002DR

Well Type: ● [✓ Monitoring] ● Other: Stick up

Well Finish: ● [✓ Stick Up] ● Flush Mount

Measuring Pt: ● [✓ Top of Casing] ● Other (specify):

Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 171.35 - 186.35

Well Casing: Diameter: 2" Material: PVC

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6-8-15 Time: 1105

Weather Conditions: Rain ± 60° F

Depth to groundwater at time of deployment: 59.44

Total well depth at time of deployment:

Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75

Deployment Method/Position of Weight:

PID (ppm): 0.00

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 179

Retrieval

Date and Time of Retrieval: Date: 6/9/15 Time: 1115

Total # of days deployed: 1 day

Weather Conditions: Cloudy 68°

Depth to groundwater at time of retrieval: 59.48

Total well depth at time of retrieval:

Downhole Field Parameters Upon Retrieval:

Temp: 14.53 **(°C)** **ORP:** 81.1 **(mV)** **Water quality meter:** 650 MDS

pH: 8.93 **DO:** 4.86 **(mg/L)** **Serial #:** 01M0524 AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name Company

2.22

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW1002R Date 6/10/15
Field Personnel Mike Redman
Sampling Organization Arcadis
Identify MP

Depth to 105.35 / 120.35 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 112.85
Purging Device; (pump type) Bladder
Total Volume Purged

PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
11:55	6.18		100	0.5	22.02	3524	7.99	33.2	2.16	53.15	
12:00	6.18		100	1.0	22.14	3496	7.90	34.3	1.71	16.33	
12:05	6.14		100	1.5	23.46	3512	7.82	36.2	1.49	9.39	
12:10	6.19		100	2.0	23.76	3534	7.77	38.1	1.58	5.02	
12:15	6.19		100	2.5	23.12	3548	7.71	39.9	1.39	5.40	
12:20	6.20		100	3.0	23.74	3541	7.68	40.8	1.17	4.83	
12:25	6.21		100	3.5	23.48	3516	7.61	42.3	1.02	4.05	
12:30	6.21		100	4.0	23.58	3534	7.56	42.9	0.89	3.11	
12:40	6.21		100	4.5	22.92	3535	7.53	43.0	0.74	2.28	
12:45	6.21		100	5.0	23.04	3515	7.50	42.5	0.70	2.22	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 6.15

Depth to Bottom:

Comments: Sampled @ 13:10

2 of 2

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SASNE
Well Number MW-1002Z Date 6/10/15
Field Personnel mike Ledman
Sampling Organization Arcadis
Identify MP

Depth to 105.35/ 102.35 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 112.85
Purging Device; (pump type) Bladder
Total Volume Purged

PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
12:50	6.21		100	5.5	23.80	35.26	7.47	42.4	0.65	2.67	
12:55	6.21		100	6.0	24.30	3525	7.46	41.7	0.60	3.12	
13:00	6.21		100	6.5	24.40	3525	7.45	41.7	0.56	2.19	
13:05	6.21		100	7.0	24.44	3535	7.44	41.3	0.60	2.85	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 6.35

Depth to Bottom:

Comments: Sample @ 13:10

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: ~~South~~, SRSNE

Location: Southington, CT

Well ID: MW-1003 DR

Well Type: ● [✓ Monitoring] ● Other:

Well Finish: ● [✓ Stick Up] ● Flush Mount

Measuring Pt: ● [✓ Top of Casing] ● Other (specify):

Total Depth As Constructed (ftbgs): 192.4 **Screened Interval (ftbgs):** 177.4 - 192.4

Well Casing: Diameter: 2" Material: PVC

Well Screen: Diameter: ~~1.5~~ 2"

Deployment

Date and Time of Deployment: Date: 6-8-15 Time: 0930

Weather Conditions: P. Cloudy ± 60° F

Depth to groundwater at time of deployment: 13.25

Total well depth at time of deployment: 192.35

Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75

Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 185'

Retrieval

Date and Time of Retrieval: Date: 6/9/15 Time: 1030

Total # of days deployed: 1 day

Weather Conditions: Cloudy 68°

Depth to groundwater at time of retrieval: 13.

Total well depth at time of retrieval: 192.35

Downhole Field Parameters Upon Retrieval:

Temp: 15.15 (°C) **ORP:** 33.6 (mV) **Water quality meter:** 650 MDS

pH: 10.09 **DO:** 5.21 (mg/L) **Serial #:** 01M0524 AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name Company

1 of 2

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-1003R Date 6/10/15
Field Personnel Mike Ledman
Sampling Organization Arcadis
Identify MP

Depth to 103.4 / 118.4 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 110.9
Purging Device; (pump type) Bladder
Total Volume Purged

PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
14:00	6.86		100	0.5	14.65	1224	8.85	-59.4	5.14	4.30	
14:05	6.95		100	1.0	13.01	1368	9.35	-91.8	1.66	32.22	
14:10	6.99		100	1.5	13.02	1414	9.53	-94.3	1.00	38.90	
14:15	7.05		100	2.0	13.97	1457	9.59	-98.1	0.79	43.76	
14:20	7.13		100	2.5	16.74	1806	9.68	-96.3	0.62	90.05	
14:25	7.20		100	3.0	18.19	1782	9.72	-85.5	0.49	101.6	
14:30	7.24		100	3.5	19.40	1675	9.71	-109.5	0.45	73.16	
14:35	7.30		100	4.0	20.67	1413	9.89	-214.3	0.41	23.25	
14:40	7.35		100	4.5	20.27	1176	9.94	-242.3	0.39	13.90	
14:45	7.34		100	5.0	20.46	1240	10.00	-262.2	0.37	11.00	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 6.79
Depth to Bottom: 124.0

Comments: Sampled @ 15:15

893/980

2082

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-1003R Date 6/18/15
Field Personnel Mike Redman
Sampling Organization Arcadis
Identify MP

Depth to 103.4 / 118.4 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 110.9
Purging Device; (pump type) Bladder
Total Volume Purged

PID: 0.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
14:50	7.32		100	5.5	20.72	1238	9.99	-266.4	0.46	10.78	
14:55	7.32		100	6.0	15.88	1227	10.08	-280.4	0.21	7.24	
15:00	7.31		100	6.5	15.77	1227	10.07	-280.6	0.17	7.13	
15:05	7.30		100	7.0	15.60	1217	10.06	-277	0.62	6.41	
15:10	7.29		100	7.5	15.13	1207	10.05	-271	0.14	7.11	

Stabilization Criteria 3% 3% ±0.1 ± 10 mv 10% 10%

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 6.79

Depth to Bottom: 124.0

Comments: Sample@15:15 for VOC's

Mike Tragka

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-309

Well Type: ● [✓ Monitoring] ● Other:
Well Finish: ● [✓ Stick Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 1-11
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/8/15 Time: 1415
Weather Conditions: Sunny 70°
Depth to groundwater at time of deployment: 4.26
Total well depth at time of deployment: 10.97
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.25"
Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 7.5'

Retrieval

Date and Time of Retrieval: Date: 6/10/15 Time: 1030
Total # of days deployed: 1 day
Weather Conditions: sunny ± 75° F
Depth to groundwater at time of retrieval: 4.60
Total well depth at time of retrieval: 10.97
Downhole Field Parameters Upon Retrieval:
Temp: 17.17 **(°C)** **ORP:** -11.8 **(mV)** **Water quality meter:** 650 MDS
pH: 7.20 **DO:** 8.12 **(mg/L)** **Serial #:** 01M0524AB

Notes/Observations:

DUP-06102015-2 collected here

Field Sampling Technician: Name(s) and Company

Name Company

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE

Location: Southington, CT

Well ID: P-11A

Well Type: ● [✓ Monitoring] ● Other:

Well Finish: ● [✓ Stick Up] ● Flush Mount

Measuring Pt: ● [✓ Top of Casing] ● Other (specify):

Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 58-68

Well Casing: Diameter: 2" Material: PVC

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/8/15 Time: 1435

Weather Conditions: Sunny 70°

Depth to groundwater at time of deployment: 5.21

Total well depth at time of deployment: 67.59

Dimensions of HydraSleeve™: Length (in.) 36" Diameter (in.) 1.25"

Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 63

Retrieval

Date and Time of Retrieval: Date: 6-10-15 Time: 1100

Total # of days deployed: 1 day

Weather Conditions: Sunny ± 75°F

Depth to groundwater at time of retrieval: 5.21

Total well depth at time of retrieval: 67.59

Downhole Field Parameters Upon Retrieval:

Temp:______ (°C) **ORP:**______ (mV) **Water quality meter:** 650 MPS

pH:______ **DO:**______ (mg/L) **Serial #:** 01M05Z4AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name Company

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number P.12 Date 6.9.15
Field Personnel MM
Sampling Organization ARCADIS
Identify MP

Depth to 2.5 / 15 of screen
(below MP) top bottom
PID: —
Pump Intake at (ft. below MP) 1.1
Purging Device; (pump type) Bladder
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
12:55	6.91		100	0.5	17.98	299	6.69	185.2	2.09	22.89	
13:00	6.89		100	1.0	18.93	305	6.60	159.7	1.82	78.30	
13:10	6.90		100	2.0	19.20	303	6.57	139.9	1.55	346.1	
13:25	6.90		100	3.5	21.30	315	6.56	127.2	1.35	303.3	
13:40	6.90		100	5.0	21.14	310	6.55	135.1	1.38	281.8	
14:00	6.97		100	7.0	14.93	265	6.46	122.9	1.54	281.6	
14:30	6.91		100	9.0	17.51	275	6.52	117.0	1.42	171.9	
15:00	6.91		100	12.0	17.37	274	6.52	122.3	1.43	142.1	
15:30	6.91		100	15.0	17.50	277	6.52	124.1	1.47	157.2	
15:35	6.91		100	15.5	17.98	285	6.52	127.3	1.41	105.4	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 6.87

Depth to Bottom:

Comments:

Page 1 of 2

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number 0-12 Date
Field Personnel MM
Sampling Organization ARCADIS
Identify MP

Depth to 25/5 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 11
Purging Device; (pump type) Bladder
Total Volume Purged
PID: —

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
15:40	6.91		100	16.0	17.37	281	6.51	125.8	1.60	87.06	
15:45	6.91		100	16.5	17.72	284	6.51	124.8	1.58	85.01	
15:50	6.91		100	17.0	17.32	281	6.51	123.9	1.55	106.6	
15:55	6.91		100	17.5	17.13	282	6.51	1255	1.48	77.85	
16:00	6.91		100	18.0	17.33	282	6.51	125.8	1.48	80.55	
16:05	6.91		100	18.5	17.15	285	6.51	125.1	1.45	80.98	
16:10	6.91		100	19.0	17.41	286	6.49	1283	1.45	81.00	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water:

Depth to Bottom:

Comments: Sampled @ 16:15

Page 2 of 2

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number PZ-13 Date 6-8-5
Field Personnel mm
Sampling Organization ARCADIS
Identify MP

Depth to 5 / 10 of screen
(below MP) top bottom
PID: —
Pump Intake at (ft. below MP) 10
Purging Device; (pump type) Bladder
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
15:00	10.36		100	0.5	11.87	141	7.23	1475	6.34	123.7	
15:15	10.70		100	2.0	12.47	139	7.29	1455	6.75	39.52	
15:20			100	2.5	12.34	138	7.28	147.4	6.50	34.49	
15:25			100	3.0	13.94	143	7.28	1482	5.81	22.42	
~~15:30~~			~~100~~	~~3.5~~	well does not re-charge well -						paused to check re-charge
15:40											slow recharge
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 10.15

Depth to Bottom:

Comments:

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: P-101B

Well Type: ● [✓ Monitoring] ● Other:
Well Finish: ● [✓ Stick Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 34-44
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/8/15 Time: 845
Weather Conditions: Cloudy 68°
Depth to groundwater at time of deployment: 2.10
Total well depth at time of deployment: 43.19
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 0.0

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 39

Retrieval

Date and Time of Retrieval: Date: 6-10-15 Time: 1400
Total # of days deployed: Sunny 80°F
Weather Conditions: Sunny 75°F
Depth to groundwater at time of retrieval: 2.20
Total well depth at time of retrieval: 43.19
Downhole Field Parameters Upon Retrieval:
Temp: 18.40 (°C) **ORP:** 37.4 (mV) **Water quality meter:** 650 MDS
pH: 7.37 **DO:** 7.57 (mg/L) **Serial #:** 61mo524AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company
Name Company

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: P-101C

Well Type: [✓ Monitoring] • Other:
Well Finish: [✓ Stick Up] • Flush Mount
Measuring Pt: [✓ Top of Casing] • Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 3 - 13
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6/9/15 Time: 905
Weather Conditions: Cloudy 68°
Depth to groundwater at time of deployment: 3.93
Total well depth at time of deployment: 12.94
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 0.0

• Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

• Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 8'

Retrieval

Date and Time of Retrieval: Date: 6-10-15 Time: 1340
Total # of days deployed: [illegible]
Weather Conditions: Sunny 75°F
Depth to groundwater at time of retrieval: 3.96
Total well depth at time of retrieval: 12.94
Downhole Field Parameters Upon Retrieval:
Temp: 18.34 **(°C)** **ORP:** -70.7 **(mV)** **Water quality meter:** 650 MDS
pH: 7.27 **DO:** 7.10 **(mg/L)** **Serial #:** 01M0524AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name Company

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number PZO-2D Date 06-09-2015
Field Personnel Mike Redman
Sampling Organization ARCADIS
Identify MP

Depth to 75 / 85 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 80
Purging Device; (pump type) Bladder
Total Volume Purged 5.0L
PID:

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
13:24	7.22		100	0.5	14.52	185	7.51	162.5	6.95	12.79	
13:29	7.19		100	1.0	14.26	183	7.62	158.6	6.79	161.3	
13:34	7.20		100	1.5	18.14	193	7.71	148.4	5.56	69.45	
13:39	7.19		100	2.0	17.45	185	7.67	146.4	5.03	26.80	
13:44	7.21		100	2.5	17.69	186	7.68	145.7	4.98	16.09	
13:49	7.19		100	3.0	17.37	187	7.69	144.2	5.00	13.79	
13:54	7.18		100	3.5	17.48	186	7.70	142.8	4.81	8.26	
13:59	7.19		100	4.0	18.08	187	7.69	1429	4.78	7.56	
14:05	7.20		100	4.5	18.46	187	7.68	139.2	4.72	7.22	
14:10	7.20		100	5.0	18.40	187	7.68	1385	4.75	6.52	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 7.21'

Depth to Bottom: 87.00'

Comments: Sample 14:28

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: PZ0-2M
Well Type: ● [✓ Monitoring] ● Other: Stick up
Well Finish: ● [✓ Stick Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 46-56
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 6-8-15 Time: 1020
Weather Conditions: P Cloudy ±60°F
Depth to groundwater at time of deployment: 7.64
Total well depth at time of deployment: 58.36
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:

PID (ppm): 0.00

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 51

Retrieval

Date and Time of Retrieval: Date: 6/9/15 Time: 1050
Total # of days deployed: 1 day
Weather Conditions: Cloudy 68°
Depth to groundwater at time of retrieval: 7.72
Total well depth at time of retrieval: 58.34
Downhole Field Parameters Upon Retrieval:
Temp: 12.94 **(°C)** **ORP:** 41.1 **(mV)** **Water quality meter:** 650 MDS
pH: 7.41 **DO:** 6.46 **(mg/L)** **Serial #:** 01M0524 AB

Notes/Observations:

Field Sampling Technician: Name(s) and Company
Name Company

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number P7R-2R Date 6-9-15
Field Personnel Mike Redman
Sampling Organization Arcadis
Identify MP 140.5

Depth to 120.5 / ______ of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 130.8
Purging Device; (pump type) Bladder
Total Volume Purged 5.0 Liters

PID: ———

Clock Time 24 HR 4	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1~~5~~:40	5.98		100	.05	12.09	226	7.43	137.5	1.70	9.60	I misread the time
1~~5~~4:45	7.19		100	1.0	11.67	225	7.42	133.4	1.15	9.10	15 to 14
1~~5~~4:50	8.98		100	1.5	11.83	225	7.38	131.0	1.04	7.21	and 16:15
1~~5~~4:55	10.46		100	2.0	13.07	223	7.33	125.7	0.96	7.41	
1~~6~~5:00	11.33		100	2.5	13.38	223	7.32	125.0	0.95	5.05	
1~~6~~5:05	11.35		100	3.0	13.93	226	7.33	121.4	1.05	5.75	
1~~6~~5:10	11.36		100	3.5	15.66	226	7.32	119.2	1.06	5.28	
1~~6~~5:15	11.46		100	4.0	15.30	223	7.32	117.1	1.08	3.68	
1~~6~~5:20	11.40		100	4.5	15.58	223	7.33	116.3	1.10	4.03	
1~~6~~5:25	11.40		100	5.0	15.81	224	7.33	115.9	1.09	3.85	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 5.98'
Depth to Bottom: 144.54

Comments:
Sample @ 15:30

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-902 D

Well Type: [✓ • Monitoring] • Other:
Well Finish: [✓ • Stick Up] • Flush Mount
Measuring Pt: [✓ • Top of Casing] • Other (specify):
Total Depth As Constructed (ftbgs): 24.0 **Screened Interval (ftbgs):** 19.0 - 24.0
Well Casing: Diameter: 2" Material: Steel
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 3-17-15 Time: 13:35
Weather Conditions: 40° Cloudy
Depth to groundwater at time of deployment: 10.94
Total well depth at time of deployment: 21.44
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:
PID (ppm): 0.0

- Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.
- [✓ Top-Down]: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 16

Retrieval

Date and Time of Retrieval: Date: 3/18/15 Time: 1543
Total # of days deployed: 1
Weather Conditions: 28° Sunny
Depth to groundwater at time of retrieval: 10.64
Total well depth at time of retrieval: 21.44
Downhole Field Parameters Upon Retrieval:
Turb: 41.13
Temp: 8.1 **(°C)** **ORP:** -43.9 **(mV)** **Water quality meter:** YSI Pro Plus
pH: 6.42 **DO:** 8.6 **(mg/L)** **Serial #:** 10E100342

Notes/Observations:
Outer casing : 29"
PVC : 26.5"
Set to 18.0 ft from PVC
MS, MSD For dissolved/Total metals and Alk.

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O+M, Inc.
Chris Trowbridge / Mike Redman	Arcadis

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Appendix B-2
HydraSleeve™ Field Form

Site: ~~Southingtn~~ SRSNE
Location: Southington, CT
Well ID: MW-902 M

Well Type: [✓ Monitoring] • Other:
Well Finish: [✓ Stick Up] • Flush Mount
Measuring Pt: [✓ Top of Casing] • Other (specify):
Total Depth As Constructed (ftbgs): 17.5 **Screened Interval (ftbgs):** 12.5-17.5
Well Casing: Diameter: 2" Material: Steel
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 3-17-15 Time: 13:55
Weather Conditions: 40° Cloudy
Depth to groundwater at time of deployment: 10.63
Total well depth at time of deployment: 26.17
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:

PID (ppm): 0.0

[✓ Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.]

• Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): ~~14~~ 15.0

Retrieval

Date and Time of Retrieval: Date: 3-18-15 Time: 16:03
Total # of days deployed: 1
Weather Conditions: 30° Sunny
Depth to groundwater at time of retrieval: 10.42
Total well depth at time of retrieval: 26.17
Downhole Field Parameters Upon Retrieval: Turb: 85.78
Temp: 8.2 (°C) **ORP:** -52.2 (mV) **Water quality meter:** YSI Pro Plus
pH: 6.45 **DO:** 1.45 (mg/L) **Serial #:** 10E100342

Notes/Observations:

outer casing: 32"
steel: 29"

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O+M, Inc.
Chris Trowbridge / Mike Reilman	Arcadis

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-304

Well Type: [✓ Monitoring] • Other:
Well Finish: [✓ Stick Up] • Flush Mount
Measuring Pt: [✓ Top of Casing] • Other (specify):
Total Depth As Constructed (ftbgs): 11.0 **Screened Interval (ftbgs):** 1.0 - 11.0
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 3-17-15 Time: 10:17
Weather Conditions: 40° cloudy
Depth to groundwater at time of deployment: 10.49
Total well depth at time of deployment: 16.14
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:
PID (ppm): 0.0

[✓ Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.]

• Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 10.1

Retrieval

Date and Time of Retrieval: Date: 3-18-15 Time: 12:27
Total # of days deployed: 1
Weather Conditions: 30° sunny, windy
Depth to groundwater at time of retrieval: 10.30
Total well depth at time of retrieval: 16.14
Downhole Field Parameters Upon Retrieval:
Temp: 7.1 (°C) **ORP:** 62.8 (mV) **Water quality meter:** YSI Pro Plus
pH: 5.92 **DO:** 7.07 (mg/L) **Serial #:** 10E100342

Turbidity - 60.1
Notes/Observations:
Outer casing: 44"
PVC : 41"
Deployed to 13.5 ft from pvc. due to lack of GW

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O&M, Inc.
Chris Trowbridge / Mike Redmon	Arcadis

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: TW - 08D

Well Type: [✓ Monitoring] ● Other:
Well Finish: [✓ Stick Up] ● Flush Mount
Measuring Pt: [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): 22.0 **Screened Interval (ftbgs):** 17.0 - 22.0
Well Casing: Diameter: 2" Material: Steel
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 3-17-15 Time: 10:34
Weather Conditions: 40° cloudy
Depth to groundwater at time of deployment: 8.60
Total well depth at time of deployment: 26.07
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:

PID (ppm): 4.3

[✓ Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.]

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 19.5

Retrieval

Date and Time of Retrieval: Date: 3-18-15 Time: 12:48
Total # of days deployed: 1
Weather Conditions: 30° Sunny
Depth to groundwater at time of retrieval: 8.51
Total well depth at time of retrieval: 26.07
Downhole Field Parameters Upon Retrieval: Turb: 54.11
Temp: 21.1 (°C) **ORP:** -43.6 (mV) **Water quality meter:** YSI Pro Plus
pH: 6.61 **DO:** 9.61 (mg/L) **Serial #:** 10E100342

Notes/Observations:

outer: 22"
Steel: 19.5"

~~All 'MS' content completed except dissolved~~ ~~SSS'~~

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O+M, Inc.
Chris Trowbridge / Mike Redman	Arcadis

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: TW-J 08B

Well Type: [✓ Monitoring] ● Other:
Well Finish: [✓ Stick Up] ● Flush Mount
Measuring Pt: [✓ Top of Casing] ● Other (specify):

Total Depth As Constructed (ftbgs): 31.5 **Screened Interval (ftbgs):** 21.5 - 31.5
Well Casing: Diameter: 2" Material: Steel
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 3-17-15 Time: 10:46
Weather Conditions: 40° Cloudy
Depth to groundwater at time of deployment: 9.16
Total well depth at time of deployment: 29.12
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:
PID (ppm): 9.1

[✓ Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.]

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 26.5

Retrieval

Date and Time of Retrieval: Date: 3-18-15 Time: 13:22
Total # of days deployed: 1
Weather Conditions: 30° Sunny
Depth to groundwater at time of retrieval: 9.05
Total well depth at time of retrieval: 29.12
Downhole Field Parameters Upon Retrieval: Turb: 137.0
Temp: 19.9 (°C) **ORP:** -47.5 (mV) **Water quality meter:** YSI Pro Plus
pH: 6.73 **DO:** 8.05 (mg/L) **Serial #:** 10E100342

Notes/Observations:

~~All 'MS' content completed except 'dissolved gases'~~
outer: 38"
Steel: 25.5" ~~All 'MSD' content except 'dissolved gases'~~

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O&M, Inc.
Chris Trowbridge / Mike Redman	Arcadis

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: TW - J08A

Well Type: ● [✓ Monitoring] ● Other:
Well Finish: ● [✓ Stick Up] ● Flush Mount
Measuring Pt: ● [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): 14.0 **Screened Interval** (ftbgs): 4.0 - 14.0
Well Casing: Diameter: 2" Material: Steel
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 3-17-15 Time: 10:59
Weather Conditions: 40° Cloudy
Depth to groundwater at time of deployment: 9.14
Total well depth at time of deployment: 14.39
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:

PID (ppm): 0.0

● [✓ Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.]

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 10.1

Retrieval

Date and Time of Retrieval: Date: 3-15-15 Time: 13 54
Total # of days deployed: 1
Weather Conditions: 30° Sunny
Depth to groundwater at time of retrieval: 9.03
Total well depth at time of retrieval: 14.39
Downhole Field Parameters Upon Retrieval:
Temp: 25.1 **(°C)** **ORP:** -63.0 **(mV)** Turb: 51.13 **Water quality meter:** YSI Pro Plus
pH: 6.79 **DO:** 2.48 **(mg/L)** **Serial #:** 10E100342

Notes/Observations:

Outer casing : 27" Deployed to 12.14 from Steel due to lack of GW
~~BLC~~ Steel 2" : 24"

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O+M Inc.
Chris Trowbridge / Mike Redman	Arcadis

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-413

Well Type: • [✓ Monitoring] • Other:
Well Finish: • [✓ Stick Up] • Flush Mount
Measuring Pt: • [✓ Top of Casing] • Other (specify):
Total Depth As Constructed (ftbgs): 19.8 **Screened Interval (ftbgs):** 14.8 – 19.8
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 3-17-15 Time: 11:13
Weather Conditions: 40° Cloudy
Depth to groundwater at time of deployment: 7.51
Total well depth at time of deployment: 22.31
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:
PID (ppm): 0.0

• [✓ Top-Down:] Weight attached to bottom of HydraSleeve™. Weight suspended in well.

• Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 17.3

Retrieval

Date and Time of Retrieval: Date: 3/18/15 Time: 1430
Total # of days deployed: 1
Weather Conditions: 30° Sunny
Depth to groundwater at time of retrieval: 7.36
Total well depth at time of retrieval: 22.31
Downhole Field Parameters Upon Retrieval:
Temp: 9.3 (°C) **ORP:** -53.9 (mV) Turb: 15.38 **Water quality meter:** YSI Pro Plus
pH: 6.25 **DO:** 1.96 (mg/L) **Serial #:** 10E100342

Notes/Observations:

outer casing: 27" Dup, MS, MSD, of dissolved gases
PVC : 25" Dup of Everything except dissolved metals

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O+M, Inc.
Chris Trowbridge / Mike Redman	Arcadis

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-V416

Well Type: [✓ Monitoring] • Other:
Well Finish: [✓ Stick Up] • Flush Mount
Measuring Pt: [✓ Top of Casing] • Other (specify):
Total Depth As Constructed (ftbgs): 49.4 **Screened Interval (ftbgs):** 29.4 - 49.4
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 3-17-15 Time: 14:10
Weather Conditions: 40° Cloudy
Depth to groundwater at time of deployment: 10.47
Total well depth at time of deployment: 49.90
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75
Deployment Method/Position of Weight:

PID (ppm): 0.0

[✓ Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.]

• Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 30.4

Retrieval

Date and Time of Retrieval: Date: 3-18-15 Time: 15:12
Total # of days deployed: 1
Weather Conditions: 30° Sunny
Depth to groundwater at time of retrieval: 9.55
Total well depth at time of retrieval: 49.90
Downhole Field Parameters Upon Retrieval: Turb: 13.40
Temp: 6.8 (°C) **ORP:** -54.5 (mV) **Water quality meter:** YSI Pro Plus
pH: 7.43 **DO:** 8.01 (mg/L) **Serial #:** 10E100342

Notes/Observations:

Outer: 31"
PVC: 29.5"
MS + MSD for TOC, VOC, + NO3-4500 CL-300 NO2-4500 NO3 SO4-300

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O+M, Inc
Chris Trowbridge / Mike Redman	Arcadis

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE

Location: Southington, CT

Well ID: MWL - 307

Well Type: • [✓ Monitoring] • Other:

Well Finish: • [✓ Stick Up] • Flush Mount

Measuring Pt: • [✓ Top of Casing] • Other (specify):

Total Depth As Constructed (ftbgs): 11.0 **Screened Interval (ftbgs):** 1.0 - 11.0

Well Casing: Diameter: 2" Material: PVC

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 3-17-15 Time: 13:00

Weather Conditions: 40° Cloudy

Depth to groundwater at time of deployment: 6.08

Total well depth at time of deployment: 12.85

Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75

Deployment Method/Position of Weight:

PID (ppm): 0.0

• [✓ Top-Down]: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

• Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 7.5

Retrieval

Date and Time of Retrieval: Date: 3-18-15 Time: 15:15

Total # of days deployed: 1

Weather Conditions: 30° Sunny

Depth to groundwater at time of retrieval: 5.98

Total well depth at time of retrieval: 12.85

Downhole Field Parameters Upon Retrieval: Turb: 42.51

Temp: 5.1 (°C) **ORP:** 33.4 (mV) **Water quality meter:** YSI Pro Plus

pH: 6.38 **DO:** 10.99 (mg/L) **Serial #:** 10E100342

Notes/Observations:

Above GS <
outer casing : 27"
PVC : 18"

set @ 9.0 from PVC

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O&M, Inc.
Chris Trowbridge / Mike Redman	Arcadis

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Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-415

Well Type: [✓ Monitoring] • Other:
Well Finish: [✓ Stick Up] • Flush Mount
Measuring Pt: [✓ Top of Casing] • Other (specify):
Total Depth As Constructed (ftbgs): 11.8 **Screened Interval (ftbgs):** 6.8-11.8
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 3-17-15 Time: 11:23
Weather Conditions: 40° Cloudy
Depth to groundwater at time of deployment: 7.69
Total well depth at time of deployment: 14.29
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:
PID (ppm): 0.0

[✓ Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.]

• Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 8.7

Retrieval

Date and Time of Retrieval: Date: 3-18-15 Time: 1445
Total # of days deployed: 1
Weather Conditions: 30° Sunny
Depth to groundwater at time of retrieval: 7.59
Total well depth at time of retrieval: 14.29
Downhole Field Parameters Upon Retrieval:
Temp: 3.5 **(°C)** **ORP:** 16.9 **(mV)** Turb: 56.69 **Water quality meter:** YSI Pro Plus
pH: 6.53 **DO:** 4.77 **(mg/L)** **Serial #:** 10E100342

Notes/Observations:
outer casing: 30"
PVC : ≈28"
Deployed 11.0 from PVC due to lack of GW
Dup for dissolved metals

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O+M Inc
Chris Trowbridge / Mike [illegible]	Arcadis

ARCADIS

Attachment A
HydraSleeve™ Field Form

Site: SRSNE

Location: Southington, CT

Well ID: TW-08D

Well Type: ● [✓ Monitoring] ● Other:

Well Finish: ● [✓ Stick Up] ● Flush Mount

Measuring Pt: ● [✓ Top of Casing] ● Other (specify):

Total Depth As Constructed (ftbgs): 22.0 **Screened Interval (ftbgs):** 17.0 - 22.0

Well Casing: Diameter: 2" Material: Steel

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 7/6/15 Time: 8:45

Weather Conditions: 64° Sunny

Depth to groundwater at time of deployment: 6.76

Total well depth at time of deployment: 26.34 26.34

Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75

Deployment Method/Position of Weight:

PID (ppm) 73.8

● Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom.

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 19.5

Retrieval

Date and Time of Retrieval: Date: ~~8~~ 7/7/15 Time: 09:22

Total # of days deployed: 1

Weather Conditions: 70° Sunny

Depth to groundwater at time of retrieval: 6.40

Total well depth at time of retrieval: 26.34

Downhole Field Parameters Upon Retrieval:

Temp: 20.70 **(°C)** **ORP:** -101 **(mV)** **Water quality meter:** YSI 6920

pH: 6.96 **DO:** 2.13 **(mg/L)** **Serial #:** 02J0124AD

Turb: 21.3

Notes/Observations:

Top of Casing 1.92'
Top of Riser 1.71'

DUP of dissolved gasses
DUP of VOC

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O+M
Mike Redman	Arcadis

ARCADIS

Attachment A
HydraSleeve™ Field Form

Site: SRS NE

Location: Southington, CT

Well ID: MW-304

Well Type: [✓ Monitoring] ● Other:

Well Finish: [✓ Stick Up] ● Flush Mount

Measuring Pt: [✓ Top of Casing] ● Other (specify):

Total Depth As Constructed (ftbgs): 11.0 **Screened Interval (ftbgs):** 1.0 - 11.0

Well Casing: Diameter: 2" Material: PVC

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 7/16/15 Time: 8:30

Weather Conditions: 64°F Sunny

Depth to groundwater at time of deployment: 8.39

Total well depth at time of deployment: 16.40

Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75

Deployment Method/Position of Weight:

PID (ppm) : 0.0

- ● Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom.
- ● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.
- ● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): ~~12.14~~ 10.38

Retrieval

Date and Time of Retrieval: Date: 7/17/15 Time: 8:50

Total # of days deployed: 1

Weather Conditions: 70° Mostly

Depth to groundwater at time of retrieval: 8.45

Total well depth at time of retrieval: 16.40

Downhole Field Parameters Upon Retrieval:

(20.55°C) 7/23/15

Temp: 8.12 (°C) **ORP:** -92.4 (mV) **Water quality meter:** YSI 6920

pH: 6.42 **DO:** 5.85 (mg/L) **Serial #:** 02J0124AD

Notes/Observations: Turb: 68.8

Top of casing - 3.43
Top of Rvr - 3.18

Possible NAPL in Sleeve. Black Blebs suspended in sleeve

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O&M
Mike Perlman	Arcadis

ARCADIS

Attachment A
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-982D

Well Type: [✓ ● Monitoring] ● Other:
Well Finish: [✓ ● Stick Up] ● Flush Mount
Measuring Pt: [✓ ● Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): 24.0 Screened Interval (ftbgs): 19.0-24.0
Well Casing: Diameter: 2" Material: Steel
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 7/16/2015 Time: 11:20
Weather Conditions: 67° Sunny + Windy
Depth to groundwater at time of deployment: 9.98
Total well depth at time of deployment: 21.75
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm) 0.1

- ● Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom.
- ● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.
- ● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 16.0

Retrieval

Date and Time of Retrieval: Date: 7/17/15 Time: 13:40
Total # of days deployed: 1 day
Weather Conditions: 77°F Sunny
Depth to groundwater at time of retrieval: 10.49
Total well depth at time of retrieval: 21.75
Downhole Field Parameters Upon Retrieval: turb - 29.2
Temp: 18.73 (°C) ORP: -107.7 (mV) Water quality meter: YSI 6920
pH: 6.27 DO: 3.35 (mg/L) Serial #: 02J0124AD

Notes/Observations:

Outer Casing 2.35' Potential NAPLE, strong odor, black bleebs in gw.
steel-2.1'

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O&M
Mike Redman	Arcadis

ARCADIS

Attachment A
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: TW-08A

Well Type: [✓ ● Monitoring] ● Other:
Well Finish: [✓ ● Stick Up] ● Flush Mount
Measuring Pt: [✓ ● Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): 14'0" **Screened Interval (ftbgs):** 4.0 - 14.0
Well Casing: Diameter: 2" Material: Steel
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 7/16/15 Time: 9:45
Weather Conditions: 66°F Windy
Depth to groundwater at time of deployment: ~~6.85~~ 7.05
Total well depth at time of deployment: 14.89
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:

PID (ppm) 25.5

● Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom.
● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.
● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 8.8'

Retrieval

Date and Time of Retrieval: Date: 7/17/15 Time: 10:05
Total # of days deployed: 1
Weather Conditions: 70° Sunny
Depth to groundwater at time of retrieval: 7.00
Total well depth at time of retrieval: 14.69
Downhole Field Parameters Upon Retrieval:
Temp: 37.74 (°C) **ORP:** -69.0 (mV) **Water quality meter:** YSI 6920
pH: 5.9 **DO:** 2.04 (mg/L) **Serial #:** 02J0124AD

Turb: 88.4

Notes/Observations:

Top of Casing - 2.04'
Top of Riser - 1.88

Potential NAPL in well, strong odor, blackish blebs in sleeve. MS/MSD for dissolved gasses

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O&M
Mike Redmon	Arcadis

ARCADIS

Attachment A
HydraSleeve™ Field Form

Site: SRS NE
Location: Southington, CT
Well ID: MW-413
Well Type: [✓ ● Monitoring] ● Other:
Well Finish: [✓ ● Stick Up] ● Flush Mount
Measuring Pt: [✓ ● Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): 19.8 **Screened Interval (ftbgs):** 14.8-19.8
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 7/16/15 Time: 10:40
Weather Conditions: 66° Sunny/Windy
Depth to groundwater at time of deployment: 6.12
Total well depth at time of deployment: 22.34
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:

PID (ppm) 0.3

- ● Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom.
- ● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.
- ● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 17.0

Retrieval

Date and Time of Retrieval: Date: 7/17/15 Time: 11:10
Total # of days deployed: 1
Weather Conditions: 75° Sunny
Depth to groundwater at time of retrieval: 6.06
Total well depth at time of retrieval: 22.34
Downhole Field Parameters Upon Retrieval:
Temp: 19.70 **(°C)** **ORP:** -46.2 **(mV)** **Water quality meter:** YSI 6920
pH: 6.10 **DO:** 6.18 **(mg/L)** **Serial #:** 02J0124AD

Notes/Observations: Turb: 44.0

Strong odor of NAPLE. Recovery: Brown tint
Top of Casing 2.38 Top of Riser 2.21

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O+M
Mike Redman	Arcadis

ARCADIS

Attachment A
HydraSleeve™ Field Form

Site: SRSNE

Location: Southington, CT

Well ID: MWL-307

Well Type: [✓ Monitoring] ● Other:

Well Finish: [✓ Stick Up] ● Flush Mount

Measuring Pt: [✓ Top of Casing] ● Other (specify):

Total Depth As Constructed (ftbgs): 11.0 **Screened Interval (ftbgs):** ~~10-11.0~~ 1.0-11.0

Well Casing: Diameter: 2" Material: PVC

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 7/16/15 Time: 11:55

Weather Conditions: 68° Sunny

Depth to groundwater at time of deployment: 6.51

Total well depth at time of deployment: 13.47

Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"

Deployment Method/Position of Weight:

PID (ppm) 0.0

● Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom.

● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 7.5

Retrieval

Date and Time of Retrieval: Date: 7/17 Time: 14:55

Total # of days deployed: 1 day

Weather Conditions: 77° Sunny

Depth to groundwater at time of retrieval: 5.58

Total well depth at time of retrieval:

Downhole Field Parameters Upon Retrieval: Turb 2.6

Temp: 21.09 (°C) **ORP:** -8.7 (mV) **Water quality meter:** YSI 6920

pH: 5.91 **DO:** 5.86 (mg/L) **Serial #:** 02J0124AD

Notes/Observations:

Top of Casing 2.0'
Top of Riser 1.5'

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O&M
Mike Redman	Arcadis

ARCADIS

Attachment A
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: MW-416
Well Type: [✓ ● Monitoring] ● Other:
Well Finish: [✓ ● Stick Up] ● Flush Mount
Measuring Pt: [✓ ● Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): 49.4 **Screened Interval (ftbgs):** 29.4-49.4
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 3/17/15 Time: 11:45
Weather Conditions: 68° Sunny
Depth to groundwater at time of deployment: 8.80
Total well depth at time of deployment: 49.41
Dimensions of HydraSleeve™: Length (in.) 30" Diameter (in.) 1.75
Deployment Method/Position of Weight:

- ● Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom.
- ● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.
- ● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

PID (ppm) 0.0

Deployment Depth (Top of HydraSleeve™) (ftbgs): ~~40.4~~ 33.8

Retrieval

Date and Time of Retrieval: Date: 3/17/15 Time: ~~3:17~~ 12:17
Total # of days deployed: 1
Weather Conditions: 77° Sunny
Depth to groundwater at time of retrieval: 8.94'
Total well depth at time of retrieval: 33.7
Downhole Field Parameters Upon Retrieval: Turb 25.8
Temp: 20.12 (°C) **ORP:** -85.5 (mV) **Water quality meter:** YSI 6920
pH: 6.23 **DO:** 2.92 (mg/L) **Serial #:** 02J0124AD

Notes/Observations:

Top of Casing 2.5'
Top of Riser - [illegible]25

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O+M
Mike Redman	Arcadis

ARCADIS

Attachment A
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, Ct
Well ID: MW-902M
Well Type: [✓ Monitoring] ● Other:
Well Finish: [✓ Stick Up] ● Flush Mount
Measuring Pt: [✓ Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): 17.5 **Screened Interval (ftbgs):** 12.5 - 17.5
Well Casing: Diameter: 2" Material: Steel
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 7/16/2015 Time: 10:55
Weather Conditions: 67° Sunny
Depth to groundwater at time of deployment: 9.58
Total well depth at time of deployment: 20.20
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:
- ● Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom.
- ● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.
- ● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

PID (ppm) 0.0

Deployment Depth (Top of HydraSleeve™) (ftbgs): 15

Retrieval

Date and Time of Retrieval: Date: 7/17/15 Time: 12:20
Total # of days deployed: 1
Weather Conditions: 75° Sunny
Depth to groundwater at time of retrieval: 9.33
Total well depth at time of retrieval: 20.20
Downhole Field Parameters Upon Retrieval: Turb:
Temp: 17.66 (°C) **ORP:** -80.1 (mV) **Water quality meter:** YSI 6920
pH: 6.47 **DO:** 7.16 (mg/L) **Serial #:** 02J0124AD

Turb: 50.8

Notes/Observations:

Top of Casing 2.6'
Top of Riser 2.35' 2.35'

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O+M
Mike Redman	Arcadis

ARCADIS

Attachment A
HydraSleeve™ Field Form

Site: SRS NE
Location: Southington, CT
Well ID: MW-415

Well Type: [✓ ● Monitoring] ● Other:
Well Finish: [✓ ● Stick Up] ● Flush Mount
Measuring Pt: [✓ ● Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 6.8-11.8
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 7/16/15 Time: 10:10
Weather Conditions: 66° Sunny
Depth to groundwater at time of deployment: 6.28'
Total well depth at time of deployment: 14.15
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:

PID(ppm) 0.0

● Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom.
● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.
● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 9.3

Retrieval

Date and Time of Retrieval: Date: 7/17/15 Time: 11:45
Total # of days deployed: 1
Weather Conditions: 75° Sunny
Depth to groundwater at time of retrieval: 6.20
Total well depth at time of retrieval: 14.15
Downhole Field Parameters Upon Retrieval: Turb: 11.5
Temp: 22.99 **(°C)** **ORP:** 57.1 **(mV)** **Water quality meter:** YSI 6920
pH: 5.62 **DO:** 3.93 **(mg/L)** **Serial #:** 02J0124AD

Notes/Observations:

Top of Casing -2.49'
Top of Riser -2.32'
Yellow/Brown tint

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	O&M
Mike Redman	Arcadis

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~~See Low Flow Sheets~~

ARCADIS

Attachment A
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington, CT
Well ID: TW08B
Well Type: [✓ ● Monitoring] ● Other:
Well Finish: [✓ ● Stick Up] ● Flush Mount
Measuring Pt: [✓ ● Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): 31.5 **Screened Interval (ftbgs):** 21.5 - 31.5
Well Casing: Diameter: 2" Material: Steel
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 7/16/15 Time: 9:20
Weather Conditions: 65° Sunny
Depth to groundwater at time of deployment: ~~6.86~~ 7.11
Total well depth at time of deployment: ~~28.85~~ 28.1
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:

PID (ppm) 1.6

● Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom.
● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.
● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 26.0

Retrieval

Date and Time of Retrieval: Date: Time:
Total # of days deployed:
Weather Conditions:
Depth to groundwater at time of retrieval:
Total well depth at time of retrieval:
Downhole Field Parameters Upon Retrieval: Parameters taken on 7/23/15
Temp: 38.33 (°C) **ORP:** -122.0 (mV) **Water quality meter:** YSI 6920
pH: 7.06 **DO:** 1.13 (mg/L) **Serial #:** 02J0124AD

Notes/Observations: Turb: 20.0

Top of Casing 2.21'
Top of Riser 2.01'

Well was bent + repaired, HS broke upon retrieval + unable to put another one down. Well ~~[illegible]~~ Kinked @ 2.89 from steel top

Field Sampling Technician: Name(s) and Company

Name	Company
Ryan Malone	OtM
Mike Redman	Arcadis

~~MS, MSD,~~ MS : VOC, TOC, SO4, C, NO3, NO2, Diss-metals, Total metals + Alkalinity

MSD: VOC, TOC, SO4, C, NO3, NO2, Diss metals, Total Metals + Alkalinity

Duplicate: Dissolved metals(FF), Alkalinity, Total metals, [SO4, C, NO3, NO2], TOC's

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) Sout SRSNE
Well Number TW-08B Date 7/17/15
Field Personnel Mike R / Ryan M
Sampling Organization Arcadis + O&M
Identify MP

Depth to 21.5 / 31.5 of screen
(below MP) [✓ top] bottom
Pump Intake at (ft. below MP) 26.5
Purging Device; (pump type) Terry
Total Volume Purged
PID: 0.

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C 3%	Spec. Cond.[2] µS/cm 3%	pH 0.1	ORP[3] mv 3%	DO mg/L 3%	Turb-idity NTU 10%	Comments
10:55	8.19	100	100	0.5	39.49	1.028	567	-78.2	5.90	71.3	
11:00	8.21	100	100	1.0	39.40	1.028	6.71	-74.7	6.40	72.6	
11:05	8.22	100	100	1.5	39.35	1.038	6.67	-71.5	7.21	50.4	
11:10	8.18	100	100	2.0	39.13	1.041	6.67	-70.7	7.41	48.6	
11:15	8.15	100	100	2.5	38.95	1.044	6.65	-69.0	0.10	67.7	
11:20	8.12	100	100	3.0	38.81	1.051	663	-62.0	0.11	54.1	
11:25	8.07	100	100	3.5	38.81	1.051	6.61	-61.4	0.11	46.6	
11:30	8.03	100	100	4.0	38.82	1.047	6.59	-60.0	0.10	47.2	
11:35	8.00	100	100	4.5	38.85	1.050	6.58	-60.2	0.09	44.2	
11:40	7.99		100	5.0	38.84	1.049	6.57	-60.4	0.08	52.4	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 7.88
Depth to Bottom: 28.1

Comments:

Page 1 of 2

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number TW-08B Date 7/17/15
Field Personnel Mike E / Ryan M
Sampling Organization Arcadis + O&M
Identify MP

Depth to 21.5 / 31.5 of screen
(below MP) top bottom
PID:
Pump Intake at (ft. below MP) 26.5
Purging Device; (pump type) Peri Pump
Total Volume Purged 6.0

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
11:45	7.99		100	5.5	38.94	1.051	6.53	-60.6	0.11	39.0	
11:50	8.00		100	6.0	38.91	1.050	6.53	-60.4	0.10	42.5	
11:55	7.99		100	6.5	38.90	1.050	6.53	-60.2	0.90	43.7	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 7.89

Depth to Bottom: 28.1

Comments: Sample after 1 hour. Well was stable while turb was high and inconsistent.

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ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE

Location: ~~TW-08D~~ Southington

Well ID: TW-08D

Well Type: [✓ Monitoring] • Other: ____

Well Finish: [✓ Stick Up] • Flush Mount

Measuring Pt: [✓ Top of Casing] • Other (specify): ____

Total Depth As Constructed (ftbgs): 22.0 **Screened Interval (ftbgs):** 12.0 - 22.0

Well Casing: Diameter: 2" Material: steel

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 10-21-15 Time: ~~FF~~ 1445

Weather Conditions: Sunny 80°F

Depth to groundwater at time of deployment: 8.78

Total well depth at time of deployment: 26.08

Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"

Deployment Method/Position of Weight:

PID (ppm): 2.1 ~~0.0~~

[✓ Top-Down]: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

• Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): 19.5

Retrieval

Date and Time of Retrieval: Date: 10-22-15 Time: 1500

Total # of days deployed: 1

Weather Conditions: 70° Partly Sunny

Depth to groundwater at time of retrieval: 8.80

Total well depth at time of retrieval: 26.08

Downhole Field Parameters Upon Retrieval:

Temp: 35.3 (°C) **ORP:** -53.6 (mV) **Water quality meter:** YSI

pH: 6.60 T:50.56 **DO:** 0.74 (mg/L) **Serial #:** 10D101573

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name	Company
DB/RM	Arcadis / [illegible]

2.

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington
Well ID: TW-08A
Well Type: [✓ Monitoring] • Other:
Well Finish: [✓ Stick Up] • Flush Mount
Measuring Pt: [✓ Top of Casing] • Other (specify):
Total Depth As Constructed (ftbgs): 14.0 **Screened Interval (ftbgs):** 4-14.0
Well Casing: Diameter: 2" Material: Steel
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 10.21-15 Time: 1455
Weather Conditions: Sunny 80°F
Depth to groundwater at time of deployment: 9.23
Total well depth at time of deployment: 14.48
Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"
Deployment Method/Position of Weight:

PID (ppm): 2.1

[✓ Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.]

• Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): ~9.5'

Retrieval

Date and Time of Retrieval: Date: 10-22-15 Time: 1525
Total # of days deployed: 1
Weather Conditions: P. Cloudy 70°F
Depth to groundwater at time of retrieval: 9.22
Total well depth at time of retrieval: 14.45
Downhole Field Parameters Upon Retrieval:
Temp: 37.4 **(°C)** **ORP:** -59.2 **(mV)** **Water quality meter:** YSI
pH: 6.27 T: 104.6 **DO:** 0.47 **(mg/L)** **Serial #:** 10D101573

Notes/Observations:

1525

Field Sampling Technician: Name(s) and Company

Name	Company
DB/RM	Arcadis/D-maximis

9

5.5

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE

Location: Southington

Well ID: MWL-304

Well Type: [✓ Monitoring] ● Other:

Well Finish: [✓ Stick Up] ● Flush Mount

Measuring Pt: [✓ Top of Casing] ● Other (specify):

Total Depth As Constructed (ftbgs): 16.0 **Screened Interval (ftbgs):** 1.0 - 11.0

Well Casing: Diameter: 2'' Material: PVC

Well Screen: Diameter: 2''

Deployment

Date and Time of Deployment: Date: 10-21-15 Time: 1438

Weather Conditions: Sunny 80°F

Depth to groundwater at time of deployment: 10.71

Total well depth at time of deployment: 16.19

Dimensions of HydraSleeve™: Length (in.) 38'' Diameter (in.) 1.75''

Deployment Method/Position of Weight:

PID (ppm): 0.0

- Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.
- Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): ~9'

Retrieval

Date and Time of Retrieval: Date: 10-22-15 Time: 14:45

Total # of days deployed: 1

Weather Conditions: P. Cloudy 80°F

Depth to groundwater at time of retrieval: 10.70

Total well depth at time of retrieval: 16.19

Downhole Field Parameters Upon Retrieval:

Temp: 25.0 (°C) **ORP:** -86.1 (mV) **Water quality meter:** 10D101573

pH: 6.57 T:38.35 **DO:** 1.30 (mg/L) **Serial #:** YSI

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name	Company
P.B/RM	Arcadis/Demaximis

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SiASiVQ
Location: Southington
Well ID: MWL-307

Well Type: [✓ ● Monitoring] ● Other:
Well Finish: [✓ ● Stick Up] ● Flush Mount
Measuring Pt: [✓ ● Top of Casing] ● Other (specify):

Total Depth As Constructed (ftbgs): 11.0 **Screened Interval (ftbgs):** 1.0 - 11.0
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 10-22-15 Time: 0815
Weather Conditions: P. Cloudy 70°F
Depth to groundwater at time of deployment: 7.04
Total well depth at time of deployment: 12.90
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:

PID (ppm): 0.0

✓ ● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): ~~7.5~~ ~9.0

Retrieval

Date and Time of Retrieval: Date: 10-28-15 Time: 1100
Total # of days deployed: 1r
Weather Conditions: P. Sunny windy / 50°
Depth to groundwater at time of retrieval: 7.02
Total well depth at time of retrieval: 12.90
Downhole Field Parameters Upon Retrieval:
Temp: 19.4 (°C) **ORP:** -16.0 (mV) **Water quality meter:** YSI
pH: 6.43 **DO:** 0.89 (mg/L) **Serial #:** 11D101573

10.5'
5.64
21.16 LF
333.27

Notes/Observations: Turb: 9.49

Field Sampling Technician: Name(s) and Company

Name	Company
DB / IMR	Arcadis / Demaximus

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington
Well ID: MW-416
Well Type: [✓ ● Monitoring] ● Other:
Well Finish: [✓ ● Stick Up] ● Flush Mount
Measuring Pt: [✓ ● Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): 49.4 **Screened Interval (ftbgs):** 29.4 - 49.4
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2'

Deployment

Date and Time of Deployment: Date: 10-22-15 Time: 0845
Weather Conditions: P. Cloudy 70°F
Depth to groundwater at time of deployment: 11.59
Total well depth at time of deployment: 49.03
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:
PID (ppm): 0.0

✓ ● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.
● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): ~39'

Retrieval

Date and Time of Retrieval: Date: 10-23-2015 Time: 1040
Total # of days deployed: 1+
Weather Conditions: P. Cloudy/windy 50°F
Depth to groundwater at time of retrieval: 11.59
Total well depth at time of retrieval: 49.03
Downhole Field Parameters Upon Retrieval:
Temp: 14.6 **(°C)** **ORP:** -73.6 **(mV)** **Water quality meter:** YSI
pH: 7.58 **DO:** 1.10 **(mg/L)** **Serial #:** 10J100572

Notes/Observations: Turb: 30.27

Field Sampling Technician: Name(s) and Company

Name	Company
PB/MR	Arcadis / D. Martin's

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE
Location: Southington
Well ID: MW-902D

Well Type: [✓ ● Monitoring] ● Other:
Well Finish: [✓ ● Stick Up] ● Flush Mount
Measuring Pt: [✓ ● Top of Casing] ● Other (specify):
Total Depth As Constructed (ftbgs): 24.0 **Screened Interval (ftbgs):** 12.5 – 17.5
Well Casing: Diameter: 2" Material: Steel
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 10-22-15 Time: 0930
Weather Conditions: P. Cloudy 70°F
Depth to groundwater at time of deployment: 11.72
Total well depth at time of deployment: 21.70
Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75
Deployment Method/Position of Weight:

PID (ppm): 21.7

✓ ● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): ~15.0

Retrieval

Date and Time of Retrieval: Date: 10-23-15 Time: 1015
Total # of days deployed: 1
Weather Conditions: P. cloudy / wind 50°F
Depth to groundwater at time of retrieval: 11.70
Total well depth at time of retrieval: 21.70
Downhole Field Parameters Upon Retrieval:
Temp: 17.1 **(°C)** **ORP:** -36.0 **(mV)** **Water quality meter:** YSI
pH: 6.45 **DO:** 0.44 **(mg/L)** **Serial #:** 10D101575

Turb: 17.23

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name	Company
DB/MR	Arcadis/Dimaxims

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE

Location: Southington

Well ID: MW-902M

Well Type: [✓ ● Monitoring] ● Other: ____

Well Finish: [✓ ● Stick Up] ● Flush Mount

Measuring Pt: [✓ ● Top of Casing] ● Other (specify): ____

Total Depth As Constructed (ftbgs): 17.5 **Screened Interval (ftbgs):** 12.5 - 17.5

Well Casing: Diameter: 2" Material: steel

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 10-22-15 Time: 0945

Weather Conditions: P. Cloudy 70°F

Depth to groundwater at time of deployment: 11.45

Total well depth at time of deployment: 26.24

Dimensions of HydraSleeve™: Length (in.) 38 Diameter (in.) 1.75

Deployment Method/Position of Weight:

PID (ppm): 0.7

✓ ● Top-Down: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): ~15.5

Retrieval

Date and Time of Retrieval: Date: 10-23-15 Time: 1000

Total # of days deployed: 1+

Weather Conditions: P. Sunny/windy 50°F

Depth to groundwater at time of retrieval: 11.42

Total well depth at time of retrieval: 26.24

Downhole Field Parameters Upon Retrieval:

Temp: 17 (°C) **ORP:** -65.3 (mV) **Water quality meter:** 451

pH: 7.20 **DO:** 0.95 (mg/L) **Serial #:** 10D101573

Notes/Observations: Turb: 15.52

Field Sampling Technician: Name(s) and Company

Name	Company
DB/MR	Arcadis / Demaximis

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: SRSNE

Location: Southington

Well ID: MWL-413

Well Type: [✓ Monitoring] • Other:

Well Finish: [✓ Stick Up] • Flush Mount

Measuring Pt: [✓ Top of Casing] • Other (specify):

Total Depth As Constructed (ftbgs): **Screened Interval (ftbgs):** 14.8 - 19.8

Well Casing: Diameter: 2" Material: PVC

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: Date: 10-21-15 Time: 1500

Weather Conditions: Sunny 80°F

Depth to groundwater at time of deployment: 8.22

Total well depth at time of deployment: 22.3

Dimensions of HydraSleeve™: Length (in.) 38" Diameter (in.) 1.75"

Deployment Method/Position of Weight:

PID (ppm): 1.8

• [✓ Top-Down]: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

• Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): ~15.5

Retrieval

Date and Time of Retrieval: Date: 10-23-15 Time: 0945

Total # of days deployed: ~1.5

Weather Conditions: P. Sunny / windy 55

Depth to groundwater at time of retrieval: 8.26

Total well depth at time of retrieval:

Downhole Field Parameters Upon Retrieval: SC: 1392 us/cm Turb: 9.14

Temp: 21.0 **(°C)** **ORP:** -34.6 **(mV)** **Water quality meter:** YSI

pH: 6.46 **DO:** 0.70 **(mg/L)** **Serial #:** 10D101573

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name	Company
DB/MR	Arcadis/Demaximis

ARCADIS

Appendix B-2
HydraSleeve™ Field Form

Site: ~~Syn~~ SRSNE

Location: ~~SBSNE~~ Southington

Well ID: MWL-415

Well Type: [✓ ● Monitoring] ● Other:

Well Finish: [✓ ● Stick Up] ● Flush Mount

Measuring Pt: [✓ ● Top of Casing] ● Other (specify):

Total Depth As Constructed (ftbgs): 11.8 **Screened Interval (ftbgs):** 6.8 - 11.8

Well Casing: Diameter: 2'' Material: steel

Well Screen: Diameter: 2''

Deployment

Date and Time of Deployment: Date: 10-21-15 Time: 1505

Weather Conditions: Sunny 80° F

Depth to groundwater at time of deployment: 8.41

Total well depth at time of deployment: 14.03

Dimensions of HydraSleeve™: Length (in.) 38'' Diameter (in.) 1.75''

Deployment Method/Position of Weight:

PID (ppm): 0.0

[✓ ● Top-Down]: Weight attached to bottom of HydraSleeve™. Weight suspended in well.

● Top-Down: Weight attached to top of HydraSleeve™. Weight suspended in well.

Deployment Depth (Top of HydraSleeve™) (ftbgs): ~ 9.5

Retrieval

Date and Time of Retrieval: Date: 10-23-15 Time: 0900

5.02

Total # of days deployed: 1.5

Weather Conditions: P. Sunny, windy, 55°

Depth to groundwater at time of retrieval: 8.48

2.5

Total well depth at time of retrieval: 14.03

Downhole Field Parameters Upon Retrieval: Sp. C. [illegible]256 / Turb: 16.78

Temp: 20.4 (°C) **ORP:** -42.0 (mV) **Water quality meter:** YSI

pH: 7.25 **DO:** 1.47 (mg/L) **Serial #:** 16D101573

Notes/Observations:

Field Sampling Technician: Name(s) and Company

Name	Company
DB/RM	Arcadis / Demauris

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number TW-08B Date
Field Personnel RM, DB
Sampling Organization O&M, Arcadis
Identify MP Steel Top

Depth to ____/____ of screen (below MP) top bottom
Pump Intake at (ft. below MP) ?
Purging Device; (pump type) Perry
Total Volume Purged

PID: 51- 361 ppm

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
0	9-28				32.6	1116	6.75	-66.1	0.45	65.78	Clear
5	9.33				31.1	1104	6.72	-80.1	0.15	65.38	
10	9.45				29.4	1092	6.70	-80.1	0.15	59.65	
15	9.48				30.4	1106	6.68	-79.0	.08	75.02	
20	9.52				33.4	1163	6.69	-84.9	—	67.73	
25	9.58				32.4	1127	6.65	-80.5	—	54.46	
30	9.58				32.4	1126	6.64	-80.1	—	43.92	Duplicate/ms/msd collected here for VOCs
35	9-58				32.3	1122	6.64	-79.9	—	39.71	and 1,4-Dioxane
40	9-58				32.0	1119	6.64	-79.8	—	42.71	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Initial Depth to Water: 9-28

Depth to Bottom: 28.35

Comments:

Sample @ 1150

ARCADIS

Appendix B

Equipment Calibration Logs

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 6/8/15

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 600 XL	Serial Number: 09D100323
Brand: Micro PW	Model: Turbmeter	Serial Number: 201404353

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4.00	4.00		4.00	4.00
7.00	7.01	7.00		7.00	7.00
10.00	10.00	10.00		10.00	10.00
Turbidity (NTUs)					
0.02	0.02	0		0	0.02
10	10.00	10		10	10.00
1000	1000			1000	1000
Conductivity (µmhos/cm)					
1000 us/cm	1000	10		10	1000
Dissolved Oxygen (mg/L)		**Not Applicable**		**Not Applicable**	
~~Zero DO Solution~~					
REDOX (mV)		Chart ¹		Chart ¹	
(Zobel Solution)	200 mV				200 mV
~~(Light's Solution)~~					
~~Temperature (C)~~					

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¹ The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 6·8·15

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 556 MPS	Serial Number: 11K101289
Brand: Micro	Model: PW	Serial Number: 201404355

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	3.97	4.00		4.00	~~3.97~~ 4.12
7.00	7.06	7.00		7.00	7.10
10.00	10.00	10.00		10.00	10.20
Turbidity (NTUs)					
0.2	0.2	0		0	
10.	10	10		10	
1000	1000				
Conductivity (µmhos/cm)					
1000	997	10		10	1055
Dissolved Oxygen (mg/L)		Not Applicable		Not Applicable	
Zero DO Solution					
REDOX (mV) 200		Chart ¹		Chart ¹	
(Zobel Solution)					192.5
(Light's Solution)					
Temperature (C)					

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¹ The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 6/9/15

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 556 MPS	Serial Number: MPS 14F100062
Brand: Microtw	Model: Turbidw	Serial Number: 201404353

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4.00	4.00		4.00	4.00
7.00	7.00	7.00		7.00	7.00
10.00	10.02	10.00		10.00	10.01
Turbidity (NTUs)					
0.02	0.02	0		0.02	0.02
10.00	10.00	10		10.00	10.00
1000	1000			1000	1000
Conductivity (µmhos/cm)					
1000	9999	10		10	1000
Dissolved Oxygen (mg/L)		Not Applicable		Not Applicable	
Zero DO Solution					
REDOX (mV)		Chart [1]		Chart [1]	
(Zobel Solution)	200mV				200 mV
(Light's Solution)					
Temperature (C)					

Standard 200 mV

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[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 6/9/15

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 600xL	Serial Number: 09D100323
Brand: MicroproTPW Turbmeter	Model: MicroproTPW	Serial Number: 201205050

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4.00	4.00		4.00	4.04
7.00	7.00	7.00		7.00	6.91
10.00	10.05	10.00		10.00	1001
Turbidity (NTUs)					
0.02	0.02	0		0.02	0.02
10.0	10.00	10		10.00	10.06
1000	1000			1000	1006
Conductivity (µmhos/cm)					
1000	1005	10		10	1005
Dissolved Oxygen (mg/L)		**Not Applicable**		**Not Applicable**	
Zero DO Solution					
REDOX (mV)		Chart ¹		Chart ¹	
(Zobel Solution)	200mV				200mv
(Light's Solution)					
Temperature (C)					

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¹ The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 6.9.15

INSTRUMENT IDENTIFICATION

Brand: YSI 556 MPS	Model:	Serial Number: 11K101289
Brand:	Model:	Serial Number:

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	3.99	4.00		4.00	4.15
7.00	7.02	7.00		7.00	7.07
10.00	10.08	10.00		10.00	10.17
Turbidity (NTUs)					
0.2	0.2	0		0	0.22
10	10	10		10	10.39
1000	1010				914.3
Conductivity (μmhos/cm)					
10	1000	10		10	1021
Dissolved Oxygen (mg/L)		Not Applicable		Not Applicable	
Zero DO Solution					
REDOX (mV)	200.1	Chart [1]		Chart [1]	
(Zobel Solution)					197.8
(Light's Solution)					
Temperature (C)					

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 6/10/15

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 556 MPS	Serial Number: 14F100062
Brand: Turbidity Scientific, inc	Model: MicroTPW	Serial Number: 201404553

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4.00	4.00		4.00	4.01
7.00	7.00	7.00		7.00	6.99
10.00	10.01	10.00		10.00	10.01
Turbidity (NTUs)					
0.02	0.02	0		0	0.02
10	10	10		10	10
1000	1000				1000
Conductivity (µmhos/cm)					
1000	1000	10		10	1000
Dissolved Oxygen (mg/L)		**Not Applicable**		**Not Applicable**	
Zero DO Solution					
REDOX (mV)		Chart ¹		Chart ¹	
(Zobel Solution)	200mV				200mV
(Light's Solution)					
Temperature (C)					

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¹ The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 6/10/15

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 600 XL	Serial Number: 09D100323
Brand: Micropro TPW Turbidimeter	Model: Micropro TPW	Serial Number: 201205050

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	3.99	4.00		4.00	4.13
7.00	7.01	7.00		7.00	7.09
10.00	10.03	10.00		10.00	10.17
Turbidity (NTUs)					
0	0.02	0		0	0.05
1	10.0	10		10	9.69
10	1000.0				1013
Conductivity (µmhos/cm)					
1000	1002	10		10	1103
Dissolved Oxygen (mg/L)		Not Applicable		Not Applicable	
Zero DO Solution					
REDOX (mV)		Chart [1]		Chart [1]	
(Zobel Solution)	200 mV				198.3
(Light's Solution)					
Temperature (C)	20.46				20.05

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 10.10.15

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 556 MPS	Serial Number: 11K 101289
Brand: Scientific	Model: MicroTPW	Serial Number: 201404355

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	3.98	4.00		4.00	4.01
7.00	7.01	7.00		7.00	7.00
10.00	10.05	10.00		10.00	10.23
Turbidity (NTUs)					
0 0.2	0.2	0		0	110.1
10	10	10		10	44.45
1000	1000				576.9
Conductivity (µmhos/cm)					
1000	999	10		10	1467
Dissolved Oxygen (mg/L)		Not Applicable		Not Applicable	
Zero DO Solution					
REDOX (mV)	200.4	Chart [1]		Chart [1]	192.9
(Zobel Solution)					
(Light's Solution)					
Temperature (C)					

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 3-18-15

INSTRUMENT IDENTIFICATION

Brand: YSI	**Model:** Pro Plus	**Serial Number:** 10E100342
Brand:	**Model:**	**Serial Number:**

CALIBRATION RECORD

Morning Calibration		**Afternoon Check**		**Evening Check**	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	3.90	4.00	3.92	4.00	
7.00	6.86	7.00	6.93	7.00	
10.00	10.09	10.00	10.16	10.00	
Turbidity (NTUs)					
0 2.0	2.0	~~0~~ 2	0.0	0	
1 0.0	10.0	10	9.84	10	
10 00.0	1000.0				
Conductivity (µmhos/cm)					
10	10	10	10	10	
Dissolved Oxygen (~~mg/L~~)					
Zero DO Solution	100 %	**Not Applicable**		**Not Applicable**	
REDOX (mV)		Chart [1]		Chart [1]	
(Zobel Solution)	257.1		255.6		
(Light's Solution)	475.7		473.2		
Temperature (C)	2.5		2.5		

---

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

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YSI & Turbidity Meter Calibration Log

DATE: 7/17/15

INSTRUMENT IDENTIFICATION

Brand: YSI	**Model:** 6920	**Serial Number:** 02J0124AD
Brand:	**Model:**	**Serial Number:**

CALIBRATION RECORD

Morning Calibration		**Afternoon Check**		**Evening Check**	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	3.70(4)	4.00		4.00	
7.00	6.91(7)	7.00		7.00	
10.00	10.14(10)	10.00		10.00	
Turbidity (NTUs)					
0	0	0		0	
1	1	10		10	
10	10				
Conductivity (μmhos/cm)					
10	10	10		10	
Dissolved Oxygen (mg/L)					
Zero DO Solution	100.0	**Not Applicable**		**Not Applicable**	
REDOX (mV)		Chart [1]		Chart [1]	
(Zobel Solution)	244				
(Light's Solution)					
Temperature (C)	15.00				

---

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 10-21-18

INSTRUMENT IDENTIFICATION

Brand: MicroPW	Model: scientific inc	Serial Number: 201205048
Brand: YSI	Model: Proffessional Plus	Serial Number: 10 D101572

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	3.97	4.00		4.00	
7.00	7.00	7.00		7.00	
10.00	10.00	10.00		10.00	
Turbidity (NTUs)					
0.02	0.02	0		0	
10	$10	10		10	
1,000	1000				
Conductivity (µmhos/cm)					
~~10~~ 1000	1000	10		10	
Dissolved Oxygen (mg/L)		Not Applicable		Not Applicable	
%DO	100.7				
~~Zero DO Solution~~					
REDOX (mV)		Chart [1]		Chart [1]	
(Zobel Solution)					
(Light's Solution)					
Temperature (C)					
200 mV	201				

---

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 10-21-15

INSTRUMENT IDENTIFICATION

Brand: micro PW ~~YSI PP~~	Model: Proffessional Plus	Serial Number: 10E100132
Brand: ~~YSI PP~~	Model: Scientific Inc	Serial Number: ~~10D101573~~ 20140438

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	3.96/[illegible]	4.00	______	4.00	______
7.00	6.98	7.00	______	7.00	______
10.00	9.99	10.00	______	10.00	______
Turbidity (NTUs)					
0.02	0.02	0	______	0	______
10	410	10	______	10	______
1000	1040				
Conductivity (µmhos/cm)					
~~10~~ 1000	1000	10	______	10	______
Dissolved Oxygen (mg/L)		Not Applicable		Not Applicable	
70 DOO	100.6				
~~Zero DO Solution~~	______				
REDOX (mV)		Chart [1]		Chart [1]	
(Zobel Solution)	______		______		______
(Light's Solution)	______		______		______
Temperature (C)	______		______		______
200mV	200				

---

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 10-22-15

INSTRUMENT IDENTIFICATION

Brand: Y S I	Model: Proffessional Plus	Serial Number: 10D101573
Brand: MICRO PW	Model: Scientific	Serial Number: 20120504 Y

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4.05/ 4.06	4.00		4.00	
7.00	6.97/ 7.02	7.00		7.00	
10.00	9.93/10.02	10.00		10.00	
Turbidity (NTUs)					
0 .02	.02	0		0	
10	10	10		10	
1000	1000				
Conductivity (µmhos/cm)					
1000	~~100~~ 999	10		10	
Dissolved Oxygen (mg/L)		**Not Applicable**		**Not Applicable**	
% DO	100.6				
Zero DO Solution					
REDOX (mV)		Chart [1]		Chart [1]	
(Zobel Solution)					
(Light's Solution)					
Temperature (C)					
200 mV	200				

---

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 10-23-15

INSTRUMENT IDENTIFICATION

Brand: Micro PW	Model: Scientific Inc.	Serial Number: 201205044
Brand: YSI	Model: Proffessional Plus	Serial Number: 10D101572

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4.05 / 4.00	4.00		4.00	
7.00	6.71 / 7.02	7.00		7.00	
10.00	10.04 / 10.02	10.00		10.00	
Turbidity (NTUs)					
0.02		0		0	
10		10		10	
1000					
Conductivity (µmhos/cm)					
~~10~~ 1000	1000	10		10	
Dissolved Oxygen (mg/L)		Not Applicable		Not Applicable	
% D	100.7				
Zero DO Solution					
REDOX (mV)		Chart [1]		Chart [1]	
~~(Zobel Solution)~~					
~~(Light's Solution)~~					
Temperature (C)					
200 mV	201				

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

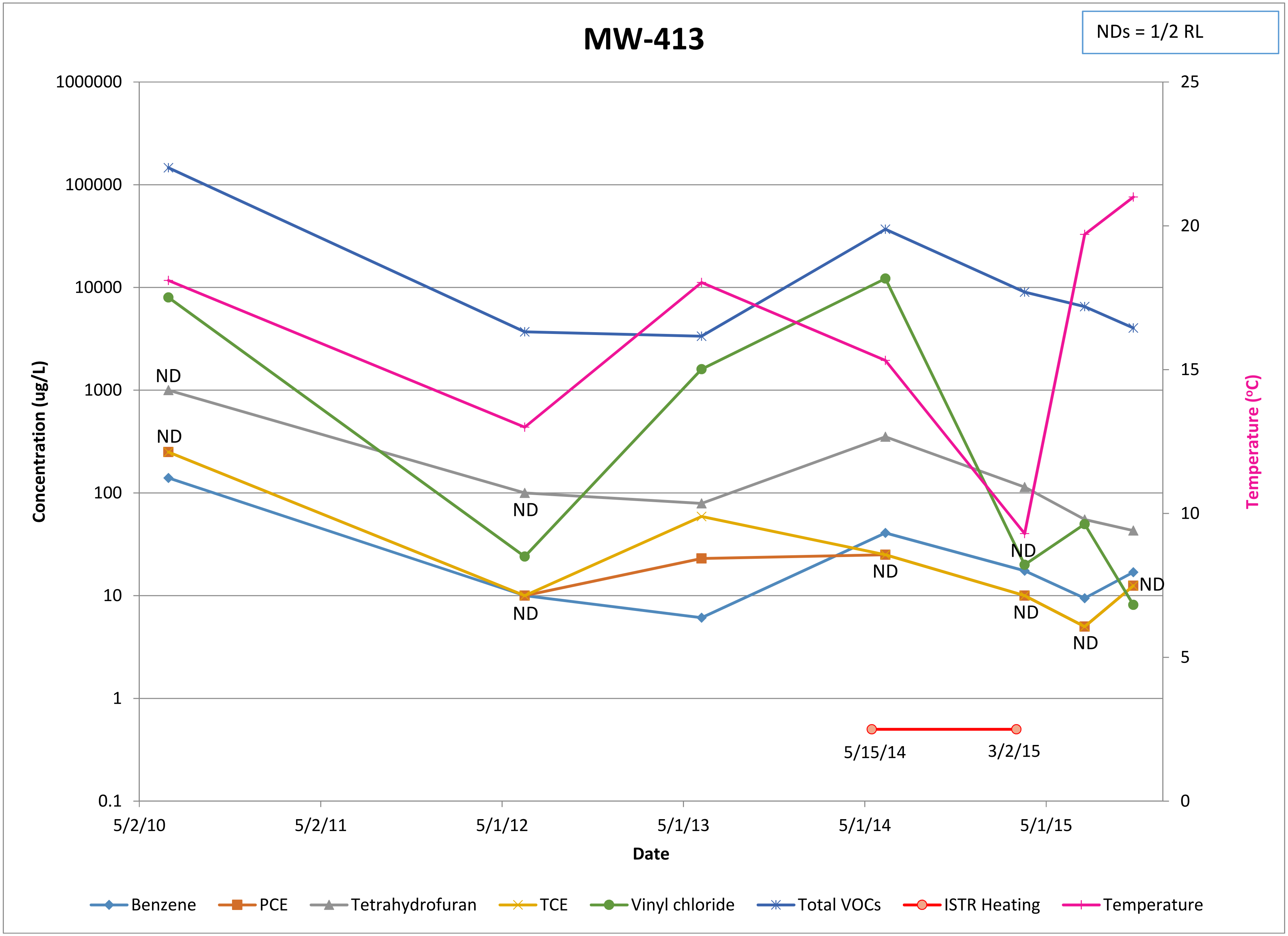
Appendix C

Post-Thermal Treatment Trend Graphs

Groundwater Sampling Summary - Post-Thermal Treatment Sampling (N Wells)

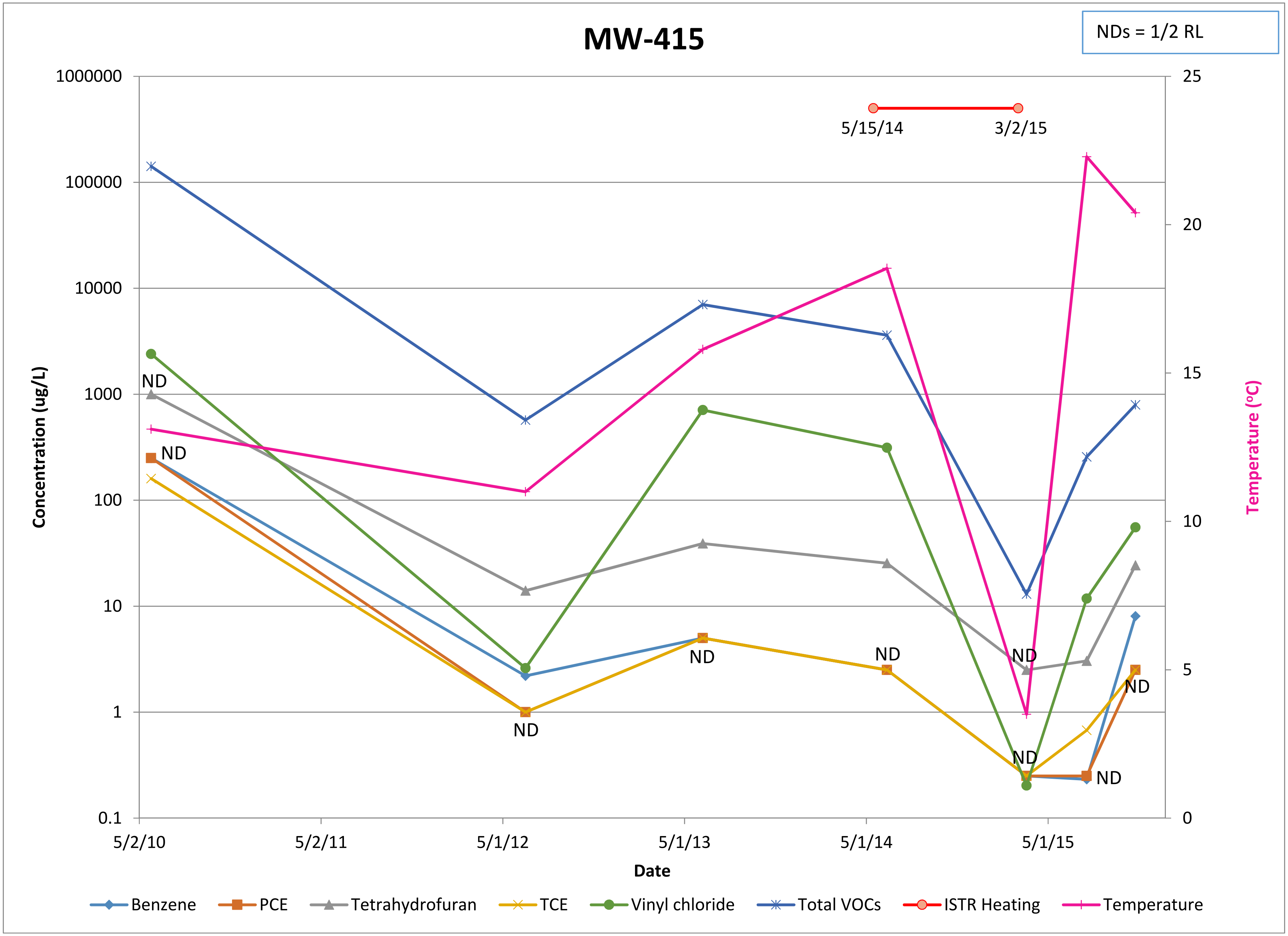
SRSNE Superfund Site

Southington, Connecticut



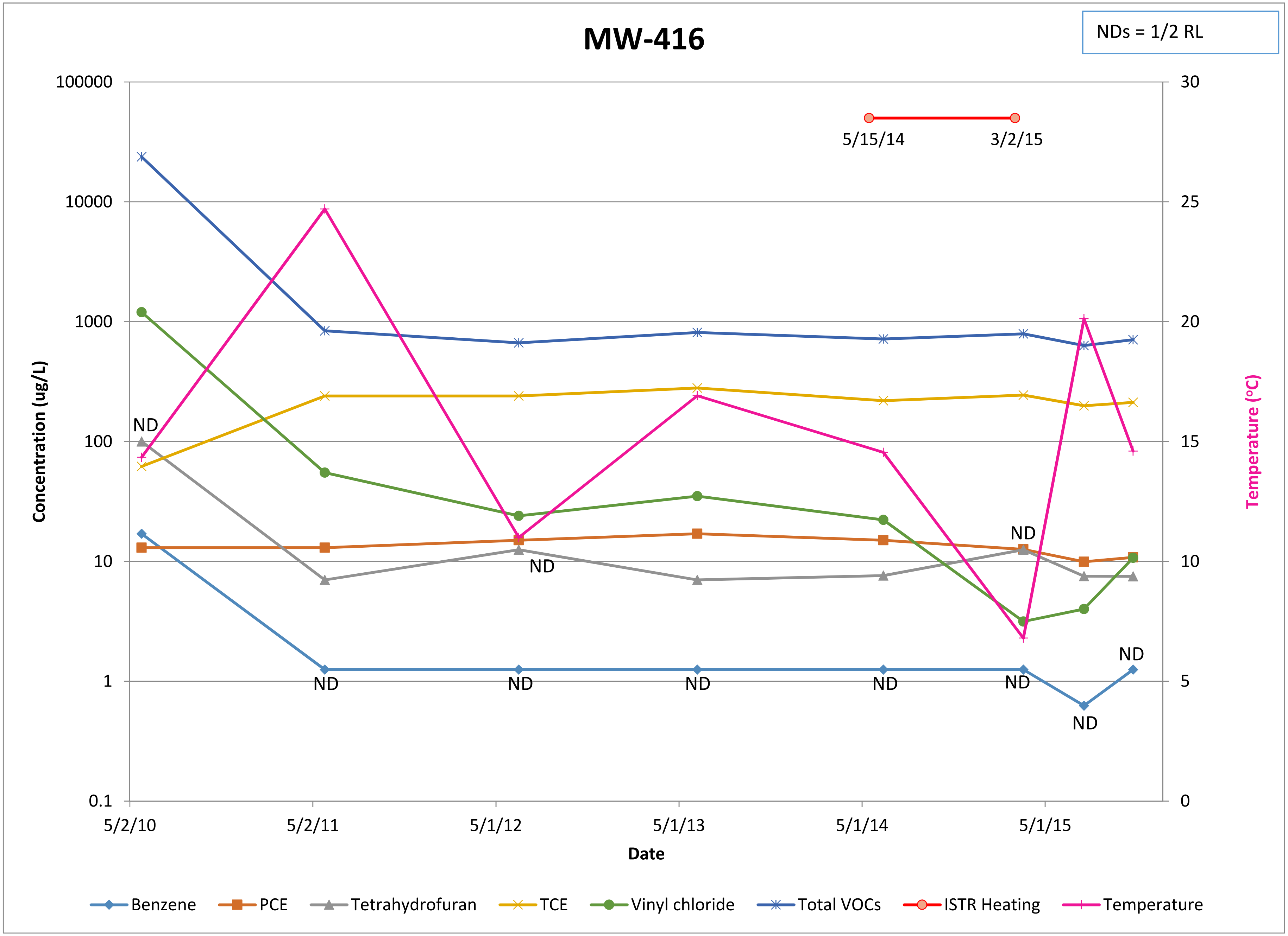
Groundwater Sampling Summary - Post-Thermal Treatment Sampling (N Wells)

SRSNE Superfund Site
Southington, Connecticut



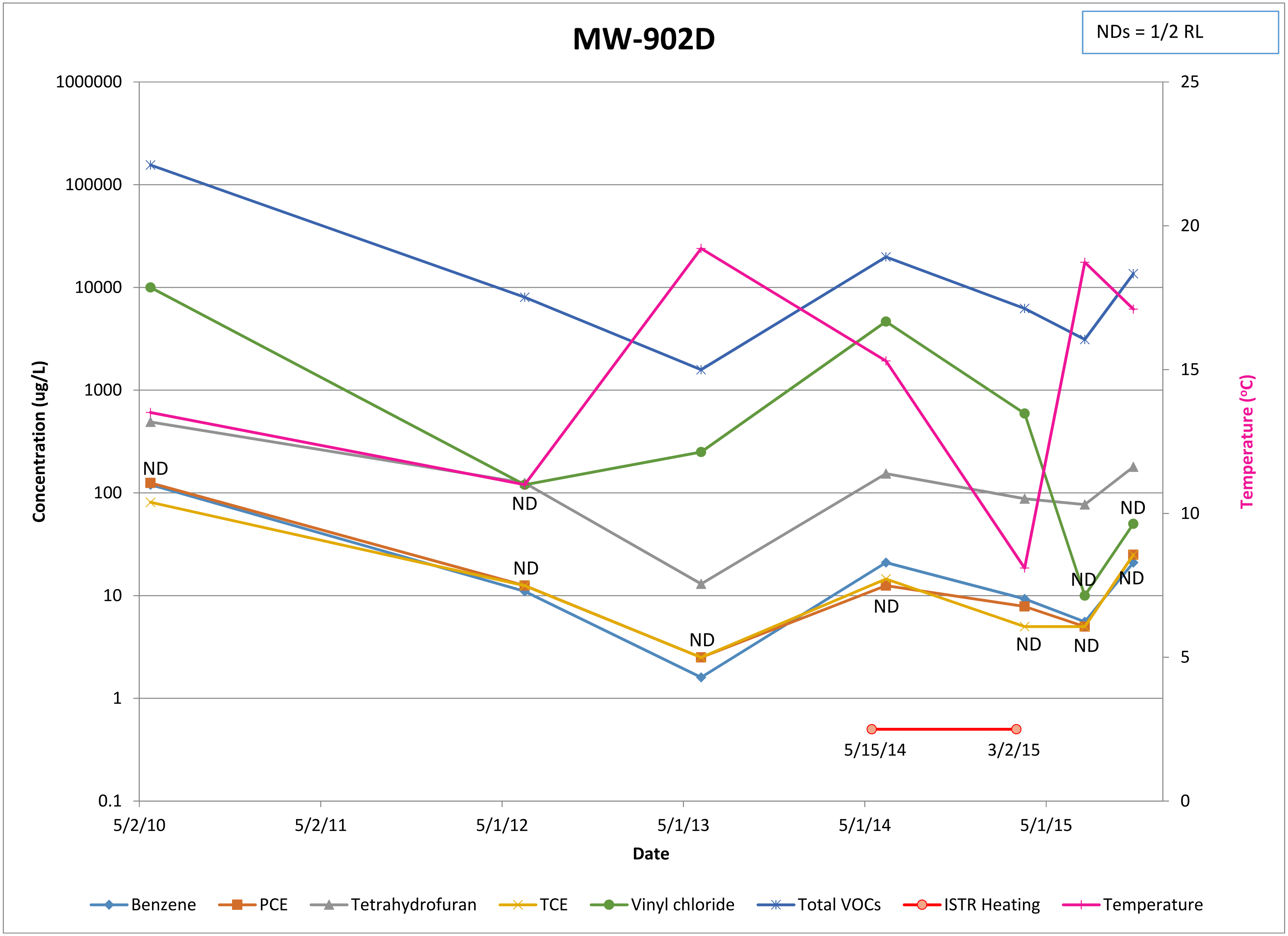
Groundwater Sampling Summary - Post-Thermal Treatment Sampling (N Wells)

SRSNE Superfund Site
Southington, Connecticut



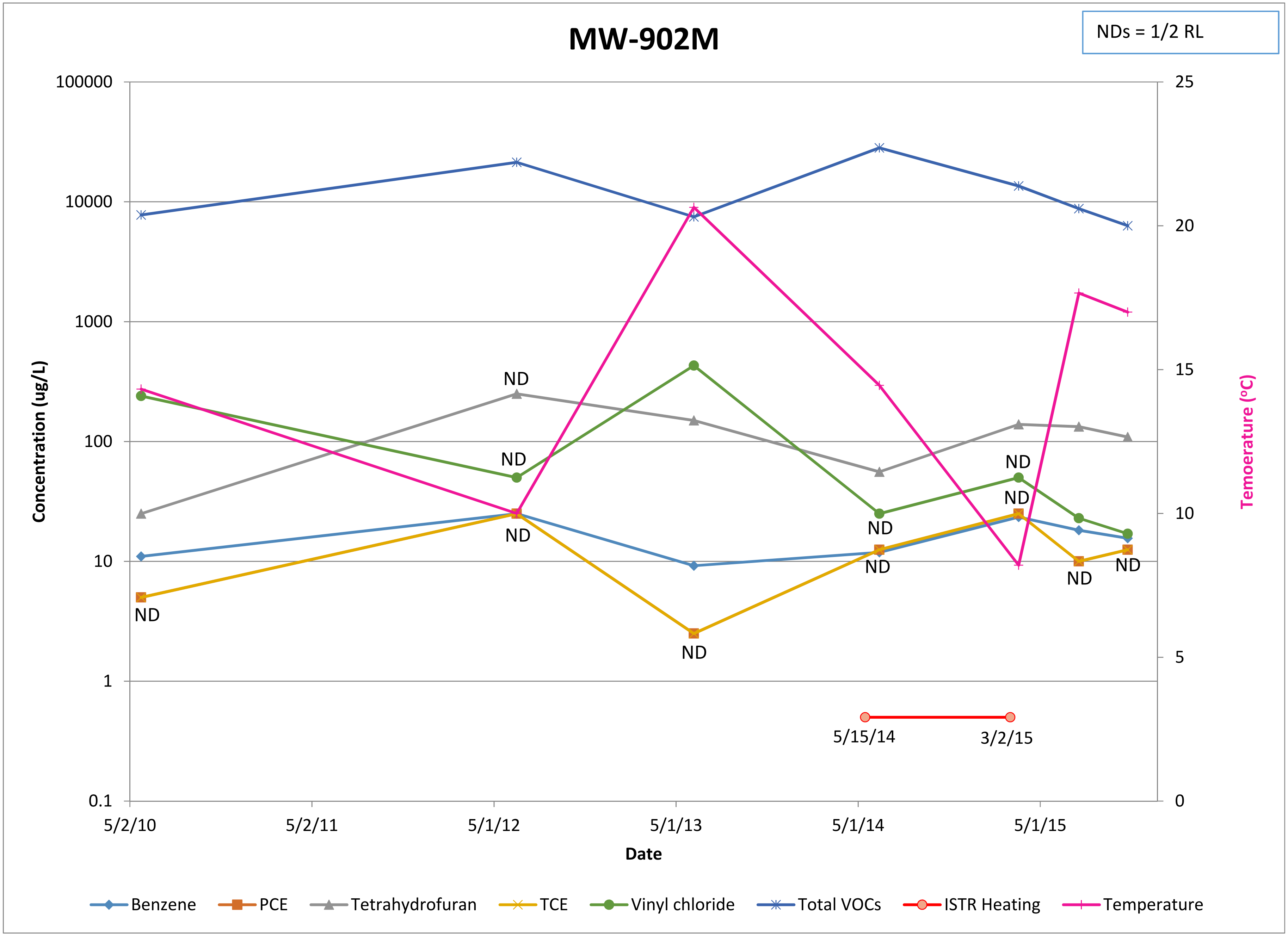
Groundwater Sampling Summary - Post-Thermal Treatment Sampling (N Wells)

SRSNE Superfund Site
Southington, Connecticut

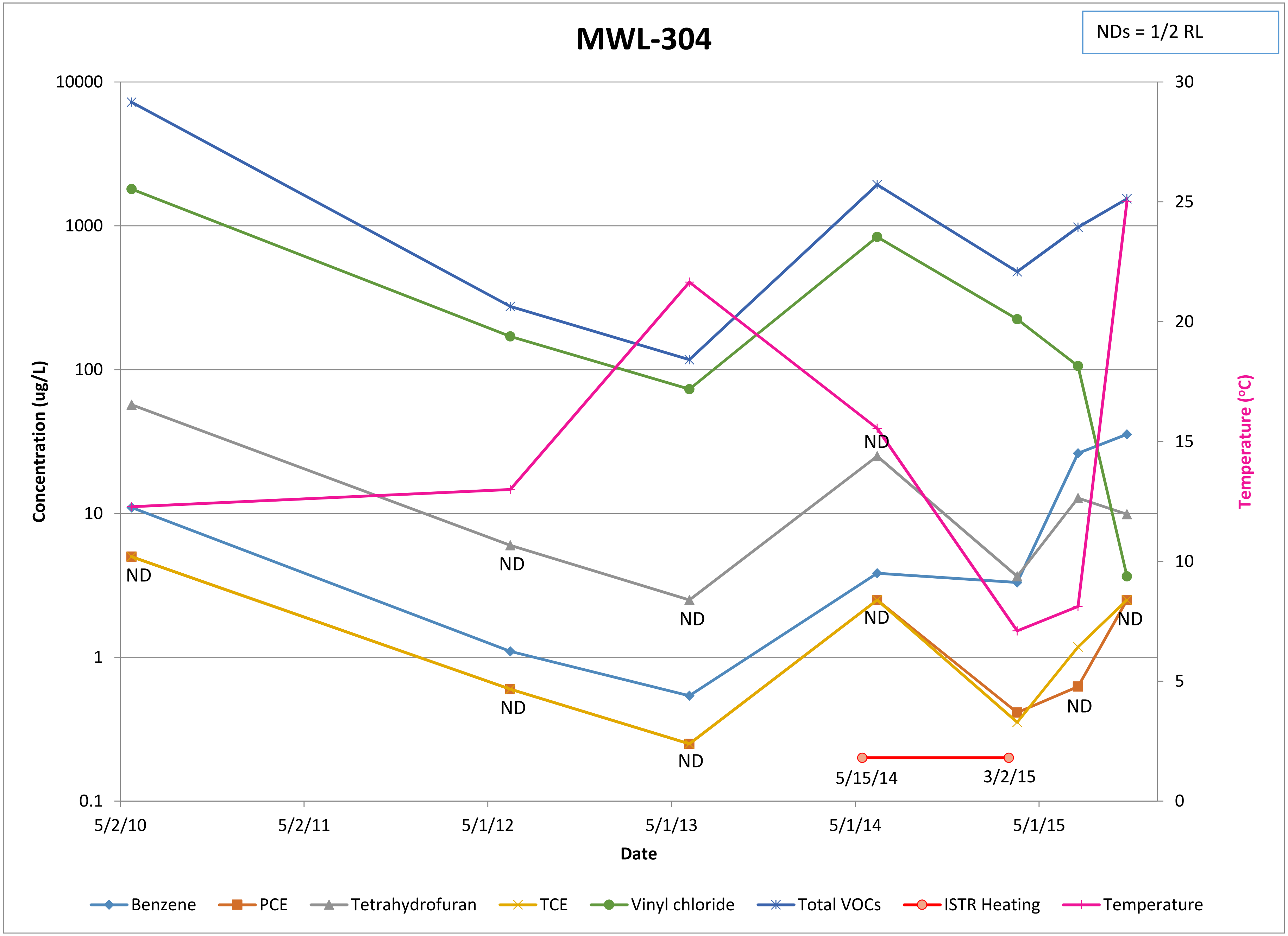


Groundwater Sampling Summary - Post-Thermal Treatment Sampling (N Wells)

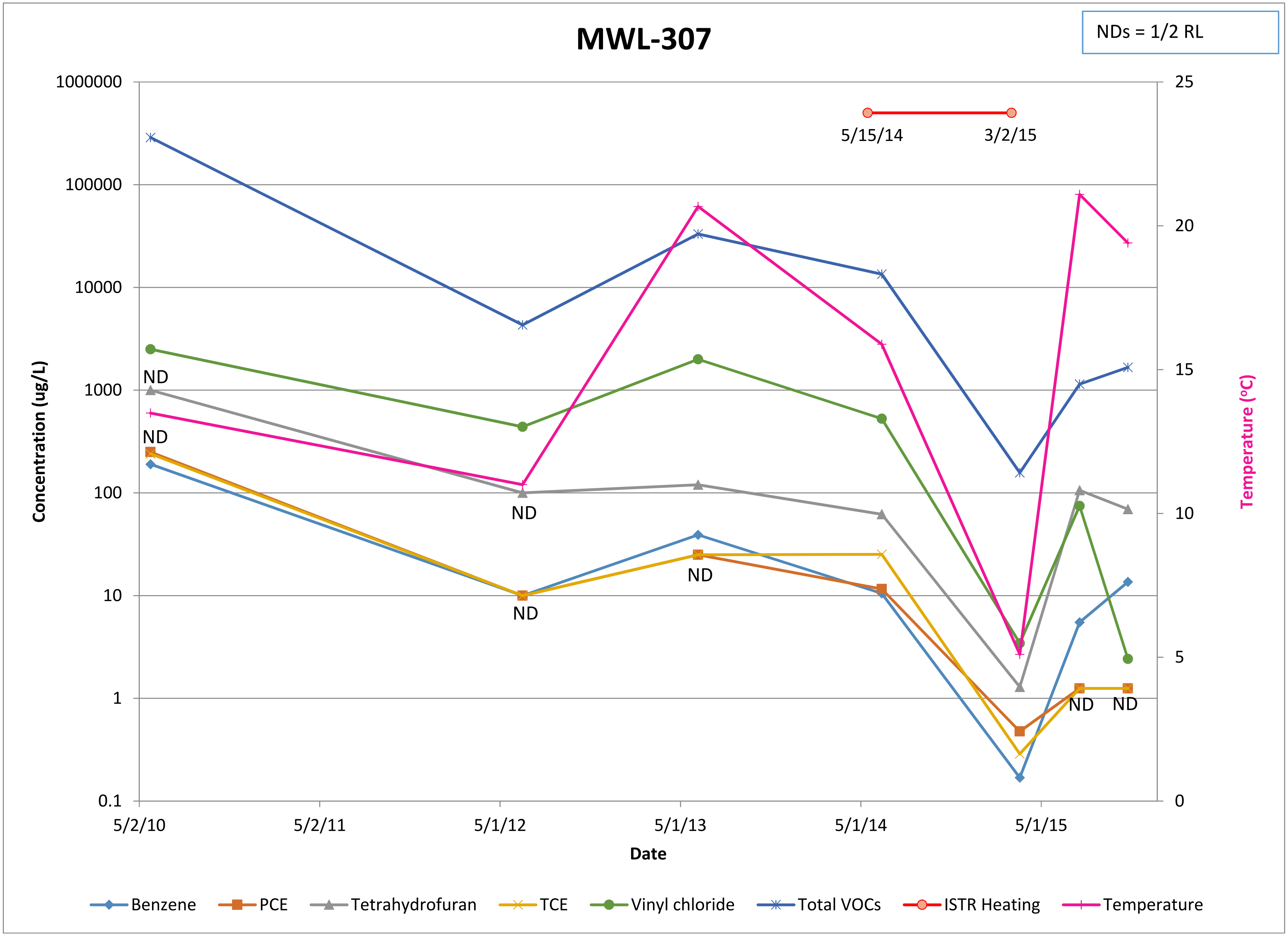
SRSNE Superfund Site
Southington, Connecticut



Groundwater Sampling Summary - Post-Thermal Treatment Sampling (N Wells)
SRSNE Superfund Site
Southington, Connecticut



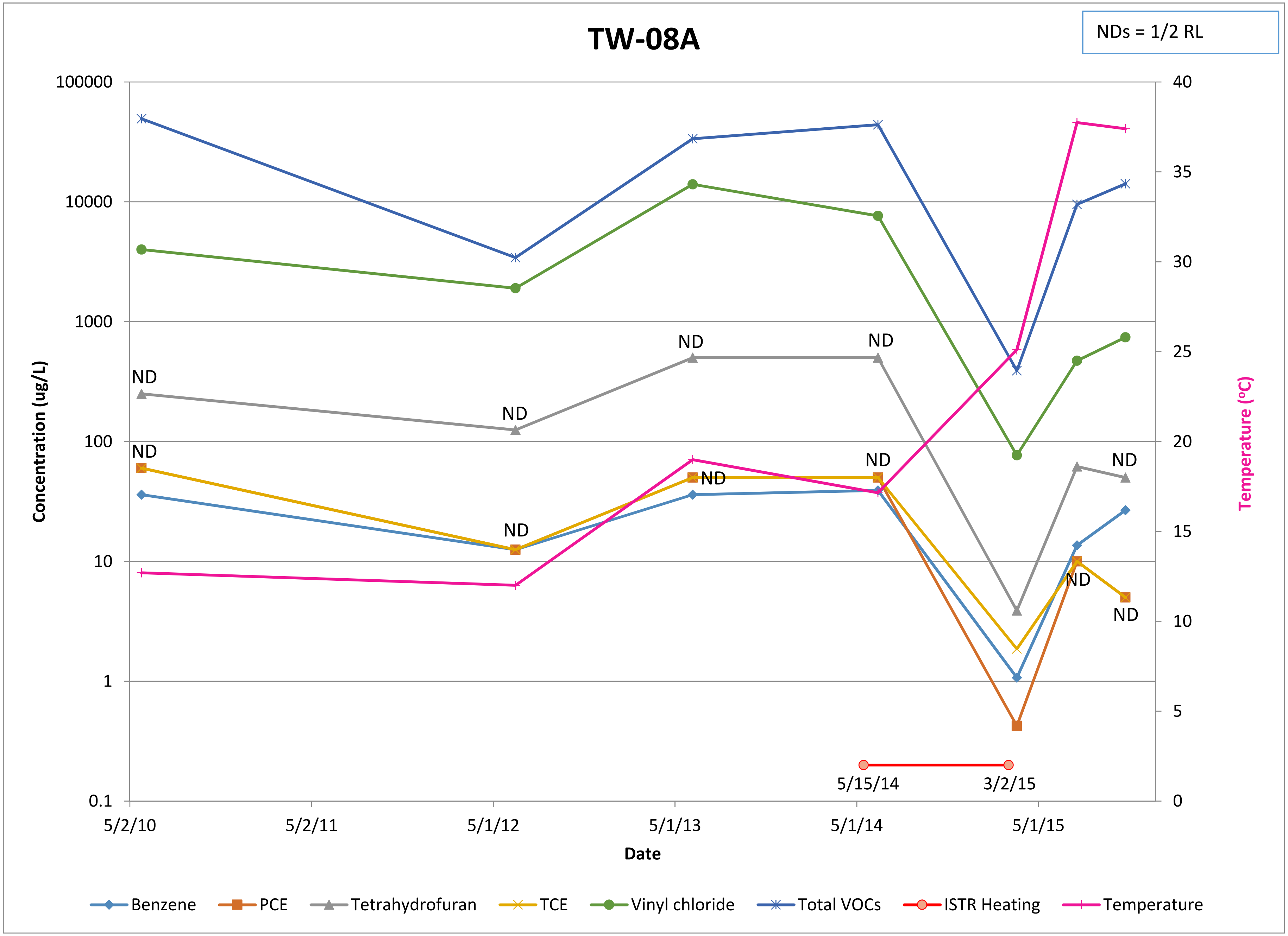
Groundwater Sampling Summary - Post-Thermal Treatment Sampling (N Wells)
SRSNE Superfund Site
Southington, Connecticut



Groundwater Sampling Summary - Post-Thermal Treatment Sampling (N Wells)

SRSNE Superfund Site

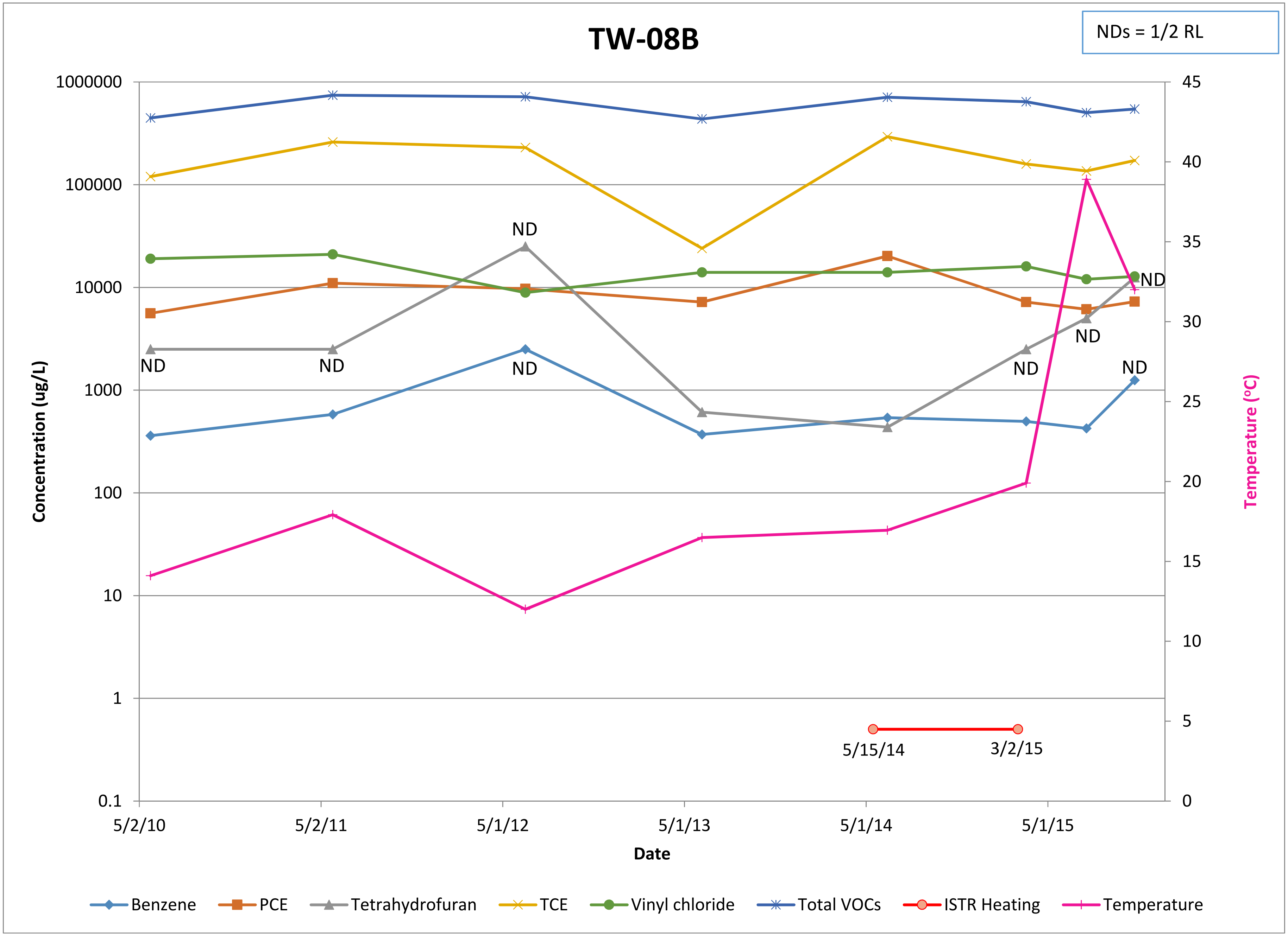
Southington, Connecticut



Groundwater Sampling Summary - Post-Thermal Treatment Sampling (N Wells)

SRSNE Superfund Site

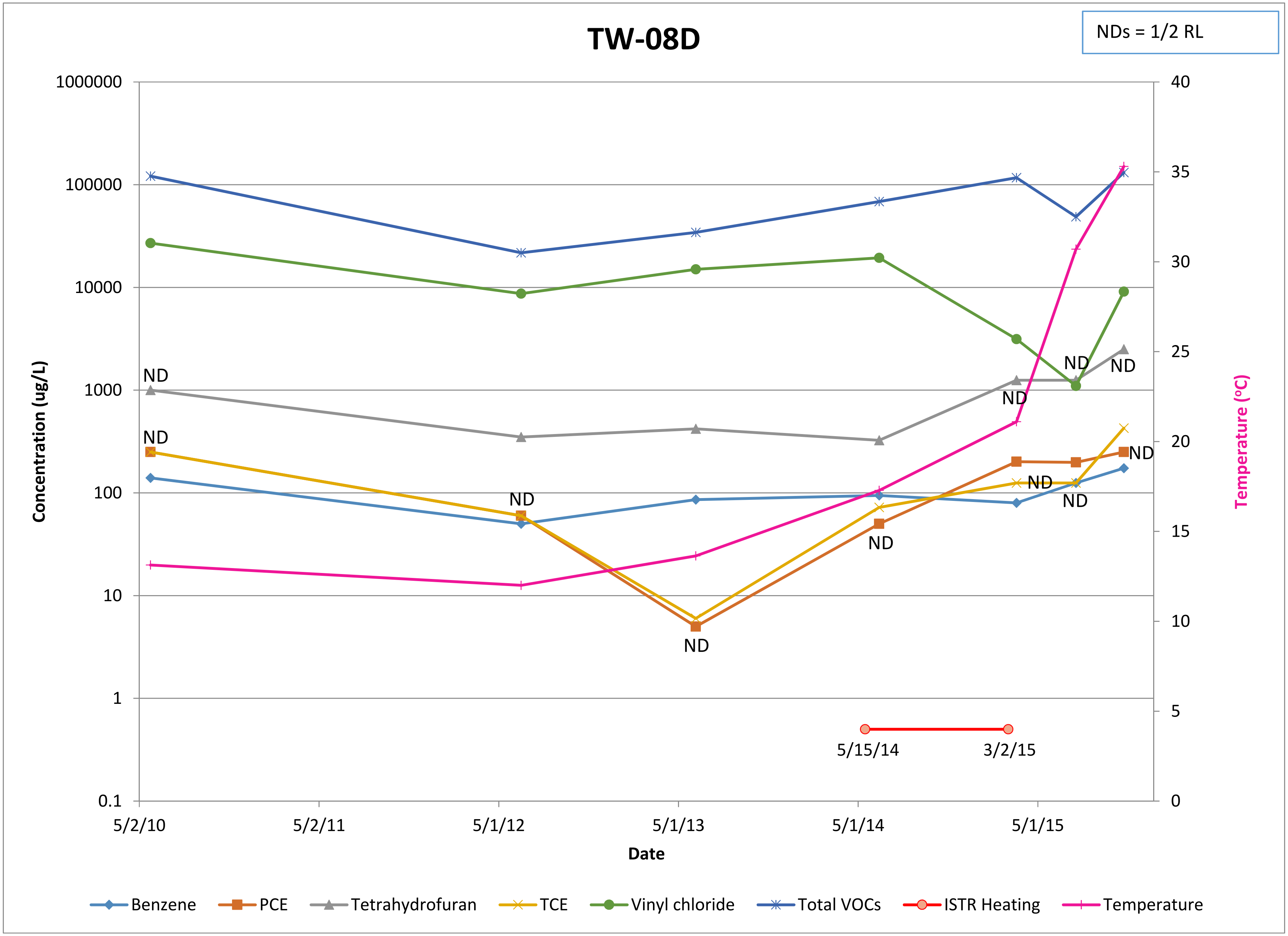
Southington, Connecticut

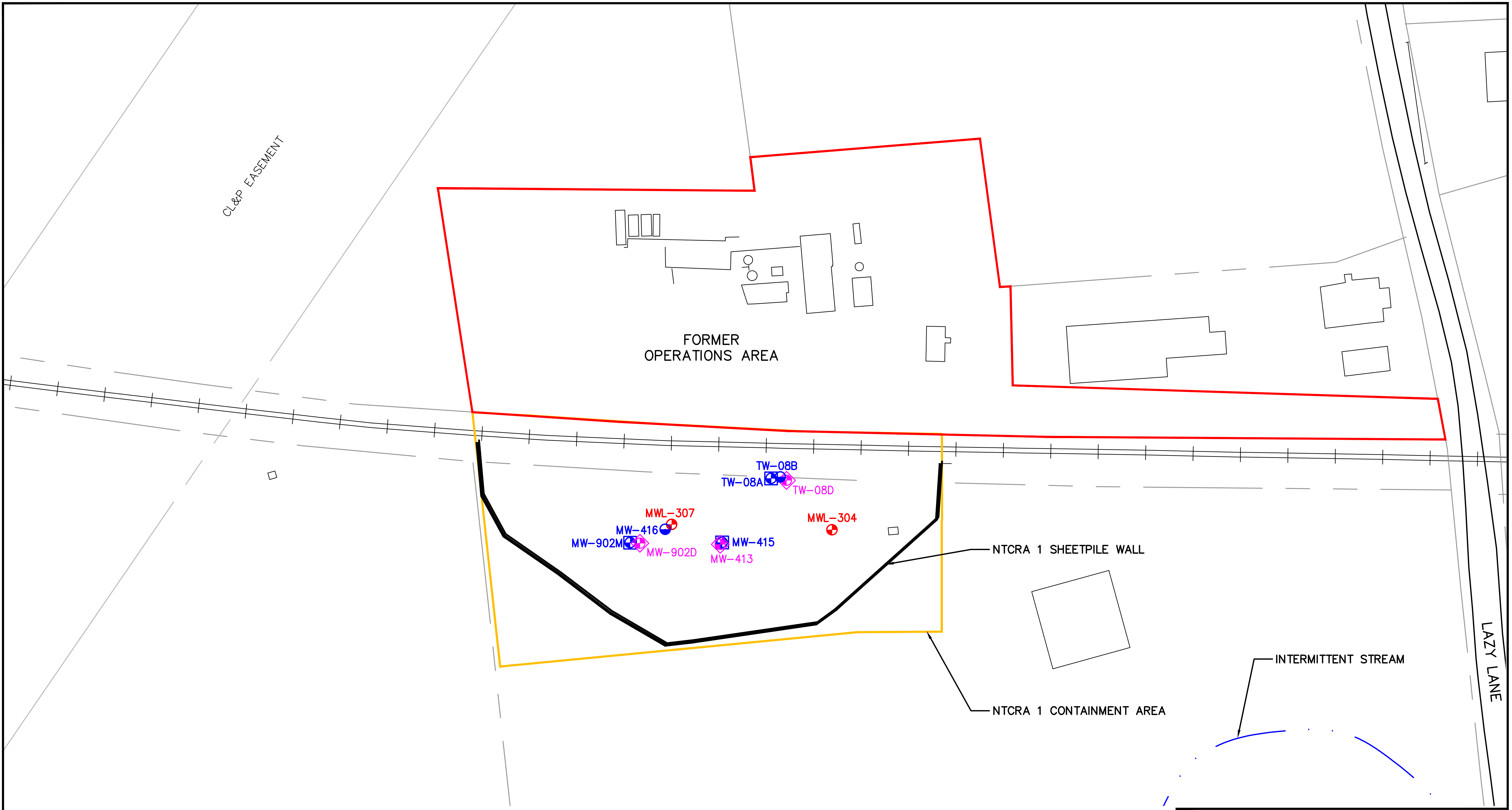


Groundwater Sampling Summary - Post-Thermal Treatment Sampling (N Wells)

SRSNE Superfund Site

Southington, Connecticut





NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

LEGEND:

● SHALLOW OVERBURDEN MONITORING WELL

▣ MIDDLE OVERBURDEN MONITORING WELL

◈ DEEP OVERBURDEN MONITORING WELL

◒ SHALLOW BEDROCK MONITORING WELL

0 100' 200'
GRAPHIC SCALE

DRAFT

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT

GROUNDWATER MONITORING LOCATIONS N WELLS

ARCADIS

FIGURE
2

CITY: SYRACUSE, NY GROUP: ENVCAD DB: P. LISTER PM: M. GEFELL TM: M. GEFELL TR: R. STEVENSON LYR: ON=*;OFF=REF, (FRZ)
G:\ENVCAD\Manchester\ACT\B0054634\0001\01900\54634B02.DWG LAYOUT: 2 SAVED: 4/1/2015 5:12 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 4/1/2015 5:12 PM BY: SMALL, BRIAN

Attachment 4

RW-15 Completion Report

RW-15 COMPLETION REPORT

NON-TIME CRITICAL REMOVAL ACTION NO. 2
SUPPLEMENTAL GROUNDWATER RECOVERY WELL RW-15

Prepared for:

Solvents Recovery Service of New England
Potentially Responsible Party Group
&
demaximis, inc.
200 Day Hill Rd.
Suite 200
Windsor, CT 06095

Prepared by:

Weston Solutions, Inc.
148 Eastern Boulevard
Glastonbury, CT 06033

7 January 2015

Work Order No. 13056.001.019.8100

DISCLAIMER

This document has been prepared pursuant to a government administrative order [U.S. Environmental Protection Agency (EPA) Region I Comprehensive Environmental Response, Compensation, and Liability Act Docket No. I-97-1000] and has not received final acceptance from EPA. The opinions, findings, and conclusions expressed are those of the authors and not those of EPA.

TABLE OF CONTENTS

LIST OF FIGURES

Title

LIST OF TABLES

Title

LIST OF ACRONYMS

bgs	below ground surface
EPA	U.S. Environmental Protection Agency
ft	feet/foot
gpm	gallons per minute
GWTF	groundwater treatment facility
HDPE	high density polyethylene
NTCRA-2	Non-Time Critical Removal Action No. 2
PRP	Potentially Responsible Party
PVC	polyvinyl chloride
SRSNE	Solvents Recovery Service of New England
WESTON®	Weston Solutions, Inc.

SECTION 1

INTRODUCTION

1. INTRODUCTION

Weston Solutions, Inc. (WESTON®) was retained by the Solvents Recovery Service of New England (SRSNE), Potentially Responsible Party (PRP) Group to install, start-up, and place into service one additional recovery well in the Non-Time Critical Removal Action No. 2 (NTCRA-2) well field. The new recovery well (RW-15) was constructed and placed into operation in accordance with the *Work Plan* (WESTON, 2014)[1]. Following initial operation of the new recovery well, WESTON has prepared this completion report, which documents NTCRA-2 forcemain and electrical service enhancements, well installation, and initial well development results.

The additional recovery well (RW-15) has been installed to provide redundancy and reliability in ensuring the NTCRA-2 recovery wells maintain an effective overburden capture zone. A targeted cumulative yield of 30 gallons per minute (gpm) has been identified. This additional recovery well will ensure that flow objective can be attained with one well taken out of service for maintenance or repair.

The RW-15 Completion Report provides the following information:

- A narrative of work completed to design and construct the well and implement the other NTCRA-2 system enhancements (Sections 2 and 3)
- A summary of the recovery well development activities (Section 4)
- Pilot Boring Logs – Appendix A
- Pilot Boring Sieve Analysis Results – Appendix B
- Extraction Well RW-15 Tie-In Record Drawings – Appendix C
- Well Development Documentation – Appendix D

This completion report was prepared with input from ARCADIS Company.

---

[1] Weston Solutions, Inc. 2014. *Revised Draft Technical Work Plan*. July.

SECTION 2

RECOVERY WELL DESIGN AND CONSTRUCTION

2. RECOVERY WELL DESIGN AND CONSTRUCTION

This section describes the recovery well design and construction. The recovery well design was based on the method outlined in *Groundwater and Wells* by Fletcher Driscoll (1986)[2] and included the drilling of a pilot boring to confirm the geology and collection of soil samples for grain size analysis. The overall objective of the well design was to produce an efficient recovery well that maximizes the pumping rate while minimizing maintenance related to fouling of the screen.

The pilot boring was installed in August 2014 (see Table 1). The pilot boring was drilled at the site location shown on Figure 1 for RW-15 using a truck-mounted rotary drilling rig employing case and wash methods. Soil samples were collected continuously from approximately 26 feet (ft) below the ground surface (bgs) down to the bedrock surface using a standard split-spoon sampler. The soil samples were logged by a geologist. A total of ten soil samples collected between 26 and 66.5 ft bgs were submitted to a geotechnical laboratory (Materials Testing, Inc.) for grain size distribution using a washed sieve analysis (ASTM C-136, D-1140). The boring log and sieve results are included in Appendices A and B, respectively.

In October 2014, a 16-inch-diameter borehole was advanced using rotary drilling techniques through the overburden (approximately 72 ft) and approximately 1.5 ft into the bedrock for a total drilling depth of 73.5 ft (see Table 1). The new borehole was installed adjacent to the pilot boring to ensure similar lithology. The well screen is 8 inches in diameter and constructed of #304 stainless steel. The well is equipped with two screens. The higher screen is 15-ft long and is installed between 30 ft and 45 ft bgs. The lower screen is 20-ft long and is installed between 52 ft and 72 ft bgs. The two screens are separated by a 7-ft long #304 stainless steel riser (45 ft to 52 ft bgs). Each well screen is continuous 20-slot (wire-wound) installed in a continuous Morie No. 0 Sand Pack. Morie No. 00 sand was installed in the riser area between the two screens. The riser pipe above the screens is 8-inch-diameter, Schedule 80 polyvinyl chloride (PVC). The well materials were placed in the borehole, and the sand pack was placed according to the design

---

[2] Fletcher Driscoll. 1986. *Groundwater and Wells.*

shown on Figure 2. Two 1-inch-diameter PVC piezometers were installed in the sand pack as shown on Figure 2 to facilitate water level monitoring and screen head loss rates during operation. In addition, three stainless steel centralizers were placed at the top, midpoint, and bottom of the well. A 5-ft-thick bentonite pellet seal was installed above the sand pack. The remainder of the annulus was filled with bentonite-cement grout.

The well screen was designed based on the grain size distribution data obtained from sieve analyses conducted on the pilot boring (see Appendix B). The final well construction is shown in Figure 2. Two screens were selected based on stratigraphic information obtained from the pilot boring and the sieve analysis.

All drilling cuttings were screened for organic vapors in accordance with the guidelines indicated in the *Work Plan* (WESTON, 2014). Field screening revealed that all drilling cuttings were less than 5 parts per million above background; thus, all drilling cuttings were spread locally around the drilling location and special handling and disposal was not required.

The recovery well was developed in late October 2014 during scheduled redevelopment of existing NTCRA-2 recovery wells (RW-13 and RW-14). The well was developed using an 8-inch-diameter surge block and electric submersible pump. The well was alternately surged and pumped until the discharge water contained less than 2 milliliters per liter of solids as determined using an Imhoff Cone. Development water was transferred to the groundwater treatment facility (GWTF) for treatment prior to discharge.

SECTION 3

INTEGRATION OF RW-15 INTO SRSNE GROUNDWATER CONTAINMENT AND TREATMENT SYSTEM

3. INTEGRATION OF RW-15 INTO SRSNE GROUNDWATER CONTAINMENT AND TREATMENT SYSTEM

In October and November 2014, following recovery well development, a new recovery well vault and associated equipment were installed and integrated into the existing groundwater containment and treatment system. These activities are described in more detail below.

3.1 RECOVERY WELL PUMP

Recovery well RW-15 is equipped with a new 40S15-5 Grundfos® pump, which is identical to the existing pumps for well RW-13 and RW-14. Vertical discharge tubing in the well is constructed of polyethylene. Piping in the vault is constructed of Schedule 80 PVC. An isolation valve was provided to allow for maintenance and service without impacting the operation of the other NTCRA-2 recovery wells. A pitless adapter is employed to enable pump and motor removal from the well. The well pump discharge piping and pitless adapter are 2-inch diameter. The recovery well pump is driven by a 1.5 horsepower motor. The pump intake is installed approximately 5 ft above the bottom of recovery well.

3.2 NTCRA-2 FORCEMAIN IMPROVEMENTS

The existing NTCRA-2 recovery wells convey groundwater to the GWTF through one of three 4-inch high density polyethylene (HDPE) forcemains. In March/April 2014, WESTON installed a valve vault in the NCTRA-2 well field to enable placement of a second forcemain into service between the valve vault and GWTF and allow for the future connection of the third forcemain at a later date. Additionally, WESTON installed a manifold within the GWTF to be able to receive flow from all three forcemains and allow isolation of forcemains for maintenance and operational flexibility. The details of the new valve vault and manifold are provided in Appendix C.

A new 4-inch-diameter HDPE forcemain was installed between the new recovery well and the valve vault, where the discharge line was fused to the valve vault manifold. A hydrostatic test was performed on the new forcemain after installation. Currently, RW-13, 14, and 1R discharge through one of the three existing forcemains, RW-15 is connected to one of the spare forcemains, and the third forcemain is a spare line not currently in service. To provide better service, the plumbing in the new valve vault allows selection of which two forcemains are in service and valves allow one of the forcemains to be taken out of service for cleaning or maintenance.

3.3 NTCRA-2 ELECTRICAL SERVICE UPGRADE

Upgrades to the NTCRA-2 well field electrical service system were required to facilitate the new recovery well, as the original 240-volt, single-phase, 30-amp electrical service to RW-13, 14, and 1R was at its maximum capacity. A second 240-volt, single-phase, 30-amp service from the treatment plant to the NTCRA-2 control center was installed. This new service was connected to new recovery well RW-15 and existing recovery well RW-1R. The original 30-amp service will continue to provide power to RW-13 and RW-14.

At the treatment building, a second 30-amp service disconnect was added. This service is connected to the existing 100-amp well NTCRA-1 and NTCRA-2 recovery well pump contactor. The new electrical service wiring between the treatment system and Junction Box 310 was installed in the existing spare 3-inch PVC conduit. From Junction Box 310 to the NTCRA-2 Control Center, both electrical services (existing and new) were installed in a new 3-inch conduit. At the NTCRA-2 well control cluster, a second service disconnect was added for the new electrical service. The new recovery well RW-15 is powered from this new service. The current power service for RW-1R was relocated to the new service so two recovery wells are powered by a separate service.

3.4 RECOVERY WELL CONTROL PANEL

A new recovery well control panel, similar in construction to the panel for RW-13 and RW-14, was installed in the secured control panel cage near the recovery wells. The RW-15 control panel is 240-volt, single-phase and equipped with a separate lockable disconnect. The pump control panel is equipped with a cycle counter, run time hour-meter, motor starter, motor protection, and a level controller, which turns the pump on and off automatically based on extraction well water level. A separate RW-15 high level alarm input is provided and wired in parallel to the RW-13 and RW-14 high level alarms so operations staff will be notified of a NTCRA-2 Alarm condition for all three recovery wells (RW-13, 14 or 15).

3.5 SECURITY MEASURES

To inhibit unauthorized entry and vandalism, the new well vault is accessed by a lockable access hatch. The control panel is remotely installed inside the existing security fence along with the other NTCRA-2 electrical equipment. Both areas have locks maintained to prevent unauthorized entry.

3.6 FLOW MONITORING PROVISIONS

A local flow meter/totalizer is provided for each NTCRA-2 recovery well (RW-13, RW-14, and RW-1R), as well as NTCRA-2 flow meter/totalizer located at the GWTF to document the combined flow from the NTCRA-2 recovery wells. A new local flow meter was provided for recovery well RW-15 similar to the meters present in RW-13 and RW-14. The new RW-15 flow meter is a 1-inch-diameter displacement-type flow meter located in the recovery well vault.

SECTION 4

WELL DEVELOPMENT AND HYDRAULIC TESTING

4. WELL DEVELOPMENT AND HYDRAULIC TESTING

Well development and hydraulic testing was conducted during the process of developing the extraction well. This methodology tracked the progress of development and helps ensure adequate well yield and stabilization of the benefits of development.

The recovery well was mechanically developed using an 8-inch-diameter surge block and electric submersible pump until discharge waters contain less than 2 milliliters per liter of settled solids as determined using an Imhoff Cone. Development water was transferred to the existing GWTF for treatment prior to discharge.

The recovery well development activities were performed between 14 and 23 October 2014, and are summarized in Appendix D. During the course of development the following activities were documented.

- Samples were collected hourly for measurement by a turbidity meter and Imhoff cone.
- Depth to water and recovery well flow estimates were documented.
- Photos of jar samples and Imhoff cones were taken to document the results during development.

Recovery well development activities omitted static depth to water results prior to initiation of redevelopment activities during each day of development. As a result, a separate recovery well drawdown and hydraulic test was subsequently performed on 19 December 2014 to document well performance. These results are summarized in Table 2.

SECTION 5

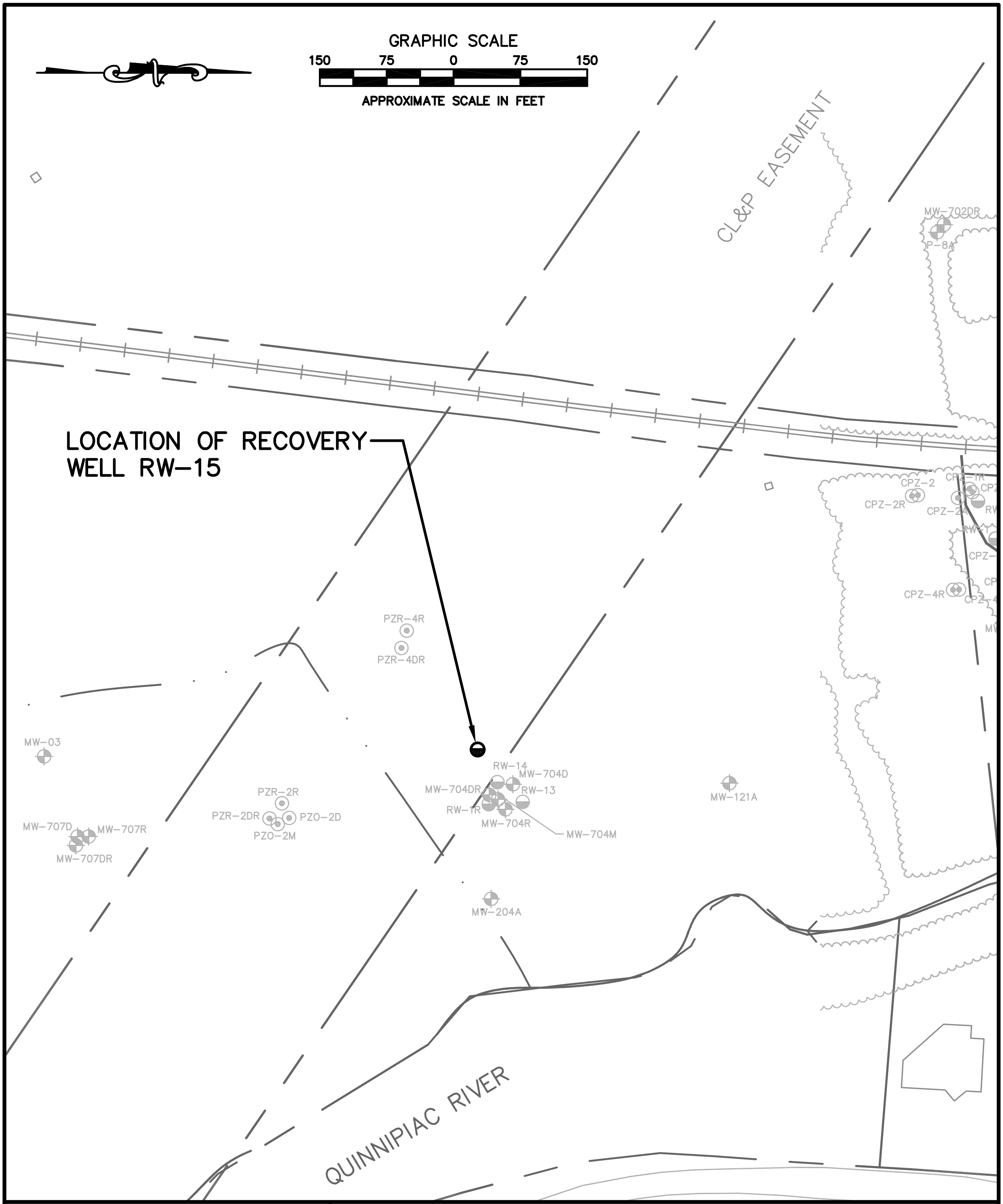
SUMMARY AND CONCLUSIONS

5. SUMMARY AND CONCLUSIONS

WESTON was retained by the SRSNE PRP Group to install, develop, start-up, place into service, and test one additional recovery well (RW-15) in the NTCRA-2 well field to ensure long-term hydraulic containment of overburden and bedrock groundwater and target flows of at least 30 gpm can be maintained with one recovery well out of service. The well was designed based on soil data obtained from a pilot boring drilled at the proposed location in August 2014. Recovery well RW-15 was installed and developed in October 2014. Once the well was installed and developed, mechanical and electrical construction was completed. The new recovery well was placed into service on 12 November 2014. Recovery well RW-15 operating and performance monitoring was added to the NTCRA-2 program after start-up. Performance data will be collected going forward along with the other NTCRA-2 recovery and monitoring wells.

After the new recovery well had been connected to the treatment system and operated for approximately a 1-month period, a drawdown/flow test was conducted on 19 December to confirm the recovery well performance. The test results are summarized in Table 2. In summary, the recovery well produced approximately 35 gpm with less than 6 ft of drawdown.

FIGURES



LOCATION OF RECOVERY WELL RW-15

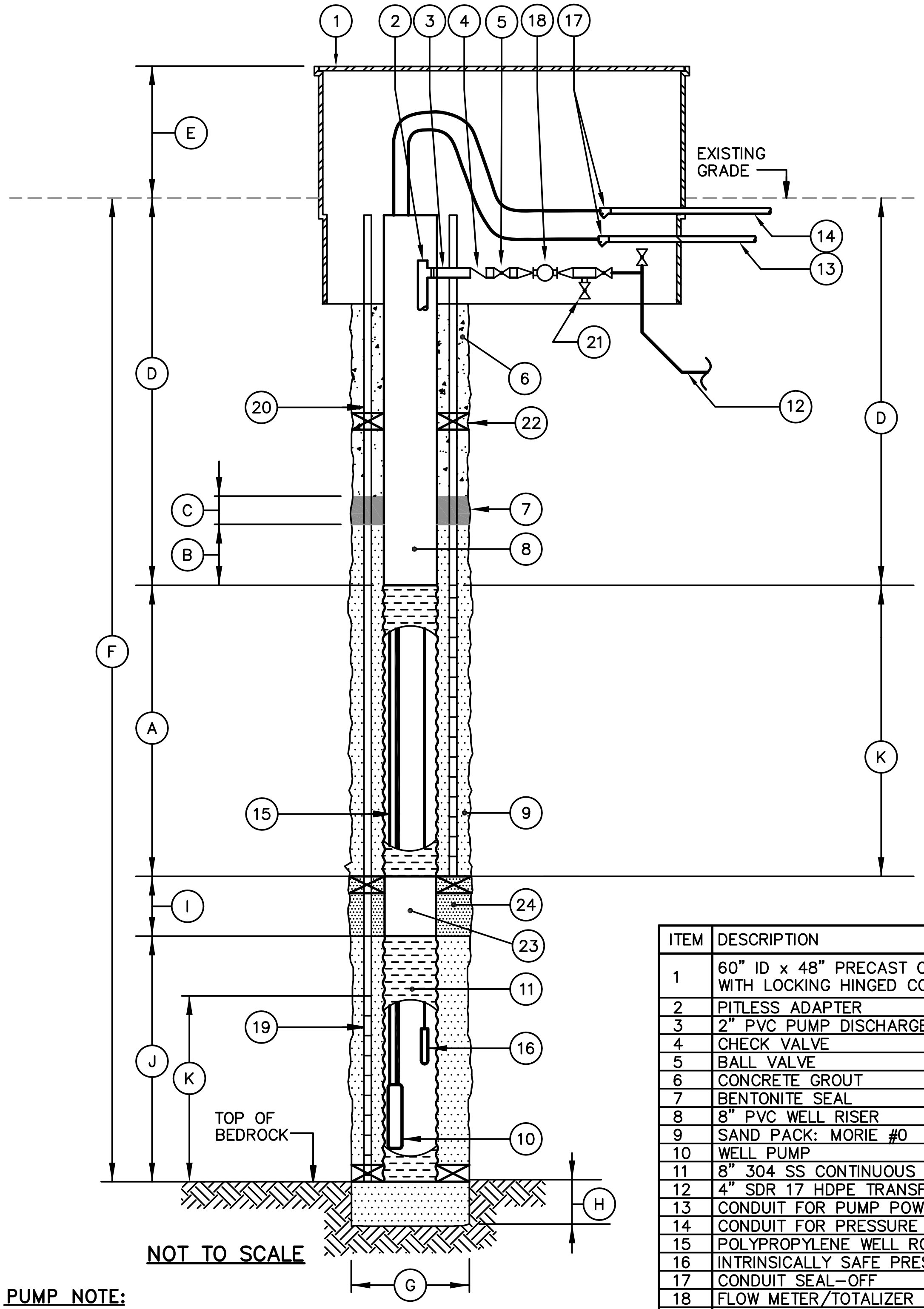
NTCRA-2 RECOVERY WELL 15 SITE PLAN

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN TAC	DATE DEC 2014	DES. ENG. BFF	DATE DEC 2014	W.O. NO. 13056.001.019
CHECKED EDK	DATE DEC 2014	APPROVED	DATE	FIGURE NO. 1

M:\Design\DWG\SRSNE\Design\2014 RW-15\FIG 1.dwg, Layout1, 12/23/2014 3:11:28 PM, chaset, 1:1



NOT TO SCALE

ITEM	DIMENSION
A	15'–0"
B	5'–0"
C	5'–0"
D	30'–0"
E	1'–0"
F	72'–0"
G	1'–4"
H	1'–6"
I	7'–0"
J	20'–0"
K	15'–0"

ITEM	DESCRIPTION
1	60" ID x 48" PRECAST CONCRETE MANHOLE ASSEMBLY WITH LOCKING HINGED COVER
2	PITLESS ADAPTER
3	2" PVC PUMP DISCHARGE PIPE
4	CHECK VALVE
5	BALL VALVE
6	CONCRETE GROUT
7	BENTONITE SEAL
8	8" PVC WELL RISER
9	SAND PACK: MORIE #0
10	WELL PUMP
11	8" 304 SS CONTINUOUS 20–SLOT WELL SCREEN
12	4" SDR 17 HDPE TRANSFER PIPE
13	CONDUIT FOR PUMP POWER
14	CONDUIT FOR PRESSURE TRANSDUCER
15	POLYPROPYLENE WELL ROPE (CONNECT TO PUMP)
16	INTRINSICALLY SAFE PRESSURE TRANSDUCER
17	CONDUIT SEAL–OFF
18	FLOW METER/TOTALIZER
19	1" PVC 0.010 INCH SLOTTED PIPE (2 @ 15' EA.)
20	1" PVC RISER PIPE (2)
21	SAMPLE TAP
22	STAINLESS STEEL CENTRALIZER (3)
23	8" 304 STAINLESS STEEL PIPE (SOLID)
24	SAND PACK: MORIE #00 (RISER AREA)

PUMP NOTE:

WELL PUMP TO BE GRUNDFOS ENVIRONMENTAL MODEL 40S15–5 (1–1/2 HP, 230 VOLT, 3450 RPM, SINGLE PHASE) CAPABLE OF 30 GPM AT 110 FEET TOTAL DYNAMIC HEAD OR APPROVED EQUAL. PACKAGE TO INCLUDE 3–WIRE WITH GROUND PUMP/MOTOR ASSEMBLY WITH LEADS AND CONTROL BOX WITH LOCKABLE DISCONNECT SWITCH AND HAND–OFF–AUTO SWITCH IN A WEATHER–PROOF ENCLOSURE.

NTCRA–2 RECOVERY WELL 15 DETAIL

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN TAC	DATE DEC 2014	DES. ENG. BFF	DATE DEC 2014	W.O. NO. 13056.001.019
CHECKED EDK	DATE DEC 2014	APPROVED	DATE	FIGURE NO. 2

M:\Design\DWG\SRSNE\Design\2014 RW–15\FIG 2.dwg, Layout1, 12/23/2014 3:12:12 PM, chaset, 1:1

TABLES

Table 1

Installation and Start-up Activity Schedule

Activity	**Date(s)**
Relocate existing NTCRA-2 Electrical Service for new Valve Vault	5 to 26 December 2013
Install new Valve Vault	20 March to 6 April 2014
Install Second Electrical Service to NTCRA-2 Control Center (Buried portion)	19 to 30 May 2014
Install RW-15 Pilot Boring	4 to 6 August 2014
Design Recovery Well	14 August to 3 September 2014
Install New Electrical Service Disconnects and Energize second new NTCRA-2 Electrical Service	8 to 10 September 2014
Install Recovery Well	7 to 10 October 2014
Develop Recovery Well	14 to 23 October 2014
Mechanical and Electrical Install	25 October to 11 November 2014
RW-15 Start-up	12 November 2014
Recovery Well Performance Data Collection	19 December 2014

Table 2

RW-15 Drawdown and Flow Results

Depth to Water (ft)	**Drawdown (ft)**	**GW Elevation (ft)**	**Flow (gpm)**
4.03	None	147.25	0
6.48	2.45	144.80	16.5
8.45	4.42	142.83	29.0
9.30	5.27	141.98	35.5

Notes:
GW = groundwater
ft = feet
gpm = gallons per minute

APPENDIX A

PILOT BORING LOG

SOILTESTING, INC.
90 DONOVAN ROAD
OXFORD, CONN. 06478
CT 203-262-9328
N.Y. 914-946-4850

FOREMAN - DRILLER Jeff + Joe Nitsch
INSPECTOR Steve OBrien

GROUND WATER OBSERVATIONS
AT 8' FT AFTER 0.0 HOURS
AT ____ FT AFTER ____ HOURS

CLIENT SRSNE
PROJECT NO.
PROJECT NAME RW-15 Pilot hole
LOCATION 90 Lazy Lane Southington

	CASING	SAMPLER	CORE BAR
TYPE	FLJ ~~HSA~~	SS	NX
SIZE I.D.		1 3/8"	
HAMMER WT.		140#	BIT
HAMMER FALL		30"	

SHEET 1 OF 2
HOLE NO. RW-15 pilot

BORING LOCATIONS Pilot hole for RW-15 @ 43' from
OFFSET
DATE START 8/4/14 DATE FIN. 8/6/14
SURFACE ELEV.
GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE TYPE	SAMPLE PEN	SAMPLE REC	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN. ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	SS	24	9	6'	7 8	6 9			wet	4'	Red/brown F-m gravel Trace C-gravel
10		2	SS	24	14	11'	8 6	7 6			wet	9'	Brown/gray F-C sand Little F-m gravel, Trace oily sheen PID (0.0)
15		3	SS	24	4	16'	11 14	12 14			wet	14'	Red clay lens Red/brown F-C sand Trace silt Trace F-m gravel
20		4	SS	24	12	21'	10 14	15 15			wet	19'	Red/brown F-C sand Little F-m gravel Trace C-gravel
25		5	SS	24	0	26'	8 7	7 8			wet	24'	No recovery
		6	SS	24	23	28'	8 7	6 6			wet	26'	Red/brown F-C sand Little silt Trace F-m gravel
		7	SS	24	7	30'	5 8	7 10			wet	30'	Same as above
30		8	SS	24	20	32'	7 9	8 10			wet	32'	gray/Red F-C sand, Little silt Trace F-m gravel
		9	SS	24	0	34'	6 7	6 11					Zero recovery
35		10	SS	24	0	36'	8 4	4 6					Zero recovery
		11	SS	24	20	38	6 62	37 47			wet	36'	gray F-m sand Trace C-gravel
40		12	SS	24	8	40	14 8	6 8			wet	38'	Red F-Sand Little silt Trace F-C gravel

GROUND SURFACE TO ______ FT. USED ______ CASING THEN ______ CASING TO ______ FT

HOLE NO. R-15 pilot hole

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST
WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS
SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER
PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND = 35 - 50%
C = COARSE
M = MEDIUM
F = FINE

SOILTESTING, INC.
90 DONOVAN ROAD
OXFORD, CONN, 06478
CT 203-262-9328
N.Y. 914-946-4850

FOREMAN - DRILLER Jeff + Joe Nitsch
INSPECTOR Steve O'Brien

CLIENT SRSNE
PROJECT NO.
PROJECT NAME RW-15 Pilot hole
LOCATION 90 Lazy Lane Southington

SHEET 2 OF 2
HOLE NO. RW-15 pilot
BORING LOCATIONS
OFFSET

GROUND WATER OBSERVATIONS
AT ______ FT AFTER ________ HOURS
AT ______ FT AFTER ________ HOURS

	CASING	SAMPLER	CORE BAR
TYPE FLJ	~~HSA~~	SS	NX
SIZE I.D.		1 3/8"	
HAMMER WT.		140#	BIT
HAMMER FALL		30"	

DATE START 8/4/14 DATE FIN. 8/6/14
SURFACE ELEV.
GROUND WATER ELEV.

Depth DEPTH	CASING BLOWS PER FOOT	SAMPLE					BLOWS PER 6 IN. ON SAMPLER (FORCE ON TUBE)			CORING TIME PER FT (MIN)	DENSITY OR CONSIST	STRATA CHANGE DEPTH	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
		NO	TYPE	PEN	REC	DEPTH @ BOT	0 - 6	6 - 12	12 - 18		MOIST	ELEV	
		13	SS	24	20	42'	8	7			wet	40'	Same as above
							8	11					
		14	SS	24	12	44'	5	4			wet	42'	Same as above
							4	5					
15 ~~5~~		15	SS	24	9	46'	5	5			wet	44'	Red/brown silt + clay Trace
							6	10					C-gravel
		16	SS	24	20	48'	15	16			wet	46'	
							14	18					Same as above
		17	SS	24	8	50'	13	9			wet	48'	
0 ~~10~~							14	15					gray F-M Sand, Trace silt
		18	SS	24	22	52	8	13				50'	Same as above
							25	25			wet	51'	
		19	SS	6	4	52'6"	50/6						Red/brown silt and clay
5 ~~15~~		20	SS	15	10	54'10"	44	30					Trace F-C Sand Trace F gravel
							50/3					?	possible weathered till - - - - -
		21	SS	2	1	56'2"	50/2						
												54'	Same as above (weathered till)
0 ~~20~~												56'	Red weathered till
													Roller bit into till
													cobbels
5 ~~25~~		22	SS	6	3	65'6"	100/6					65'	- - - - possible - - Top of
													weathered rock - - - - ?
													Red brown till like
10 ~~30~~													Advance roller bit
													Core through diabase boulders
													Roller bit
												72'	- - - Top of bedrock - - -
15 ~~35~~													Core
												73'	Fracture Zone
													competent bedrock Arkose Sandstone
30 ~~40~~												77'	EOB

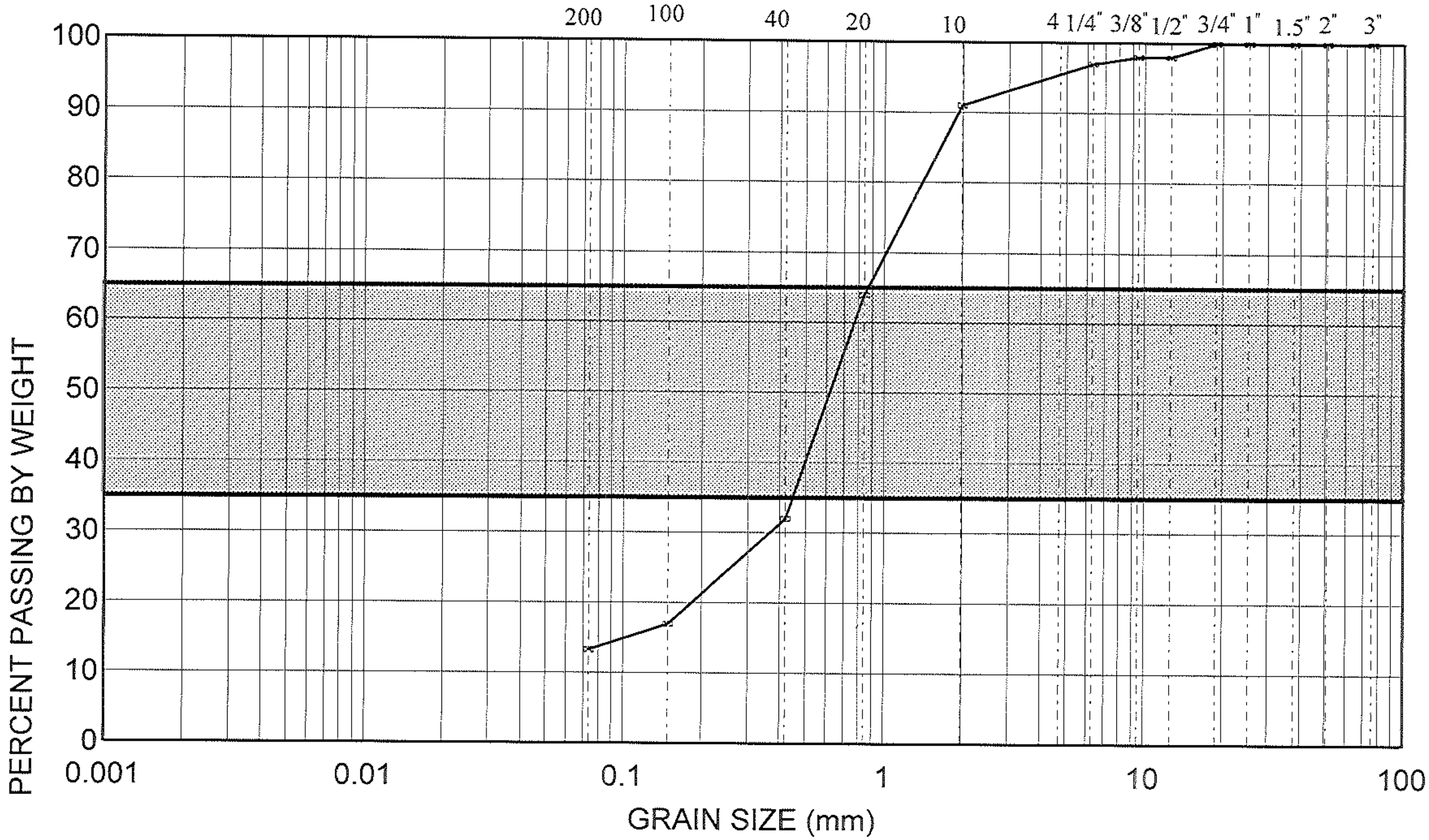
GROUND SURFACE TO __________ FT. USED __________ CASING THEN ________ CASING TO ________ FT

HOLE NO. RW-15 pilot hole

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST
WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE
SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM
PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND = 35 - 50% F = FINE

APPENDIX B

RW-15 PILOT BORING SIEVE ANALYSIS RESULTS



CLAY	SILT	SAND			GRAVEL		COBBLES
		Fine	Medium	Coarse	Fine	Coarse	

Location	Depth	Elevation	W(%)	C_u	C_c	Classification	UC	LL	PL	PI

Client: Weston Solutions, Inc.

Project: SRSNE RW-15

Boring No.:

Report No.: S-1000

Test Date: 08/06/14

Received 8-04-14

Test Lab: MTI

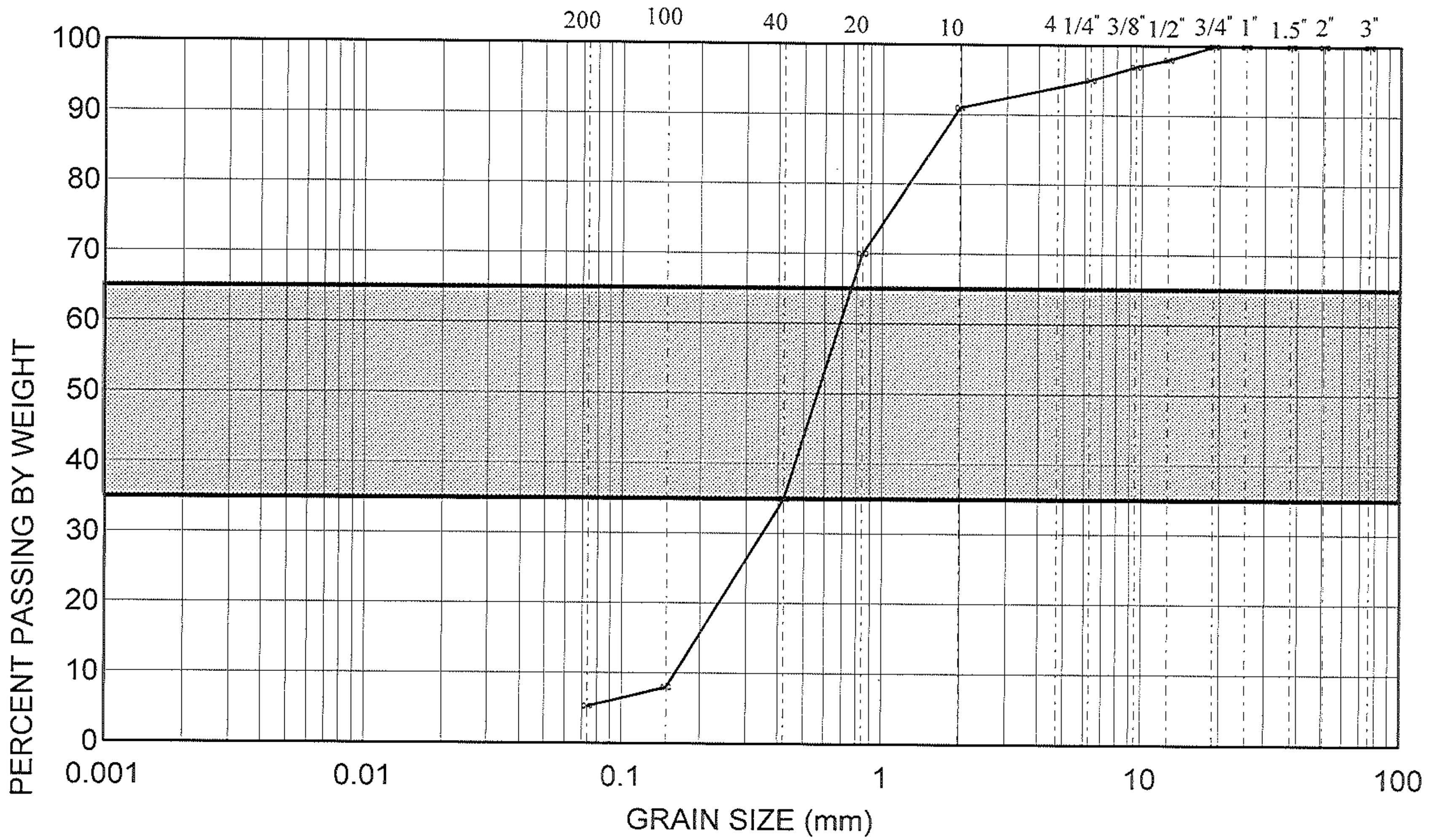
Materials Testing, Inc.
55 Laura Street
New Haven, CT 06512

Soil Description: Soil
Lab Sample L-4588

Source: SS-6

D_{60} (mm)	D_{30} (mm)	D_{10} (mm)	%Gravel	%Sand	% Silt & Clay

GRAIN SIZE DISTRIBUTION



CLAY	SILT	SAND			GRAVEL		COBBLES
		Fine	Medium	Coarse	Fine	Coarse	

Location	Depth	Elevation	W(%)	C_u	C_c	Classification	UC	LL	PL	PI

Client: Weston Solutions, Inc.

Project: SRSNE RW-15

Boring No.:

Report No.: S-1001

Test Date: 08/06/14

Received 8-04-14

Test Lab: MTI

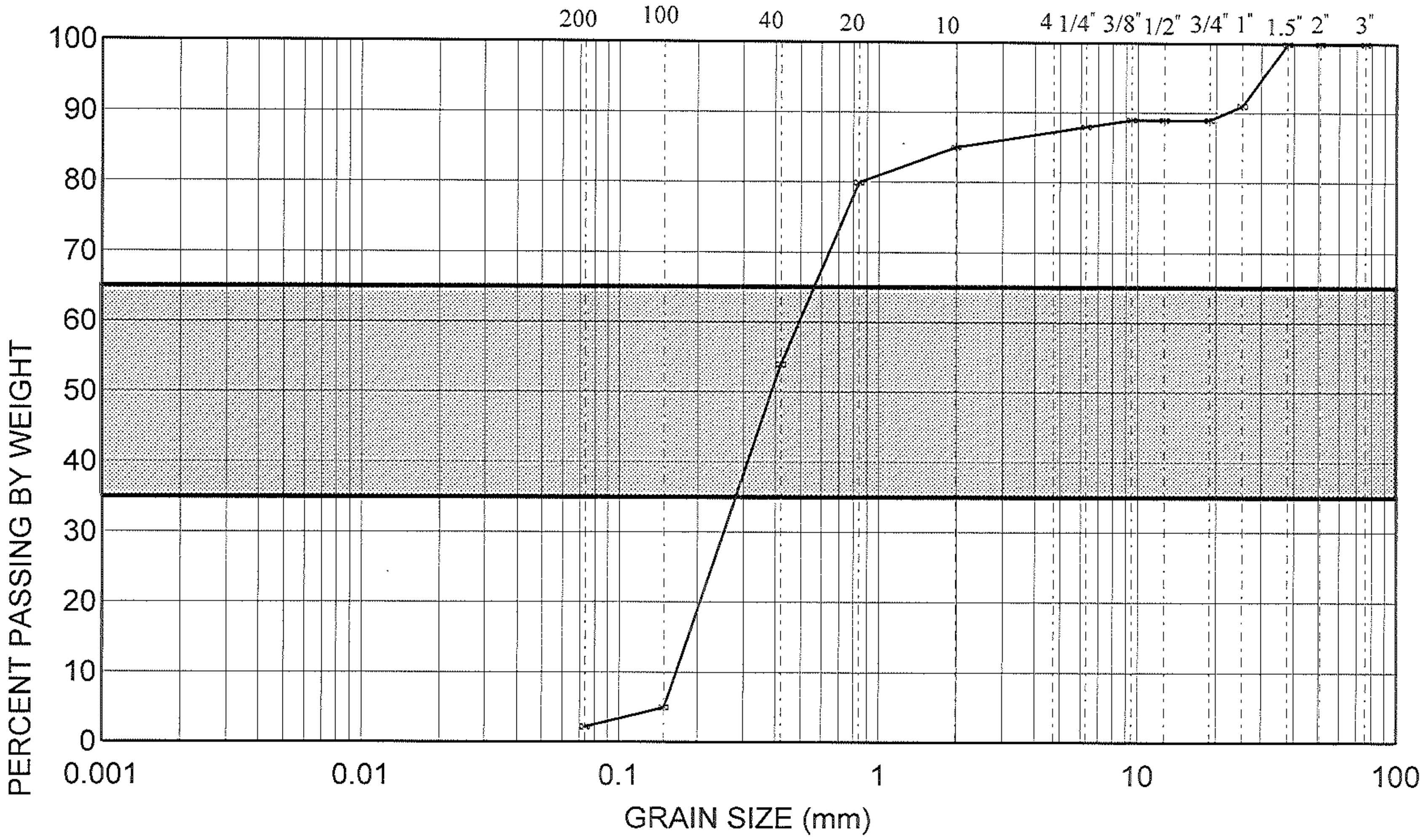
Materials Testing, Inc.
55 Laura Street
New Haven, CT 06512

Soil Description: Soil
Lab Sample L-4589

Source: SS-8

D_{60} (mm)	D_{30} (mm)	D_{10} (mm)	%Gravel	%Sand	% Silt & Clay

GRAIN SIZE DISTRIBUTION



CLAY	SILT	SAND			GRAVEL		COBBLES
		Fine	Medium	Coarse	Fine	Coarse	

Location	Depth	Elevation	$W_{(\%)}$	C_u	C_c	Classification	UC	LL	PL	PI

Client: Weston Solutions, Inc.

Project: SRSNE RW-15

Boring No.:

Report No.: S-1002

Test Date: 08/06/14

Received 8-04-14

Test Lab: MTI

Materials Testing, Inc.
55 Laura Street
New Haven, CT 06512

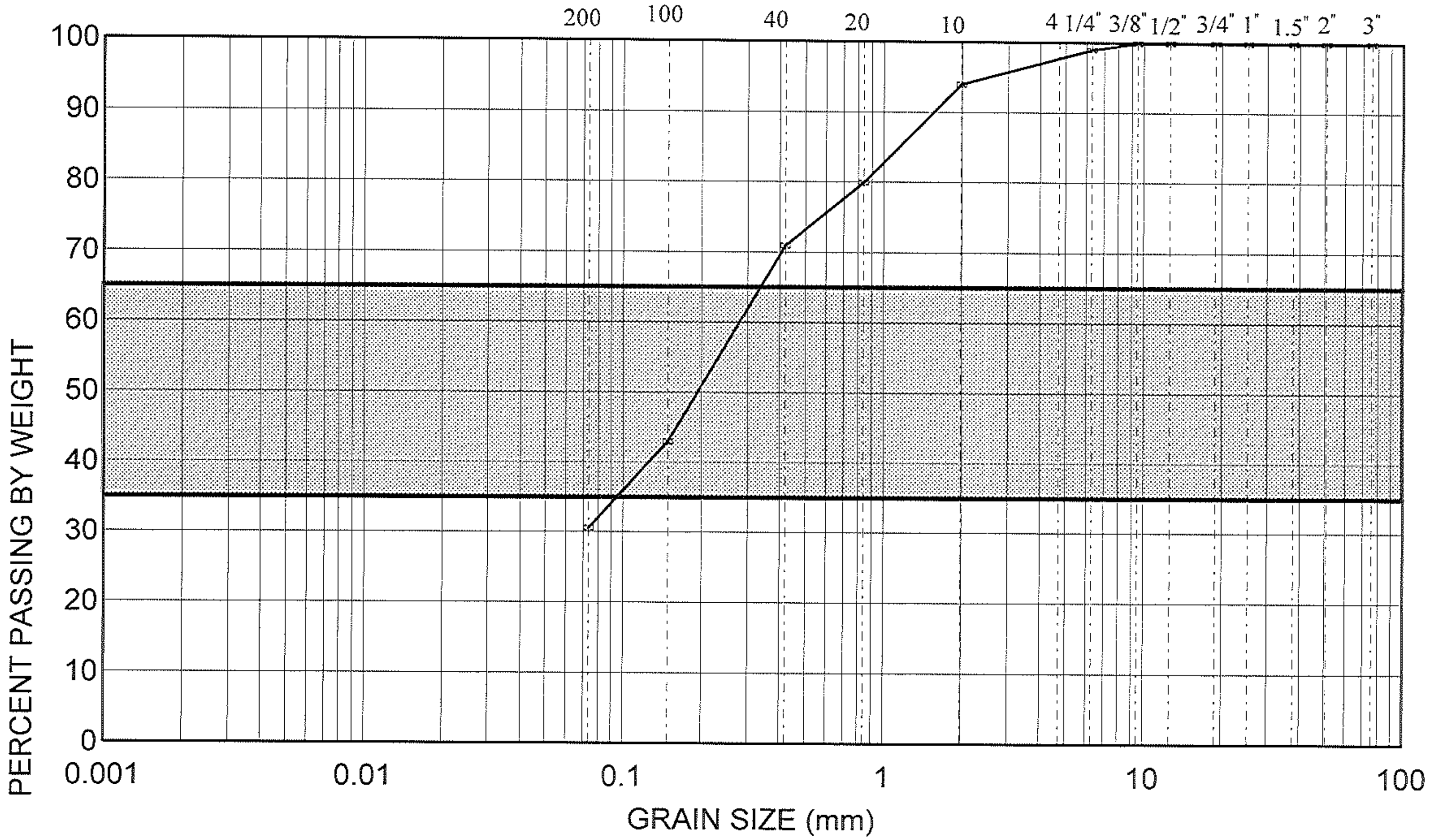
Soil Description: Soil
Lab Sample L-4590

Source: SS-11

D_{60} (mm)	D_{30} (mm)	D_{10} (mm)	%Gravel	%Sand	% Silt & Clay

GRAIN SIZE DISTRIBUTION

Page 2 of 2



CLAY	SILT	SAND			GRAVEL		COBBLES
		Fine	Medium	Coarse	Fine	Coarse	

Location	Depth	Elevation	$W_{(\%)}$	C_u	C_c	Classification	UC	LL	PL	PI

Client: Weston Solutions, Inc.

Project: SRSNE RW-15

Boring No.:

Report No.: S-1003

Test Date: 08/06/14

Received 8-04-14

Test Lab: MTI

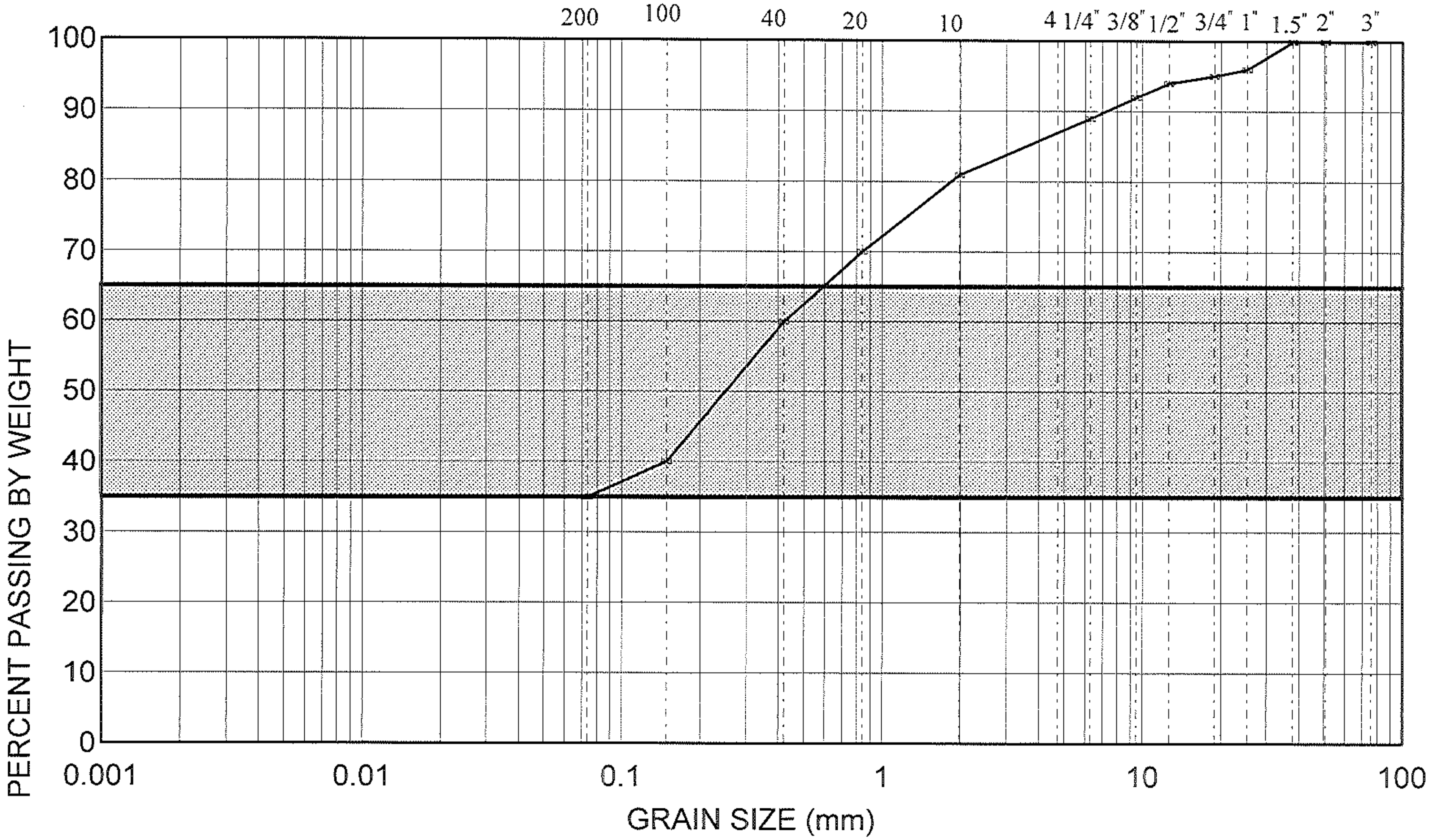
Materials Testing, Inc.
55 Laura Street
New Haven, CT 06512

Soil Description: Soil
Lab Sample L-4591

Source: SS-13

D_{60} (mm)	D_{30} (mm)	D_{10} (mm)	%Gravel	%Sand	% Silt & Clay

GRAIN SIZE DISTRIBUTION



CLAY	SILT	SAND			GRAVEL		COBBLES
		Fine	Medium	Coarse	Fine	Coarse	

Location	Depth	Elevation	$W_{(\%)}$	C_u	C_c	Classification	UC	LL	PL	PI

Client: Weston Solutions, Inc.

Project: SRSNE RW-15

Boring No.:

Report No.: S-1004

Test Date: 08/06/14

Received 8-04-14

Test Lab: MTI

Materials Testing, Inc.
55 Laura Street
New Haven, CT 06512

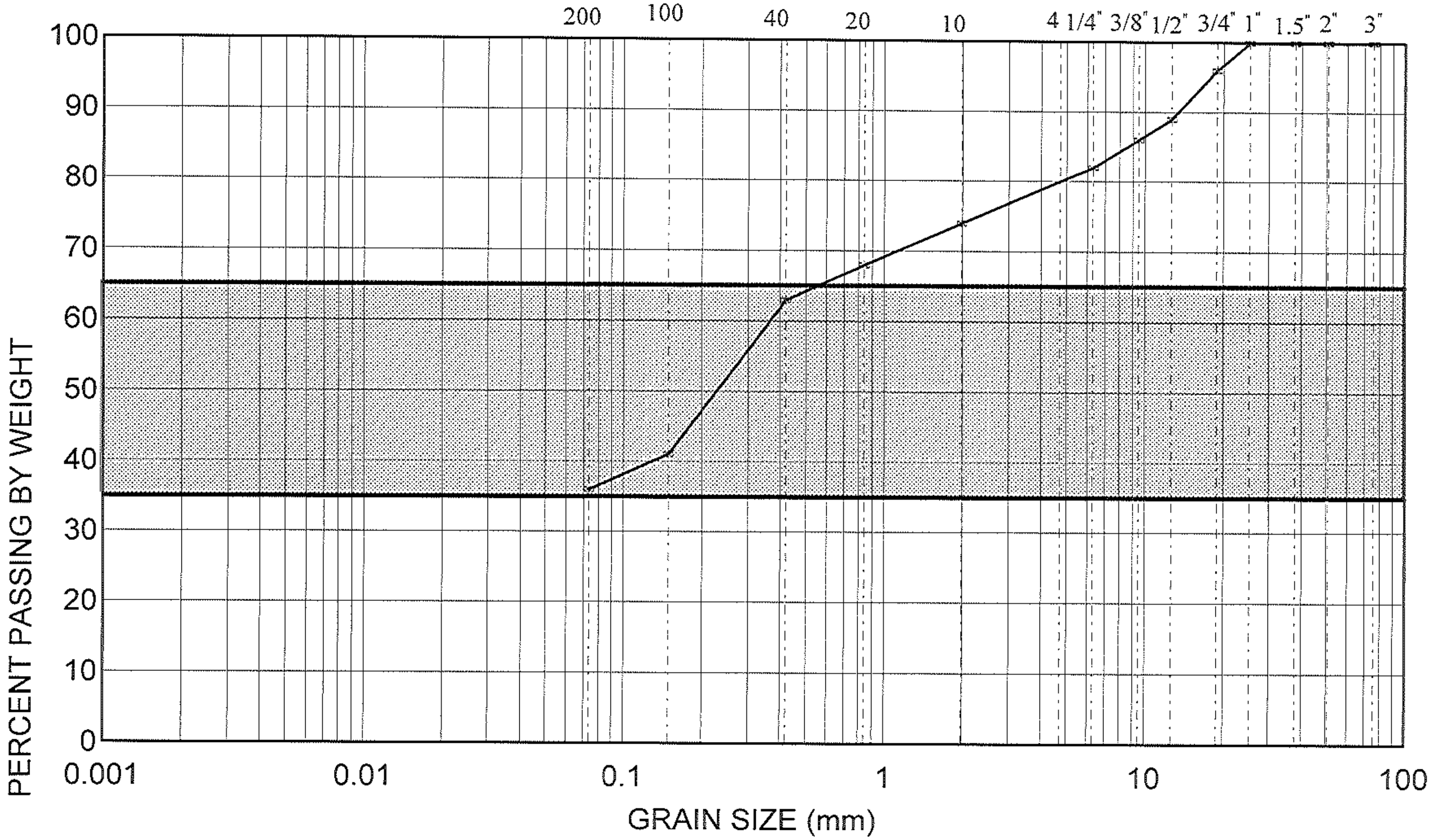
Soil Description: Soil
Lab Sample L-4592

Source: SS-16

D_{60} (mm)	D_{30} (mm)	D_{10} (mm)	%Gravel	%Sand	% Silt & Clay

GRAIN SIZE DISTRIBUTION

Page 2 of 2



CLAY	SILT	SAND			GRAVEL		COBBLES
		Fine	Medium	Coarse	Fine	Coarse	

Location	Depth	Elevation	W(%)	C_u	C_c	Classification	UC	LL	PL	PI

Client: Weston Solutions, Inc.

Project: SRSNE RW-15

Boring No.:

Report No.: S-1005

Test Date: 08/06/14

Received 8-04-14

Test Lab: MTI

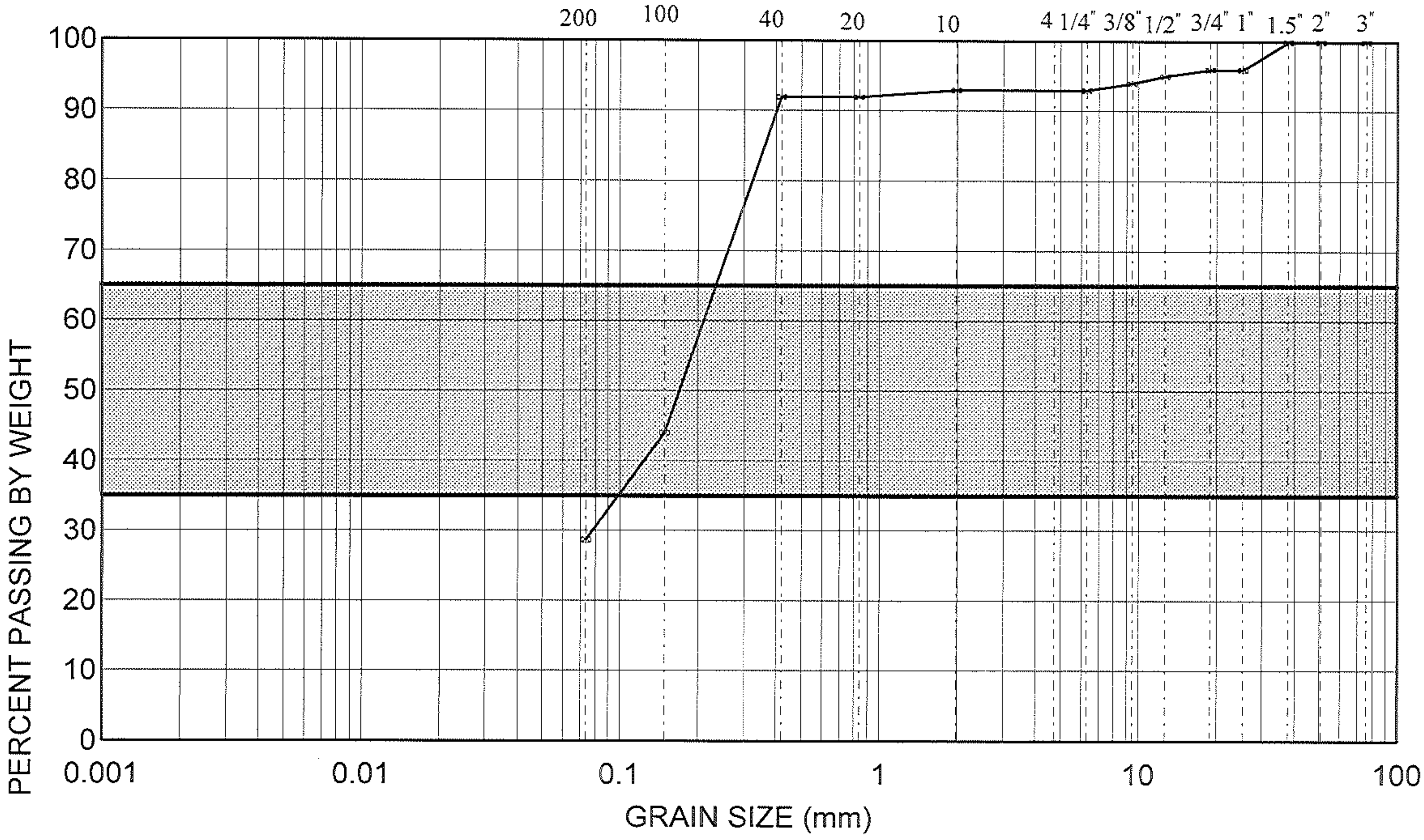
Materials Testing, Inc.
55 Laura Street
New Haven, CT 06512

Soil Description: Soil
Lab Sample L-4593

Source: SS-18

D_{60} (mm)	D_{30} (mm)	D_{10} (mm)	%Gravel	%Sand	% Silt & Clay

GRAIN SIZE DISTRIBUTION



CLAY	SILT	SAND			GRAVEL		COBBLES
		Fine	Medium	Coarse	Fine	Coarse	

Location	Depth	Elevation	W(%)	C_u	C_c	Classification	UC	LL	PL	PI

Client: Weston Solutions, Inc.

Project: SRSNE RW-15

Boring No.:

Report No.: S-1006

Test Date: 08/06/14

Received 8-04-14

Test Lab: MTI

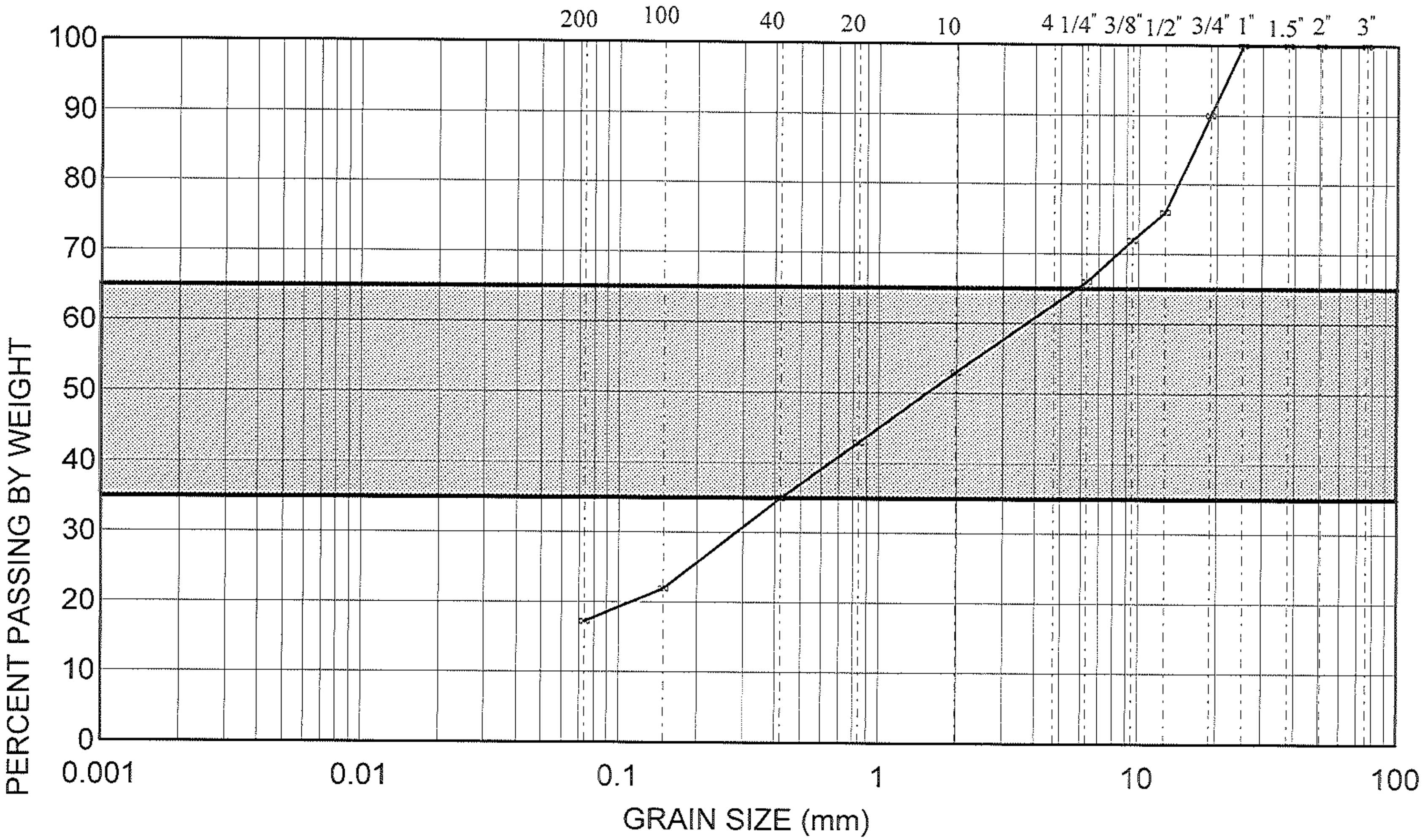
Materials Testing, Inc.
55 Laura Street
New Haven, CT 06512

Soil Description: Soil
Lab Sample L-4594

Source: SS-14

D_{60} (mm)	D_{30} (mm)	D_{10} (mm)	%Gravel	%Sand	% Silt & Clay

GRAIN SIZE DISTRIBUTION



CLAY	SILT	SAND			GRAVEL		COBBLES
		Fine	Medium	Coarse	Fine	Coarse	

Location	Depth	Elevation	W(%)	C_u	C_c	Classification	UC	LL	PL	PI

Client: Weston Solutions, Inc.

Project: SRSNE RW-15

Boring No.:

Report No.: S-1007

Test Date: 08/06/14

Received 8-04-14

Test Lab: MTI

Materials Testing, Inc.
55 Laura Street
New Haven, CT 06512

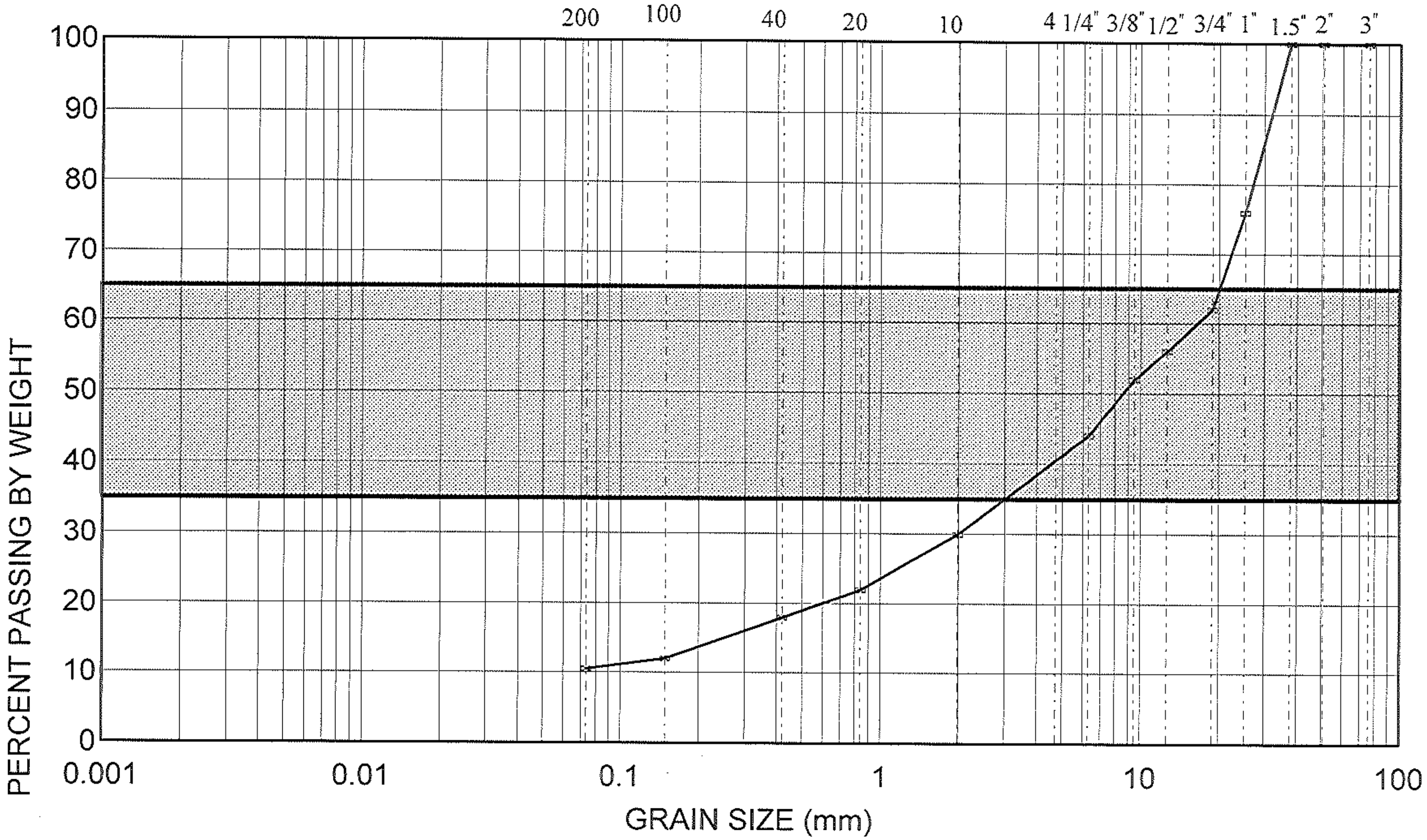
Soil Description: Soil
Lab Sample L-4595

Source: SS-19

D_{60} (mm)	D_{30} (mm)	D_{10} (mm)	%Gravel	%Sand	% Silt & Clay

GRAIN SIZE DISTRIBUTION

Page 2 of 2



CLAY	SILT	SAND			GRAVEL		COBBLES
		Fine	Medium	Coarse	Fine	Coarse	

Location	Depth	Elevation	W(%)	C_u	C_c	Classification	UC	LL	PL	PI

Client: Weston Solutions, Inc.

Project: SRSNE RW-15

Boring No.:

Report No.: S-1008

Test Date: 08/06/14

Received 8-04-14

Test Lab: MTI

Materials Testing, Inc.
55 Laura Street
New Haven, CT 06512

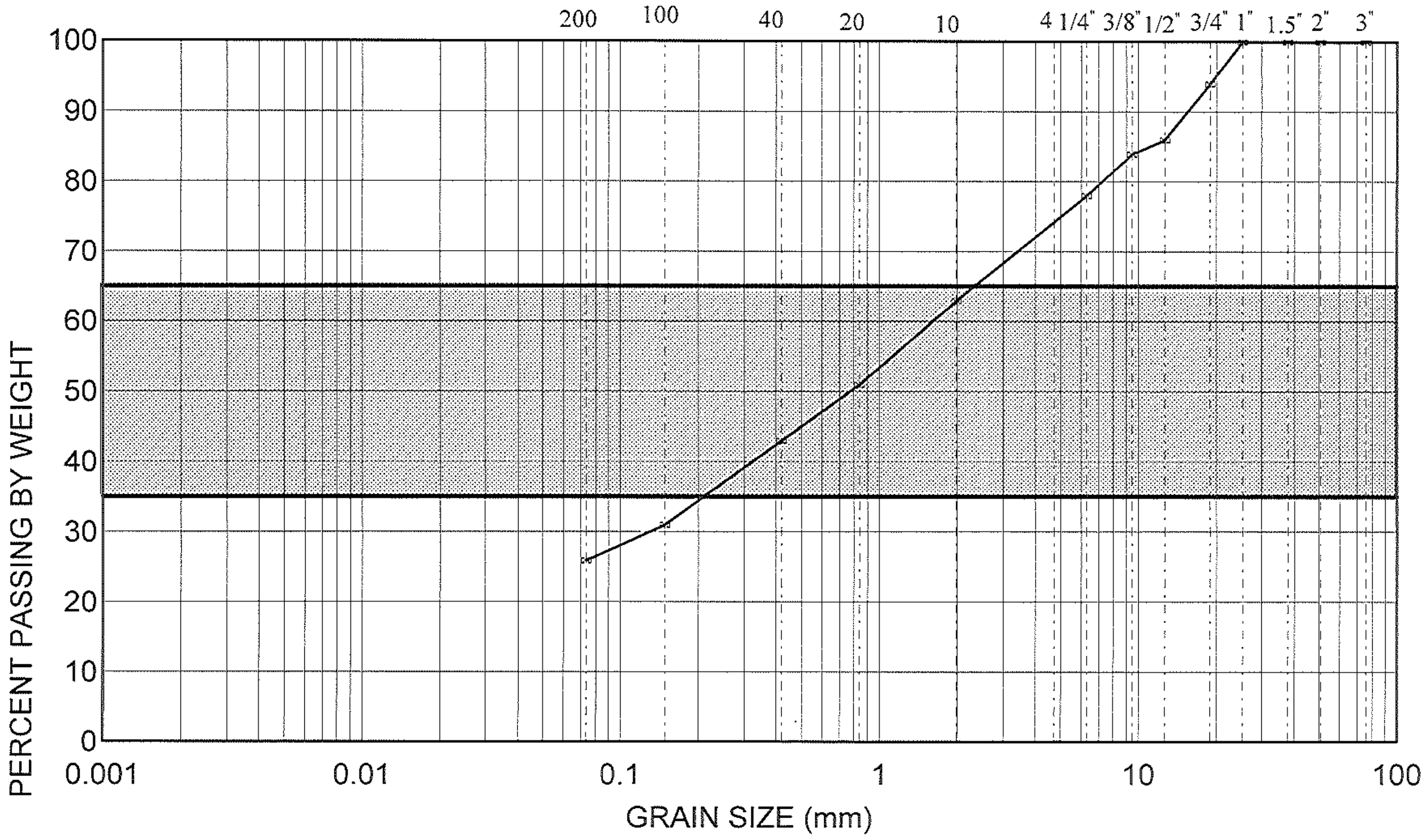
Soil Description: Soil
Lab Sample L-4596

Source: SS-20

D_{60} (mm)	D_{30} (mm)	D_{10} (mm)	%Gravel	%Sand	% Silt & Clay

GRAIN SIZE DISTRIBUTION

Page 2 of 2



CLAY	SILT	SAND			GRAVEL		COBBLES
		Fine	Medium	Coarse	Fine	Coarse	

Location	Depth	Elevation	$W_{(\%)}$	C_u	C_c	Classification	UC	LL	PL	PI

Client: Weston Solutions, Inc.

Project: SRSNE RW-15

Boring No.:

Report No.: S-1009

Test Date: 08/06/14

Received 8-04-14

Test Lab: MTI

Materials Testing, Inc.
55 Laura Street
New Haven, CT 06512

Soil Description: Soil
Lab Sample L-4597

Source: SS-22

D_{60} (mm)	D_{30} (mm)	D_{10} (mm)	%Gravel	%Sand	% Silt & Clay

GRAIN SIZE DISTRIBUTION

Page 2 of 2

APPENDIX C

EXTRACTION WELL RW-15 TIE-IN RECORD DRAWINGS

SOLVENTS RECOVERY SERVICES OF NEW ENGLAND SUPERFUND SITE

NON TIME CRITICAL REMOVAL ACTION No. 2

EXTRACTION WELL RW-15 TIE-IN

SOUTHINGTON, CONNECTICUT

Prepared for:
SOLVENTS RECOVERY SERVICE OF NEW ENGLAND (SRSNE)
Potentially Responsible Party (PRP) Group
and
demaximis, Inc.
200 Day Hill Road
Suite 200
Windsor, Connecticut 06095

INDEX OF DRAWINGS

DECEMBER 2014

Prepared by:
WESTON SOLUTIONS, INC.
Suite 3B 124 Hebron Avenue
Glastonbury, Connecticut 06033

WESTON SOLUTIONS®

W.O. No. 13056.001.019.8100

REVISION D – 12/23/14 – UPDATED RECORD DRAWINGS
REVISION C – 4/16/14 – RW–15 TIE–IN
REVISION B – 10/12/07 – AS–BUILT DRAWING
REVISION A – 7/20/07 – INITIAL ISSUE

DWG. TITLE	DWG. NO.
TITLE SHEET AND INDEX	0

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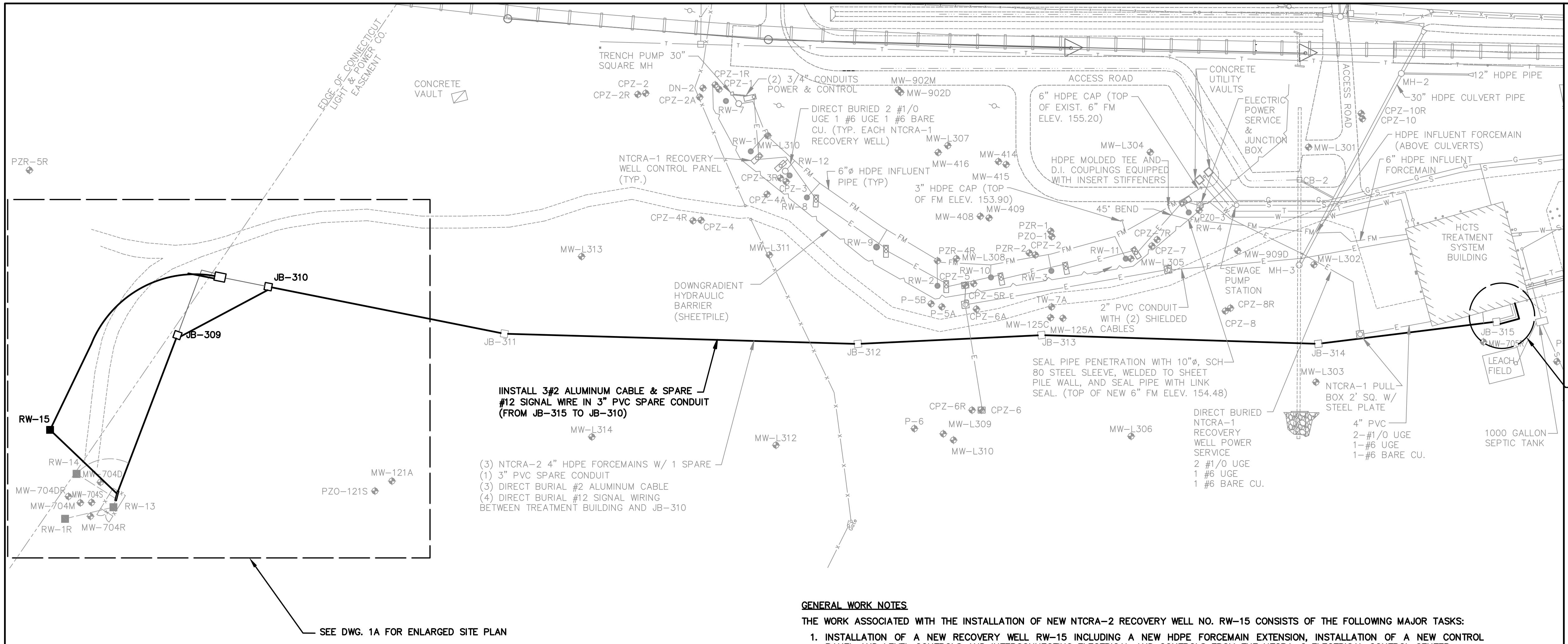

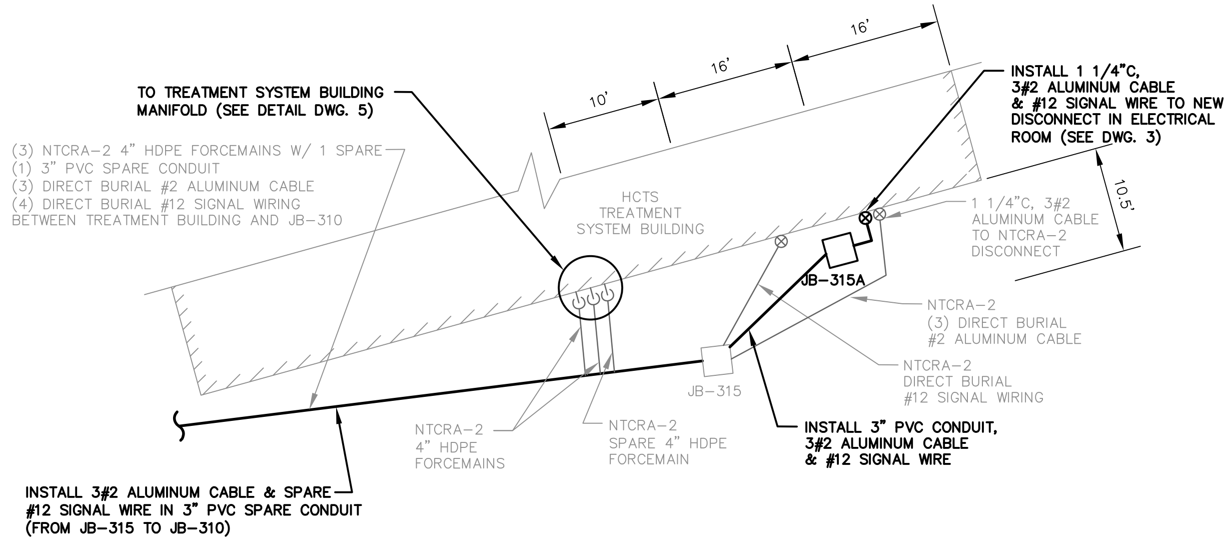

HCTS AREA-ENLARGED SITE PLAN

NOT TO SCALE

GENERAL WORK NOTES

THE WORK ASSOCIATED WITH THE INSTALLATION OF NEW NTCRA-2 RECOVERY WELL NO. RW-15 CONSISTS OF THE FOLLOWING MAJOR TASKS:

1. INSTALLATION OF A NEW RECOVERY WELL RW-15 INCLUDING A NEW HDPE FORCEMAIN EXTENSION, INSTALLATION OF A NEW CONTROL PANEL AND LEVEL CONTROLS AND INTERCONNECTING ELECTRICAL AND CONTROLS FROM THE NTCRA-2 ELECTRICAL CONTROL CENTER.
2. UPGRADE OF THE NTCRA-2 ELECTRICAL SERVICE. THIS WORK SHALL INCLUDE:
   - INSTALLATION OF A SECOND 30 AMP SERVICE AT THE TREATMENT SYSTEM BUILDING.
   - INSTALLATION OF NEW ELECTRICAL SERVICE BETWEEN TREATMENT BUILDING AND THE NTCRA-2 CONTROL CENTER. THE NEW SERVICE SHALL BE INSTALLED IN EXISTING CONDUIT BETWEEN THE TREATMENT BUILDING AND JB-310. BOTH THE EXISTING SERVICE AND NEW SERVICE SHALL BE REPLACED AND INSTALLED BETWEEN JB-310 AND THE NTCRA-2 CONTROL CENTER IN NEW 3" PVC CONDUIT.
   - INSTALLATION OF A NEW ALARM SIGNAL BETWEEN JB-310 AND NTCRA-2 CONTROL CENTER IN NEW 3" CONDUIT.
   - INSTALLATION OF A NEW SERVICE DISCONNECT AT THE NTCRA-2 CONTROL CENTER AND CONNECTION OF NEW RW-15 CONTROL PANEL AND RELOCATION OF EXISTING RECOVERY WELL RW-1R TO THE NEW SERVICE.
   - INSTALLATION OF A NEW SPARE ALARM SIGNAL BETWEEN TREATMENT SYSTEM BUILDING AND NTCRA-2 CONTROL CENTER IN EXISTING AND NEW 3" CONDUIT.
3. INSTALLATION OF A NEW NTCRA-2 VALVE VAULT THAT WILL ENABLE CONNECTION OF NEW RECOVERY WELL RW-15 AND PLACE ONE OF THE TWO SPARE FORCEMAINS INTO SERVICE. THE VALVE VAULT WILL ALSO ENABLE PLACEMENT OF THE THIRD FORCEMAIN INTO SERVICE IN THE FUTURE.

DRAWING SOURCE:
BASE MAP INFORMATION FROM CONKLIN & SORAKA, INC., 1484 HIGHLAND AVE., CHESHIRE, CT. DATED 1/13/09, AT A SCALE OF 1"=50' AND MODIFIED BY WESTON SOLUTIONS, INC. BASED ON FIELD OBSERVATIONS.

NOTE:
BOLD INDICATES NEW WORK REQUIRED AS PART OF THIS CONTRACT.

LEGEND

RW-11 ●	NTCRA 1 EXTRACTION WELL
RW-13 ■	NTCRA 2 EXTRACTION WELL
CPZ-8R ⊘	MONITORING WELL
——E——	ELECTRIC LINE
——FM——	FORCEMAIN
——G——	GAS LINE
——S——	SEWER LINE
——T——	TELEPHONE LINE
——W——	WATER LINE
ϕ	UTILITY POLE
MH-3 ○	MANHOLE
CB-2 □	CATCH BASIN
——x——x——	FENCE

GRAPHIC SCALE
50 25 0 25 50
APPROXIMATE SCALE IN FEET

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION
D	12/23/14	BFF	UPDATED RECORD DRAWING				
C	4/16/14	BFF	RW-15 TIE-IN				
B	10/12/07	BFF	AS-BUILT DRAWING				
A	7/20/07	BFF	INITIAL ISSUE				

SRSNE PRP GROUP – SOUTHINGTON, CONNECTICUT
NON-TIME CRITICAL REMOVAL ACTION 2
SRSNE SITE
EXTRACTION WELL RW-15 TIE-IN

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

CHECKED	DATE	CLIENT APPROVALS	DATE
DES. ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED		ISSUED FOR	DATE

OVERALL SITE PLAN

DRAWN	DATE	DWG NO.	REV. NO.
TAC	APRIL 2014	1	D
SCALE	W.O. NO.	SHT. ____ OF ____	
AS SHOWN	13056.019.019		

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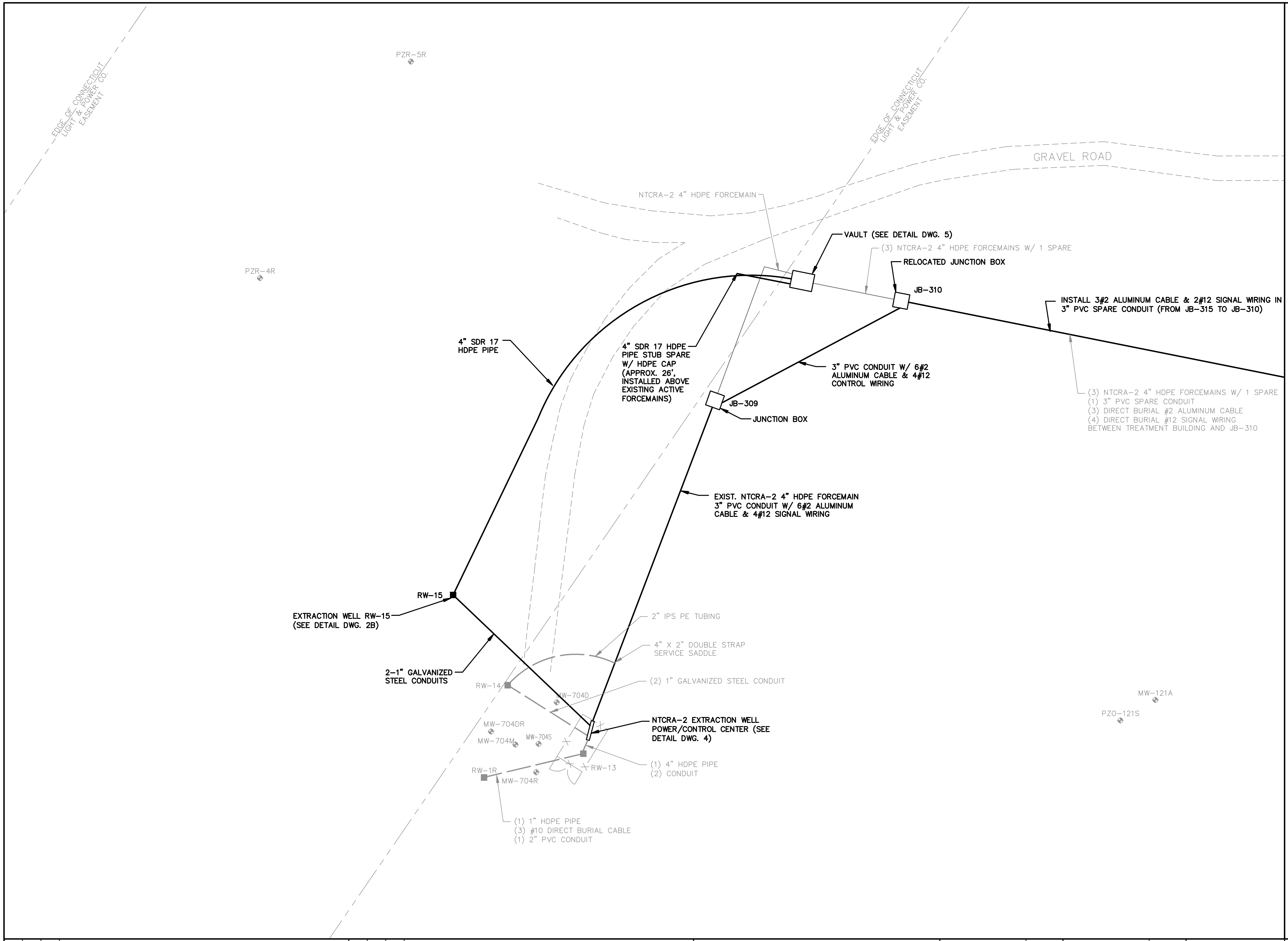


NOTES:

1. BOLD INDICATES NEW WORK REQUIRED AS PART OF THIS CONTRACT.
2. FOR EXIST. EXTRACTION WELL RW-1R AND RW-13 DETAILS SEE DWG. 2.
3. FOR EXIST. EXTRACTION WELL RW-14 DETAILS SEE DWG. 2A.
4. FOR EXTRACTION WELL RW-15 DETAILS SEE DWG. 2B.

GRAPHIC SCALE
20 10 0 10 20
APPROXIMATE SCALE IN FEET

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION
D	12/23/14	BFF	UPDATED RECORD DRAWING				
C	4/16/14	BFF	RW-15 TIE-IN				
B	10/12/07	BFF	AS-BUILT DRAWING				
A	7/20/07	BFF	INITIAL ISSUE				

SRSNE PRP GROUP – SOUTHINGTON, CONNECTICUT
NON-TIME CRITICAL REMOVAL ACTION 2
SRSNE SITE
EXTRACTION WELL RW-15 TIE-IN

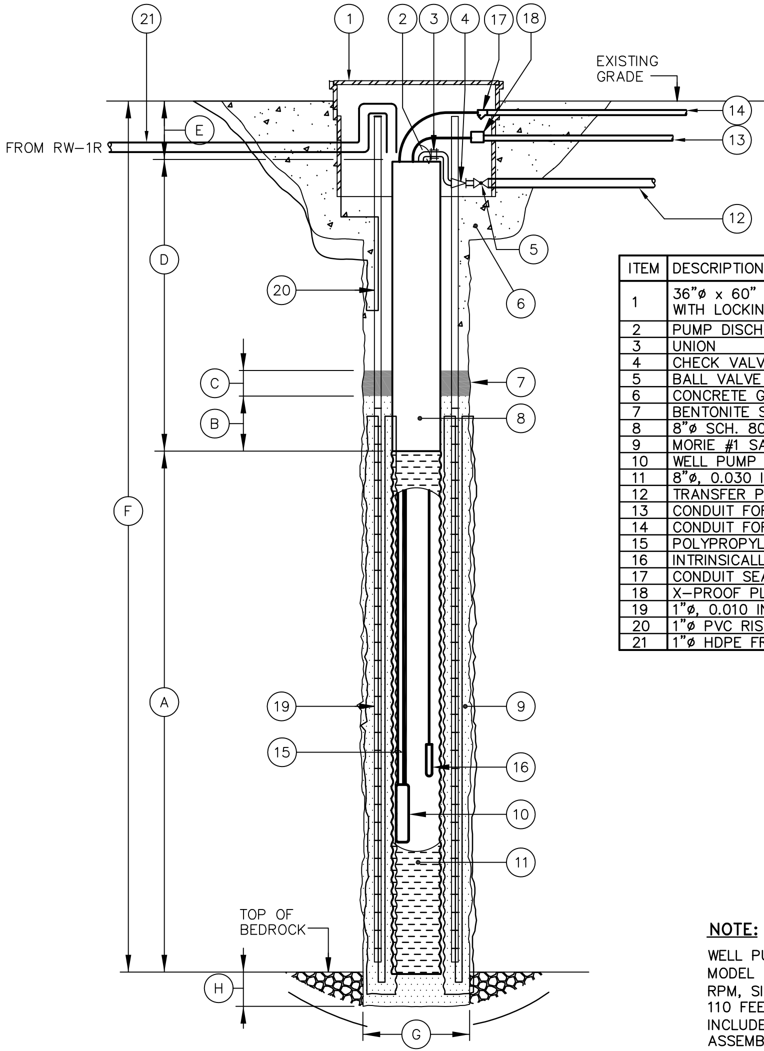
WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

	DATE	CLIENT APPROVALS	DATE
CHECKED			
DES. ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED		ISSUED FOR	DATE

ENLARGED SITE PLAN

DRAWN TAC
DATE APRIL 2014
DWG NO. 1A
REV. NO. D
SCALE AS SHOWN
W.O. NO. 13056.019.019
SHT.______ OF ______

M:\Design\DWG\SRSNE\Design\2014 RW-15\Site Plan 1 and 1A.dwg, 1A, 12/23/2014 3:21:51 PM, chaset, 1:2



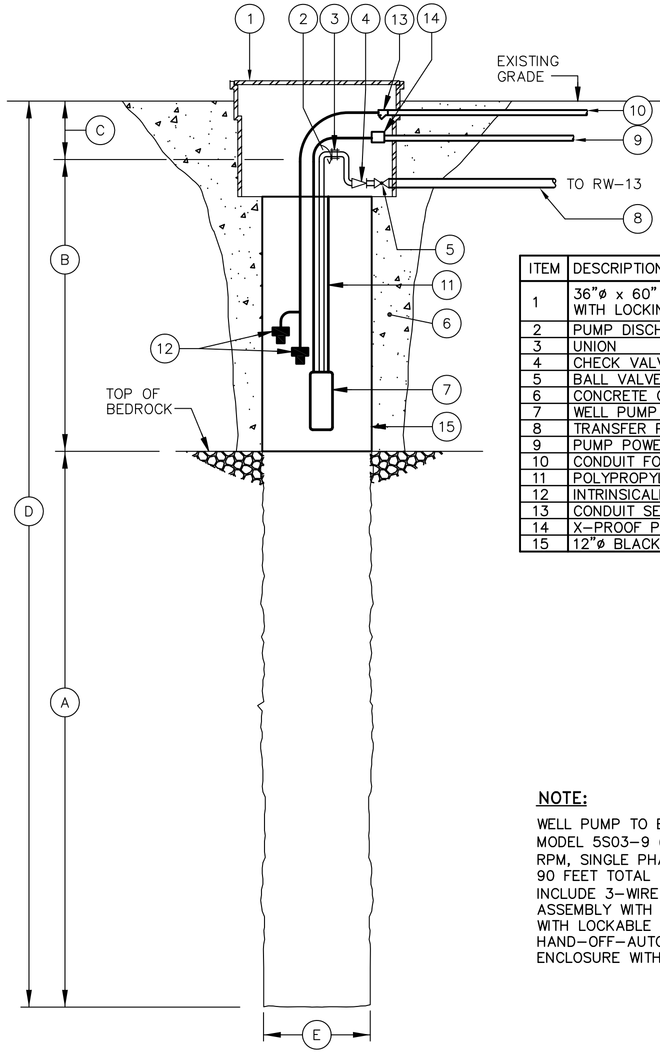
ITEM	DESCRIPTION
1	36"ø x 60" CONCRETE MANHOLE ASSEMBLY WITH LOCKING HINGED STEEL COVER
2	PUMP DISCHARGE PIPE (2"ø PVC)
3	UNION
4	CHECK VALVE
5	BALL VALVE
6	CONCRETE GROUT
7	BENTONITE SEAL
8	8"ø SCH. 80 PVC RISER
9	MORIE #1 SAND
10	WELL PUMP
11	8"ø, 0.030 INCH SLOT STAINLESS STEEL SCREEN
12	TRANSFER PIPE (4"ø HDPE)
13	CONDUIT FOR PUMP POWER
14	CONDUIT FOR PRESSURE TRANSDUCER
15	POLYPROPYLENE WELL ROPE (CONNECT TO PUMP)
16	INTRINSICALLY SAFE PRESSURE TRANSDUCER
17	CONDUIT SEAL-OFF
18	X-PROOF PLUG & RECEPTACLE W/CONDUIT SEAL
19	1"ø, 0.010 INCH SLOTTED PVC PIPES (3)
20	1"ø PVC RISER PIPES (3)
21	1"ø HDPE FROM RW-1R

ITEM	DIMENSION
A	40'-0"
B	5'-0"
C	3'-0"
D	34'-0"
E	1'-0"
F	75'-0"
G	1'-4"
H	2'-10"

NOTE:

WELL PUMP TO BE GRUNDFOS ENVIRONMENTAL MODEL 40S15-5 (1-1/2 HP, 230 VOLT, 3450 RPM, SINGLE PHASE) CAPABLE OF 30 GPM AT 110 FEET TOTAL DYNAMIC HEAD. PACKAGE TO INCLUDE 3-WIRE WITH GROUND PUMP/MOTOR ASSEMBLY WITH LEADS AND CONTROL BOX WITH LOCKABLE DISCONNECT SWITCH AND HAND-OFF-AUTO SWITCH IN A NEMA 4 ENCLOSURE WITHIN A LOCKABLE CABINET.

EXISTING RECOVERY WELL 13 DETAIL



ITEM	DESCRIPTION
1	36"ø x 60" CONCRETE MANHOLE ASSEMBLY WITH LOCKING HINGED STEEL COVER
2	PUMP DISCHARGE PIPE (1"ø PVC)
3	UNION
4	CHECK VALVE
5	BALL VALVE
6	CONCRETE GROUT
7	WELL PUMP
8	TRANSFER PIPE TO RW-13 (1"ø HDPE)
9	PUMP POWER CONDUCTOR
10	CONDUIT FOR LEVEL PROBES
11	POLYPROPYLENE WELL ROPE (CONNECT TO PUMP)
12	INTRINSICALLY SAFE LEVEL PROBES
13	CONDUIT SEAL-OFF
14	X-PROOF PLUG & RECEPTACLE W/CONDUIT SEAL
15	12"ø BLACK STEEL RISER

ITEM	DIMENSION
A	90'-0"
B	81'-0"
C	1'-0"
D	172'-0"
E	1'-0"

NOTE:

WELL PUMP TO BE GRUNDFOS ENVIRONMENTAL MODEL 5S03-9 (1/2 HP, 230 VOLT, 3450 RPM, SINGLE PHASE) CAPABLE OF 7 GPM AT 90 FEET TOTAL DYNAMIC HEAD. PACKAGE TO INCLUDE 3-WIRE WITH GROUND PUMP/MOTOR ASSEMBLY WITH LEADS AND CONTROL BOX WITH LOCKABLE DISCONNECT SWITCH AND HAND-OFF-AUTO SWITCH IN A NEMA 4 ENCLOSURE WITHIN A LOCKABLE CABINET.

EXISTING RECOVERY WELL 1R DETAIL

GENERAL NOTES:

1. CONTRACTORS SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH REPRESENTATIVES OF THE SRSNE PRP GROUP PRIOR TO COMMENCING ON-SITE ACTIVITIES.
2. CONTRACTORS SHALL VERIFY ALL DIMENSIONS IN THE FIELD.
3. CONTRACTORS SHALL PROVIDE ALL LOCAL PERMITS AND MAKE ARRANGEMENTS FOR LOCAL INSPECTIONS (AS NECESSARY).
4. CONTRACTORS SHALL INSTALL EQUIPMENT IN NEAT AND WORKMANLIKE MANNER; ALIGN, LEVEL AND ADJUST FOR SATISFACTORY OPERATION; INSTALL SO THAT PARTS ARE EASILY ACCESSIBLE FOR INSPECTION, OPERATION AND MAINTENANCE AND REPAIR. DEVIATIONS FROM INDICATED ARRANGEMENTS ARE SUBJECT TO BE REMOVED AND APPROVED BY REPRESENTATIVES OF THE SRSNE PRP GROUP PRIOR TO INSTALLATION AND/OR OPERATION.
5. CONTRACTORS SHALL FURNISH AND PLACE PROPER GUARDS FOR PREVENTION OF ACCIDENTS, PROVIDE ALL TRENCH SHORING, SCAFFOLDING, SHIELDING, DUST/FUME PROTECTION, MECHANICAL/ELECTRICAL PROTECTION, SPECIAL GROUNDING, SAFETY RAILINGS, BARRIERS, OR OTHER SAFETY FEATURES REQUIRED. CONTRACTOR SHALL PROVIDE AND MAINTAIN SUFFICIENT LIGHTS DURING NIGHT HOURS TO SECURE SUCH PROTECTION. CONTRACTORS SHALL MAINTAIN ALL SITE TRAFFIC.
6. CONTRACTORS SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS, AND ORDERS OF PUBLIC BODIES HAVING JURISDICTION FOR THE SAFETY OF PERSONS OR PROPERTY, OR TO PROTECT THEM FROM DAMAGE, INJURY, OR LOSS, INCLUDING, WITHOUT LIMITATION, THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER SECTION 107 OF THE CONTRACTOR WORK HOURS AND SAFETY STANDARDS ACT (PL 91-54) AND AMENDMENTS THERETO. IT SHALL ERECT AND MAINTAIN AS REQUIRED BY THE CONDITIONS AND THE PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARD FOR THE SAFETY AND PROTECTION AND SHALL COMPLY WITH ALL APPLICABLE RECOMMENDATIONS OF THE MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC.

SITE WORK NOTES:

1. CONTRACTORS SHALL PLACE ALL SPOIL MATERIAL AT AN ON-SITE LOCATION AS DIRECTED BY REPRESENTATIVES OF THE SRSNE PRP GROUP.
2. CONTRACTORS SHALL FIELD VERIFY THE LOCATION OF UTILITIES IN THE FIELD PRIOR TO INITIATING WORK.
3. ALL SURFACES DAMAGED OR DESTROYED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE RESTORED TO THEIR PRE-CONSTRUCTION CONDITION IN A TIMELY MANNER.
4. ALL EXCAVATIONS SHALL BE OBSERVED BY REPRESENTATIVES OF THE SRSNE PRP GROUP PRIOR TO PLACING BACKFILL.
5. GALVANIZED CHAIN LINK FENCE SURROUNDING RW-13 SHALL BE A TOTAL OF 8 FEET ABOVE GROUND WITH 1 FOOT HIGH BARBED WIRE. FENCE SHALL CONSIST OF SCH. 40 GALVANIZED STEEL PIPE FOR POSTS, RAILS, AND BRACES. FABRIC SHALL BE ONE PIECE, 9 GAUGE, 2-INCH MESH WITH TWISTED AND BARBED BOTTOM WITH THREE 12 GAUGE BARBED WIRE TOP STRANDS.
6. CONTRACTOR TO PROVIDE CHAIN AND LOCK (WITH 8 KEYS) FOR LOCKING FENCE GATE.

MECHANICAL NOTES:

1. ALL ABOVE GROUND PIPING INSIDE BUILDING SHALL BE PVC SCHEDULE 80 TYPE II UNLESS OTHERWISE SPECIFIED.
2. ALL UNDERGROUND PIPES SHALL BE HDPE SDR 21 UNLESS OTHERWISE SPECIFIED.
3. ALL PVC JOINTS TO BE SOLVENT WELDED.
4. ALL HDPE PIPES SHALL BE BUTT-FUSED.
5. ALL PIPE INSIDE BUILDING SHALL BE SUPPORTED AT A MINIMUM OF 5'-0" O.C. (MAX) AND LOCATED 2'-0" (MAX) FROM JOINT LOCATIONS.
6. ALL PIPE TO BE INSTALLED AND PRESSURE-TESTED AS PER MANUFACTURER'S SPECIFICATIONS. ZERO LEAKAGE IS ALLOWED FOR ALL JOINTS.
7. ALL PIPING TO BE LABELED WITH STENCIL OR ADHESIVE. FLOW ARROWS TO BE LABELED AT INLET AND DISCHARGE CONNECTIONS. PIPING AND DESCRIPTION SHALL ALSO BE CLEARLY LABELED AT ALL VALVE INFLUENT AND APPURTENANCE LOCATIONS.
8. ALL BALL VALVES TO BE PVC DUO-BLOC, VITON SEALS, TRUE UNION OR EQUAL.
9. ALL CHECK VALVES TO BE PVC, FLANGED, SWING CHECK VALVE OR EQUAL.
10. ALL SAMPLE TAPS AND DRAIN VALVES SHALL CONSIST OF A 1/2" PIPE EXTENSION AND BALL VALVE OR EQUAL. SAMPLES TAPS AND DRAIN VALVES SHALL BE LOCATED AT LOCATIONS SHOWN ON THE DRAWINGS AND AT ALL LOW ELEVATIONS IN PROCESS PIPING.
11. FLOW METER SHALL BE A GREAT LAKES INSTRUMENTS MODEL 677F INTEGRAL MOUNT ANALOG FLOW METER/TRANSMITTER WITH 6-DIGIT TOTALIZER.
12. FLOW METER SHALL HAVE STRAIGHT PIPE PRECEDING (10 TIMES PIPE DIAMETER) AND FOLLOWING (5 TIMES PIPE DIAMETER) THEM.

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION
D	12/23/14	BFF	UPDATED RECORD DRAWING				
C	4/16/14	BFF	RW-15 TIE-IN				
B	10/12/07	BFF	AS-BUILT DRAWING				
A	7/20/07	BFF	INITIAL ISSUE				

SRSNE PRP GROUP – SOUTHINGTON, CONNECTICUT
NON-TIME CRITICAL REMOVAL ACTION 2
SRSNE SITE
EXTRACTION WELL RW-15 TIE-IN

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

CHECKED	DATE	CLIENT APPROVALS	DATE
DES. ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED		ISSUED FOR	DATE

EXTRACTION WELL RW-13 AND RW-1R
INSTALLATION DETAILS

DRAWN	DATE	DWG. NO.	REV. NO.
TAC	APRIL 2014	2	D
SCALE	W.O. NO.	SHT. ___ OF ___	
NONE	13056.001.019		

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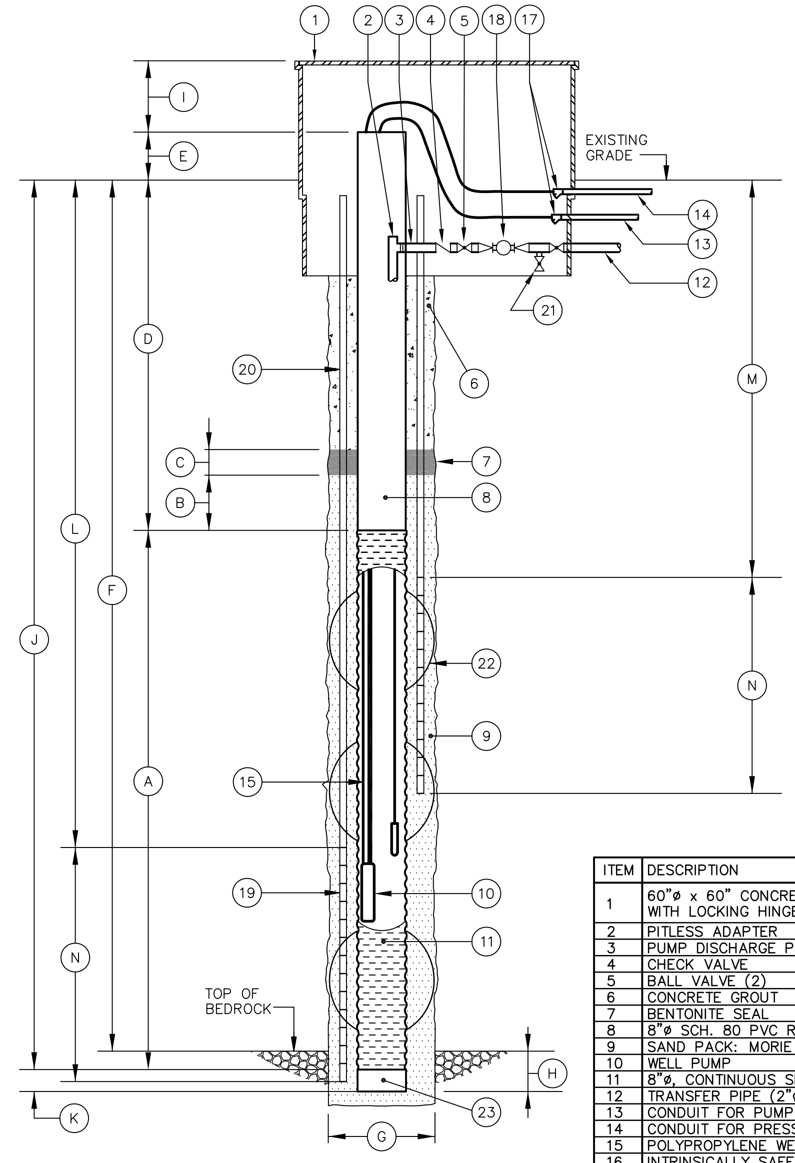


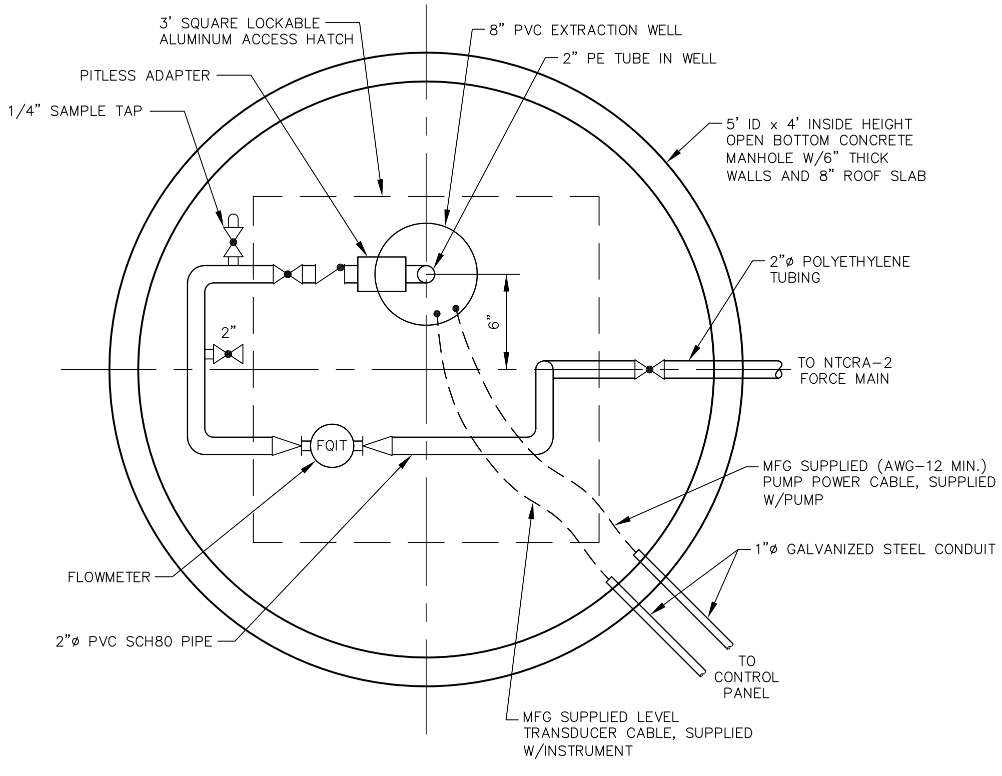
ITEM	DIMENSION
A	40'–0"
B	5'–0"
C	3'–0"
D	31'–0"
E	0'–6"
F	68'–0"
G	1'–4"
H	7'–0"
I	1'–5"
J	71'–0"
K	4'–6"
L	59'–6"
M	36'–8"
N	15'–0"

NOTE:

WELL PUMP TO BE GRUNDFOS ENVIRONMENTAL MODEL 40S15–5 (1–1/2 HP, 230 VOLT, 3450 RPM, SINGLE PHASE) CAPABLE OF 30 GPM AT 110 FEET TOTAL DYNAMIC HEAD OR APPROVED EQUAL. PACKAGE TO INCLUDE 3–WIRE WITH GROUND PUMP/MOTOR ASSEMBLY WITH LEADS AND CONTROL BOX WITH LOCKABLE DISCONNECT SWITCH AND HAND–OFF–AUTO SWITCH IN A WEATHER–PROOF ENCLOSURE.

ITEM	DESCRIPTION
1	60"ø x 60" CONCRETE MANHOLE ASSEMBLY WITH LOCKING HINGED COVER
2	PITLESS ADAPTER
3	PUMP DISCHARGE PIPE (2"ø PVC)
4	CHECK VALVE
5	BALL VALVE (2)
6	CONCRETE GROUT
7	BENTONITE SEAL
8	8"ø SCH. 80 PVC RISER
9	SAND PACK: MORIE #1 OR EQUIVALENT
10	WELL PUMP
11	8"ø, CONTINUOUS SLOT 304 S.S. 30–SLOT SCREEN
12	TRANSFER PIPE (2"ø PE)
13	CONDUIT FOR PUMP POWER
14	CONDUIT FOR PRESSURE TRANSDUCER
15	POLYPROPYLENE WELL ROPE (CONNECT TO PUMP)
16	INTRINSICALLY SAFE PRESSURE TRANSDUCER
17	CONDUIT SEAL–OFF
18	FLOW METER/TOTALIZER RELOCATED FROM GWTF
19	1"ø, 0.010 INCH SLOTTED PVC PIPES (2 @ 15' EA.)
20	1"ø PVC RISER PIPES (2)
21	SAMPLE TAP
22	STAINLESS STEEL CENTRALIZER (3)
23	8"ø, 304 STAINLESS STEEL PIPE (SOLID)

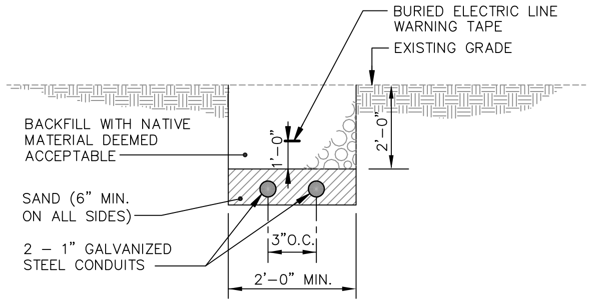
RW–14 DETAIL



NOTE:

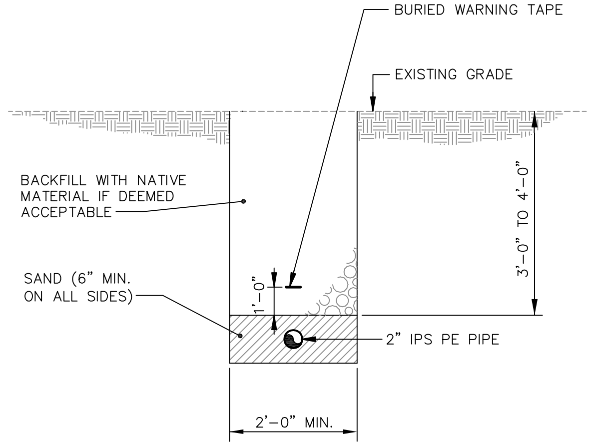
CONNECT POLYETHYLENE TUBING TO OTHER PIPE AND EQUIPMENT WITH STAINLESS STEEL EXTRA LONG BARB FITTINGS AND STAINLESS STEEL BANDS.

RW–14 MANHOLE DETAIL



RW–14 CONDUIT TRENCH TYPICAL DETAIL

(NTCRA–2 EXTRACTION WELL POWER/CONTROL CENTER TO RW–14)



RW–14 SERVICE TRENCH TYPICAL DETAIL

(RW–14 TO 4" SDR 21 FORCEMAIN)

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION
D	12/23/14	BFF	UPDATED RECORD DRAWING				
C	4/16/14	BFF	RW–15 TIE–IN				
B	10/12/07	BFF	AS–BUILT DRAWING				
A	7/20/07	BFF	INITIAL ISSUE				

SRSNE PRP GROUP – SOUTHINGTON, CONNECTICUT
NON–TIME CRITICAL REMOVAL ACTION 2
SRSNE SITE
EXTRACTION WELL RW–15 TIE–IN

CONCORD WESTON SOLUTIONS NEW HAMPSHIRE

	DATE	CLIENT APPROVALS	DATE
CHECKED			
DES. ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED		ISSUED FOR	DATE

EXTRACTION WELL RW–14
INSTALLATION DETAILS

DRAWN TAC
DATE APRIL 2014
DWG. NO. 2A
REV. NO. D
SCALE NONE
W.O. NO. 13056.001.019
SHT.____ OF ____

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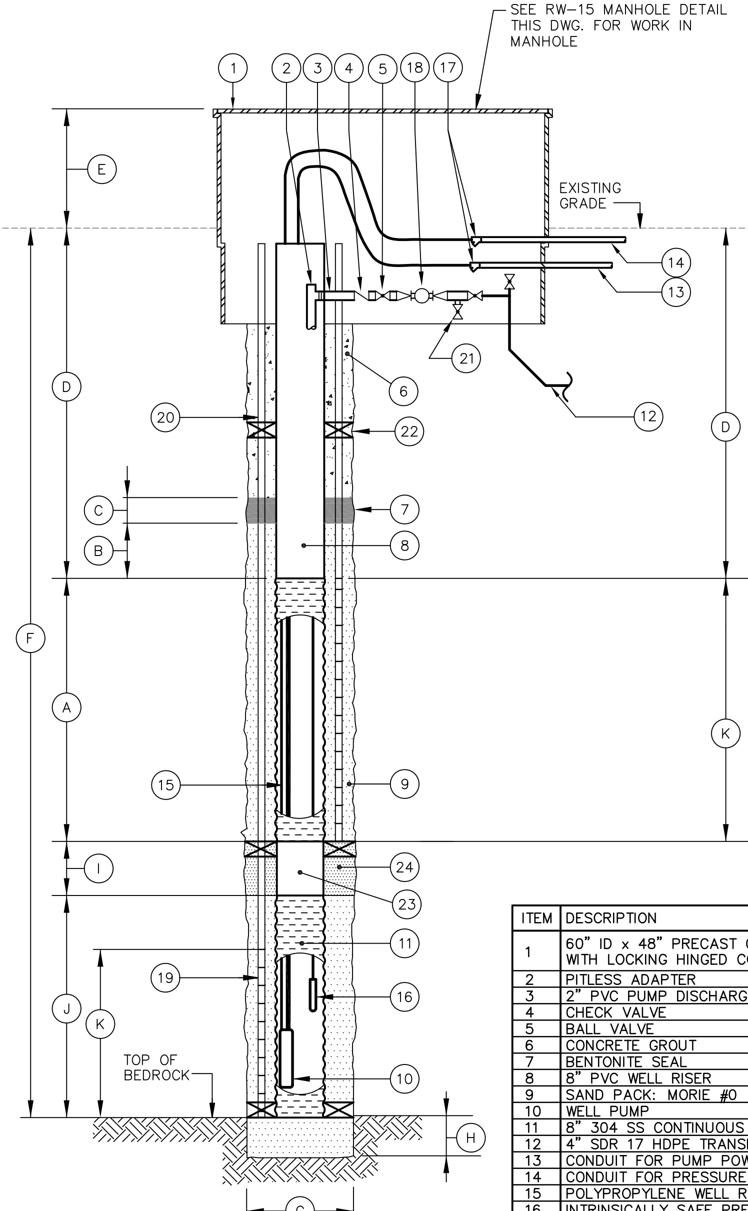


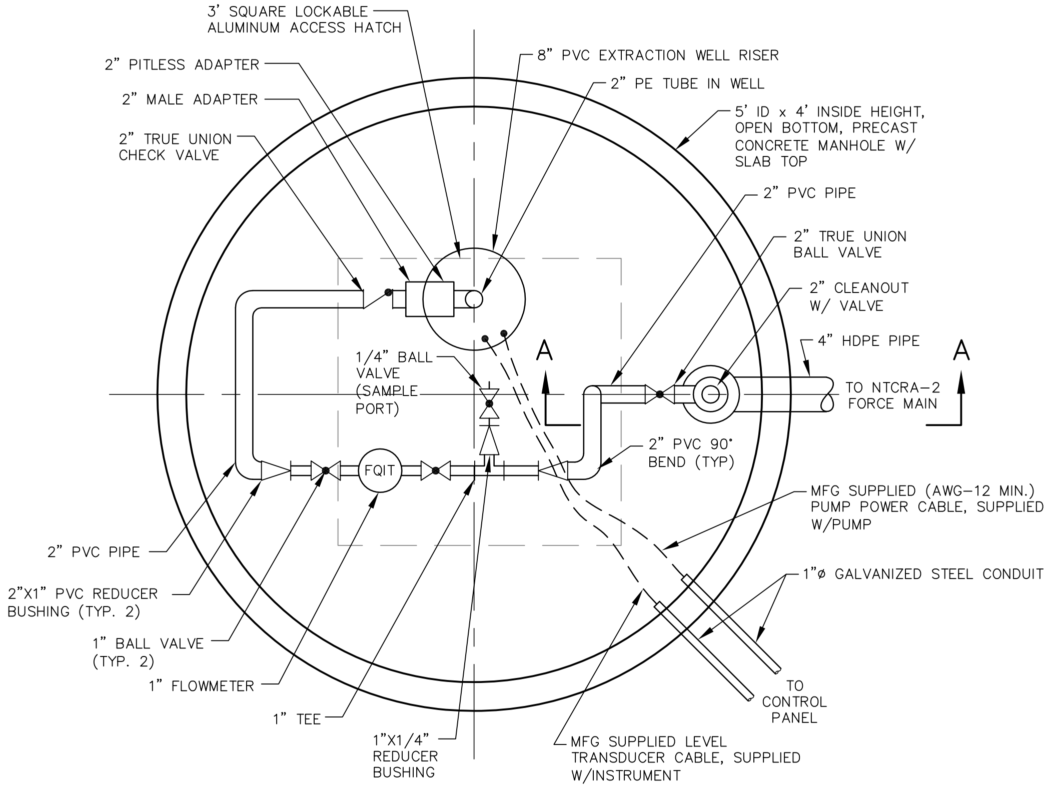
ITEM	DIMENSION
A	15'-0"
B	5'-0"
C	5'-0"
D	30'-0"
E	1'-0"
F	72'-0"
G	1'-4"
H	1'-6"
I	7'-0"
J	20'-0"
K	15'-0"

ITEM	DESCRIPTION
1	60" ID x 48" PRECAST CONCRETE MANHOLE ASSEMBLY WITH LOCKING HINGED COVER
2	PITLESS ADAPTER
3	2" PVC PUMP DISCHARGE PIPE
4	CHECK VALVE
5	BALL VALVE
6	CONCRETE GROUT
7	BENTONITE SEAL
8	8" PVC WELL RISER
9	SAND PACK: MORIE #0
10	WELL PUMP
11	8" 304 SS CONTINUOUS 20-SLOT WELL SCREEN
12	4" SDR 17 HDPE TRANSFER PIPE
13	CONDUIT FOR PUMP POWER
14	CONDUIT FOR PRESSURE TRANSDUCER
15	POLYPROPYLENE WELL ROPE (CONNECT TO PUMP)
16	INTRINSICALLY SAFE PRESSURE TRANSDUCER
17	CONDUIT SEAL-OFF
18	FLOW METER/TOTALIZER
19	1" PVC 0.010 INCH SLOTTED PIPE (2 @ 15' EA.)
20	1" PVC RISER PIPE (2)
21	SAMPLE TAP
22	STAINLESS STEEL CENTRALIZER (3)
23	8" 304 STAINLESS STEEL PIPE (SOLID)
24	SAND PACK: MORIE #00 (RISER AREA)

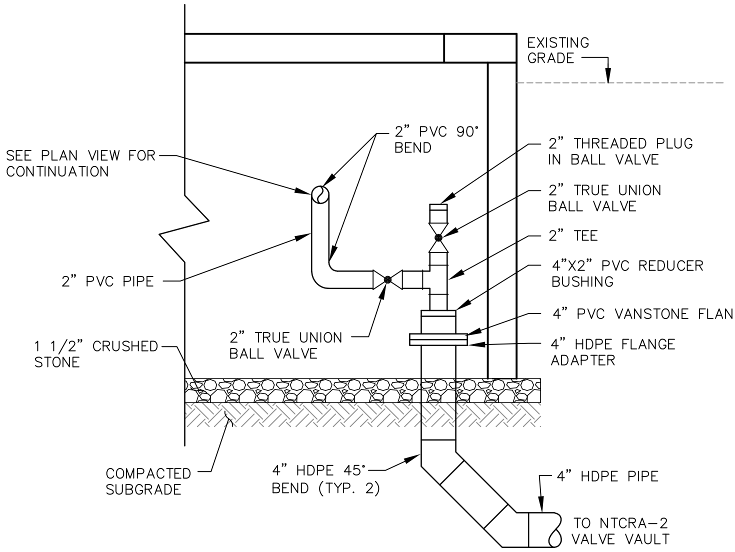
NOTE:

WELL PUMP TO BE GRUNDFOS ENVIRONMENTAL MODEL 40S15-5 (1-1/2 HP, 230 VOLT, 3450 RPM, SINGLE PHASE) CAPABLE OF 30 GPM AT 110 FEET TOTAL DYNAMIC HEAD OR APPROVED EQUAL. PACKAGE TO INCLUDE 3-WIRE WITH GROUND PUMP/MOTOR ASSEMBLY WITH LEADS AND CONTROL BOX WITH LOCKABLE DISCONNECT SWITCH AND HAND-OFF-AUTO SWITCH IN A WEATHER-PROOF ENCLOSURE.

RW-15 DETAIL



PLAN



SECTION A

NOTES:

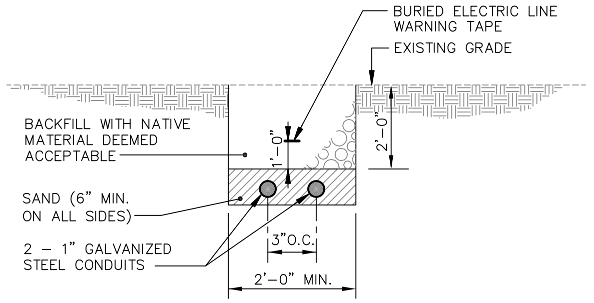
1. PRECAST CONCRETE MANHOLE SHALL BE CONSTRUCTED IN COMPLIANCE WITH ASTM C487 LATEST EDITION.

2. ALL PVC PIPE AND FITTINGS SHALL BE SCHEDULE 80.

3. ALL HDPE PIPE AND FITTINGS SHALL SDR 17.

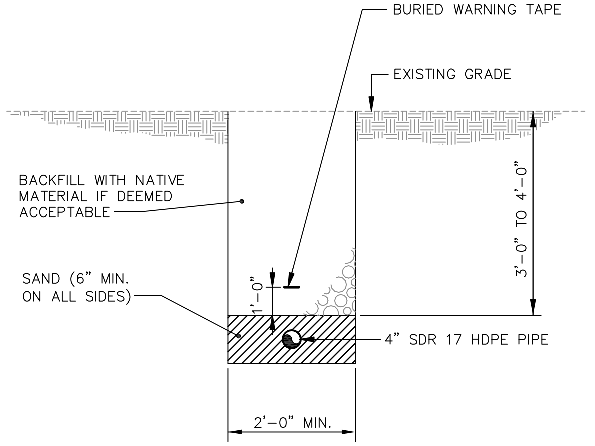
4. ALL PIPE AND FITTING MATERIAL BETWEEN THE PVC REDUCER BUSHINGS SHALL BE BRASS.

RW-15 MANHOLE DETAIL



RW-15 CONDUIT TRENCH TYPICAL DETAIL

(NTCRA-2 CONTROL PANEL TO RW-15)



RW-15 SERVICE TRENCH TYPICAL DETAIL

(RW-15 TO VALVE VAULT)

NO.	DATE	APPR.	REVISION
B	12/23/14	BFF	UPDATED RECORD DRAWING
A	4/16/14	BFF	RW-15 TIE-IN

SRSNE PRP GROUP – SOUTHINGTON, CONNECTICUT
NON-TIME CRITICAL REMOVAL ACTION 2
SRSNE SITE
EXTRACTION WELL RW-15 TIE-IN

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

CHECKED	DATE	CLIENT APPROVALS	DATE
DES. ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED		ISSUED FOR	DATE

EXTRACTION WELL RW-15
INSTALLATION DETAILS

DRAWN	DATE	DWG. NO.	REV. NO.
TAC	APRIL 2014	2B	B
SCALE	W.O. NO.	SHT. ___ OF ___	
NONE	13056.001.019		

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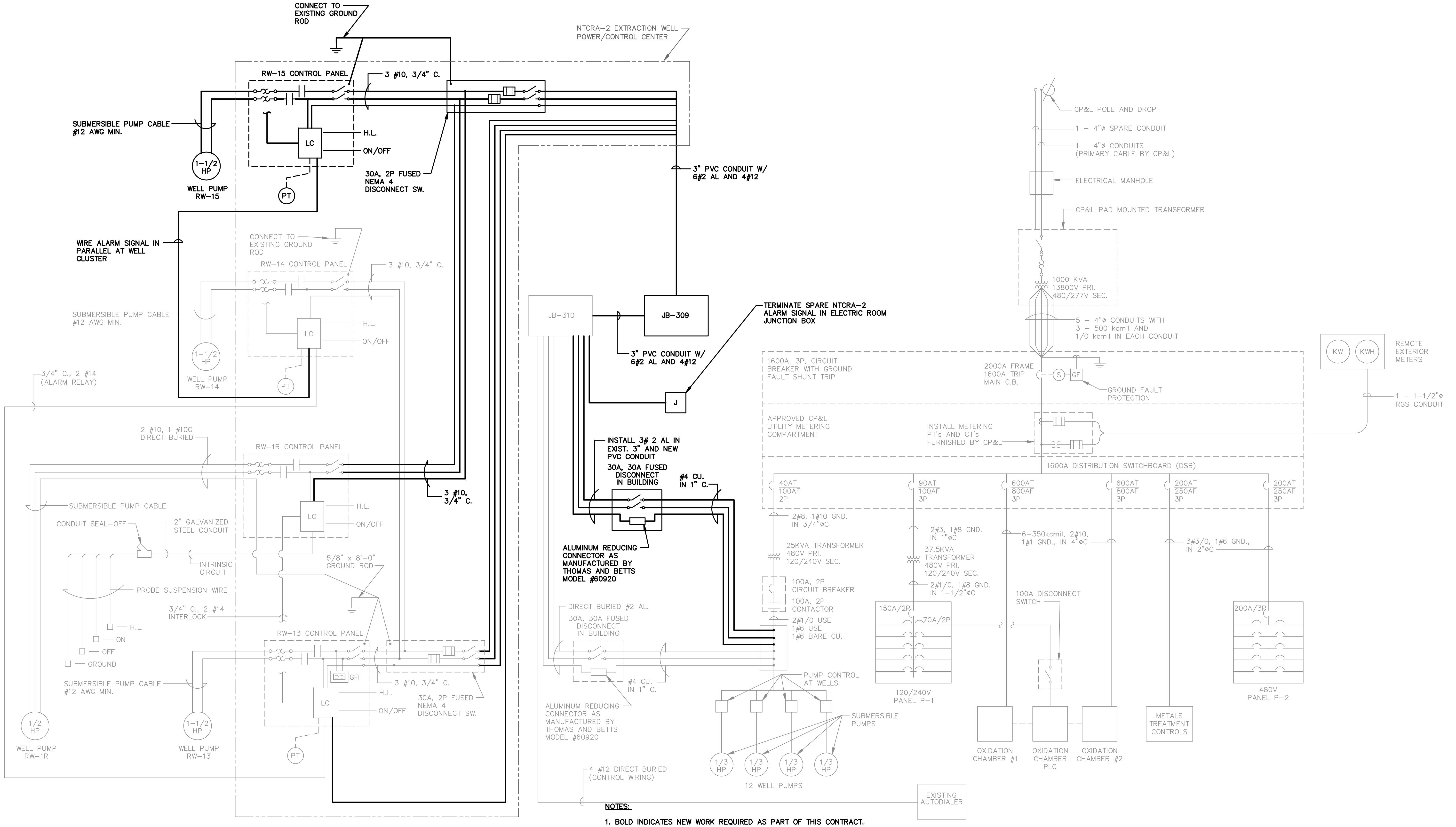


NOTES:

1. BOLD INDICATES NEW WORK REQUIRED AS PART OF THIS CONTRACT.

2. SEE DRAWINGS 1 & 1A FOR NEW BURIED POWER AND SIGNAL WORK ASSOCIATED WITH RW-15.

EXISTING ONE-LINE DIAGRAM

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION
D	12/23/14	BFF	UPDATED RECORD DRAWING				
C	4/16/14	BFF	RW-15 TIE-IN				
B	10/12/07	BFF	AS-BUILT DRAWING				
A	7/20/07	BFF	INITIAL ISSUE				

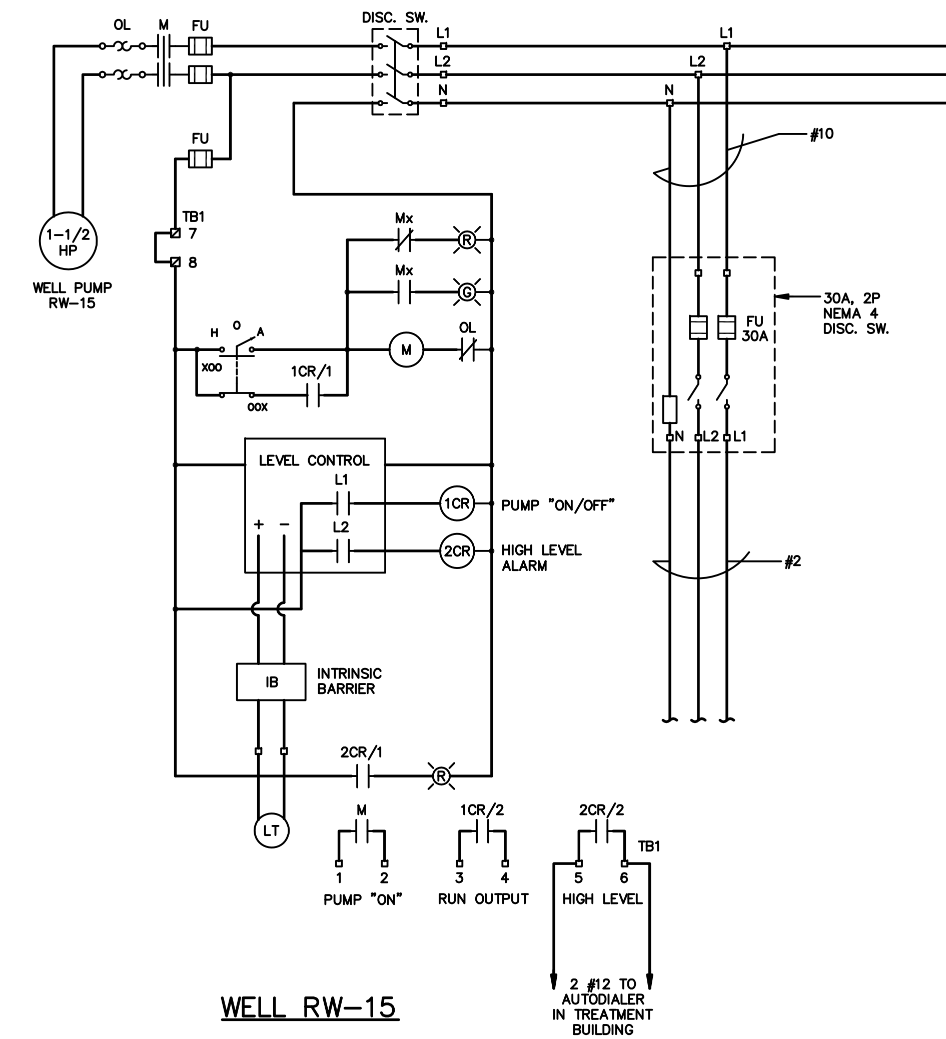
SRSNE PRP GROUP – SOUTHINGTON, CONNECTICUT
NON-TIME CRITICAL REMOVAL ACTION 2
SRSNE SITE
EXTRACTION WELL RW-15 TIE-IN

CONCORD WESTON SOLUTIONS NEW HAMPSHIRE

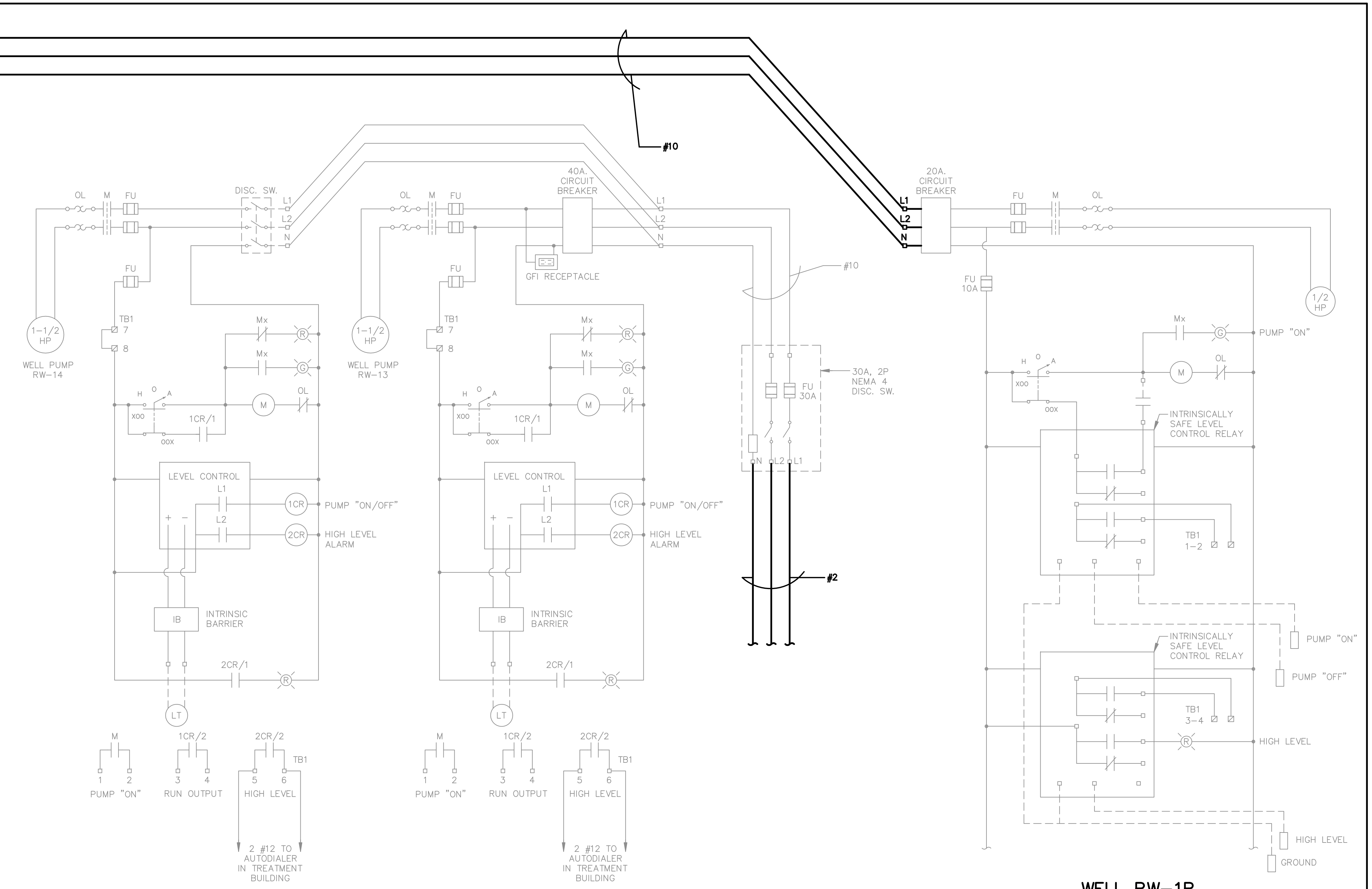
CHECKED	DATE	CLIENT APPROVALS	DATE
DES. ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED		ISSUED FOR	DATE

ONE LINE DIAGRAM

DRAWN TAC
DATE APRIL 2014
DWG. NO. 3
REV. NO. D
SCALE NONE
W.O. NO. 13056.001.019
SHT. ____ OF ____



WELL RW-15

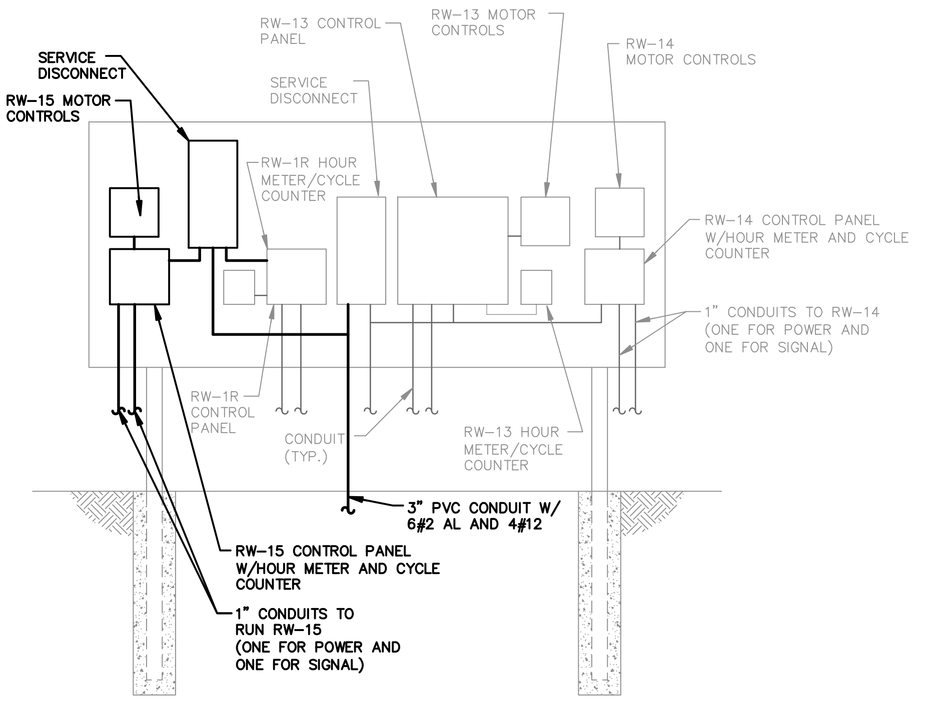


WELL RW-14

WELL RW-13

WELL RW-1R

EXISTING CONTROLS



EXISTING NTCRA-2 EXTRACTION WELL POWER/CONTROL CENTER DETAIL

NOTES:

1. BOLD INDICATES NEW WORK REQUIRED AS PART OF THIS CONTRACT.

2. WIRE EXISTING ALARM CIRCUIT FOR RW-13 AND RW-14 IN PARALLEL WITH RW-15 (NOT SHOWN). INSTALL SPARE ALARM CIRCUIT BETWEEN TREATMENT BUILDING ELECTRIC ROOM AND NTCRA-2 CONTROL CENTER (NOT SHOWN).

ELECTRICAL NOTES:

1. ALL ELECTRICAL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF NFPA – 70, NATIONAL ELECTRICAL CODE (NEC).
2. CONTROL PANELS SHALL BE NEMA 4, STEEL, HINGED COVER, 8 INCH DEPTH BY SIZE REQUIRED; HEAVY DUTY OIL–TIGHT PUSH BUTTONS & INDICATING LIGHTS; 2 POLE, 20A DISCONNECT; WIRING TO TERMINAL STRIPS.
3. DIRECT BURIED CABLE SHALL BE 10/2 W/GRD., USE, COPPER. POWER AND CONTROL WIRE SHALL BE TYPE THHN/THWN IN SUITABLE WIREWAY.
4. INTRINSIC LEVEL CONTROLS SHALL BE B/W CONTROLS INTRINSICALLY SAFE CONTROL RELAYS CAT. NO. 5300SVOC, OR EQUAL.
5. WELL PROBES SHALL BE B/W CONTROLS TYPE E–1P, STAINLESS STEEL. FURNISH THREE SHIELDED AND ONE UNSHIELDED.
6. DISCONNECT SWITCH SHALL BE 240 VOLT, HEAVY DUTY, NEMA 4, 2 POLE, 3 WIRE, SOLID NEUTRAL, RATED FOR ALUMINUM OR COPPER WIRE.
7. ABOVE GROUND CONDUIT SHALL BE GALVANIZED RIDGED STEEL (RGS) CONDUIT WITH THREADED COUPLINGS UNLESS OTHERWISE NOTED.

NO.	DATE	APPR.	REVISION
D	12/23/14	BFF	UPDATED RECORD DRAWING
C	4/16/14	BFF	RW–15 TIE–IN
B	10/12/07	BFF	AS–BUILT DRAWING
A	7/20/07	BFF	INITIAL ISSUE

SRSNE PRP GROUP – SOUTHINGTON, CONNECTICUT
NON–TIME CRITICAL REMOVAL ACTION 2
SRSNE SITE
EXTRACTION WELL RW–15 TIE–IN

CONCORD WESTON SOLUTIONS NEW HAMPSHIRE

CHECKED	DATE	CLIENT APPROVALS	DATE
DES. ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED		ISSUED FOR	DATE

EXTRACTION WELL CONTROL DETAILS

DRAWN	DATE	DWG. NO.	REV. NO.
TAC	APRIL 2014	4	D
SCALE	W.O. NO.	SHT. ___ OF ___	
NONE	13056.001.019		

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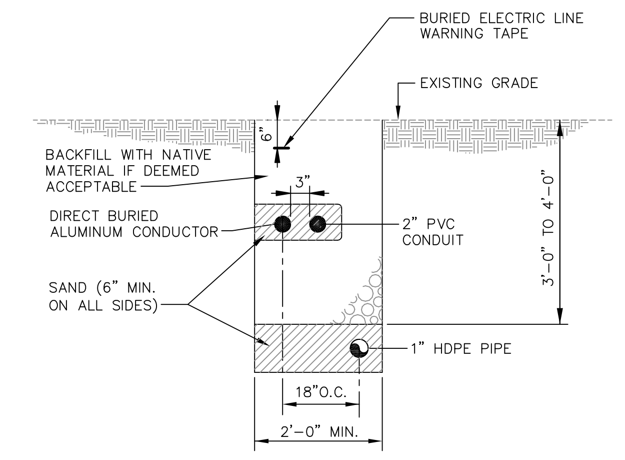
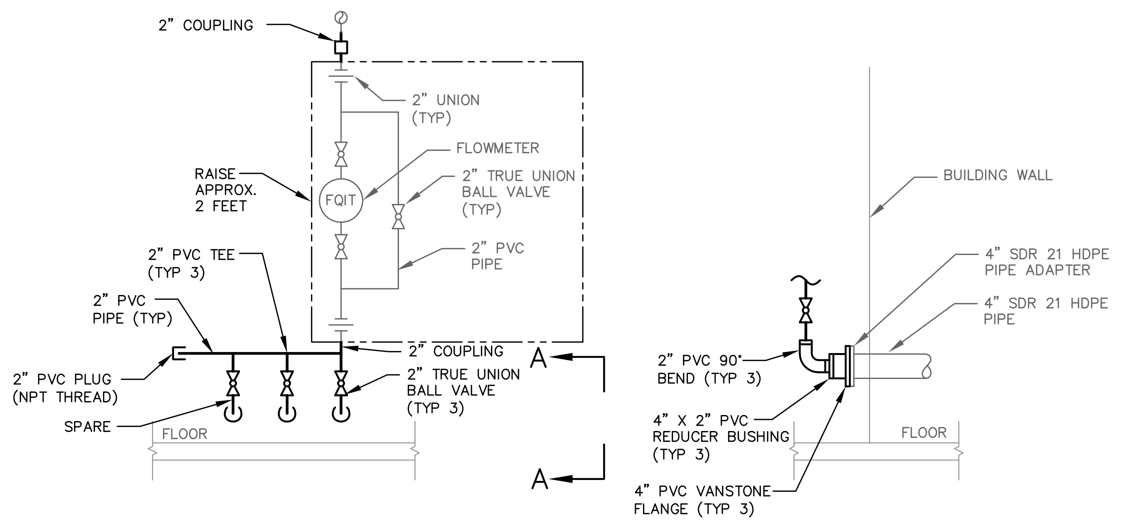


EXISTING TRENCH TYPICAL DETAIL

(RW-13 TO RW-1R)

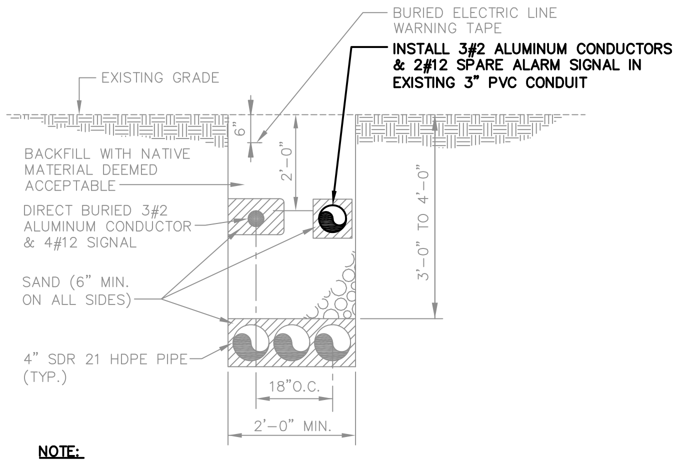


ELEVATION

SECTION A

NOTES:
1. BOLD INDICATES NEW WORK REQUIRED AS PART OF THIS CONTRACT.
2. ALL PVC PIPE AND FITTINGS SHALL BE SCHEDULE 80.

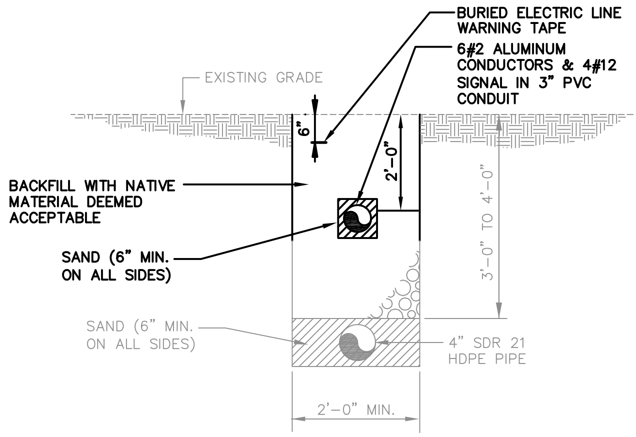
EXISTING TREATMENT PLANT MANIFOLD DETAIL



NOTE:
BOLD INDICATES NEW WORK REQUIRED AS PART OF THIS CONTRACT.

EXISTING TRENCH TYPICAL DETAIL

(TREATMENT BUILDING TO JB-310)



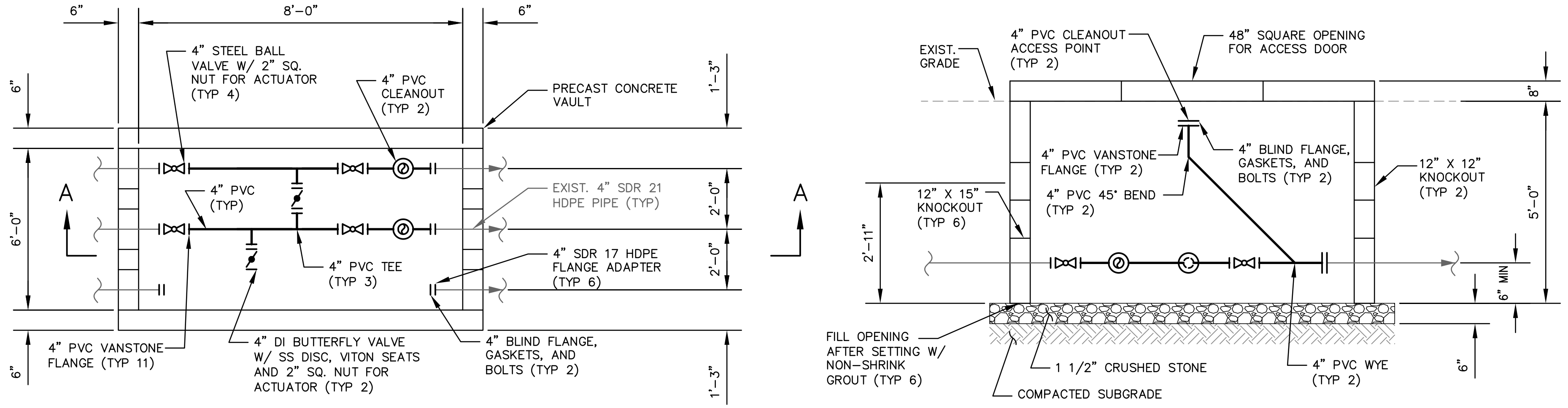
NOTE:
BOLD INDICATES NEW WORK REQUIRED AS PART OF THIS CONTRACT.

EXISTING TRENCH TYPICAL DETAIL

(JB-309 TO NTCRA-2 EXTRACTION WELL POWER/CONTROL CENTER
SIMILAR FOR ELECTRICAL JB-310 TO JB-309)

ELECTRICAL NOTES:

1. ALL ELECTRICAL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF THE NFPA-70, NATIONAL ELECTRICAL CODE (NEC).
2. PULL BOXES FOR OUTDOOR INGROUND USE SHALL BE 12"x18"x18" DEEP WITH COVER AND NO BASE. BOXES SHALL BE MANUFACTURED BY QUAZITE, OR EQUAL.
3. CONTROL CABLE SHALL CONSIST OF 600 VOLT, 12 AWG. CONDUCTORS CONSTRUCTED OF A MINIMUM OF SEVEN STRANDS OF UNCOATED CLASS B COPPER CONCENTRICALLY-STRANDED WIRES. EACH CONDUCTOR SHALL HAVE FLAME-RETARDANT ETHYLENE PROPYLENE INSULATION AND COLOR CODED PVC OUTER JACKET. CABLE SHALL BE MANUFACTURED BY CABLEC CORP. NO. AP63570, ROME TYPE CT-B, OR EQUAL.
4. TWISTED PAIR INSTRUMENTATION CONDUCTOR SHALL CONSIST OF TWO TWISTED STRANDS OF NO. 16 AWG. TINNED COATED COPPER STRANDED WIRES WITH AN ALUMINUM POLYESTER SHIELD AND COPPER DRAIN WIRE. EACH CONDUCTOR SHALL HAVE POLYETHYLENE INSULATION RATED FOR 600 VOLTS, AND COLOR COATED PVC OUTER JACKET. CONDUCTOR SHALL BE MANUFACTURED BY BELDEN TRADE NO. 8719, ALPHA NO. 2471, OR EQUAL.
5. INTRINSIC BARRIERS (IB) SHALL BE SUITABLE FOR USE ON CIRCUITS THAT SERVE HAZARDOUS LOCATIONS BY LIMITING THE ELECTRICAL ENERGY TO BELOW IGNITION LEVELS. RELAYS SHALL BE APPROVED BY FACTORY MUTUAL FOR USE IN CLASS I, DIV. I AREAS AND SHALL BE MANUFACTURED BY GEMS 54806, OR EQUAL.
6. ANALOG RELAYS SHALL BE USED WHERE SHOWN OR NOTED FOR INTERFACING ELECTRONIC EQUIPMENT AND LOW CURRENT DEVICES WITH OTHER CONTROLS. RELAYS SHALL BE FIELD CONFIGURABLE INPUT RANGE FOR DC CURRENT, DUAL TRIP (2SPDT, 5A). FURNISH WITH 11-PIN OCTAL BASE SOCKET WITH SCREW TERMINALS MANUFACTURED BY ACTION-PAK AP1090, OR EQUAL.
7. DIGITAL INDICATOR SHALL BE PANEL MOUNTED WITH NEMA 4X FRONT. 4-1/2 DIGIT DISPLAY LOOP POWERED AND SHALL OPERATE AT -40° TO 65°C. INDICATOR SHALL BE MANUFACTURED BY PRECISION DIGITAL MODEL 686, OR EQUAL.
8. ALL FIELD MOUNTED DEVICES (PUSH BUTTONS, SELECTOR SWITCHES, INDICATING LIGHTS) SHALL BE HEAVY-DUTY, CORROSION RESISTANT, WITH NEMA 4X OPERATOR BODIES AND MOLDED MODULAR TYPE CONTACT BLOCKS. ALL DEVICES SHALL BE CONFIGURED AS SHOWN, OR SPECIFIED. CONTACTS SHALL BE RATED 10 AMPS CONTINUOUS AT 120 VAC, 60 HZ. INDICATING LIGHTS SHALL BE WIRED FOR PUSH-TO-TEST AND SHALL BE 120 VOLT TRANSFORMER TYPE.
9. GROUND WATER LIQUID LEVEL PRESSURE TRANSDUCER SHALL BE SUITABLE FOR GROUNDWATER APPLICATIONS. OPERATING RANGE SHALL BE 0-60 psi WITH ACCURACY ± 0.5% OF SPAN. 9-32 VOLT EXCITATION AND 4-20 mA DC OUTPUT. TRANSDUCER SHALL BE HOUSED IN 316 STAINLESS STEEL, ZINC, HASTELLOY-C MATERIAL AND SHALL FEATURE A POLYURETHANE JACKET CABLE OF UP TO 85 FEET. PRESSURE TRANSDUCER SHALL BE MANUFACTURED BY SENSOTEC GW SERIES, KPSI SERIES 300S, OR EQUAL.
10. ALL PANELS SHALL HAVE PIANO HINGED, LOCKABLE DOORS. A ROLLED LIP AROUND THREE SIDES OF DOOR SHALL BE PROVIDED TO PREVENT DIRT AND LIQUID FROM ENTERING PANEL. SUBPANEL SHALL BE INCLUDED TO MOUNT ELECTRICAL EQUIPMENT. PANELS SHALL BE CONSTRUCTED OF A MINIMUM 14 GAUGE STEEL WITH 12 GAUGE STEEL SUBPANEL. PANELS SHALL BE 24"H x 20"W x 8"D NEMA 4 MANUFACTURED BY HOFFMAN A-24H20BLP, OR EQUAL.
11. DISCONNECT SWITCHES AS NOTED SHALL BE NEMA HEAVY-DUTY TYPE HD, UNDERWRITERS LISTED (UL). ALL SWITCHES SHALL HAVE SWITCH BLADES WHICH ARE FULLY VISIBLE IN THE "OFF" POSITION WHEN THE DOOR IS OPEN. LUGS SHALL BE (UL) LISTED FOR ALUMINUM AND/OR COPPER CABLES AND FRONT REMOVABLE. SWITCH MECHANISMS SHALL BE QUICK-BREAK OPERATING HANDLE WHICH SHALL BE AN INTEGRAL PART OF THE BOX, NOT THE COVER. SWITCHES SHALL HAVE INTERLOCK TO PREVENT UNAUTHORIZED OPENING OF SWITCH DOOR WHEN IN THE "ON" POSITION. DISCONNECT SWITCHES SHALL BE RATED AS NOTED AND MUST HAVE A (UL) LISTED REJECTION FEATURE TO REJECT ALL FUSES EXCEPT CLASS R. (UL) LISTED SHORT CIRCUIT RATING, WHEN EQUIPPED WITH FUSES, SHALL BE 200,000 AMPERES RMS SYMMETRICAL. MANUFACTURED BY SQUARE D CO., OR EQUAL.
12. FUSES SHALL BE FURNISHED AND INSTALLED FOR ALL SWITCHES AND ELECTRICAL DEVICES WITH FUSE HOLDERS. FUSES FOR USE ON INSTRUMENT AND CONTROL CIRCUITS SHALL BE FAST ACTING 1/4" x 1-1/4" GLASS TUBE FUSES. FUSES FOR USE ON MOTOR BRANCH CIRCUITS SHALL BE DUAL ELEMENT CLASS R FUSES: BUSSMAN FRN-R, GOULD-SHAWMUT TYPE TR, OR EQUAL.



PLAN

SECTION A

NOTES:
1. ACCESS DOOR SHALL BE ALUMINUM DOUBLE LEAF PEDESTRIAN RATED 300 PSF LOADING WITH STAINLESS STEEL ACCESSORIES (EJ CLS2 PRODUCT NUMBER H48481701 ACCESS DOOR)
2. PRECAST CONCRETE VAULT SHALL CONSTRUCTED IN COMPLIANCE WITH ASTM C487 LATEST EDITION.
3. ALL PVC PIPE AND FITTINGS SHALL BE SCHEDULE 80 PVC.

VALVE VAULT DETAIL

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION
D	12/23/14	BFF	UPDATED RECORD DRAWING				
C	4/16/14	BFF	RW-15 TIE-IN				
B	10/12/07	BFF	AS-BUILT DRAWING				
A	7/20/07	BFF	INITIAL ISSUE				

SRSNE PRP GROUP – SOUTHINGTON, CONNECTICUT
NON-TIME CRITICAL REMOVAL ACTION 2
SRSNE SITE
EXTRACTION WELL RW-15 TIE-IN

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

CHECKED	DATE	CLIENT APPROVALS	DATE
DES. ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED		ISSUED FOR	DATE

MISCELLANEOUS DETAILS

DRAWN TAC
DATE APRIL 2014
DWG. NO. 5
REV. NO. D
SCALE NONE
W.O. NO. 13056.001.019
SHT. ____ OF ____

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APPENDIX D

RW-15 WELL DEVELOPMENT DOCUMENTATION

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

Date(s): Oct 14, 2014 – Oct 23, 2014

Well development and hydraulic testing were performed on October 14th, 21st, and 23rd on the new NTCRA-2 Recovery Well (RW-15) at the Solvents Recovery Service of New England (SRSNE) site.

Following installation, the recovery well was mechanically developed using an 8-inch-diameter surge block and electric submersible pump for 13 hours over the course of 3 days. Hydraulic testing was performed simultaneously; water was pumped from between the bottom of the well and the area of the screens to help suspend any sediment present in the recovery well. The aggressive pump rate [between 30-50 gallons per minute (gpm)] was determined by filling buckets and the total flow was determined by time elapsed at this pump rate. During development and testing, discharge waters were collected and transferred to the Groundwater Treatment Facility (GWTF) for treatment.

Static depth to water measurements were omitted prior to each day of development. As a result a separate drawdown test was planned after recovery well development was completed.

During development, total discharged water and depth to water level were recorded, and discharge water samples were collected and tested for:

- Solids content using an Imhoff Cone.
- Turbidity using a HACH 2100 turbidimeter.

Additionally, a sample of discharge water was periodically collected in a mason jar for visual comparison to subsequent pump tests.

Each Imhoff cone was allowed to settle for 45 minutes after collection and shaken to release sediment from the sides of the cone. On the hour, the level of sediment at the bottom of the cone was recorded. The cone was delineated in milliliters (mL) which is equivalent to cubic centimeters (cm^3).

A total of 13 Imhoff cones and mason jars were collected over the course of 3 active days of pumping/development (over a 10-day period). Following collection, the jars were retained and shaken to provide a comparative example of purge water turbidity over the development process.

The following table details all monitoring activities, all samples collected, and measurements recorded. Photos of the samples are included and identified in the table by number.

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

date	time	activity	cone ID	sediment	settle time	water pumped	rack	photos
14-Oct	8:00	Begin pumping @ 20 gpm						
	9:00	surge/pump @ 30 gpm						
	10:00	collect 1st cone	cone 10-14 10:00		0 hr	1800 gals	right	
				720* NTU	(DTW)**	Feet		
	10:45	shook cones						
	11:00	collect 2nd cone	cone 10-14 11:00		0 hr	3600 gals	center	Cones: 001
				964* NTU	(DTW)**	Feet		
			cone 10-14 10:00	0.5 mL	1 hr		right	
	11:45	shook cones						
	12:00	collect 3rd cone	cone 10-14 12:00		0 hr	5400 gals	left	Cones: 002
				>1000* NTU	(DTW)**	Feet		
			cone 10-14 11:00	0.5 mL	1 hr		center	
			cone 10-14 10:00	1 mL	2 hr		right	
	12:45	shook cones						
	13:00		cone 10-14 12:00	0.75 mL	1 hr		left	Cones: 003
			cone 10-14 11:00	1 mL	2 hr		center	
			cone 10-14 10:00	2 mL	3 hr		right	
15-Oct	7:00		cone 10-14 12:00	4 mL	19 hr		left	Cones: 004
			cone 10-14 11:00	3 mL	20 hr		center	
			cone 10-14 10:00	3 mL	21 hr		right	
	9:00	*Read turbidity of samples from 14-Oct cones after shaking them in mason jars						Jars: 005
		**Did not collect DTW first day						
16-Oct	8:30	Oct-14 jars after settling out						Jars: 006

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

date	time	activity	cone ID	sediment	settle time	water pumped	rack	photos
21-Oct	8:00	Begin surge/pumping @ 40 gpm						
	9:00	collect 1st cone	cone 10-21 09:00		0 hr	2400 gals	right	Cones: 007
				570 NTU	15.45	Feet-DTW		
	9:45	shook cones						
	10:00	collect 2nd cone	cone 10-21 10:00		0 hr	4800 gals	center	Cones: 008
				251 NTU	15.81	Feet-DTW		
			cone 10-21 09:00	0.25 mL	1 hr		right	
	10:45	shook cones						
	11:00	collect 3rd cone	cone 10-21 11:00		0 hr	7200 gals	left	Cones: 009
				696 NTU	15.45	Feet-DTW		
			cone 10-21 10:00	<0.1 mL	1 hr		center	
			cone 10-21 09:00	0.3 mL	2 hr		right	
	11:45	shook cones	and washed out	cone 10-21 09:00				
	12:00	collect 4th cone	cone 10-21 12:00		0 hr	9600 gals	right	Cones: 010
				>1000 NTU	15.22	Feet-DTW		Jars: 011
			cone 10-21 11:00	0.2 mL	1 hr		left	
			cone 10-21 10:00	<0.1 mL	2 hr		center	
	12:45	shook cones	and washed out	cone 10-21 10:00				
	13:00	collect 5th cone	cone 10-21 13:00		0 hr	12000 gals	center	Cones: 012
				>1000 NTU	15.63	Feet-DTW		
			cone 10-21 12:00	0.5 mL	1 hr		right	
			cone 10-21 11:00	0.2 mL	2 hr		left	
	13:45	shook cones	and washed out	cone 10-21 11:00				

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

date	time	activity	cone ID	sediment	settle time	water pumped	rack	photos
21-Oct	14:00	collect 6th cone	cone 10-21 14:00		0 Hr	14400 gals	left	Cones: 013
				562 NTU		15.82 Feet-DTW		
			cone 10-21 13:00	0.25 mL	1 hr		center	
			cone 10-21 12:00	0.6 mL	2 hr		right	
	14:45	shook cones	and washed out	cone 10-21 12:00				
	15:00	collect 7th cone	cone 10-21 15:00		0 hr	16800 gals	right	Cones: 014
				562 NTU		15.82 Feet-DTW		
			cone 10-21 13:00	0.25 mL	2 hr		center	
	15:45	shook cones						
	16:00		cone 10-21 15:00	<0.1 mL	1 hr		right	Cones: 015
			cone 10-21 14:00	<0.1 mL	2 hr		left	Jars: 016, 017
			cone 10-21 13:00	0.15 mL	3 hr		center	
23-Oct	10:15	Begin surge/pumping @ 50 gpm						
	11:00	shook cones	cone 10-21 15:00	1 mL	20 hr		right	Cones: 018
			cone 10-21 14:00	0.9 mL	21 hr		left	
			cone 10-21 13:00	1.6 mL	22 hr		center	
	11:15	collect 1st cone	cone 10-23 11:15		0 hr	3000 gals	right	
				263 NTU		14.4 Feet-DTW		
	12:00	shook cone						
	12:15	collect 2nd cone	cone 10-23 12:15		0 hr	6000 gals	center	Cones: 019
				264 NTU		14.44 Feet-DTW		
			cone 10-23 11:15	0.2 mL	1 hr			
	13:00	shook cones						

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

date	time	activity	cone ID	sediment	settle time	water pumped	rack	photos
23-Oct	13:15	collect 3rd cone	cone 10-23 13:15		0 hr	9000 gals	left	
				157 NTU	14.4	Feet		
			cone 10-23 12:15	<0.1 mL	1 hr			
			cone 10-23 11:15	0.2 mL	2 hr			
	14:00	shook cones. Developer finishing up and pumping off bottom				12000 gals		
	14:15		cone 10-23 13:15	<0.1 mL	1 hr			Cones: 020
			cone 10-23 12:15	<0.1 mL	2 hr			Jars: 021, 022
			cone 10-23 11:15	0.2 mL	3 hr			
31-Oct	7:45	Shook all jars	for comparison	photo				Jars: 023
					Total Gal	**34200 gals**		

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

Photo 001 – 14 Oct 11:00

Photo 002 – 14 Oct 12:00

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

Photo 003 – 14 Oct 13:00

Photo 004 – 15 Oct 07:00

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

Photo 005 – 15 Oct 09:00

Photo 006 – 16 Oct 08:30

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

Photo 007 – 21 Oct 09:00

Photo 008 – 21 Oct 10:00

Photo 009 – 21 Oct 11:00

Photo 010 – 21 Oct 12:00

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

Photo 011 – 21 Oct 12:00

Photo 012 – 21 Oct 13:00

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

Photo 013 – 21 Oct 14:00

Photo 014 – 21 Oct 15:00

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

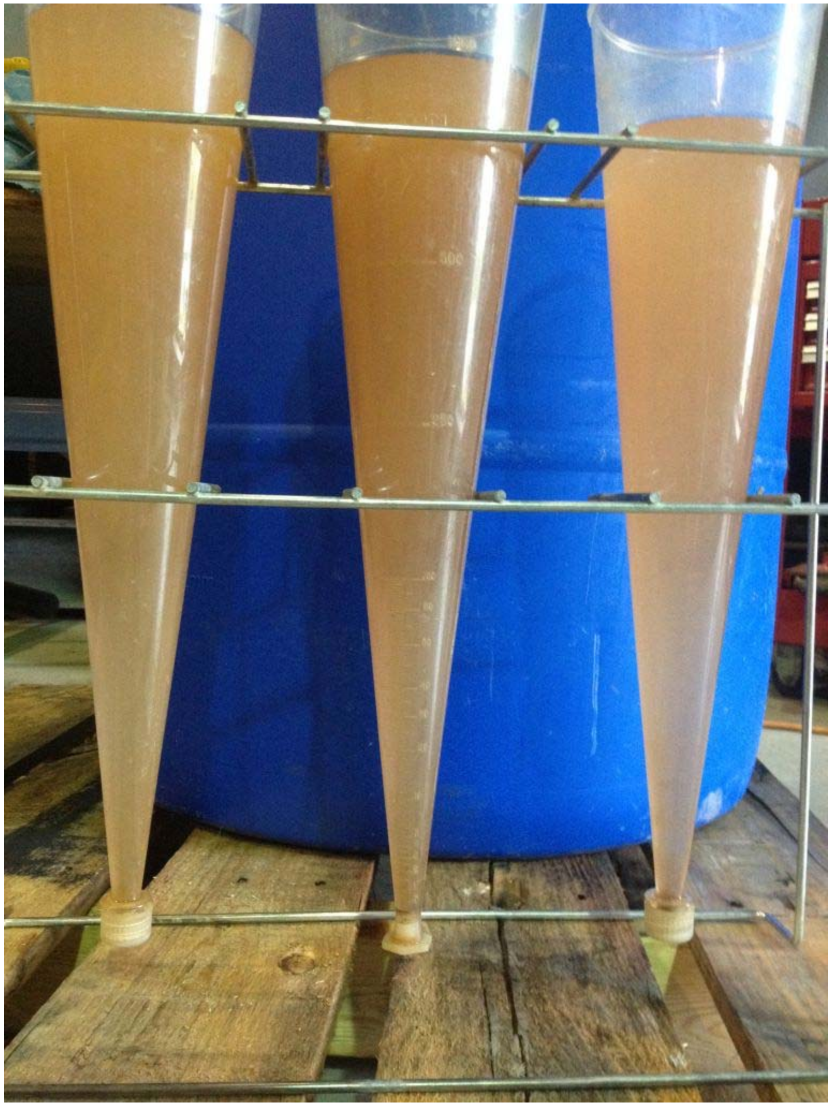

Photo 015 – 21 Oct 16:00

Photo 016 – 21 Oct 16:00

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

Photo 017 – 21 Oct 16:00

Photo 018 – 23 Oct 11:00

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

Photo 019 – 23 Oct 12:15

Photo 020 – 23 Oct 14:15

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

Photo 021 – 23 Oct 14:15

Photo 022 – 23 Oct 14:15

Appendix D
NTCRA-2 Recovery Well (RW-15) Development Documentation

Photo 023 – 31 Oct 07:45