First Five-Year Review Report

for

Solvents Recovery Service of New England, Inc. Superfund Site

Southington, Hartford County, Connecticut

September 2010

Prepared by

U.S. Environmental Protection Agency
Region 1

Boston, Massachusetts

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9/29/10
Date

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Acronyms and Abbreviations

ADAFs	Age-Dependent Adjustment Factors
ARARs	Applicable or Relevant and Appropriate Requirements
ATSDR	Agency for Toxic Substance and Disease Registry
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CL&P	Connecticut Light & Power
CTDEP	Connecticut Department of Environmental Protection
CTDPH	Connecticut Department of Public Health
DOJ	United States Department of Justice
EPA	United States Environmental Protection Agency
ft bgs	feet below ground surface
HCTS	Hydraulic Containment and Treatment System
IMS	Interim Monitoring and Sampling
IRIS	Integrated Risk Information System
ISTR	In-situ Thermal Remediation
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MNA	Monitored Natural Attenuation
NAPL	non-aqueous phase liquid
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NTCRA	Non-Time-Critical Removal Action
O&M	Operations and Maintenance
OIS	On-Site Interceptor System
OSWER	Office of Solid Waste and Emergency Response
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PCE	perchloroethylene
PIPP	Pre-ISTR Preparation Plan
PRGs	Preliminary Remediation Goals
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RDWP	Remedial Design Work Plan
RD/RA	Remedial Design/Remedial Action
ROD	Record of Decision
RSRs	Connecticut Remediation Standard Regulations
SOW	Statement of Work
SRSNE	Solvents Recovery Service of New England, Inc.
SVOCs	semi-volatile organic compounds
TCE	trichloroethylene
ug/L	micrograms per liter
$\mu g/m^3$	micrograms per meter cubed
UV/ox	ultraviolet/oxidation
VOCs	volatile organic compounds

Executive Summary

This five-year review report was prepared for the Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site, located in Southington, Hartford County, Connecticut. The Site, which encompasses the former Operations Area and the extent of impacted groundwater, is approximately 42 acres. Land use in the immediate vicinity of the SRSNE Site is mixed residential, commercial and light industrial, and has not changed since the Record of Decision (ROD) was issued in 2005. Public water is available to all downgradient properties.

The SRSNE facility began operating in Southington in 1955. Spent solvents were received from customers and distilled to remove impurities until the facility's closure in 1991. During processing, numerous spills to bare ground occurred, and two unlined lagoons were used for part of the operational period for storage of still bottoms. As a result, soil and groundwater are impacted above acceptable risk levels, primarily by solvents. Non-aqueous phase liquids (NAPL) are present in the overburden and fractured bedrock.

Migration of contaminated groundwater is controlled by two Non-Time-Critical Removal Actions (NTCRAs) that were implemented at the Site in the 1990's and became part of the final Site remedy with issuance of the ROD. Contaminated groundwater in both the overburden and bedrock aquifers is hydraulically contained and treated on site.

The remedy selected by EPA for the Site was set forth in the September 2005 ROD. Key elements of the remedy are as follows:

- In-situ thermal treatment of contaminants in the overburden aquifer NAPL area until site-specific NAPL performance standards are achieved;
- Excavate, consolidate and cap soil and wetland soil (including river sediment) that exceeds cleanup levels (see Table 6);
- Capture and on-site treatment of contaminated groundwater in both the overburden and bedrock aquifers, until federal safe drinking water standards and other risk-based levels are achieved;
- Over time, modification of the configuration of the on-site groundwater extraction and treatment system, as appropriate, based on expected reductions in contamination;
- Monitor natural attenuation of the groundwater plume including a) groundwater outside the capture zone of the extraction and treatment system until groundwater cleanup levels are achieved and b) contaminants in the NAPL area of the bedrock aquifer until groundwater cleanup levels are achieved (see Table 5);
- Implement restrictions on uses of the Site in perpetuity to prevent human exposure to contaminants in the subsurface soils and to prohibit activities that might harm the cap.

Implement institutional controls to prevent human exposure to contaminated groundwater and NAPL areas until appropriate levels are met. These restrictions will also prohibit construction above that portion of the groundwater plume that exceeds federal and state volatilization criteria, if studies conducted during remedial design confirm the need for such restrictions;

- Maintain the cap in the long term; and

- Perform reviews at least every five years to ensure that the remedy remains protective of human health and the environment.

- Contingent remedy – In the event that the Southington Water District decides to re-activate municipal production wells located near the Site prior to attainment of federal drinking water standards and other risk-based levels throughout the Site, additional groundwater containment is required.

Pursuant to a Consent Decree entered on March 26, 2009, by the United States District Court for the District of Connecticut, a group of potentially responsible parties (SRSNE Site Group) agreed to conduct the cleanup of the Site as set forth in the ROD. Since entry of the Consent Decree, monitored natural attenuation of groundwater is ongoing and remedial design activities, sampling and continued operations of the NTCRA groundwater containment systems have been undertaken by the SRSNE Site Group.

This is the first five-year review for the Site. The requirement for conducting five-year reviews is incorporated in Section 121(c) of CERCLA 42 § 9621(c). Depending on the selected remedial action, the five-year review may be required by statute or conducted as a matter of EPA policy. This is a statutory review, conducted five years from the issuance of the ROD in September 2005.

Based upon a review of the ROD, remedial design documents, data collected during sampling events, operation and maintenance reports, and an inspection of the Site, the remedy at the SRSNE Site is expected to be protective of human health and the environment upon completion of the remedy, and in the interim, exposure pathways that could result in unacceptable risks are being controlled.

Access control in the form of fencing and paving are in place, and currently limit exposure to soil that presents an unacceptable human-health risk. In addition, groundwater beneath and down gradient of the Site is not currently used as drinking water. Finally, although the vapor intrusion investigation is not yet complete, there are currently no structures without vapor controls above the area where groundwater presents possible vapor intrusion issues. As a result, this possible exposure pathway is not complete.

Excavation of wetland soils and river sediment at the culvert outfall that pose an ecological risk, and, consolidation in the Operations Area where the contaminated material will be covered with clean fill is underway and will be completed by December 2010.

However, in order for the remedy to be protective in the long-term, the following actions need to be taken to ensure long-term protectiveness: major components of the remedy need to be implemented including in-situ thermal treatment of contaminants in groundwater; excavation, consolidation and capping of soil; vapor intrusion investigation and, if required, mitigation; and institutional controls. In addition, if 1, 4-dioxane is found in concentrations that exceed EPA's risk-screening level in that portion of the groundwater plume that is not contained, the monitored natural attenuation approach for addressing this contaminant in that portion of the plume may need to be re-evaluated.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name: Solvents Recovery Service of New England, Inc Superfund Site		
EPA ID: CTD009717604		
Region: 1	**State:** CT	**City/County:** Southington/Hartford County

SITE STATUS	
NPL status: ■ Final ☐ Deleted ☐ Other (specify)	
Remediation status (choose all that apply): ■ Under Construction ☐ Operating ☐ Complete	
Multiple OUs? ☐ YES ■ NO	**Construction completion date:** N/A
Has site been put into reuse? ☐ YES ■ NO ☐ N/A	

REVIEW STATUS	
Lead agency: ■ EPA ☐ State ☐ Tribe ☐ Other Federal Agency _____	
Author name: Karen Lumino	
Author title: RPM	**Author affiliation:** EPA Region 1
Review period: 1/6/10 to 9/24/10	
Date(s) of site inspection: 6/2/10	
Type of review: ■ Post-SARA ☐ Pre-SARA ☐ NPL-Removal only ☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead ☐ Regional Discretion ☐ Policy ☐ Statutory	
Review number: ■ 1 (first) ☐ 2 (second) ☐ 3 (third) ☐ Other (specify)_____	
Triggering action: ☐ Actual RA Onsite Construction at OU # ☐ Actual RA Start at OU# ☐ Construction Completion ☐ Previous Five-Year Review Report ■ Other (specify): Record of Decision	
Triggering action date ***(from WasteLAN)***: 9/30/05	
Due date ***(five years after triggering action date)***: 9/30/10	

Does the report include recommendation(s) and follow-up action(s)? ■ yes ☐ no
Is human exposure under control? ■ yes ☐ no
Is contaminated groundwater under control? ■ yes ☐ no ☐ not yet determined
Is the remedy protective of the environment? ■ yes ☐ no ☐ not yet determined
Acres in use or available for use: **restricted:** 42 **unrestricted: 0**

Five-Year Review Summary Form, cont'd.

Issues, Recommendations, and Follow-Up Actions

1) Although significant progress has been made, major components of the remedy need to be implemented including in-situ thermal treatment of contaminants in the overburden aquifer; excavation, consolidation and capping of soil; vapor intrusion investigation and possible mitigation; and institutional controls.

Preparation of the site for the in-situ thermal treatment began on September 13, 2010, and will be completed by December 2010. The contaminated soil in the railroad right-of-way and drainage ditch, as well as contaminated wetland soil and river sediment at the culvert outfall will be excavated during this phase of construction and used as fill material in the re-grading of the Operations Area. Startup of the in-situ thermal component is anticipated for early 2012. Upon completion of thermal treatment in 2014, the remaining soil targeted for excavation will be moved to the thermally-treated area and capped.

Groundwater data collected for the vapor intrusion investigation is undergoing validation and will be reviewed by EPA and CTDEP later this year; additional data may be needed for a multiple-lines-of-evidence analysis. Institutional controls are required by the ROD to prevent unacceptable exposure to groundwater, soil, subsurface NAPL, and possibly vapor intrusion in the future but have not yet been put in place. Completion of the vapor intrusion investigation triggers submission of a plan and schedule for implementing institutional controls.

2) If 1,4-dioxane is found in concentrations that exceed EPA's risk-screening level in that portion of the groundwater plume that is not contained, the monitored natural attenuation approach for addressing this contaminant in that portion of the plume may need to be re-evaluated.

Groundwater data collected this summer is undergoing validation and will be reviewed by EPA and CTDEP later this year.

Five-Year Review Summary Form, cont'd.

Protectiveness Statement

Based upon a review of the ROD, remedial design documents, data collected during sampling events, operation and maintenance reports and an inspection of the Site, the remedy at the SRSNE Site is expected to be protective of human health and the environment upon completion of the remedy, and in the interim, exposure pathways that could result in unacceptable risks are being controlled.

Access controls in the form of fencing and pavement are in place, and currently limit exposure to soil that presents an unacceptable human-health risk. In addition, groundwater beneath and downgradient of the Site is not currently used as drinking water. Finally, although the vapor intrusion investigation is not yet complete, there are currently no structures without vapor barriers above the area where groundwater presents possible vapor intrusion issues. As a result, this possible exposure pathway is not complete.

Excavation of wetland soil and river sediment at the culvert outfall that pose an ecological risk, and, consolidation in the Operations Area where the contaminated material will be covered with clean fill is underway and will be completed by December 2010.

However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure long-term protectiveness: major components of the remedy need to be implemented including in-situ thermal treatment of contaminants in the overburden aquifer; excavation, consolidation and capping of soil; vapor intrusion investigation and potential remediation; and institutional controls. In addition, if 1,4-dioxane is found in that portion of the groundwater plume that is not contained in concentrations that exceed EPA's risk-screening level, the monitored natural attenuation approach for addressing this contaminant in the portion of the plume may need to be re-evaluated.

FIVE-YEAR REVIEW REPORT

SECTION 1.0
INTRODUCTION

The purpose of the five-year review is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review Reports. In addition, Five-Year Review Reports identify issues found during the review, if any, and identify recommendations to address them.

The United States Environmental Protection Agency (EPA) is preparing this Five-Year Review Report pursuant to CERCLA §121 and the National Contingency Plan. CERCLA §121 states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

40 CFR §300.430(f)(4)(ii) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

EPA, Region 1, conducted this first five-year review of the remedy implemented at the Solvents Recovery Service of New England, Inc. (SRSNE) Site ("the Site"), located in the Town of Southington, Hartford County, Connecticut. This five-year review was conducted by EPA Remedial Project Manager Karen Lumino. The review was conducted in accordance with the *Comprehensive Five-Year Review Guidance* (OSWER Directive 9355.7-03B-P, June 2001). This report documents the results of the review, and will become part of the administrative record for the Site.

A five-year review is required at this Site due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure.

In accordance with EPA's five-year review guidance, this first statutory five-year review is triggered by the date the Record of Decision (ROD) for the Site was signed and issued which occurred on September 30, 2005.

Based upon a review of the ROD, remedial design documents, data collected during sampling events, operation and maintenance reports, and an inspection of the Site, the remedy at the SRSNE Site is expected to be protective of human health and the environment upon completion of the remedy, and in the interim, exposure pathways that could result in unacceptable risks are being controlled.

Access control in the form of fencing and paving are in place, and currently limit exposure to soil that presents an unacceptable human-health risk. In addition, groundwater beneath and down gradient of the Site is not currently used as drinking water. Finally, although the vapor intrusion investigation is not yet complete, there are currently no structures without vapor controls above the area where groundwater presents possible vapor intrusion issues. As a result, this possible exposure pathway is not complete.

Excavation of approximately 1300 total cubic yards of wetland soils and river sediment at the culvert outfall that pose an ecological risk, and, consolidation in the Operations Area where the contaminated material will be covered with clean fill is underway and will be completed by December 2010.

However, in order for the remedy to be protective in the long-term, the following actions need to be taken to ensure long-term protectiveness: major components of the remedy need to be implemented including in-situ thermal treatment of contaminants in groundwater; excavation, consolidation and capping of soil; vapor intrusion investigation and, if required, mitigation; and institutional controls. In addition, if 1,4-dioxane is found at concentrations that exceed EPA's risk-screening level in that portion of the groundwater plume that is not being contained, the monitored natural attenuation approach for addressing that contaminant in the portion of that plume may need to be re-evaluated.

SECTION 2.0
SITE CHRONOLOGY

Table 1 (attached) summarizes the site-related events from discovery to date. Additional events and details are provided in Section 3.0, Background.

SECTION 3.0
BACKGROUND

3.1 Physical Characteristics and Land and Resource Use

The SRSNE Site is located on approximately 14 acres 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.

The SRSNE Site encompasses portions of several properties/areas that include the former SRSNE Operations Area, the former Boston & Maine railroad right-of-way, the former Cianci Property, and the Town of Southington municipal well field. The Site includes all areas where contamination, which includes a broad range of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, pesticides and polychlorinated biphenyls (PCBs), has come to be located. There are no areas of architectural or historical importance within the Site.

These areas are shown on Figure 2, and further described below.

- **Former SRSNE Operations Area:** The former SRSNE Operations Area ("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 of Southington municipal well field.

- **Railroad Right-of-Way:** The railroad right-of-way is an approximately 50-foot wide corridor running north-south that separates the 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. Connecticut Department of Environmental Protection (CTDEP) 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.

- **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 of Southington Municipal Well Field:** The Town of Southington municipal well field ("Town Well Field") consists of approximately 28 acres of undeveloped land south of

the 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 its western perimeter and the CL&P easement runs northwest-southeast through the northern portion of the Town Well Field.

Soil and/or groundwater contamination above acceptable levels has been found on/below these properties. Soil contamination above acceptable levels has been identified on the Operations Area, railroad right-of-way, and Cianci Property. Groundwater contamination (dissolved phase and NAPL) has been identified in both the overburden and bedrock aquifers (Figures 3A and 3B, respectively). A groundwater extraction and treatment system that was installed in the 1990's to prevent the migration of groundwater that exceeds federal safe drinking water standards and other risk-based levels continues to operate, and is described in greater detail in Section 3.3.

Geology, Hydrogeology, Land and Resource Use

Geology. The Site is located within the Connecticut Valley Lowland section of the New England physiographic province. The Connecticut Valley Lowland occupies a regional, structural rift basin, which is characterized by block-faulted and tilted bedrock strata. The geology of the region, in general, consists of the Upper Triassic New Haven Arkose bedrock, overlain by Wisconsin-age unconsolidated deposits formed when glaciers eroded and smoothed the bedrock hills.

The depth to bedrock varies throughout the Site, from approximately 15 to 40 feet below ground surface (ft bgs) at the Operations Area, to approximately 25 to 45 ft bgs, on the Cianci property, to approximately 80 to 100 ft bgs at the Town Well Field. Core samples and drilling observations indicate that the upper five feet of the bedrock is severely weathered and partially decomposed, and that the degree of weathering generally decreases with depth.

The overburden geology beneath the Operations Area and Cianci Property consists primarily of two unconsolidated layers. The upper layer, called outwash, extends from ground surface to approximately 10 to 25 ft bgs and consists of reddish-brown silty sand and gravel deposits, interbedded with discontinuous layers of silt and relatively well-sorted sand and gravel. The lower layer consists of glacial till, a generally unstratified unit consisting of reddish-brown clay, silt, sand, gravel, cobbles and boulders, but also including isolated, discontinuous sandy seams. Fill materials are present above the outwash in portions of the Operations Area and Cianci Property, where grading operations reworked the upper few feet of soil and filled low areas. Fill materials (ballast) are also observed along the railroad right-of-way. The overburden in the Town Well Field grades to a coarser distribution of sand and gravel, lacking fines.

Hydrogeology. Groundwater is present in the overburden and bedrock units. In the overburden, depth to the water table generally ranges from 0 to 10 ft bgs throughout the Site. The overburden and bedrock groundwater is recharged primarily via precipitation, although groundwater underflow also occurs from the north within the saturated zone in the vicinity of the Quinnipiac River.

Essentially all overburden and bedrock groundwater within the monitored geologic zones ultimately discharges to the Quinnipiac River and associated wetlands. The overburden and bedrock units are hydraulically connected. Where the till layer is relatively thick, it may limit the rate of groundwater flow between them. In areas where till is anomalously thin or absent, or lacks fine-grained material, more groundwater flow may occur between the overburden and bedrock.

Surface Water Hydrology. Surface water from precipitation falling within the Operations Area generally drains to the east, with surface runoff collected in a ditch on the west side of the existing railroad right-of-way. This ditch also collects runoff from areas to the north of the Operations Area, including areas north of Lazy Lane. An existing 30-inch culvert conveys water from this ditch easterly to the Quinnipiac River (BBL and EPA 2005).

The former Cianci property currently drains by overland flow to the east towards the Quinnipiac River and adjoining wetland and low-lying areas. The Town Well Field also drains by overland flow towards the east, although an intermittent stream collects some runoff in the eastern and central portions of the property (BBL and EPA 2005).

Land and Resource Use. Land use in the immediate vicinity of the SRSNE Site is mixed residential, commercial and light industrial, and has not changed since the issuance of the ROD in 2005.

Currently, use of the Site is limited to activities that support the cleanup activities selected in the ROD. There are no anticipated future uses for the Operations Area and Cianci Property other than those needed to perform the long-term components of the remedy (e.g., operation and maintenance on the cap, groundwater monitoring, etc).

With respect to the railroad right-of-way, the reasonably anticipated future use of this parcel is for recreational purposes, specifically, to redevelop this property to create a multi-purpose public path, known as a "rails-to-trails greenway."

Groundwater at the Site is not currently being used for drinking water. The on-site treatment building, the commercial/residential properties adjacent to and north of the Operations Area, the Southington police headquarters across the street from the Cianci Property, and the commercial/light industrial properties along Route 10 are all on public water. Approximately 85 residences on Lazy Lane, Melcon Street, Curtiss Street, Juniper Road, Little Fawn Road and Carrier Court are on domestic supply wells, but these properties are all to the west of and hydraulically upgradient from the SRSNE Site.

The potential beneficial use of groundwater at the Site and surrounding areas is for drinking water. Groundwater within the Site is currently classified by CTDEP as GA, GA-degraded or GAA. The State's goal for this aquifer is to maintain or restore the groundwater to its natural quality, suitable for drinking or other domestic uses without treatment.

The Quinnipiac River is not used as a drinking water supply. Adjacent to and south of the SRSNE Site there is limited access, as the river is a narrow, shallow meander bordered by steep banks along Queen Street to the east and the Town Well Field and fenced Cianci Property to the west. Seasonally low water and lack of access leads to little to no recreational use of the river in the vicinity of the Site.

Surface water along the Quinnipiac River adjacent to the Site is currently classified by CTDEP as Class C/B. This means that the state's goal for this surface water is Class B, although it is currently degraded to Class C. Class B surface waters are designated for recreational use, fish and wildlife habitat, agricultural and industrial supply, and other legitimate uses including navigation. Conditions that result in a Class C designation are usually correctable, and commonly relate to combined sewer overflows, urban runoff, inadequate municipal or industrial waste water treatment, and community-wide septic system failures.

Based on the State's classification, the potential beneficial use of the surface water is recreational use, fish and wildlife habitat, agricultural and industrial supply, and other legitimate uses including navigation.

3.2 History of Contamination

The SRSNE facility began operating 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.

Liquid wastes processed at the SRSNE facility included unrecoverable or spent solvent-based fuels, spent chlorinated solvents, and wastes generated from fuel-blending operations. Contact and non-contact distillation stream generated during the facility's distillation process were discharged into a subsurface drain pipe that discharged into a ditch along the west side of the Operations Area. From 1957 to approximately 1967, the non-recoverable portion of distilled solvents, consisting of distillation or still-bottom sludge, was stored in two unlined lagoons located in the Operations Area.

After the closure of the lagoons in 1967, wastes, including still-bottom sludge and flammable liquids, were incinerated in an open pit on site or disposed of off site. The open-pit incinerator burned approximately 1,000 gallons of solvent sludge per day between 1966 and 1974, when it was decommissioned (ATSDR 1992). The solvent-burning and fuel-blending operations involved handling, storage, and transfer activities that resulted in leaks and spills to bare ground within the Operations Area.

In 1976, VOCs were detected at the Town of Southington's Production Well No. 4, forcing its closure. Water-supply pumping shifted to Production Well No. 6 until 1979 when it too was closed due to the presence of VOCs (HNUS 1994). Subsequent environmental investigations revealed that the SRSNE Site was a major source of VOC contamination to the groundwater in the Town Well Field.

In 1983, EPA and SRSNE executed a Consent Decree that required the installation of a groundwater interceptor system along the downgradient property line of the Operations Area. The on-site interceptor system (OIS) was installed in 1985 and began operating in 1986 with the intended purpose of capturing overburden groundwater migrating from the Operations Area. Between 1986 and 1991, the OIS was used to extract and treat contaminated groundwater. The OIS used a cooling tower on the roof of the operations building that was converted to an air stripper to capture contamination, with treated groundwater discharging via a subsurface pipe to the ditch along the railroad tracks east of the Operations Area.

The 1983 Consent Decree also required modifications to SRSNE's solvent handling practices and the performance of subsurface investigations to assess environmental impacts associated with the Site. Between 1983 and the facility's closure in 1991, SRSNE made some improvements including spill control measures, paving the Operations Area, fire protection measures, and installation of a groundwater treatment system but did not meet other requirements.

In 1988, the three batch stills were removed, and spent solvents received by SRSNE were transferred to other facilities for the remainder of SRSNE's period of operations. An EPA Resource Conservation and Recovery Act (RCRA) inspection in February 1989 documented 75 cases of solvent releases from drums, tank trucks, hoses, and other solvent containers and transfer equipment during the previous year (EPA 1989).

Additional EPA and CTDEP enforcement orders were subsequently issued to compel SRSNE to perform further cleanup work at the facility. The facility ceased operating in March 1991 and was closed down in May 1991.

3.3 Initial Response

Pre-1994 Response Actions

Key regulatory milestones prior to 1994 are as follows:

- 1983: EPA adds SRSNE to the National Priorities List, thereby designating it a Superfund Site; SRSNE signs a Consent Decree with EPA to install an on-site groundwater interceptor system and propertly store/manage hazardous waste on site.

- 1983-1988: EPA and the State of Connecticut take enforcement actions to require cleanup of the facility operations and the property.

- 1989 – 1990: Site paving and control measures were installed in accordance with a RCRA Corrective Measures Plan.

- 1991: SRSNE operations cease.

- 1990 – 1994: EPA conducts the remedial investigation in three phases.

- 1992: EPA takes emergency actions to remove contaminated soils from the railroad grade drainage ditch and some chemicals stored in buildings in the Operations Area for proper off-site disposal.

- 1992 – 1994: CTDEP operates the on-site groundwater interceptor system and an ultra-violet/oxidation (UV/ox) treatment system.

Post-1994 Response Actions

NTCRA 1 Groundwater Extraction System. In 1994, the SRSNE Site Group entered into a settlement with EPA that required construction and operation of a pump and treat system to contain the contaminated groundwater in the overburden ("NTCRA 1"). Pumping from the NTCRA 1 system began in July 1995 and continues to operate today. The NTCRA 1 system is located on the Cianci Property (Figure 4). It consists of a 700-foot long by 30-foot deep steel sheetpile wall through the overburden to the top of bedrock, and 12 overburden groundwater extraction wells (RW-1 through RW-12) on the upgradient side of the wall. Contaminated groundwater is extracted from the wells to maintain hydraulic gradient reversal across the sheetpile wall, which prevents its migration. Other work conducted under this settlement included the construction of a mitigation wetland in the northeast corner of the Cianci Property, a full-scale phytoremediation study within the sheetpile wall, and extension of public water to three buildings immediately adjacent to the Site.

NTCRA 2 Groundwater Extraction System. In 1997, EPA and the SRSNE Site Group entered into a second settlement that expanded the groundwater containment system ("NTCRA 2"). The NTCRA 2 groundwater extraction system consists of three extraction wells (two in the deep overburden (RW-13 and 14) and one in the bedrock (RW-1R)) just north of the CL&P easement (Figure 4). The purpose of these wells is to prevent the migration of contaminated groundwater in the bedrock aquifer. It, too, continues to operate. Other work conducted under this settlement included the completion of a remedial investigation/feasibility study (described below in greater detail) and the decontamination, demolition and removal of the remaining buildings and tanks from the Operations Area.

On-site Groundwater Treatment System. Groundwater extracted from the NTCRA 1 and 2 systems is treated on site using a process that consists of the following: metals pretreatment, filtration, UV/ox, 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 captures and destroys VOCs. Treated water is discharged to the Quinnipiac River in accordance with the Revised CTDEP Substantive Requirements for Discharge of Pre-Treated Groundwater, issued November 5, 1995.

The SRSNE Site Group continues to operate the overburden and bedrock groundwater containment systems and on-site treatment system which, following entry of the Consent Decree in 2009, became part of the groundwater remedy specified in the ROD. Those systems are now collectively referred to as the Hydraulic Containment and Treatment System (HCTS). Since 1995, 196 million gallons of contaminated groundwater have passed through the HCTS, removing 16,000 pounds of VOCs from the Site.

Remedial Investigation/Feasibility Study. As part of the 1997 settlement, the SRSNE Site Group also agreed to complete the remedial investigation/feasibility study (RI/FS) which they did in 2004. Based on the RI/FS, EPA issued a proposed cleanup plan for the Site (June 2005), held a public comment period (June 9, 2005 to August 8, 2005) and ultimately selected a final cleanup plan with the issuance of the ROD on September 30, 2005.

3.4 Basis for Taking Action

This section summarizes the extent of contamination found at the Site and the human-health and ecological risks associated with exposure to that contamination.

Site Contamination

Soil. The distribution of contaminants in soil covers much of the Operations Area. This suggests that solvent VOCs and other contaminants entered the surface and subsurface soil in varying quantities at many locations within the Operations Area. Likely known entry points include two unlined lagoons, drum storage areas, and truck loading/unloading areas. Overflow from the lagoons drained into a ditch east of the Operations Area, alongside the railroad tracks and into a concrete culvert that crosses the Cianci Property and discharges directly to the Quinnipiac River.

Groundwater. The plume of contamination in the overburden aquifer that is associated with the SRSNE Site extends deep into the Town Well Field (Figure 3A). The highest contaminant concentrations are found in the Operations Area, particularly in the area where the unlined lagoons were located. The plume in the bedrock aquifer does not extend as far into the well field but does extend into the northern portion of the Cianci Property (Figure 3B). It is believed that a production well on the Cianci Property pulled the plume in the bedrock to its current location, which is hydraulically upgradient of the Operations Area. Groundwater that exceeds federal drinking water standards and other risk-based levels is contained and treated on site.

NAPL Zones. Waste oil and solvents in the form of non-aqueous phase liquid (NAPL) are present in the unconsolidated deposits in the overburden aquifer and in the fractured sandstone in the bedrock aquifer.

Surface Water and Wetlands Soil. Surface water and wetland soils, including river sediment, at the outlet of the concrete culvert to the Quinnipiac River have been impacted by runoff from the two unlined lagoons that were located on the Operations Area, and, contaminated groundwater infiltrating the cracked and leaky concrete culvert.

Summary of Risk Assessments

Human-Health Risk Assessment. In 1994, a baseline human-health risk assessment was performed that evaluated both current and future risks from exposure to contamination under a variety of different exposure scenarios. Approximately 40 of the more than 80 chemicals detected in groundwater and approximately 30 of the more than 65 chemicals detected in soils at the Site were identified as contaminants of potential concern and evaluated for possible adverse health effects to human receptors to determine the total cancer and total non-cancer hazards present.

With respect to groundwater, the baseline risk assessment assumed a future residential exposure scenario and evaluated risks from ingestion, dermal contact and inhalation of VOCs and SVOCs emitted from showers, toilets, dishwashers, washing machines and other turbulent water-use sources. With respect to soil, surface water and river sediment, the baseline risk assessment considered residential, recreational and trespasser exposure scenarios. Exposure pathways included direct contact with soil, surface water and river sediment, as well as inhalation of soil particulates and vapors.

In 1999, portions of the risk assessment were updated to incorporate new data and to reflect new risk assessment guidance issued by EPA the previous year. The update re-evaluated the potential risks and hazards associated with incidental ingestion and dermal contact with surface and subsurface soils for residential, recreational and commercial/industrial land uses and re-evaluated the potential risks and hazards associated with hypothetical future ingestion of groundwater (see Table 2).

Neither risk assessment looked at the potential for impacts from volatile chemicals emanating from the groundwater plume into overlying buildings that may be constructed in the future. The vapor intrusion pathway was addressed in the 2005 ROD with a requirement that the remedy include a study to determine the extent of impacts, if any, and the imposition of institutional controls and/or mitigation systems on those parcels where risk was determined to be present.

Ecological Risk Assessment. Surface water and soil/wetland soil to depths of 10 feet were considered for the ecological risk assessment. The chemicals considered in the exposure assessment based on occurrence, distribution, toxicity, persistence and bioaccumulation potential were:

- benzene
- xylenes
- phthalate esters
- polycyclic aromatic hydrocarbons (PAHs)
- 1,2,4-trichlorobenzene
- PCBs or Aroclors
- dioxin
- several pesticides
- metals (cadmium, copper, lead, mercury, nickel, selenium, zinc)

These chemicals persist, undergo bioaccumulation and biomagnify though food webs. Although plants and invertebrates are at potential risk from the contaminants present at the Site, species at higher levels received special emphasis. The selection of indicator species to assess the potential effects of contaminant exposure on wildlife was based on observations in the field, feeding habits, food webs and routes of exposure. The indicator species used for the ecological risk assessment were raccoon, red-tailed hawk, mallard duck, eastern garter snake, and green frog.

Summary of Site Risks

Groundwater Risk. Contaminants in groundwater exceed both cancer and non-cancer EPA target risk requirements and state and federal regulatory requirements assuming that the groundwater is used for potable use in the future. The highest calculated groundwater ingestion risks are related to the Operations Area, the Cianci Property, and the northern portion of the Town Well Field. Groundwater in these areas is not currently used for drinking water or other domestic purposes.

Soil and Wetland Soil Risk. Soil in the Operations Area and railroad right-of-way presented unacceptable cancer and/or non-cancer risks to adults and children who might live on the property in the future (residential scenario) and workers (industrial scenario). Although the future use scenario for the Site is expected to be recreational, per Connecticut law, areas used for recreational purposes must meet cleanup standards for residential use. In addition, soil in the Operations Area, railroad right-of-way, isolated areas on the Cianci Property, and the drainage ditch north of the culvert exceed Connecticut remediation standards for pollutant mobility criteria and/or direct exposure criteria. Wetland soil (including river sediment) at the culvert outfall also exceeds Connecticut remediation standards for direct exposure criteria and presents an unacceptable ecological risk from PCBs.

River Sediment and Surface Water Risk. The total cancer risk and non-cancer risk calculated for accidental ingestion and dermal contact with surface waters and sediment in the Quinnipiac River indicate that surface water and sediment do not present an unacceptable risk to human health. Surface water and river sediment at the outlet of the 30-inch concrete culvert pose an unacceptable risk to ecological receptors from PCBs and PAHs.

SECTION 4.0
REMEDIAL ACTIONS

4.1 Remedy Selection

Remedial action objectives (RAOs) were established based on types of constituents, environmental media of concern (e.g., soil, groundwater) and potential exposure pathways. The RAOs were developed to guide plans to mitigate, restore, and/or prevent existing and future potential threats to human health and/or the environment from soil and wetland soil, overburden and bedrock groundwater, and NAPL in the overburden and bedrock aquifers; and to meet applicable or relevant and appropriate requirements (ARARs).

The specific RAOs presented in the ROD issued on September 30, 2005, are summarized in the following table.

Remedial Action Objectives

Site Area/ Medium	Protection of Human Health	Protection of the Environment
Former SRSNE Operations Area/ Railroad Soil	• Prevent potential human exposure (dermal contact, ingestion and inhalation) to soil with contaminants that exceed an excess carcinogenic risk of 10^{-4} to 10^{-6}, that pose a non-carcinogenic Hazard Index greater than 1, or that exceed ARARs. • Prevent migration of contaminants from soils to groundwater that would result in groundwater concentrations in excess of ARARs or which otherwise present an unacceptable risk in groundwater.	• Prevent migration of contaminants from soils to groundwater that would result in groundwater concentrations in excess of ARARs.
Former Cianci Property Soil	• Same as Former SRSNE Operations Area/Railroad Soil Area.	• Prevent ecological risks associated with SRSNE-related contaminants.

Site Area/ Medium	Protection of Human Health	Protection of the Environment
Overburden NAPL Area	• Reduce or stabilize contaminants in the NAPL area that would otherwise result in groundwater concentrations that pose a carcinogenic risk in excess of 10^{-4} to 10^{-6}, non-carcinogenic Hazard Index greater than 1, or that exceed ARARs.	• Reduce contaminants in the NAPL area to achieve one or more of the following: - Shorten the timeframe that groundwater standards are exceeded - Shrink the size of the groundwater plume - Reduce groundwater constituent concentrations - Prevent the migration of NAPL
Overburden Groundwater	• Prevent potential human exposure (dermal contact, ingestion and inhalation) to groundwater in the overburden aquifer with contaminants that pose an excess carcinogenic risk of 10^{-4} to 10^{-6}, non-carcinogenic Hazard Index greater than 1, or that exceed ARARs.	• Restore groundwater quality to meet ARARs.
Bedrock NAPL Area	• Minimize expansion of the extent of impacted bedrock groundwater due to further NAPL migration.	• Minimize expansion of the extent of impacted bedrock groundwater due to further NAPL migration.
Bedrock Groundwater	• Prevent potential human exposure (dermal contact, ingestion and inhalation) to groundwater in the bedrock aquifer with contaminants that pose an excess carcinogenic risk of 10^{-4} to 10^{-6}, non-carcinogenic Hazard Index greater than 1, or that exceed ARARs.	• Prevent continuing migration of contaminants that exceed ARARs; and restore bedrock groundwater to meet ARARs once VOC residuals are depleted.

Key elements of the selected remedy are summarized as follows:

- In-situ thermal treatment of contaminants in the overburden aquifer NAPL area until site-specific NAPL performance standards are achieved;

- Excavate, consolidate and cap soil and wetland soil that exceeds cleanup levels (see Table 6);

- Capture and on-site treatment of contaminated groundwater in both the overburden and bedrock aquifers, until federal safe drinking water standards and other risk-based levels are achieved;

- Over time, modification of the configuration of the on-site groundwater extraction and treatment system, as appropriate, based on expected reductions in contamination;

- Monitor natural attenuation of the groundwater plume including a) groundwater outside the capture zone of the extraction and treatment system until groundwater cleanup levels are achieved and b) contaminants in the NAPL area of the bedrock aquifer until groundwater cleanup levels are achieved (see Table 5);

- Implement restrictions on uses of the Site in perpetuity to prevent human exposure to contaminants in the subsurface soils and to prohibit activities that might harm the cap. Implement institutional controls to prevent human exposure to contaminated groundwater and NAPL areas until appropriate levels are met. These restrictions will also prohibit construction above that portion of the groundwater plume that exceeds federal and state volatilization criteria, if studies conducted during remedial design confirm the need for such restrictions;

- Maintain the cap in the long term; and

- Perform reviews at least every five years to ensure that the remedy remains protective of human health and the environment.

- Contingent remedy – In the event that the Southington Water District decides to re-activate municipal production wells located near the Site prior to attainment of federal drinking water standards and other risk-based levels throughout the Site, additional groundwater containment is required.

4.2 Remedy Implementation

Pursuant to a Consent Decree entered on March 26, 2009 by the United States District Court for the District of Connecticut, the SRSNE Site Group agreed to conduct the cleanup of the Site as set forth in the ROD. The Consent Decree included a Statement of Work (SOW) that sets out the framework for conducting the remedy selected in the ROD. In the 18 months that have passed since entry of the Consent Decree, remedy implementation has consisted primarily of remedial design activities, sampling, and continued operation of the groundwater containment and treatment system. This section summarizes the remedial activities that have been undertaken by the SRSNE Site Group to date, and provides a status report on implementation of the other key components of the remedy.

Remedial Design. Significant remedial design field activities conducted include:

- Comprehensive monitoring well evaluation (June and July 2009)

- Baseline habitat survey and wetlands delineation (June 2009)
- Negotiation and agreement for access to ten properties not controlled by the SRSNE Site Group (August to November 2009)
- Overburden NAPL Area delineation (July to November 2009)
- Soil sampling in railroad right-of-way (July 2009)
- Monitoring well abandonment, installation and development program (November 2009 to May 2010)
- First round of groundwater sampling to support vapor intrusion assessment (February 2010)
- Soil sampling on Cianci Property (May 2010)
- First comprehensive groundwater sampling program (May and June 2010)
- Survey of existing and new wells (June and July 2010)

Remedial design activities have also included submissions to EPA and CTDEP of the following documents:

- Draft Memorandum of Agreement between EPA, CTDEP, the SRSNE Site Group and the Town of Southington/Southington Water Department, submitted for EPA review on September 16, 2009, and resubmitted based upon EPA comments on June 23, 2010.
- *Annual State of Compliance Report #1* submitted on December 4, 2009.
- *In-Situ Thermal Remedial (ISTR) Conceptual Design* submitted on April 15, 2010.
- *Pre-ISTR Preparation Plan (PIPP) Final Design and Remedial Action Work Plan* on April 15, 2010.
- *Independent Quality Assurance Team Plan* on April 15, 2010.

A public information web site was launched on August 28, 2009 (www.srsnesite.com). An open house was held at the Site on July 10, 2010, satisfying the SOW requirement for a pre-construction public meeting prior to the PIPP activities which began on September 13, 2010.

No noteworthy difficulties or delays have occurred during the remedial design process.

Capture and on-site treatment of contaminated groundwater. As discussed above, the NTCRA 1 and NTCRA 2 groundwater containment and treatment systems are now known as the Hydraulic Containment and Treatment System (HCTS). In the five-year period covered

by this review, the HCTS has operated in compliance with the Demonstration of Compliance requirements first in the 1994 and 1997 NTCRA settlements and subsequently, the 2009 Consent Decree. Since 1995, more than 196 million gallons of groundwater have been recovered and treated, with 16,000 pounds of VOCs removed. During the five-year period since the ROD was issued (September 2005 to August 2010), the HCTS has pumped and treated 70,495,000 gallons of contaminated groundwater and removed 3,487 pounds of VOCs.

No noteworthy problems have occurred during operation and maintenance (O&M) of the HCTS. Costs for work since the ROD was issued, including pre-remedial design, remedial design and HCTS O&M are provided in Table 3.

In-situ thermal treatment of Overburden NAPL Area. Site preparation which started on September 13, 2010, will include significant earthworks; installation of thermal infrastructure (new gas, sewer, power); re-routing of a major AT&T optics line; and removing and replacing the existing concrete culvert. The conceptual design for the in-situ thermal treatment system is under EPA and CTDEP review. Construction on the thermal component is scheduled to being in the summer of 2011, with operation start-up anticipated for early 2012.

Excavation, consolidation and capping soils. Contaminated soils that run along the railroad right-of-way will be excavated and used as fill during re-grading of the Operations Area this fall during the ISTR site preparations. The wetland soils and river sediments at the outfall of the existing culvert will also be excavated and consolidated in the Operations Area. The outlet will be reconfigured to enhance the functions and value of the habitat in that area. The remaining, isolated areas of contaminated soil on the Cianci Property will be excavated after the in-situ thermal treatment and placed in the Operations Area prior to capping which is scheduled for 2014.

Monitored natural attenuation and vapor intrusion. New monitoring wells were needed to further refine the delineation of the groundwater plumes in the overburden and bedrock aquifers for purposes of monitoring natural attenuation in 3-D and the vapor intrusion study. The wells were installed over fall/winter of 2009 and spring 2010. Data collected from new and existing monitoring wells across the entire 42-acre site is currently undergoing validation and will be submitted for EPA review later this year. Additional data may be needed for a multiple-lines-of-evidence analysis concerning vapor intrusion.

Implementation of institutional controls. Institutional controls are required by the ROD to prevent unacceptable exposure to groundwater, soil, subsurface NAPL, and possibly vapor intrusion in the future but have not yet been put in place. A process to identify and implement necessary controls was set forth in the SOW and the SRSNE Site Group is making satisfactory progress towards implementing controls. The next step in implementing controls is completion of the vapor intrusion investigation, which triggers submission of an Institutional Controls Plan.

SECTION 5.0
PROGRESS SINCE THE LAST FIVE-YEAR REVIEW

This section is not applicable because this is the first five-year review for the Site.

SECTION 6.0
FIVE-YEAR REVIEW PROCESS

6.1 Community Notification and Involvement

EPA, Region 1, published a notice in both the Meriden Record Journal (daily newspaper) and the Southington Citizen (weekly publication) on March 5, 2010, notifying the community of the start of the five-year review process. The notice indicated that EPA would be conducting a five-year review of the SRSNE Site to ensure that it is protective of public health and the environment and that the implemented components of the remedy are functioning as designed. It also indicated that once the five-year review is completed, the results will be made available in a final report. A similar notice will be published when the review is completed. A copy of the public notice announcing the start of the review process is included as Attachment 1.

In addition, the newspaper display ad encouraged local citizens to contact EPA if they had any questions about the SRSNE Site or if they wanted to be interviewed as part of the five-year review process. No citizens contacted EPA to be interviewed. Interviews were conducted by EPA with the Southington Town Manager and the Southington Director of Public Works/Town Engineer in April 2010 (see Section 6.5).

A Superfund Community Update was mailed to approximately 1500 Southington households in June 2010. The update included information about ongoing and upcoming activities at the Site and announced an open house for the public scheduled for July 10, 2010. The update included a paragraph explaining the five-year review process and soliciting community interviewees.

The Five-Year Review Report will be provided to the Town and a press release will be issued to announce its availability.

6.2 Document Review

Table 4 (attached) summarizes the documents, data, and information reviewed during the development of this first five-year review.

6.3 Data Review

Data reviewed include the HCTS monitoring data found in *Annual Demonstration of Compliance Reports #57, 58 and 59* (covering the time period January 2005 to December 2007) and the *Annual State of Compliance Report #1* (covering October 2008 to October 2009).

The performance standards developed for the NTCRA 1 and 2 containment systems now apply to the HCTS. With respect to the plume in the overburden, groundwater on both sides

of the NTCRA 1 sheetpile wall must flow in the direction of the twelve recovery wells. With respect to the plume in the bedrock, three NTCRA 2 recovery wells located in the vicinity of the CL&P easement must maintain a capture zone beyond which all groundwater must meet federal drinking water standards and other risk-based levels set forth in the ROD. Contaminated groundwater from all the recovery wells is treated on site with an UV/ox/oxidation process and must meet requirements of a NPDES permit equivalency issued by CTDEP before it is discharged to the Quinnipiac River. The HCTS monitoring data indicate continued compliance with discharge limits, reversal of groundwater gradient across the NTCRA 1 sheetpile wall, and consistent maintenance of the NTCRA 2 bedrock capture zone, with no excessive system downtime noted. Since HCTS startup in 1995, more than 196 million gallons of groundwater have been pumped and treated, removing 16,000 pounds of VOCs from the Site. During the five-year period since the ROD was issued (September 2005 to August 2010), the system has pumped and treated 70,495,000 gallons of contaminated groundwater and removed 3,487 pounds of VOCs from the Site.

The data collected for the vapor intrusion study (February, May and June 2010) and during the first comprehensive groundwater monitoring event to demonstrate that natural attenuation processes continue to reduce contaminant concentrations within the plumes, and, verify plume capture in 3-D (June and July 2010) is undergoing validation and will be included in deliverable to be submitted to EPA and CTDEP later this year. This data has not been evaluated for purposes of this five-year review. However, with respect to vapor intrusion, there are currently no structures without vapor controls above the area where groundwater presents possible vapor intrusion issues[1].

6.4 Site Inspection

A SRSNE Site was inspected for this five-year review on June 2, 2010. Those in attendance included Karen Lumino, Ryan Santos (CTDEP Project Manager), the SRSNE Site Group's Project Coordinator, Bruce Thompson of *de maximis, inc.*, John Hunt of *de maximis, inc.*, and Jeffrey Holden from ARCADIS (the SRSNE Site Group's remedial design consultant).

The site inspection checklist is included as Attachment 2.

6.5 Interviews

Two in-person interviews were conducted by EPA on April 27, 2010, with Mr. John Weichsel (Southington Town Manager) and Mr. Anthony Traquillo (Southington Town Engineer and Director of Public Works). Neither interviewee expressed any major concerns regarding the Site and the effectiveness of the remedy. In general, both were pleased with the level of communication from the EPA and SRSNE Site Group concerning activities at the Site. Reports of these interviews are included as Attachment 3.

The Town Manager stated that the Site appears to be in pretty good shape. He stated that the nearby residences have become less nervous about the presence of the Site and he feels

[1] The only structure in this area is the HCTS building which was constructed with a vapor barrier in the slab foundation as a precautionary measure.

that the Town is well informed about site events and work. The Town is pleased that the SRSNE Site Group has committed to complete that section of the rails-to-trails project that crosses the Site since the presence of that recreational corridor has been a very positive development for Southington.

The Town Engineer noted that there is some community concern about the potential for vapors to be released during the planned remediation. He also thought that there is some general frustration over the length of time that it has taken to decide on and then implement the cleanup. The Town Engineer views the work at the SRSNE Site to be very well done and professional.

Telephone interviews were conducted with two local residents following the open house. Two additional residents contacted EPA's Community Involvement Coordinator with comments.

The major concern expressed by all the citizens was that while the information about the Site is usually very helpful and useful in understanding site developments, it is not always timely. Specifically, although the open house was advertized in the local weekly paper by the SRSNE Site Group, EPA's postcard announcing the meeting was received either the day of or the day following the event, or as was the case with some citizens in the neighboring vicinity, not at all. That said, a dozen citizens did attend the open house including Albert Natelli, a councilman for the Town of Southington.

A second issue raised by two of the citizens is that there continues to be concern about the possible emission of vapors during next year's in-situ thermal remediation. The concern is primarily based on the history of releases when the facility was in operation, and it was recommended that EPA continue to explain how the community will be protected during the operation of the thermal treatment process. The citizen who did attend the open house said that she was satisfied that her concerns about potential emissions and noise had been well addressed by the SRSNE Site Group's project manager and remedial design consultant.

Two citizens recommended that EPA prepare another brief update prior to major activity at the Site in 2011 and provide a clear description of what they can expect to see, including pictures of what the structures might look like. There was general agreement that although the open house was not well attended by community members, there should be a similar event next year so that interested citizens can get a firsthand look at site activity.

None of the citizens had any concerns regarding the operation of the existing groundwater containment and treatment system. None were aware of any negative events or incidents at the Site such as trespassing or emergency responses from local authorities.

SECTION 7.0
TECHNICAL ASSESSMENT

7.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Ecological risk related to wetland soil, surface water and river sediment is in the process of being addressed with the excavation of approximately 1300 total cubic yards of wetland soil and river sediment at the culvert outlet to the Quinnipiac River and replacement of the existing leaky concrete culvert. This phase of construction began on September 13, 2010 and will be completed by December 2010.

Other components of the selected remedy are functioning as intended. The HCTS portion of the remedy is performing as expected, meeting hydraulic containment requirements and successfully treating extracted groundwater to meet NPDES-equivalent discharge limits set by CTDEP. The SRSNE Site Group continues to implement O&M of the HCTS, which will maintain the effectiveness of this component of the remedy.

Access controls in the form of fencing and paving are in place limiting current exposure to soil that presents an unacceptable human-health risk, while the remedial design/remedial action process to address those areas of the Site continues towards implementation. Groundwater that has been impacted by the Site is currently not used as drinking water or for any industrial uses. Finally, although the vapor intrusion investigation in not yet complete and additional data may be needed to conduct a multiple-lines-of-evidence analysis, there are currently no structures without vapor controls above the area where groundwater presents possible vapor intrusion issues. As a result, this possible exposure pathway is not complete nor is expected to be complete in the foreseeable future.

In addition to the vapor intrusion investigation, there are other components of the selected remedy that have not been fully implemented: in-situ thermal treatment of contaminants in the overburden aquifer; excavation, consolidation and capping of soil; and demonstration that monitored natural attenuation is ongoing. Vapor intrusion and monitored natural attenuation sampling has occurred and the results will be evaluated by EPA later this year. In-situ thermal treatment is still in design however, site preparation for next year's thermal installation has started and will be completed by December 2010. Isolated hotspots of contaminated soil on the Cianci Property that are not being addressed this year will be excavated and placed in the Operations Area for capping upon completion of the in-situ thermal treatment in 2014.

Institutional controls are required by the ROD to prevent unacceptable exposure to groundwater, soil, subsurface NAPL, and possibly vapor intrusion in the future but have not yet been put in place. A process to identify and implement necessary controls was set forth in the SOW and the SRSNE Site Group is making satisfactory progress towards

implementing controls. The next step in implementing controls is completion of the vapor intrusion investigation, which triggers submission of an Institutional Controls Plan.

7.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?

No. However, the changes are not expected to affect the selected remedy.

7.2.1 Review of Human Heath and Ecological Risk Assessments and Toxicity Factors Serving as the Basis for the Remedy

Land use on and near the Site has not changed. The physical site conditions have not changed. Human health and ecological routes of exposure have not changed, therefore none of these issues call into question the protectiveness of the remedy. However, there have been developments with respect to 1,4-dioxane, trichloroethylene (TCE), perchloroethylene (PCE), PAHs, vinyl chloride, chromium and dioxin that must be considered.

1,4-dioxane. EPA's Integrated Risk Information System (IRIS) has recently published an external peer review draft of a toxicological review of 1,4-dioxane. This review has found that 1,4-dioxane is 17 times more potent than previously believed. There is currently no federal standard for 1,4-dioxane. EPA's risk-based screening level for 1,4-dioxane in water is 6.1 µg/L based on target risk level of $1x10^{-6}$. However, this level might become 17 times lower or more stringent as a result of the IRIS toxicological review.

The UV/ox/oxidation process in the HCTS is sufficient to treat this contaminant, which has been detected in groundwater at the Site. However, studies have shown that the monitored natural attenuation approach to solvent contamination is unlikely to achieve degradation of 1,4-dioxane since it is very persistent in water. Data show that it is infinitely soluble in water and a volatilization half-life cannot be estimated. As a result, if after review of the first round of comprehensive groundwater monitoring data later this year, 1,4-dioxane is found outside of the HCTS containment area at concentrations that exceed EPA's risk-screening level, the monitored natural attenuation approach for that portion of the plume may need to be re-evaluated.

TCE , PCE, PAHs and vinyl chloride. The toxicity assessments for TCE and PCE are currently under external peer review. The assessments found these chemicals to be more toxic than previously characterized hence using this information to re-evaluate risk from these contaminants would result in higher risks than the results in the ROD. EPA has determined that the carcinogenic PAHs and vinyl chloride can cause cancer via the mutagenic mode of action and has developed specific toxicity values for vinyl chloride and guidance to address early-life exposure to carcinogens. Using this updated risk methodology would result in higher risks for vinyl chloride and carcinogenic PAHs.

A qualitative assessment has been conducted for this five-year review and concluded that these changes or potential changes would not affect the selected remedy and its

protectiveness. PAHs are not found in that portion of the groundwater plume that is outside the capture/treatment zone. For the qualitative assessment of the other three contaminants, the highest concentrations found in the wells which are outside the capture/treatment zone were used: TCE (0.2 µg/L), PCE (1.0 µg/L) and vinyl chloride (non-detect). The ingestion risk was doubled to account for inhalation, and ½ the detection limit was used for the non-detect. The total risk was $1x10^{-5}$ which is within EPA's acceptable risk range.

Chromium. EPA has concluded that the weight of evidence on chromium VI supports the conclusion that it may act through a mutagenic mode of action following exposure via drinking water, and, recommends that Age-Dependent Adjustment Factors (ADAFs) be applied when assessing cancer risks from early-life exposure (< 16 years of age) to reflect EPA's 2005 *Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens.* Application of ADAFs for all exposure pathways would result in more health-protective screening levels and higher risk results. For chromium VI, EPA suggests use of the oral cancer slope factor of 5×10^{-1} $(mg/kg\text{-}day)^{-1}$ developed by New Jersey Department of Environmental Protection. For chromium VI inhalation unit risk, IRIS shows a value of 1.2×10^{-2} $(\mu g/m^3)^{-1}$. Using the conservative assumption that all chromium existed is chromium VI, EPA suggests chromium VI inhalation unit risk of 8.4×10^{-2} $(\mu g/m^3)^{-1}$ by multiplying the IRIS value by 7, assuming a chromium VI to chromium III ratio of 1:6.

A qualitative assessment has been conducted for this five-year review and concluded that these changes or potential changes would not affect the selected remedy and its protectiveness. Chromium is not found in that portion of the groundwater plume that is outside the capture/treatment zone.

Dioxin. Dioxin has been identified as a contaminant of concern in soil at the Site. EPA's dioxin reassessment has been developed and undergone review over many years with the participation of scientific experts in EPA and other federal agencies, as well as scientific experts in the private sector and academia. EPA followed current cancer guidelines and incorporated the latest data and physiological/biochemical research into assessment. The results of the assessment have currently not been finalized and have not been adopted into state or federal standards. EPA anticipates that a final revision to the dioxin toxicity numbers may be released by the end of 2010. In addition, EPA has proposed to revise the interim preliminary remediation goals (PRGs) for dioxin and dioxin-like compounds, based on technical assessment of scientific and environmental data. However, EPA has not made any final decisions on interim PRGs at this time. Therefore, the dioxin toxicity re-assessment for this Site will be updated during the next five-year review.

7.2.2 ARARs Review

No changes have been made to the standards identified in the ROD. No new standards have been promulgated. No changes have been made to the "To Be Considered" standards used in selecting cleanup levels that could affect the protectiveness of the remedy. CTDEP has published a lower detection limit for 1,2,4-trichlorobenzene of 0.5 ug/L, compared to the prior

value of 2 ug/L. To satisfy CTDEP regulations, the SRSNE Site Group will treat this as the new cleanup level for that contaminant (see Table 5).

7.2.3 Remedial Action Objectives

The RAOs incorporated into the ROD are still appropriate, and the remedy is progressing as expected. Protection of human health is currently being achieved with fencing, pavement and the fact that that no one is drinking the groundwater. The HCTS which contains and treats all groundwater that exceeds federal drinking water standards and other risk-based levels coupled with the contingent remedy for additional containment will prevent the consumption of contaminated groundwater should the Southington Water Department at some point in the future make the decision to re-activate existing and/or drill new municipal production wells in the Town Well Field. The components that will address the remaining RAOs are currently in remedial design.

The RAOs for prevention of ecological risks associated with SRSNE-related contaminants are expected to be met once wetland soils and river sediments at the outfall of the concrete culvert are excavated and consolidated in the Operations Area during the earthworks that are underway, and the areas are restored. This phase of the remedy began on September 13, 2010, and will be completed by December 2010.

7.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No. There is no other information that calls into question the protectiveness of the remedy.

On August 6, 2010, CTDEP notified EPA that two state species of special concern, Eastern Box Turtle and Eastern Hognose Snake, occur in the vicinity of the SRSNE Site. Neither species has been observed directly on site, however, suitable habitat does exist and will be enhanced by the remedy. During construction, precautions such as the creation of and regular inspection for trapped animals inside silt-fence exclusion zones will be taken to reduce the risk of harming these state-listed species.

7.4 Technical Assessment Summary

Based upon the results of the five-year review, the remedy selected for the Site is expected to be protective of human health and the environment upon completion of the remedy, and in the interim, exposure pathways that could result in unacceptable risks to human health are being controlled.

SECTION 8.0
ISSUES

Based on the activities conducted during this five-year review, the issues identified in the following table have been noted.

Issue	Affects Current Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
Major components of the remedy need to be implemented: in-situ thermal treatment of contaminants in the overburden aquifer; excavation, consolidation and capping of soil; vapor intrusion investigation and potential remediation; and institutional controls.	No	Yes
If 1,4-dioxane is found above EPA's risk-screening level in groundwater that is not being contained, the monitored natural attenuation approach for addressing this contaminant in that portion of the plume may need to be re-evaluated.	No	Yes

SECTION 9.0
RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness	
					Current	Future
Many key elements of the remedy are still in design.	Implement in-situ thermal treatment	SRSNE Site Group	EPA	2011	No	Yes
	Excavate, consolidate and cap soil.	SRSNE Site Group	EPA	2014		
	Complete vapor intrusion study and determine need for mitigation controls.	SRSNE Site Group	EPA	December 2010		
	Implement institutional controls.	SRSNE Site Group	EPA	2011		
Monitored natural attenuation for 1,4-dioxane may need to be re-evaluated if found in that portion of the plume that is not hydraulically contained.	Review groundwater monitoring data to determine if 1,4-dioxane is a) present and b) above EPA's risk-screening level.	SRSNE Site Group	EPA	December 2010	No	Yes

SECTION 10.0
PROTECTIVENESS STATEMENT

Based upon a review of the ROD, remedial design documents, data collected during sampling events, operation and maintenance reports and an inspection of the Site, the remedy at the SRSNE Site is expected to be protective of human health and the environment upon completion of the remedy, and in the interim, exposure pathways that could result in unacceptable risks are being controlled.

Access controls in the form of fencing and pavement are in place, and currently limit exposure to soil that presents an unacceptable human-health risk. In addition, groundwater beneath and downgradient of the Site is not currently used as drinking water. Finally, although the vapor intrusion investigation is not yet complete, there are currently no structures without vapor barriers above the area where groundwater presents possible vapor intrusion issues. As a result, this possible exposure pathway is not complete.

Excavation of approximately 1300 total cubic yards of wetland soils and river sediment at the culvert outfall that pose an ecological risk, and, consolidation in the Operations Area where the contaminated material will be covered with clean fill is underway and will be completed by December 2010.

However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure long-term protectiveness: major components of the remedy need to be implemented including in-situ thermal treatment of contaminants in the overburden aquifer; excavation, consolidation and capping of soil; vapor intrusion investigation and potential remediation; and institutional controls. In addition, if 1,4-dioxane is found in that portion of the plume that is not hydraulically contained in concentrations that exceed EPA's risk-screening level, the monitored natural attenuation approach for addressing this contaminant in that portion of the plume may have to be re-evaluated.

SECTION 11.0
NEXT REVIEW

Since hazardous substances, pollutants or contaminants remain at the SRSNE Superfund Site which do not allow for unlimited use or unrestricted exposure, in accordance with 40 CFR 300.430 (f) (4) (ii), the site shall be reviewed no less often than every five years. EPA will conduct another five-year review on or before September 2015.

Table 1
Chronology of Site Events

Event	Date
Solvents Recovery Service of New England (SRSNE) facility begins operations	1955
Use of on-site lagoons for sludge disposal terminates	1967
EPA files suit against SRSNE under RCRA	1979
Town Production Wells No. 4 & No. 6 close when they are found to contain VOCs	1979-1980
Investigations by EPA of Town Well Field property initiated	1980
EPA lawsuit under RCRA amended to include claims under CERCLA	1982
EPA lists SRSNE Site on Superfund National Priorities List	1983
On-site interceptor system (OIS) installed along with 25 groundwater extraction wells to capture contaminated groundwater	1985
SRSNE paves site and installs control measures in accordance with a RCRA Corrective Measures Plan	1986-1990
EPA initiates the remedial investigation for the Site	1990
CTDPH initiates a public health assessment for the SRSNE Site under cooperative agreement with ATSDR	1990-1997
SRSNE facility closes	1991
CTDEP takes over operation of OIS, upgrades treatment to use UV/oxidation	1991-1995
EPA conducts an emergency removal of contaminated soils from the drainage ditch and chemicals stored at the property	1992
SRSNE Site Group enters into a settlement with EPA to construct overburden aquifer containment and treatment system (NTCRA 1)	1994
NTCRA 1 construction completed and operations began; OIS terminated	1995
SRSNE Site Group constructs a mitigation wetland on the Cianci Property to compensate for the potential impact from constructing/operating the NTCRA 1 system	1996
SRSNE Site Group enters into second settlement with EPA to construct bedrock aquifer containment, complete remedial investigation and prepare feasibility study	1997
SRSNE Site Group submits Remedial Investigation Report; implements phytoremediation study in NTCRA 1 containment area	1998
NTCRA 2 begins operating	1999
SRSNE Site Group decontaminates, demolishes and removes all remaining site structures, tanks, and distillation towers	1999
SRSNE Site Group conducts a field investigation to delineate the extent of NAPL in overburden	2003
SRSNE Site Group completes Feasibility Study Report	2005
EPA issues the Record of Decision which sets forth the remedy for the Site and will form the basis for all remedial design/remedial action (RD/RA) activities	2005
EPA/DOJ lodges RD/RA Consent Decree with the U.S. District Court in Connecticut	2008
Consent Decree entered by the U.S District Court	2009
SRSNE Site Group submits remedial design work plan (RDWP) and Project Operations Plan; begins remedial design activities	2009
Overburden NAPL area delineation refined (RDWP Attachment A)	2009
Pre-construction wetland delineation performed (RDWP Attachment H)	2009

Soil sampling performed along railroad right-of-way to delineate capping limits (RDWP Attachment M)	2009
Operation and maintenance performed on ~160 monitoring wells across the Site (RDWP Attachment N)	2009
Groundwater sampling for vapor intrusion study performed (RDWP Attachment K)	2010
A drilling event including the installation of 29 new monitoring wells, the abandonment of 43 existing monitoring wells and a site-wide well rehabilitation program is completed (RDWP Attachment N)	2010
Initial comprehensive groundwater sampling event completed; consists of sampling of 110 monitoring wells and taking water-level measurements of ~160 wells (RDWP Attachment N)	2010
Sampling of wetland soil and river sediment removal areas on the Cianci Property to define limits for excavation (RDWP Attachment I)	2010

Table 2
Summary of Human-Health Risks (RA Update 1999)

The baseline risk assessment (1994) was updated in 1999 to incorporate new soil and groundwater data and new EPA guidance on performing risk assessments. A summary of the potential risks from direct contact and/or inhalation of particles under residential, recreational and commercial/industrial exposure scenarios is presented below.

Location / Receptor	Surface Soils		Subsurface Soils	
	Total Excess Lifetime Cancer Risk	Total Noncancer Hazard Index	Total Excess Lifetime Cancer Risk	Total Noncancer Hazard Index
North Cianci				
Adult Resident	3×10^{-6}	0.01	-	-
Child Resident	7×10^{-6}	0.1	-	-
Total Residential Risk (30 year)	1×10^{-5}	0.1		
Recreational/Trespasser	3×10^{-7}	0.002	-	-
Worker	2×10^{-6}	0.009	-	-
South Cianci				
Adult Resident	5×10^{-6}	0.08	-	-
Child Resident	1×10^{-5}	0.8	-	-
Total Residential Risk (30 year)	2×10^{-5}	0.9		
Recreational/Trespasser	5×10^{-7}	0.02	-	-
Worker	4×10^{-6}	0.06	-	-
Operations Area/Railroad Property				
Adult Resident	-	-	5×10^{-4}	2.0
Child Resident	-	-	1×10^{-3}	20
Total Residential Risk (30 year)	-	-	2×10^{-3}	20
Worker	-	-	3×10^{-4}	2.0

A summary of the potential risks from hypothetical future ingestion of groundwater is presented below.

Location	Bedrock Groundwater		Overburden Groundwater	
	Total Excess Lifetime Cancer Risk	Total Noncancer Hazard Index	Total Excess Lifetime Cancer Risk	Total Noncancer Hazard Index
Operations Area Plume	2×10^{0}	1000	1×10^{0}	1000
Queen Street Plume	7×10^{-5}	0.08	NO COPC	NO COPC
Up gradient Area	1×10^{-4}	20	6×10^{-4}	10

Table 3

Post-ROD, Pre-RD/RA Costs

Task Name	Amount Expended from ROD through Consent Decree Lodging (October 30, 2008)
NTCRA O&M Costs	
Final Quarter 2005	$117,844
2006	$454,703
2007	$648,988
2008	$403,750
RD/RA Negotiation Support (Contractor)	
2006	$114,106
2007	$66,223
Project Management / RD/RA Negotiation Support	
Final Quarter 2005	$ 53,192
2006	$218,527
2007	$119,249
2008	$108,523
Total from ROD through Consent Decree Lodging	**$2,305,105**

RD/RA Costs to Date

Task Name	Amount Expended from Consent Decree Lodging through June 2010
Settlement Costs	
EPA Past Costs	$2,234,000
Future Oversight Costs Subaccount Funding	$5,700,000
Groundwater Natural Resource Damage Costs	$2,625,000
SWD Settlement Cost	$500,000
Sediment Natural Resource Damage Costs	$200,000
NTCRA 1&2 Interim O&M Costs	$857,876
2001 - 2008 Trustee Costs	$187,070
Administrative Costs	
Legal Support	$130,960
Trustee	$81,678
TC Advisor	$12,559

Financial Advisor	$8,292
Taxes Paid (Federal and State)	$32,364
Future Response Costs	$176,705
Subtotal- Settlement + Admin	**$12,746,604**
Technical Costs	
Project Management	$703,487
Soils Remedy (Ops Area Cap + Drainage Pathways)	
Remedial Design (including Pre-Design Studies)	$396,155
In-Situ Thermal Remedy	
Remedial Design (including Pre-Design Studies)	$446,326
Remedial Action	$138,889
Groundwater Remedy	
Remedial Design (including Pre-Design Studies)	$1,027,370
Access Agreements	$6,500
Groundwater Monitoring	$126,332
Subtotal - Technical	**$2,791,634**
Total - Settlement + Admin + Technical	**$15,538,237**

Table 4

Documents, Data and Information Reviewed for the Five-Year Review

Inspection Report: Solvents Recovery Service of New England (SRSNE), EPA	February 1989
Public Health Assessment, Agency for Toxic Substances and Disease Registry	July 1992
Final Remedial Investigation Report: Remedial Investigation/Feasibility Study, SRSNE Site, Southington, Connecticut, Halliburton NUS (HNUS)	May 1994
Remedial Investigation Report, Blasland, Bouck & Lee (BBL)	June 1998
Preliminary Reuse Assessment, EPA	September 2003
Feasibility Study Report, BBL and EPA	May 2005
Interim Monitoring and Sampling Report No. 14, BBL	June 27, 2005
Record of Decision, EPA Region 1	September 30, 2005
Non-Time Critical Removal (NTCRA) Action No.1 and 2 – Annual Demonstration of Compliance Report #57 (January – December 2005), Weston Solutions, Inc.	February 28, 2006
NTCRA No.1 and 2 – Annual Demonstration of Compliance Report #58 (January – December 2006), Weston Solutions, Inc.	March 16, 2007
NTCRA No.1 and 2 – Annual Demonstration of Compliance Report #59 (January – December 2007), Weston Solutions, Inc.	November 5, 2008
Remedial Design/Remedial Action (RD/RA) Monthly Progress Reports #1-20, *de maximis, inc.*	November 2008-June 2010
RD/RA Consent Decree, United States District Court for the District of Connecticut in connection with Civil Actions No. 3:08cv1509 (SRU) and No. 3:08cv1504 (WWE).	Entered March 26, 2009
RD Work Plan and Project Operations Plan, ARCADIS	April 21, 2009
Draft Memorandum of Agreement between EPA, CTDEP, SRSNE Site Group and Town of Southington/Southington Water Department	September 16, 2009
Annual State of Compliance Report #1 (October 2008 – October 2009), *de maximis, inc.*	April 15, 2010
In-Situ Thermal Remediation (ISTR) Conceptual Design, TerraTherm, Inc.	April 15, 2010
Pre-ISTR Preparation Plan Final RD/RA Work Plan, ARCADIS	April 15, 2010
Independent Quality Assurance Team Plan, *de maximis, inc.*	April 15, 2010
EPA guidance for conducting five-year reviews and other guidance and regulations to determine if any new Applicable or Relevant and Appropriate Requirements relating to the protectiveness of the remedy have been developed since EPA issued the ROD.	

TABLE 5

INTERIM CLEANUP LEVELS FOR GROUNDWATER [1]

Chemical Name	Units	Interim Cleanup Level [1]	Basis of Interim Cleanup Level
1,1,1-Trichloroethane	ug/l	0.5	CT RSR
1,1,1,2-Tetrachloroethane	ug/l	0.5	CT RSR
1.1.2-Trichloroethane	ug/l	0.5	CT RSR
1,1-Dichloroethane	ug/l	0.5	CT RSR
1,1-Dichloroethene	ug/l	0.5	CT RSR
1,2-Dibromo-3-chloropropane	ug/l	0.05	CT RSR
1,2-Dichlorobenzene	ug/l	0.5	CT RSR
1,2-Dichloroethane	ug/l	0.5	CT RSR
1,4-Dichlorobenzene	ug/l	0.5	CT RSR
2-Butanone	ug/l	5	CT RSR
2-Hexanone	ug/l	5	CT RSR
4-Methyl-2-pentanone	ug/l	5	CT RSR
Acetone	ug/l	5	CT RSR
Benzene	ug/l	0.5	CT RSR
Bromomethane	ug/l	0.5	CT RSR
Carbon Disulfide	ug/l	0.5	CT RSR
Carbon tetrachloride	ug/l	0.5	CT RSR
Chlorobenzene	ug/l	0.5	CT RSR
Chloroethane	ug/l	0.5	CT RSR
Chloroform	ug/l	0.5	CT RSR
Chloromethane	ug/l	0.5	CT RSR
cis-1,2-Dichloroethene	ug/l	0.5	CT RSR
Ethylbenzene	ug/l	0.5	CT RSR
Methylene chloride	ug/l	0.5	CT RSR
Styrene	ug/l	0.5	CT RSR
Tetrachloroethene	ug/l	0.5	CT RSR
Tetrahydrofuran	ug/l	0.5	CT RSR
Toluene	ug/l	0.5	CT RSR
trans-1,2-Dichloroethene	ug/l	0.5	CT RSR
trans-1,3-Dichloropropene	ug/l	0.5	CT RSR
Trichloroethene	ug/l	0.5	CT RSR
Vinyl chloride	ug/l	0.5	CT RSR
Xylenes	ug/l	0.5	CT RSR
1,2,4-Trichlorobenzene	ug/l	0.5 * ~~2~~	CT RSR
2,4-Dimethylphenol	ug/l	10	CT RSR
2-Methylphenol	ug/l	10	CT RSR
4-Methylphenol	ug/l	10	CT RSR
Benzoic Acid	ug/l	10	CT RSR
bis(2-Ethylhexyl)phthalate	ug/l	10	CT RSR
Di-n-butyl phthalate	ug/l	10	CT RSR
Di-n-octyl phthalate	ug/l	10	CT RSR
Hexachlorobutadiene	ug/l	0.45 [2]	CT RSR
Isophorone	ug/l	10	CT RSR
Napthalene	ug/l	0.5 [3]	CT RSR
Phenol	ug/l	10	CT RSR
Aroclor-1254	ug/l	0.5	CT RSR
Aroclor-1260	ug/l	0.5	CT RSR

TABLE 5

INTERIM CLEANUP LEVELS FOR GROUNDWATER [1]

Chemical Name	Units	Interim Cleanup Level [1]	Basis of Interim Cleanup Level
Aluminum	ug/l	(1)	CT RSR
Antimony	ug/l	(1)	CT RSR
Arsenic	ug/l	(1)	CT RSR
Barium	ug/l	(1)	CT RSR
Beryllium	ug/l	(1)	CT RSR
Cadmium	ug/l	(1)	CT RSR
Chromium (Total)	ug/l	(1)	CT RSR
Cobalt	ug/l	(1)	CT RSR
Copper	ug/l	(1)	CT RSR
Iron	ug/l	(1)	CT RSR
Lead	ug/l	(1)	CT RSR
Manganese	ug/l	(1)	CT RSR
Nickel	ug/l	(1)	CT RSR
Silver	ug/l	(1)	CT RSR
Thallium	ug/l	(1)	CT RSR
Vanadium	ug/l	(1)	CT RSR
Zinc	ug/l	(1)	CT RSR
4,4'-DDD	ug/l	0.1	CT RSR
Aldrin	ug/l	0.05	CT RSR
Ethanol	ug/l	1000	CT RSR
Isopropanol	ug/l	1000	CT RSR
Methanol	ug/l	1000	CT RSR
Sec-Butanol	ug/l	1000	CT RSR

Notes:

1. CT Remediation Standards Regulation requires that "Remediation of groundwater in a GA area shall result in reduction of each substance therein to a concentration equal to or less than the background concentration for groundwater of such substance...." (RCSA 22a-133k-3(a)(2). Where background concentrations are reported as non-detects, the analytical detection level as defined in the CT RSRs shall be the remedial goal. Background levels for metals will be established based on future field sampling and laboratory analyses.

2. A special request to the laboratory is needed to provide an analytical detection limit of 0.45 ug/l for hexachlorobutadiene.

3. The analytical detection limit for napthalene is 0.5 ug/l via EPA Test Method 8260.

* Detection limit for 1,2,4-trichlorobenzene modified to reflect the value specified in CTDEP's Reasonable Confidence Protocol for Method 8260 (Version 3.0, July 2006)

TABLE 6 SOIL AND WETLAND SOIL CLEANUP LEVELS FOR THE PROTECTION OF HUMAN HEALTH AND THE AQUIFER[1]

Chemical Name	Connecticut Residential Direct Exposure Criteria (mg/kg)	Connecticut GA, GAA Pollutant Mobility Criteria (mg/kg) [2]	Soil Cleanup Level (mg/kg) [1]	Basis of Cleanup Level	Carcinogenic Risk [3]	Non-Carcinogenic Hazard Quotient [3]	Non-cancer Target Endpoint
1,1,1-Trichlorethane	500	4	4	CT RSR	-	NA	-
1,1,2,2-Tetrachloroethane	3.1	0.01	0.01	CT RSR	2.E-08	1.E-05	liver
1.1.2-Trichloroethane	11	0.1	0.1	CT RSR	1.E-07	3.E-03	blood
1,1-Dichloroethane	500	1.4	1.4	CT RSR	-	3.E-03	kidney
1,1-Dichloroethene	1	0.14	0.14	CT RSR	-	1.E-03	liver
1,2-Dichloroethene, Total	500	1.4	1.4	CT RSR	-	3.E-02	blood
1,2-Dichloropropane	9	0.1	0.1	CT RSR	3.E-07	NA	-
2-Butanone	500	8	8	CT RSR	-	4.E-03	fetal weight
4-Methyl-2-pentanone	500	7	7	CT RSR	-	1.E-03	liver/ kidney
Acetone	500	14	14	CT RSR	-	1.E-03	kidney
Benzene	21	0.02	0.02	CT RSR	3.E-08	1.E-03	blood
Carbon tetrachloride	4.7	0.1	0.1	CT RSR	4.E-07	5.E-02	liver
Chlorobenzene	500	2	2	CT RSR	-	1.E-02	liver
Chlorodibromomethane	7.3	0.01	0.01	CT RSR	9.E-09	3.E-04	liver
Chloroform	100	0.12	0.12	CT RSR	6.E-07	2.E-03	liver
Ethylbenzene	500	10.1	10.1	CT RSR	-	5.E-03	liver
Methylene chloride	82	0.1	0.1	CT RSR	1.E-08	5.E-05	liver
Styrene	500	2	2	CT RSR	-	5.E-04	blood/ immune
Tetrachloroethene	12	0.1	0.1	CT RSR	2.E-07	3.E-03	liver
Toluene	500	20	20	CT RSR	-	3.E-02	liver/kidney
Trichloroethene	56	0.1	0.1	CT RSR	2.E-06	6.E-03	liver/ kidney/ developmental
Vinyl chloride	0.32	0.04	0.04	CT RSR	5.E-07	1.E-03	liver
Xylenes, Total	500	19.5	19.5	CT RSR	-	7.E-02	body weight
2-Methylnapthalene	474	0.98	0.98	CT RSR	NA	NA	-
4-Chloroaniline	270	1	1	CT RSR	-	4.E-03	spleen
4-Methylphenol	340	0.7	0.7	CT RSR	-	2.E-03	nervous system
Benzo(a)anthracene	1	1	1	CT RSR	2.E-06	-	-
Benzo(a)pyrene	1	1	1	CT RSR	2.E-05	-	-
Benzo(b)fluoranthene	1	1	1	CT RSR	2.E-06	-	-
Benzo(k)fluoranthene	8.4	1	1	CT RSR	2.E-07	-	-
bis(2-Ethylhexyl)phthalate	44	1	1	CT RSR	3.E-08	1.E-03	liver
Chrysene	84	1	1	CT RSR	2.E-08	-	-
Dibenzofuran	270	1	1	CT RSR	-	7.E-03	kidney
Di-n-butyl phthalate	1000	14	14	CT RSR	-	2.E-03	mortality
Di-n-octyl phthalate	1000	2	2	CT RSR	-	8.E-04	liver/thyroid

TABLE 6 SOIL AND WETLAND SOIL CLEANUP LEVELS FOR THE PROTECTION OF HUMAN HEALTH AND THE AQUIFER[1]

Chemical Name	Connecticut Residential Direct Exposure Criteria (mg/kg)	Connecticut GA, GAA Pollutant Mobility Criteria (mg/kg) [2]	Soil Cleanup Level (mg/kg) [1]	Basis of Cleanup Level	Carcinogenic Risk [3]	Non-Carcinogenic Hazard Quotient [3]	Non-cancer Target Endpoint
Fluoranthene	1000	5.6	5.6	CT RSR	-	2.E-03	liver
Indeno(1,2,3-cd)pyrene	1	1	1	CT RSR	2.E-06	-	-
Phenanthrene	1000	4	4	CT RSR	NA	NA	-
Pyrene	1000	4	4	CT RSR	-	2.E-03	kidney
2,3,7,8 TCDD -TEQ	NA [4]	NA [4]	lower of 0.001 mg/kg or background [4]	EPA Policy [4]/ background	To be determined	-	-
PCBs Total	1	0.0005 mg/l [2]	1 mg/kg and 0.0005 mg/l [2]	CT RSR	5.E-06	9.E-01	immune
Antimony	27	0.006 mg/l [2]	27 mg/kg and 0.006 mg/l [2]	CT RSR	-	9.E-01	mortality/ blood
Arsenic	10	0.05 mg/l [2]	10 mg/kg and 0.05 mg/l [2]	CT RSR	3.E-05	5.E-01	skin
Barium	4700	1 mg/l [2]	4700 mg/kg and 1 mg/l [2]	CT RSR	-	9.E-01	kidney
Beryllium	2	0.004 mg/l [2]	2 mg/kg and 0.004 mg/l [2]	CT RSR	1.E-09	1.E-02	small intestine
Cadmium	34	0.005 mg/l [2]	34 mg/kg and 0.005 mg/l [2]	CT RSR	2.E-08	9.E-01	kidney
Chromium^{+3}	3900	0.05 mg/l [2,5]	3900 mg/kg and 0.05 mg/l [2,5]	CT RSR	-	3.E-02	none
Chromium^{+6}	100	0.05 mg/l [2,5]	100 mg/kg and 0.05 mg/l [2,5]	CT RSR	3.E-06	5.E-01	none
Lead	500	0.015 mg/l [2]	400 mg/kg [6] and 0.015 mg/l [2]	EPA Policy [6]/ CT RSR	NA	NA [6]	nervous system

Total Cancer Risk[7] =	7.E-05

Cumulative HI by Target Endpoint

kidney	2.E+00
immune	9.E-01
mortality	9.E-01
skin	5.E-01
other endpoints	HI below 1

TABLE 6

SOIL AND WETLAND SOIL CLEANUP LEVELS F THE PROTECTION OF HUMAN HEALTH AND THE AQUIFER[1]

Notes:

NA = Not Available or Not Applicable

1. Soil Cleanup levels are the more stringent of the Connecticut Residential Direct Exposure Criteria (RDEC) or Pollutant Mobility Criteria (PMC) for those depths of soil where both RDEC and PMC apply, and where both RDEC and PMC are expressed in mass concentrations (e.g. mg/kg). Cleanup levels for those substances where PMC are leachate concentrations (see footnote 3), both RDEC and PMC apply except for lead where the cleanup level is based on EPA policy (see footnote 7) and the CT PMC for lead. Cleanup levels may revert to background concentrations if adequate documentation is provided.

2. For inorganics and PCBs, the Pollutant Mobility Criteria are based on leachate concentrations (expressed in mg/l) as obtained via either the SPLP or TCLP leaching procedures.

3. Cancer risk and non-cancer hazard are based on residential exposure and assume exposure parameters consistent with EPA Region 9 Preliminary Remediation Goals which reflect ingestion, dermal contact, and inhalation of the soil medium. Values for PCBs and inorganics reflect risk or hazard for cleanup levels expressed as a soil concentration (mg/kg).

4. There are no CT residential DEC or PMC for 2,3,7,8 TCDD-TEQ (Dioxin) in the CT RSRs. EPA and CT DEP have agreed that the cleanup level for 2,3,7,8-TCDD TEQ will be the lower of the EPA policy for residential sites (0.001 mg/kg per OSWER Directive # 9200.4-26 April 1998) and the background concentration which will be determined based on future field study, or another concentration consistent with CT RSRs, but not lower than background.

5. The PMC based cleanup levels for chromium (both trivalent and hexavalent) are based on a total chromium concentration.

6. The value of 400 mg/kg lead protects 95% of the exposed population from blood lead levels in excess of 10 ug/dl consistent with EPA's policy for lead (OSWER Directive #9355.4-12 July 14, 1994).

7. The total cancer risk does not include the risk attributed to 2,3,7,8 TCDD-TEQs as the cleanup level will be determined during remedial design.

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'

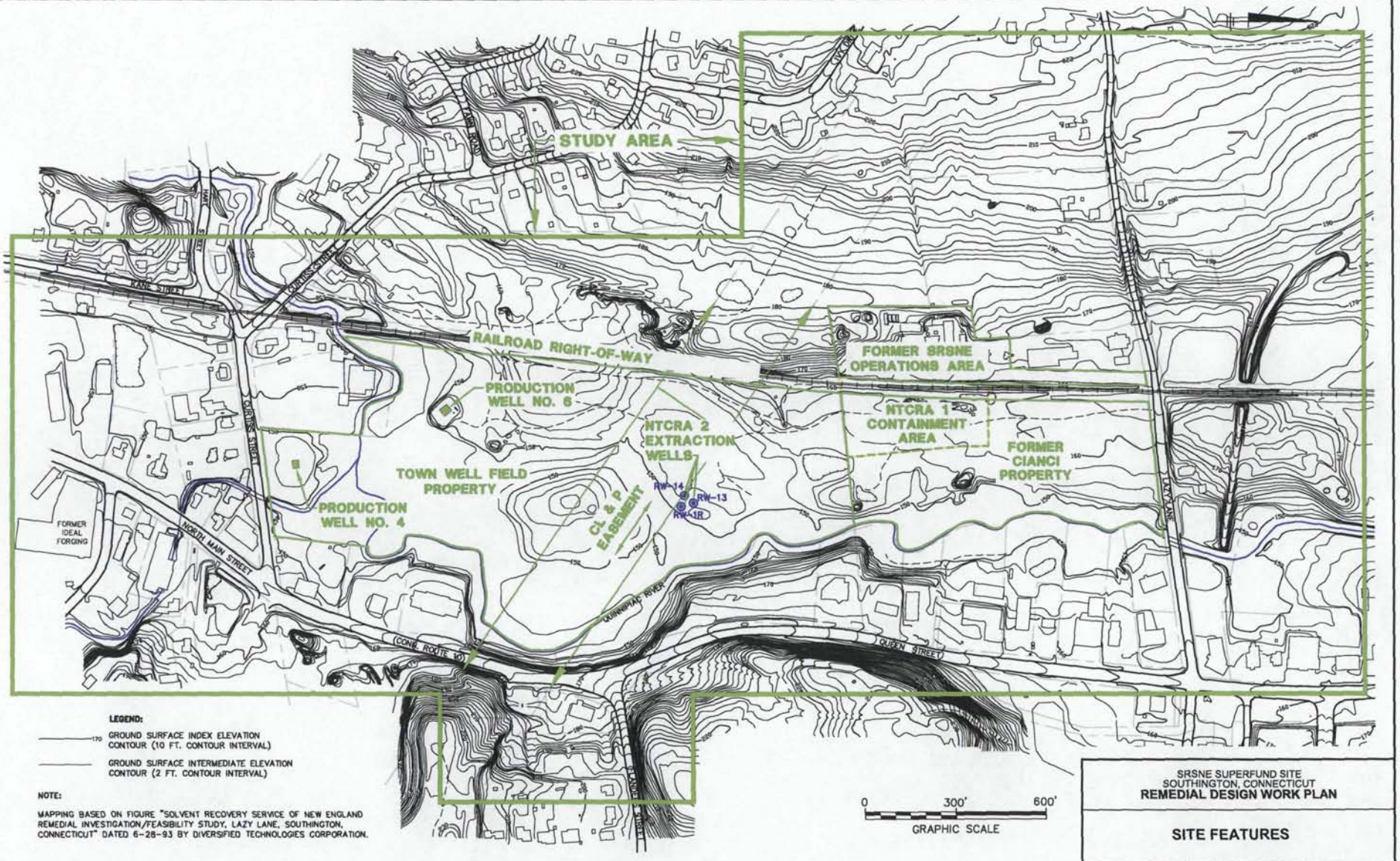
QUADRANGLE LOCATION

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
REMEDIAL DESIGN WORK PLAN

SITE LOCATION MAP

ARCADIS

FIGURE
1



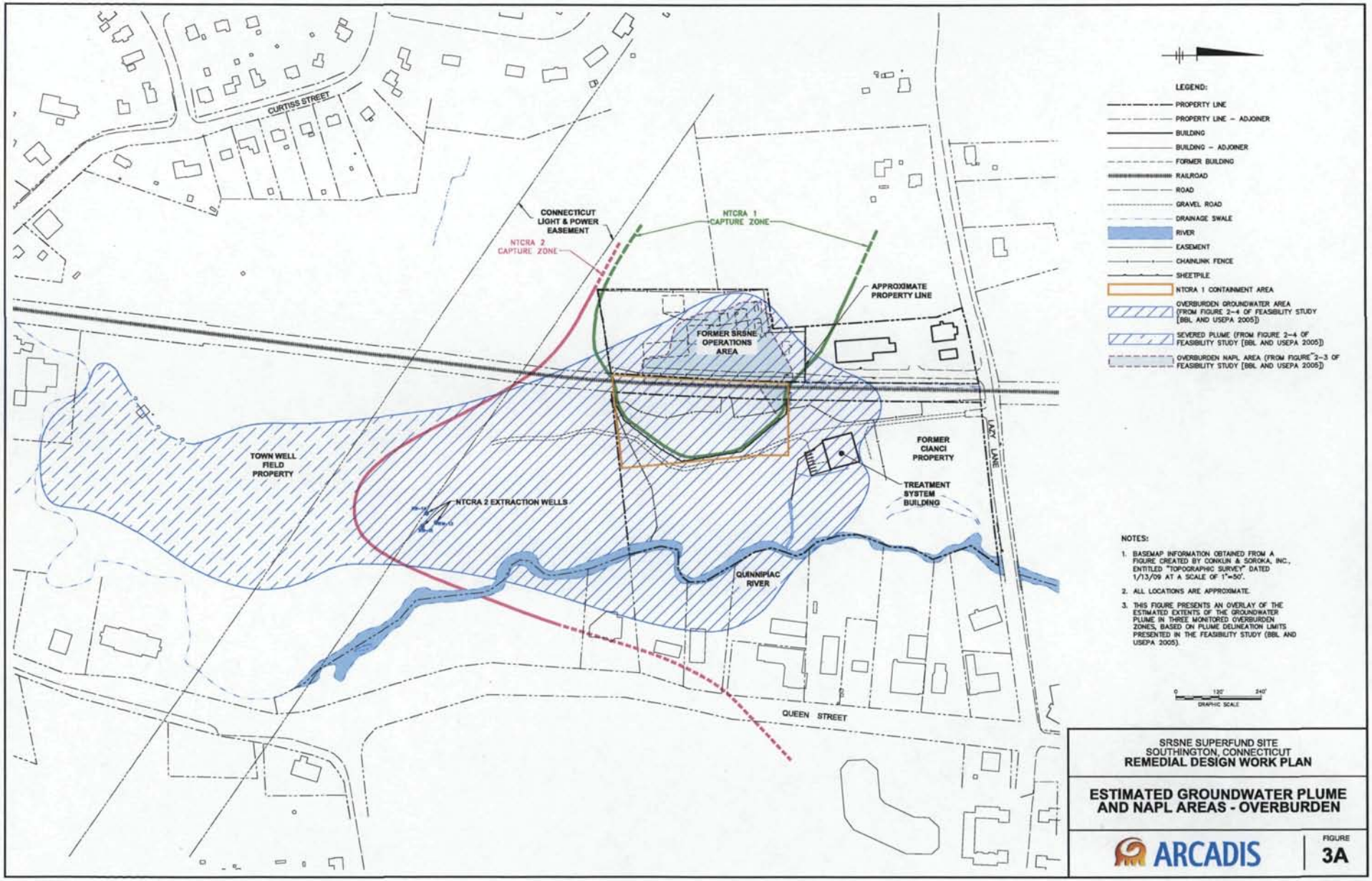
SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
REMEDIAL DESIGN WORK PLAN

SITE FEATURES

ARCADIS

FIGURE
2

XREFS:
IMAGES:
PROJECTNAME:
54634001

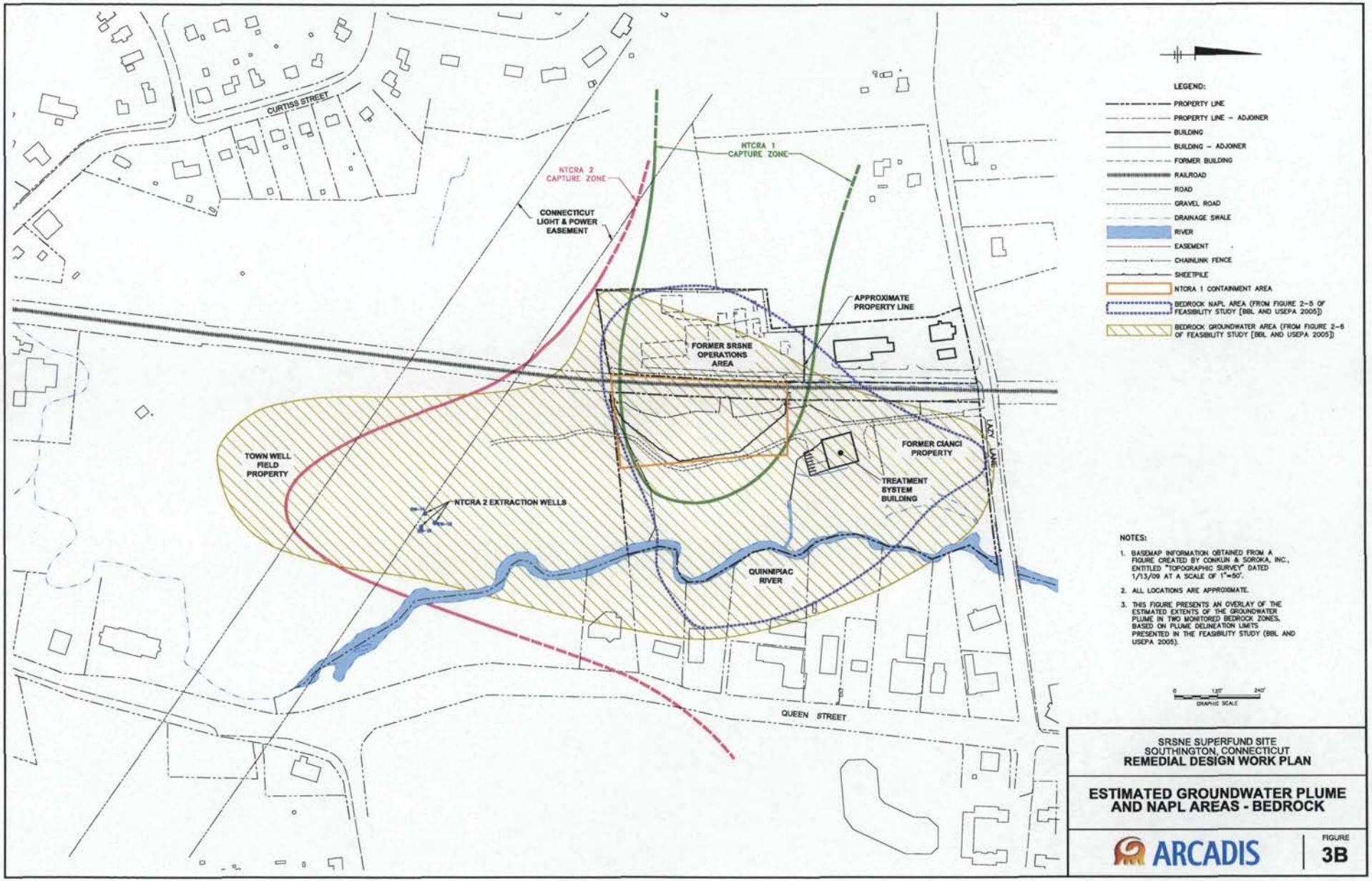


SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
REMEDIAL DESIGN WORK PLAN

ESTIMATED GROUNDWATER PLUME AND NAPL AREAS - OVERBURDEN

ARCADIS

FIGURE
3A

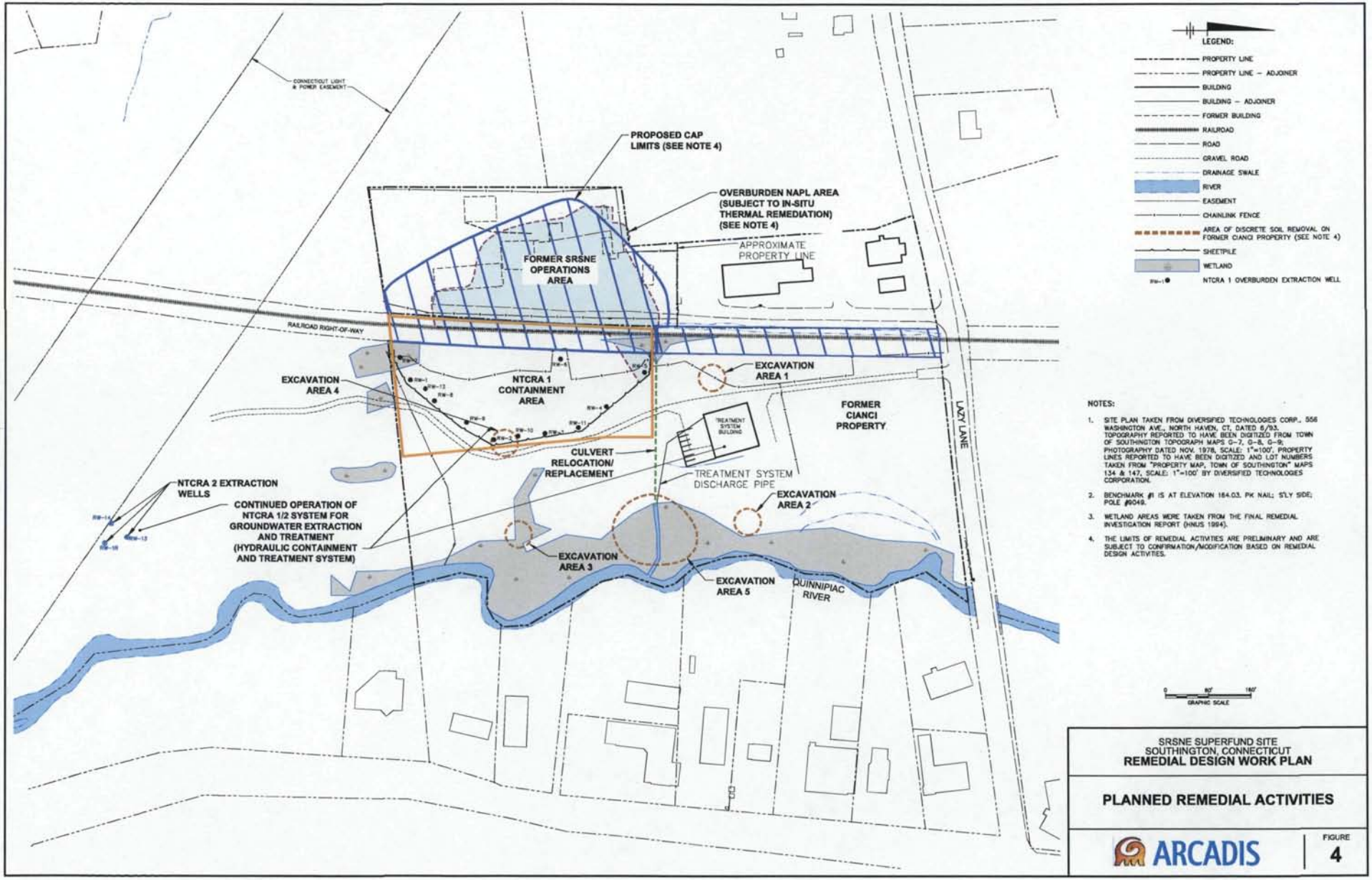


SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
REMEDIAL DESIGN WORK PLAN

ESTIMATED GROUNDWATER PLUME AND NAPL AREAS - BEDROCK

ARCADIS

FIGURE
3B



SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
REMEDIAL DESIGN WORK PLAN

PLANNED REMEDIAL ACTIVITIES

ARCADIS

FIGURE
4

Soldier returns from Iraq

Army National Guard Chief Warrant Officer 2 Christopher R. Mattson is returning to the U.S. after a deployment to Iraqi in support of Operations Iraqi Freedom.

The soldier returns to Fort Dix, N.J. for debriefing, evaluations and out-processing procedures before returning to his regularly assigned Army National Guard unit.

The chief warrant officer served in support of Operation Iraqi Freedom in the Iraq Theater of Operations.

Mattson, a CH-47 pilot, is a member of Company B, 104th General Support Aviation Battalion, based in Windsor Locks. He has 12 years of military service.

He is the son of Richard A.E. and Alice Mattson of Golden Road, Uncasville.

His wife, Kristen, is the daughter of Fredrick K. Anderson, and Mary E. Anderson, both of Southington.

In 1998, he graduated from Montville High School, Oakdale, Conn.

EPA United States Environmental Protection Agency New England

Solvents Recovery Service of New England Superfund Site Five-Year Review

The United States Environmental Protection Agency (EPA) has begun its first five-year review at the Solvents Recovery Service of New England, Inc. Superfund Site on Lazy Lane in Southington, Connecticut. This review is being performed five years following selection of the final cleanup plan and issuance of the Record of Decision in 2005. The review is a comprehensive assessment of the performance of the groundwater cleanup systems which began operating in 1995. EPA will also talk with Southington officials and citizens to gain a better understanding of any local concerns related to the Superfund site.

The review team will evaluate the information gathered and then make a determination as to whether the remedy is protective or not protective of public health and the environment. After completion of these activities, EPA will issue a Five-Year Review Report summarizing the findings with respect to the site.

From 1955 to 1991, Solvents Recovery Service (SRS) operated as a spent solvent processing and reclamation facility at the Lazy Lane site. Millions of gallons of waste solvents and oils were handled, stored and processed at the facility. Past operating practices, such as the use of lagoons and a leach field, contributed to contamination at SRS and surrounding properties. Poor housekeeping from a variety of practices, including the unloading and loading of tank trucks, the transfer of spent solvents to storage tanks, as well as the improper handling and storage of drums, resulted in numerous leaks and spills to the bare ground which also contributed to contamination of the underlying aquifer.

The 2005 cleanup plan selected by EPA is projected to cost approximately $29 million and includes heating, capturing, and treating waste oils and solvents in the subsurface; excavating, consolidating and capping contaminated soil and wetland soil onsite; and continuing to pump and treat contaminated groundwater. There will also be restrictions on uses of the site property and groundwater, and long term monitoring of the cap and groundwater to ensure that the cleanup remains protective of human health and the environment for the future.

Preliminary activities will begin at the site this year and major cleanup work is being planned for 2011. EPA plans to keep the community informed of the status of activities at the site and will announce opportunities for community participation later this year. In the meantime, anyone who has questions or who would like to be interviewed as part of the five-year review, may contact Jim Murphy, EPA's Community Involvement Coordinator at 617-918-1028 or murphy.jim@epa.gov.

More information about cleanup activities at the Solvents Recovery Services Superfund Site may be found on the EPA New England web site at www.epa.gov/region1/superfund/sites/srs.

Obituaries

William Shearstone II

William Charles Shearstone II, 68, of the Plantsville section of Southington died Feb. 27, 2010, at the Hospital of Central Connecticut at Bradley Memorial. He was beloved husband of Barbara (Pelsinski) Shearstone for 49 years.

He was born July 13, 1941, in Ashland, Pa., to the late William Charles Shearstone Jr. and the late Alice (Winters) Shearstone he had lived in Southington for many years. He retired from the Travelers Insurance Company and will be fondly remembered for being a big Dodgers fan.

In addition to his wif, he is survived by his son, William Shearstone III and his wife, Leslie, of Roswell, Ga.; two daughters, Jennifer Shearstone, of Northampton, Mass. and Angeline Shearstone of Durham, N.C.; two sisters, Alice Oshman and Rosemary Beaver; and three grandchildren: William, Amanda and Matthew. He was predeceased by his brother, John Shearstone.

The funeral was held March 3, 2010, at the Plantsville Funeral Home, Plantsville with a Mass at St. Aloysius Church, Plantsville. Burial followed in St. Thomas Cemetery, Southington. Memorial donations may be made to The American Cancer Society, 825 Broad St., Rocky Hill, CT 06067 or to the National Emphysema Foundation, 128 East Ave., Norwalk, CT 06850.

Nancy Peterson

Nancy (Hornkohl) Peterson, 76, of Southington, widow of Harvey E. Peterson, died Feb. 28, 2010.

She was born in New Britain, and had been a Southington resident since 1957. She was a graduate of Teachers College (now Central Connecticut State University) and was employed as a nursery school teacher at Grace United Methodist Church in Southington for many years. Besides being a member of the church, she was a member of the Southington Festival Choir.

She is survived by her two sons, Mark Peterson, of Southington and Todd Peterson and his wife, Rosemarie, of Plainville; a sister, Joyce Brotherton, of Southington; two grandchildren, Nathan H. Peterson and Victoria Lynn Peterson; several nieces and nephews; and a grand puppy, Lilly.

The funeral was held March 4, 2010, at the Carlson Funeral Home, New Britain. Burial was in Oak Hill Cemetery, Southington. Memorial donations may be made to the Connecticut Humane Society, Russell Road, Newington, CT 06111.

More obituaries on page 22

Attachment 2 Five-Year Review Site Inspection Checklist

I. SITE INFORMATION

Site name: Solvents Recovery Service of New England, Inc	**Date of inspection:** June 2, 2010
Location and Region: Southington, CT / Region 1	**EPA ID:** CTD009717604
Agency, office, or company leading the five-year review: EPA Region 1	**Weather/temperature:** 75-80°, Sunny

Remedy Includes: (Check all that apply)

- √ Landfill cover/containment
- √ Access controls
- √ Institutional controls
- √ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- √ Other: In-situ Thermal Treatment
- √ Monitored natural attenuation
- √ Groundwater containment
- √ Vertical barrier walls

Attachments: ☐ Inspection team roster attached √ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** John Hunt, *de maximis, inc* (Name) Project Manager (Title) June 2, 2010 (Date)
   Interviewed √ at site ☐ at office ☐ by phone Phone no. 860-651-1196
   Problems, suggestions; ☐ Report attached: None

2. **O&M staff** _____ (Name) _____ (Title) _____ (Date)
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies**

   Agency: CT Department of Environmental Protection
   Contact: Ryan Santos (Name) Project Manager (Title) June 2, 2010 (Date) 860-424-3865 (Phone no.)
   Problems; suggestions; ☐ Report attached : None

   Agency: Town of Southington
   Contact: John Weichsel (Name) Town Manager (Title) April 27, 2010 (Date) 860-276-6200 (Phone no.)
   Problems; suggestions; √ Report attached

   Agency: Town of Southington
   Contact: Anthony Traquillo (Name) Town Engineer/Director Public Works (Title) April 27, 2010 (Date) 860-276-6231 (Phone no.)
   Problems; suggestions; √ Report attached

4.	**Other interviews** (optional) ☐ Report attached			
	See discussion in Section 6.5			
	III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	**O&M Documents**			
	☐ O&M manual	√ Readily available	√ Up to date	☐ N/A
	☐ As-built drawings	√ Readily available	√ Up to date	☐ N/A
	☐ Maintenance logs	√ Readily available	√ Up to date	☐ N/A
	Remarks: None			
2.	**Site-Specific Health and Safety Plan**	☐ Readily available	☐ Up to date	☐ N/A
	☐ Contingency plan/emergency response plan	☐ Readily available	☐ Up to date	☐ N/A
	Remarks: RPM did not review			
3.	**O&M and OSHA Training Records**	☐ Readily available	☐ Up to date	☐ N/A
	Remarks: RPM did not review			
4.	**Permits and Service Agreements**			
	☐ Air discharge permit	☐ Readily available	☐ Up to date	√ N/A
	☐ Effluent discharge	√ Readily available	√ Up to date	☐ N/A
	☐ Waste disposal, POTW	√ Readily available	√ Up to date	☐ N/A
	☐ Other permits_____	☐ Readily available	☐ Up to date	√ N/A
	Remarks: None			
5.	**Gas Generation Records**	☐ Readily available	☐ Up to date	√ N/A
	Remarks_____			
6.	**Settlement Monument Records**	☐ Readily available	☐ Up to date	√ N/A
	Remarks_____			
7.	**Groundwater Monitoring Records**	√ Readily available	√ Up to date	☐ N/A
	Remarks: None			
8.	**Leachate Extraction Records**	☐ Readily available	☐ Up to date	√ N/A
	Remarks: None			
9.	**Discharge Compliance Records**			
	☐ Air	☐ Readily available	☐ Up to date	√ N/A
	☐ Water (effluent)	√ Readily available	√ Up to date	☐ N/A
	Remarks: None			
10.	**Daily Access/Security Logs**	☐ Readily available	☐ Up to date	☐ N/A
	Remarks: RPM did not review			
	IV. O&M COSTS			
1.	**O&M Organization**			
	☐ State in-house	☐ Contractor for State		
	☐ PRP in-house	√ Contractor for PRP		

☐ Federal Facility in-house ☐ Contractor for Federal Facility
☐ Other_____

2. **O&M Cost Records**
☐ Readily available √ Up to date
☐ Funding mechanism/agreement in place
Original O&M cost estimate_____ ☐ Breakdown attached

Total annual cost by year for review period if available: See Table 3

3. **Unanticipated or Unusually High O&M Costs During Review Period**
Describe costs and reasons: None

V. ACCESS AND INSTITUTIONAL CONTROLS √ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** √ Location shown on site map √ Gates secured ☐ N/A
Remarks: None

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map √ N/A
Remarks_____

C. Institutional Controls (ICs) This component of the remedy has not been implemented yet.

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map √ No vandalism evident
Remarks: None

2. **Land use changes on site** √ N/A
Remarks_____

3. **Land use changes off site** √ N/A
Remarks_____

VI. GENERAL SITE CONDITIONS

A. Roads √ Applicable ☐ N/A

1. **Roads damaged** √ Location shown on site map √ Roads adequate ☐ N/A
Remarks: None

B. Other Site Conditions

Remarks: None

VII. LANDFILL COVERS This component of the remedy has not been implemented yet.

VIII. VERTICAL BARRIER WALLS √ Applicable ☐ N/A

1. **Settlement** √ Location shown on site map √ Settlement not evident
   Areal extent: 700 feet long Depth: 30 feet
   Remarks: None

2. **Performance Monitoring** Type of monitoring : Groundwater elevations
   ☐ Performance not monitored
   Frequency: varies (daily, weekly, monthly) ☐ Evidence of breaching
   Head differential: minimum requirement of 0.3 feet
   Remarks: None

IX. GROUNDWATER/SURFACE WATER REMEDIES √ Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines √ Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
   ☐ Good condition ☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
   Remarks: RPM did not inspect

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs Maintenance
   Remarks: RPM did not inspect

3. **Spare Parts and Equipment**
   ☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
   Remarks: RPM did not inspect

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable √ N/A

C. Treatment System √ Applicable ☐ N/A

1. **Treatment Train** (Check components that apply)
   ☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
   ☐ Air stripping √ Carbon adsorbers
   ☐ Filters_____
   ☐ Additive (*e.g.*, chelation agent, flocculent)_____
   √ Others: UV/oxidation
   √ Good condition ☐ Needs Maintenance
   ☐ Sampling ports properly marked and functional
   ☐ Sampling/maintenance log displayed and up to date
   ☐ Equipment properly identified
   √ Quantity of groundwater treated annually (Sept 2005 to August 2010): 14 million (average)
   ☐ Quantity of surface water treated annually_____
   Remarks: None

2. **Electrical Enclosures and Panels** (properly rated and functional)
   ☐ N/A ☐ Good condition ☐ Needs Maintenance
   Remarks: RPM did not inspect

3.	**Tanks, Vaults, Storage Vessels** ☐ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs Maintenance Remarks: RPM did not inspect
4.	**Discharge Structure and Appurtenances** ☐ N/A ☐ Good condition ☐ Needs Maintenance Remarks: RPM did not inspect
5.	**Treatment Building(s)** ☐ N/A √ Good condition (esp. roof and doorways) ☐ Needs repair ☐ Chemicals and equipment properly stored Remarks: None
6.	**Monitoring Wells** (pump and treatment remedy) √ Properly secured/locked √ Functioning √ Routinely sampled √ Good condition ☐ All required wells located ☐ Needs Maintenance ☐ N/A Remarks: None
D. Monitoring Data	
1.	Monitoring Data √ Is routinely submitted on time √ Is of acceptable quality
2.	Monitoring data suggests √ Groundwater plume is effectively contained √ Contaminant concentrations are declining
E. Monitored Natural Attenuation	
1.	**Monitoring Wells** (natural attenuation remedy) √ Properly secured/locked √ Functioning √ Routinely sampled √ Good condition ☐ All required wells located ☐ Needs Maintenance ☐ N/A Remarks: None
X. OTHER REMEDIES	
In-situ thermal treatment – this component of the remedy has not been implemented yet.	
XI. OVERALL OBSERVATIONS	
A.	**Implementation of the Remedy**
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). Groundwater containment and on-site treatment is functioning as designed. MNA portion of that plume that meets federal drinking water standards but not ARARs (background) is occurring. Access is controlled by fencing and no one is currently drinking the groundwater. Excavation of wetland soils and river sediment that posed a ecological risk are being excavated in the phase of construction that began September 13, 2010, to be completed by December 2010. Remaining components of the remedy will be implemented before next five-year review (2015).	

B.	Adequacy of O&M
	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. O&M of the groundwater containment and on-site treatment system is performed regularly, with no significant issues or problems reported.
C.	**Early Indicators of Potential Remedy Problems**
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. No such issues or observations noted.
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. Under the terms of the 2009 Consent Decree, the SRSNE Site Group is required to perform an optimization study of the containment/treatment system after the in-situ thermal component of the remedy, which is expected to be completed in 2015.

Attachment 3 Interview Reports

INTERVIEW RECORD – Town Manager of Southington			
Site Name: Solvents Recovery Services of New England (SRSNE)		**EPA ID No.:**	
Subject: First Five-Year Review (2010)		**Time:** 11:00	**Date:** 4/27/10
Type: ☐ Telephone ☒ Visit ☐ Other **Location of Visit:** Town Offices		☐ Incoming ☐ Outgoing	
Contact Made By:			
Name: Jim Murphy	**Title:** Community Involvement Coordinator	**Organization:** US EPA	
Individual Contacted:			
Name: John Weichsel	**Title:** Town Manager	**Organization:** Town of Southington	
Telephone No: 860-276-6200 **Fax No:** 860-628-4727 **E-Mail Address:** weichselj@southington.org		**Street Address:** Town Hall, 75 Main Street **City, State, Zip:** Southington, CT 06489	

Summary Of Conversation

Q1: What is your overall impression of the project and site?
A1: The site is well managed by the responsible party group as well as the EPA. The Town is pleased that the SRSNE site group has committed to complete the section of the rails to trails project that crosses the site as thr rails to trails project has been a vert positive recreational development in town.

Q2: What effects have site operations had on the surrounding community?
A2: While there was an impact on the community along Lazy Lane over the years, that has eased over time as the remediation work has progressed.

Q3: Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.
A3: As the Town is not really involved in the operation and management of the site, he does not focus general site issues and is not aware of any community concers relative to the site.

Q4: Has there been any significant changes in the O&M activities or a chance to optimize the O&M?
A4: Not aware of any.

Q5: Do you feel that information related to the site is readily available?
A5: He feels appropriately informed on the issues and events by the site group and US E.P.A; there haven't been any real surprises.

Q6: Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.
A6: No incidents or emergency response activities have occurred at the Site.

Q7: Do you have any comments, suggestions, or recommendations regarding the site's management or operation?
A7: Nothing at this time.

INTERVIEW RECORD – Southington Town Engineer

Site Name: Solvents Recovery Services of New England (SRSNE)	**EPA ID No.:**	
Subject: First Five-Year Review (2010)	**Time:** 12:00	**Date:** 4/27/10
Type: ☐ Telephone ☒ Visit ☐ Other **Location of Visit:** Town Offices	☐ Incoming	☐ Outgoing

Contact Made By:

Name: Jim Murphy	**Title:** Community Involvement Coordinator	**Organization:** US EPA

Individual Contacted:

Name: Anthony J. Tranquillo, P.E.	**Title:** Dir. Of Public Works / Town Engineer	**Organization:** Town of Southington
Telephone No: 860-276-6231 **Fax No:** 860-628-8669 **E-Mail Address:** tranquiloa@southington.org	**Street Address:** Town Hall, 75 Main Street **City, State, Zip:** Southington, CT 06489	

Summary Of Conversation

Q1: What is your overall impression of the project and site?
A1: In contrast to the OSL site where the Town plays an active role, including the scheduled mowing of the site, there is very little involvement with the SRS site and very little information that comes into the Town that he is aware of.

Q2: What effects have site operations had on the surrounding community?
A2: The area around the site is still generally depressed due to the stigma.

Q3: Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.
A3: There is some community concern about the potential for vapors to be released during the planned remediation. There is also some general frustration over the length of time that it has taken to decide on and then implement the cleanup.

Q4: Has there been any significant changes in the O&M activities or a chance to optimize the O&M?
A4: Not aware of any.

Q5: Do you feel that information related to the site is readily available?
A5: He believes the Town Offices are moderately well informed, but he doesn't always get information in the Engineering Department.

Q6: Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.
A6: No incidents or emergency response activities have occurred at the Site.

Q7: Do you have any comments, suggestions, or recommendations regarding the site's management or operation?
A7: There are some internal issues with delivering the information to the necessary people and departments and he suggests the Assistant Town Manager be the point of contact and that relevant information also be sent directly to Mr. Tranquillo.