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September 20, 2016

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Subject: Expanded Site Inspection (ESI)
New Haven Drive TCE (NCD986171379)
New Haven Drive, Gastonia, Gaston Co., NC 28052

Dear Ms. Callihan:

Attached is the Expanded Site Inspection (ESI) Report for the New Haven Drive TCE site. To date, 36 drinking water wells have been contaminated with trichloroethene (TCE) and approximately 60 residences have been provided with municipal water. Previous studies as well as this ESI have documented there is TCE-contaminated groundwater underneath the facility proper and that this facility is responsible for contamination of the nearby drinking water wells that were closed in 1990. Continued regulatory oversight of additional investigations and cleanup activities at this site will be conducted by the NC Inactive Hazardous Sites (IHS) Program.

This site is recommended for further action under CERCLA. If you have any questions regarding this recommendation, please contact Melanie at (919) 707-8373 or by email at melanie.henderson@ncdenr.gov.

Sincerely,


Melanie Henderson, Environmental Engineer
Federal Remediation Branch
NC Superfund Section


David Lown, Head
Federal Remediation Branch
NC Superfund Section

EXPANDED SITE INSPECTION (ESI)

Approved CPC 9/29/16

New Haven Drive TCE
(NCD986171379)
Gastonia, Gaston Co., NC.

September 20, 2016

Superfund Section
Division of Waste Management
North Carolina Department of
Environmental Quality

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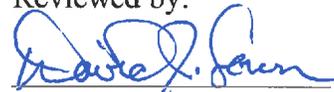

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1.0 INTRODUCTION

This Expanded Site Inspection (ESI) for the New Haven Drive TCE site (NCD986171379) was performed by the NC Superfund Section under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) (Ref. 1).

The 2013 Site Re-Assessment Report (SRR) details site history and past sample events. No site work is known to have occurred since that time, other than groundwater sampling conducted for this ESI. Please review the SRR report at Reference 53 for detailed historical information. References 1 – 52 are cited in the SRR.

In 1988, thirty residential wells serving approximately 81 people were found contaminated with trichloroethene (TCE). The US EPA conducted a Removal Action and 51 residences were provided with municipal water. On February 8, 1990, the NC Superfund Section completed the Preliminary Assessment (PA) report. The US EPA conducted a soil and soil gas sample event in 1990 but did not identify a source of TCE.

In November 1991, the NC Division of Environmental Management (DEM) issued a Notice of Violation (NOV) for TCE-contaminated groundwater on the CR Industries facility property and ordered a Corrective Action Plan (CAP). The NC Superfund Section completed a Site Screening Inspection (SSI) in 1992 and recommended an Expanded Site Inspection (ESI), including installation of deep monitoring wells to determine the responsible party. CR Industries began operating a groundwater remediation system in 1999; however, deep wells were never installed. On June 8, 2000, the site was assigned a non-NPL Status of "Other Cleanup Activity: State Lead" (<http://cumulis.epa.gov/supercpad/cursites/srchsites.cfm>). In 2008, the groundwater remediation system was shut down due to continued failure of effluent toxicity tests (Refs. 26 - 28, 31, 32, 33).

While CR Industries has been confirmed as a source of shallow groundwater contamination under the facility, they were not confirmed as the source of TCE-contamination in nearby drinking water wells until this ESI. The September 2013 SRR completed by NC Superfund recommended that the non-NPL Status of "Other Cleanup Activity: State Lead" be removed and that further action under CERCLA be conducted (Ref. 53). For this ESI, the US EPA installed seven monitoring wells (four deep) near this site. Well installation was completed in August 2015. NC Superfund collected samples from these monitoring wells and four nearby drinking water wells in November 2015. Based on the findings of this ESI, the New Haven Drive TCE site is recommended for further action under CERCLA.

2.0 SITE DESCRIPTION, OPERATIONAL HISTORY, AND WASTE CHARACTERISTICS

2.1 Location and Climate

The CERCLIS address for the New Haven Drive TCE site is New Haven Drive (no street number); however, the suspected source of groundwater contamination is a facility that has operated under several names at 4328 York Hwy., Gastonia, NC 28052. The NC Inactive Hazardous Sites Branch (IHSB) lists the facility name as CR Industries. The coordinates of the site are 35.2022° north latitude and 81.2111° west longitude, recorded in the Emergency Planning and Community Right-to-Know Act Section 313 (EP313) database (Fig. 1, Ref. 4). The site is in the 10th Congressional District.

The average annual precipitation is 46 inches and the mean annual lake evaporation is 40 inches (Ref. 3). The two-year, 24-hour rainfall is 3.31 - 3.40 inches (Ref. 3).

2.2 Site Description

Industrial Fabricators, Inc. currently operates on the 24.22-acre facility property and makes and assembles metals parts (Refs. 5, pp. 1-22; 6, pp. 73-85; Fig. 2). Capabilities include fabricating, stamping, machining, ductile and gray iron casting and finishing. Roger Bingham is the president of Industrial Fabricators, Inc. The current property owner is Bingham Properties, LLC (Ref. 7, pp. 17-21). There are about 13 on-site monitoring wells and several structures having a total area of about 160,000 square feet (Refs. 7, pp. 23, 24; 34, p. 11). The facility was connected to municipal water by 1978 and sewer by 2010 but the exact connection dates were not determined during this SRR (Ref. 36, p. 7; 37, p. 51).

Plantation Pipeline maintains a fifty-foot wide right-of-way within the northern portion of the property (Ref. 16, p. 8; Fig. 4). The facility property is bordered by Hwy 321 S (York Rd.) to the east; Crowders Creek Rd. to the south, residential property to the west and New Haven Dr. to the north (Ref. 7, p. 22). Across York Hwy to the east is a warehouse building owned by Douglas Hanson which was formerly owned by Delaine Worsted Mills from 1965 – 2008 and is now leased by Lubrizol. Across Crowders Creek Rd. to the south is commercial property owned by Pearson's Inc. since 1965 and residential property. Across New Haven Drive to the north is residential property. Diagonally across the York Hwy. and Telegraph / Crowders Creek intersection (to the southeast) is property currently owned by PMD Group Inc. This property is listed in CERCLIS as the Rhone-Poulenc Rhodia site (NCD986182582).

In 1990, the combined area of residential properties (to the north and west of the CR Industries property) known to have contaminated wells was 60.5 acres (Ref. 14, p. 1). Samples collected south of the CR Industries facility property since 1990 have shown drinking water well contamination in that area, too. Therefore, the area of documented groundwater contamination outside the facility property boundary is about 100 acres.

Other nearby CERCLIS sites include Textron (NCD091249417) (aka Homelite) about 1 mile to the northeast and AB Carter (NCD003154010) (a former chrome plating operation) about

¾ mile to the south (Ref. 48; Fig. 1). Both Textron and AB Carter have a history of chlorinated solvent use (Ref. 48, p. 3) and are currently deferred to the RCRA program. However, a previous investigation ruled out Textron as a potential source of contamination along New Haven Dr. (Ref. 24, pp. 49, 50).

2.3 Site Discovery

In 1988, removal of a leaking methyl ethyl ketone (MEK) underground storage tank (UST) at Precision Seals Co. (former owner / operator of the CR Industries) prompted sampling of nearby wells for volatile organic compounds (VOCs). Gaston County collected samples from neighboring drinking water wells and approximately 30 residential wells serving about 81 people were found to be contaminated with trichloroethene (TCE) and other chlorinated solvents, but MEK was not detected in the drinking water wells (Refs. 4, pp. 1 - 91; Refs. 9, 14). The US EPA performed a Removal Action in 1990 and 51 houses were connected to waterlines. EPA did not pursue cost recovery for the Removal Action because a responsible party could not be definitively identified (Refs. 9, 14; Fig. 3, Table 1).

2.4 Operational, Ownership and Regulatory History

2.4.1 Operational History

From 1965 until 1994 or later, the facility was used to manufacture oil seals for transmissions and transaxles. Parts production involved punch pressing metal sheets into rings, preparing the metal rings to accept the application of a rubber seal bonding agent and fitting the prepared rings with rubber seals. From 1965 - 1972, TCE was used to remove lubricating oil from metal parts produced in the punch presses. A 1984 plant diagram shows the punch presses were near the southeastern side of the building (Refs. 19, p. 51; 21, p. 60), but it is not known where the metal parts were cleaned. The plant had a distillation unit to reuse the spent solvent, but it is unknown how the still bottoms were disposed (Ref. 14, pp. 4, 331, 332). Reportedly, 5-gallon buckets of spent chlorinated degreasing solvents were dumped on the ground near a loading dock (there are two loading docks, which one was not specified). It was also reported that a 55-gallon drum of solvent was dumped in the northwest quadrant of the plant around 1983 - 1984 (Ref. 12, pp. 78, 127; 14, pp. 4, 331, 332; 19, p. 11).

The facility's permitting and regulatory history (see below) provides greater detail on operational history. Chrome plating apparently occurred on the facility property in 1976 and a mercury-based algaecide was used in 1978 (Ref. 8; Ref. 37, pp. 40, 42, 52, 53). Interior facility equipment included mold cleaning tanks, spray booths, and ovens (Ref. 5, p. 61; Ref. 47).

Until around 1979, the facility blended and discharged treated domestic wastewater, cooling water, and oil-water separator discharge directly to the surface water pathway (Ref. 8; Ref. 37, p. 51). After 1979, the wastewater treatment system included an equalization basin, pH adjustment, aeration and mixing, lime and alum addition, clarification, a filter press and final filtration (Ref. 8). Facility layouts for 1984, 1995, and 2009 are shown in references (Ref. 19, p. 51; 21, p. 60; 5, pp. 63, 64; 34, p. 51)

A groundwater remediation designed to remove volatile organics was operated on the CR Industries site from 1999 to 2008. Groundwater was pumped from two wells, through a stacked-tray air stripper and discharged to the sanitary sewer under an NPDES permit. The system was turned off due to continued failure to pass toxicity tests required for the facility's NPDES permit (Refs. 32, 43). Some evaluation for natural attenuation has occurred since then. Soil in the former equalization basin contained elevated zinc and the facility received a Notice of Regulatory Requirements (NORR) from NCDENR in 2012 (Ref. 40, p. 55).

2.4.2 Ownership History

2.4.2.1 Summary of Names

A list of facility names associated with the New Haven Dr TCE / CR Industries site is provided below. A discussion of ownership of these facilities is provided in References 6 and 7.

Garlock, Inc.	CR Industries
Colt Industries	CR Industries Gastonia
Coltec Industries	SKF USA
Precision Seal	SKF Gastonia Facility
Chicago Rawhide - Gastonia	Industrial Fabricators Inc.
CR/Precision Seal	

Some references and discussions in this report pertain to communications between operators of this facility and the site diagonally across the street - Rhone-Poulenc Rhodia. To assist the reader in determining which facility is being discussed, a list of business names associated with the Rhone-Poulenc Rhodia site is provided below (Ref. 48):

Walsh Chemical Corporation
Colloids, Inc.
Rhone-Poulenc Specialty Chemicals Co.
Rhone-Poulenc Surfactants and Specialties,
Inc.
Rhone-Poulenc, Inc.
Slaton Machinery Sales
Rhodia, Inc.
The B. F. Goodrich Company
B. F. Goodrich Textile Chemicals Co.
BFGoodrich Textile Chemicals Inc.
PMD Group Inc.
Noveon Inc.
Noveon Textile Chemicals, Inc.
Lubrizol Advanced Materials, Inc.
The Lubrizol Corporation

2.4.2.2 Property Ownership History

In 1959, WIX Corporation purchased the facility property. On August 6, 1965, Garlock Inc. purchased the property from WIX Corporation. The facility name changed from Garlock Precision Seal Inc. to Precision Seal Inc., effective November 1, 1983. On November 15, 1983, Precision Seals, Inc., purchased the property. When the property was sold in 2000, the seller (SKF USA Inc.) was described as a successor in merger with CR Investments, Inc., successor in merger with Chicago Rawhide Manufacturing Company, successor in merger with Precision Seals, Inc. The dates of these mergers were not determined for this SRR.

On May 2, 2000, Roger Dale Bingham purchased the property. On July 2, 2007, Roger and Patricia Bingham transferred ownership of the property to Bingham Properties, LLC, the current property owner. See References 6, 7, and 35 for discussion and documentation of property ownership.

2.4.2.3 Corporation Ownership History

Corporations (including parent corporations) associated with ownership of the facility and/or land include those listed below. For a thorough discussion of corporations, please see references 6 and 7.

WIX Corporation
WIX Accessories Corporation
WIX International Corporation
Dana Corporation
DANA-WIX
Dana Holding Corporation
Garlock Colt Industries
Coltec Industries
Garlock Sealing Technologies
EnPro Industries
Chicago Rawhide Inc.
Chicago Rawhide Manufacturing Company
CR Industries
Precision Seals, Inc.
SKF USA Inc., a subsidiary of AB SKF
Bingham Properties LLC
Industrial Coating, FLP
R&P Properties of the Carolinas, Inc.

2.4.3 Regulatory History

2.4.3.1 Regulatory Status Overview

The two below tables excerpted from Envirofacts summarize past regulated site activities (<http://www.epa.gov/enviro/facts/multisystem.html>).

Statute	System	Source ID	Facility Name	Street Address	City	State	Zip
	FRS	110002381501	CR INDUSTRIES	4307 SOUTH YORK ROAD	GASTONIA	NC	28052
CAA	AFS	3707100047	CR INDUSTRIES **INACTIVE**	4307 SOUTH YORK ROAD	GASTONIA	NC	28052
CWA	ICP	NCG050184	SKF GASTONIA FACILITY	4307 S YORK RD	GASTONIA	NC	28052
CWA	ICP	NC0004260	SKF GASTONIA FACILITY	4307 S YORK RD	GASTONIA	NC	28052
RCRA	RCR	NCD006556963	INDUSTRIAL FABRICATORS INC	4328 SOUTH YORK HWY	GASTONIA	NC	28052
EP313	TRI	28053CRPRC4307S	CHICAGO RAWHIDE GASTONIA (CR IND.)	4328 S. YORK RD.	GASTONIA	NC	28052

CAA = Clean Air Act; CWA = Clean Water Act; RCRA = Resource Conservation and Recovery Act; EP313 = Emergency Planning and Community Right-to-Know Act Section 313

(Note that Industrial Fabricators' other facility in the area is at 4920 / 4926 S. York Hwy and has an EPA ID # NCR000149716.)

Statute	Source ID	Universe	Status	Areas	Permit Expiration Date	Latitude/ Longitude
	110002381501					LRT: 35.204132 , -81.209324
CAA	3707100047	Major (Fed. Rep.)	Permanently Closed	SIP		
CWA	NCG050184	Minor; General Permit Covered Facility	Terminated ; Compliance Tracking Off		03/31/2003	35.218056, -81.191944
CWA	NC0004260	Minor; NPDES Individual Permit	Effective		08/31/2015	35.226017, -81.199239
RCRA	NCD006556963	CESQG	Active (H)			
EP313	28053CRPRC4307S					35.2022 , -81.2111

CESQG = Conditionally Exempt Small Quantity Generator
NPDES = National Pollutant Discharge Elimination System

2.4.3.2 Hazardous Waste (RCRA) Regulatory History

This SRR included a review of NC DENR's Hazardous Waste Section (NC RCRA) files. A thorough summary and file materials are provided at Reference 5. The most significant findings are listed below:

- RCRA inspections showed the facility was in compliance in 1983, 1985, 1986, 1989 - 1991, and 1994 - 1998 (Ref. 5, pp. 27-29, 31-78, 91-98, 102-116130-136, 181-185, 221-227, 246-265).
- The 1987 RCRA inspection record shows that the facility used 1,1,1-TCA, acetone, methanol, and xylene. A drum of 1,1,1-TCA waste required additional action (Ref. 5, p. 209).
- In 1988, nearby drinking water well contamination was discovered (Ref. 4, pp. 1-95; Ref. 5, pp. 138-141, 147-149, 175-177).

- In 1988, NC RCRA collected four soil samples that were analyzed for VOCs and metals. No TCE was detected (Ref. 5, pp. 150-174). In 1989, NC RCRA collected samples of the polishing pond and equalization pond sludge. Methylene chloride and acetone were detected in the sludge, but no TCE was detected (Ref. 5, pp. 117-129).
- In 1999, Chicago Rawhide (CR Industries) ceased operation and its generator ID was inactivated (Ref. 5, pp. 26, 30). On August 1, 2000, Industrial Fabricators began operations, but the EPA ID number (NCD 006 556 963) was not reactivated (Ref. 5, pp. 1-4).
- On October 29, 2009, a RCRA inspection revealed that Industrial Fabricators was storing hazardous waste. There were 130 - 160 55-gallon containers and 80-100 5-gallon containers stored in four areas on the site. An Immediate Action Notice of Violation (NOV) Docket #2010-011 was issued (Refs. 5, pp. 9-20; 6).
- On July 5, 2012, Industrial Fabricators shipped 4,000 gallons of waste sulfuric acid off site using an incorrect address and EPA ID number. Consequently, the EPA ID number (NCD 006 556 963) was upgraded to Conditionally Exempt Small Quantity Generator (CESQG) (Ref. 5, pp. 1- 7).

2.4.3.3 Underground Storage Tank (UST) History

In 1984, there were four USTs on the facility property -- a 2,000 - 3,000 gallon MEK tank, a 2,000 - 3,000-gallon isopropyl alcohol tank, both of which were at the rear (west) of the building, and two diesel / fuel oil tanks (total capacity 28,000 - 30,000 gallons), both of which were at the south side of the building (Ref. 4, pp. 2, 17, 98, 210, 213, 214). During removal, stained soils beneath all 4 tanks were excavated; the deepest excavation was 24' (Ref. 4, pp. 21, 24, 25, 112). All file material and a summary are provided in Reference 4. Highlights are provided below:

- Investigation of the leaking MEK tank is what prompted discovery of the nearby contaminated drinking water wells. Although no MEK contamination was detected in private wells at that time, wells installed by EPA in 2015 show MEK contamination present in both the shallow and deep bedrock aquifer wells on the facility property (Ref. 4, Table 5).
- In November 1991, CR Industries permanently closed the 8,000 - 10,000 and the 20,000 gallon #2 fuel oil USTs that were south of the building, north of Crowders Creek Rd. and west of one of the facility's two loading docks (Ref. 4, pp. 100-101, 165, 178). Samples were analyzed for TPH only, no VOC analyses were ever conducted on any soil sample near the diesel USTs. These USTs were near where the most highly TCE-contaminated groundwater was subsequently discovered (Ref. 4, pp. 100, 102; Figs. 2, 4). Recall that TCE was reportedly poured on the ground near one of two loading docks (Ref. 14, pp. 4, 331, 332; 19, p. 11).

Soil excavated from around the fuel oil USTs was removed and hauled to a local land farm at 7100 N. Statesville Ave., Charlotte, NC. Because this soil was never tested for

chlorinated solvents, it is possible that TCE-contaminated soil was removed from the site and placed at this land farm.

2.4.3.4 Wastewater / NPDES Regulatory History

A Feb. 4, 1977 report describes the wastewater treatment plant (WWTP) at Precision Seal Division, Garlock, Inc. (Ref. 8). The WWTP included a 2,160-gallon oil and grease separator. The separator's discharge was combined with 78,000 gpd of cooling water and domestic wastewater into one sewer outfall, which was about 3,300 feet west of the WW facility. Apparently, chrome plating occurred at the facility and a mercury-based algaecide was used in 1978 (Ref. 8; Ref. 37, pp. 42, 52, 53). The facility was not meeting the 1976 NPDES guidelines for electroplating and was not meeting limitations; therefore, a Special Order on Consent (SOC) was recommended (Ref. 8).

The equalization basin was not lined except for a concrete pad at the bottom of the basin (Ref. 61). The wastewater treatment ponds (lagoons) were closed in 2000 and sludge was removed from both ponds for offsite disposal (Ref. 39, pp. 6, 7). Soil in the area of the former equalization basin was later tested; elevated zinc was detected, and the facility received a NORR in 2012 for compliance with its NPDES permit (NC0004260) (Ref. 40, p. 55).

2.4.3.5 Air Quality Regulatory History

On Feb 11, 1992, the NC DEM Air Quality Section conducted an inspection of the site. Two parts washers had been removed from the plant. Equipment was identified that had been at the plant for some time but for unknown reasons had never been included in the company's permit. No NOV was issued, but the company was instructed to retroactively submit permit applications for the equipment while applying for renewal of the existing permit. In May 1992, after a review of the permit application, it was determined that the manual tumbler spray booths and five post cure ovens constituted seven violations. Furthermore, it was discovered that the manual spray booth emitted 47.67 pounds per day of photochemically reactive solvent (Ref. 5, p. 263, Ref. 47). Attempts to locate additional Air Quality file material have been unsuccessful.

2.5 Previous Investigations

- NC Superfund completed the Preliminary Assessment (PA) in February 1990 and Further Action under CERLCA was recommended (Ref. 9).
- The US EPA conducted a Removal Action and 46 wells serving 51 residences were provided with municipal water. EPA did not seek cost recovery for the Removal Action, even though the CR Industries facility was the suspected source (Refs. 11; 14, p. 6; Ref. 24, p. 48; Table 1, Fig. 3).
- In mid-February 1990, the US EPA collected soil gas samples through a probe at 29 locations (4 - 5' depth). Soil gas samples were collected west of the former wastewater pond and downgradient from the former concrete flume, in an area generally near the northwest corner of the building. None of the soil gas samples contained TCE (Ref. 10, pp. 5, 10, 18).

Soil samples were collected at 13 locations (4 - 5' depth) within this grid (Ref. 10, p. 10). Soil headspace and laboratory analyses were conducted on each of the 13 soil samples. Of these 13 soil samples, TCE was found in four soil headspace samples but was not identified in any of the laboratory-analyzed soil samples. Toluene, 1,1,1-TCA, methylene chloride, and trichlorofluoromethane were reported in several laboratory-analyzed soil samples.

- In March 1991, EPA Region 4 and the Office of Emergency and Remedial Response completed a Fracture Trace Analysis, New Haven Drive TCE Site, South Gastonia, North Carolina. There were 120 fracture traces identified during the course of this analysis. It was determined that the dominant fracture trend at the site had an orientation of N-NW (Ref. 60)
- The June 29, 1992, the "Report of Exploratory Drilling" describes subsurface investigation at the New Haven Drive Area, consisting of ten exploratory borings to bedrock. The purpose of these borings was to determine depths to bedrock and groundwater (Ref. 13, pp. 6-10).
- In 1992, the NC Superfund Section completed the SSI. This SSI stated that CR Industries was the leading suspected source of TCE contamination and that employees had stated that the facility used TCE in a degreasing unit until 1972; however, the source of TCE contamination in the drinking water wells could not be confirmed. Reportedly, TCE was used to wash machine parts prior to 1972. In 1972 - 1974, the vapor degreaser was removed and the floor in the vapor degreaser area was cracked (Ref. 24, pp. 62, 63). The SSI recommended an Expanded Site Inspection (ESI), including installation of deep monitoring wells to determine the responsible party (Ref. 14, pp. 6, 8, 9, 15). In February 1993, the US EPA recommended a high priority ESI (Ref. 15, p. 66).
- On February 7, 1994, Coltec's consultant completed a Ground Water Assessment report on the CR Industries site in response to the January 11, 1993 NOV issued by NC DEHNR (because chlorinated solvents had been detected in an on-site monitoring well). Ten piezometers were installed. TCE was detected in several onsite wells and further assessment was recommended (Ref. 12, pp. 39, 40, 63, 64, 70, 71; Ref. 16). MW-1 contained TCE at 722 µg/L, the highest level of TCE in any well (Ref. 16, p. 26). A 1984 plant diagram shows the punch presses were near the southeastern side of the building (Refs. 19, p. 51; 21, p. 60), but it is not known where the metal parts were cleaned with TCE (prior to 1972).
- On April 28, 1994, Coltec's consultant reported on-going site assessment activities to NC DEHNR (Ref. 17). Eight additional domestic drinking water wells were located and proposed for sampling per requirements set forth in the February 18, 1994 NORR (Ref. 12, pp. 36-38). Six wells were located along Hoyle Circle and two wells were to the north of the CR Industries property; one was a community well (Ref. 17, p. 3). Contamination was discovered in drinking water wells along Hoyle Circle (Ref. 12, pp. 4, 5, 9-27).
- On July 27, 1994, the Interim Update of Monitor Well Analytical Results were reported to NC DEHNR. In response to the February 18, 1994 NORR, five additional monitoring wells were installed and sampled (Ref. 18, pp. 1, 6). Two of these five wells were a well pair near MW-1 (MW1A and MW-1B) (Ref. 18, p. 3). MW-1 (680 µg/L) and MW-2 (480

µg/L) continued to show the highest level of TCE (Ref. 18, p. 8). MW1A showed some (19 µg/L), but lower TCE contamination. MW-1B was dry.

- On November 29, 1994, Coltec's consultant submitted the Site Assessment Summary (aka Comprehensive Site Assessment) Report to NC DEHNR (Ref. 19). This report summarized activities that were conducted in response to the Jan 11, 1993 NOV and the February 14, 1994 NORR. In all, three shallow and three deep monitoring wells were installed (as discussed in the interim update). Water samples were collected from seven drinking water wells, the six new monitoring wells, and seventeen existing monitoring wells. Soil samples from eleven hand augured borings were collected (Ref. 19, pp. 7, 8). Two former on-site water supply wells were abandoned (Ref. 19, p. 19).

Soil sample results did not identify a source of chlorinated solvents. Shallow wells MW-1 (680 µg/L) and MW-2 (480 µg/L) contained the highest levels of TCE (Ref. 19, p. 48). It was proposed that pumping of groundwater on the Rhone-Poulenc site was pulling contaminated groundwater beneath the CR Industries site from the New Haven Dr. area (Ref. 19, p. 28); however, NC DEHNR disagreed with this hypothesis in a February 8, 1995 NOV to Coltec Industries (Ref. 15, pp 21-23). DEHNR stated that Rhone-Poulenc was responsible for TCE contamination at its facility. DEHNR stated that because the highest level of TCE contamination on the CR Industries site was in shallow wells, there was a source of TCE on the CR Industries property (Ref. 15, pp. 21-13). NC DEHNR ordered an addendum to the Site Assessment.

- For the May 9, 1995 Site Assessment Addendum, 26 soil vapor boring samples were collected at 15' depths from inside and outside the building near MW-1 & MW-2 and two additional monitoring wells were installed (Ref. 20, pp. 27, 28). Soil vapor samples were analyzed for TCE, PCE and DCE. Soil vapor results were highest in the area of the highest groundwater contamination and indicated TCE at 20 locations and PCE at 6 locations (Ref. 20, pp. 27, 35).
- On October 13, 1995, Coltec's consultant submitted the Interim Corrective Plan. The plan recommended pumping and air stripping of groundwater with subsequent discharge to the CR Industries WW treatment facility or to a groundwater infiltration gallery (Ref. 21).
- On February 6, 1996, in response to NC DEHNR's NORR dated November 17, 1995, Coltec's consultant submitted the Update for Site Assessment Activities (Ref. 22) and in April 1996, the Pumping Test Evaluation Report was submitted (Ref. 23). On January 16, 1998, Remediation System Installation Plans & Specifications were submitted (Ref. 25).
- Pumping for the remediation started in August 1999 (Refs. 26, 27, 28, 31, 32, 33). By March 2008, the remediation system was shut off due to effluent toxicity failures (Ref. 31, p. 11; 41, pp. 81, 82). Table 2 compares 1999 and 2008 monitoring well results.
- On August 26, 2008, Coltec's consultant completed a water well survey update and two additional drinking water wells were identified, subsequently sampled, and found to be contaminated with TCE, PCE, cis-1,2-DCE, and MTBE (Ref. 37, pp. 236 - 249; Table 1).

- On June 29, 2009, Coltec's consultant submitted a site assessment work plan for another attempt to locate a source area. Soil borings were proposed both within and outside the building (Ref. 34, pp. 53, 54). The revised Site Assessment Plan - Phase I was submitted on March 12, 2010 (Ref. 35).
- On October 10, 2010, Coltec's consultant submitted the Phase I Remedial Investigation (RI) Report (Ref. 36). Thirty-six soil samples were collected from 14 locations from borings ranging in depth from 5' - 45' below land surface. TCE was detected in only one soil sample near the former hazardous waste storage building at a depth of 10-12 feet below ground surface and at a concentration of 9.2 ug/kg. Zinc was detected at 5100 mg/kg, which is above the protection of groundwater soil remediation goals, at a depth of 8-10 feet in the wastewater treatment area. No TCE was detected in the loading dock area; low levels of acetate (up to 20 ug/kg), carbon disulfide (up to 13 ug/kg), cis-1,2-dichloroethene (up to 74 ug/kg) and acetone (up to 210 ug/kg) were detected in soil samples in the loading dock area. Acetone was the only volatile organic detected in all sampled collected from the wastewater treatment area (Ref. 36, pp. 19, 21, 23, 27, 35, 36). No groundwater samples were collected for this report.
- On October 14, 2011, Coltec's consultant submitted the Phase II RI work plan (Ref. 39). This work plan called for a water supply well survey and additional soil samples in the WWTP, sanitary sewer line, former hazardous waste storage building and site drainage ditch areas. This work plan proposed that TCE contamination in the two upgradient wells (MW-20 and R70M25) was pulled from underneath the facility by remedial groundwater pumping on the Rhone-Poulenc facility. This plan discussed that limited natural attenuation is occurring (Ref. 39).
- In October 2012, Coltec's consultant submitted the Phase II Remedial Investigation Report to the NC IHSB (Ref. 43). Eighteen soil samples were collected from 11 borings (2 - 35' deep) and were analyzed for VOCs and metals (arsenic, cadmium, chromium, manganese, mercury, and zinc). Samples were collected near the former hazardous waste storage building and ditches draining the former wastewater treatment area. No VOCs were detected. The soil boring collected near the former equalization basin area contained elevated zinc and was reported to NC DWQ as part of the NPDES permit reporting and was copied to NC IHSB under separate cover (Ref. 44).
- In January 2013, a work plan was submitted to collect groundwater data prior to developing the Phase IIB RI work plan. Groundwater sampling had not been conducted at the site since October 2008 (Ref. 45). The NC IHSB had required that three well pairs (one shallow, one deep) be installed (Ref. 46).
- In October 2013, Coltec's consultant submitted the Phase IIB Remedial Investigation Plan (Ref. 59). Groundwater samples were collected from seven monitoring wells that are screened in saprolite/partially weathered rock and nine monitoring wells that are screened in bedrock. TCE (up to 160 ug/l) exceeded its 2L groundwater standard in three of the seven shallow monitoring wells sampled; these shallow wells were located near the loading dock area immediately to the west and the east. TCE (up to 12 ug/l) exceeded its 2L groundwater standard in three of the nine bedrock monitoring wells sampled; these wells were located just west of the loading dock area, immediately to the west and downgradient

of the former equalization basin, and immediately south of the facility on the Pearson Properties parcel (Ref. 59, pp. 8, 9).

Bedrock (deep) groundwater flow has historically varied. Flow is estimated to be toward the west-southwest; however, historically, groundwater flow has been affected by pumping from production and water supply wells as well as an on-site remediation system. Fracture trace analysis shows trending fractures north to northwest in this area. The New Haven Drive contaminated private wells are located north and northwest of the facility and north and northwest of the TCE-contaminated bedrock wells installed by EPA in 2015. In addition, east-west trending bedrock trough across the site may have influenced bedrock flow as well (Ref. 59, pp. 7, 8, 30, 31).

3.0 GROUNDWATER PATHWAY

3.1 Hydrogeology

Gaston County is located within the Piedmont Plateau physiographic province of NC, lying intermediate between the Coastal Plain physiographic province to the east and the Mountain physiographic province to the west. The piedmont topography consists primarily of well-rounded hills and northeast-southwest trending ridges, with a few more prominent mountains (Ref. 49). The site's average altitude is approximately 760 ft. above mean sea level (MSL). Within ¼ mile southeast of the site, the elevation of the unnamed tributary to Crowders Creek is 680' MSL. Ground surface elevations within a 4-mile radius of the site range from 620 ft. MSL on Crowders Creek to 1076 ft. MSL on Jackson Knob, 1.1 miles east of the site.

Central Gaston County bedrock is geologically mapped as part of the Kings Mountain lithotectonic belt, formed during the late Proterozoic Era. The site is underlain by biotite granite which forms the High Shoals Pluton, a mass of igneous rock which intruded the surrounding metamorphic rock formations during the Pennsylvanian Period of the Paleozoic Era (Refs. 50, 51).

Soil on the facility property is mapped as Urban land. Adjacent and west of the facility property soil is mapped as Madison Sandy Loam with 15 - 25% slope or 8 - 15% slope, eroded. Soil to the north of the facility property is mapped as Cecil sandy loam with a 2 - 8% slope, eroded. Cecil soil is typically a 6-inch surface layer of yellowish-red sandy clay loam, with subsurface soil consisting of red clay and red clay loam to 58 inches depth. Underlying this layer is loamy saprolite to a depth of 80 inches. The soil type reportedly has characteristic water-table and bedrock depths greater than 6 ft. Soils in the 8 to 15 percent slope can become highly eroded in bare, unprotected areas. Madison soils have a yellowish red or yellowish brown sandy clay loam and a predominantly red clay subsoil (Ref. 52).

Depth to groundwater on the site property and immediate vicinity ranges from 20' - 71' below land surface (Refs. 16, p. 17; 39, p. 16). The overall direction of groundwater flow is to the west (Ref. 16, p. 17). There appears to be a saprolite/weathered rock trough running from the east to the west and northwest below the facility property (Ref. 16, pp. 19, 20).

During well installation, overburden soils were field-identified as fine-grained, reddish brown (changing) to light brown saprolite, underlain by dioritic gneiss bedrock (Refs. 54, 55).

3.2 Groundwater Contaminants

Chlorinated solvents are the primary contaminants of concern. While it was earlier speculated by the facility's consultant that the source of TCE was off-site, DEHNR's 1994 review of reports stated that a source of TCE-contaminated groundwater under the facility was facility operations and not an off-site source (Ref. 12, pp. 6-7, 69-71, 82-84). Although DEHNR's opinion was not incorporated in some later discussions (Ref. 15, pp. 13, 21-23, Ref. 29, p. 9), more recent reports concur that shallow groundwater contamination underneath the facility originated from the facility (Ref. 49). DEHNR's 1994 review also stated that Rhone-Poulenc is responsible for TCE contamination on their facility property (Ref. 15, pp. 21 - 23, 33-34). Even though it is anticipated that any deep well contamination may have decreased over the years, as it has in shallower monitoring wells (Fig. 4; Table 2), deep wells were installed by EPA in 2015 in an effort to identify the source of contamination of the nearby drinking water wells, determine if there is an ongoing threat to drinking water wells still in use, and to determine any potential threat to nearby residents via the indoor air pathway.

3.3 Groundwater Targets

In 1990, the US EPA installed waterlines to 51 residences along New Haven Drive area. Thirty of these residences serving 81 residents were served by contaminated wells (Ref. 14, p. 14). In September 1991, it was determined that the drinking water wells had been improperly abandoned by EPA's contractor (Ref. 12, pp. 80, 81) and the wells were subsequently re-abandoned using updated methods (Ref. 12, p. 8; Ref. 29, pp. 71-83, 95-130).

In 1995, NC DEHNR issued a Notice of Regulatory Requirements (NORR) to Coltec (former operator at CR Industries site), ordering them to supply waterlines to two Hoyle Circle residences. This NORR suggested the groundwater was co-mingled with PCE from another source and required remediation of the TCE source area (Ref. 15, pp. 24, 25, 35, 36). In 2008, two wells serving two residences on Crowders Creek Rd. were found to be contaminated and were connected to municipal water (Ref. 37, pp. 224-230, 233-236, 246-249; Fig. 5; Table 3).

In 2011, NC Superfund conducted a Site Inspection (SI) for the Rhone-Poulenc Rhodia site, which is diagonally across the intersection from Industrial Fabricators. Due to the proximity of these two sites, the groundwater target count (i.e. the number of residents using groundwater for drinking) for the two sites is very similar. Below is the groundwater target count conducted for Rhone-Poulenc Rhodia site. For unconfirmed populations, the population is estimated by multiplying the number of residences by 2.5 persons per household for Gaston County (Ref. 46).

<u># in-use residential drinking wells (# residences served)</u>	<u>Residents served</u>
>1/4 – 1/2 mile	Total for distance ring 34 (estimated)
>1/2 – 1 mile	Total for distance ring 29 (estimated)

Gaston County relies heavily on groundwater for drinking and there are numerous community wells within a 4-mile radius of the site (Ref. 48; see Table 6 and Fig. 20 in Ref. 48).

The estimated population served by community wells within four miles of the site includes (Ref. 46):

>1/2 – 1 mile	688
>1 – 2 miles	2362
>2 – 3 miles	5149
>3 – 4 miles	1892

3.4 Groundwater Samples

In August 2015, the US EPA installed 4 deep and 3 shallow groundwater monitoring wells. A fourth shallow well was not installed due to the dry conditions. All well screens were 10' slotted PVC screen. The report on wells installation was received in September 2015. Well locations are shown on Figure 2. Well depths are summarized in the below table. Passive diffusion bags were inserted in these wells in October 2015 and samples were collected in November 2015 in accordance with the Quality Assurance Project Plan (QAPP) that was approved in September 2015 (Appendix A). When samples were collected, additional passive diffusion bags were inserted in the 7 monitoring wells so that another round of samples can be collected if needed (App. A). Analytical results were received in December 2015 (App. B)

	Total well depth bgs 8-2015	Casing stickup	Depth to GW Btc 08-2015	Depth to GW 10-11-15 btc	Depth to GW 11-03-15
MW1S	35'	35"	20'	21.55'	21.7'
MW1D	75'	35"	20'	23.6'	23.75'
MW2S	30'	35"	18'	12.45'	12.25'
MW2D	70'	42"	18'	12.60'	12.75'
MW3D	74'	Flush mount	48'	29.1'	29.3'
MW4S	53'	37"	45'	28.35'	28.6'
MW4D	83'	34"	45'	27.30'	26.85'

bgs – below ground surface

btc – below top of casing

In November 2015, NC Superfund also collected samples from four nearby (within ½ mile) drinking water wells. These four drinking water wells were also sampled in 2011. Figure 5 shows additional in-use drinking water wells greater than ½ mile from the site. Table 3 summarizes the number of residents using these nearby drinking water wells along with attempts to collect samples from other nearby drinking water wells.

Table 4 provides sample collection details on samples collected and Table 5 summarizes analytical results. Based on field quality control (QC) samples, no uncertainty is expected in the groundwater results (Appendix B).

The deep monitoring wells (MW1D and MW2D) in the overland drainage area west and downgradient from the former CR Industries facilities contained TCE at a level greater than both the drinking water standard and the NC groundwater standard. Other contaminants were detected in all of the monitoring wells, but TCE was the only contaminant that exceeded a benchmark (App.

B; Table 5; Fig. 2). Fracture trace analysis shows trending fractures north to northwest in this area. The New Haven Drive contaminated private wells are located north and northwest of the facility and north and northwest of the TCE-contaminated bedrock wells installed by EPA in 2015. The TCE contamination in these wells coincides with MEK contamination. As discussed earlier, a UST containing MEK was found to have leaked in 1984, which precipitated the sampling of the New Haven Drive private wells (Ref. 4). Based on these findings, as well as previous investigations conducted by EPA and other contractors, deep well contamination with TCE is attributable to the former CR Industries facility (Refs. 59, 60).

3.5 Groundwater Conclusions

At least 55 residences near the facility property have been supplied with municipal water connections, at least 34 of which contained site contaminants. Groundwater is used for drinking near the site and the area relies heavily on groundwater for drinking. While previous studies documented TCE-contaminated groundwater underneath the facility proper, it now appears clear that this facility is responsible for contamination of the nearby drinking water wells that were closed in 1990. Further work is needed to identify any ongoing threats to the local drinking water supply and possible threat to human health via vapor intrusion into indoor air.

4.0 SURFACE WATER, SOIL EXPOSURE AND AIR PATHWAYS

These pathways are discussed in the SRR. There have been no changes or additional studies in these pathways since the SRR

5.0 CONCLUSIONS

At least 55 residences have been supplied with municipal water connections, at least 34 of which contained site contaminants. Groundwater is used for drinking near the site and the area relies heavily on groundwater for drinking. There is documented groundwater contamination beneath the facility property and the results of this ESI make it clear that this facility is responsible for TCE-contaminated drinking water wells that were closed in 1990. The level of contamination has decreased over the years; however, this indicates that wells further from the site may have become contaminated with lower levels of contaminants as groundwater has moved away from the site. There is a potential that residents may be threatened from indoor air contamination via the vapor intrusion pathway. Further work is needed to identify any potential ongoing threats to the local drinking water supply. Therefore, Further Action Under CERCLA is recommended.

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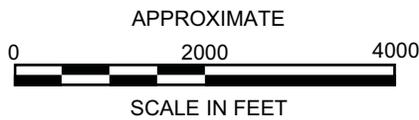
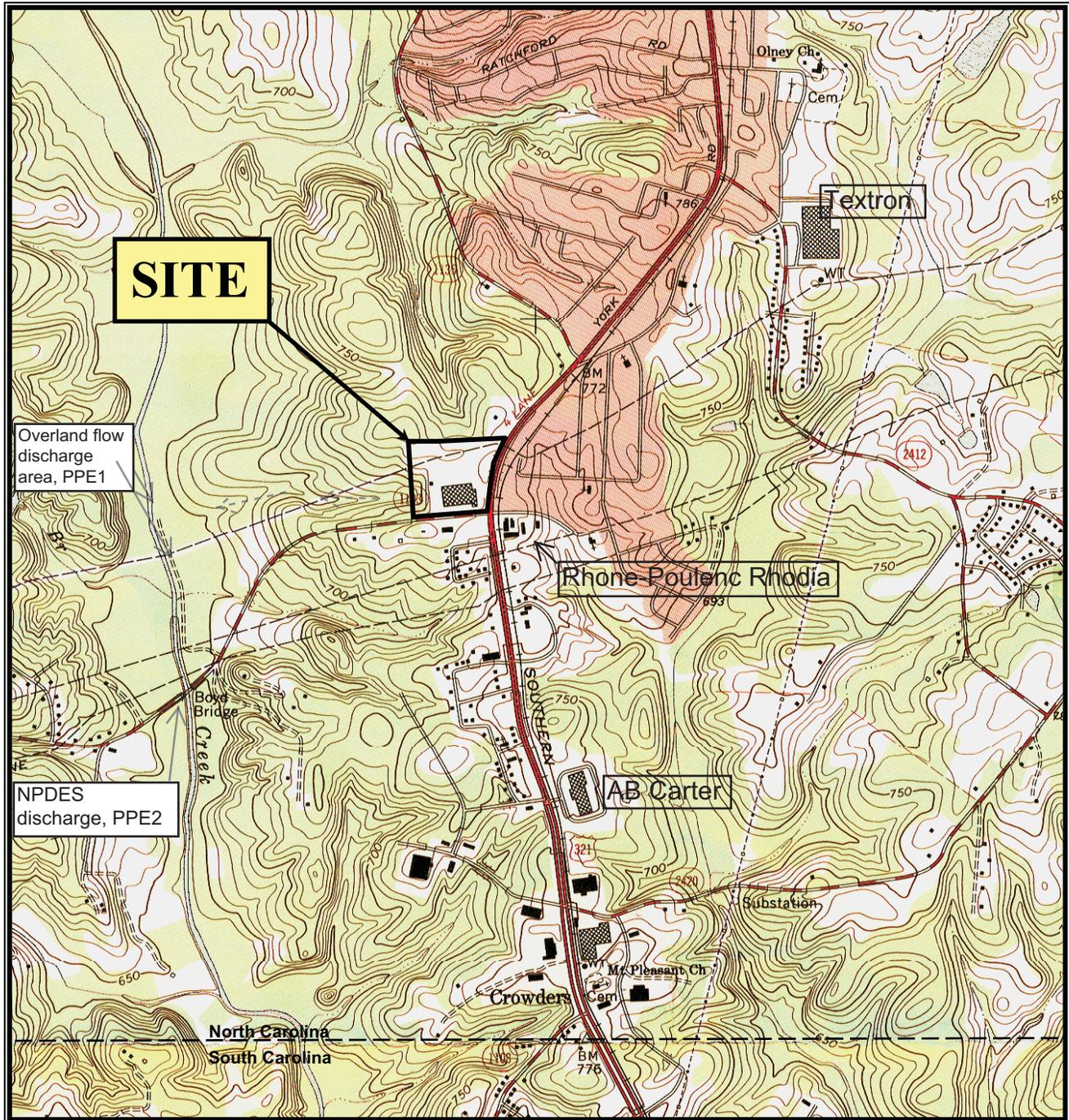
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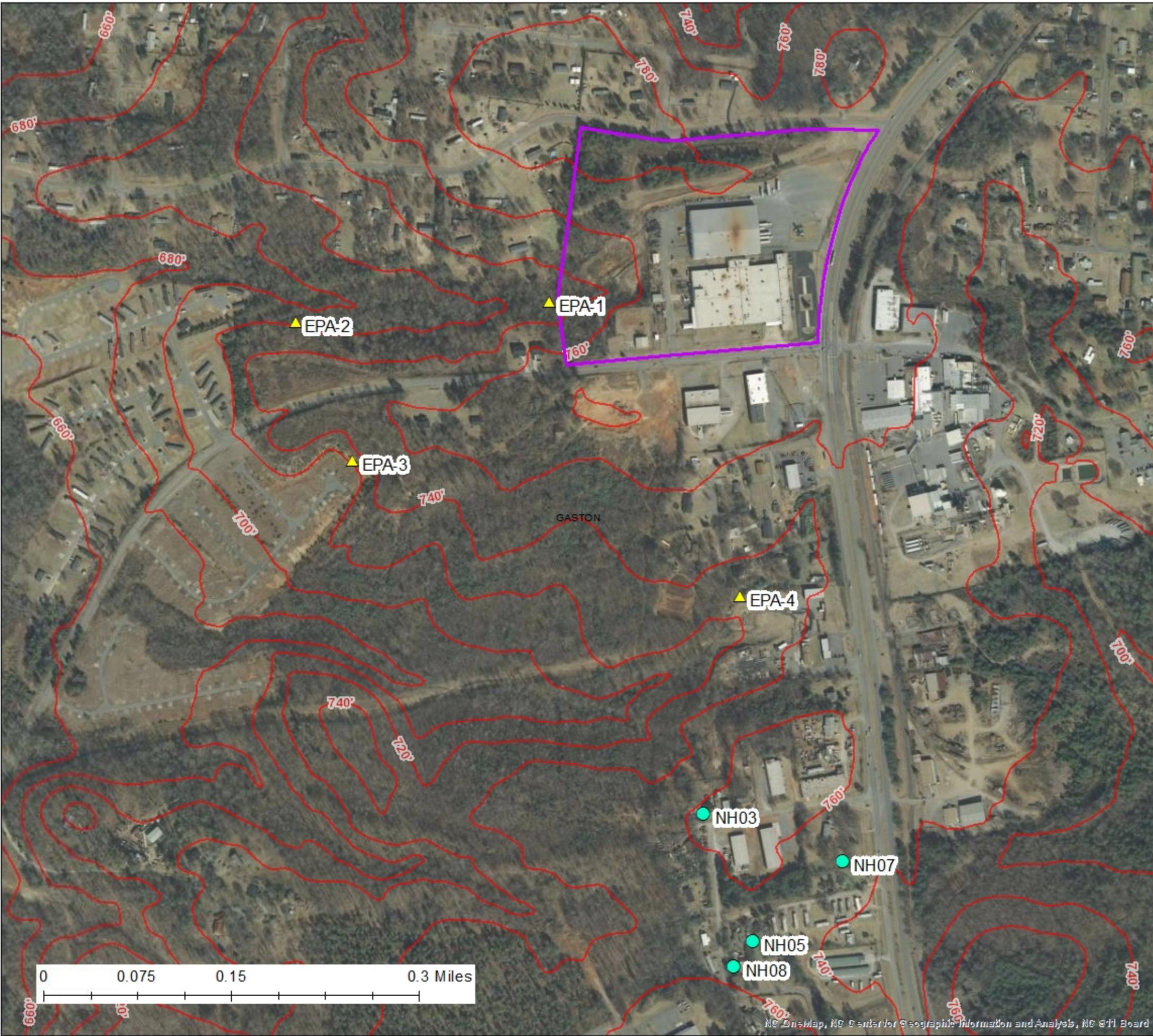


U.S.G.S. QUADRANGLE MAP

GASTONIA SOUTH, N.C. – S.C. 1973

QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE	SITE LOCATION MAP	
PROJECT	FORMER CR INDUSTRIES GASTONIA, NORTH CAROLINA	
	 2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 A PROFESSIONAL CORPORATION 704-586-0007 (p) 704-586-0370 (f)	
DATE:	09-29-2010	REVISION NO: 0
JOB NO:	COL-001	FIGURE NO: 1



New Haven Drive TCE Site

Figure 2: Sample Location Map

Site ID: NCD986171379

City: Gastonia, NC

County: Gaston

Date: January 22, 2016

Prepared By: Amy Axon



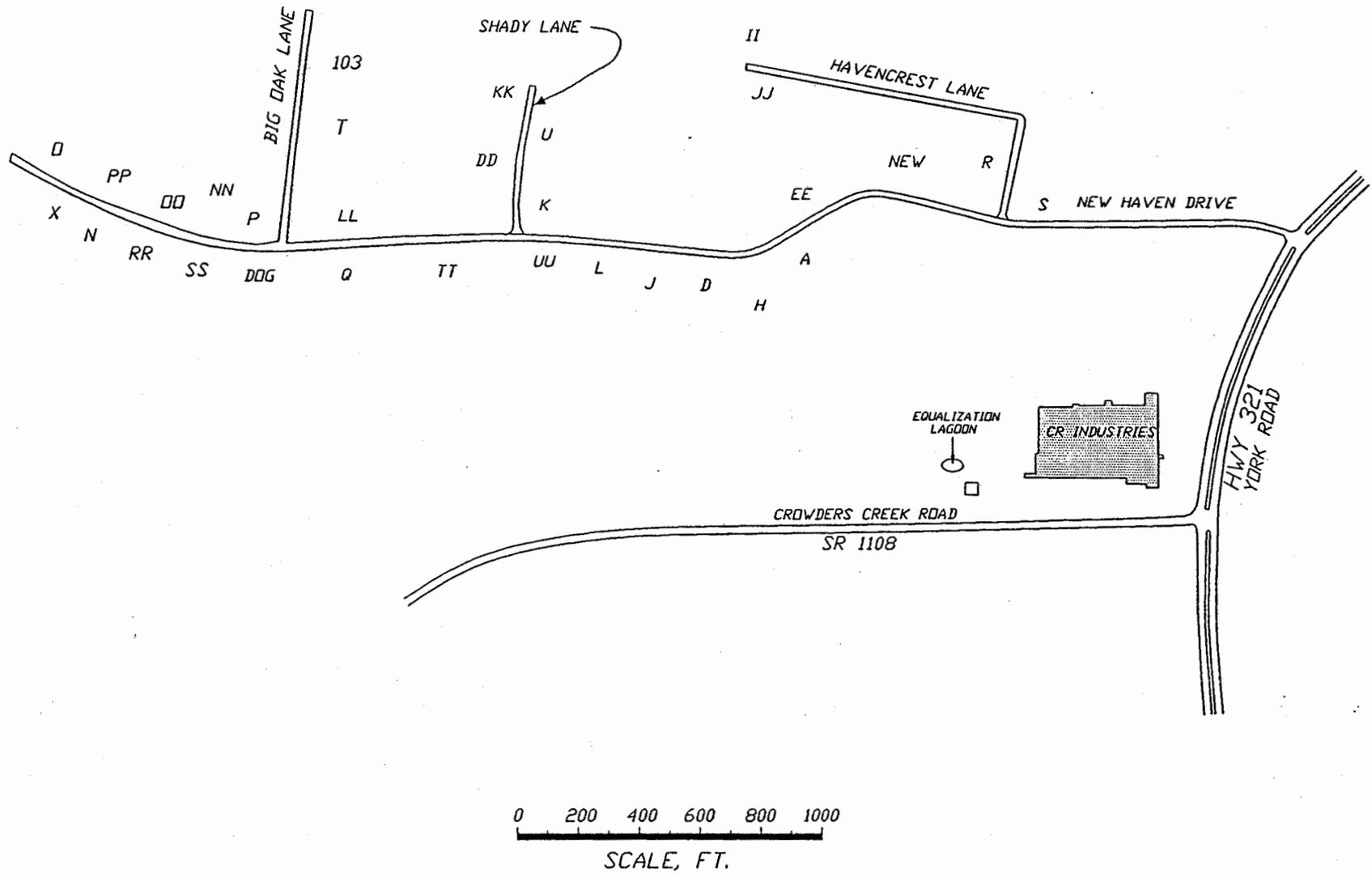
Legend

Well Type

- Drinking Water Well
- ▲ Monitoring Well
- Industrial Fabricators



2



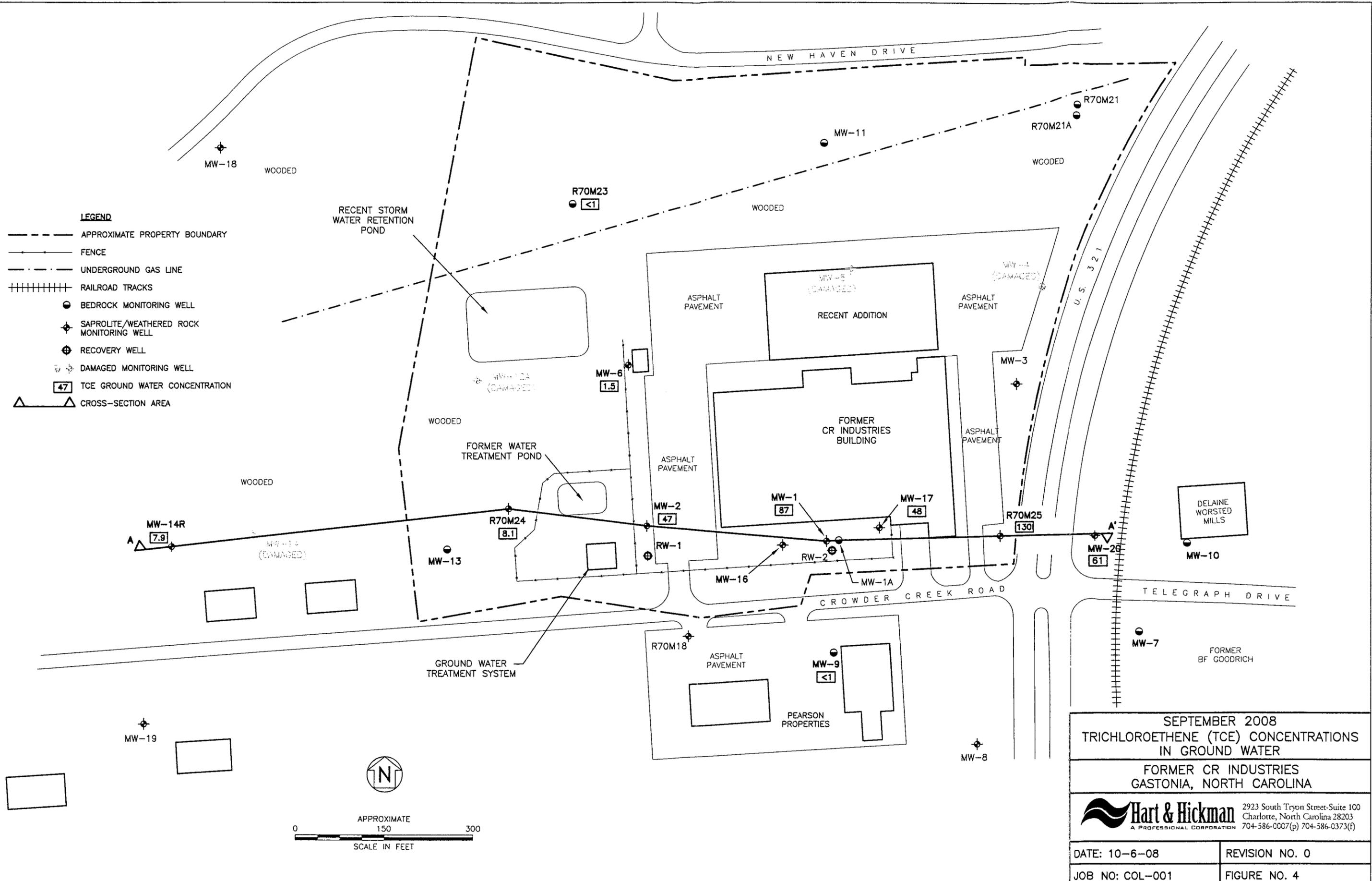
B. NICHOLSON

Figure 3. Contaminated Drinking Water Well Locations

NCDEHNR/SUPERFUND SECTION

9-2-92

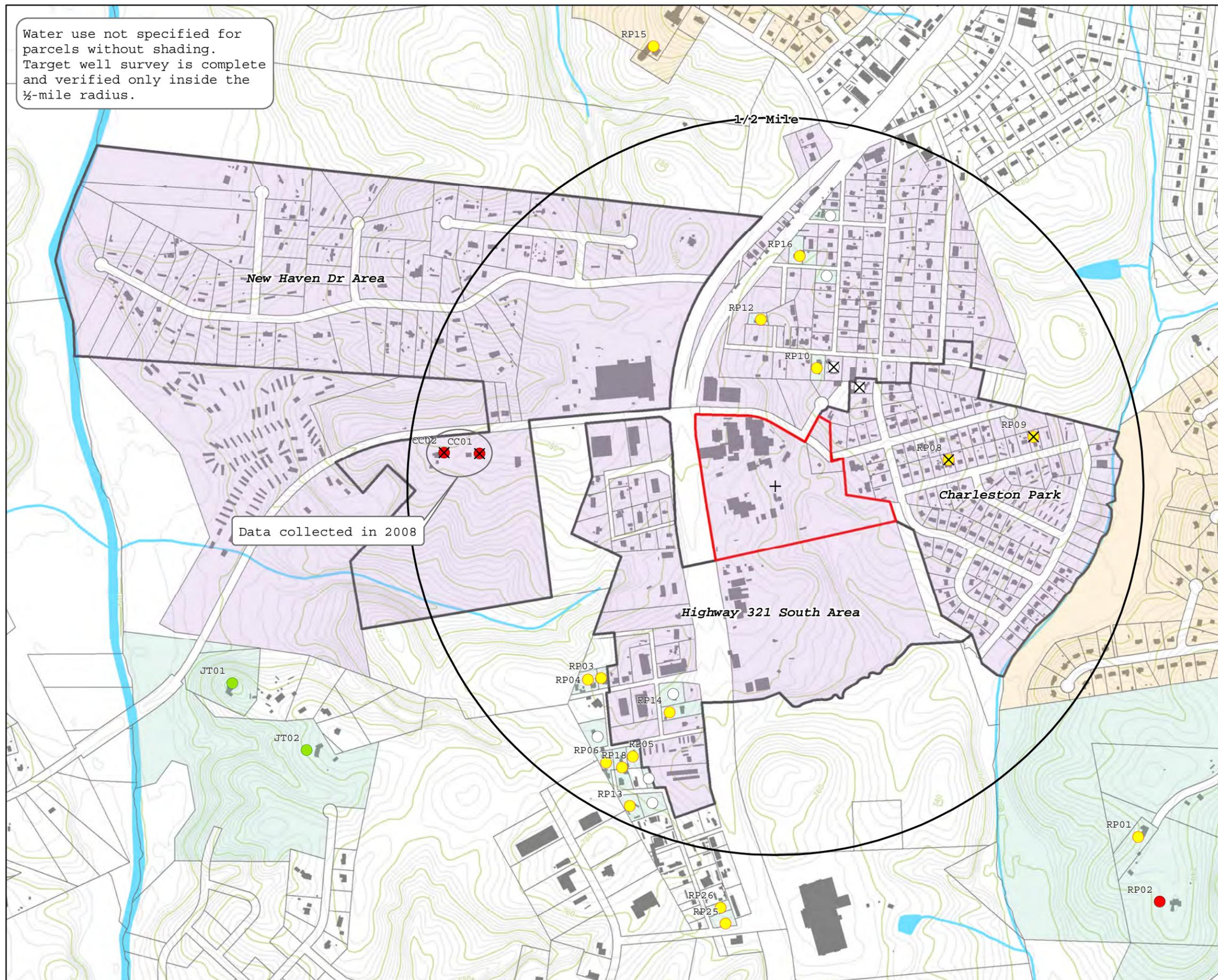
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SEPTEMBER 2008 TRICHLOROETHENE (TCE) CONCENTRATIONS IN GROUND WATER	
FORMER CR INDUSTRIES GASTONIA, NORTH CAROLINA	
 Hart & Hickman <small>A PROFESSIONAL CORPORATION</small>	
2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f)	
DATE: 10-6-08	REVISION NO. 0
JOB NO: COL-001	FIGURE NO. 4

S:\AAA-Master Projects\Coltec Industries - COL\COL_01\October 2008\FIGURES\2008-10-6_Fig_4_COL-01.dwg, Model

Water use not specified for parcels without shading.
Target well survey is complete and verified only inside the 1/2-mile radius.

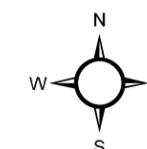


RHONE-POULENC RHODIA HALF-MILE GROUNDWATER USE 2011 SI SAMPLING RESULTS

Fig:	5: Groundwater Use
Site:	NCD 986 182 582
City:	Gastonia, NC
County:	Gaston
Date:	07/19/2012
Drawn By:	SMM

Drinking Water Sampling Results

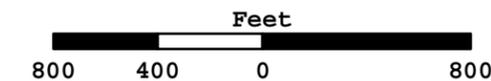
- ✕ Well Not Used as Water Source
- Detection - Level I
- Detection - Level II
- No Detection
- Not Sampled
- City Water
- Community Well
- Private Well



North American Datum
North Carolina State Plane (3200)

Contour Interval 4 Feet

1 inch = 700 feet



Source: Gaston County, Parcels; Well Sample Locations, NC Division of Waste Management; Contour, NC DOT (Derived from 2007 LIDAR)



Table 1. Contaminated Residential Well Results, New Haven Drive TCE, NCD986171379, Gastonia, NC

Well ID	TCE	Cis-1,2-DCE	1,2-DCP	TCFM	PCE	CLFM	Other
1988-1989							
D	116	47.9	9.6	10J			
H	100.3	11.8	6.1	11.5			
A	98.1	22.0	7.9	7.0			
JJ	94.4	6.3	7.0	16.0	1.0		
R	86.1	4.0	5.0				
EE	84.7	5.8	8.2	27.4	1.5	1.8	
NEW	56.1						
J	55.8	13.0	8.7	11.4		1.5	
II	42.8	3.7	5.5	73.2J		1.1	
Q	39.7	--	3.3	4.1J	2.1		MeCl -1.6
TT	31.7	--	3.7				
S	28.3	12.9	3.9				
K	18.9	--	1.6	1.6			
LL	15.2	--	1.3				
DOG	15.2						
L	14.9	--	1.8	1.8			
OO	14.2						
SS	13.1	--	2.7				
NN	11.4						
PP	8.3	--	1.2				
G	6.8						
T	6.6						
E	5.4						
N	5.0						
X	4.9						
DD	4.9	--	2.0	6.9J			
RR	4.1						
KK	3.5	--					
O	3.4						
103	2.6	--	1.1				
P	2.3						
UU	1.7						
1994							
109 Hoyle	2				3		
111 Hoyle	2				2		
215 Hoyle							1,1,1-TCA - 5
505 Crowders Creek*	10				8		
2008							
223 Crowders Creek	1.0				1.4		
227 Crowders Creek	17	1.7			1.0		MTBE - 1.2

J = Estimated Value; TCFM = Trichlorofluoromethane; DCP = Dichloropropane; CLFM = Chloroform; MeCl = Methylene chloride; MTBE = Methyl tert butyl ethylene

*Crowders Creek Rd. was apparently re-numbered after 1994 and before 2008. The former 505 Crowders Creek is now 227 Crowders Creek. This well served an abandoned barn until 2008. The residence served by this well was connected to the clean well next door in 1994. This formerly clean well at 223 Crowders Creek showed contamination in 2008 and both residences now are served by municipal water (Refs. 12, pp. 9-27; 14, p. 14; 19, pp. 58-60; Ref. 37, pp. 224-230, 233-236, 246-249).

Table 2. Comparison of Monitoring Well Results, New Haven Drive TCE, NCD986171379, Gastonia, NC

Well ID	PCE	TCE	cis-1,2-DCE	1,2-DCP	TCFM	PCE	TCE	cis-1,2-DCE	1,2-DCP	TCFM
1998					2008					
Saprolite										
MW-1	BDL	333	8.3	BDL	BDL	<1.0	29	<1.0	<1.0	<5.0
MW-2	BDL	170	BDL	BDL	BDL	<1.0	40	<1.0	<1.0	<5.0
MW-6	BDL	8.9	11.3	BDL	BDL	1.0	2.6	6.5	1.4	<5.0
MW-14	BDL	47.6	2.4	BDL	BDL	<1.0	11	1.5	<1.0	<5.0
R70M25	BDL	66.2	BDL	BDL	BDL	<1.0	150	1.5	<1.0	<5.0
Bedrock										
MW-9	BDL	5.2	BDL	BDL	BDL	<1.0	<1.0	<1.0	<1.0	<5.0
MW-12	2.2	33.4	51.6	BDL	19.5	1.4	8.7	16	5.3	3.6J
R70M22	8	6.9	33.5	BDL	BDL	<1.0	1.2	14	<1.0	<5.0
R70M23	<i>BDL</i>	<i>BDL</i>	<i>BDL</i>	<i>BDL</i>	<i>BDL</i>	<1.0	<1.0	<1.0	<1.0	<5.0
R70M24	BDL	75.8	BDL	BDL	BDL	<1.0	10	<1.0	<1.0	<5.0

TCFM = Trichorofluoromethane; DCP = Dichloropropane;

BDL = Below Detection Limit; J = Estimated Value

Shading/Italics indicates well sample date different from that shown in heading.

R70M22 was damaged, sample results shown for 2005, last date sampled

R70M23 was replacement for well R70M22. R70M23 not part of regular GW monitoring during pumping. Results shown are for 1993 (Ref. 16)

Table 3. Well Survey and Sample Information 2011 & 2015
New Haven Drive TCE (NCD 986 171 379), Gaston Co., NC

2015 Station ID	Address	Notes / (number residents)
NH03	Davis Heights, 208	2 residences (5 residents) Well also serves 206 Davis Hts
	Davis Heights, 302	4 residents Not sampled 2015, house vacant
NH05	Davis Heights, 410	3 residents
	Davis Heights, 411	2 residences home & trailer; 4 residents. not sampled 2015, access denied. Pit bull inside fence
	Davis Heights, 507	(2 residents), not sampled 2015
NH07	S York Hwy, 4608	(2 residents)
NH08	Davis Heights, 412&502	(3 residents)
	Davis Heights, 409	no answer, no response in 2011 or 2015. Has fence and no trespassing sign. Pit bull tied in yard.
	Davis Heights, 510	Not sampled– no answer at door, no response to 2011 or 2015 letters, well in front yard. Two Pit Bulls tied in yard
	S York Hwy, 4705/4604, AJR Electric & residence, also mailing address for Bruce's Iron & Metal	Not sampled – no answer at door, no response to letter in 2011. In 2015, resident responded they had been on city water for years
	S York Hwy, 4212	Not Sampled; has city water
	Crowders Creek, 223	Residential well sampled in 2008 for CR Industries
	Crowders Creek, 227	Residential well sampled in 2008 for CR Industries

Table 4. New Haven Drive TCE ESI -- List of Samples, November 3, 2015

Station ID	Sample Number	Map Number	Date	Time	Address / description of samples
	NH-100-GW		11/03/2015	0630	Trip Blank
EPA1S	NH-1S-MW	EPA1S	11/03/2015	14:12	Shallow well
EPA1D	NH-1D-MW	EPA1D	11/03/2015	14:05	Deep well
EPA2S	NH-2S-MW	EPA2S	11/03/2015	13:45	Shallow well
EPA2D	NH-2D-MW	EPA2D	11/03/2015	13:40	Deep well
EPA3D	NH-3D-MW	EPA3D	11/03/2015	13:20	Deep well
EPA4S	NH-4S-MW	EPA4S	11/03/2015	14:35	Shallow well
EPA4D	NH-4D-MW	EPA4D	11/03/2015	14:40	Deep well
NH03	NH-003-GW	NH03	11/03/2015	12:02	Davis Heights, 208
NH03	NH-103-GW	NH03	11/03/2015	12:02	Duplicate of NH-003-GW
NH05	NH-005-GW	NH05	11/03/2015	15:08	Davis Heights, 410
NH07	NH-007-GW	NH07	11/03/2015	10:50	S York Hwy, 4608
NH08	NH-008-GW	NH08	11/03/2015	11:26	Davis Heights, 502 (412 is a vacant parcel)

Table 5. New Haven Drive TCE ESI – Well Sample Results 2015

Sample Number	Map Number	1,1,1-TCA µg/L	1,1-DCA µg/L	1,1-DCE	Acetone **	CS ₂	Chloro- form	Chloro- methane	Cis-1,2- DCE	Cyclo- hexane	MEK	PCE	TCE µg/L	Freon 11*
NH-1S- MW	EPA1S	ND (0.50)	ND (0.50)	ND (0.50)	120 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.44 J (0.50)	9.4	ND (0.50)	ND (0.50)	ND (0.50)
NH-1D- MW	EPA1D	ND (0.50)	ND (0.50)	ND (0.50)	110 J	0.73	0.69	ND (0.50)	2.5	0.82	14	0.24J (0.50)	20	ND (0.50)
NH-2S- MW	EPA2S	ND (0.50)	ND (0.50)	ND (0.50)	110 J	ND (0.50)	ND (0.50)	ND (0.50)	0.23 J (0.50)	0.87	9.0	ND (0.50)	0.99	ND (0.50)
NH-2D- MW	EPA2D	ND (0.50)	ND (0.50)	ND (0.50)	130 J	ND (0.50)	0.59	ND (0.50)	5.8	1.3	8.2	0.27J (0.50)	16	0.30 J (0.50)
NH-3D- MW	EPA3D	ND (0.50)	ND (0.50)	ND (0.50)	96 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	1.4	14	ND (0.50)	0.28 J (0.50)	0.28 J (0.50)
NH-4S- MW	EPA4S	ND (0.50)	ND (0.50)	ND (0.50)	130 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	1.3	12	ND (0.50)	ND (0.50)	ND (0.50)
NH-4D- MW	EPA4D	ND (0.50)	ND (0.50)	ND (0.50)	91 J	ND (0.50)	0.39 J (0.50)	ND (0.50)	0.39 J (0.50)	2.3	6.9	ND (0.50)	ND (0.50)	1.1
NH-003- GW	NH03	ND (0.50)	ND (0.50)	ND (0.50)	5.0 UR	ND (0.50)	1.1	0.26 J (0.50)	ND (0.50)	ND (0.50)	ND (5.0)	ND (0.50)	ND (0.50)	ND (0.50)
NH-103- GW	NH03	ND (0.50)	ND (0.50)	ND (0.50)	5.0 UR	ND (0.50)	1.1	ND (0.50)	ND (0.50)	ND (0.50)	ND (5.0)	ND (0.50)	ND (0.50)	ND (0.50)
NH-005- GW	NH05	0.58	0.35J (0.50)	0.53	5.0 UR	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (5.0)	0.28 J (0.50)	ND (0.50)	ND (0.50)
NH-007- GW	NH07	ND (0.50)	ND (0.50)	ND (0.50)	5.0 UR	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (5.0)	ND (0.50)	ND (0.50)	ND (0.50)
NH-008- GW	NH08	0.29 J (0.50)	ND (0.50)	0.27 J (0.50)	5.0 UR	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (5.0)	ND (0.50)	ND (0.50)	ND (0.50)
2L		200	6	350	6,000	700	70	3	70	NS	4,000	0.7	3	2,000
MCL		200	NS	7	NS	NS	NS	NS	70	NS	NS	5	5	NS

BOLD & Shaded = Greater than a Benchmark; **BOLD** = Detected above reporting limit; (___) = reporting limit

*Freon 11 is also known as Trichlorofluoromethane

**For acetone, the lab encountered poor instrument response in some calibration standards. All associated positive results were qualified J and all associated non-detects were qualified UR.

J – The identification of the analyte is acceptable; the reported value is an estimate. U – The analyte was not detected at or above the reporting limit.

R – The data are rejected and considered unusable. ND – Non-Detect NS – No Standard

1,1,1-TCA – 1,1,1-Trichloroethane; 1,1-DCA – 1,1-Dichloroethane; 1,1,-DCE – 1,1-Dichlorethene; CS₂ – Carbon disulfide; Cis-1,2-DCE – Cis-1,2-Dichloroethene; MEK – Methyl Ethyl Ketone; PCE – Tetrachloroethylene; TCE - Trichloroethylene

New Haven Dr TCE
NCD986171379
Gastonia, Gaston Co., NC

Appendix A

10/11/15
arrived well 15 + 1D
1007 am

minirae was calibrated
at lab at 6:30 am -

1D uncapped - stuck up - 35"
1.2 in well
0 in breathing

1S uncapped 0 reading in well
0 in breathing zone
1S stuck up 35"

1D - tank trolley
23.6 btc water
79.2 btc - total depth

1S - water
21.55 btc

1D - Double Bag dropped
for duplicate
~ 72" b/s or 74 1/2'
btc to cap
of bottom bag

1S rope = 33' btc -

2S - min Rae 0 -
2D " " 0 -

2S - 35" stuck up
2D 42" stuck up

2S - 12.45' btc

2D - 12.60' btc

2S - 1 bag hung -
Rope 28' btc to
middle of bag

2D - 1 bag hung -
68 1/2' btc

1105 - completed hanging 4 wells

delivered Rita Ln gate key

to Nancy @ Orion Oaks.

1135

arrived 30 - flush mount
mini Ray - 0
water 29.1 btl
30 bag @ 69' btl.

1205

0.5

0.5

} mini Ray
both wells

45 - front well

28.35' btl
water 57.1' btl
Bag hung 52' btl

- back well

40 27.30' btl
bag hung 80' btl
18+2

finished hanging 1225

Revised potential well sample
locations

Dennis Machine

205 Davis Heights Pr.

(704) 861-8981

Charles D. Jones owner

Mike Jones - son

Brenda Jones (Charles D.'s wife)

Signed form.

Mr. Jones Resided 411 McFalls

@ 208 Davis Heights were

moving out soon due to illness.

Front porch was hooked + back

screen door was blocked

Beverly Altord @ 410 Davis Hts
5th rd access. 2 Residents

Russell Lewis 411 Davis Hts

adjacent home/trailer shares

well w/ Mrs Lewis. They Part.

Well inside fence w/ dog. Mrs Lewis

was ill & did not come to fence

407 Davis Hts Business
vacant

409 Davis Hts Residence
left card. No answer
at door

310 Davis Hts - no one home -
2 pit bulls on chain

302 Davis Hts - vacant

502 Davis Hts - cars
there, no one came to door -
Beware of Dog sign + Dog
inside fence. Light turned
on, but no one opened door

11/3/2015

0630 J. prepared Trip Blank
HZ calibrated pH meter

11/3/15

arrived Gastonia ~10:30
cool, cloudy, sl. drizzle ~60°F

S. Stanley
H. Zinn

$$T+Z=9+4=13$$
$$T+Z=14-2=12$$

Jeff Maumey 4608 S York
NH007-GW

1035 started purging from tap by front porch

	pH	Temp	ntu	uS
1040	5.88	16.8	0.23	168.1
1045	5.83	16.8	0.44	131
1050	5.80	16.8	0.60	128.9

Met with Amber, Patricia Arledge
daughter. She gave verbal
permission

started purging Patricia Arledge
well 502 Davis Hts. NH08

	pH	Temp	ntu	uS
1109				
1116	6.29	17.0	0.48	131.9
1120	6.16	17.0	0.32	126.0
1125	6.16	17.0	0.32	124.4
1126				

NH08 collected

NH03 + NH 103

Johnny McFalls owns
ear Judy + Harold McFalls
Reside at 208

208 Davis Hts

nextdoor 206 Davis Hts

Share Sam well 3-4 resident

pH temp ntus μ S

1145 Started purging

1150 6.20 17.9 11.33 88.81

1155 5.87 18.3 0.79 88.43

1200 5.82 18.6 0.82 85.81

1202 NH03 + NH103 collected

break for Lunch

1305 arrived at 3D well

off Rita Ln

29.3' btc

1320 NH 3D collected

200

1335 NH45 - 12.25' btc

1345 48 collected

250
of

200

NH 40 12.75' btc

1340 40 collected

200

10 23.75' btc

6-40mls - ms/msd

140 30 10 collected - ms/msd

15 21.7' btc

1412 - 15 collected

45 1430 28.6 btc

1435 45 collected

40 26.85 btc

1440 40 collected

410 Davis Hts

1452 started purging Alford well

NH05

pH temp ntus μ S

1457 6.37 17.0 0.53 130.5

1502 6.10 16.9 0.28 117.1

1507 6.03 16.9 0.38 118.8

1508 NH05 collected

Knocked on door @
409 Davis Hts.
No answer

411 Davis Hts -

Mr. Lewis came to
door + said he did receive
my letter but would not
allow sample. We had
sampled his well ~ 3 yrs
ago (I did) + he felt
he had good, sweet water.
I told him if I detected
anything in his neighbors'
wells, I would contact him
+ request a sample again.

~~Sample~~

**North Carolina Superfund Section
SITE HEALTH AND SAFETY PLAN**

A. General Information

Site Name

ID #

Location

Proposed Date of Investigation:

Date of Briefing:

Date of Debriefing:

Nature of Visit (check one):

On-site reconnaissance	Off-site reconnaissance	Sampling
------------------------	-------------------------	----------

Sampling Objectives and Overview:

Remediation Overview:

Health Department Official Contacted:

Date of Contact:

Site Investigation Team: All site personnel have read the Site Health and Safety Plan and are familiar with its provisions.

Team One Personnel		Task	Signature
Team Two Personnel		Task	Signature
Team Three Personnel		Task	Signature

Prepared By:

Reviewed By:

B. SITE/WASTE CHARACTERISTICS

Liquid	Gas
Solid	Vapor
Sludge	

Waste Characteristics:

Corrosive	Volatile
Ignitable	Toxic
Radioactive	
Reactive	

Comments:

If known, list the substance of concern and amounts:

Substance of Concern	Warning Properties	Exposure Limits

Underground Utilities Checklist Required: YES NO

Utility	Locator/Contact	Phone	Date of Location
Power			
Telephone			
Gas			
Water			
Sewer			

Facility Description: Size: Buildings:

Disposal Methods Being Investigated:

Unusual Features on Site (dike integrity, power lines, terrain, etc.):

History of the Site:

Indicate All Anticipated Hazards:

Biological Hazards	Pressure Hazards
Chemical Exposures	Workplace Violence
Electrical Hazards	Ergonomic Hazards (stooping, bending, crawling, repetitive)
Fire and Explosion	Vision Hazards (impact/splash)
Environmental/Weather Conditions	Confined Spaces
Radiation	Excavations, Unstable Terrain, and Test Pits
Noise / Vibration	Traffic Hazards
Oxygen Deficiency Atmospheres	Wildlife Hazards
Slip, Trip, Falls, Impact, and Struck-by	Other:

What method(s) will be implemented to reduce or eliminate exposure to these hazards?

Indicate all necessary PPE:

Hard Hat	Eye Wash/First Aid Kit
Safety Boots	Hand Sanitizer
Knee Length Boots	Gloves
Safety Glasses	DWM Reflective Safety Vest
Safety Goggles	Binoculars
Tyvek Suit/Other	Hearing Protection
Other:	

D. WORK PLAN INSTRUCTION

Map or Sketch Attached?

Perimeter Identified?

Command Post Identified?

Zones of Contamination Identified?

Personal Protective Equipment/Level of Protection:

Surveillance Equipment:

HNU	Rea Systems PID
OVA	Oxygen Meter
Detector Tubes	Radiation Monitor
Other:	Niton XRF

Air Monitoring Results:

Equipment (w/ calibration date)	Results (units)	Comments

Decontamination Procedures

Level C Respirator wash, respirator removal, suit wash (if needed), suit removal, boot wash, boot removal and glove removal.

Level D Boot wash and rinse and boot removal, suit removal, glove and goggle removal. Goggles will be worn while decontaminating field equipment. Modifications Dispose of trash properly, on-site if possible.

EMERGENCY PRECAUTIONS

Route of Exposure First Aid

Eyes- irrigate immediately

Skin- soap and water wash

Inhalation- fresh air and artificial respiration

Ingestion- get medical attention immediately

STATE POISON CONTROL CENTER: 1-800-848-6946

Location of Nearest Phone:

Phone Numbers:

Police:

Fire:

Hospital (Address and Phone Number):

EMPLOYER: Please complete the top section and give to the injured employee to take with them to their authorized treating physician. If you already have transitional duty job descriptions available, please attach a copy for the treating physician's review.

Name of Employee: Last:	First:
Date of Injury:	
Name of Employer:	
Employer Signature:	Treating Physician:

EMPLOYEE: Please take this form with you to an authorized treating physician. Please have the physician complete the middle section and return this immediately to your employer. The bottom section is for you to show the pharmacist should you need to have any prescriptions filled as prescribed by your authorized treating physician for this work related injury.

AUTHORIZED PHYSICIAN, PLEASE COMPLETE

Diagnosis: _____

A post accident drug test (check one) has been completed has not been completed

In accordance with this patient's physical capability, check all that apply:

- May resume work immediately, no restriction.
- May resume work immediately with the following restrictions:
 - Sedentary work (sitting, occasional walking, standing, lifting less than 10 pounds)
 - Light work (lifting less than 20 pounds)
 - Medium work (lifting less than 50 pounds)
 - Heavy work (lifting less than 100 pounds)
 - Normal shift
 - Limited hours: ___ hrs, ___ hrs, ___ hrs per day
 - Other: _____

Repetitive Motion Restrictions (specific to hand/arm injuries):

Frequency	Left	Right
No Use		
Occasional <33% of time		
Frequent 34-66% of time		
Regular 67-100% of time		

- Patient may return to work at full duty on (date) _____
- Patient has a return appointment on (date) _____ at (time) _____

Please indicate any referrals that are required: _____

Physician's Signature Date Physician's Name (type or print)

Physician Offices – Be sure to contact CorVel's Claim Department at 800-365-5998 for authorization for the referral.

PHARMACIST: Please use the Injured Worker's SSN and Date of Injury (SSN+MMDDYYYY) as their 17 digit Identification Number when entering information to process an online claim to CorVel on behalf of Department of Environmental and Natural Resources injured employees. Pharmacies can contact the CorVel Customer Service at 800-563-8438 or CVS/Caremark Pharmacy Help Desk at 877-876-7216, for assistance with claims processing.

DO NOT CHARGE THE PATIENT FOR THE PRESCRIPTION.

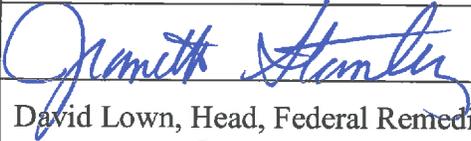
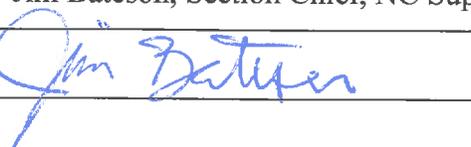
CHAIN NAME	CHAIN NAME	CHAIN NAME	CHAIN NAME
80-Lo Pharmacy	Horizon Pharmacy	Novo drugs	VA Pharmacy
80-Ment	HyVee Drugstore	Pile-Aid drugs	Walgreen's
Brooks Drugs	J & J Pharmacy	PA Discount Pharmacy	Wal-Mart Pharmacy
Brookshire Brothers	Joel & Jerry's	Jack-n-Save	Wegman Pharmacy
Cub Pharmacy	Kash N' Carry	Save-A-Lot	Winn-Dixie
CVS Drugs	Kier Drugs	Sears Club Pharmacy	
Drug Emporium	K-mart phcy	Save Mart	
Eckards (all others)	Long's Phcy	Stop N Shop	
Francis's Pharmacy	Medicine Shoppe	Super D	
Frost Meyer	Medistal Phcy	Super Vals	
Frost's Pharmacy	Milner-Harding Drugs	Super X (H&M)	
Guard Pharmacy	Pathmark Pharmacy	Tom Thumb Phcy	
Goodings	Perry Drug St	Tops Pharmacy	
Hannaford Food &	Phar-Mix	Tri Daily Drugs	

Group Number: RXFFWC311
CCRx BIN: 004336
PCN: ADV Rev. 6/10
Dept. of Environ. & Natural Res.

CORVEL
* All participating pharmacies have not been included on this list. Please have your pharmacy call regarding any questions/authorizations 800-563-8438.



Quality Assurance Project Plan

Section A: Planning Elements		
A1. Title (Project Name):	New Haven Drive TCE	
EPA ID#:	NCD 986 171 379	
Project Location:	New Haven Drive, Gastonia, Gaston Co., NC 27701	
Project Requestor and Organization:	Jeanette Stanley, Chemist, NC Superfund Section	
Project Manager's Name, Position, and Organization:	Jeanette Stanley, Chemist, NC Superfund Section	
Project Manager's Signature:		Date: 9/2/15
Technical Reviewer's Name and Position:	David Lown, Head, Federal Remediation Branch, NC Superfund	
Technical Reviewer's Signature:		Date: 9/2/15
QA Reviewer's Name and Position:	Jim Bateson, Section Chief, NC Superfund	
QA Reviewer's Signature:		Date: 9/2/15
DAO's Name, Position, and Organization:		
DAO's Signature:		Date:
A2. Table of Contents	<ul style="list-style-type: none"> • Page i of the NC generic QAPP • Section No. TOC of NC Superfund Section Health and Safety SOP Manual (http://portal.ncdenr.org/web/wm/div/safety/program) • Sampling Plan Table 1, Figures 1 - 3 	
A3. Distribution List	Carolyn Callihan, US EPA Region 4 David Lown, NC Superfund Section Scott Ross (File Room), NC Superfund Section Jeanette Stanley, Chemist, NC Superfund Section	
A4. Project Personnel	Organization	Responsibilities
Jeanette Stanley, Chemist	NC Superfund	<i>Project Lead/FORMS</i>
Stuart Parker, Hydrogeologist	NC Superfund	<i>Sampler/Safety</i>
Harry Zinn, Engineer	NC Superfund	<i>Sampler</i>
Comments: The NC Superfund Section organizational chart and delegation of duties can be found in Section 3.1 and Appendix A of the NC generic QAPP.		
A5. Background:	In 1988, removal of a leaking methyl ethyl ketone (MEK) underground storage tank (UST) at Precision Seals Co. (former owner / operator of CR Industries at the corner of New Haven Drive and York Hwy) prompted sampling of nearby wells for volatile organic compounds (VOCs). Gaston County collected samples from neighboring drinking water wells and approximately 30 residential wells serving about 81 people were found to be contaminated with trichloroethene (TCE) and	



Quality Assurance Project Plan

other chlorinated solvents, but MEK was not detected in the drinking water wells. The US EPA performed a Removal Action in 1990 and 51 houses were connected to waterlines. EPA did not pursue cost recovery for the Removal Action because a responsible party could not be definitively identified.

The NC Superfund Section completed the Site Reassessment Report (SRR) in September 2013. This report and over 6,000 pages of reference material are available at <https://edm.nc.gov/DENR-Portal/>. Below is a background summary from the SRR report.

NC Superfund completed the Preliminary Assessment (PA) in February 1990 and Further Action under CERCLA was recommended. In mid-February 1990, the US EPA collected soil gas samples through a probe at 29 locations (4 - 5' depth) west of the CR Industries building. None of the soil gas samples contained TCE. Soil samples were collected at 13 locations (4 - 5' depth) within this grid. Soil headspace and laboratory analyses were conducted on each of the 13 soil samples. Of these 13 soil samples, TCE was found in four soil headspace samples but was not identified in any of the laboratory-analyzed soil samples. Toluene, 1,1,1-TCA, methylene chloride, and trichlorofluoromethane were reported in several laboratory-analyzed soil samples.

In 1992, the NC Superfund Section completed the SSI. This SSI stated that CR Industries was the leading suspected source of TCE contamination and that employees had stated that the facility used TCE in a degreasing unit until 1972; reportedly, TCE was used to wash machine parts. In 1972 - 1974, the vapor degreaser was removed and the floor in the vapor degreaser area was cracked. However, the source of TCE contamination in the drinking water wells could not be confirmed. The SSI recommended an Expanded Site Inspection (ESI), including installation of deep monitoring wells to determine the responsible party. In February 1993, the US EPA recommended a high priority ESI.

The January 11, 1993 Notice of Violation (NOV) issued by NC DEHNR determined that Coltec and SKF were the responsible parties (RPs) for the chlorinated solvent contamination in an on-site monitoring well. On February 7, 1994, their consultant completed a Ground Water Assessment report on the CR Industries site. Ten piezometers were installed. TCE was detected in several onsite wells and further assessment was recommended. MW-1 contained TCE at 722 µg/L, the highest level of TCE in any monitoring well.

Later in 1994, eight additional domestic drinking water wells were located and proposed for sampling per requirements set forth in the February 18, 1994 Notice of Regulatory Requirements (NORR). Six



Quality Assurance Project Plan

wells were located along Hoyle Circle and two wells were to the north of the CR Industries property; one was a community well. Contamination was discovered in drinking water wells along Hoyle Circle.

Five additional monitoring wells were subsequently installed in 1994 and sampled. Two of these five wells were a well pair near MW-1 (MW1A and MW-1B). MW-1 (680 µg/L) and MW-2 (480 µg/L) continued to show the highest level of TCE on the facility property. MW1A showed some (19 µg/L), but lower TCE contamination.

In 1994, two former on-site water supply wells were abandoned.

NC DEHNR ordered an addendum to the Site Assessment. For the May 9, 1995 Site Assessment Addendum, 26 soil vapor boring samples were collected at 15' depths from inside and outside the building near MW-1 & MW-2 and two additional monitoring wells were installed. Soil vapor samples were analyzed for TCE, PCE and DCE. Soil vapor results were highest in the area of the highest groundwater contamination and indicated TCE at 20 locations and PCE at 6 locations.

In 1995, their consultant submitted the Interim Corrective Plan. The plan recommended pumping and air stripping of groundwater with subsequent discharge to the CR Industries WW treatment facility or to a groundwater infiltration gallery. Pumping for the remediation started in August 1999. By March 2008, the remediation system was shut off due to effluent toxicity failures.

In 2008, their consultant completed a water well survey update and two additional drinking water wells were identified on Crowder's Creek Rd.), subsequently sampled, and found to be contaminated with TCE, PCE, cis-1,2-DCE, and MTBE. These wells are no longer in use.

On June 29, 2009, their consultant submitted a site assessment work plan for another attempt to locate a source area. Soil borings were proposed both within and outside the building. The revised Site Assessment Plan - Phase I was submitted on March 12, 2010. In 2010, the Phase I Remedial Investigation (RI) Report was submitted. Thirty-six soil samples were collected from 14 locations from borings ranging in depth from 5' - 45' below land surface. TCE was detected in only one soil sample and zinc was detected above protection of groundwater soil remediation goals. No groundwater samples were collected.

On October 14, 2011, the Phase II RI work plan was submitted. This work plan called for a water supply well survey and additional soil samples in the WWTP, sanitary sewer line, former hazardous waste storage building and site drainage ditch areas. This work plan proposed



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	<p>that TCE contamination in the two upgradient wells (MW-20 and R70M25) was pulled from underneath the facility by remedial groundwater pumping on the Rhone-Poulenc facility. This plan discussed that limited natural attenuation is occurring.</p> <p>In 2012, the Phase II Remedial Investigation Report was submitted to the NC DENR. Eighteen soil samples were collected from 11 borings (2 - 35' deep) and were analyzed for VOCs and metals (arsenic, cadmium, chromium, manganese, mercury, and zinc). No VOCs were detected. The soil boring collected near the former equalization basin area contained elevated zinc and was reported to NC DENR DWQ as part of the NPDES permit reporting and was copied to NC DENR IHSB under separate cover.</p> <p>In January 2013, a work plan was submitted to collect groundwater data prior to developing the Phase IIB RI work plan. Groundwater sampling had not been conducted at the site since October 2008. On March 28, 2013, NC IHSB did not further extend the April 2013 deadline for submittal of the revised work plan. The NC IHSB had required that three well pairs (one shallow, one deep) be installed. Due to unresolved liability concerns, Coltec and SKF did not proceed with work.</p> <p>NC Superfund requested that the US EPA fund installation of eight monitoring wells – four pair (one shallow, one deep). Beginning on August 3 and ending on August 14, 2015, the US EPA Environmental Response Team (ERT) installed seven wells at four locations -- three pair (one deep and one shallow), and one deep well. At the fourth well location, there was no water in the shallow zone so a well was not installed. Well logs are attached to this QAPP.</p>
	<p>In September 2015, the NC Superfund Section will insert Polyethylene-based Passive Diffusion Bag samplers into the seven monitoring wells. Approximately 2 – 3 weeks later, NC Superfund will return to collect samples from these wells. NC Superfund will also collect samples from up to 10 drinking water wells within ½ mile of the CR Industries facility (Figs. 1,3). These wells serve residences about 3/8 - ½ mile south of the site. Most of these drinking water wells were sampled in 2011 and some were found to contain low levels (below drinking water standards) of chlorinated solvents.</p>
<p>Decision(s) to be made based on data:</p>	<p>Data from the monitoring wells will help identify the source of the TCE- contaminated groundwater that was discovered in the late 1980s. Once the source of this groundwater contamination is identified, NC DENR may recommend listing the site on the National Priorities List (NPL). In addition, knowing the level of contaminants in these monitoring wells will help determine if there is a potential for the level of chlorinated solvents in the nearby drinking water wells to increase and thereby warrant more frequent monitoring and/or installation of a</p>



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	<p>waterline to protect human health.</p> <p>Data from the in-use drinking water wells will determine if there is an immediate threat to human health.</p> <p>This ESI will not serve to completely characterize the groundwater plume. Installation of additional groundwater wells may be recommended. Based on the findings of this ESI, further evaluation under CERCLA may be recommended.</p>
Applicable regulatory information, action levels, etc.	<i>Applicable and regulatory benchmarks include: NC Water Quality Standards, Drinking Water Standards ((MCLs), and SCDM Values</i>
Field Study Date:	Week of October 12, 2015
Projected Lab Completion Date:	January 11, 2016
Final Report Completion Date:	April 30, 2016
<p>A7. Quality Objectives and Criteria:</p>	<p>Identification of the seven steps of the data quality objectives (DQO) process: DQOs were established for the New Haven Drive TCE site to define the quantity and quality of data to be collected to support the objectives of the sampling event. DQOs were developed using the seven-step process outlines in the following EPA guidance documents: “Guidance on Systematic Planning using the Data Quality Objectives Process,” EPA QA/G-4 (http://www.epa.gov/quality/qs-docs/g4-final.pdf), February 2006; “Guidance for Quality Assurance Project Plans,” EPA QA/G-5 (http://www.epa.gov/quality/qs-docs/g5-final.pdf), December 2002; and “EPA Requirements for Quality Assurance Project Plans,” EPA QA/R-5 (http://www.epa.gov/quality/qs-docs/r5-final.pdf), March 2001.</p> <p>Step 1: State the Problem:</p> <p>In the late 1980s, chlorinated solvents were detected in 30 private drinking water wells. Residences served by groundwater wells were connected to municipal water. This plume is not being remediated and no responsible party for the contaminated drinking water wells has been identified. It is unknown if the contaminated groundwater is threatening nearby drinking water wells to the south. Groundwater within 4 miles of the site is a major source of drinking water for the area. There are approximately 92 community wells within 4 miles of the site.</p> <p>Water samples will be analyzed for VOCs. There is sufficient past analytical data to determine that VOCs are the primary contaminants of concern.</p> <p>Step 2: ESI goals</p> <p>Collect ground water samples to identify groundwater contaminants and their level.</p>



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Step 3: Identify the inputs

The primary inputs needed to support the decision making process are identification of groundwater contaminants and their levels. It will be determined which groundwater contaminants exceed NC Groundwater standards and drinking water standards.

Analytical data results will be compared with the following comparison criteria:

- 1) Non-detects of background concentrations;
- 2) Three times detectable background concentrations;
- 3) Sample quantitation limits (SQLs) or minimum reporting limits (MRLs) which are sample specific and correspond to the lowest quantitative point on the calibration curve.
- 4) 15A NCAC 2L Groundwater Standards
(<http://portal.ncdenr.org/web/wq/ps/csu/gwstandards>)
- 5) National Primary Drinking Water Regulations, Maximum Contaminant Levels (MCLs), if samples are collected from drinking water wells
(<http://water.epa.gov/drink/contaminants/index.cfm>)

Information Inputs

Inputs needed to support the decision making process are contaminant levels in groundwater. Water samples will be analyzed by a CLP or the Region 4 laboratory for routine TCL VOC parameters. Contract required quantitation limits (CRQLs) will be requested for the samples analyzed by CLP. Trace level VOCs will be requested for drinking water wells.

Step 4: Boundaries of study

The primary media of interest is groundwater. The level of contaminants in the newly-installed monitoring wells will help identify the source of this groundwater contamination. Documentation of source contaminants could warrant a recommendation for further evaluation under CERCLA.

Step 5: Develop the Analytical Approach

The analytical approach is designed to determine if formerly-reported groundwater contaminants remain in groundwater, determine if there are groundwater contaminants in addition to those previously reported, and determine the relative level of contaminants in the shallow vs. deep wells.

See Section A6 Project Description and Steps 2 & 3 above.



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	<p>Step 6: Specify Performance or Acceptance Criteria Analytical results for initial acceptance will be assessed during validation performed by US EPA Region 4 Science and Ecosystem Support Division (SESD) that evaluates the usability of the data defined. Any rejected data and the reasons for rejection will be summarized in the data validation report.</p> <p>Step 7: Develop the Plan for Obtaining Data Proposed sampling includes seven monitoring wells and up to 10 drinking water wells. For QA/QC, the appropriate number of duplicate and trip blank (one) water samples will be collected in addition to these seventeen samples. Access permission will be obtained prior to the sample event, proposed for the week of October 12, 2015.</p> <p>Samples from the monitoring wells will be collected using Polyethylene Diffusion Bag (PDB) samplers. Samplers will be placed in the monitoring wells at least two weeks prior to collection of samples. The field samplers will follow guidance outlined in “Technical and Regulatory Guidance for using Polyethylene Diffusion Bag Samplers to Monitor Volatile Organic Compounds in Groundwater”, February 2004 http://www.itrcweb.org/Guidance/ and “User’s Guide for polyethylene-based passive diffusion bag samplers, Part 1”, http://pubs.er.usgs.gov/publication/wri014060.</p> <p>Most local residents are now consuming municipal water for drinking; however some residents to the south remain on drinking water wells. Groundwater is a major source of drinking water within the 4-mile distance limit of the site.</p> <p>NC Superfund will request permission to collect private drinking water well samples and collect samples once permission is obtained. Permission to collect samples from the EPA-installed monitoring wells has been obtained</p>
<p>A8. Special Training/ Certifications:</p>	<ul style="list-style-type: none"> • Section 3.3 of the NC generic QAPP. • Section 2.1 and Appendix A of NC Superfund Section Health and Safety SOP Manual (http://portal.ncdenr.org/web/wm/div/safety/program)
<p>A9. Documents and Records:</p>	<p>Section 3.4 of the NC generic QAPP.</p>

Section B: Data Generation and Acquisition

<p>B1. Sampling Design</p>	<p>An authoritative sampling design was chosen based on the data quality objectives of the study. Sample IDs, media, analysis, location and rationale can be found in Table 1 of the sampling plan. Sample locations can also be found on Figures 1-3 of the sampling plan.</p>
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	Volume, Holding time, and Preservation requirements are in accordance with: <i>SESD Analytical Support Branch Laboratory Operations and Quality Assurance Manual, Figure 3-1</i>
B2. Sampling Methods, General Procedures:	SESD Field Branches Quality System and Technical Procedures found at http://www.epa.gov/region4/sesd/fbqstp/index.html Groundwater Level and Well Depth Measurement , January 29, 2013 Field pH Measurement , January 29, 2013 Field Temperature Measurement , October 23, 2014 Field Specific Conductance Measurement , August 30, 2012 Field Turbidity Measurement , January 29, 2013 Groundwater Sampling , March 6, 2013 Global Positioning System , June 23, 2015 Logbooks , May 30, 2013 Packing, Marking, Labeling and Shipping of Environmental and Waste Samples , February 4, 2015 And CLP Guidance for Field Samplers, October 2014, found at: http://www.epa.gov/superfund/programs/clp/download/sampler/clp_sampler_guidance.pdf Guidance for collecting samples using PDBs: “Technical and Regulatory Guidance for using Polyethylene Diffusion Bag Samplers to Monitor Volatile Organic Compounds in Groundwater”, February 2004 http://www.itrcweb.org/Guidance/ , and “User’s Guide for polyethylene-based passive diffusion bag samplers, Part 1”, http://pubs.er.usgs.gov/publication/wri014060 .
B3. Sampling Handling and Custody:	All samples will be handled and custody maintained in accordance with SESD Operating Procedures for Sample Evidence Management, SESDPROC-005-R2. Sample and Evidence Management , January 29, 2013
B4. Analytical Methods:	
CLP:	Analytical methods for organic samples are in accordance with: <i>CLP Multi-Media, Multi-Concentration Organics Analysis, SOM01.2</i>
SESD:	Analytical methods for organic samples are in accordance with: <i>SESD Analytical Support Branch Laboratory Operations and Quality Assurance Manual, April 2015</i>
B5. Quality Control:	
Field:	<ul style="list-style-type: none"> • Rinsate blanks are collected on a quarterly basis on equipment used for sampling during that calendar quarter. • Rinsate blanks are collected on a quarterly basis on gloves utilized for sampling during that calendar quarter. • Rinsate blanks are collected on a quarterly basis on the DI water system maintained and utilized by the NC Division of Waste Management for decontamination of sampling equipment. • Organic-free water is obtained from the NC Public Health lab for VOC water trip blanks. • A minimum of one duplicate per twenty samples per medium will be collected. • A minimum of one trip blank per twenty samples will be collected for VOC water samples. Preservative will be added to all VOC sample containers prior to the field event, thereby eliminating any potential for the preservative to become contaminated during the field event. • Section 3.5 of the NC generic QAPP



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Laboratory:	<ul style="list-style-type: none"> • A minimum of one MS/MSD sample per twenty samples per medium will be collected. • Section 3.5 of the NC generic QAPP
B6. Instrument/Equipment Testing, Inspection and Maintenance:	<ul style="list-style-type: none"> • Section 3.4 and Appendix B of the NC generic QAPP • Section 6 of NC Superfund Section Health and Safety SOP Manual (http://portal.ncdenr.org/web/wm/div/safety/program)
B7. Instrument/Equipment Calibration and Frequency:	<p>All monitoring equipment and instruments are calibrated a minimum of once daily, at the start of the day, when field activities requiring use of the equipment occur. Serial numbers and calibration records are maintained in the field logbook for the project. Any inconsistencies and errors during calibration are also to be noted in the field logbook.</p> <p>Equipment to be used for this project and requiring calibration includes:</p> <ul style="list-style-type: none"> • pH/Conductivity/Temperature Meter(s): pH is calibrated to three standards (pH 7, pH4, pH10); Conductivity is calibrated to one standard (1413 μS) • MiniRae(s): MiniRae(s) are calibrated to Isobutylene at a concentration of 50.0 ppm. Acceptable range is plus or minus 2 ppm (48.0-52.0 ppm). MiniRae(s) are photoionization detectors (PIDs) used to monitor VOC levels in breathing space when monitoring wells are first opened and uncapped. • GPS Trimble XT/XM Units: Used for geolocating sampling locations. GPS Units do not require calibration.
B8. Inspection/Acceptance for Supplies and Consumables:	All critical supplies and consumables for this field investigation are inspected and maintained by the QAO and designated staff, as discussed in Section 3.2 of the NC generic QAPP. A list of these supplies is included in Appendix B of the NC generic QAPP.
B9. Non-direct Measurements:	Not applicable.
B10. Data Management:	<p>The project manager will be responsible for ensuring that all requirements for data management are met. All data generated for this field investigation, whether hand-recorded or obtained using an electronic data logger, will be recorded, stored, and managed according to the following procedures:</p> <p><i>SESD Operating Procedure for Control of Records, SESDPROC-002-R6.</i> <i>SESD Operating Procedures for Logbooks, SESDPROC-010-R5.</i></p>

Section C: Assessment/Oversight

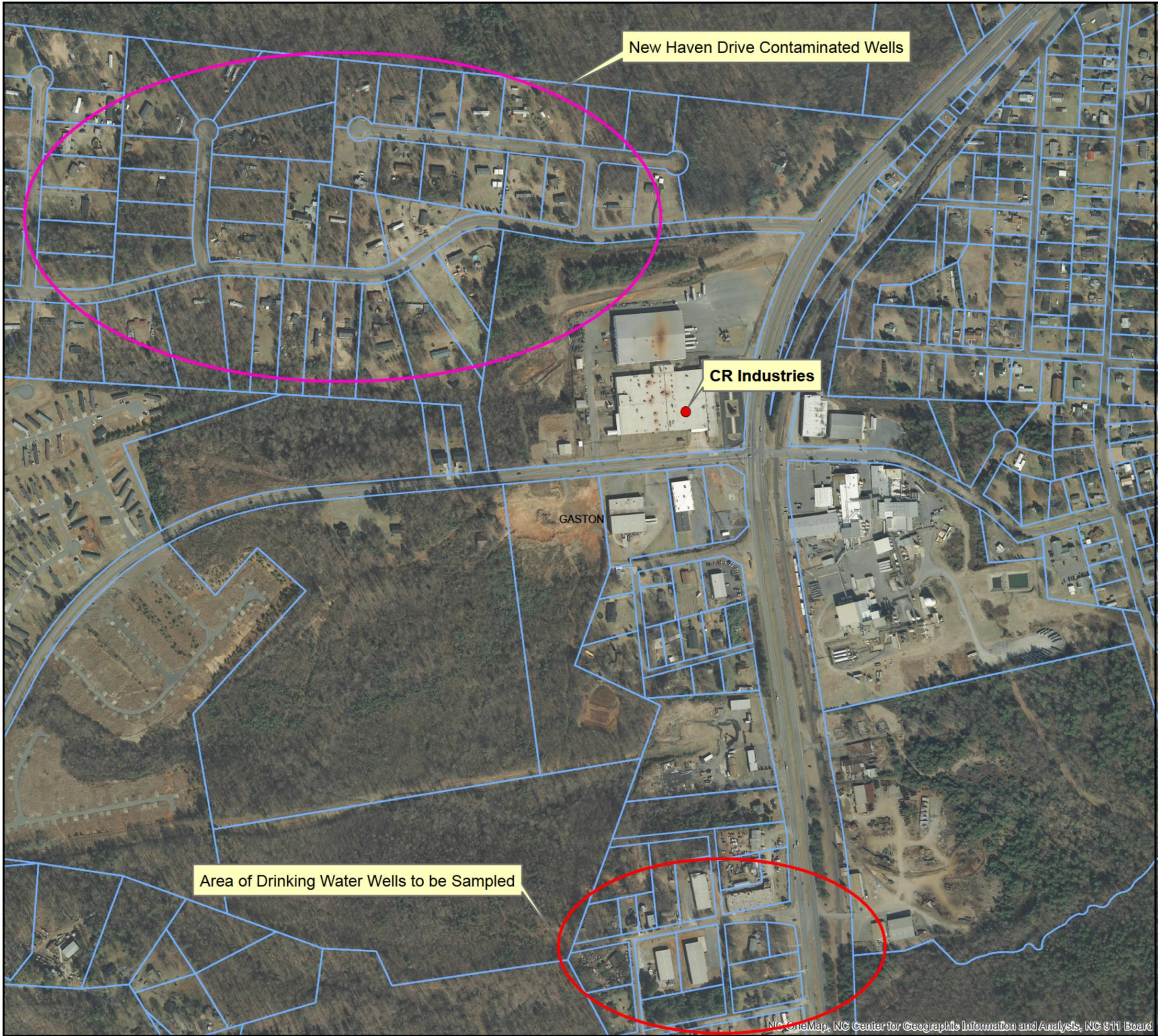
C1. Assessments and Response Actions:	<p>Assessments will be conducted during the field investigation according to <i>SESD Operating Procedure for Project Planning, SESDPROC-016-R4</i> to ensure the QAPP is being implemented as approved. The Project Manager is responsible for all corrective actions while in the field.</p> <p>Section 3.2.4 of the NC generic QAPP.</p>
C2. Reports to Management:	The Project Manager will report to their immediate supervisor if any circumstances arise during the field investigation that may adversely



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	<p>impact the quality of the data collected. The Project Manager and/or their immediate supervisor will also be responsible for notifying the EPA Project Manager if any circumstances arise during the field investigation that may adversely impact the quality of the data collected.</p> <p>Section 3.2.4 of the NC generic QAPP</p>
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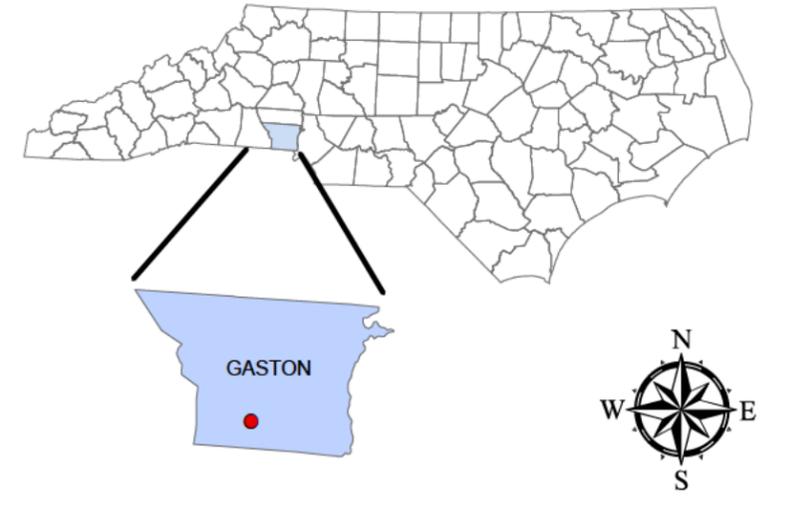
Section D: Data Validation and Usability	
D1. Data Review, Verification, and Validation:	<p>Section 3.2.4 of the NC generic QAPP. CLP and US EPA ASB (Athens, Ga) analytical data are validated using procedures found at: http://www.epa.gov/superfund/programs/clp/data_assessment.htm#assessment</p>
D2. Verification and Validation Methods:	<p>Section 3.2.4 of the NC generic QAPP.</p>
D3. Reconciliation with User Requirements:	<p>Review of blanks is evaluated by the Project Manager using the following guidelines:</p> <ul style="list-style-type: none"> • <i>USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-48, EPA-540/R-08-01 (SOM 01.2)</i> <p>Review of data is evaluated by the Project Manager using the following guidelines:</p> <ul style="list-style-type: none"> • <i>USEPA Using Qualified Data to Document an Observed Release and Observed Contamination, EPA 540-F-94-028, Exhibit 3 and Table 1</i> <p>Section 3.2 of the NC generic QAPP</p>



New Haven Drive Contaminated Wells

CR Industries

Area of Drinking Water Wells to be Sampled



Site Name: New Haven Drive TCE Site

Date: August 28, 2015

Prepared By: Amy Axon





Fig. 2
New Haven Drive TCE site
Monitoring wells



Fig. 3
New Haven Drive TCE site
Drinking Water well locations
(see Fig. 1 for location of these wells)

Table1. New Haven Drive TCE site SI -- List of Proposed Samples, September 1, 2015

Station ID	Sample Number	Map Number	Address / description of samples	Property +Owner – Contact information
	NH-100-GW		Trip Blank	NOTE: QA samples do not have location data
EPA1S	NH-1S-MW	EPA1S		Access Permission acquired during well installation
EPA1D	NH-1D-MW	EPA1D		Access Permission acquired during well installation
EPA2S	NH-2S-MW	EPA2S		Access Permission acquired during well installation
EPA2D	NH-2D-MW	EPA2D		Access Permission acquired during well installation
EPA3D	NH-3D-MW	EPA3D		Access Permission acquired during well installation
EPA4S	NH-4S-MW	EPA4S		Access Permission acquired during well installation
EPA4D	NH-4D-MW	EPA4D		Access Permission acquired during well installation
NH03	NH-003-GW	3	Davis Heights, 208	McFalls, Raymond & Judy 208 Davis Heights Dr., Gastonia, NC 28052 McFalls, Johnny Wade jr. 4903 Jamee Dr., Gastonia, NC 28056
NH03	NH-103-GW	3	Duplicate of NH-003-GW	
NH04	NH-004-GW	4	Davis Heights, 302	Heffner, Ann M & McDaniel, James A 529 Dixon School Rd Kings Mountain 28086
NH05	NH-005-GW	5	Davis Heights, 410	Alford, Daryl and Beverly Roseberry Alford 410 Davis Heights Gastonia, NC 28052
NH06	NH-006-GW	6	Davis Heights, 411	Russell Lewis & Russell Lewis Jr. 411 Davis Heights (704) 349-3983 – Jr's number
NH07	NH-007-GW	7	S York Hwy, 4608	Richard Penegar PO Box 839 Gastonia, NC 28052
NH08	NH-008-GW	8	Davis Heights, 502 412 is a vacant parcel	Patricia Murphy 502 Davis Heights Dr 28052
NH09	NH-009-GW	9	Davis Heights, 409	Huddleston, Thomas W. & Hall, Early M. 409 Davis heights
NH10	NH-008-GW	A	Davis Heights, 407	Huddleston, Thomas W. & Hall, Early M. 409 Davis heights
NH11	NH-010-GW	B	Davis Heights, 510	Travis Weaver 3204 Starland Dr Gastonia 28052
NH12	NH-012-GW	C	S York Hwy, 4604, AJR Electric & residences	James Summey 4705 S York Rd 28052 Property address in Gaston Co. database is different (4604)

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Lewis LeFever

Well Contractor Name

2480-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- Agricultural Municipal/Public
 Geothermal (Heating/Cooling Supply) Residential Water Supply (single)
 Industrial/Commercial Residential Water Supply (shared)
 Irrigation

Non-Water Supply Well:

- Monitoring Recovery

Injection Well:

- Aquifer Recharge Groundwater Remediation
 Aquifer Storage and Recovery Salinity Barrier
 Aquifer Test Stormwater Drainage
 Experimental Technology Subsidence Control
 Geothermal (Closed Loop) Tracer
 Geothermal (Heating/Cooling Return) Other (explain under #21 Remarks)

4. Date Well(s) Completed: 8/7/15 Well ID# EPA-1S

5a. Well Location:

Industrial Fabricators

Facility/Owner Name

Facility ID# (if applicable)

122 Crowders Creek Rd., Gastonia, NC 28052

Physical Address, City, and Zip

Gaston

County

Parcel Identification No (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:

(if well field, one lat long is sufficient)

35.202324 N -81.213638 W

6. Is (are) the well(s): Permanent or Temporary

7. Is this a repair to an existing well: Yes or No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 35.0 (ft.)

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 20.0 (ft.)

If water level is above casing, use "-"

11. Borehole diameter: 8.0 (in.)

12. Well construction method: Augered

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ Method of test: _____

13b. Disinfection type: _____ Amount: _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
20.0 ft.	35.0 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0.0 ft.	25.0 ft.	2.0 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
25.0 ft.	35.0 ft.	2.0 in.	0.010"	Sch.40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0.0 ft.	20.0 ft.	Cement	Tremied
20.0 ft.	23.0 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
23.0 ft.	35.0 ft.	#1 Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0.0 ft.	20.0 ft.	Brown Moist Loose Silt and Clay
20.0 ft.	35.0 ft.	Brown Wet Loose Silt and Clay
ft.	ft.	

21. REMARKS

22. Certification:

 (3367-A) 8/17/15
Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Lewis LeFever

Well Contractor Name

2480-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- Agricultural Municipal/Public
 Geothermal (Heating/Cooling Supply) Residential Water Supply (single)
 Industrial/Commercial Residential Water Supply (shared)
 Irrigation

Non-Water Supply Well:

- Monitoring Recovery

Injection Well:

- Aquifer Recharge Groundwater Remediation
 Aquifer Storage and Recovery Salinity Barrier
 Aquifer Test Stormwater Drainage
 Experimental Technology Subsidence Control
 Geothermal (Closed Loop) Tracer
 Geothermal (Heating/Cooling Return) Other (explain under #21 Remarks)

4. Date Well(s) Completed: 8/6/15 Well ID# EPA-1D

5a. Well Location:

Industrial Fabricators

Facility/Owner Name

Facility ID# (if applicable)

122 Crowders Creek Rd., Gastonia, NC 28052

Physical Address, City, and Zip

Gaston

County

Parcel Identification No (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:

(if well field, one lat/long is sufficient)

35.202324 N -81.213638 W

6. Is (are) the well(s): Permanent or Temporary

7. Is this a repair to an existing well: Yes or No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form

9. Total well depth below land surface: 75.0 (ft.)

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 20.0 (ft.)

If water level is above casing, use " "

11. Borehole diameter: 8.0/4.0 (in.)

12. Well construction method: Augered/Air Rotary

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) Method of test:

13b. Disinfection type: Amount:

For Internal Use ONLY:

14. WATER ZONES

Table with columns: FROM, TO, DESCRIPTION. Row 1: 20.0 ft. to 75.0 ft. Wet

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

Table with columns: FROM, TO, DIAMETER, THICKNESS, MATERIAL. Row 1: ft. to ft. in. Sch. 40

16. INNER CASING OR TUBING (geothermal closed-loop)

Table with columns: FROM, TO, DIAMETER, THICKNESS, MATERIAL. Row 1: 0.0 ft. to 65.0 ft. 2.0 in. Sch. 40 PVC

17. SCREEN

Table with columns: FROM, TO, DIAMETER, SLOT SIZE, THICKNESS, MATERIAL. Row 1: 65.0 ft. to 75.0 ft. 2.0 in. 0.010" Sch.40 PVC

18. GROUT

Table with columns: FROM, TO, MATERIAL, EMPLACEMENT METHOD & AMOUNT. Row 1: 0.0 ft. to 60.0 ft. Cement Tremied. Row 2: 60.0 ft. to 63.0 ft. Bentonite Dropped

19. SAND/GRAVEL PACK (if applicable)

Table with columns: FROM, TO, MATERIAL, EMPLACEMENT METHOD. Row 1: 63.0 ft. to 75.0 ft. #1 Sand Dropped

20. DRILLING LOG (attach additional sheets if necessary)

Table with columns: FROM, TO, DESCRIPTION. Rows: 0.0 ft. to 20.0 ft. Brown Moist Loose Silt and Clay; 20.0 ft. to 50.0 ft. Brown Wet Loose Silt and Clay; 50.0 ft. to 75.0 ft. Dense Rock

21. REMARKS

22. Certification:

Signature of Certified Well Contractor: [Signature] (3367-A) 8/17/15 Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NC AC 02C .0100 or 15A NC AC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following

Division of Water Resources, Information Processing Unit, 1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program, 1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Lewis LeFever

Well Contractor Name

2480-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- Agricultural Municipal/Public
 Geothermal (Heating/Cooling Supply) Residential Water Supply (single)
 Industrial/Commercial Residential Water Supply (shared)
 Irrigation

Non-Water Supply Well:

- Monitoring Recovery

Injection Well:

- Aquifer Recharge Groundwater Remediation
 Aquifer Storage and Recovery Salinity Barrier
 Aquifer Test Stormwater Drainage
 Experimental Technology Subsidence Control
 Geothermal (Closed Loop) Tracer
 Geothermal (Heating/Cooling Return) Other (explain under #21 Remarks)

4. Date Well(s) Completed: 8/5/15 Well ID# EPA-2S

5a. Well Location:

Industrial Fabricators

Facility/Owner Name

Facility ID# (if applicable)

218 Crowders Creek Rd., Gastonia, NC 28052

Physical Address, City, and Zip

Gaston

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:

(if well field, one lat/long is sufficient)

35.201885 N -81.217674 W

6. Is (are) the well(s): Permanent or Temporary

7. Is this a repair to an existing well: Yes or No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 30.0 (ft.)

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 18.0 (ft.)

If water level is above casing, use " "

11. Borehole diameter: 8.0 (in.)

12. Well construction method: Augered

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ Method of test: _____

13b. Disinfection type: _____ Amount: _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
18.0 ft.	30.0 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0.0 ft.	20.0 ft.	2.0 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
20.0 ft.	30.0 ft.	2.0 in.	0.010"	Sch.40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0.0 ft.	16.0 ft.	Cement	Tremied
16.0 ft.	18.0 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
18.0 ft.	30.0 ft.	#1 Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0.0 ft.	18.0 ft.	Brown Moist Loose Silt and Clay
18.0 ft.	30.0 ft.	Brown Wet Loose Silt and Clay
ft.	ft.	

21. REMARKS

22. Certification:

Signature of Certified Well Contractor: [Signature] (3367-A) Date: 8/17/15

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0101 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Lewis LeFever

Well Contractor Name

2480-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- Agricultural Municipal/Public
 Geothermal (Heating/Cooling Supply) Residential Water Supply (single)
 Industrial/Commercial Residential Water Supply (shared)
 Irrigation

Non-Water Supply Well:

- Monitoring Recovery

Injection Well:

- Aquifer Recharge Groundwater Remediation
 Aquifer Storage and Recovery Salinity Barrier
 Aquifer Test Stormwater Drainage
 Experimental Technology Subsidence Control
 Geothermal (Closed Loop) Tracer
 Geothermal (Heating/Cooling Return) Other (explain under #21 Remarks)

4. Date Well(s) Completed: 8/5/15 Well ID# EPA-2D

5a. Well Location:

Industrial Fabricators

Facility/Owner Name

Facility ID# (if applicable)

218 Crowders Creek Rd., Gastonia, NC 28052

Physical Address, City, and Zip

Gaston

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:

(if well field, one lat long is sufficient)

35.201885 N -81.217674 W

6. Is (are) the well(s): Permanent or Temporary

7. Is this a repair to an existing well: Yes or No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form

9. Total well depth below land surface: 70.0 (ft.)

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 18.0 (ft.)

If water level is above casing, use " "

11. Borehole diameter: 8.0/4.0 (in.)

12. Well construction method: Augered/Air Rotary

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ Method of test: _____

13b. Disinfection type: _____ Amount: _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
18.0 ft.	70.0 ft.	Wet

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0.0 ft.	60.0 ft.	2.0 in.	Sch. 40	PVC

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
60.0 ft.	70.0 ft.	2.0 in.	0.010"	Sch.40	PVC

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0.0 ft.	50.0 ft.	Cement	Tremied
50.0 ft.	58.0 ft.	Bentonite	Dropped

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
58.0 ft.	70.0 ft.	#1 Sand	Dropped

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0.0 ft.	18.0 ft.	Brown Moist Loose Silt and Clay
18.0 ft.	50.0 ft.	Brown Wet Loose Silt and Clay
50.0 ft.	70.0 ft.	Brown Wet Dense Rock

21. REMARKS

22. Certification:

[Signature] (3367-A) 8/17/15
Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NC AC 02C .0100' or 15A NC AC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Lewis LeFever

Well Contractor Name

2480-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- Agricultural Municipal/Public
- Geothermal (Heating/Cooling Supply) Residential Water Supply (single)
- Industrial/Commercial Residential Water Supply (shared)
- Irrigation

Non-Water Supply Well:

- Monitoring Recovery

Injection Well:

- Aquifer Recharge Groundwater Remediation
- Aquifer Storage and Recovery Salinity Barrier
- Aquifer Test Stormwater Drainage
- Experimental Technology Subsidence Control
- Geothermal (Closed Loop) Tracer
- Geothermal (Heating/Cooling Return) Other (explain under #21 Remarks)

4. Date Well(s) Completed: 8/12/15 **Well ID#** EPA-3D

5a. Well Location:

Industrial Fabricators

Facility/Owner Name

Facility ID# (if applicable)

223Crowders Creek Rd. Gastonia, NC 28052

Physical Address, City, and Zip

Gaston

County

Parcel Identification No (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat long is sufficient)

35.200516 N -81.217567 W

6. Is (are) the well(s): Permanent or Temporary

7. Is this a repair to an existing well: Yes or No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form

9. Total well depth below land surface: 74.0 (ft.)
For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 48.0 (ft.)
If water level is above casing, use " "

11. Borehole diameter: 8.0/4.0 (in.)

12. Well construction method: Augered/Air Rotary
(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
48.0 ft.	74.0 ft.	Wet

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0.0 ft.	64.0 ft.	2.0 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
64.0 ft.	74.0 ft.	2.0 in.	0.010"	Sch.40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0.0 ft.	55.0 ft.	Cement	Tremied
55.0 ft.	60.0 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
60.0 ft.	74.0 ft.	#1 Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0.0 ft.	48.0 ft.	Brown Moist Loose Silt and Clay
48.0 ft.	74.0 ft.	Brown Wet Dense Rock
ft.	ft.	

21. REMARKS

22. Certification:

[Signature] 8/17/15
Signature of Certified Well Contractor Date

By signing this form I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Lewis LeFever

Well Contractor Name

2480-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- Agricultural Municipal/Public
 Geothermal (Heating/Cooling Supply) Residential Water Supply (single)
 Industrial/Commercial Residential Water Supply (shared)
 Irrigation

Non-Water Supply Well:

- Monitoring Recovery

Injection Well:

- Aquifer Recharge Groundwater Remediation
 Aquifer Storage and Recovery Salinity Barrier
 Aquifer Test Stormwater Drainage
 Experimental Technology Subsidence Control
 Geothermal (Closed Loop) Tracer
 Geothermal (Heating/Cooling Return) Other (explain under #21 Remarks)

4. Date Well(s) Completed: 8/13/15 Well ID# EPA-4S

5a. Well Location:

Industrial Fabricators

Facility/Owner Name

Facility ID# (if applicable)

307 Hoyle Circle, Gastonia, NC 28052

Physical Address, City, and Zip

Gaston

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:

(if well field, one lat/long is sufficient)

35.197872 N -81.211304 W

6. Is (are) the well(s): Permanent or Temporary

7. Is this a repair to an existing well: Yes or No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form

9. Total well depth below land surface: 53.0 (ft.)

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 45.0 (ft.)

If water level is above casing, use " "

11. Borehole diameter: 8.0/4.0 (in.)

12. Well construction method: Augered/Air Rotary

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ Method of test: _____

13b. Disinfection type: _____ Amount: _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
45.0 ft.	53.0 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0.0 ft.	43.0 ft.	2.0 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
43.0 ft.	53.0 ft.	2.0 in.	0.010"	Sch.40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0.0 ft.	38.0 ft.	Cement	Tremied
38.0 ft.	40.0 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
40.0 ft.	53.0 ft.	#1 Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0.0 ft.	45.0 ft.	Brown Moist Loose Silt and Clay
45.0 ft.	53.0 ft.	Brown Wet Dense Weathered Rock
ft.	ft.	

21. REMARKS

22. Certification:

[Signature] (3367A) 8/17/15
Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Lewis LeFever

Well Contractor Name

2480-A

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- Agricultural Municipal/Public
 Geothermal (Heating/Cooling Supply) Residential Water Supply (single)
 Industrial/Commercial Residential Water Supply (shared)
 Irrigation

Non-Water Supply Well:

- Monitoring Recovery

Injection Well:

- Aquifer Recharge Groundwater Remediation
 Aquifer Storage and Recovery Salinity Barrier
 Aquifer Test Stormwater Drainage
 Experimental Technology Subsidence Control
 Geothermal (Closed Loop) Tracer
 Geothermal (Heating/Cooling Return) Other (explain under #21 Remarks)

4. Date Well(s) Completed: 8/12/15 Well ID# EPA-4D

5a. Well Location:

Industrial Fabricators

Facility/Owner Name

Facility ID# (if applicable)

307 Hoyle Circle, Gastonia, NC 28052

Physical Address, City, and Zip

Gaston

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:

(if well field, one lat long is sufficient)

35.197872 N -81.211304 W

6. Is (are) the well(s): Permanent or Temporary

7. Is this a repair to an existing well: Yes or No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form

9. Total well depth below land surface: 83.0 (ft.)

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 45.0 (ft.)

If water level is above casing, use " "

11. Borehole diameter: 8.0/4.0 (in.)

12. Well construction method: Augered/Air Rotary

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ Method of test: _____

13b. Disinfection type: _____ Amount: _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
45.0 ft.	83.0 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0.0 ft.	73.0 ft.	2.0 in.	Sch. 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
73.0 ft.	83.0 ft.	2.0 in.	0.010"	Sch.40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0.0 ft.	68.0 ft.	Cement	Tremied
68.0 ft.	71.0 ft.	Bentonite	Dropped
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
71.0 ft.	83.0 ft.	#1 Sand	Dropped
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0.0 ft.	45.0 ft.	Brown Moist Loose Silt and Clay
45.0 ft.	50.0 ft.	Brown Wet Weathered Rock
50.0 ft.	83.0 ft.	Dense Rock
ft.	ft.	

21. REMARKS

22. Certification:

Stephen Ellinger (3367-A) 8/17/15
Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NC AC 02C .0100 or 15A NC AC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

New Haven Dr TCE
NCD986171379
Gastonia, Gaston Co., NC

Appendix B



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 16-0070

Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

December 8, 2015

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 16-0070, New Haven Drive TCE Site
Superfund Remedial

FROM: Nancy Seabolt
Office of Quality Assurance Chemist

THRU: Ray Terhune, Acting Chief
Office of Quality Assurance

TO: Carolyn Callihan

Attached are the final results for the analytical groups listed below. These analyses were performed in accordance with the associated contract Statement Of Work (SOW). In general, project data quality objectives have not been used to evaluate these data prior to release by the Office of Quality Assurance. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report.

Analyses Included in this report:

Method Used:

Accreditations:

Volatile Organics (VOA)

Volatile organic compounds

CLP VOA (Water)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 16-0070

Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Report Narrative for Work Order: C154713 Analysis: VOA

Site Name: New Haven Drive TCE Site, Gastonia, NC
CLP Case No. 45766, ELEMENT Sample Nos. C154713-01 through C154713-13
C154714-01 (PES only)

Organic Analysis: Spectrum Analytical, Inc. (Mitkem), North Kingston, RI

The ESAT Work Team reviewed data for 13 water samples analyzed for Trace Volatiles Organic Compounds per CLP Statement of Work SOM02.2. The samples were collected on 11/3/15 and were received by the laboratory on 11/6/15. The data package was received on 11/24/15 by the USEPA Office of Quality Assurance, Region 4 SESD. The analytical results were reported in one sample delivery group (SDG) by the laboratory. In addition to the field samples, the laboratory analyzed one performance evaluation sample (PES) for evaluating the laboratory's performance with using the method.

The laboratory satisfied all technical analysis and extraction holding time requirements. A Stage 4 validation consisting of an electronic/manual review (S4VEM) was performed on the organic samples submitted for this case. The data package presents acceptable technical performance with qualifications.

Deuterated monitoring compounds (DMC) are used as surrogates in each sample for GC/MS analysis to monitor extraction efficiency.

Data quality factors requiring qualification of results are discussed below:

Trace Volatiles

1. The laboratory encountered poor instrument response for Acetone and 1,2-Dibromo-3-chloropropane in some initial and continuing calibration standards. All associated positive results for these analytes were qualified "J" (CLP17, CLP32) and all associated not detected results were qualified "UR" (CLP17, CLP32).

Data qualification factors are explained by the Region 4 - specific qualifier definitions which are included elsewhere in this report. Further details are provided in the complete data review report, which is on file in the Region 4 SESD Records Center.

cc: Nardina Turner



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 16-0070

Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

SAMPLES INCLUDED IN THIS REPORT

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID	Laboratory ID	MD#	D#	Matrix	Date Collected
NH-100-GW	C154713-01		9L71	Trip Blank - Water	11/3/15 06:30
NH-1D-MW	C154713-02		9L73	Groundwater	11/3/15 14:05
NH-1S-MW	C154713-03		9L72	Groundwater	11/3/15 14:12
NH-2D-MW	C154713-04		9L75	Groundwater	11/3/15 13:40
NH-2S-MW	C154713-05		9L74	Groundwater	11/3/15 13:45
NH-3D-MW	C154713-06		9L76	Groundwater	11/3/15 13:20
NH-4D-MW	C154713-07		9L78	Groundwater	11/3/15 14:40
NH-4S-MW	C154713-08		9L77	Groundwater	11/3/15 14:35
NH-003-GW	C154713-09		9L79	Groundwater	11/3/15 12:02
NH-103-GW	C154713-10		9L80	Groundwater	11/3/15 12:02
NH-005-GW	C154713-11		9L81	Groundwater	11/3/15 15:08
NH-007-GW	C154713-12		9L82	Groundwater	11/3/15 10:50
NH-008-GW	C154713-13		9L83	Groundwater	11/3/15 11:26



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DATA QUALIFIER DEFINITIONS

U	The analyte was not detected at or above the reporting limit.
CLP01	Concentration reported is less than the lowest standard on calibration curve
CLP15	TIC Results Reported as Identified by Lab - IDs Not Verified
CLP17	Initial Calibration Relative Response Outside Method Control Limits
CLP32	Continuing Calibration Relative Response Outside Method Control Limits
J	The identification of the analyte is acceptable; the reported value is an estimate.
NJ	Presumptive evidence that analyte is present; reported as a tentative identification with an estimated value.
R	The presence or absence of the analyte can not be determined from the data due to severe quality control problems. The data are rejected and considered unusable.

ACRONYMS AND ABBREVIATIONS

CAS	Chemical Abstracts Service Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.
MDL	Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.
MRL	Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.
TIC	Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.



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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-100-GW

Lab ID: C154713-01

MD No:

Station ID:

Matrix: Trip Blank - Water

D No: 9L71 SAR

Date Collected: 11/3/15 6:30

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	5.0	U, R, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-100-GW

Lab ID: C154713-01

MD No:

Station ID:

Matrix: Trip Blank - Water

D No: 9L71 SAR

Date Collected: 11/3/15 6:30

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
67-66-3	Chloroform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
R4-0000	Tentatively Identified Compounds	0.5	U	ug/L	0.5	11/10/15	11/10/15	CLP SOM02.2



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 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-1D-MW

Lab ID: C154713-02

MD No:

Station ID: EPA-1D

Matrix: Groundwater

D No: 9L73 SAR

Date Collected: 11/3/15 14:05

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	110	J, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.73		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-1D-MW

Lab ID: C154713-02

MD No:

Station ID: EPA-1D

Matrix: Groundwater

D No: 9L73 SAR

Date Collected: 11/3/15 14:05

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
67-66-3	Chloroform	0.69		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	2.5		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	0.82		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	14		ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.24	J, CLP01	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	20		ug/L	1.0	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
R4-6501	Unidentified Compound(s)	0.7	J, CLP15	ug/L		11/10/15	11/10/15	CLP SOM02.2



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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-1S-MW

Lab ID: C154713-03

MD No:

Station ID: EPA-1S

Matrix: Groundwater

D No: 9L72 SAR

Date Collected: 11/3/15 14:12

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	120	J, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region 4 Science and Ecosystem Support Division
 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 16-0070
 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-1S-MW

Lab ID: C154713-03

MD No:

Station ID: EPA-1S

Matrix: Groundwater

D No: 9L72 SAR

Date Collected: 11/3/15 14:12

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
67-66-3	Chloroform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	0.44	J, CLP01	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	9.4		ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
R4-0000	Tentatively Identified Compounds	0.5	U	ug/L	0.5	11/10/15	11/10/15	CLP SOM02.2



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 D.A.R.T. Id: 16-0070
 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-2D-MW

Lab ID: C154713-04

MD No:

Station ID: EPA-2D

Matrix: Groundwater

D No: 9L75 SAR

Date Collected: 11/3/15 13:40

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	130	J, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



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 D.A.R.T. Id: 16-0070
 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-2D-MW

Lab ID: C154713-04

MD No:

Station ID: EPA-2D

Matrix: Groundwater

D No: 9L75 SAR

Date Collected: 11/3/15 13:40

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
67-66-3	Chloroform	0.59		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	5.8		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	1.3		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	8.2		ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.27	J, CLP01	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	16		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	0.30	J, CLP01	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
R4-6501	Unidentified Compound(s)	1	J, CLP15	ug/L		11/10/15	11/10/15	CLP SOM02.2



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 D.A.R.T. Id: 16-0070
 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-2S-MW

Lab ID: C154713-05

MD No:

Station ID: EPA-2S

Matrix: Groundwater

D No: 9L74 SAR

Date Collected: 11/3/15 13:45

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	110	J, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



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 D.A.R.T. Id: 16-0070
 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-2S-MW

Lab ID: C154713-05

MD No:

Station ID: EPA-2S

Matrix: Groundwater

D No: 9L74 SAR

Date Collected: 11/3/15 13:45

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
67-66-3	Chloroform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	0.23	J, CLP01	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	0.87		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	9.0		ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	0.99		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
R4-6501	Unidentified Compound(s)	0.8	J, CLP15	ug/L		11/10/15	11/10/15	CLP SOM02.2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region 4 Science and Ecosystem Support Division
 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 16-0070
 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-3D-MW

Lab ID: C154713-06

MD No:

Station ID: EPA-3D

Matrix: Groundwater

D No: 9L76 SAR

Date Collected: 11/3/15 13:20

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	96	J, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



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 D.A.R.T. Id: 16-0070
 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-3D-MW

Lab ID: C154713-06

MD No:

Station ID: EPA-3D

Matrix: Groundwater

D No: 9L76 SAR

Date Collected: 11/3/15 13:20

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
67-66-3	Chloroform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	1.4		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	14		ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	0.28	J, CLP01	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
104-76-7	2-Ethyl-1-hexanol	1	NJ, CLP15	ug/L		11/10/15	11/10/15	CLP SOM02.2



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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-4D-MW

Lab ID: C154713-07

MD No:

Station ID: EPA-4D

Matrix: Groundwater

D No: 9L78 SAR

Date Collected: 11/3/15 14:40

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	91	J, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



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 D.A.R.T. Id: 16-0070
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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-4D-MW

Lab ID: C154713-07

MD No:

Station ID: EPA-4D

Matrix: Groundwater

D No: 9L78 SAR

Date Collected: 11/3/15 14:40

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
67-66-3	Chloroform	0.39	J, CLP01	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	2.3		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	6.9		ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	1.1		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
R4-6501	Unidentified Compound(s)	0.9	J, CLP15	ug/L		11/10/15	11/10/15	CLP SOM02.2



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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-4S-MW

Lab ID: C154713-08

MD No:

Station ID: EPA-4S

Matrix: Groundwater

D No: 9L77 SAR

Date Collected: 11/3/15 14:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	130	J, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



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 Region 4 Science and Ecosystem Support Division
 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 16-0070
 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-4S-MW

Lab ID: C154713-08

MD No:

Station ID: EPA-4S

Matrix: Groundwater

D No: 9L77 SAR

Date Collected: 11/3/15 14:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
67-66-3	Chloroform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	1.3		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	12		ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
R4-6501	Unidentified Compound(s)	0.8	J, CLP15	ug/L		11/10/15	11/10/15	CLP SOM02.2



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 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-003-GW

Lab ID: C154713-09

MD No:

Station ID: NH03

Matrix: Groundwater

D No: 9L79 SAR

Date Collected: 11/3/15 12:02

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	5.0	U, R, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-003-GW

Lab ID: C154713-09

MD No:

Station ID: NH03

Matrix: Groundwater

D No: 9L79 SAR

Date Collected: 11/3/15 12:02

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
67-66-3	Chloroform	1.1		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.26	J, CLP01	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
R4-0000	Tentatively Identified Compounds	0.5	U	ug/L	0.5	11/10/15	11/10/15	CLP SOM02.2



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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-103-GW

Lab ID: C154713-10

MD No:

Station ID: NH03

Matrix: Groundwater

D No: 9L80 SAR

Date Collected: 11/3/15 12:02

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	5.0	U, R, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-103-GW

Lab ID: C154713-10

MD No:

Station ID: NH03

Matrix: Groundwater

D No: 9L80 SAR

Date Collected: 11/3/15 12:02

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
67-66-3	Chloroform	1.1		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
R4-0000	Tentatively Identified Compounds	0.5	U	ug/L	0.5	11/10/15	11/10/15	CLP SOM02.2



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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-005-GW

Lab ID: C154713-11

MD No:

Station ID: NH05

Matrix: Groundwater

D No: 9L81 SAR

Date Collected: 11/3/15 15:08

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.58		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.35	J, CLP01	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.53		ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	5.0	U, R, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region 4 Science and Ecosystem Support Division
 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 16-0070
 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-005-GW

Lab ID: C154713-11

MD No:

Station ID: NH05

Matrix: Groundwater

D No: 9L81 SAR

Date Collected: 11/3/15 15:08

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
67-66-3	Chloroform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.28	J, CLP01	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
R4-0000	Tentatively Identified Compounds	0.5	U	ug/L	0.5	11/10/15	11/10/15	CLP SOM02.2



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 D.A.R.T. Id: 16-0070
 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-007-GW

Lab ID: C154713-12

MD No:

Station ID: NH07

Matrix: Groundwater

D No: 9L82 SAR

Date Collected: 11/3/15 10:50

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	5.0	U, R, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



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 D.A.R.T. Id: 16-0070
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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-007-GW

Lab ID: C154713-12

MD No:

Station ID: NH07

Matrix: Groundwater

D No: 9L82 SAR

Date Collected: 11/3/15 10:50

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
67-66-3	Chloroform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
R4-0000	Tentatively Identified Compounds	0.5	U	ug/L	0.5	11/10/15	11/10/15	CLP SOM02.2



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 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 16-0070
 Project: 16-0070, New Haven Drive TCE Site - Reported by Nancy Seabolt

Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-008-GW

Lab ID: C154713-13

MD No:

Station ID: NH08

Matrix: Groundwater

D No: 9L83 SAR

Date Collected: 11/3/15 11:26

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
71-55-6	1,1,1-Trichloroethane	0.29	J, CLP01	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.27	J, CLP01	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.50	U, R, CLP32, CLP17	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
67-64-1	Acetone	5.0	U, R, CLP32, CLP17	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
71-43-2	Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-25-2	Bromoform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-83-9	Bromomethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-15-0	Carbon disulfide	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-00-3	Chloroethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2



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Volatile Organics

Project: 16-0070, New Haven Drive TCE Site

Contract Lab Case: 45766

Sample ID: NH-008-GW

Lab ID: C154713-13

MD No:

Station ID: NH08

Matrix: Groundwater

D No: 9L83 SAR

Date Collected: 11/3/15 11:26

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
67-66-3	Chloroform	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
74-87-3	Chloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
110-82-7	Cyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-20-9	Methyl Acetate	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
591-78-6	Methyl Butyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
78-93-3	Methyl Ethyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
108-10-1	Methyl Isobutyl Ketone	5.0	U	ug/L	5.0	11/10/15	11/10/15	CLP SOM02.2
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
95-47-6	o-Xylene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
100-42-5	Styrene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
108-88-3	Toluene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	11/10/15	11/10/15	CLP SOM02.2
Tentatively Identified Compounds:								
R4-0000	Tentatively Identified Compounds	0.5	U	ug/L	0.5	11/10/15	11/10/15	CLP SOM02.2