FINAL

SITE CLOSEOUT REPORT FOR THE COLONIE FUSRAP SITE

Colonie, New York

Authorized Project under the Formerly Utilized Sites Remedial Action Program

April 2018

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DECLARATION OF RESPONSE ACTION COMPLETION AND ISSUANCE OF THE SITE CLOSEOUT REPORT FOR THE COLONIE FUSRAP SITE

The response actions at the Colonie Formerly Utilized Sites Remedial Action Program (FUSRAP) Site (Site) in Colonie, New York for the Main Site and Vicinity Properties are complete in accordance with respective records of decision (RODs) for the three Site Operable Units (OUs). The Groundwater OU signed on 9 April 2010; Main Site Soils OU signed on 26 March 2015; and the Vicinity Property OU signed on 20 September 2017 are in compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). As a result of the investigations and remedial actions completed for these media, all FUSRAP-eligible radioactive materials as defined by the RODs have been addressed on the Main Site (federal property), Vicinity Properties (private properties), and in the groundwater at levels above the cleanup requirements, and no further action (NFA) to address FUSRAP-eligible contamination will be required onsite. However, metals contamination remains in the subsurface soils at the Main Site in three specific areas. These areas will be managed by institutional controls (ICs) to be administered by a New York state-issued Environmental Easement which imposes appropriate restrictions to prohibit human contact with these soils as a means of long-term safe management of the Site property. The response action for groundwater media at the Colonie Site is also complete with the selected remedy of monitored natural attenuation (MNA) in place since 2010. Long-term monitoring (LTM) of the groundwater is ongoing as one volatile organic compound (VOC) of four monitored VOCs is above its target cleanup goal (TCG) at two Main Site locations. In accordance with the Groundwater ROD, monitoring will continue until TCGs are achieved for each of the four contaminants of concern (COCs) at all monitoring points and data indicate that levels will remain as such. This Site Closeout Report (SCOR) for the Colonie FUSRAP Site supports this declaration.

William H. Graham
Major General, U.S. Army
Commanding

11 Jun 18
Date

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Acronyms, Abbreviations, and Units of Measure

AEC	Atomic Energy Commission
ARAR	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylene
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cis-1,2-DCE	cis-1,2-dichloroethene
CISS	Colonie Interim Storage Site
COC	contaminant of concern
CSX	CSX Corporation
cy	cubic yards
DO	dissolved oxygen
DOE-LM	United States Department of Energy-Office of Legacy Management
EE/CA	Engineering Evaluation and Cost Analysis
EIS	Environmental Impact Statement
EM	Engineer Manual
EPA	United States Environmental Protection Agency
FS	Feasibility Study
FSS	Final Status Survey
FUSRAP	Formerly Utilized Sites Remedial Action Program
FYR	Five-Year Review
HHRA	Human Health Risk Assessment
IC	institutional control
IT	IT Corporation
LDR	land disposal restriction
LTM	long-term monitoring
LUC	land use control
Magnus	Magnus Metal Company, Inc.
MED	Manhattan Engineer District
µg/L	micrograms per liter
mg/kg	milligram/kilogram
MNA	monitored natural attenuation
NA	no action

Acronyms and Abbreviations (continued)

NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFA	no further action
NL	National Lead Industries
NRC	United States Nuclear Regulatory Commission
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	operations and maintenance
ORNL	Oak Ridge National Laboratory
ORP	oxidation-reduction potential
OU	operable unit
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
pCi/g	picocuries per gram
QA	quality assurance
QC	quality control
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RI	remedial investigation
ROD	Record of Decision
SCOR	Site Closeout Report
Shaw	Shaw Environmental & Infrastructure
Site	Colonie Formerly Utilized Sites Remedial Action Program (FUSRAP) Site
SI	site investigation
SMP	Site Management Plan
TCE	trichloroethene
TCG	target cleanup goal
Teledyne	Teledyne Isotopes
USACE	United States Army Corps of Engineers
USC	United States Code
UU/UE	unlimited use and unrestricted exposure
VC	vinyl chloride
VOC	volatile organic compound
WAC	waste acceptance criteria

EXECUTIVE SUMMARY

Site Description and History

The Colonie Formerly Utilized Sites Remedial Action Program (FUSRAP) Site (Site) is located at 1130 Central Avenue (New York State Route 5) in the Town of Colonie, Albany County, New York. The 11.2-acre industrial site was previously owned and operated by National Lead Industries (NL) from 1937 to 1984 and is currently owned by the Federal Government. In 1958, NL began producing items manufactured from uranium and thorium under a license issued by the Atomic Energy Commission (AEC) and New York State. The plant handled enriched uranium from 1960 to 1972. These activities resulted in residual radiological contamination co-located with metals in soil on portions of the Site, as well as impacts to Site groundwater and to neighboring privately owned properties (known as the Vicinity Properties). The New York State Supreme Court shut down the NL plant in 1984 and management of the property was transferred to the United States Department of Energy (DOE). Congress transferred administration and execution of FUSRAP cleanups from the DOE to the United States Army Corps of Engineers (USACE) in 1997.

DOE Activities

Between 1984 and 1995, DOE performed the following response actions at the Site: 1) investigated the Vicinity Properties, on-site structures, groundwater, and surface/subsurface soils, 2) developed a plan for removal of radiologically-impacted soils, 3) performed successful cleanup of 53 of 56 identified Vicinity Properties (DOE, 1989 and 1990), 4) removed on-site buildings, and 5) disposed generated waste materials associated with these actions.

USACE Activities

Congress transferred administration and execution of FUSRAP cleanups from the DOE to the USACE in 1997 in accordance with the *Energy and Water Development Appropriations Act* of 1984. Response actions conducted by USACE under FUSRAP were subject to, and conducted in accordance with, the CERCLA of 1980 (42 United States Code [USC] 9601 et seq.), as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] Part 300).

In 1997, USACE began assessing Site status and formulating plans for conducting remedial actions as needed for each of the three operable units (OUs) (i.e., the Groundwater OU, Main Site Soils OU, and Vicinity Property OU) at the Site. Based on those assessments, USACE performed the following response actions at the Site from 1999 to 2007; USACE completed the large-scale removal of soil at the Main Site, which included the adjacent Town of Colonie Vicinity Property (Shaw, 2010). Radioactively contaminated soil along with accessible metals-contaminated soil and soil containing volatile organic compounds (VOCs) were removed during this effort. A total

of 135,244 cubic yards (cy) of soil was excavated and disposed offsite as authorized by the 4 November 2001 signed Action Memorandum, which revised an earlier DOE Action Memorandum.

In 2010, USACE performed a review of the 53 Vicinity Properties remediated by DOE in the 1980s to ensure that the residual concentrations met proposed Applicable or Relevant and Appropriate Requirements (ARARs) and current MARSSIM guidance. The conclusion of the review was that additional work was necessary at two Vicinity Properties (USACE, 2010b) at 50 Yardboro Avenue and 1118 Central Avenue. Those properties were then addressed with additional sampling and limited soil removal (USACE, 2012a).

On 9 April 2010, USACE issued the Colonie Groundwater OU Record of Decision (ROD). In accordance with the Groundwater ROD (USACE 2010a), a remedy of the monitored natural attenuation (MNA) and long-term monitoring (LTM) of groundwater began in November 2010. Based on the marked progress toward target cleanup goals (TCGs), USACE optimized the groundwater LTM program (USACE, 2014) by reducing the well network, sampling frequency, and analytical parameters. On 26 March 2015, USACE signed the Main Site Soils OU ROD (USACE, 2015a). The ROD remedy included provisions for LUCs consisting of institutional controls (ICs) through an Environmental Easement for management of three discrete inaccessible locations within three of the 27 Final Status Survey (FSS) units of the Main Site. The Environmental Easement provides a means of protection based on both current and future land use by placing restrictions on the excavation and uses of soil. The Site Management Plan and easement will be completed by DOE Office of Legacy Management who will finalize the document.

The Vicinity Property OU ROD was signed on 20 September 2017 (USACE, 2017b), subsequent to a Public Meeting held on 1 February 2017 for the Proposed Plan for this OU. This ROD declared No Action (NA) for dust and No Further Action (NFA) for soil and other media for the Vicinity Properties.

Current Status

The Site is currently in the closeout phase of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process. USACE has prepared this Site Closeout Report (SCOR) to provide a consolidated record of investigatory and remedial activities conducted at the Site and document compliance status of the three OUs. This report also fulfills New York state requirements for site closeout and provides information to facilitate transfer of Site property management from USACE back to DOE.

Groundwater OU

The current status of the Groundwater OU is continued monitoring of the MNA remedy which is progressing toward meeting cleanup levels for the four COCs established in the ROD: tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride (VC). As of the latest monitoring event conducted in April 2017, just one of the four COCs (PCE) remains above its TCG at two well locations. Because VOC contamination remains in groundwater above a TCG, continued monitoring and Five-Year Reviews (FYR) are required.

Main Site Soils OU

The removal of radiologically contaminated soils has achieved the degree of cleanup and/or protection required for NFA as specified in the Main Site Soils OU ROD (USACE, 2015a) for all pathways of exposure. Residual soil concentrations for Uranium-238 and Thorium-232 satisfied the ARAR-based cleanup criteria of 35 picocuries per gram (pCi/g) and 2.8 pCi/g, respectively, for current and future use of the property that would allow for unlimited use and unrestricted exposure (UU/UE).

However, unacceptable risks due to metals concentrations were determined for three small discrete areas of the Main Site where metals-contaminated soil was left in place because excavations were obstructed by fixed features such as utilities and rail lines. LUCs (consisting of ICs) by means of an Environmental Easement will be implemented at these three areas of the Main Site with elevated metals concentrations in subsurface soils. Since metals concentrations posing potential risk remain on the Site, FYRs for the Main Site Soils are required to periodically assess the ongoing protectiveness of the remedy, current and future land use, and Site ownership.

Vicinity Property OU

The remedies implemented for the Vicinity Property OU have achieved the degree of cleanup and/or protection for required NFA/NA as specified in the Vicinity Property OU ROD (USACE, 2017b) for all media and all pathways of exposure. As no remedy is being implemented, FYRs are not required in support of the NFA (for soils) and NA (for dust) decisions.

Next Steps

The next step is the transfer of Site management from USACE to the DOE Office of Legacy Management. USACE will issue a declaration of response action complete letter and submit this Site Closeout report to DOE. USACE will monitor and maintain the Colonie site for a 2-year transition period. The transfer is expected to occur in January 2020. Once the transfer is complete, DOE will retain sole responsibility for long-term stewardship, which includes management of Main Site ICs, Site maintenance, LTM of groundwater, and Site records management.

Administrative Record File

The Administrative Record file for the Site contains CERCLA-related documentation relied on in the remedy decision-making process for the Site. Reports and documents are available for review in the Administrative Record file at the following location:

William K. Sanford Town Library
629 Albany Shaker Road
Loudonville, New York 12211.

USACE will maintain the Administrative Record File until the Site is officially transferred to DOE, after which the DOE will manage the Colonie Site administrative records.

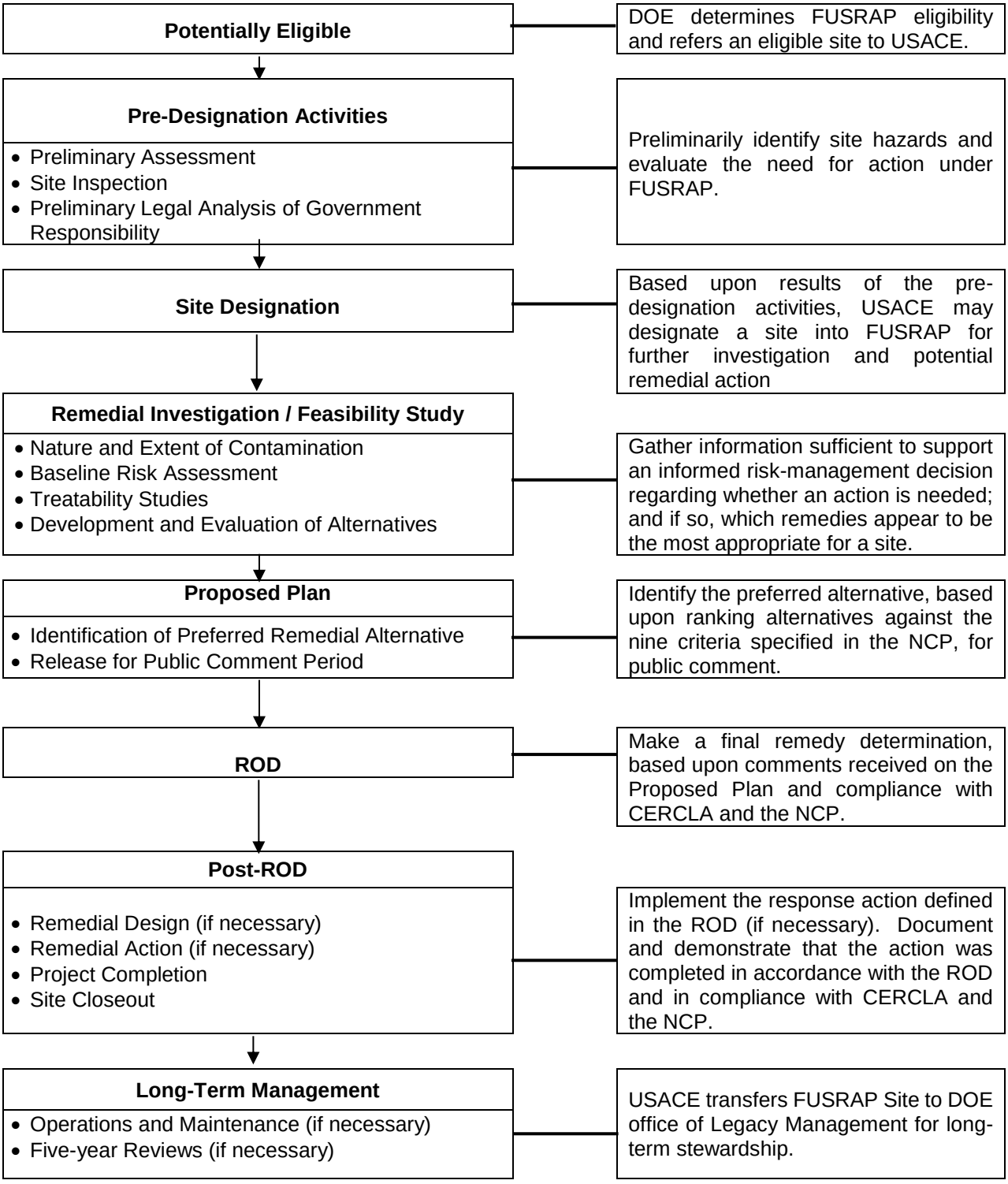
1.0 INTRODUCTION

The Colonie FUSRAP Site, located at 1130 Central Avenue (New York State Route 5) in the Town of Colonie, Albany County, New York, was remediated under FUSRAP first by DOE and then by USACE. The Site's Vicinity Properties are located both in the Town of Colonie and in the City of Albany, New York.

FUSRAP authorized investigation and, if necessary, cleanup or control of sites throughout the United States contaminated as a result of Manhattan Engineering District (MED) or AEC activities conducted in support of the nation's early atomic energy and weapons program. In accordance with Section 611 of Public Law 106-60, response actions conducted under FUSRAP are subject to, and conducted in accordance with, CERCLA of 1980 (42 USC 9601 et seq.), as amended, and the NCP (40 CFR Part 300). Note that for Proposed Plans, CERCLA § 117(a)(2) requires that USACE provide a "reasonable opportunity for submission of written and oral comments and an opportunity for a public meeting at or near the facility." The NCP [40 CFR § 300.430(f)(3)(C)] specifies that USACE must "provide a reasonable opportunity, not less than 30 calendar days, for submission of written and oral comments" and that, "upon timely request, the lead agency will extend the public comment period by a minimum of 30 additional days…". This requirement for Proposed Plans was upheld by USACE for all three OUs.

As shown in the chart below, CERCLA and the NCP guided the FUSRAP process for characterizing the nature and extent of releases of hazardous substances (such as radionuclides), evaluating alternatives for remedial actions, proposing and considering state and public comments on a remedial action, and deciding upon and carrying out a remedial action.

CERCLA PROCESS FOLLOWED BY USACE FOR FUSRAP SITES



The Site is currently in the Post-ROD Site Closeout phase of the CERCLA process and heading toward long-term management of the property. The Site is comprised of three OUs: 1) Main Site Soils OU, 2) Vicinity Property OU, and the 3) Groundwater OU.

The Main Site Soils OU requires long-term management (i.e., ICs, FYRs) of soils in limited areas and site upkeep such as lawn mowing and fencing repairs. The Vicinity Properties OU achieved the degree of cleanup and protection specified in the ROD for all pathways of exposure, thereby achieving a condition that allows for UU/UE. The Site Groundwater OU remedy, in place since 2010, requires further monitoring to assess the MNA remedy and requires FYRs while concentrations of any of the four monitored VOCs remain above TCGs.

The remedies for the three OUs at the Site are summarized below.

1.1 Groundwater OU

The Groundwater OU ROD (USACE, 2010a) signed in April 2010 established MNA as the selected remedy, with an initial two- to five-year monitoring period to assess the progress of natural attenuation processes, followed by additional monitoring as needed until TCGs are met for the four COCs (PCE, TCE, cis-1,2-DCE, and VC). The timeframe to reach compliance was initially estimated at about 15 years from the time the remedy was established in 2010. Since the initiation of MNA, the original estimated compliance timeframe remains reasonable based on the data record to date.

1.2 Main Site Soils OU

The ROD for the Main Site Soils OU (USACE, 2015a) signed in March 2015 required the implementation of LUCs consisting of ICs for metals-contaminated soils remaining onsite that potentially pose a risk.

By 2007, USACE removed over 135,000 cy of soil contaminated with radiological, VOC, and metals constituents, and disposed these soils offsite at appropriate disposal facilities as documented in the *Final Post-Remedial Action Report* (Shaw, 2010). However, soils that could pose a possible future risk from ingestion due to metals contamination as determined by the risk assessment performed for the remedial investigation (RI) (USACE, 2013a) remain on the Main Site at three specific locations. These soils were inaccessible during the soil removal action due to their location adjacent to active rail lines or utility power poles.

LUCs: LUCs (consisting of ICs) administered through an Environmental Easement to control exposure to remaining metals contamination at specific locations will ensure protection of public health and the environment. The Environmental Easement will restrict soil excavation in the three locations found to pose potential risk. These areas are shown as "easement areas" on the Environmental Easement Survey drawing in Appendix A.

In addition to the three locations identified in the ROD, the Environmental Easement includes locations on the Main Site where elevated metals were found at depths greater than nine feet. Note that no unacceptable CERCLA risk has been associated with these elevated metal concentrations at greater depth due to a lack of complete pathway. As such, no CERCLA action was conducted for these deeper soils. The recognition of the area encompassing these locations as an "additional deed restriction area" on the Environmental Easement Survey (Appendix A) acknowledges the New York State Department of Environmental Conservation (NYSDEC) regulation of soil contamination up to a depth of 15 feet below ground surface (bgs).

1.3 Vicinity Property OU

The Vicinity Property OU ROD (USACE, 2017b) established the soil and other media (such as pavement and rooftops) NFA decision and the dust media NA decision. Based on the results of completed investigations and remedial actions, the final decisions for the soil and dust media are appropriate under CERCLA for the Vicinity Property OU.

2.0 SITE LOCATION AND DESCRIPTION

The Colonie FUSRAP Site is located at 1130 Central Avenue (New York State Route 5) in the Town of Colonie, Albany County, New York. The Town of Colonie lies in the eastern portion of the state just northwest of the city of Albany, New York. The Main Site occupies 11.2 acres. Figure 1 shows the location of the Colonie Site.

The Site is bounded by a partially wooded lot/building materials enterprise on the west (7 Railroad Ave), CSX Corporation (CSX)/Amtrak Railroad tracks on the southwest and south, active commercial properties on the east and northeast, Central Avenue on the north, and an electrical substation on the northwest. The Site is situated in an urban area consisting of both residential and commercial properties. The Site is zoned for industrial use by the Town of Colonie, which has a population of approximately 83,000. Figure 2 shows a Site map.

The fenced Site property is a grassy, vacant lot containing monitoring wells and a single storage shed near the locked access gate on Central Avenue. An asphalt road transects the Site to a back gate leading to the CSX/Amtrak Railroad tracks. The strip of land outside of the fence along Central Avenue is a grassy area maintained by the current Site owner.

2.1 Current and Future Land Use

The Colonie site is a government owned property. There is no current government use of the Site as it is vacant land that was once used for industrial operations. USACE determined that the most probable future land use at the Site would be urban residential. In accordance with United States Environmental Protection Agency (EPA) guidance for projecting potential future land use at a site, current land use, site setting, zoning laws/maps, and comprehensive community master plans were examined. The Town of Colonie master plan indicating future commercial use for the Central Avenue strip, coupled with the fact that residential property currently borders the Site on two sides, supports the use of urban-residential cleanup criteria. Future projected use will result in concentrated mixed-use development with high population characteristic of an urban residential scheme.

Soils at the Site are poorly suited for agricultural purposes, as native soils are high in clay content, and a layer of engineered backfill material exists over much of the Site. Access to the Site is currently restricted by fencing with two locked access gates and is to be restricted at specific locations by an Environmental Easement. ICs will prohibit vegetable gardens and farming in the specific easement areas of the Site.

Groundwater at the Site is not used as a drinking water source. The high clay content of the overburden aquifer causes very low well yield, which makes the aquifer unsuitable for potable use.

Homes and businesses in the area around the Site are supplied with public water from the Latham Water District in the Town of Colonie. The water sources are the Mohawk River, several supply wells, and several reservoirs.

3.0 SITE HISTORY

Industrial operations at the Site began in 1923, when a facility was built for manufacturing wood products and toys. In 1927, the facility was converted to a brass foundry for manufacturing railroad components. In 1937, NL purchased the facility for conducting electroplating operations. Chemicals used in the plating operations included various acids, bases, metals, and degreasing solvents. NL also bought an adjacent lot that contained a portion of Patroon Lake. In 1958, NL began producing items manufactured from uranium and thorium under a license issued by the AEC. The plant handled enriched uranium from 1960 to 1972. During that time, NL held several contracts to manufacture fuel from enriched uranium for use in experimental nuclear reactors. Radioactive materials released from the plant exhaust stacks spread to Site buildings, portions of the grounds, and 56 commercial and residential Vicinity Properties. NL also placed contaminated casting sand into the former Patroon Lake. The historical industrial operations at the Colonie Main Site resulted in impacts to soil, groundwater, other media (i.e., dust), and structures at the Site and its vicinity.

The AEC contract was terminated in 1968, and work at the plant afterwards was devoted to fabricating shielding components, aircraft counterweights, and artillery projectiles from depleted uranium. The New York State Supreme Court shut down the NL plant in 1984 due to environmental concerns (i.e., emitting uranium compounds in airborne releases), and management of this federally-owned property was transferred to DOE by Congress through the *Energy and Water Development Appropriations Act* of 1984. From 1984 to the fall of 1997, the Site was managed by the DOE. In 1997, responsibility for the investigation/remediation execution of FUSRAP was transferred to USACE pursuant to the *Energy and Water Development Appropriations Act* of 1998 (Public Law 105-62).

The DOE and USACE performed investigations and removal actions at properties surrounding the Site (i.e., Vicinity Properties) that were impacted by radioactive contamination via airborne releases of uranium compounds. In 2007 USACE completed the large-scale soil removal action at the Main Site involving excavation and off-site disposal of over 135,000 cy of soil contaminated with radionuclides, metals, and VOCs. In 2010, USACE initiated a groundwater monitoring program to measure the progress of the MNA remedy by assessing the attenuation of four specific VOCs identified as COCs that had concentrations above protective levels. Beginning in 2011 and continuing in 2014, USACE conducted investigations of the dust medium in Vicinity Properties including homes and commercial entities. Currently the Site is undergoing groundwater monitoring and property maintenance while preparations for site transfer continue.

3.1 Site Ownership

Albany County online tax mapping records for the Town of Colonie indicate the owner of the property at 1130 Central Avenue as the United States of America. The online records do not show any previous owner or property sales information for 1130 Central Avenue. Propriety of the Site (and authority for its remediation) was previously assigned to DOE by Congress through the *Energy and Water Development Appropriations Act* of 1984. While DOE remains the landholding agency, USACE assumed responsibilities for environmental restoration of the Site from DOE through congressional action in October 1997. USACE is the lead agency for Site activities; NYSDEC is the lead regulatory agency for the Site. Restoration activities were also coordinated with the New York State Department of Health (NYSDOH) and the Albany County Department of Health. Funding for remediation activities was provided on an annual basis to USACE by congressional appropriations under the *Energy and Water Development Appropriations Act.*

3.2 Historical Industrial Operations at the Colonie FUSRAP Site

The Embossing Company began industrial operations in 1923 when it purchased a portion of the present-day Site to construct a facility for manufacturing wood products and toys. In 1927, Magnus Metal Company, Inc. (Magnus) purchased the property and converted the facility to a brass foundry for manufacturing railroad components. Magnus cast the brass components in sand molds and also manufactured brass-bearing housings with surfaces of Babbitt metal (an alloy of lead, copper, and antimony). Preparation of the bearing surfaces for bonding with the brass housing involved degreasing the bearings by immersion in an acid bath (Bechtel National, Inc. [BNI], 1992).

In 1937, NL purchased the facility, continued the brass foundry operations initiated by Magnus, and bought an adjacent lot that contained a portion of Patroon Lake. Prior to 1941, NL began filling Patroon Lake with used casting (metals contaminated) sand. The filling of Patroon Lake and other disposal operations is documented in the Historic Aerial Photograph Interpretation Report of the Final Groundwater Feasibility Study (URS, 2008). After World War II, the plant began casting aluminum mainframes for jet airplanes. In 1958, the nuclear division of NL began producing items manufactured from uranium and thorium under a license issued by the AEC. NL discontinued its brass foundry operations in 1960.

Between 1958 and 1984, NL carried out a number of processes using radioactive materials consisting primarily of depleted uranium, but also with lesser amounts of thorium and enriched uranium. The plant handled enriched uranium from 1960 to 1972. From 1966 to 1972, NL held several contracts to manufacture fuel from enriched uranium for experimental nuclear reactors. Operations at the plant reduced depleted uranium tetrafluoride to depleted uranium metal, which was then fabricated into shielding components, ballast weights, and projectiles. During this period, the AEC issued licenses to NL for possession of uranium and special nuclear material, and the

State of New York issued a license for fabrication of depleted uranium parts. As a result of the NL operations, residual radioactive materials were found on the property buildings and grounds, and the residences and businesses properties surrounding the Site.

Other processes at the plant included an electro polishing operation for plating uranium with nickel and cadmium. Chemicals used in the plating operation included PCE, nickel sulfamate, sodium cyanide, ferric chloride, nitric acid, silicate phosphate, iridite (chromium brightener), cadmium metal, nickel metal, and boric acid. The location and method of disposal for most of these materials is unknown because very few disposal records could be located. However, historic NL correspondence indicates that under an AEC license, approximately 42 cubic meters of graphite, slag, refractory uranium oxide, insoluble oil, metal scrap, and burnable trash had been buried in the Patroon Lake area by 1961 (Huss, 1959; Wilson, 1962). Chemical wastes and packaged chemicals used at the Site included: acids, bases, degreasing agents, carbon tetrachloride, benzene, polychlorinated biphenyls (PCBs), cyanide, heavy metals, and asbestos. The chemicals present on the Resource Conservation and Recovery Act (RCRA) Part A permit application were removed from the Site as part of its closure as an interim RCRA storage facility.

Various industrial operations utilizing acids, bases, and chlorinated solvents were conducted at the Site. One of the processes conducted at the Site between 1958 and 1984 included an operation for electroplating uranium with nickel and cadmium. Historic drawings of the former main building within the Site showed one of the former rooms labeled as "Plating." Chemicals used in the plating operation included various acids, bases, metals, and PCE. A degreasing bath containing PCE was reportedly used in the plating operation. Chemical wastes and packaged chemicals used at the Site also included carbon tetrachloride, benzene, PCBs, and asbestos.

Based on a review of historical surveys, aerial photographs, and results of the investigation conducted during 1988-1989, one burial area (Patroon Lake area) and chemical contamination of surfaces within the processing building were identified as likely sources of organic contamination at the Site (BNI, 1992).

3.3 Historical Regulatory Response at Colonie

On 15 February 1980, the New York State Supreme Court issued a temporary restraining order barring NL from operating its facility because it emitted unacceptable airborne releases of uranium compounds. The temporary restraining order was amended on 12 May 1980, to allow NL to continue limited operations. The amended order required the company to initiate an independent investigation to assess all adverse environmental conditions in on-site soil and on the residences and businesses that may have resulted from airborne discharges of radioactive particulates from the plant.

New York State officials closed NL in 1984, and authority for cleaning up the Site was assigned to the DOE by the U.S. Congress through the *Energy and Water Development Appropriations Act* of 1984. DOE placed the Site into FUSRAP as a decontamination and research development project. From 1984 to fall 1997, the Site was managed by DOE. During this time, DOE investigated the Site and Vicinity Properties and began the cleanup process. Fifty-three Vicinity Properties were cleaned up and all NL buildings were demolished.

In February 1984, the Secretary of Energy accepted an offer from NL to donate the land, buildings, and equipment to DOE to help expedite the cleanup. In 1985, DOE acquired a portion of the Niagara Mohawk property bordering the Site on the north and northwest, and subsequently designated it as part of the Site. From 1984 to 1995, the Site was used for interim storage of radioactive materials removed from the affected properties and businesses (DOE, 1989). At the time DOE took ownership of the former NL property, both the AEC and State licenses were administratively terminated, since DOE-owned facilities are not subject to regulation by the State of New York or by the U.S. Nuclear Regulatory Commission (NRC), the successor-licensing agency to AEC.

In 1992, DOE initiated actions to prepare the Main Site Building for cleanup, including preparation of the *Engineering Evaluation and Cost Analysis (EE/CA) Report for the Colonie Interim Storage Site Building*, (DOE, 1993). In September 1995, an EE/CA (DOE, 1995) to address cleanup of the Site was finalized. DOE then prepared the 1997 Action Memorandum (DOE, 1997) that authorized partial excavation of soils with an engineered cap for Main Site soils.

In October 1997, authority for executing FUSRAP investigation/remedial action at the Site was transferred from DOE to the USACE by further congressional action. Removal activities were first initiated by USACE in 1999 and were based upon the results of a 1995 *Engineering Evaluation/Cost Analysis* report and the original DOE Action Memorandum (DOE, 1995 and 1997). The *EE/CA* and the DOE Action Memorandum document the selected Alternative 3B, Moderate Excavation and Cap and Cover. Due to subsequent uncertainties regarding implementability, physical constraints of the Main Site and local community resistance, USACE re-evaluated the alternative when it assumed responsibility for remediation of the Site from DOE. Subsequently, USACE revised the 2001 Action Memorandum to document the selection of Alternative 2B, Large-Scale Excavation and Disposal (rather than Alternative 3B). Under the revised plan, Main Site soils with concentrations in excess of radiological and metals removal action goals were excavated and disposed offsite from 2001 through 2008. Clean soil was placed over the excavated areas, leaving the Site available for future development.

3.4 Historical Designation of the Colonie Site under FUSRAP

The AEC created the FUSRAP in 1974 to identify, investigate, and if necessary, clean up or control sites that were contaminated as a result of activities conducted in support of the Nation's early atomic energy and weapons program. These activities were performed by the MED (1942-1946) and/or under the AEC (1947-1975). Therefore, by law, only MED/AEC-related constituents, hereafter referred to as FUSRAP-eligible contaminants of concern (COCs), are authorized to be addressed under FUSRAP.

As part of the research and development project discussed in the House report that accompanied the *1984 Energy and Water Appropriations Act*, the Site, previously known as the Colonie Interim Storage Site (CISS), was assigned to DOE for cleanup under the FUSRAP and became known as the Colonie FUSRAP Site. In 1998, responsibility for the execution of the remediation action was transferred to USACE.

3.5 Community Involvement

This section summarizes FUSRAP community involvement activities from 1984 through the present. It should be noted that public concern over uranium releases from the NL plant arose even before the Site was assigned to DOE under FUSRAP because citizen groups called attention to the issue. During the history of FUSRAP public involvement, DOE and then USACE have utilized a variety of methods to engage and inform the public, including answering media inquiries, conducting media tours, issuing news releases and newsletters, and holding public meetings.

Below is a chronology of significant community involvement events.

DOE Activities:

- A public meeting in Albany, New York on 14 February 1984 between DOE and State/Local community groups to discuss plans for the Site.
- A public meeting in Colonie on 2 July 1984 to discuss remedial action plans with affected property owners and to answer questions from the public.
- Personal contacts with owners of residential and commercial properties remediated in 1984, 1985, and 1988.
- An October 1987 on-site meeting between DOE staff, representatives of the Superfund Monitoring Project and a former NL employee who pointed out areas of suspected buried contamination. Members of the media also attended.
- In April 1988, DOE published a Notice of Intent (another term for Environmental

Impact Statement [EIS]) in the Federal Register to publicly announce that an EIS was being initiated; the EIS would culminate in a ROD on how the Site should be remediated.

- A public meeting on 25 April 1988 to solicit public comments and concerns related to the Site. At the time, the Site was part of a combined environmental review process that included three other FUSRAP sites. As a result of public comment, DOE agreed to manage the Colonie Site as a separate action. Due to this change, DOE determined that an Environmental Assessment rather than an EIS would be required for the Site.

- DOE held several meetings in December 1988 with Town of Colonie officials, Congressional district staff, and concerned citizens. These meetings captured public concerns and communicated DOE progress on the Site. Between 1984 and 1988, DOE remediated 53 Vicinity Properties. From 1992 to 1996, DOE demolished all remaining NL buildings.

- DOE prepared an Engineering Evaluation and Cost Analysis (EE/CA) in 1995 to determine the best cleanup approach for Site contaminants. The recommended alternative was 3B, which included: 1) excavation and off-site disposal of material containing Uranium-238 above 100 pCi/g and Thorium-232 above 15 pCi/g, and 2) on-site consolidation of material between 35 pCi/g and 100 pCi/g under an engineered 18-inch gravel and earthen cap. Public input on the EE/CA remedy selection process was obtained during the time of the public comment period.

USACE Activities:

- USACE conducted 31 community interviews from 15 through 20 November 1999 with residents, local business owners, elected officials, media representatives, representatives of public agencies and representatives of environmental activist groups.

- A 24 August 2000 Open House was held to update the community.

- USACE prepared a public involvement plan in October 2000 to identify local community concerns and set forth a strategy for on-going, two-way communication between USACE and the community.

- Due to physical constraints of the Site and negative public reaction regarding the proposal to store encapsulated radioactive waste onsite (e.g., alternative 3B), USACE reevaluated the EE/CA alternatives and recommended alternative 2B: Large-scale excavation and off-site disposal with no on-site storage of contaminated material. A public meeting was held 11 July 2001 regarding this proposal.

- During the removal action (2000-2007), fact sheets were mailed semi-annually or as circumstances warranted to a community mailing list and made available in the Information Repository at the William K. Sanford Town Library and on the project website. In addition, periodic open houses were held to share information and gather community feedback.

- The Groundwater OU Proposed Plan was released to the public in July 2009. A public comment period was held from 9 July through 31 August 2009. A public meeting was held on 30 July 2009. The Groundwater OU ROD was issued in April 2010.

- The Main Site Soils Proposed Plan was released to the public in July 2014. A public comment period was held from 24 July 2014 through 22 September 2014. A public meeting was held on 6 August 2014.

- The Main Site Soils OU ROD was issued in March 2015. Fact sheets summarizing the Proposed Plan and providing a general update on Site activities were made available to the public at this time.

- The Vicinity Property OU Proposed Plan was released to the public in January 2017. A public comment period was initially held from 12 January 2017 to 13 February 2017. A 30-day extension to 15 March 2017 was granted at the request of interested stakeholders. A public meeting was held on 1 February 2017.

- The Vicinity Property OU ROD was issued on 10 September 2017.

4.0 PREVIOUS INVESTIGATIONS and RESPONSE ACTIONS

The Colonie Site has undergone extensive investigations and response actions relating to the occurrence of FUSRAP-eligible COCs. The following list presents the key reports that document investigations and remedial actions performed at the Site, including decision documents:

DOE Reports:

- Certification Docket for the Remedial Action Performed at Colonie Site Vicinity Properties, 1984 and 1985 (DOE, 1989b)
- Post-Remedial Action Report for the Colonie Site Vicinity Properties, 1988 (DOE, 1989a)
- Certification Docket for the Remedial Action Performed at Site Vicinity Properties in Colonie and Albany, New York in 1988 (DOE, 1990)
- Characterization Report for the Colonie Site (BNI, 1992)
- EE/CA for the Colonie CISS Building (DOE, 1993)
- EE/CA for the Colonie Site (DOE, 1995) Colonie Site Action Memorandum for Removal Action (DOE, 1997)

USACE Reports:

- Phase I Geoprobe Groundwater Sampling Report, IT Corporation, (IT), 1999
- Focused Site Investigation (SI) Report, Niagara Mohawk Power Station (USACE, 2000).
- Phase II Geoprobe Groundwater Sampling Report (IT, 2001)
- Final Action Memorandum - Revising February 14, 1997 DOE Action Memorandum: Soil Removal at the Colonie Site (USACE, 2001)
- Final Groundwater RI Report, Shaw Environmental & Infrastructure, (Shaw), 2003
- SI Report for the Unnamed Tributary of Patroon Creek, Patroon Creek, and Three Mile Reservoir (Shaw, 2004)
- Final Human Health and Ecological Risk Assessments (URS, 2004a and 2004b)

- Final Indoor Air Assessment Report (Shaw, 2005)
- EE/CA for the CSX Vicinity Property (USACE, 2005)
- Final Indoor Air Data Assessment Addendum Report, 52 Yardboro (Shaw, 2006)
- Final Groundwater Feasibility Study (URS, 2008)
- Final CSX Vicinity Property Report (USACE, 2008a)
- Final Town of Colonie Vicinity Property Report (USACE, 2008b)
- Lloyd Study - distribution of depleted uranium contamination in Colonie (Lloyd, et.al, 2009)
- Final Post Remedial Action Report (Shaw, 2010)
- Colonie Site Groundwater ROD (USACE, 2010a)
- Technical Memorandum Vicinity Property Assessment (USACE, 2010b)
- Investigation of Two Colonie FUSRAP Site Vicinity Properties (USACE, 2012a)
- Confirmation Dust Sampling Report for the Colonie Vicinity Properties (USACE, 2013a)
- Main Site Soils Remedial Investigation (USACE, 2013b)
- CSX and 50 Yardboro Avenue Vicinity Property Closure Report (USACE, 2013c)
- *Annual Long-Term Monitoring Report*, Colonie FUSRAP Site, Colonie, New York, Final, USACE, May 2014.
- Colonie Main Site Soils ROD (USACE, 2015a)
- Vicinity Property OU RI Summary Report (USACE, 2016a)
- 2015-2016 Annual LTM Report for the Colonie FUSRAP Site (USACE, 2016b)
- Vicinity Property OU Proposed Plan (USACE, 2017a)
- Vicinity Property OU ROD (USACE, 2017b)

- Groundwater FYR (USACE, 2017c).

The following sections summarize investigatory and response action work completed by DOE and USACE. These actions were completed as necessary prior to the issuance of the RODs that established final remedies for the three OUs.

4.1 National Lead Industries Investigations

Prior to the transfer of the NL property to DOE in 1978, several radiological surveys were performed by NL including a survey of external radiation for the building and equipment as well as surface contamination at the NL facility.

In 1980, Teledyne Isotopes (Teledyne) conducted radiological surveys to ascertain radiological levels in Vicinity Property soils. Survey results indicated that uranium released into the air had settled on residential and industrial properties and structures and that most of the contamination was deposited in the direction of prevailing winds in the area (Teledyne, 1980).

In October 1983, Oak Ridge National Laboratory (ORNL) began performing more detailed radiological surveys of the individual properties surrounding the NL Industries plant to start identifying all locations where uranium contamination exceeded DOE remedial action guidelines. The ORNL surveys identified 54 Vicinity Properties containing elevated levels of radioactive contamination that were designated for remedial action. Remedial action was conducted at 11 of these Vicinity Properties during 1984 and at 24 more in 1985. In 1988, remedial action was conducted at 16 of the 19 remaining properties; during this action, two additional properties (4 Maplewood Avenue and 16 Yardboro Avenue) were identified as contaminated and were subsequently designated and remediated, bringing the total number of designated Vicinity Properties to 56 and the total number of properties remediated in 1998 to 18 (ORNL, 1988).

4.2 DOE Investigations and Response Action Summary

From 1984 to the fall of 1997, the Site was managed by DOE. DOE investigated the Main Site and 56 Vicinity Properties and initiated the FUSRAP remediation process. Specifically, DOE performed the following response actions at the Site: 1) investigated the Vicinity Properties, onsite structures, groundwater, and surface/subsurface soils, 2) developed a plan for removal of radiologically-impacted soils, 3) performed remediation of 53 of 56 identified Vicinity Properties (DOE, 1989 and 1990), 4) removed onsite buildings, and 5) disposed of generated waste materials associated with these actions.

From 1984 through 1988, groundwater samples were collected on a quarterly basis. Results of this sampling were published in annual environmental summary reports, which are available in the Site Administrative Record.

In 1984, 1985, and 1988, 53 of the 56 Vicinity Properties were remediated. The remaining three Vicinity Properties border the Main Site and were investigated and remediated during a subsequent removal action at the Main Site. Table 1 summarizes the Vicinity Property remedial actions completed by DOE. The Vicinity Property locations are shown on Figure 3.

Certification Dockets were prepared by DOE attesting to the radiological status of the Vicinity Properties, and all contaminated materials from remediation activities were staged on the Main Site pending disposal. In 1985, DOE acquired a portion of the Niagara Mohawk property bordering the Main Site and subsequently designated it as part of the Main Site. In November 1992, DOE had prepared a Characterization Report for the Site documenting the results of field activities and outlining the nature and extent of contamination (BNI, 1992). From 1992 to 1996, the remaining NL buildings were demolished by DOE.

4.3 USACE Investigations and Response Action Summary

Response actions conducted by USACE under FUSRAP were subject to and conducted in accordance with CERCLA of 1980 (42 USC 9601 et seq.), as amended, and the NCP (40 CFR Part 300).

USACE began assessing the status of the Site in 1997. Plans for conducting remedial actions for each of the three OUs (i.e., Main Site Soils OU, the Groundwater OU, and Vicinity Property OU) at the Site were prepared. Prior to the initiation of soil removal work, USACE re-evaluated the remedial alternative (i.e., Moderate Excavation and Cap and Cover) selected by DOE. Due to uncertainties regarding implementability, physical constraints of the Main Site, and local community acceptance, USACE changed the preferred remedial alternative to Large-Scale Excavation and Disposal.

Beginning in 1997, USACE conducted periodic groundwater monitoring to determine the nature and extent of radioactive and chemical constituents beneath the Site. This included a phased groundwater investigation to determine the presence of VOC contamination and to delineate its areal extent in the groundwater.

An assessment comparing the post-remedial status of the Vicinity Properties remediated by DOE to more current soil cleanup criteria was documented in the Technical Memorandum Vicinity Property Assessment (USACE, 2010b). Table 2 presents a list of the Vicinity Properties addressed by DOE and USACE.

Plans for conducting response actions for each of the three OUs (i.e., Main Site Soils OU, the Groundwater OU, and Vicinity Property OU) at the Site were prepared. USACE performed various investigatory and response actions at and around the Site for each of the three OUs, as summarized in the sections to follow.

4.3.1 Site Groundwater Investigation

The Groundwater RI conducted between 1999 and 2002 involved collection and analysis of groundwater samples from direct-push (Geoprobe®) temporary sample points and from permanent monitoring wells. Surface water and sediment samples were also collected and analyzed as part of the RI.

USACE initiated the groundwater investigation using Geoprobe® equipment over grids established during a three-phased approach to determine the nature and extent of VOC contamination in the groundwater.

Analytical results from the Phases I through III Geoprobe® Groundwater Sampling indicated the presence of elevated levels of VOCs along the southern boundary of the Site. Results of the 1999 Phase I Geoprobe® sampling were presented in the *Phase I Geoprobe Groundwater Sampling Report* (IT, 1999). Results of the Phase II Geoprobe® sampling were presented in the *Phase II Geoprobe Groundwater Sampling Report* (IT, 2001). The results of the Phase III sampling are discussed in the *Final Groundwater Remedial Investigation Report* (Shaw, 2003).

Analytical results from the RI revealed the presence of elevated concentrations of VOCs in water table monitoring wells. Total VOC concentrations (i.e., sum of PCE, TCE, cis-1,2-DCE, and VC concentrations) ranged from 27 to 2,583 micrograms per liter (µg/L), based on the 2002 data. The RI data also indicated that the deeper groundwater was not impacted at concentrations above evaluation criteria.

The RI also identified the presence of PCE breakdown products such as cis-1,2-DCE and VC in the groundwater which indicated that biodegradation processes were active in Site groundwater. There is no record of historic use of either cis-1,2-DCE or VC at the Site, thus their presence was attributed to biodegradation.

Information presented in the Groundwater RI indicated that VOC contamination expanded laterally from the source areas toward the railroad tracks and the unnamed tributary of Patroon Creek, consistent with the natural direction of groundwater flow (i.e., generally from northwest to southeast). The water table was also impacted by historic releases of radiological constituents; however, these constituents were not identified as COCs for groundwater, as there is no complete pathway for human exposure.

The associated Human Health Risk Assessment (HHRA) (URS, 2004a) evaluated onsite and off-site groundwater results and determined that the groundwater COCs are the chlorinated solvents: PCE, TCE, and their degradation products cis-1,2-DCE and VC.

The HHRA identified and quantified two potential residential exposure pathways: 1) groundwater consumption through domestic use, and 2) vapor intrusion of VOCs into buildings. The first pathway, domestic groundwater consumption, is an incomplete pathway that is not present either onsite or offsite. The other potentially complete exposure pathway was inhalation of VOC vapors that could volatilize from the groundwater and migrate via vapor intrusion into residential buildings for both on-site and off-site receptors. The on-site pathway does not exist, but could exist in the future if the Site is ever declared suitable for residential use.

The potential for VOC vapor intrusion into off-site residences was evaluated, with multiple rounds of indoor air samples collected to fully assess the off-site pathway at potential receptor locations. The focus of the remedial action objective (RAO) development process was to ensure protection from the onsite vapor intrusion pathway. All exposure pathway risks related to the intrusion of volatile chemicals and resultant indoor air concentrations were estimated using the EPA spreadsheet version of the Johnson and Ettinger Vapor Intrusion Model (EPA, 2002).

Results of the HHRA and subsequent modeling in support of the Groundwater Feasibility Study (FS) (URS, 2008) indicated that exposure to COCs in the Site groundwater under a hypothetical future onsite urban resident scenario via the vapor intrusion pathway may result in unacceptable risks (i.e., greater than the 10^{-4} and 10^{-6} risk range deemed protective in the NCP).

4.3.2 Main Site Soils Removal Action

From 1999 to 2007, USACE completed a large-scale removal of soil at the Main Site, which included soil removal from the adjacent Town of Colonie Vicinity Property (USACE, 2008b). Soil removal activities were initiated at the Main Site by USACE on 30 March 1999 and were based on the results of a 1995 EE/CA report and the original DOE Action Memorandum (DOE, 1995 and 1997).

In accordance with the removal action goals presented in the Final Action Memorandum (USACE, 2001) and summarized in Table 3, USACE removed all radioactively contaminated soils exceeding cleanup criteria regardless of depth and excavated all accessible metals-contaminated soils exceeding criteria to a maximum depth of nine feet below original grade. USACE also removed soil containing VOC sources where they were encountered. The following section details this work. Further details of the Main Site soil removal action and associated activities are provided *Final Post-Remedial Action Report* (Shaw, 2010).

Soil Excavation

Excavated material was field-screened with two separate instruments to detect Uranium-238 and Thorium-232 and was segregated according to level of radiological activity. Cleanup criteria for Main Site soils are shown in Table 4. Soils found to be below the Uranium-238 cleanup level of

35 pCi/g were re-used as backfill with state concurrence. Soils with Uranium-238 screening results between 35 pCi/g and 100 pCi/g were segregated and sent to the US Ecology commercial disposal facility in Idaho. Soils with Uranium-238 levels above 100 pCi/g were segregated for commercial disposal at EnergySolutions (formerly Envirocare) in Utah.

Two areas of soils impacted with VOCs were identified during the groundwater RI efforts. Soils impacted by VOCs were encountered during excavation activities in five FSS units (i.e., Unit 109, Unit 114, Unit 116, Unit 117, and Unit 119). The VOC soils were removed following the excavation of radiologically- and metals-contaminated soils. It was later discovered that the removal of the VOC-contaminated soil ultimately resulted in a significant reduction in VOC concentrations in the underlying groundwater.

Some metals contamination remained in Site soils at specifically defined locations that were not excavated during the removal action due to the presence of semi-permanent physical obstructions including high-voltage power line support poles, a rail line, and a fire hydrant/water main. The remaining metals contamination is limited to small areas in the shallow subsurface and some portions of the deeper subsurface (greater than 12 feet in depth). Removal of these deep subsurface soils was not authorized in the 2001 Action Memorandum (USACE 2001) as there is no complete exposure pathway to those soils.

The relatively small areas in the shallow subsurface with remaining metals contamination are FSS Units 104, 109, 124, and North Lawn (Figure 4). Three of these four small areas (i.e., Units 104, 124, and North Lawn), ranging in area from 0.010 to 0.028 acres, are specifically addressed by the Main Site Soils ROD remedy component of LUCs (consisting of ICs) to be implemented through an Environmental Easement. An Environmental Easement is a form of LUC that documents the location and concentration of contamination above the residential soil cleanup standard. The project team followed appropriate state guidance for the creation of an Environmental Easement and the United States Department of Energy-Office of Legacy Management (DOE-LM) will complete the Site Management Plan that documents all of the specific state requirements for this LUC. Note that Unit 109 (Figure 4) posed no unacceptable risk and therefore is not subject to an Environmental Easement.

Upon completion of the soil removal work on 23 January 2007, a total of 135,244 cy of soil and debris were excavated from the Site. Following soil removal, the requirements specified in the Multi-Agency Radiation Survey and Site Investigation Manual (2000) were applied to conduct an FSS for the Main Site. The FSS is a detailed systematic sampling approach designed to obtain sufficient sample information to demonstrate that potential doses from remaining levels of radioactivity are below the cleanup criteria for each survey unit. USACE designated the entire Site a Class 1 survey unit area. Class 1 survey units are considered contaminated and require the highest degree of survey effort. USACE then performed an FSS at each of the 27 individual Class

1 survey units shown on Figure 4 as a means of demonstrating compliance with the soil cleanup criteria. A table summarizing field screening and analytical results for each FSS unit (i.e., Table 12 from *Final Post-Remedial Action Report, Shaw, 2010*) is provided in Appendix B.

Residual soil concentrations for Uranium-238 and Thorium-232 satisfied the ARAR-based cleanup criteria of 35 pCi/g and 2.8 pCi/g, respectively, for current and future UU/UE use of the property. All average residual concentrations for individual metal constituents also satisfied the risk-based cleanup criteria from zero to nine feet below ground. Four individual soil sample results from locations up to nine feet below ground exceeded the metals cleanup criteria as follows:

- Survey Unit 104 (1.82-foot depth): arsenic 85.4 milligram/kilogram (mg/kg) (cleanup goal 7.4 mg/kg). The sample was located between active power poles. Additional vertical and horizontal excavation would have impacted soils supporting the power poles.

- Survey Unit 124 (5.3-foot depth): copper 2,450 mg/kg (cleanup criteria 1,912 mg/kg) and lead 734 mg/kg (cleanup criteria 450 mg/kg). The sample was located adjacent to an active power pole. Additional vertical and horizontal excavation would have impacted soils supporting the power poles.

- North Lawn (3.9-foot depth) - copper 4,340 mg/kg (cleanup goal 1,912 mg/kg) and lead 3,370 mg/kg (cleanup goal 450 mg/kg). The sample was located adjacent to the main fire hydrant for commercial and residential properties along Central Avenue. The local Fire Chief stated that full time access to the hydrant was required, and additional excavation would impact the stability of the hydrant.

- Survey Unit 109 (2.4-foot depth): arsenic 10.5 mg/kg (cleanup goal 7.4 mg/kg) and lead 630 mg/kg (cleanup goal 450 mg/kg). The sample was located on the property boundary adjacent to an active rail line. Additional excavation would impact soils supporting the rail line. This unit is not designated as an environmental easement area because there is no unacceptable risk associated with the remaining contamination.

Note that soil sample results for six locations in deeper subsurface soils (shallowest is 12 feet bgs) were in excess of the metals cleanup goals applicable to soil less than nine feet bgs. The six locations are confined to a single portion of the Site where past NL landfill operations in the former Patroon Lake occurred. These deep subsurface soils were not removed because there is no complete exposure pathway to those soils. The area encompassing these locations is identified as the "additional deed restriction area" on the Environmental Easement Survey drawing in Appendix A and DOE-LM has specific information on the fully executed easement in the Site Management Plan.

Soil Removal Support Activities

Several activities were completed in support of the soil removal work including sheet pile installation, water management, soil stabilization, soil loadout, waste transportation and disposal, and site restoration tasks. These activities are summarized below.

Sheet Pile Installation. Due to the anticipated depth of radiologically impacted soils in the eastern portion of the Site and proximity of active CSX rail lines along the southern boundary, USACE installed vertical sheet piling to depths of as much as 50 feet bgs to facilitate remediation and to ensure the structural integrity of the active rail line. Approximately 260 linear feet of metal sheet piling was installed (Shaw, 2010). The sheet pile remains in the ground at the Site at the location shown on Figure 2. It was kept in place following the completion of the Main Site soil removal to preclude any possibility of impacting the stability of the high-speed rail. It is important to note that the sheet pile wall may delay or increase the amount of time for MNA of VOCs to achieve compliance in groundwater at the Site as it acts as a barrier to normal overburden groundwater flow.

Water Management. To support the soil excavation work, an on-site temporary water treatment system was constructed to manage groundwater generated from dewatering wells and storm water that accumulated in excavations. Shallow groundwater was generally observed 5 to 8 feet below the original ground surface and flowed from the northeast to the southwest across the Site. Surface water from storm events entered the Site from both the northern border with Central Avenue and the southern border with the elevated CSX rail tracks. The primary goals of water management during the remedial activities were as follows:

- To control the influx of groundwater recharge water into active excavations
- To collect seepage water from the sidewalls of excavation areas
- To prevent and control surface water run-on into and run-off from excavation areas.

The on-site water treatment facility was designed, permitted, and constructed to process water that could contain radiological, metals, and VOC contamination. Water collected from the extraction wells, excavation dewatering, decontamination operations, and storm water management were treated by the system. During the project, more than 32,400,000 gallons of groundwater, surface water, storm water, process water, and decontamination water were treated in this system and discharged from the Site in accordance with the New York State Pollutant Discharge Elimination System Permit (Shaw, 2010).

Soil Stabilization. Bench scale treatability studies were conducted in 1999 to identify stabilization materials that might be utilized to minimize future leaching of lead from the soils. In order for

soils to be disposed offsite, the material had to meet applicable land disposal restriction (LDR) criteria. The additional objective of the studies was to identify a material used for stabilization that maintained an end product with soil-like consistency for ease of handling as well as limit the volumetric expansion of stabilized material. Based on results of the treatability study, phosphoric acid was selected as the stabilizing additive. An *ex-situ* treatment system was mobilized and set-up in the eastern portion of the Site. The stabilization system consisted of a power screener to remove oversized materials, a feed hopper with belt scale to measure throughput, a pugmill to mix the phosphoric acid with the soils, and a radial stacker for creating the post-treatment piles. A permitted 6,800-gallon double-contained polyethylene tank held the acid, which was fed by a chemical feed pump to the pugmill. The system was tested and successfully completed an operational prove-out in October 1999. Soil stabilization began on 13 October 1999 and was completed on 13 September 2005 with over 113,000 tons of soil successfully treated on site. As the footprint of contamination decreased, the soils were shipped to commercial disposal facilities which stabilized the soils for lead prior to disposal.

Soil Blending. USACE also treated excavated soils onsite to satisfy LDRs for radioactive contamination. Under NRC guidance *Use of Intentional Mixing of Contaminated Soil* (SECY-04-0035) dated 1 March 2004, it was acceptable to blend higher-level radiologically contaminated soils with that of lower activity soils. Blending soils with higher radioactivity (i.e., above 170 pCi/g) concentration with soils of lower radioactivity concentration (i.e., below 170 pCi/g), based on the mass balance formula approach was used to meet the Waste Acceptance Criteria (WAC) of a RCRA Part C facility versus an NRC licensed facility. Prior to commencing soil blending, USACE coordinated with appropriate state and federal governmental organizations.

The initial on-site blending involved a large stockpile (3,250 cy) of higher concentration soils being blended with lower concentration soils that were excavated and sampled in 250 cy stockpiles. The ratio for this blending was based on the average radiological concentration of the large stockpile being blended with individual 250 c y piles of lower radiological concentration soils that had recently been excavated. Once a 250 cy stockpile was created with blended soils, it was sampled to ensure compliance with the WAC of the RCRA Part C facility. After the large stockpile had been successfully blended, other *in-situ* soils of higher concentration were excavated and staged in 250 cy stockpiles and blended with lower concentration stockpiles. In this way, approximately 4,431 cy of high activity soils with an average activity of 379 pCi/g were blended with 5,963 cy of low activity soils with an average activity of 13.6 pCi/g to meet disposal criteria.

Soil Loadout. A lease agreement was executed with CSX to allow loadout operations on a 2,000 linear foot section of active rail line. Intermodal containers used for transporting bulk materials such as soil arrived by rail, removed by crane, and placed on a chassis. The intermodals were lined and soils were placed into them by a front-end loader equipped with a bucket scale to accurately

measure the weight. Filled intermodals were secured and properly cleaned and placarded before being returned to the railcar.

Waste Transportation and Disposal. Prior to transport and disposal of Site wastes, waste characterization of the soils and other material was accomplished by initial screening to determine the approximate level of radiological contamination and by using an x-ray fluorescence detector to determine the level of inorganic (total metals) contamination. The screened soils were then segregated into 250 cy stockpiles, tracked, and sampled for laboratory analysis. Radioactive soils were transported for disposal as previously described. Soils exhibiting higher levels of radioactivity required disposal at a waste facility licensed to handle low-level radioactive waste. Soils exceeding the toxicity characteristic leaching procedure value for lead for direct burial at the off-site disposal facility were stabilized in the on-site soil stabilization system. After stabilization, the soil was sampled again to ensure that it was no longer a hazardous waste and could be sent to the commercial disposal facility as non-hazardous waste.

A total of 8,739 intermodal containers containing 193,381 tons of soil and debris were sent via rail (Shaw, 2010). Most of the waste was sent to one of two disposal facilities, US Ecology in Idaho and EnergySolutions (formerly Envirocare) in Utah. USACE executed waste profiles with each of these facilities and annually recertified these waste profiles. All materials shipped offsite were subject to periodic off-site laboratory analysis to document compliance with WACs and profiles. Waste profile compliance quality assurance (QA) sampling was conducted at the Site; samples were analyzed onsite and sent to off-site certified laboratories.

Other waste streams generated during the project included:

- Concrete from demolition of the building slab, foundations, and footers
- Asbestos materials generated during building demolition
- Asphalt materials from demolition of the parking lots and roads
- Wood chip stockpile from demolition of the main NL building, outbuildings, and trees
- Metals generated during demolition of structures and excavation of buried metallic waste
- Non-hazardous, non-radioactive construction debris
- Personal protective equipment and disposable supplies.

These wastes were sampled for characterization as required and appropriately disposed. Further details of this work are provided in the *Final Post-Remedial Action Report* (Shaw, 2010).

Site Restoration

Once USACE determined and NYSDEC concurred that an FSS unit met the cleanup criteria, the area was backfilled with certified clean fill material and restored (i.e., graded and seeded). A minimum of six inches and average of two feet of clean backfill soil was placed over the Site. Approximately 160,581 cy of backfill materials, including gravel for operational haul roads, general backfill, bedding sand for utilities, and topsoil were placed (Shaw, 2010).

Upon completion of the Main Site activities, new chain link fence was installed along the border of the Town of Colonie property and the Main Site.

During the same period, investigation and removal actions were completed at the Town of Colonie and Niagara Mohawk Vicinity Properties located directly adjacent to the Main Site. A summary of these actions is provided below.

4.3.3 Town of Colonie Vicinity Property Soil Removal Summary

The Town of Colonie Vicinity Property is located in the westernmost portion of the Site (Figure 2). The property consists of a 0.3-acre vacant lot overgrown with weeds and small trees. For efficiency reasons, the property was remediated as part of the Main Site excavation. Complexities on the property included shallow groundwater conditions, and the existence of a headwall structure and a 48-inch reinforced concrete pipe that traverses the Site and conveys the flow of the unnamed tributary to Patroon Creek. Portions of three separate FSS units (Unit 101, East Culvert, and West Culvert) were located on the property.

Remediation of the Town of Colonie Vicinity Property was completed with no contamination remaining above protective levels. Therefore, NFA is required for the Town of Colonie Vicinity Property.

4.3.4 Niagara Mohawk Vicinity Property Investigation Summary

The National Grid (formerly Niagara Mohawk) substation is located adjacent to the northwest corner of the Main Site (Figure 2). In 1998, the substation was investigated to assess the presence of radiological contamination. The radiological results at the substation were less than the cleanup levels of 35 pCi/g for Uranium-238 and 5 pCi/g for Thorium-232 in surface soils in the top six inches and 15 pCi/g in soils below the top six inches. USACE prepared the *Focused SI Report, Niagara Mohawk Power Station, Colonie New York* (USACE, 2000) outlining the findings. NYSDEC correspondence dated 31August 2000 concurred with USACE's conclusion that NFA under FUSRAP was required.

4.3.5 Removal Action for the CSX Vicinity Property

USACE conducted a removal action for soils on the 6.5-acre CSX Vicinity Property (Figure 2). Cleanup objectives and criterion are documented in the *CSX Vicinity Property Action Memorandum* (USACE, 2006). USACE selected Alternative 4, Removal and Off-Site Disposal of Soil, With No Impact to the High-Speed Rail Line or the Utility Rail Spur. This alternative included the removal of soils with Uranium-238 concentrations greater than 96 pCi/g, as long as removal did not impact the structural integrity of the high-speed rail line or the utility rail spur. The USACE derived the cleanup criterion for this Vicinity Property using risk-based radiological modeling based on a "residential encroachment upon industrial land use" exposure scenario.

By August 2007, the USACE removed a total of 2,871 cy of contaminated soil from the CSX Vicinity Property. Soils were not removed from underneath the utility rail spur because they were considered inaccessible and part of the active rail line. There were three discrete locations along the rail spur in which Uranium-238 concentrations exceeded 96 pCi/g. A clay pipe extended from a remediated portion of the Main Site to the CSX Vicinity Property at a depth of eight feet. Due to its proximity to the active rail line, remedial action was not performed on the CSX portion of the pipe. While a sediment sample obtained from the CSX portion of the pipe did not exceed the Vicinity Property cleanup criterion for Uranium-238, the actual extent, integrity, and direction of the pipe could not be verified. Detailed information regarding CSX Vicinity Property soil excavation activities is presented in the *Final Colonie FUSRAP Site CSX Vicinity Property Report* (USACE, 2008a).

During the removal action, NYSDEC reviewed USACE confirmation soil sampling data packages and collected split samples of USACE soil confirmation samples. Results of the NYSDEC data reviews and analysis of split samples revealed that all soil confirmation samples met the NYSDEC cleanup criterion of 35 pCi/g. Following the completion of the soil removal work, NYSDEC conducted 100 percent coverage walkover radiological surveys of the entire area; no elevated radiation levels were found above the NYSDEC cleanup criterion of 35 pCi/g.

4.3.6 Site Investigation for Unnamed Tributary, Patroon Creek, and Three Mile Reservoir

An SI was conducted in 2003 for the unnamed tributary, Patroon Creek, and Three Mile Reservoir. The objective of the investigation was to determine if radiological contamination resulting from past industrial activities at the Colonie Site had potentially impacted sediments in each surface water body. Results from the 32 sediment sample locations were less than the radiological cleanup criteria for Uranium-238 (35 pCi/g) and Thorium-232 (2.8 pCi/g) and NFA was required. Detailed information regarding this investigation including sampling locations and results is presented in the *Site Investigation Report for the Unnamed Tributary of Patroon Creek and the Three Mile Reservoir* (Shaw, 2004).

4.3.7 Limited Removal Action for Unnamed Tributary

During the survey and sampling phase for the CSX Vicinity Property, evidence was uncovered suggesting that radiological contamination may have migrated off the steep southern slope and been deposited in the unnamed tributary. USACE determined that a limited removal action in the unnamed tributary was warranted. During March and April 2007 approximately 393 cy of impacted sediments were removed from the bed of the unnamed tributary. Off-site analytical data associated with the unnamed tributary indicated full compliance with the radiological cleanup criteria of 35 pCi/g for Uranium-238 and NFA was required. The location and results of this limited removal action are found in the *Final CSX Vicinity Property Report* (USACE, 2008a).

4.3.8 Post-RI Off-Site Indoor Air Data Assessment

Groundwater sampling conducted at the Site indicated the presence of low levels of chlorinated VOCs, including PCE, TCE, cis-1,2-DCE, and VC as presented in the Groundwater RI Report (Shaw, 2003). Fuel-related compounds including benzene, toluene, ethylbenzene, and xylenes (BTEX) were also detected in groundwater at concentrations that were generally below groundwater quality standards.

Indoor air sampling was conducted at selected off-site locations downgradient of the Site along Yardboro Avenue. The investigation included sampling of indoor air, sub-slab vapors, and ambient outdoor air at a total of seven residences. Four rounds of sampling were conducted between July 2002 and March 2005. The indoor air, outdoor air, and sub-slab sampling results obtained during this investigation were compared to a variety of guideline values, including NYSDOH Study Background Levels, NYSDOH Air Guideline Values, and EPA preliminary remediation goals.

While benzene was detected in some of the indoor air results, evaluation of the indoor air to sub-slab ratios indicated that the groundwater was not a likely source of BTEX compounds. Rather, ambient background and household products were the more likely sources. Common household products containing BTEX observed at the various locations included latex paint, paint remover, adhesives, spray products, gasoline, and mineral spirits. Accordingly, USACE recommended NFA with respect to BTEX; NYSDOH concurred with the recommendation. The locations and results of the indoor air investigation are presented in the *Final Indoor Air Assessment Report* (Shaw, 2005).

Based on the results of five rounds of indoor air, outdoor air, and sub-slab sampling and the NYSDOH Decision Matrix (which provides recommended actions for TCE and PCE), USACE recommended NFA for all locations. Upon review of the data, NYSDOH concurred.

4.3.9 Vicinity Property Data Gap Investigation Results

As a follow-up to the actions previously taken at the Vicinity Properties, USACE reviewed cleanup results relative to current standards for 53 of the 56 Vicinity Properties that were originally addressed by DOE. Based on this review, USACE identified two Vicinity Properties addressed by DOE with insufficient data to document compliance with the clean-up level (35 pCi/g). Additional investigation (USACE, 2010b) were performed at 50 Yardboro Avenue and 1118 Central Avenue (Figure 3).

DOE results indicated that the property at 50 Yardboro Avenue contained elevated uranium in the back portion of the property along the south-facing rail bed outslope, most likely from a drainage line beneath the CSX Rail Vicinity Property that discharged at the 50 Yardboro Avenue property boundary (USACE, 2010b). The property at 1118 Central Avenue was identified by DOE as containing elevated gross gamma readings using field instrumentation. With concurrence from NYSDEC, USACE conducted a data gap investigation of these two Vicinity Properties in August 2011. The results are documented in the *Investigation of Two Colonie FUSRAP Site Vicinity Properties* (USACE, 2012a) and are summarized below.

50 Yardboro Avenue Vicinity Property

The objective of the soils investigation at the 50 Yardboro Avenue Vicinity Property was to assess residual radioactivity concentrations at the location of the former drainage line outfall and determine if it met the cleanup criterion of 35 pCi/g for Uranium-238. A total of 11 cy of soil was removed and 22 confirmation soil samples collected. Four of the samples had Uranium-238 concentrations greater than 35 pCi/g (ranging from 37.6 pCi/g to 60.4 pCi/g). Based on these results, the USACE concluded that the 50 Yardboro Avenue Vicinity Property was not eligible for unrestricted release and further remediation was required (USACE, 2013c).

In June 2013, an additional 10 cy of soil were removed from this location and a new drainage line was installed at the base of the rail bed slope. Soil removal from the rail bed slope was successfully completed as demonstrated by achievement of the cleanup goal of 35 pCi/g of Uranium-238 for all confirmation soil samples (USACE, 2013c). Consequently, the USACE determined and NYSDEC concurred that the 50 Yardboro Vicinity Property was eligible for unrestricted release.

1118 Central Avenue Vicinity Property

The investigation objectives for the 1118 Central Avenue Vicinity Property were to confirm that: 1) the DOE finding that the source of elevated radioactivity in the asphalt surface that surrounds the building is natural radioactivity in bedding materials, and 2) the property is suitable for release for unrestricted use.

Samples were collected from both the asphalt/roadbed and soils beneath. The analytical results for the asphalt/roadbed material indicated that the uranium was naturally occurring in roadbed materials. The results also showed that soils were likely impacted by Site uranium; however, the levels were below cleanup criteria. The cleanup criterion of 35 pCi/g was not exceeded in any sample. Therefore, USACE determined with NYSDEC concurrence that this Vicinity Property is eligible for unrestricted release.

4.3.10 Vicinity Property Dust Sampling

In 2011, the USACE performed an SI involving confirmation "dust" sampling at four Vicinity Property locations to verify the findings of an independent study performed in 2009 known as the Lloyd Study (Lloyd, et. al., 2009). Dust sampling results in the Lloyd Study indicated that residual uranium was detected at concentrations ranging from non-detectable to 1,065 milligram per kilogram (i.e., 426 pCi total uranium activity per gram of dust) in samples collected at the four Vicinity Properties in non-living, uninhabited areas such as basements, attics, and garages.

The objective of the 2011 confirmation dust sampling project was to confirm the 2009 Lloyd assessment of uranium concentrations in non-living areas of the following Vicinity Properties: 1144 Central Avenue, 1144A Central Avenue, 1148 Central Avenue, and 78 Yardboro Avenue. USACE dust sampling data confirmed that select Vicinity Properties had low levels of radiologically impacted dust located in uninhabited areas. Additional CERCLA investigations have been performed at select Vicinity Properties since that time with the concurrence of NYSDOH. The additional actions and other completed removal actions are summarized in Colonie Vicinity Property Record of Decision released in 2017.

4.3.11 2014-2015 Vicinity Property OU RI Dust Results

USACE performed a CERCLA RI in 2014-2015 to further evaluate S I levels of depleted uranium in dust at representative residential and commercial Vicinity Properties. The RI performed more extensive dust sampling of residential and commercial properties within the impacted areas of the site compared to the Lloyd Study. The purpose of the RI was to: 1) collect and evaluate data reflecting the current conditions of dust at representative Vicinity Properties (i.e., individually-owned residential and commercial properties nearby the Colonie Main Site); 2) prepare a baseline risk assessment based on the data collected, and 3) provide an evaluation of the properties previously cleaned up by DOE (specifically at the Vicinity Property OU) to determine compliance with the *Colonie Main Site Soils Record of Decision* (USACE, 2015a).

USACE collected dust samples from 12 Vicinity Properties (including eight residential, three commercial, and one mixed residential/commercial use property) and one background sample location as a part of the RI to assess current conditions. The specialized sampling methodology, data results, and baseline risk assessment are presented in the *Vicinity Property Operable Unit*

Remedial Investigation Report (USACE, 2016a). This report is part of the Site Administrative Record and is available to the public.

The RI was intended to assess the current nature and extent of uranium dust in sufficient detail to determine risk and to aid in the development and evaluation of alternatives consistent with the CERCLA process. Table 5 lists the residential and commercial Vicinity Properties sampled during this effort. Figure 3 shows the locations of these properties.

The basic sampling strategy was to collect dust for uranium analysis from living and non-living areas of the residential Vicinity Properties and from limited- and high-use areas of the commercial Vicinity Properties.

The dust sampling data as summarized in Table 5 showed that the highest concentrations observed were all in non-living areas (e.g., attics, basements, garages, etc.). Furthermore, non-living areas contained the highest concentrations within each of the properties sampled regardless of whether that property was commercial or residential. As presented in the RI Report (USACE, 2016a), the baseline risk assessment concluded that the uranium concentrations do not pose an unacceptable risk in accordance with CERCLA and the NCP. Additional supporting conclusions were presented in the Vicinity Property RI Report as follows:

- Uranium was detected in dust samples at residential and commercial Vicinity Properties above background concentrations. These concentrations do not pose an unacceptable risk in accordance with CERCLA and the NCP.

- Though not all Vicinity Properties were sampled, those that were sampled (i.e., 12 Vicinity Property locations including eight residential, three commercial, and one mixed residential/commercial use property) are representative of all Vicinity Properties.

- Analysis of the DOE and USACE cleanup actions at Vicinity Properties indicates that all properties are in compliance with the *Colonie FUSRAP Site Colonie Main Site Soils Record of Decision* (USACE, 2015a).

- Based on the available information, the USACE recommended NA for dust at all Vicinity Properties.

The NYSDEC, in consultation with the NYSDOH, concurred with NA as the selected remedy.

As a result of the RI findings and previously completed remedial actions, USACE released the *Vicinity Property Operable Unit Proposed Plan* (USACE, 2017a) recommending NA for dust and NFA for soil and other media at all Vicinity Properties. NYSDEC (2016) and the NYSDOH (2016) concurred with these recommendations.

5.0 SELECTED REMEDIES

The Colonie FUSRAP Site is comprised of the following three OUs:

- Groundwater OU
- Main Site Soils OU
- Vicinity Property OU.

The selected remedy for each OU is summarized in the sections to follow.

5.1 Groundwater OU

USACE issued the Site Groundwater ROD (USACE, 2010a) on 9 April 2010. The remedy selected in the ROD and currently in place for groundwater is MNA. Natural attenuation is a passive, non-treatment option that relies on the combination of physical, chemical, and biological processes that result in reasonably predictable reductions in contaminant concentrations over time. For most chlorinated hydrocarbons (e.g., PCE and TCE), anaerobic biodegradation is the principal mechanism resulting in the reduction of these compounds. In addition to biodegradation, physical attenuation processes (e.g., mixing and dilution) contribute to the overall reduction of chlorinated hydrocarbon concentrations. MNA refers to the process of documenting the progress and effectiveness of natural attenuation through a defined monitoring program.

MNA was preferred over other alternatives because it was expected to achieve substantial risk reduction by providing permanent and irreversible reductions in concentrations of groundwater COCs to acceptable levels in the most cost effective and easily implemented manner. MNA is implemented through a groundwater monitoring program to assess status and progress of the natural attenuation process.

The RAOs for Site groundwater are as follows:

- Limit exposure of potential future onsite urban residents to VOC constituents that may migrate into homes via the vapor intrusion pathway.
- Reduce the concentrations of VOCs in onsite groundwater to levels that are protective of future onsite urban residents who may be exposed to these compounds via the vapor intrusion pathway.

The selected remedy was expected to reduce excess cancer risk due to inhalation of vapors intruding into a hypothetical onsite residence to less than one in one million (10^{-6}). This risk

reduction will be achieved by lowering the concentrations of the four groundwater COCs to the following TCG concentrations:

- PCE: 5.5 µg/L
- TCE: 18 µg/L
- cis-1,2-DCE: 1,800 µg/L
- VC: 1.4 µg/L.

5.2 Main Site Soils OU

The Main Site Soils ROD (USACE, 2015a) was issued by USACE on 26 March 2015. The selected remedy, presented in the ROD as Alternative 2 (LUCs), was preferred over other alternatives because LUCs are effective in both the short and long term in protecting the public and workers from onsite exposures, and are expected to manage risk in the most cost effective and easily implemented manner. LUCs provide measures to prevent potential future onsite exposure to residual soil contaminant concentrations at depth through the placement of environmental easements. These easements will prohibit soil excavation at the three discrete locations found to present an unacceptable risk.

USACE established RAOs for the Main Site Soils to eliminate or minimize potential human exposure to soils impacted by FUSRAP-related contaminants identified as exceeding the standards established in ARARs and site-specific remediation goals. The RAOs for Site soils are designed to:

- Prevent direct contact with soil having arsenic concentrations in excess of an arithmetically determined mean background concentration of 7.4 mg/kg.
- Prevent direct contact with soil having lead concentrations exceeding 450 mg/kg, which would result in unacceptable risks due to lead blood levels above 10 micrograms per deciliter.

Extensive onsite soil removal was completed as a response action prior to the signing of the Main Site Soils ROD. This action effectively removed radioactive, metals, and VOC contamination from the Main Site soil. The soil removal action also addressed the directly adjacent Town of Colonie Vicinity Property. The RAOs above were designed to prevent direct contact with Site soils that remain in place due to their inaccessibility which present a possible future risk to receptors. The USACE identified three discrete soil locations that were inaccessible due to their proximity to active rail lines, utility power poles or water lines, and thus were not excavated. The

three locations shown on the Environmental Easement Survey Map in Appendix A are subject to the above-listed RAOs are will be protected by LUCs.

5.3 Vicinity Property OU

The Vicinity Property OU ROD was issued by USACE on 20 September 2017 (USACE, 2017b). The ROD presents the final determinations for the management of soil and dust contamination located on the Vicinity Properties (i.e., private properties adjacent to the Site). The final determination for the soil media is NFA by the NYSDEC. The final determination for dust media at the Vicinity Properties is NA as approved by the New York State Department of Health. Note that all Vicinity Properties with the exception of one (i.e., the Town of Colonie Vicinity Property) are addressed by the Vicinity Property OU ROD. The Town of Colonie Vicinity Property was addressed under the Main Site Soils OU.

The previous removal actions conducted for the Vicinity Property soils have proved to be protective of human health and the environment and have eliminated the need to conduct additional remedial action to allow for unrestricted release. Similarly, current conditions in structures at representative residential and commercial Vicinity Properties have been characterized. The results demonstrate that dust containing concentrations of uranium found in various areas of the structures poses no unacceptable risk to human health. Therefore, the final decisions for these media are considered protective of human health and the environment.

The final determinations for the Vicinity Properties were chosen in accordance with the requirements of CERCLA as amended by the *Superfund Amendments and Reauthorization Act*, 42 USC §9601-9675, and the NCP, as amended, 40 CFR Part 300. These decisions are based on information contained in the Administrative Record file for the Site and have been made by USACE in conjunction with NYSDEC and NYSDOH.

Based on the results of completed investigations and remedial actions, the final decisions for soil and other media (NFA) and dust (NA) media are appropriate under CERCLA for the Vicinity Property OU and the final decisions for Vicinity Property soils and dust are considered protective of human health and the environment.

6.0 REMEDIAL ACTION SUMMARY

For each of the three Colonie Site OUs, response actions were performed in a streamlined process to expedite cleanup of the Site. These actions were completed prior to the signing of respective RODs for the three OUs as detailed previously in Section 5.0 of this report. This section presents a summary of the remedies completed and ongoing management for each OU as applicable in accordance with the respective RODs.

6.1 Groundwater OU

The selected remedy for Site groundwater as detailed in the Groundwater OU ROD (USACE, 2010a) is MNA. The progress of the MNA remedy is assessed by means of data collected during periodic groundwater monitoring events. Prior to the signing of the Groundwater ROD by USACE, groundwater monitoring was performed by the USACE on a semi-annual basis from December 1998 through May 2009. Groundwater monitoring performed after the signing of the ROD was initially held on a quarterly basis, then progressively less frequently as data results showed that concentrations of the COCs were generally decreasing and leading to optimizing the monitoring program. Groundwater monitoring data has been maintained in the Site Administrative Record at the William K. Sanford Public Library and is summarized in tabular and graphic forms in Table 7.

6.1.1 Groundwater Remedy Implementation

In June 2010, following the release of the Groundwater OU ROD, USACE established the LTM program which included an enhanced data collection period initially consisting of eight consecutive quarterly groundwater sampling events utilizing a monitoring well network of 22 wells. This included a total of 15 wells in the Upper Groundwater Zone (water table) and seven wells in the Lower Groundwater Zone (Table 6a). The number of Lower Groundwater Zone wells was reduced to six when monitoring well MW-43M became non-functional due to excessive silt buildup and was removed from the well network in May 2011. Figure 5 shows the locations of the monitoring well network through August 2012.

In the initial post-ROD monitoring period, eight quarterly monitoring events were held from November 2010 through August 2012. The analytical protocol for this initial monitoring period was as follows:

- VOCs: the four COCs PCE, TCE, cis-1,2-DCE, and VC, and two constituents of interest 1,1-dichloroethene and trans-1,2-dichloroethene.

- Lead (total and dissolved) at select monitoring wells for informational purposes (not required by the Groundwater ROD and discontinued with NYSDEC concurrence upon demonstrating the protectiveness of the Site soil removal action).

- Radionuclides (including total and dissolved gross alpha, gross beta, total uranium, and combined radium-226/228) at selected monitoring wells for informational purposes (not required by the Groundwater ROD and discontinued with NYSDEC concurrence upon demonstrating the protectiveness of the Site soil removal action).

The following MNA parameters were also included in the monitoring program: ethane, ethene, methane, total organic carbon, chloride, nitrate-N, sulfate, oxidation-reduction potential (ORP) via field measurement, dissolved oxygen (DO) via field measurement, soluble manganese via field measurement, and ferrous iron via field measurement.

Based on the marked progress of the MNA remedy, NYSDEC concurred with USACE recommendations to optimize the LTM program that included reductions in: 1) the number of monitoring wells from 21 to eight; 2) the number of analytes from 23 to eight; and 3) the frequency of sampling from quarterly to semi-annual events. The monitoring well network was reduced as shown in Table 6.

The wells removed from the monitoring well network were decommissioned in July-August 2015 in accordance with NYSDEC regulations as documented in the Colonie *Decommissioning Report, Monitoring Wells and Piezometers* (USACE, 2015b). Also in July 2015, one additional monitoring well (MW-44S) was installed onsite and upgradient of the vertical sheet pile wall.

The associated analytical program was modified at that time from a quarterly to a semi-annual frequency. The analytical protocol was revised as follows:

- VOCs: the four COCs – PCE, TCE, cis-1,2-DCE, and VC

- Radionuclides: total and dissolved uranium.

The two MNA parameters DO and ORP were retained under the modified program and were measured in each well during well purging for sampling. Also measured during sampling events was the groundwater table elevation in each monitoring well. Figure 6 shows groundwater elevations and apparent groundwater flow direction based on measurements from monitoring wells in the current well network for the April 2017 monitoring event.

USACE recommended the following further modifications to the groundwater LTM program as documented in the *2015-2016 Annual LTM Report for the Colonie FUSRAP Site* (USACE, 2016b): discontinue sampling monitoring well MW-32S, and discontinue performing uranium analysis of

groundwater samples. NYSDEC concurred with these modifications in their letter to the USACE dated 17 November 2016. These program modifications were initially implemented during the monitoring event conducted on 3-4 April 2017.

NYSDEC concurred with removing well MW-32S from the LTM network because it was suspected of yielding unrepresentative analytical results. This was attributed to the stagnating effects on groundwater flow caused by the vertical sheet pile wall, located directly upgradient of the well. NYSDEC requested that well MW-32S remain onsite for potential future monitoring if needed.

The current monitoring well network is shown in Table 6c. The monitoring well locations are shown on Figure 6. The analytical protocol under the current groundwater monitoring program includes the following chemical analyses and field measurements to be collected on a semiannual basis:

- VOCs – laboratory analyses of PCE, TCE, cis-1,2-DCE, and VC
- MNA parameters – field measurements of DO and ORP.

The April 2017 Groundwater Monitoring Report included a recommendation to reduce groundwater monitoring frequency to biennial events. NYSDEC concurred with this recommendation.

6.1.2 Reporting

Groundwater monitoring results are documented in data reports produced after each monitoring event. Yearly review of the data involves more extensive data evaluation as presented in annual groundwater reports. The annual reports document the progress of the natural attenuation remedy and evaluate monitoring endpoints. In doing so, natural attenuation progress is measured empirically, evaluated statistically, and the monitoring endpoints are determined by comparing groundwater analytical results to the RAO-based TCG concentrations to determine compliance with the ROD.

6.1.3 Progress and Current Status of the Groundwater Remedy

This section presents the progress and current status of the groundwater remedy based on review of data relevant to the COCs (i.e., the VOCs PCE, TCE, cis-1,2-DCE, and VC) in groundwater as required by the Groundwater ROD (USACE, 2010a). These four COCs must meet TCGs and maintain levels below TCGs in order to close out the Groundwater OU.

Overall, VOC concentrations have steadily decreased at most wells over the course of the monitoring period. Observable changes in VOC concentrations following the completion of the

Main Site soil removal in 2007 are noted. Time-series graphs of VOC concentrations for wells in the current monitoring well network graphically depict these changes as well as the overall progress of the remedy over time. Copies of these time-series plots are provided in Appendix C.

Compliance status for Site groundwater is determined by comparison of the four COCs to respective TCGs. Table 7 presents the compliance status at each monitoring well as April 2017, the most recent monitoring event. This table also provides a summary of minimum, maximum, and latest VOC concentrations in groundwater for the monitoring period November 2010 through April 2017, as well as the current active status of each well.

A review of Table 7 reveals that that there is currently one COC (PCE) out of compliance at two well locations. PCE exceeded its TCG of 5.5 µg/L at monitoring wells MW-41S (24 µg/L) and MW-44S (18 µg/L).

The direct comparison of VOC results to TCGs and the graphic representation of these results over time clearly demonstrate that the MNA remedy has made significant progress since the completion of contaminated soil removal. Progress toward TCG compliance is evident since only two shallow wells are currently out of compliance. Further supporting evidence of remedy progress such as the calculation of attenuation rates and the assessment of geochemical parameters (i.e., DO and ORP) is presented in the first Groundwater FYR (USACE, 2017c). The Groundwater FYR concluded that all monitoring wells with the probable exception of well MW-41S are projected to be in compliance with TCGs within the 15-year-to-compliance period initially estimated in the Groundwater ROD.

6.2 Colonie Main Site OU

As detailed in Section 5.2.2, the Main Site soil removal was successfully completed in 2007. The ROD for the Main Site Soils OU declared a final remedy of LUCs (consisting of ICs) to be administered by an Environmental Easement to restrict future excavation and other activities at specifically identified locations (i.e., easement areas) of the Site where metals contamination remains in subsurface soils.

The restrictions imposed by the Environmental Easement to protect human health and the environment are presented in a Site Management Plan (SMP) which has been drafted by USACE. USACE and DOE have agreed that DOE will complete the SMP. The SMP is a component of the Environmental Easement package for the Site to be issued by NYSDEC. For government (DOE-LM) to receive a Certificate of Completion for the Site, the Environmental Easement package must first be issued and initiated. The Environmental Easement package is comprised of the following elements:

- Environmental Easement Document

- Property Title Report
- Environmental Easement Survey drawing (certified by New York state-licensed surveyor)
- SMP.

A draft Environmental Easement Survey drawing is provided in Appendix A.

6.2.1 Environmental Easement

The Environmental Easement is designed to restrict soil excavation in the three locations determined to pose potential risk. In addition to restricting soil excavation in the three locations identified in the ROD, the SMP to be completed by DOE will also identify locations on the Site where elevated metals were found at depths greater than nine feet. No risk resulting from these elevated metal concentrations at depth has been found and therefore no CERCLA action will be taken. Identification of these locations acknowledges NYSDEC's regulation of soil contamination up to a depth of 15 feet below ground surface.

In accordance with the Main Site OU ROD signed on 31 March 31 2015, the SMP will address the three locations (i.e., FSSUs 104, 124, and the North Lawn) where LUCs (consisting of ICs) in the form of an Environmental Easement are being imposed. ICs have been incorporated into the Site remedy to control exposure to remaining contamination in the Easement Areas to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Albany County Clerk, will require compliance with the SMP and all ICs placed on the Site.

6.3 Vicinity Property OU

As in the case of the Main Site Soils OU, remedial actions including investigation and soil removal at the Vicinity Properties were completed prior to the signing of the Vicinity Property OU ROD (USACE, 2017b). Remedial actions are complete as required for all 56 Vicinity Properties and NFA has been acquired.

As summarized in Section 5.1, DOE performed cleanup actions at 53 of the 56 Vicinity Properties, and demolished all NL buildings prior to USACE involvement. The soil and other materials removal activities completed by DOE for the 53 Vicinity Properties were documented in the *Certification Docket for the Remedial Action Performed at the Colonie Interim Storage Site Vicinity Properties in Colonie and Albany, New York in 1984 and 1985* (DOE, 1989), and the *Certification Docket for the Remedial Action Performed at the Colonie Interim Storage Site Vicinity Properties in Colonie and Albany, New York in 1988* (DOE, 1990).

USACE completed investigations and/or remedial actions for the three Vicinity Properties (i.e., Town of Colonie, CSX, and Niagara Mohawk Electrical Power Substation Vicinity Properties) remaining at the time FUSRAP was transferred from DOE to USACE. Additional actions including re-evaluation of remedial status of the Vicinity Properties were performed by USACE, and additional soil remedial actions for the Vicinity Properties were completed by USACE as summarized in Sections 5.2.5 through 5.2.9.

In addition to the soil removal actions at the Vicinity Properties, dust was also investigated to determine the presence and levels of uranium in the dust medium within private properties in the vicinity of the Site. As summarized in Sections 5.2.10 and 5.2.11, dust sampling events at the Vicinity Property OU were conducted in 2011 and 2014. The 2011 USACE dust sampling data confirmed the results found during previous studies (i.e., Lloyd Study, 2009) that some Vicinity Properties had low levels of radiologically-impacted dust within uninhabited areas of the structures.

The Vicinity Property RI conducted in 2014 concluded that within representative residential and commercial properties in the vicinity of the Site, uranium concentrations do not pose an unacceptable risk in accordance with CERCLA and the NCP. The NYSDEC concurred with this and other conclusions presented in the *Vicinity Property OU Remedial Investigation Report* (USACE, 2016a).

The results of the aforementioned soil investigations and removals, dust sampling investigation results, and associated data evaluations and informational analysis were all used in final determinations of NFA and NA, respectively, for soil and dust media for the Vicinity Property OU.

Both NYSDEC and NYSDOH have provided concurrence letters on the Colonie Vicinity Property OU ROD.

7.0 DEMONSTRATION OF CLEANUP QUALITY

The purpose of QA/QC (quality assurance/quality control) function was to ensure that USACE requirements and applicable project goals were met, that applicable industry codes and standards were complied with, and that corporate and professional requirements were satisfied. The objectives were to establish procedures to ensure that work quality met technical specifications and conformed to the requirements of specific tasks. The program was established to: 1) identify the project and QC organization and defined respective authority, responsibilities, and qualifications; 2) define project communication, documentation, and record keeping procedures; and 3) establish QC procedures to ensure that work met applicable specifications.

USACE and its contractors routinely performed QA and QC activities as specified in the QA/QC plans. This included contractor-furnished equipment, materials, workmanship, construction, finish, and functional performance. The QA/QC program was implemented to provide the necessary oversight, control phases, and tests of work items, including that of suppliers and subcontractors, to ensure compliance with applicable specifications and drawings. Contractor project QC was maintained through the implementation of project-specific QA project plans and QC plans. Controlled copies of pertinent plans were available at the Site for the duration of the project. The QA/QC program field records and results are documented in the field activity/closeout reports for the respective investigations, remedial actions, and monitoring events which include the results of inspections and daily QC oversight as documented in the daily QC Reports.

8.0 SUMMARY OF OPERATION AND MAINTENANCE

The approved final remedies for the Colonie FUSRAP Site include MNA of groundwater, LUCs for Main Site soil, and NFA/NA for Vicinity Property media. Since these Site remedies do not rely on any mechanical systems, such as groundwater treatment systems, sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment, operation and maintenance (O&M) of such components is not required for the Site. However, activities are required at the Site on an ongoing basis for long-term management of the Groundwater and Main Site Soils OUs.

For the Groundwater OU, LTM of groundwater is to continue on a biennial basis until TCGs are met for all four COCs (i.e., PCE, TCE, cis-1,2-DCE, and VC) at all Site network wells. An associated biennial groundwater LTM report would be issued for each monitoring event. Occasional maintenance or replacement of the dedicated well sampling pumps may also be necessary. In addition, FYR reports will be required as long as COC concentrations in groundwater remain above TCGs.

For the Main Site Soils OU, ongoing activities include general site upkeep, LUC management, and reporting. General site upkeep includes seasonal grounds keeping such as lawn mowing and maintenance of site features such as perimeter fencing and the storage shed. LUCs (consisting of ICs) by means of Environmental Easement will be implemented administratively and managed through periodic assessment in accordance with the SMP which will be on record with the NYSDEC. The Site will have three specific environmental easement areas as shown on Environmental Easement Survey drawing in Appendix A. The SMP will detail the site-specific implementation procedures that are required by the Environmental Easement. The procedures include required annual inspections of the Site and associated annual Site Management Reports to document the outcome of the inspections. FYR reports will also be required as long as the identified metals contamination in the easement areas remains in place.

Documents and other records pertaining to the three OUs are to be maintained for public review in the Administrative Record file at the William K. Sanford Town Library, 629 Albany Shaker Road. Loudonville, New York, telephone 518-458-9274.

9.0 SUMMARY OF REMEDIAL COSTS

A summary of overall remediation costs for the Colonie FUSRAP Site is presented in Table 8. There are no actual O&M costs for the three OUs. However, there will be costs for ongoing stewardship of the Site including grounds keeping and maintenance of Site features, groundwater monitoring, reporting, and records management.

10.0 FIVE-YEAR REVIEWS

10.1 Five-Year Review Report

FYR Reports are required for the Main Site Soils and Groundwater OUs because contamination remains onsite above levels that allow for UU/UE. FYRs are not required for the Vicinity Property OU because it is an NFA/NA remedy without contamination above protective levels.

USACE issued the first Groundwater OU FYR Report (USACE, 2017c) in January 2018. The FYR assessed the status and effectiveness of the groundwater remedy (i.e., MNA) as required by the Groundwater ROD (USACE, 2010a). The trigger date for the first FYR was the start of the first groundwater monitoring event (29 November 2010) following the signing of the Site Groundwater OU ROD on 9 April 2010. This first FYR was due in November 2015; however, the FYR report was not issued until January 2018. The report was delayed by two years to evaluate groundwater results that indicated concentrations were in compliance. The report includes the findings that the groundwater remedy is protective of human health and the environment and MNA of groundwater is progressing according to the initially estimated timeframe of 15 years for compliance.

The compliance assessment of the MNA remedy revealed that there is currently one COC out of compliance with its TCG at two wells as of the last monitoring event held in April 2017. Observations made during the site walk conducted for the groundwater FYR included the following:

- Damage to boundary fencing observed at three locations, including damage by a large tree that fell on the fence impacting approximately seven fence panels on western side of the Site, lower rail disconnected at one location on west side at creek crossing, and a short span of fence posts (i.e., two or three posts) bent and leaning in northeast portion near the Central Avenue entrance gate.
- The "No Trespassing" signs along fence perimeter are in place and intact.
- On-site gravel road in good condition overall, but somewhat soft at southern access gate.
- All dedicated monitoring well pumps observed are in good condition and in good working order. Three spare pumps are available in Site storage shed.
- Difficult to traverse Site by vehicle following precipitation events due to soft ground under wet conditions.

None of these noted observations impacted the level of protectiveness of the groundwater remedy.

As a part of the first FYR, an interview was conducted via telephone on 10 May 2017 with an NYSDEC representative involved with the Site. During the interview, NYSDEC indicated that the Site is in an acceptable visual condition in terms of upkeep, and that the groundwater remedy is functioning as intended and making progress toward TCGs.

Additional FYRs for the Groundwater OU are required as long as any of the four COCs remain above their respective TCG.

10.2 Five-Year Review Requirements

The second FYR Report for the groundwater FYR would be due on January 2023 and will be prepared by DOE.

The first FYR for the Main Site Soils OU would be due on 26 March 2020, assuming the due date is triggered by the signing of the Main Site Soils ROD on 26 March 2015, and will be prepared by DOE.

No FYRs are required for the Vicinity Property OU.

11.0 SITE TRANSFER FROM USACE TO DOE

11.1 General Site Transfer Process

In accordance with the Memorandum of Understanding between USACE and DOE (DOE and USACE, 1999), USACE will employ the following process in transferring long-term management of the completed FUSRAP site back to DOE.

USACE will provide DOE with a signed copy of the declaration of response action completion, this SCOR, and any other Site plans and documents if available that detail required ongoing actions at the Site as required to ensure future protectiveness of the implemented remedies. USACE will also provide DOE with any letters from regulators acknowledging that remedial action goals have been met, and provide DOE with an estimate of annual out-year cost requirements, a general description of the remedial goals, and any restrictions remaining on the property.

11.2 Site Transfer Process for the Colonie FUSRAP Site

USACE will notify DOE of an effective date of transfer for long-term stewardship of the Colonie Site. Accompanying this notification will be a complete electronic copy of the Administrative Record, Long-Term Groundwater Monitoring Plan, description of the long-term actions required by the DOE, and associated costing information. In addition, USACE has provided DOE with the Environmental Easement Survey map for the Site and will keep DOE informed of changes in completion schedules.

As discussed in Section 9.0, although no actual O&M activities are required for long-term management of the Site, periodic ongoing activities such as seasonal site upkeep are required. In addition, long-term actions required by DOE will include records management for all three OUs.

11.3 Remaining Government Responsibilities and Long-Term Stewardship Activities

USACE will notify DOE of an effective date of transfer for long-term stewardship of the Colonie Site. Upon this notification, DOE-LM will have specific responsibilities for long-term stewardship for each of the three OUs as summarized below:

Groundwater OU:

- Perform ongoing monitoring/sampling of a select group of shallow overburden wells every two years and prepare MNA status reports.
- These reports will be sent to the NYSDEC and a cooperative agreement will need to be established between DOE and NYSDEC to fund the state review of those documents.

- Once the two wells (MW-41S and MW-44S) are in compliance with NYSDEC regulations, the wells can be abandoned in accordance with state requirements and no further action will be required. For planning purposes, it is estimated that this will occur approximately 10 years from the date of physical transfer of the Site to DOE-LM.

- DOE-LM will likely receive questions periodically from interested landowners on property status related to real estate transactions.

Soils OU:

- DOE-LM will need to finalize the SMP.

- DOE-LM post physical transfer will need to maintain the EE.

- DOE-LM will likely receive questions periodically from interested landowners on property status related to real estate transactions or the purchase of the property.

- DOE-LM will need to maintain all records related to post-ROD activities.

Vicinity Property OU:

- No action required by DOE-LM other than to respond to questions from interested landowners on property status related to real estate transactions.

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TABLES

Table 1. Summary of DOE Vicinity Property Remediation
Colonie FUSRAP Site

Vicinity Property ID	Property	Remedial Actions	Approximate Area Remediated (m^2)	Max Uranium Concentration (pCi/g) or Avg Dose Rate (mrad/h)	No. of Samples/ Measurements	Sample Density (m^2/Sample)
AL084	1100 Central Avenue	Crushed stone removed (3-inch depth) and replaced	25.35	32.6 pCi/g	5	5.07
	1101 Central Avenue	Grass/gravel removed and replaced	85.54	18.0	5	17.10
	1104 Central Avenue	Crushed stone removed and replaced	119.86	38.3 pCi/g** (next highest 27.7 ± 5.5)	10	11.99
		Grass removed (3-in depth) and replaced	13.86	N/A	None	N/A
AL215	1110 Central Avenue	N/A	N/A	N/A	N/A	N/A
	1114 Central Avenue	Asphalt scabbled	17.95	0.1 mrad/h	156 *	0.12
		Rocks/dirt on top of asphalt excavated-asphalt scabbled	28.90	0.1 mrad/h	120 *	0.24
		Tar paper roof removed	77.96	0.1 mrad/h	330 *	0.24
		Small grass strip removed (3-in depth) and replaced	3.73	5.0 pCi/g	4	0.93
	1118 Central Avenue	Grass removed 3-in depth) and replaced	111.75	N/A	None	N/A
		Crushed Stone removed and replaced	86.99			
		Asphalt scabbled	51.18	0. 09 mrad/h	305 *	0.17
	1129 Central Avenue	Grass removed (3-in.depth) and replaced	41.86	1.1 pCi/g	4	10.46
AL098	1143 Central Avenue		N/A	N/A	N/A	N/A
	1144/1144A Central Avenue	Blacktop scabbled	33.03	0.2 mrad/h	50 *	0.66
		Grass/gravel removed and replaced	1983.01	16.3 pCi/g	105	18.89
AL100	1145 Central Avenue	N/A	N/A	N/A	N/A	N/A
	1146 Central Avenue	Crushed stone/grass removed and replaced	88.15	19.6 pCi/g	7	12.59
	1147 Central Avenue	Grass removed and replaced	35.09	3.1 pCi/g	5	7.02
	1148 Central Avenue	Grass removed and replaced	181.67	23.6 pCi/g	12	15.14
AL102	1149 Central Avenue	N//A	N/A	N/A	N/A	N/A
	1150 Central Avenue	Grass/gravel removed and replaced	163.69	20.8 pCi/g	8	20.46
	1152 Central Avenue	Grass/gravel removed and replaced	243.86	33.3 pCi/g	11	22.17
	1159 Central Avenue	Grass removed (3-in depth) /replaced	185.71	14.7 pCi/g	28	6.63

Table 1. Summary of DOE Vicinity Property Remediation (continued)
Colonie FUSRAP Site

Vicinity Property ID	Property	Remedial Actions	Approximate Area Remediated (m^2)	Max Uranium Concentration (pCi/g) or Avg Dose Rate (mrad/h)	No. of Samples/ Measurements	Sample Density (m^2/Sample)
AL021	1160 Central Avenue	Grass removed (3-in depth) and replaced	45.01	18.5 pCi/g	4	11.25
	1161 Central Avenue	Grass/gravel removed and replaced	85.65	21.3 pCi/g	11	7.79
AL020	1160/1162 Central Avenue	Grass/gravel removed and replaced	157.27	17.8 pCi/g	7	22.47
		Asphalt scabbled	58.59	0. 07 mrad/h	315	0.19
	1166 Central Avenue	Grass removed and replaced	163.13	28.5 pCi/g	11	14.83
	1167 Central Avenue	Grass removed (3-in.depth) and replaced	42.15	4.4 pCi/g	5	8.43
	1168 Central Avenue	Grass removed and replaced	257.42	14.7pCi/g	13	19.80
	1170 Central Avenue	Grass/gravel removed (3-in depth) and replaced	84.08	15.4 pCi/g	9	9.34
AL130	1177 Central Avenue	N/A	N/A	N/A	N/A	N/A
AL105	1178 Central Avenue					
	1185 Central Avenue	Grass removed (3-in depth) and replaced	43.30	2.2 pCi/g	5	8.66
	1195 Central Avenue	Grass removed (3-in depth) and replaced	20.81	7.8 pCi/g	4	5.20
AL106	1200 Central Avenue	N/A	N/A	N/A	N/A	N/A
AL217	Crannell Property, Railroad Avenue	N/A	N/A	N/A	N/A	N/A
AL068	10 N. Elmhurst Avenue	N/A	N/A	N/A	N/A	N/A
AL212	Exit 4, 190 Right of Way Property	N/A	N/A	N/A	N/A	N/A
	10 Garden Lane	Crushed stone removed and replaced	199.08	26.1 pCi/g	8	24.89
AL148	10/14 Kraft Avenue	N/A	N/A	N/A	N/A	N/A
AL143	4 Maplewood Avenue	N/A	N/A	N/A	N/A	N/A
AL218	Niagara Mohawk (NiMo) Property, Railroad Avenue	N/A	N/A	N/A	N/A	N/A
	7 Palmer Avenue	Grass removed (3-in depth) and replaced	26.07	9.0 pCi/g	4	6.52

Table 1. Summary of DOE Vicinity Property Remediation (continued)
Colonie FUSRAP Site

Vicinity Property ID	Property	Remedial Actions	Approximate Area Remediated (m^2)	Max Uranium Concentration (pCi/g) or Avg Dose Rate (mrad/h)	No. of Samples/ Measurements	Sample Density (m2/Sample)
AL218	33 Palmer Avenue	Grass removed (3-in depth) and replaced	150.90	8.2 pCi/g	8	18.86
AL033	1 Reynolds Avenue	N/A	N/A	N/A	N/A	N/A
	5 Yardboro Avenue	Grass removed (3-in depth) and replaced	2.91	2.5 pCi/g	4	0.73
AL137	16 Yardboro Avenue	N/A	N/A	N/A	N/A	N/A
AL136	20 Yardboro Avenue	N/A	N/A	N/A	N/A	N/A
	24 Yardboro Avenue	Grass removed (3-in depth) and replaced	3.23	15.2 pCi/g	4	0.81
	25/27 Yardboro Avenue	Grass removed (3-in depth) and replaced	5.40	5.7 pCi/g	3	1.80
	27/29 Yardboro Avenue	Grass removed (3-in.depth) and replaced	132.38	14.0pCi/g	11	12.03
	50 Yardboro Avenue	Grass removed and replaced	45.19	7.8 pCi/g	8	5.65
	52 Yardboro Avenue	Grass removed (3-in.depth) and replaced	217.62	8.7 pCi/g	24	9.07
	68 Yardboro Avenue	Grass removed (3-in.depth) and replaced	313.78	5.0 pCi/g	16	19.61
	74 Yardboro Avenue	Grass/gravel removed (3-in.depth) and replaced	44.29	15.0 pCi/g	13	3.41
	78 Yardboro Avenue	Grass removed (3-in.depth) and replaced	11.54	3.1 pCi/g	4	2.89
		Stone driveway removed, replaced with concrete	43.31	3.0 pCi/g	4	10.83
	80 Yardboro Avenue	Grass removed (3-in.depth) and replaced	111.34	11.0 pCi/g	8	13.92
AL151	80-110 Yardboro Avenue	N/A	N/A	N/A	N/A	N/A

Notes:

*Measurements taken at a minimum of each intersection of a 1-m grid up to measurements taken at the four corners and in the center of the grid block.

** Sample met 35-pCi/g guideline when averaged over a 100 m^2 area.

Avg = average m^2 = square meters N/A = not applicable Max = maximum mrad/h = millirad per hour pCi/g = picocuries per gram

Table reference: *Technical Memorandum, Vicinity Property Assessment, Colonie FUSRAP Site* (USACE, 2010b)

Table 2. Vicinity Properties Addressed by DOE and USACE
Colonie FUSRAP Site

Vicinity Property	Property Address/Street Nos.	Agency Responsible for Cleanup
Properties along Central Avenue	Nos. 1100; 1101; 1104; 1110; 1114; 1118; 1129; 1143; 1144/1144A; 1145; 1146; 1147; 1148; 1149; 1150; 1152; 1159; 1160; 1161; 1160/1162; 1166; 1167; 1168; 1170; 1177; 1178; 1185; 1195; 1200	DOE USACE
Properties along Yardboro Avenue	Nos. 5; 16; 20; 24; 25/27; 27/29; **50**; 52; 68; 74; 78; 80; 80-110	DOE USACE (supplemental cleanup for property listed in **boldface print**)
Railroad Avenue	- Crannell Property (no permanent structures observed in 2013 visit) - Niagara Mohawk Property	DOE USACE*
Palmer Avenue	Nos. 7; 33	DOE
Elmhurst Avenue	10 North Elmhurst Avenue	DOE
Reynolds Avenue	1 Reynolds Avenue	DOE
	Exit 4, Interstate 90 Right of Way Property	DOE
Garden Lane	10 Garden Lane	DOE
Kraft Avenue	10/14 Kraft Avenue	DOE
Maplewood Avenue	4 Maplewood Avenue	DOE
CSX Rail	Adjacent to southern portion of the Colonie Main Site	USACE DOE

Notes:

* Niagara Mohawk (NiMo) Vicinity Property did not require remediation.

The Town of Colonie Vicinity Property is addressed as part of the Colonie Main Site Soils ROD (USACE, 2015a).

Key:

DOE = U.S. Department of Energy
USACE = U.S. Army Corps of Engineers

Table 3. Removal Action Goals for Main Site Soils
Colonie FUSRAP Site

Removal Action Goals
1) Excavation and off-site disposal of Site material with ^{238}U levels greater than or equal to 35 pCi/g, regardless of the depth at which these materials are encountered.
2) Excavation and off-site disposal of Site material with ^{232}Th levels greater than or equal to 2.8 pCi/g, regardless of the depth at which these materials are encountered.
3) Excavation and off-site disposal of Site material with total lead levels greater than or equal to 450 mg/kg encountered at depths of nine feet or less below original grade.
4) Excavation and off-site disposal of Site material with total copper levels greater than or equal to 1,912 mg/kg encountered at depths of nine feet or less below original grade.
5) Excavation and off-site disposal of Site material with total arsenic levels greater than or equal to 7.4 mg/kg encountered at depths of nine feet or less below original grade.
6) Excavation of a minimum of six inches of material from the entire Site, fence line to fence line, prior to the execution of Final Status Surveys over the entire Site.
7) Placement of a minimum of six inches and average of two feet of clean backfill soil over the Site.

Key:

^{238}U = uranium-238

^{232}Th = thorium-232

pCi/g = picocuries per gram

mg/kg = milligrams per kilogram

Table reference: Final Action Memorandum (USACE, 2001)

Table 4. Main Site Soil Cleanup Criteria
Colonie FUSRAP Site

Contaminant	Cleanup Criteria [1]
^{238}Uranium	35 pCi/g [2]
^{232}Thorium	2.8 pCi/g [2]
Lead, total [3]	450 mg/kg
Copper, total [3]	1,912 mg/kg
Arsenic, total [3]	7.4 mg/kg

Notes:

[1] The cleanup criteria are based on urban residential use.

[2] Cleanup goal represents value in excess of background (Action Memorandum USACE, 2001)

[3] Metals excavated to a maximum depth of 9 feet below ground surface.

Key:

pCi/g = picocuries per gram

mg/kg = milligrams per kilogram

Table reference: Final Action Memorandum (USACE, 2001)

Table 5. Summary of Dust Data at Vicinity Properties
Colonie FUSRAP Site

Volumetric Sample ID	Property ID	Property Type *	Area Type**	Description	Total Combined Concentration (pCi/g)			
					U-234	U-235	U-238	U-Total
60811-003	1144 Central Avenue	R	L	Attic	N/A			23.8
60811-004	1144 Central Avenue	R	L	Attic	N/A			9.9
60811-005	1144 Central Avenue	R	L	Attic	N/A			15.3
60811-006	1144 Central Avenue	R	L	Attic	N/A			9.3
60811-007	1144 Central Avenue	R	L	Attic	N/A			8.6
60811-008	1144A Central Ave.	R	L	Attic	N/A			88.7
60811-009	1144A Central Ave.	R	L	1st Floor Ceiling	N/A			8.4
60811-010	1144A Central Ave.	R	L	1st Floor Ceiling	N/A			22.1
60811-011	1144A Central Ave.	R	L	Garage	N/A			79.0
60811-012	1144A Central Ave.	R	L	Garage	N/A			145.2
60811-013	1148 Central Avenue	R	L	Basement	N/A			9.2
60811-014	1148 Central Avenue	R	L	Attic Crawl Space	N/A			6.4
60811-015	1148 Central Avenue	R	L	Garage	N/A			477.4
60811-016	1148 Central Avenue	R	L	Garage	N/A			237.6
60811-017	1148 Central Avenue	R	L	Garage	N/A			631.3
CDUS-1214-041	1161 Central Avenue	R	H	Living Room	0.82	0.11	3.26	4.2
CDUS-1214-042	1161 Central Avenue	R	H	2nd Floor bedroom	0.62	0.06	1.96	2.6
CDUS-1214-043	1161 Central Avenue	R	H	Kitchen	0.40	0.05	0.64	1.1
CDUS-1214-044	1161 Central Avenue	R	H	2nd Floor bedroom	0.70	0.11	2.96	3.8
CDUS-1214-045	1161 Central Avenue	R	L	Basement near stairway	0.60	0.03	0.71	1.3
CDUS-1214-046	1161 Central Avenue	R	L	Basement floor and shelves	0.50	0.05	0.86	1.4
CDUS-1214-047	1161 Central Avenue	R	L	Basement floor and shelves	0.56	0.06	0.68	1.3
CDUS-1214-048	1161 Central Avenue	R	L	Basement cement floor, carpet, horizontal surfaces	0.49	0.04	0.64	1.2
CDUS-1214-009	1200 Central Avenue	R	H	Owner office occupied during most working hours	0.35	0.04	0.52	0.9
CDUS-1214-012	1200 Central Avenue	R	H	Viewing room; large area for visitors	0.32	0.00	0.42	0.7
CDUS-1214-014	1200 Central Avenue	R	H	Northwest sitting room	0.58	0.03	0.69	1.3
CDUS-1214-016	1200 Central Avenue	R	H	Upstairs office; potential future bedroom	0.29	0.03	0.68	1.0
CDUS-1214-010	1200 Central Avenue	R	L	Attic above garage (8 hours per year occupancy)	0.78	0.08	3.67	4.5
CDUS-1214-011	1200 Central Avenue	R	L	Walkway down to service entry; concrete edge	0.47	0.03	0.86	1.4
CDUS-1214-013	1200 Central Avenue	R	L	Attic above house area	1.64	0.15	9.10	10.9

Table 5. Summary of Dust Data at Vicinity Properties
Colonie FUSRAP Site

Volumetric Sample ID	Property ID	Property Type *	Area Type**	Description	Total Combined Concentration (pCi/g)			
					U-234	U-235	U-238	U-Total
CDUS-1214-015	1200 Central Avenue	R	L	Storage room, occasional shop area (2 hours per year)	0.42	0.04	0.76	1.2
CDUS-0518-066	24 Yardboro Avenue	R	H	2nd Floor front apt child's bedroom	0.31	0.05	0.44	0.8
CDUS-0518-068	24 Yardboro Avenue	R	H	2nd Floor back apt living room – most frequently used room	0.78	0.08	1.36	2.2
CDUS-0518-070	24 Yardboro Avenue	R	H	2nd Floor back apt bedroom	0.56	0.01	0.74	1.3
CDUS-0518-072	24 Yardboro Avenue	R	H	Top floor bedroom, partial finished	0.70	0.12	2.16	3.0
CDUS-0518-065	24 Yardboro Avenue	R	L	Basement shop area	0.59	0.07	0.95	1.6
CDUS-0518-067	24 Yardboro Avenue	R	L	Basement stove area	0.84	0.09	2.97	3.9
CDUS-0518-069	24 Yardboro Avenue	R	L	Back crawl space	1.38	0.20	7.41	9.0
CDUS-0518-071	24 Yardboro Avenue	R	L	Top floor eave on east side	1.48	0.14	5.25	6.9
CDUS-1214-057	33 Palmer Avenue	R	H	Living room	0.41	0.05	0.85	1.3
CDUS-1214-060	33 Palmer Avenue	R	H	Kitchen (carpet and hard floors)	0.35	0.04	0.96	1.4
CDUS-1214-063	33 Palmer Avenue	R	H	2nd Floor bedroom	0.53	0.08	1.36	2.0
CDUS-1214-064	33 Palmer Avenue	R	H	2nd Floor bedroom (periodically occupied by grandchildren)	0.99	0.05	1.73	2.8
CDUS-1214-058	33 Palmer Avenue	R	L	Basement carpeted area	0.41	0.03	0.70	1.1
CDUS-1214-059	33 Palmer Avenue	R	L	Basement cement floor	0.68	0.03	1.07	1.8
CDUS-1214-061	33 Palmer Avenue	R	L	Basement cement floor	0.61	0.03	0.67	1.3
CDUS-1214-062	33 Palmer Avenue	R	L	Basement floor	0.76	0.06	1.00	1.8
CDUS-1214-049	4 Kraft Avenue	R	H	Living room	0.34	0.02	1.02	1.4
CDUS-1214-052	4 Kraft Avenue	R	H	2nd Floor child's bedroom	1.47	0.07	1.92	3.5
CDUS-1214-055	4 Kraft Avenue	R	H	2nd Floor bedroom	0.96	0.07	2.04	3.1
CDUS-1214-056	4 Kraft Avenue	R	H	Kitchen	0.58	0.03	1.40	2.0
CDUS-1214-050	4 Kraft Avenue	R	L	Attic floor	2.61	0.25	14.61	17.5
CDUS-1214-051	4 Kraft Avenue	R	L	Attic floor	2.33	0.29	11.82	14.4
CDUS-1214-053	4 Kraft Avenue	R	L	Basement floor	0.58	0.09	1.01	1.7
CDUS-1214-054	4 Kraft Avenue	R	L	Basement floor	0.59	0.03	0.87	1.5
CDUS-1214-017	5 Yardboro Avenue	R	H	Living room area; most frequently used room	0.42	0.04	1.23	1.7
CDUS-1214-019	5 Yardboro Avenue	R	H	Office area on 1st floor	0.52	0.04	1.48	2.0
CDUS-1214-021	5 Yardboro Avenue	R	H	Kitchen area; second most frequently used room	0.4	0.0	1.7	2.1
CDUS-1214-023	5 Yardboro Avenue	R	H	Child's room	0.42	0.04	1.77	2.2

Table 5. Summary of Dust Data at Vicinity Properties
Colonie FUSRAP Site

Volumetric Sample ID	Property ID	Property Type *	Area Type**	Description	Total Combined Concentration (pCi/g)			
					U-234	U-235	U-238	U-Total
CDUS-1214-018	5 Yardboro Avenue	R	L	Basement	0.90	0.10	3.40	4.4
CDUS-1214-020	5 Yardboro Avenue	R	L	Basement	1.04	0.09	3.83	4.9
CDUS-1214-022	5 Yardboro Avenue	R	L	Attic	2.61	0.34	10.87	13.8
CDUS-1214-024	5 Yardboro Avenue	R	L	Attic	5.77	0.74	31.37	37.9
60811-018	78 Yardboro Avenue	R	L	Basement	N/A			21.2
60811-019	78 Yardboro Avenue	R	L	Attic	N/A			70.7
60811-020	78 Yardboro Avenue	R	L	Attic	N/A			10.6
60811-021	78 Yardboro Avenue	R	L	Attic	N/A			12.3
60811-022	78 Yardboro Avenue	R	L	Attic	N/A			7.1
CDUS-1214-033	1118 Central Avenue	C	H	Backroom of bar area	0.28	0.01	0.36	0.7
CDUS-1214-036	1118 Central Avenue	C	H	Kitchen area	0.73	0.05	1.38	2.1
CDUS-1214-038	1118 Central Avenue	C	H	Restaurant entrance area	0.25	0.04	0.31	0.6
CDUS-1214-040	1118 Central Avenue	C	H	Upstairs office	0.34	0.02	0.72	1.1
CDUS-1214-034	1118 Central Avenue	C	L	Basement storage area	0.54	0.05	0.95	1.5
CDUS-1214-035	1118 Central Avenue	C	L	Basement storage area	0.26	0.00	0.24	0.5
CDUS-1214-037	1118 Central Avenue	C	L	Basement storage area	0.76	0.06	2.10	2.9
CDUS-1214-039	1118 Central Avenue	C	L	Basement storage area	0.81	0.13	1.32	2.3
CDUS-1214-025	1160 Central Avenue	C	H	Behind cash register	0.31	0.04	0.99	1.3
CDUS-1214-027	1160 Central Avenue	C	H	Arcade area	0.38	0.02	0.65	1.0
CDUS-1214-029	1160 Central Avenue	C	H	General public area	0.33	0.02	0.51	0.9
CDUS-1214-031	1160 Central Avenue	C	H	Behind other cash register area	0.29	0.01	0.63	0.9
CDUS-1214-026	1160 Central Avenue	C	L	Attic area above shop	0.47	0.04	1.06	1.6
CDUS-1214-028	1160 Central Avenue	C	L	Pinset machine in new section	0.42	0.02	0.80	1.2
CDUS-1214-030	1160 Central Avenue	C	L	Pinset machine in old section	0.20	0.00	0.72	0.9
CDUS-1214-032	1160 Central Avenue	C	L	Basement storage area beneath lounge	1.02	0.09	4.30	5.4
CDUS-1214-001	1177 Central Avenue	C	H	Front desk area worker side; occupied most working hours	0.51	0.02	0.59	1.1
CDUS-1214-003	1177 Central Avenue	C	H	Auto shop garage area; occupied most working hours	0.51	0.05	0.54	1.1
CDUS-1214-005	1177 Central Avenue	C	H	Customer waiting area	0.50	0.03	0.54	1.1
CDUS-1214-007	1177 Central Avenue	C	H	Rear of garage work area	0.67	0.06	0.70	1.4
CDUS-1214-002	1177 Central Avenue	C	L	Attic storage near top of stairs	0.81	0.08	3.51	4.4
CDUS-1214-004	1177 Central Avenue	C	L	Attic; heavy dust loading near eve	0.83	0.06	3.22	4.1
CDUS-1214-006	1177 Central Avenue	C	L	Storage area/walkway between garage	0.37	0.01	0.53	0.9

Table 5. Summary of Dust Data at Vicinity Properties
Colonie FUSRAP Site

Volumetric Sample ID	Property ID	Property Type *	Area Type**	Description	Total Combined Concentration (pCi/g)			
					U-234	U-235	U-238	U-Total
				bays				
CDUS-1214-008	1177 Central Avenue	C	L	Attic; heavily loaded support beam	0.91	0.09	4.21	5.2
CDUS-0518-073	Background Sample	R	H	Living room – most frequently used room	0.32	0.12	0.33	0.8
CDUS-0518-075	Background Sample	R	H	Office/den	0.38	0.12	0.34	0.8
CDUS-0518-078	Background Sample	R	H	Basement game room	0.28	0.03	0.24	0.5
CDUS-0518-080	Background Sample	R	H	2nd floor child's bedroom	0.34	0.01	0.30	0.6
CDUS-0518-074	Background Sample	R	L	Basement workshop/utility room	0.41	0.04	0.30	0.8
CDUS-0518-076	Background Sample	R	L	Garage floor front half	0.32	0.02	0.39	0.7
CDUS-0518-077	Background Sample	R	L	Basement under stairs and around furnace	0.22	0.03	0.16	0.4
CDUS-0518-079	Background Sample	R	L	Garage floor rear half	0.40	0.06	0.40	0.9

Notes:

* Property Types: R = Residential or C = Commercial

** Area Types: L = Limited or H = High Use

*** The high concentration of total uranium at 1148 Central Avenue was used as the "worst case" for estimating risk to non-living spaces.

Key:

N/A = not applicable

pCi/g = picocuries per gram

Table 6. Monitoring Well Network Evolution
Colonie FUSRAP Site

a) Monitoring Well Network through August 2012

Upper Groundwater Zone Monitoring Wells and Piezometers					
MW-02S	MW-08S	MW-10S	MW-14S	MW-21S	MW-30S
MW-32S	MW-33S	MW-34S	MW-35S	MW-36S	MW-37S
MW-38S	MW-39S	MW-40S	MW-41S	MW-42S	MW-43S
PZ-12	PZ-13A	PZ-15A			
Lower Groundwater Zone Monitoring Wells and Piezometers					
MW-02M	MW-08M	MW-10M	MW-14M	MW-21M	MW-25M
MW-30M	MW-32M	MW-33M	MW-34M	MW-35M	MW-36M
MW-37M	MW-38M	MW-39M	MW-41M	MW-42M	MW-43M*
PZ-11B	PZ-13B	PZ-15B			

* Monitoring Well MW-43M was removed from the well network in May 2011 due to excessive silt in well.

b) Monitoring Well Network through August 2016

Upper Groundwater Zone Monitoring Wells			
MW-08S	MW-30S	MW-32S*	MW-34S
MW-37S	MW-41S	MW-42S	MW-44S

* Monitoring well MW-32S removed from network following August 2016 sampling event.

c) Monitoring Well Network beginning April 2017

Upper Groundwater Zone Monitoring Wells			
MW-08S	MW-30S	MW-34S	MW-37S
MW-41S	MW-42S	MW-44S	

Table 7. Groundwater Post-ROD Contaminant of Concern Results and Current Compliance Status [1]

Colonie FUSRAP Site

Monitoring Well	Contaminant of Concern	Target Cleanup Goals [(1)] (µg/L)	Minimum Concentration [(2)] (µg/L)	Maximum Concentration [(2)] (µg/L)	Latest Sample Result [(3)] (µg/L)	Target Cleanup Goal Status	Monitoring Well Active Status
MW-08S	Cis-1,2-DCE	1,800	1.0 U	1.0 U	1.0 U	In Compliance	Active (Current Network Well)
	PCE	5.5	1.0 U	1.0 U	1.0 U		
	TCE	18	1.0 U	1.0 U	1.0 U		
	VC	1.4	1.0 U	1.0 U	1.0 U		
MW-10S	Cis-1,2-DCE	1,800	1.0 U	1.0 U	1.0 U	In Compliance (prior to decommissioning)	Decommissioned (August 2015)
	PCE	5.5	1.0 U	1.0 U	1.0 U		
	TCE	18	1.0 U	1.0 U	1.0 U		
	VC	1.4	1.0 U	1.0 U	1.0 U		
MW-21S	Cis-1,2-DCE	1,800	1.0 U	**1.4** [(4)]	1.0 U	In Compliance (prior to decommissioning)	Decommissioned (August 2015)
	PCE	5.5	**0.24 J**	**1.1**	**0.24 J**		
	TCE	18	1.0 U	**0.56 J**	1.0 U		
	VC	1.4	1.0 U	1.0 U	1.0 U		
MW-30S	Cis-1,2-DCE	1,800	1.0 U	**2.3**	1.0 U	In Compliance	Active (Current Network Well)
	PCE	5.5	**1.5**	**6** [(5)]	**3.1**		
	TCE	18	1.0 U	**2.4**	1.0 U		
	VC	1.4	1.0 U	1.0 U	1.0 U		
MW-32S	Cis-1,2-DCE	1,800	**1.1**	**23**	**6.5**	In Compliance	Inactive (Existing Well Excluded from Well Network 08/2016)
	PCE	5.5	**2.4**	**50**	**2.4**		
	TCE	18	**1.1**	**19**	**1.6**		
	VC	1.4	1.0 U	**0.55 J**	1.0 U		
MW-34S	Cis-1,2-DCE	1,800	**0.79 J**	**1.6**	**1.2**	In Compliance	Active (Current Network Well)
	PCE	5.5	**0.45 J**	**0.96 J**	**0.75 J**		
	TCE	18	1.0 U	**0.29 J**	**0.29 J**		
	VC	1.4	**1.1**	**3.4**	**1.1**		
MW-35S	Cis-1,2-DCE	1,800	1.0 U	1.0 U	1.0 U	In Compliance (prior to decommissioning)	Decommissioned (August 2015)
	PCE	5.5	1.0 U	1.0 U	1.0 U		
	TCE	18	1.0 U	1.0 U	1.0 U		
	VC	1.4	1.0 U	1.0 U	1.0 U		
MW-36S	Cis-1,2-DCE	1,800	1.0 U	1.0 U	1.0 U	In Compliance (prior to decommissioning)	Decommissioned (August 2015)
	PCE	5.5	1.0 U	1.0 U	1.0 U		
	TCE	18	1.0 U	1.0 U	1.0 U		
	VC	1.4	1.0 U	1.0 U	1.0 U		

Table 7. Groundwater Post-ROD Contaminant of Concern Results and Current Compliance Status [1] (continued)

Colonie FUSRAP Site

Monitoring Well	Contaminant of Concern	Target Cleanup Goals [(1)] (µg/L)	Minimum Concentration [(2)] (µg/L)	Maximum Concentration [(2)] (µg/L)	Latest Sample Result [(3)] (µg/L)	Target Cleanup Goal Status	Monitoring Well Active Status
MW-37S	Cis-1,2-DCE	1,800	**17**	**52**	**49**	In Compliance	Active (Current Network Well)
	PCE	5.5	1.0 U	**0.61 J**	**0.50 J**		
	TCE	18	**0.28 J**	**0.79 J**	**0.42 J**		
	VC	1.4	**0.35 J**	**0.91 J**	**0.65 J**		
MW-38S	Cis-1,2-DCE	1,800	1.0 U	1.0 U	1.0 U	In Compliance (prior to decommissioning)	Decommissioned (August 2015)
	PCE	5.5	1.0 U	1.0 U	1.0 U		
	TCE	18	1.0 U	1.0 U	1.0 U		
	VC	1.4	1.0 U	1.0 U	1.0 U		
MW-39S	Cis-1,2-DCE	1,800	1.0 U	1.0 U	1.0 U	In Compliance (prior to decommissioning)	Decommissioned (August 2015)
	PCE	5.5	1.0 U	1.0 U	1.0 U		
	TCE	18	1.0 U	1.0 U	1.0 U		
	VC	1.4	1.0 U	1.0 U	1.0 U		
MW-40S	Cis-1,2-DCE	1,800	1.0 U	1.0 U	1.0 U	In Compliance (prior to decommissioning)	Decommissioned (August 2015)
	PCE	5.5	1.0 U	1.0 U	1.0 U		
	TCE	18	1.0 U	1.0 U	1.0 U		
	VC	1.4	1.0 U	1.0 U	1.0 U		
MW-41S	Cis-1,2-DCE	1,800	**6.8**	**3.5**	**4.8**	In Compliance	Active (Current Network Well)
	PCE	5.5	**14**	**39**	**24**	**Out of Compliance – PCE**	
	TCE	18	**4.5**	**11**	**5.1**	In Compliance	
	VC	1.4	**0.53 J**	**1.2**	**0.58 J**	In Compliance	
MW-42S	Cis-1,2-DCE	1,800	**3.4**	**13**	**7.6**	In Compliance	Active (Current Network Well)
	PCE	5.5	1.0 U	**0.43 J**	**0.34 J**		
	TCE	18	**0.44 J**	**1.3**	**0.75 J**		
	VC	1.4	1.0 U	**0.34 J**	1.0 U		
MW-43S	Cis-1,2-DCE	1,800	1.0 U	1.0 U	1.0 U	In Compliance (prior to decommissioning)	Decommissioned (August 2015)
	PCE	5.5	1.0 U	**0.23 J**	**0.23 J**		
	TCE	18	1.0 U	1.0 U	1.0 U		
	VC	1.4	1.0 U	1.0 U	1.0 U		

Table 7. Groundwater Post-ROD Contaminant of Concern Results and Current Compliance Status [1] (continued)

Colonie FUSRAP Site

Monitoring Well	Contaminant of Concern	Target Cleanup Goals [(1)] (µg/L)	Minimum Concentration [(2)] (µg/L)	Maximum Concentration [(2)] (µg/L)	Latest Sample Result [(3)] (µg/L)	Target Cleanup Goal Status	Monitoring Well Active Status
MW-44S	Cis-1,2-DCE	1,800	**2.8**	**3.5**	**3.3**	In Compliance	Active (Current Network Well Installed July 2015)
	PCE	5.5	**3.1**	**18**	**18**	**Out of Compliance - PCE**	
	TCE	18	**4.0**	**9.9**	**9.9**	In Compliance	
	VC	1.4	1.0 U	1.0 U	1.0 U	In Compliance	

Notes:

[1] The Period of Record for data presented in this table is November 2010 through April 2017.

[2] Target Cleanup Goals as per Colonie Groundwater ROD, April 2010.

[3] Minimum and maximum concentrations are for the period of record from November 2010 through April 2017.

[4] Latest sample for current network wells collected April 2017 and latest sample for decommissioned wells collected August 2012.

[5] Results in boldface text are laboratory detections.

[6] Shaded entry indicates that the value exceeds the Target Cleanup Goal.

Table 8. Summary of Remedial Costs for the Colonie FUSRAP Site

COLONIE REMOVAL / REMEDIAL ACTIONS	STUDY COSTS	ESTIMATE IN EECA / ROD	CONSTRUCTION COSTS	TOTAL REMEDIAL COSTS
DOE COSTS				$99,642,000
USACE COSTS Remedial Action (2001 - 2008):				
- Soils OU (IT/Shaw)	$3,000,000	$19,700,000	$80,350,000	$83,350,000
- CSX VP EECA (2006)	$250,000	$2,431,200	$3,000,000	$3,250,000
- Groundwater OU	$2,500,000	$1,550,000	$608,000	$3,108,000
- Vicinity Property OU	$2,500,000	-	$150,000	$2,650,000
			TOTAL	**$192,000,000**

Notes:

1) Total Remediation Costs include both contractor and government (DOE and USACE Costs).

2) Original estimated soil volume was 53,000 cubic yards (cy). Final actual excavated volume was 148,831 cy.

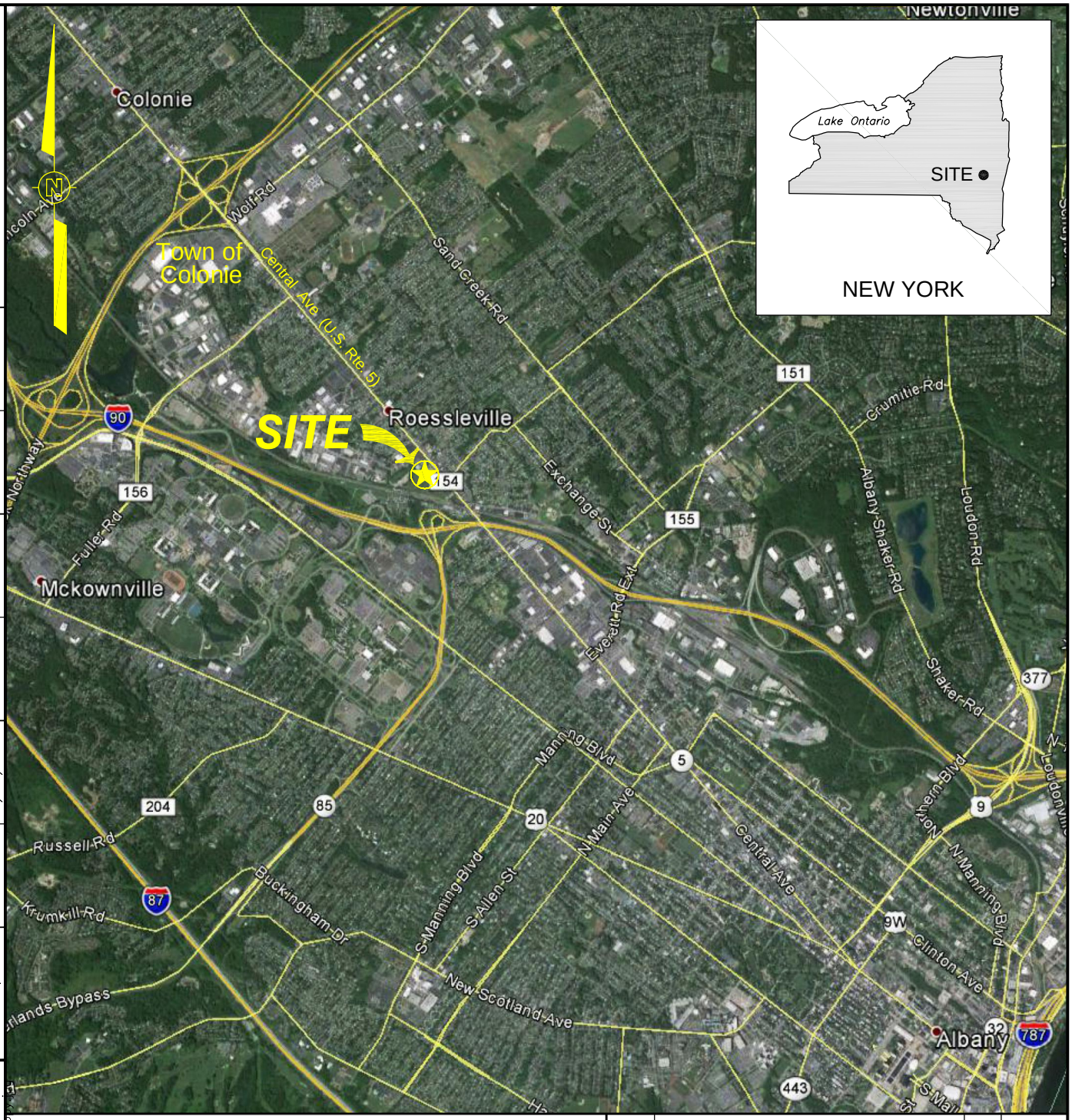
3) Additional 100,000 cy contaminated soils excavated in the central and eastern portion of the site.

4) Sheet pile design and installation to support deeper excavation adjacent to the CSX rail line. This effort was not in the original scope.

5) Removal of VOC-contaminated soils source area. This effort was not in the original scope.

6) Water Treatment system was configured for a short term duration project. The length and amount of water processed was triple the planned amount.

FIGURES



DRAWING NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	OFFICE
500304-A2		M. Hardner	B. fAISON 10/24/2014	ALBANY, NY

SCALE

0 3600 7200 FEET

REFERENCE:
BASE MAP FROM GOOGLE EARTH,
DATED: 7/15/2015

REV	DESCRIPTION / ISSUE	DATE	APPROVED

U.S. ARMY CORPS OF ENGINEERS
FORMERLY UTILIZED SITES
REMEDIAL ACTION PROGRAM

DESIGNED BY: --
DRAWN BY: B. Faison
CHECKED BY: M. Hardner
APPROVED BY: --

FIGURE 1
SITE LOCATION MAP

COLONIE FUSRAP SITE
1130 CENTRAL AVENUE
ALBANY, NY 12205

DATE:	SCALE:	DRAWING NO.	SHEET NO.
4/19/16	AS SHOWN	500304-A1	-

File: \\Cfspittfp01\cad\Shaw Offices - CAD Files\Latham, NY\500304\500304A2.dwg
Plot Date/Time: Aug 21, 2017 - 5:45pm
Plotted By: bernadette.oconnor
Image: APTIM Logo Standard Color.jpg
CBI_Logo-Color.jpg
colonie - google.jpg
Xref :

DRAWING NUMBER 500304D8

OFFICE Pittsburgh, PA

VERIFY SCALE 0 1"

Image : APTIM Logo Standard Color.jpg
CBI_Logo-Color.jpg
Figure 2 Inset.tif
Lower Zone.tif
ou-shaw.jpg
Upper Zone.tif

File: \\Cfspittfp01\cad\Shaw Offices - CAD Files\Latham, NY\500304\500304D8.dwg
Plot Date/Time: Aug 22, 2017 - 2:02pm
Plotted By: bernadette.oconnor

CENTRAL AVENUE (N.Y.S. ROUTE 5)
(99' RIGHT OF WAY)

TRUE NORTH

NIAGARA MOHAWK SUBSTATION VICINITY PROPERTY

MW-08S

MW-44S

MW-32S
(SEE NOTE)

MW-41S

MW-42S

MW-37S

MW-30S

MW-34S

COLONIE FUSRAP MAIN SITE

STEEL SHEET PILE

TOWN OF COLONIE
CITY OF ALBANY

1118 CENTRAL AVENUE

MONROE MUFFLER

GRIMMS

RESIDENCE

MURPHY'S OVERHEAD DOOR

DENSE TREES

DENSE TREES & BRUSH GROUND OBSCURED

TOWN OF COLONIE VICINITY PROPERTY

CSX VICINITY PROPERTY

AMTRAK TRACK

GRAVEL ACCESS ROAD

CLUSTER "H"

RAILROAD AVENUE
(80' RIGHT OF WAY)

YARDBORO AVENUE
(40' RIGHT OF WAY)

I-90 TO ROUTE 85 RAMP

BRICK STOCKPILE

PALLETS STORED MATERIAL

CONCRETE BLOCK BUILDING

DRAINAGE STRUCTURE BURIED TOP PIPE ELEV=212.65 48"RCP INV=208.15

5'x 3' CONCRETE BOX CULVERT

4'x 5' STONE ARCH CULVERT

STREAM

LEGEND:

- COLONIE FUSRAP SITE PROPERTY OUTLINE
- VICINITY PROPERTY OUTLINE
- MW-37S MONITORING WELL
- CB CATCH BASIN
- GUY WIRE
- IRF IRON ROD FOUND
- SMH SANITARY MANHOLE
- MON SQUARE CONCRETE MONUMENT
- STORM MH STORMWATER MANHOLE
- TMH TELEPHONE MANHOLE
- TSB TRAFFIC SIGNAL BOX
- UTILITY POLE
- WMTR WATER METER
- WSO WATER SHUT-OFF
- YCIRF YELLOW CAPPED IRON ROD FOUND
- OVERHEAD ELECTRIC
- UNDERGROUND PIPE
- FENCE LINE
- HDPE HIGH DENSITY POLYETHYLENE PIPE
- RCP REINFORCED CONCRETE PIPE
- RAILWAY (CSX)

BAR SCALE
60 0 30 60 120
1 inch = 60 ft.

NOTE: MONITORING WELL MW-32S EXISTING AT LOCATION SHOWN, BUT REMOVED FROM LONG-TERM GROUNDWATER MONITORING WELL NETWORK FOLLOWING AUGUST 2016 SAMPLING EVENT.

REV	DESCRIPTION / ISSUE	DATE	APPROVED

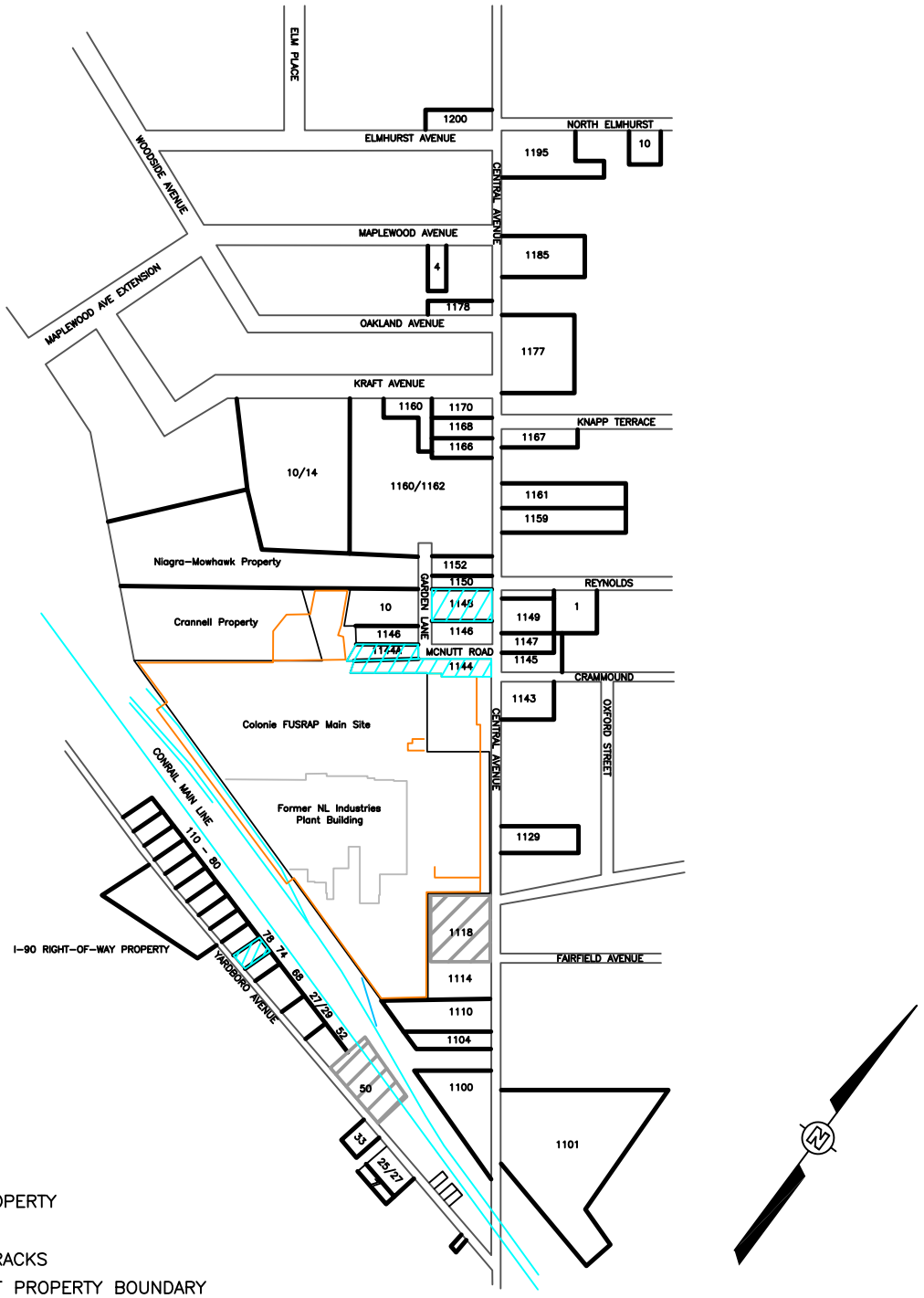
U.S. ARMY CORPS OF ENGINEERS
FORMERLY UTILIZED SITES
REMEDIAL ACTION PROGRAM

DESIGNED BY: --
DRAWN BY: B. Faison
CHECKED BY: M. Hardner
APPROVED BY: --

FIGURE 2
SITE PLAN

COLONIE FUSRAP SITE
1130 CENTRAL AVENUE
ALBANY, NY 12205

DATE: 08/16/17
SCALE: AS SHOWN
DRAWING NO.: 500304-D8
SHEET NO.: -



LEGEND

- VICINITY PROPERTY
- ROADS
- RAILROAD TRACKS
- GOVERNMENT PROPERTY BOUNDARY
- EXISTING FENCE
- VICINITY PROPERTIES DATA GAP INVESTIGATION 2011
- CONFIRMATION DUST SAMPLING 2011

REFERENCE: TECHNICAL MEMORANDUM
VICINITY PROPERTY ASSESSMENT
COLONIE FUSRAP SITE, USACE 2010
CONFIRMATION DUST SAMPLING REPORT
FOR COLONIE FUSRAP SITE VPs USACE 2012

DRAWING NOT TO SCALE
PROPERTY LOCATIONS ARE APPROXIMATE

	U.S. ARMY CORPS OF ENGINEERS FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM
	FIGURE 3 CURRENT VICINITY PROPERTY LOCATIONS
US Army Corps of Engineers	COLONIE FUSRAP SITE 1130 CENTRAL AVENUE, ALBANY, NY 12205
	DRAWING NO. / SHEET NO. 1 OF 1 / REVISION NO.

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User: bernadette.oconnor Sep 26, 2017 - 8:27am Layout: Layout1

DRAWING NUMBER 500304-D10
OFFICE ALB
X-REF x
IMAGE ---

CENTRAL AVENUE N.Y.S. ROUTE 5

RESIDENCE
NIAGARA MOHAWK SUBSTATION
DENSE TREES
MURPHY'S OVERHEAD DOOR
36" CULVERT PIPE OUTLET
20' ACCESS GATE
UN-NAMED TRIBUTARY TO PATROON CREEK
CULVERT WEST
48"RCP INV=211.51
CULVERT EAST
48" RCP
TOP PIPE ELEV=212.65
48"RCP INV=208.15
DENSE TREES & BRUSH GROUND OBSCURED
NIAGARA MOHAWK VICINITY PROPERTY
#2 RAILROAD AVE. VICINITY PROPERTY
RAILROAD AVENUE (80' RIGHT OF WAY)
TOWN OF COLONIE
CITY OF ALBANY
CSX AT-GRADE CROSSING
CSX VICINITY PROPERTY
CSX AT-GRADE CROSSING
CSX VICINITY PROPERTY
CSX VICINITY PROPERTY
18" CORRUGATED PE PIPE
STRUCTURE 3
UNNAMED TRIBUTARY
CITY OF ALBANY SEWER PUMP STATION #25
STORMWATER CULVERT (18" RCP) INSTALLED OCTOBER 2003
CLEAN-OUT MANHOLE
SOIL ACCESS ROAD
PAVED ACCESS ROAD
NORTH LAWN AREA
1118 CENTRAL AVE.
ZIEBART
GRIMMS
CONCRETE BLOCK BUILDING
BRICK STOCKPILE
PALLETS STORED MATERIAL
DENSE TREES
CSX VICINITY PROPERTY
YARDBORO AVENUE (40' RIGHT OF WAY)
I-90 TO ROUTE 85 RAMP
CHAINLINK FENCE
WOOD FENCE
RIP-RAP
SHED
GAZEBO
48
50
52
58
68
74
78
80
110
112
118
124
128

UNIT 101
UNIT 102
UNIT 103
UNIT 104
UNIT 105
UNIT 106
UNIT 107
UNIT 108
UNIT 109
UNIT 110
UNIT 111
UNIT 112
UNIT 113
UNIT 114
UNIT 115
UNIT 116
UNIT 117
UNIT 118
UNIT 119
UNIT 120
UNIT 121
UNIT 122
UNIT 123
UNIT 124

CFS-NF-012R
CFS-104-002
CFS-104-009
CFS-105-001R
CFS-106-001R
CFS-106-003R
CFS-108-005
CFS-109-006
CFS-109-009
CFS-124-011R
PP1
PP2
PP125
CB
FH
DROP INLET

LEGEND

- SAMPLE LOCATION WITH ELEVATED METALS CONCENTRATIONS REMAINING ON SITE
- STORM MH STORMWATER SAMPLE LOCATION WITH
- SMH SANITARY MANHOLE
- CB CATCH BASIN
- POWER POLE
- FENCE LINE
- VICINITY PROPERTY OUTLINE
- FINAL STATUS SURVEY UNITS

REFERENCE:

BASE MAP SOURCES: EDWARD W. BOUTELLE & SON CIVIL ENGINEERS AND SURVEYORS
BECHTEL NATIONAL INC.

GENERAL NOTES:

1. THIS SURVEY IS BASED ON PHOTOGRAMMETRIC MAPPING PREPARED BY LOCKWOOD MAPPING, INC., PHOTOS DATED MAY 13, 1998.
2. SITE ELEVATIONS AND COORDINATE GRID ARE BASED ON SITE MONUMENTATION AND INFORMATION PROVIDED BY ICF KAISER ENGINEERS, INC.

BAR SCALE
60 0 30 60 120
1 inch = 60 ft.

U.S. ARMY CORPS OF ENGINEERS
FORMERLY UTILIZED SITES
REMEDIAL ACTION PROGRAM

FIGURE 4
FINAL STATUS SURVEY UNITS
COLONIE MAIN SITE

COLONIE FUSRAP SITE
1130 CENTRAL AVENUE, ALBANY, NY 12205

SCALE:	DRAWING NO.	SHEET NO.	REVISION NO.
1" = 60'	500304-D10	1 OF 1	

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Plotted by: Samuil.Shkolnik

OFFICE Pittsburgh, PA | DRAWING NUMBER 500304-D11

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Plotted By: bernadette.oconnor

CENTRAL AVENUE N.Y.S. ROUTE 5
(99' RIGHT OF WAY)

MW-25M
MW-02S MW-02M
MW-08S MW-08M
PZ-15A PZ-15B
MW-43M MW-43S
MW-14S MW-14M
PZ-13B PZ-13A
MW-32M MW-32S
MW-41M MW-41S
MW-37M MW-37S
MW-42M MW-42S
MW-36S MW-36M
PZ-11B PZ-11A
MW-40S
MW-34M MW-34S
MW-30S MW-30M
PZ-12
MW-10M MW-10S
MW-35S MW-35M
MW-21M MW-21S
MW-33S MW-33M
MW-39S MW-39M
MW-38S MW-38M

RAILROAD AVENUE (80' RIGHT OF WAY)
YARDBORO AVENUE (40' RIGHT OF WAY)
I-90 TO ROUTE 85 RAMP
TOWN OF COLONIE
CITY OF ALBANY
1118 CENTRAL AVENUE
NIAGARA MOHAWK SUBSTATION
MURPHY'S OVERHEAD DOOR
MONROE MUFFLER
GRIMMS
DENSE TREES & BRUSH GROUND OBSCURED
GRAVEL ACCESS ROAD
STEEL SHEET PILE
STREAM

LEGEND:

- PROPERTY OUTLINE
- MW-25M/ PZ-15A — MONITORING WELL/PIEZOMETER
- CB — CATCH BASIN
- GUY WIRE
- IRF — IRON ROD FOUND
- SMH — SANITARY MANHOLE
- MON — SQUARE CONCRETE MONUMENT
- STORM MH — STORMWATER MANHOLE
- TMH — TELEPHONE MANHOLE
- TSB — TRAFFIC SIGNAL BOX
- UTILITY POLE
- WMTR — WATER METER
- WSO — WATER SHUT-OFF
- YCIRF — YELLOW CAPPED IRON ROD FOUND
- OVERHEAD ELECTRIC
- UNDERGROUND PIPE
- FENCE LINE
- HDPE — HIGH DENSITY POLYETHYLENE PIPE
- RCP — REINFORCED CONCRETE PIPE
- RAILWAY (CSX)

BAR SCALE
60 0 30 60 120
1 inch = 60 ft.

REV	DESCRIPTION / ISSUE	DATE	APPROVED

U.S. ARMY CORPS OF ENGINEERS
FORMERLY UTILIZED SITES
REMEDIAL ACTION PROGRAM

DESIGNED BY: --
DRAWN BY: EC/BOF
CHECKED BY: M. Hardner
APPROVED BY: --

FIGURE 5
MONITORING WELL NETWORK
THROUGH AUGUST 2012

COLONIE FUSRAP SITE
1130 CENTRAL AVENUE
ALBANY, NY 12205

DATE:	SCALE:	DRAWING NO.	SHEET NO.
8/23/2017	AS SHOWN	500304-D11	-

OFFICE Pittsburgh, PA | DRAWING NUMBER 500304-D12

CENTRAL AVENUE (N.Y.S. ROUTE 5)
(99' RIGHT OF WAY)

TRUE NORTH

NIAGARA MOHAWK SUBSTATION VICINITY PROPERTY

MW-08S (228.88)

COLONIE FUSRAP MAIN SITE

STEEL SHEET PILE

MW-44S (220.05)

MW-32S (221.07) SEE NOTE

MW-41S (218.51)

MW-42S (217.32)

MW-37S (212.54)

MW-30S (218.79)

MW-34S (212.13)

TOWN OF COLONIE VICINITY PROPERTY

CSX VICINITY PROPERTY

CSX TRACK

AMTRAK TRACK

TOWN OF COLONIE
CITY OF ALBANY

1118 CENTRAL AVENUE

MONROE MUFFLER

GRIMMS

DENSE TREES

DENSE TREES & BRUSH GROUND OBSCURED

MURPHY'S OVERHEAD DOOR

RESIDENCE

GRAVEL ACCESS ROAD

RAILROAD AVENUE
(80' RIGHT OF WAY)

YARDBORO AVENUE
(40' RIGHT OF WAY)

I-90 TO ROUTE 85 RAMP

CLUSTER "H"

225 220 215 210 229

LEGEND:

- PROPERTY OUTLINE
- MW-37S MONITORING WELL
- CB CATCH BASIN
- GUY WIRE
- IRF IRON ROD FOUND
- SMH SANITARY MANHOLE
- MON SQUARE CONCRETE MONUMENT
- STORM MH STORMWATER MANHOLE
- TMH TELEPHONE MANHOLE
- TSB TRAFFIC SIGNAL BOX
- UP UTILITY POLE
- WMTR WATER METER
- WSO WATER SHUT-OFF
- YCIRF YELLOW CAPPED IRON ROD FOUND
- OVERHEAD ELECTRIC
- UNDERGROUND PIPE
- FENCE LINE
- HDPE HIGH DENSITY POLYETHYLENE PIPE
- RCP REINFORCED CONCRETE PIPE
- RAILWAY (CSX)
- 225 GROUNDWATER ELEVATION CONTOURS (DASHED WHERE INFERRED)
- APPARENT GROUNDWATER FLOW DIRECTION
- (228.88) GROUNDWATER ELEVATION (ABOVE MEAN SEA LEVEL)

NOTE: THE ANOMALOUS ELEVATION VALUE FOR MONITORING WELL MW-32S WAS NOT USED IN THE DEPICTION OF THE 220 FT. MSL ELEVATION CONTOUR.

BAR SCALE
60 0 30 60 120
1 inch = 60 ft.

NOTE: MONITORING WELL MW-32S EXISTING AT LOCATION SHOWN, BUT REMOVED FROM LONG-TERM GROUNDWATER MONITORING WELL NETWORK FOLLOWING AUGUST 2016 SAMPLING EVENT.

REV	DESCRIPTION / ISSUE	DATE	APPROVED

U.S. ARMY CORPS OF ENGINEERS
FORMERLY UTILIZED SITES
REMEDIAL ACTION PROGRAM

FIGURE 6
GROUNDWATER ELEVATION
CURRENT WELL NETWORK
APRIL 2017
COLONIE FUSRAP SITE
1130 CENTRAL AVENUE
ALBANY, NY 12205

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:	DRAWING NO.	SHEET NO.
--	B. Faison	M. Hardner	--	8/23/2017	AS SHOWN	500304D12	-

VERIFY SCALE 0 1"

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APTIM Logo Color.jpg
Figure 4 markup.jpg
Lower Zone.tif
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Upper Zone.tif

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Plot Date/Time: Aug 23, 2017 - 11:48am
Plotted By: bernadette.oconnor

APPENDIX A

Environmental Easement Survey Drawing

XREFS: NONE

PROJECT NUMBER: 15.5628

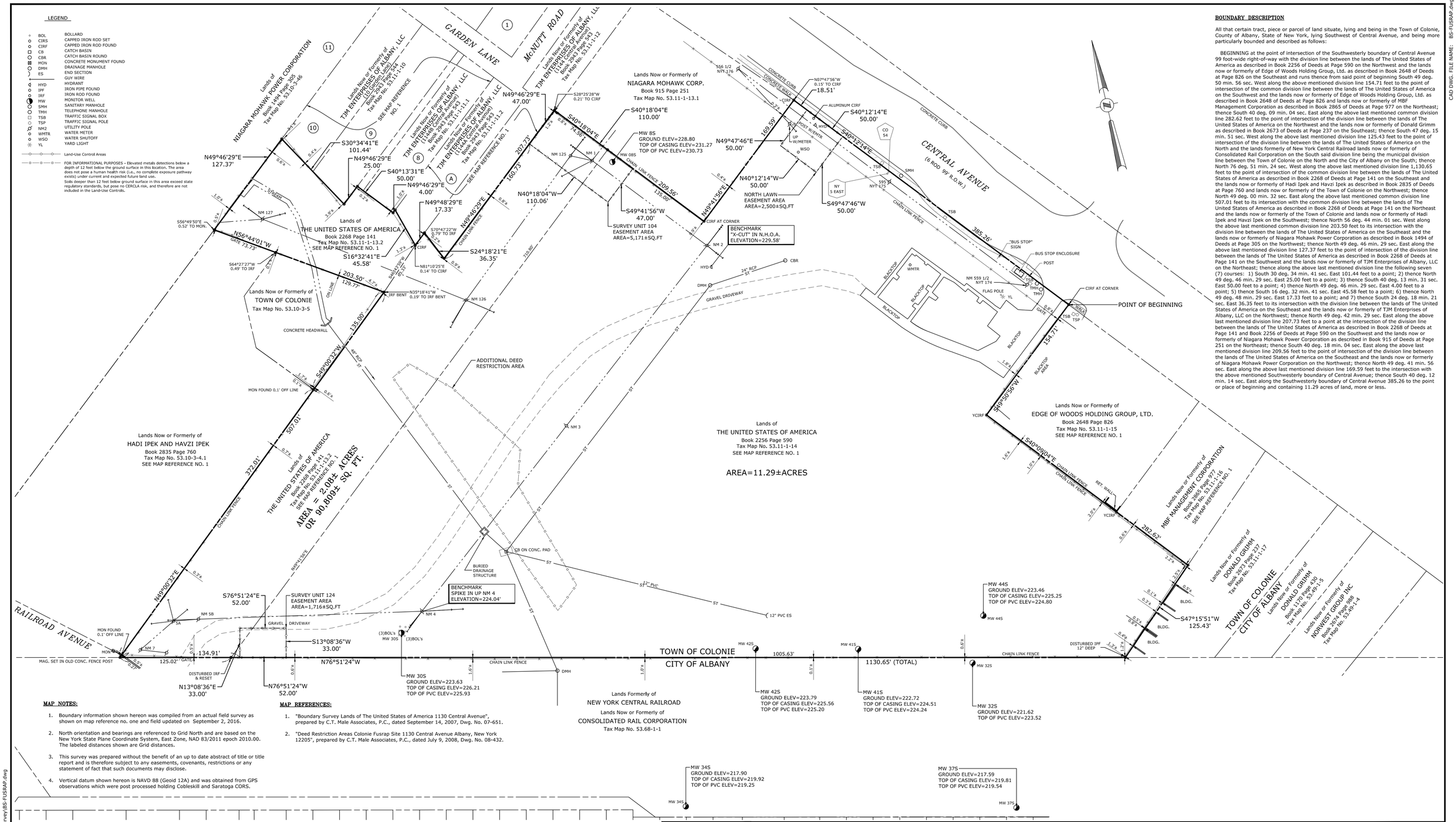
CAD DWG. FILE NAME: BS-FUSRAP.dwg

LEGEND

BOL	BOLLARD
CIRS	CAPPED IRON ROD SET
CIRF	CAPPED IRON ROD FOUND
CB	CATCH BASIN
CBR	CATCH BASIN ROUND
MON	CONCRETE MONUMENT FOUND
DMH	DRAINAGE MANHOLE
ES	END SECTION
	GUY WIRE
HYD	HYDRANT
IPF	IRON PIPE FOUND
IRF	IRON ROD FOUND
MW	MONITOR WELL
SMH	SANITARY MANHOLE
TMH	TELEPHONE MANHOLE
TSB	TRAFFIC SIGNAL BOX
TSP	TRAFFIC SIGNAL POLE
NM2	UTILITY POLE
WMTR	WATER METER
WSO	WATER SHUTOFF
YL	YARD LIGHT

Land-Use Control Areas

FOR INFORMATIONAL PURPOSES - Elevated metals detections below a depth of 12 feet below the ground surface in this location. The area does not pose a human health risk (i.e., no complete exposure pathway exists) under current and expected future land use. Soils deeper than 12 feet below ground surface in this area exceed state regulatory standards, but pose no CERCLA risk, and therefore are not included in the Land-Use Controls.



BOUNDARY DESCRIPTION

All that certain tract, piece or parcel of land situate, lying and being in the Town of Colonie, County of Albany, State of New York, lying Southwest of Central Avenue, and being more particularly bounded and described as follows:

BEGINNING at the point of intersection of the Southwesterly boundary of Central Avenue 99 foot-wide right-of-way with the division line between the lands of The United States of America as described in Book 2256 of Deeds at Page 590 on the Northwest and the lands now or formerly of Edge of Woods Holding Group, Ltd. as described in Book 2648 of Deeds at Page 826 on the Southeast and runs thence from said point of beginning South 49 deg. 50 min. 56 sec. West along the above mentioned division line 154.71 feet to the point of intersection of the common division line between the lands of The United States of America on the Southwest and the lands now or formerly of Edge of Woods Holding Group, Ltd. as described in Book 2648 of Deeds at Page 826 and lands now or formerly of MBF Management Corporation as described in Book 2865 of Deeds at Page 977 on the Northeast; thence South 40 deg. 09 min. 04 sec. East along the above last mentioned common division line 282.62 feet to the point of intersection of the division line between the lands of The United States of America on the Northwest and the lands now or formerly of Donald Grimm as described in Book 2673 of Deeds at Page 237 on the Southeast; thence South 47 deg. 15 min. 51 sec. West along the above last mentioned division line 125.43 feet to the point of intersection of the division line between the lands of The United States of America on the North and the lands formerly of New York Central Railroad lands now or formerly of Consolidated Rail Corporation on the South said division line being the municipal division line between the Town of Colonie on the North and the City of Albany on the South; thence North 76 deg. 51 min. 24 sec. West along the above last mentioned division line 1,130.65 feet to the point of intersection of the common division line between the lands of The United States of America as described in Book 2268 of Deeds at Page 141 on the Southeast and the lands now or formerly of Hadi Ipek and Havzi Ipek as described in Book 2835 of Deeds at Page 760 and lands now or formerly of the Town of Colonie on the Northwest; thence North 49 deg. 00 min. 32 sec. East along the above last mentioned common division line 507.01 feet to its intersection with the common division line between the lands of The United States of America as described in Book 2268 of Deeds at Page 141 on the Northeast and the lands now or formerly of the Town of Colonie and lands now or formerly of Hadi Ipek and Havzi Ipek on the Southwest; thence North 56 deg. 44 min. 01 sec. West along the above last mentioned common division line 203.50 feet to its intersection with the division line between the lands of The United States of America on the Southeast and the lands now or formerly of Niagara Mohawk Power Corporation as described in Book 1494 of Deeds at Page 305 on the Northwest; thence North 49 deg. 46 min. 29 sec. East along the above last mentioned division line 127.37 feet to the point of intersection of the division line between the lands of The United States of America as described in Book 2268 of Deeds at Page 141 on the Southwest and the lands now or formerly of TJM Enterprises of Albany, LLC on the Northwest; thence along the above last mentioned division line the following seven (7) courses: 1) South 30 deg. 34 min. 41 sec. East 101.44 feet to a point; 2) thence North 49 deg. 46 min. 29 sec. East 25.00 feet to a point; 3) thence South 40 deg. 13 min. 31 sec. East 50.00 feet to a point; 4) thence North 49 deg. 46 min. 29 sec. East 4.00 feet to a point; 5) thence South 16 deg. 32 min. 41 sec. East 45.58 feet to a point; 6) thence North 49 deg. 48 min. 29 sec. East 17.33 feet to a point; and 7) thence South 24 deg. 18 min. 21 sec. East 36.35 feet to its intersection with the division line between the lands of The United States of America on the Southeast and the lands now or formerly of TJM Enterprises of Albany, LLC on the Northwest; thence North 49 deg. 42 min. 29 sec. East along the above last mentioned division line 207.73 feet to a point at the intersection of the division line between the lands of The United States of America as described in Book 2268 of Deeds at Page 141 and Book 2256 of Deeds at Page 590 on the Southwest and the lands now or formerly of Niagara Mohawk Power Corporation as described in Book 915 of Deeds at Page 251 on the Northeast; thence South 40 deg. 18 min. 04 sec. East along the above last mentioned division line 209.56 feet to the point of intersection of the division line between the lands of The United States of America on the Southeast and the lands now or formerly of Niagara Mohawk Power Corporation on the Northwest; thence North 49 deg. 41 min. 56 sec. East along the above last mentioned division line 169.59 feet to the intersection with the above mentioned Southwesterly boundary of Central Avenue; thence South 40 deg. 12 min. 14 sec. East along the Southwesterly boundary of Central Avenue 385.26 to the point or place of beginning and containing 11.29 acres of land, more or less.

MAP NOTES:

1. Boundary information shown hereon was compiled from an actual field survey as shown on map reference no. one and field updated on September 2, 2016.
2. North orientation and bearings are referenced to Grid North and are based on the New York State Plane Coordinate System, East Zone, NAD 83/2011 epoch 2010.00. The labeled distances shown are Grid distances.
3. This survey was prepared without the benefit of an up to date abstract of title or title report and is therefore subject to any easements, covenants, restrictions or any statement of fact that such documents may disclose.
4. Vertical datum shown hereon is NAVD 88 (Geoid 12A) and was obtained from GPS observations which were post processed holding Cobleskill and Saratoga CORS.

MAP REFERENCES:

1. "Boundary Survey Lands of The United States of America 1130 Central Avenue", prepared by C.T. Male Associates, P.C., dated September 14, 2007, Dwg. No. 07-651.
2. "Deed Restriction Areas Colonie Fusrap Site 1130 Central Avenue Albany, New York 12205", prepared by C.T. Male Associates, P.C., dated July 9, 2008, Dwg. No. 08-432.

I certify to the following that this survey has been prepared in accordance with the Code of Practice for Land Surveys adopted by the N.Y.S. Association of Professional Land Surveyors as last revised.

The People of The State of New York, acting through their Commissioner of the Department of Environmental Conservation
The United States of America

Carl M. Rigdon, P.L.S. No. 50711 Date

"ONLY COPIES OF THIS MAP SIGNED IN RED INK AND EMBOSSED WITH THE SEAL OF AN OFFICER OF C.T. MALE ASSOCIATES OR A DESIGNATED REPRESENTATIVE SHALL BE CONSIDERED TO BE A VALID TRUE COPY".

BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

CAD DWG. FILE NAME: K:\Projects\15528\Survey\BS-FUSRAP.dwg

CARL M. RIGDON
P.L.S. NO. 50711

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
8/21/17	1	REVISED TITLE	GLB	CMR	WJN
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	9				

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

APPROVED: WJN
DRAFTED : GLB
CHECKED : DGD
PROJ. NO : 15.5628
SCALE : 1" = 50'
DATE : SEPT. 2, 2016

BOUNDARY SURVEY

Lands of
THE UNITED STATES OF AMERICA
1130 CENTRAL AVENUE

TOWN OF COLONIE — ALBANY COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299

SHEET 1 OF 1
DWG. NO: 17-519

XREFS: NONE

PROJECT NUMBER: 15.5628

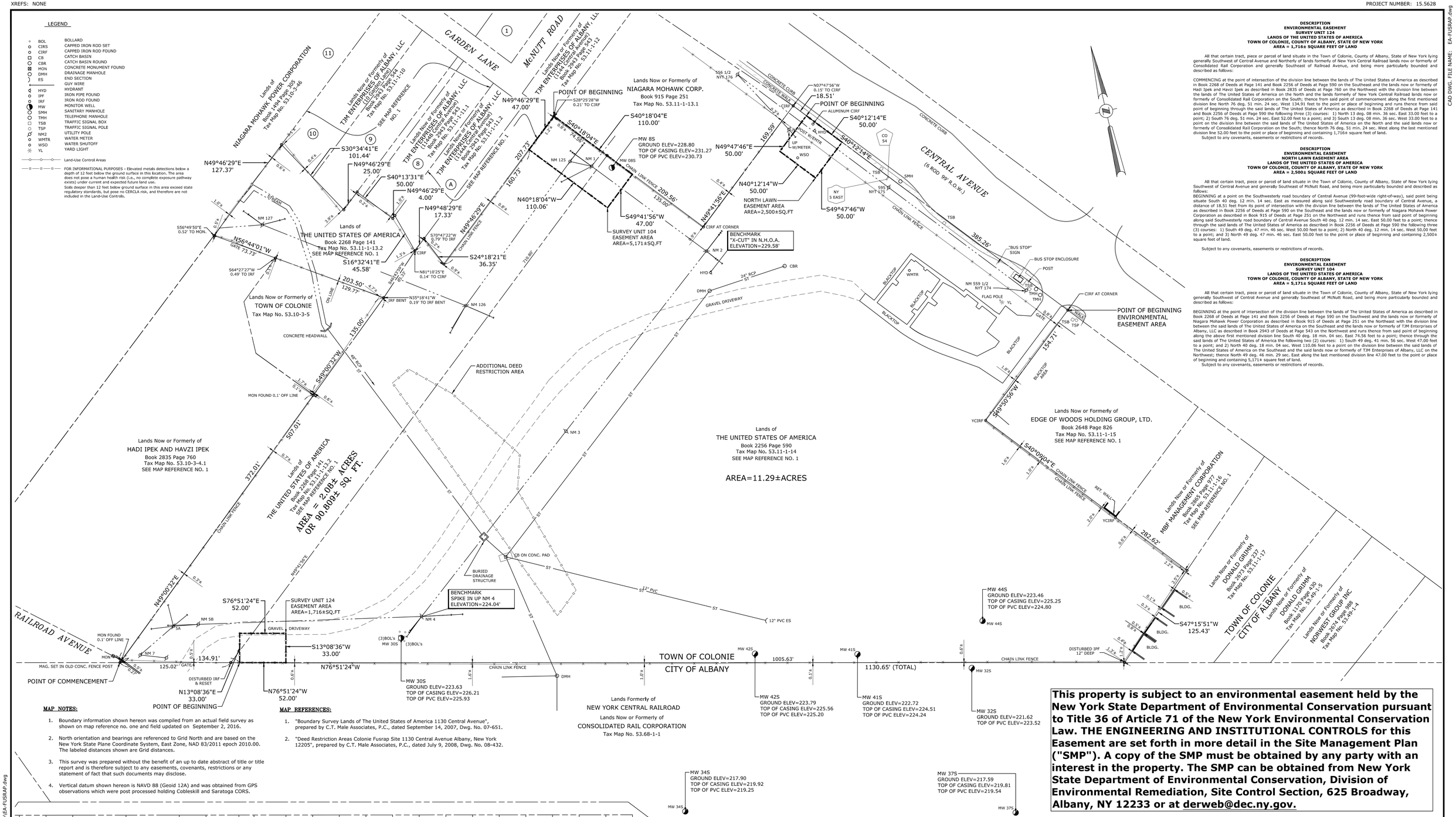
CAD DWG. FILE NAME: EA-FUSRAP.dwg

LEGEND

BOL	BOLLARD
CIRS	CAPPED IRON ROD SET
CIRF	CAPPED IRON ROD FOUND
CB	CATCH BASIN
CBR	CATCH BASIN ROUND
MON	CONCRETE MONUMENT FOUND
DMH	DRAINAGE MANHOLE
ES	END SECTION
	GUY WIRE
HYD	HYDRANT
IPF	IRON PIPE FOUND
IRF	IRON ROD FOUND
MW	MONITOR WELL
SMH	SANITARY MANHOLE
TMH	TELEPHONE MANHOLE
TSB	TRAFFIC SIGNAL BOX
TSP	TRAFFIC SIGNAL POLE
NM2	UTILITY POLE
WMTR	WATER METER
WSO	WATER SHUTOFF
YL	YARD LIGHT

Land-Use Control Areas

FOR INFORMATIONAL PURPOSES - Elevated metals detections below a depth of 12 feet below the ground surface in this location. The area does not pose a human health risk (i.e., no complete exposure pathway exists) under current and expected future land use.
Soils deeper than 12 feet below ground surface in this area exceed state regulatory standards, but pose no CERCLA risk, and therefore are not included in the Land-Use Controls.



DESCRIPTION
ENVIRONMENTAL EASEMENT
SURVEY UNIT 124
LANDS OF THE UNITED STATES OF AMERICA
TOWN OF COLONIE, COUNTY OF ALBANY, STATE OF NEW YORK
AREA = 1,716± SQUARE FEET OF LAND

All that certain tract, piece or parcel of land situate in the Town of Colonie, County of Albany, State of New York lying generally Southwest of Central Avenue and Northerly of lands formerly of New York Central Railroad lands now or formerly of Consolidated Rail Corporation and generally Southeast of Railroad Avenue, and being more particularly bounded and described as follows:

COMMENCING at the point of intersection of the division line between the lands of The United States of America as described in Book 2268 of Deeds at Page 141 and Book 2256 of Deeds at Page 590 on the Southeast and the lands now or formerly of Hadi Ipek and Havzi Ipek as described in Book 2835 of Deeds at Page 760 on the Northwest with the division line between the lands of The United States of America on the North and the lands formerly of New York Central Railroad lands now or formerly of Consolidated Rail Corporation on the South; thence from said point of commencement along the first mentioned division line North 76 deg. 51 min. 24 sec. West 134.91 feet to the point or place of beginning and runs thence from said point of beginning through the said lands of The United States of America as described in Book 2268 of Deeds at Page 141 and Book 2256 of Deeds at Page 590 the following three (3) courses: 1) North 13 deg. 08 min. 36 sec. East 33.00 feet to a point; 2) South 76 deg. 51 min. 24 sec. East 52.00 feet to a point; and 3) South 13 deg. 08 min. 36 sec. West 33.00 feet to a point on the division line between the said lands of The United States of America on the North and the said lands now or formerly of Consolidated Rail Corporation on the South; thence North 76 deg. 51 min. 24 sec. West along the last mentioned division line 52.00 feet to the point or place of beginning and containing 1,716± square feet of land.

Subject to any covenants, easements or restrictions of records.

DESCRIPTION
ENVIRONMENTAL EASEMENT
NORTH LAWN EASEMENT AREA
LANDS OF THE UNITED STATES OF AMERICA
TOWN OF COLONIE, COUNTY OF ALBANY, STATE OF NEW YORK
AREA = 2,500± SQUARE FEET OF LAND

All that certain tract, piece or parcel of land situate in the Town of Colonie, County of Albany, State of New York lying Southwest of Central Avenue and generally Southeast of McNutt Road, and being more particularly bounded and described as follows:

BEGINNING at a point on the Southwesterly road boundary of Central Avenue (99-foot-wide right-of-way), said point being situate South 40 deg. 12 min. 14 sec. East as measured along said Southwesterly road boundary of Central Avenue, a distance of 18.51 feet from its point of intersection with the division line between the lands of The United States of America as described in Book 2256 of Deeds at Page 590 on the Southeast and the lands now or formerly of Niagara Mohawk Power Corporation as described in Book 915 of Deeds at Page 251 on the Northwest and runs thence from said point of beginning along said Southwesterly road boundary of Central Avenue South 40 deg. 12 min. 14 sec. East 50.00 feet to a point; thence through the said lands of The United States of America as described in Book 2256 of Deeds at Page 590 the following three (3) courses: 1) South 49 deg. 47 min. 46 sec. West 50.00 feet to a point; 2) North 40 deg. 12 min. 14 sec. West 50.00 feet to a point; and 3) North 49 deg. 47 min. 46 sec. East 50.00 feet to the point or place of beginning and containing 2,500± square feet of land.

Subject to any covenants, easements or restrictions of records.

DESCRIPTION
ENVIRONMENTAL EASEMENT
SURVEY UNIT 104
LANDS OF THE UNITED STATES OF AMERICA
TOWN OF COLONIE, COUNTY OF ALBANY, STATE OF NEW YORK
AREA = 5,171± SQUARE FEET OF LAND

All that certain tract, piece or parcel of land situate in the Town of Colonie, County of Albany, State of New York lying generally Southwest of Central Avenue and generally Southeast of McNutt Road, and being more particularly bounded and described as follows:

BEGINNING at the point of intersection of the division line between the lands of The United States of America as described in Book 2268 of Deeds at Page 141 and Book 2256 of Deeds at Page 590 on the Southeast and the lands now or formerly of Niagara Mohawk Power Corporation as described in Book 915 of Deeds at Page 251 on the Northeast with the division line between the said lands of The United States of America on the Southeast and the lands now or formerly of TJM Enterprises of Albany, LLC as described in Book 2943 of Deeds at Page 543 on the Northwest and running thence from said point of beginning along the above first mentioned division line South 40 deg. 18 min. 04 sec. East 74.56 feet to a point; thence through the said lands of The United States of America the following two (2) courses: 1) South 49 deg. 41 min. 56 sec. West 47.00 feet to a point; and 2) North 40 deg. 18 min. 04 sec. West 110.06 feet to a point on the division line between the said lands of The United States of America on the Southeast and the said lands now or formerly of TJM Enterprises of Albany, LLC on the Northwest; thence North 49 deg. 46 min. 29 sec. East along the last mentioned division line 47.00 feet to the point or place of beginning and containing 5,171± square feet of land.

Subject to any covenants, easements or restrictions of records.

MAP NOTES:

1. Boundary information shown hereon was compiled from an actual field survey as shown on map reference no. one and field updated on September 2, 2016.
2. North orientation and bearings are referenced to Grid North and are based on the New York State Plane Coordinate System, East Zone, NAD 83/2011 epoch 2010.00. The labeled distances shown are Grid distances.
3. This survey was prepared without the benefit of an up to date abstract of title or title report and is therefore subject to any easements, covenants, restrictions or any statement of fact that such documents may disclose.
4. Vertical datum shown hereon is NAVD 88 (Geoid 12A) and was obtained from GPS observations which were post processed holding Cobleskill and Saratoga CORS.

MAP REFERENCES:

1. "Boundary Survey Lands of The United States of America 1130 Central Avenue", prepared by C.T. Male Associates, P.C., dated September 14, 2007, Dwg. No. 07-651.
2. "Deed Restriction Areas Colonie Fusrap Site 1130 Central Avenue Albany, New York 12205", prepared by C.T. Male Associates, P.C., dated July 9, 2008, Dwg. No. 08-432.

This property is subject to an environmental easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law. THE ENGINEERING AND INSTITUTIONAL CONTROLS for this Easement are set forth in more detail in the Site Management Plan ("SMP"). A copy of the SMP must be obtained by any party with an interest in the property. The SMP can be obtained from New York State Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@dec.ny.gov.

I certify to the following that this survey has been prepared in accordance with the Code of Practice for Land Surveys adopted by the N.Y.S. Association of Professional Land Surveyors as last revised.

The People of The State of New York, acting through their Commissioner of the Department of Environmental Conservation
The United States of America

Carl M. Rigdon, P.L.S. No. 50711 Date

"ONLY COPIES OF THIS MAP SIGNED IN RED INK AND EMBOSSED WITH THE SEAL OF AN OFFICER OF C.T. MALE ASSOCIATES OR A DESIGNATED REPRESENTATIVE SHALL BE CONSIDERED TO BE A VALID TRUE COPY".

CAD DWG. FILE NAME: K:\Projects\15528\Survey\EA-FUSRAP.dwg

CARL M. RIGDON
P.L.S. NO. 50711

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
10/14/16	1	REVISIONS PER CLIENT & USACE REVIEW	GLB	JFC	WJN
10/18/16	2	REVISIONS PER ADDITIONAL COMMENTS	GLB	JFC	WJN
1/26/17	3	REVISIONS PER ADDITIONAL COMMENTS	CMR	CMR	CMR
08/21/17	4	REVISIONS PER ADDITIONAL COMMENTS	GLB	CMR	WJN
	5				
	6				
	7				
	8				
	9				

APPROVED: WJN
DRAFTED : GLB
CHECKED : DGD
PROJ. NO : 15.5628
SCALE : 1" = 50'
DATE : SEPT. 2, 2016

ENVIRONMENTAL EASEMENT SURVEY

Lands of
THE UNITED STATES OF AMERICA
1130 CENTRAL AVENUE

TOWN OF COLONIE — ALBANY COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299

SHEET 1 OF 1
DWG. NO: 16-545

APPENDIX B

FSS Unit Summary Table

(Table 12 from Final Post Remedial Action Report, Shaw 2010)

Table 12
Colonie FUSRAP Site
FSS Unit #101

Sample ID	Date Collected	FIDLER Static Count	44-10 Spa Static Counts	On-Site Gamma Spec Uranium-238	Offsite Alpha Spec Uranium-238	On-Site Gamma Spec Thorium-232	Offsite Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-101-001	7/9/2002	8,760	9,323	17.0	11.0	2.3	0.384	550	**706**	6.8	630	**623**	CFS-101-Duplicate Surveyed depth 2.58 ft. below original grade.
CFS-101-002	7/9/2002	8,492	9,100	14.3	21.6	0.8	0.702	249	230	5.1	281	268	Surveyed depth 4.78 ft. below original grade.
CFS-101-003	7/9/2002	8,347	9,176	4.7	2.53	1.0	0.904	<140	52.2	4.4	19	16.6	NYSDEC and USACE Split. Surveyed depth 6.0 ft. below original grade.
CFS-101-004	7/9/2002	7,882	8,703	6.6	0.94	0.7	0.895	<120	<29	1.5	4.2	3.1	Surveyed depth 7.36 ft. below orignal grade.
CFS-101-005	7/9/2002	9,850	10,003	13.0	24.9	0.6	0.696	197	297	4.2	272	226	USACE Split Sample. Surveyed depth 0.6 ft. below original grade.
CFS-101-006	7/9/2002	8,294	9,288	5.7	1.05	0.6	0.764	<130	34	1.9	11.5	12.9	USACE Split Sample. Surveyed depth 4.2 ft. below original grade.
CFS-101-007	7/9/2002	7,724	8,872	9.2	4.14	0.7	0.422	279	209	**8.7**	231	221	Surveyed depth 5.35 ft. below original grade.
CFS-101-008	7/9/2002	8,372	9,132	7.1	1.37	1.0	0.414	<130	49.3	4.0	32.6	24.7	NYSDEC and USACE Split. Surveyed depth 15.88 ft. below original grade.
CFS-101-009	7/9/2002	8,462	9,489	14.9	8.38	1.1	0.603	400	287	**8.2**	303	271	Surveyed depth 10.90 ft. below original grade.
CFS-101-010	7/9/2002	8,153	8,671	7.2	12.1	0.7	0.853	236	259	5.7	603	405	USACE Split Sample. Surveyed depth 15.30 ft. below original grade.
CFS-101-Dup	7/9/2002	8,799	9,483	19.0	24.6	1.0	0.586	NR	NR	7.4	667	644	Duplicate of CFS-101-001. Surveyed depth 2.58 ft. below original grade.

ANALYTICAL DATA SUMMARY

Fidler Static Counts	8434						318.5	235.9	5.1	238.7	207.1	*Average values*
44-10 Spa Static Counts		9176					550.0	706.0	8.7	630.0	623.0	*Maximum Value*
Uranium 238			10.0	8.8			197.0	34.0	1.5	4.2	3.1	*Minimum Value*
Thorium 232					1.0	0.7	132.8	205.5	2.4	233.4	202.6	*Std Deviation*
							264.0	230.0	4.8	251.5	223.5	*Median Value*
							1912	1912	7.4	1912	450	*Clean-Up Objectives*

Notes:
1) Duplicate data was not used in averages
2) Bold data indicates value above recommended soil clean-up goals.
3) NR- Not Recorded

Table 12
Colonie FUSRAP Site
FSS Unit #102

Sample ID	Date Collected	FIDLER Static Count	44-10 Spa Static Counts	On-Site HPGe Uranium-238	Alpha Spec Uranium-238	On-Site HPGe Thorium-232	Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-102-001	7/9/2002	9,261	*NA*	4.5	0.569	1.0	0.382	248	133	4.0	26.8	14.0	NYDEC Split sample. Surveyed depth 13.7 ft. below original grade.
CFS-102-002	7/9/2002	8,943	*NA*	7.4	1.2	0.9	0.375	246	150	2.5	691	208	Surveyed depth 7.25 ft. below original grade.
CFS-102-003	7/9/2002	9,562	*NA*	9.5	2.83	1	0.544	615	**549**	4.5	1010	**544**	Surveyed depth 5.5 ft. below original grade.
CFS-102-004	7/9/2002	9,287	*NA*	7.8	1.34	0.7	0.755	160	92.8	3.3	77.7	51.4	Surveyed depth 10.1 ft. below original grade.
CFS-102-005	7/9/2002	8,027	*NA*	8.8	3.47	0.9	0.500	750	**552**	11.7	649	**490**	NYSDEC and USACE Split. Surveyed depth 4.05 ft. below original grade.
CFS-102-006	7/9/2002	8,864	*NA*	5.0	1.27	0.7	0.792	196	108	2.4	126	61.3	Surveyed depth 8.62 ft. below original grade.
CFS-102-007	7/9/2002	8,850	*NA*	5.1	1.23	0.7	0.711	150	59.2	2.9	39.6	27.1	Surveyed depth 6.87 ft. below original grade.
CFS-102-008	7/9/2002	9,874	*NA*	4.7	0.929	0.8	0.966	150	49.8	4.9	56.7	30.5	Surveyed depth 6.94 ft. below original grade.
CFS-102-009	7/9/2002	8,886	*NA*	4.6	1.47	0.9	0.451	190	195	3.2	150	106	CFS-102-Duplicate. Surveyed depth 12.62 ft. below original grade.
CFS-102-010	7/9/2002	10,337	*NA*	5.5	0.720	1.2	0.961	140	67.2	5.3	52.7	28.2	Surveyed depth 8.2 ft. below original grade.
CFS-102-Dup	7/9/2002	8,752	*NA*	5.3	1.55	0.9	0.288	271	186	3.8	233	160	Duplicate of CFS-102-009. Surveyed depth 12.62 ft. below original grade.

ANALYTICAL DATA SUMMARY

FIDLER Static Counts	9189						284.5	195.6	4.5	288.0	156.1	*Average values*
44-10 Spa 3 Static Counts		NA					750.0	552.0	11.7	1,010.0	544.0	*Maximum Value*
Uranium - 238			6.3	1.503			140.0	49.8	2.4	26.8	14.0	*Minimum Value*
Thorium - 232					0.880	0.644	215.5	192.2	2.7	356.3	198.9	*Std Deviation*
				0.9	**STNDEV**	**0.2**	193.0	120.5	3.7	101.9	56.4	*Median Value*
							1912	450	7.4	1912	450	*AM Criteria*

Notes: 1) Duplicate data was not used in averages
2) Bold data indicates value above recommended soil clean-up goals.
3) Data from 5 USACE and 2 NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #103

Sample ID	Date Collected	FIDLER Static Count	44-10 Spa Static Counts	On-Site HPGe U-238	Off-site Alpha Spec U-238	On-Site HPGe Th-232	Off-site Alpha Spec Th-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-103-001	8/20/2002	8,882	NA	8.5	0.569	0.7	0.714	140	52.3	4.4	77.7	42.8	Surveyed depth 9.65 ft. below original grade.
CFS-103-002	8/20/2002	9,400	NA	7.1	0.788	1.0	0.807	140	33	6.9	19.5	6.3	Surveyed depth 9.88 ft. below original grade.
CFS-103-003	8/20/2002	11,089	NA	26.8	24	1.0	0.682	140	64.5	4.3	68.4	30.2	Surveyed depth 7.96 ft. below original grade.
CFS-103-004	8/20/2002	9,584	NA	6.3	1.08	1.1	0.629	150	50.2	6.0	52.5	31.1	Surveyed depth 7.86 ft. below original grade.
CFS-103-005	8/20/2002	8,543	NA	9.5	1.57	0.8	0.353	120	<29	2.2	6.2	3.0	Surveyed depth 3.09 ft. below original grade.
CFS-103-006	8/20/2002	9,586	NA	7.3	0.733	0.7	0.522	217	221	3.8	396	238	NYSDEC split sample. Blind Duplicate (CFS-103-Duplicate. Surveyed depth 10.6 ft. below original grade.
CFS-103-007	8/20/2002	9,039	NA	8.4	1.2	0.8	0.545	160	83.2	4.1	186	89.9	Surveyed depth 11.35 ft. below original grade.
CFS-103-008	8/20/2002	8,525	NA	5.1	0.5	0.9	0.35	130	30	4.4	16.3	5.2	USACE split sample
CFS-103-009	8/20/2002	8,234	NA	6.7	3.09	1.1	0.583	1410	**1320**	5.2	**3340**	**1310**	NYSDEC split sample. Additional excavation completed and location resampled. Surveyed depth 5.2 ft. below original grade.
CFS-103-009R	*8/28/2002*		NA	*3.6*	*0.706*	*0.8*	*0.331*	*<150*	*53*	*2.6*	*207*	*74.7*	*Resample from CFS-103-009 after excavation.* *Surveyed depth 6.8 ft. below original grade.*
CFS-103-010	8/20/2002	9,326	NA	5.8	1.1	0.8	0.637	150	55.6	5.5	34.9	16.4	Surveyed depth 4.25 ft. below original grade.
CFS-103-Dup	8/20/2002		NA	6.0	1.05	1.1	0.503			4.3	358	186	Duplicate of CFS-103-006. Surveyed depth 10.6 ft. below original grade.
DATA SUMMARY / AVERAGE VALUES													
FIDLER Static Counts		9330						149.7	71.4	4.4	106.5	53.8	*Average values*
44-10 Spa Static Counts			NA					217.0	221.0	6.9	396.0	238.0	*Maximum Value*
Uranium 238				8.84	3.22			120.0	30.0	2.2	6.2	3.0	*Minimum Value*
Thorium 232						0.86	0.56	27.8	58.3	1.4	123.1	71.1	*Std Deviation*
					7.3	**stndev**	**0.2**	140.0	53.0	4.4	60.5	30.7	*Median Value*
								1912	450	7.4	1912	450	*AM Criteria*

Notes:
1) Duplicate data was not used in averages, Samples taken 20 August 02
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) Data from USACE and NYSDEC split samples is not yet available
4) Sodium Iodide 2*2 not applicable to this unit, no historical Thorium observed in this Unit
5) CFS location 009 was re-excavated and re-sampled on 22 August 02.
Resampling results are calculated in the above averages

Table 12
Colonie FUSRAP Site
FSS Unit #104

Sample ID	Date Collected	FIDLER Static Count	44-10 Spa Static Counts	On-Site HPGe U-238	Off-site Alpha Spec U-238	On-Site HPGe Th-232	Off-site Alpha Spec Th-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-104-001	9/4/2002	8,835	9,105	8.2	3.78	0.6	0.911	<130	82.4	2.5	27.7	48.3	NYSDEC QA split sample. Surveyed depth 2.55 ft. below original
CFS-104-002	9/4/2002	9,761	9,724	23.1	31.2	0.9	0.549	274	254	**85.4**	234	232	Surveyed depth 1.82 ft. below original grade.
CFS-104-003	9/4/2002	8,602	8,791	5.9	2.95	0.8	0.766	<140	91.1	2.1	32.3	16.2	Surveyed depth 2.3 ft. below original grade.
CFS-104-004	9/4/2002	8,603	8,855	6.6	4.35	0.6	0.508	<140	87.1	2.3	57.1	46.5	Surveyed depth 2.1 ft. below original grade.
CFS-104-005	9/4/2002	8,357	8,470	6.0	5.14	0.6	0.498	<140	71	1.7	41.7	22.6	Surveyed depth 2.4 ft. below original grade.
CFS-104-006	9/4/2002	8,821	8,932	5.1	7.99	0.7	0.068	<150	43	2.3	48.6	79	Surveyed depth 2.59 ft. below original grade.
CFS-104-007	9/4/2002	8,654	9,018	8.1	11.6	0.4	0.987	168	203	2.2	199	148	NYSDEC QA split sample. Surveyed depth 7.95 ft. below original
CFS-104-008	9/4/2002	8,333	8,543	8.0	6.54	0.6	0.664	308	310	2.6	248	180	USACE QA split sample Surveyed depth 12.67 ft. below original
CFS-104-009	9/4/2002	7,388	7,309	10.7	11.4	0.9	0.655	**10200**	**8170**	**243**	**6490**	**5270**	Surveyed depth 13.3 ft. below original grade.
CFS-104-Dup	9/4/2002	8,763	8,966	11.0	12.0	0.9	0.7	**9520**	**8540**	**241**	**5630**	**4470**	Duplicate of CFS-104-009

DATA SUMMARY

FIDLER Static Counts	8612						250.0	1785.2	58.5	1300.8	1051.3	*Average values*
44-10 Spa 3 Static Counts		8771					10200.0	8540.0	243.0	6490.0	5270.0	*Maximum Value*
Uranium - 238			9.08	9.44			168.0	43.0	1.7	27.7	16.2	*Minimum Value*
Thorium - 232					0.68	0.62	73.0	98.9	100.1	2517.9	2022.7	*Std Deviation*
				9.3	**stndev**	**0.3**	274.0	89.1	2.3	52.9	63.7	*Median Value*
							1912	450	7.4	1912	450	*AM Criteria*

Notes: 1) Duplicate data was not used in averages
2) Bold data indicates individual sample/value above recommended soil clean-up goals. See notes column
3) Data from USACE and NYSDEC split samples is not yet available
4) Action Memo inorganics criteria do not apply at depths below nine feet from original grade
Individual and Average values of the onsite data for samples above nine ft level is fully complient

Table 12
Colonie FUSRAP Site
FSS Unit #105

Sample ID	Date Collected	FIDLER Static Count	44-10 Spa Static Counts	On-Site HPGe U 238	Offsite Alpha Spec U-238	On-Site HPGe Th-232	Offsite Alpha Spec Th-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	
CFS-105-001	9/10/2002	4,601	5,982	9.5	1.65	0.9	0.559	**87,400**	**59,000**	**18.1**	**46000**	**41300**	Surveyed depth 11.75 ft. below original grade.
CFS-105-001R	*9/13/2002*	*7,425*	*7,596*	*4.8*	*2.48*	*0.7*	*0.429*	*1,630*	***1,160***	*6.1*	***2060***	***1780***	*Surveyed depth 13.35 ft. below original grade after re-excavation per USACE direction.*
CFS-105-002	9/10/2002	7,908	8,397	6.4	3.44	1.4	0.225	506	291	2.1	157	121	Surveyed depth 10.52 ft. below original grade.
CFS-105-003	9/10/2002	7,996	8,434	9.5	3.35	0.6	0.31	234	122	2.7	167	105	CFS-105-Duplicate. Surveyed depth 5.4 ft. below original grade.
CFS-105-004	9/10/2002	8,701	8,755	8.5	2.82	1.2	0.281	181	137	2.3	137	79.7	USACE QA Split Sample. Surveyed depth 3.2 ft. below original grade.
CFS-105-005	9/10/2002	8,796	8,964	7.6	3.15	0.6	0.346	<140	89.1	2.2	103	38.9	Surveyed depth 2.65 ft. below original grade.
CFS-105-006	9/10/2002	7,458	NA	5.8	0.687	0.9	0.284	<130	<31	2.4	13.5	6.2	Surveyed depth 2.72 ft. below original grade.
CFS-105-007	9/10/2002	7,672	NA	7.2	2.39	0.6	0.37	<140	59.2	2.6	43.6	27	NYSDEC QA split sample. Surveyed depth 2.58 ft. below original grade.
CFS-105-008	9/10/2002	10,673	NA	28.5	30.2	0.9	0.255	784	**474**	7.3	631	420	Surveyed depth 2.6 ft. below original grade.
CFS-105-009	9/10/2002	7,800	NA	9.6	1.18	0.8	0.275	<130	<34	2.4	20.5	11.1	Surveyed depth 2.4 ft. below original grade.
CFS-105-Dup	9/10/2002	4,556	6,019	8.8	2.3	1.1	0.234	321	197	2.4	128	108	Duplicate of CFS-105-003

DATA SUMMARY

FIDLER Static Counts	8270							667.0	333.2	3.3	370.3	287.7	*Average values*
44-10 Spa 3 Static Counts		8429						1630.0	1160.0	7.3	2060.0	1780.0	*Maximum Value*
Uranium - 238			9.77	5.52				181.0	59.2	2.1	13.5	6.2	*Minimum Value*
Thorium - 232					0.86	0.31		589.6	392.2	1.9	660.7	573.9	*Std Deviation*
								506.0	137.0	2.4	137.0	79.7	*Median Value*
								1912	450	7.4	1912	450	*AM Criteria*

1) Statistical information excludes data from CFS-105-Duplicate and CFS-105-001.
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) Data from USACE and NYSDEC split samples is not yet available
4) Sodium Iodide 2*2 applicable below N1600, no historical Thorium observed above this Northing.

Table 12
Colonie FUSRAP Site
FSS Unit #106

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium-238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-106-001	9/20/2002	4,823	NA this unit	6.3	0.8	1.77	0.564	**37,600**	**28,500**	**9.1**	**58,000**	**6,100**	Depth below orig. grade = 11.5'
CFS-106-001 R	9/26/2002	6,854	NA this unit	7.1	0.7			**2,690**	**1,280**	3.3	1,340	**1,430**	NYSDEC QA Split Depth below orig. grade = 12.5'
CFS-106-002	9/20/2002	7,848	NA this unit	14.5	0.8	21	0.982	**9,280**	**8,170**	4.9	**6,370**	**510**	Depth below orig. grade = 12.3' USACE QA Split
CFS-106-002 R	9/26/2002	6,879	NA this unit	12.7	1.0			**1,930**	227	6.4	132	94.9	NYSDEC Split Depth below orig. grade = 14.0'
CFS-106-003	9/20/2002	4,619	NA this unit	5.3	0.6	2.01	0.65	**46,900**	**32,100**	**12.1**	**33,200**	**6,470**	Depth below orig. grade = 14.0'
CFS-106-003 R	9/26/2002	6,356	NA this unit	7.8	0.8			**11,200**	**5,980**	3.8	**5,840**	**5,440**	USACE and NYSDEC Split Depth below orig. grade = 14.0'
CFS-106-004	9/20/2002	8,092	NA this unit	7.4	0.5	3.52	0.728	534	216	1.1	45.3	41.3	Depth below orig. grade = 10.5' NYSDEC QA Split
CFS-106-004 R	9/26/2002	7,870	NA this unit	6.8	0.6			**3,780**	<120	5.6	54.7	41.1	Depth below orig. grade = 12.1'
CFS-106-005	9/20/2002	7,727	NA this unit	9.5	0.8	20.4	0.863	**2,210**	**1,800**	3.4	**3,190**	**4,600**	Depth below orig. grade = 10.8'
CFS-106-005 R	9/26/2002	7,889	NA this unit	5.0	1.1			313	189	1.6	12.9	19.6	Depth below orig. grade = 12.2'
CFS-106-006	9/20/2002	9,628	NA this unit	10.6	1.1	14.4	0.827	639	**586**	3.6	833	**491**	Depth below orig. grade = 8.0'
CFS-106-006 R	9/26/2002	8,240	NA this unit	6.5	1.0			<240	129	2.7	66.2	59.3	Depth below orig. grade = 8.2'
CFS-106-007	9/20/2002	9,056	NA this unit	11.1	0.8	17.5	0.776	962	**862**	1.7	772	**597**	Depth below orig. grade = 8.1' NYSDEC QA Split
CFS-106-007 R	9/26/2002	7,876	NA this unit	6.5	0.7			<230	<88	2.5	14.0	5.5	Depth below orig. grade = 9.1'
CFS-106-008	9/20/2002	9,603	NA this unit	15.2	0.6	25.6	0.566	325	144	2.3	63.7	61.3	Depth below orig. grade = 4.1'
CFS-106-009	9/20/2002	9,238	NA this unit	9.6	0.6	16.9	0.723	249	164	1.4	100	81.5	Depth below orig. grade = 3.3'
CFS-106-010	9/20/2002	9,728	NA this unit	14.3	1.0	**38.8**	0.852	394	268	2.3	338	231	Depth below orig. grade = 4.3'
CFS-106-Dup (010)	9/20/2002	9,575	NA this unit	NA	NA	**40.4**	0.95	375	321	2.1	250	203	Duplicate of CFS-106-010 Depth below orig. grade = 4.3'
		7883											
Average values				9.19	0.79	16.19	0.75	7,934	5,374	4	6,492	1,546	Average values
Maximum Value				15.20	1.10	38.80	0.98	46,900	32,100	12	58,000	6,470	Maximum Value
Minimum Value				5.00	0.50	1.77	0.56	249	129	1	13	6	Minimum Value
Std Deviation				3.35	0.19	11.62	0.13	14,425	10,413	3	15,487	2,401	Std Deviation
Median Value				7.80	0.80	17.20	0.75	1,930	586	3	338	231	Median Value
AM Criteria				<35	<2.8	<35	<2.8	1,912	450	450	450	450	AM Criteria

Notes:
1) Duplicate data was not used in averages
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) Data from USACE and NYSDEC split samples is not yet available
4) No historical Thorium observed in this unit.

Table 12
Colonie FUSRAP Site
FSS Unit #107

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium-238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-107-001	10/29/2002	8,357	N/A	6.9	0.9	0.614	0.574	<160	156	5.7	122	115	Surveyed depth 13.3 ft. below original grade.
CFS-107-002	10/29/2002	7,732	N/A	6.6	1.7	0.264	0.583	<120	66	1.7	33.9	18.5	Surveyed depth 9.48 ft. below original grade.
CFS-107-003	10/29/2002	10,771	N/A	7.7	1.1	2.29	0.462	273	228	5.7	144	106	USACE Split Sample. Surveyed depth 8.19 ft. below original grade.
CFS-107-004	10/29/2002	10,478	N/A	7.0	1.0	0.469	0.385	<160	<45	5.2	47.7	23.5	Surveyed depth 7.91 ft. below original grade.
CFS-107-005	10/29/2002	8,229	N/A	5.7	1.0	0.58	0.276	1,560	**1,340**	5.0	**2,820**	**1,920**	Re-excavated and re-sampled on 11/11/02. Surveyed depth 7.14 ft. below original grade.
CFS-107-005R	11/11/2002	9,644	NA this unit	4.8	0.7	0.541	0.488	<160	50	3.5	10.2	6.9	Resample of CFS-107-005.
CFS-107-006	10/29/2002	9,949	N/A	5.5	1.0	1.21	0.57	<140	56	4.9	44	20.5	Surveyed depth 13.49 ft. below original grade.
CFS-107-007	10/29/2002	9,346	N/A	6.8	1.0	1.94	0.418	838	**682**	6.3	705	280	Surveyed depth 6.30 ft. below original grade.
CFS-107-008	10/29/2002	8,986	N/A	14.1	0.8	11.2	0.437	<180	199	4.1	154	107	Surveyed depth 1.47 ft. below original grade.
CFS-107-009	10/29/2002	8,497	N/A	8.5	0.7	2.84	0.367	<150	174	3.0	634	**463**	NYSDEC Split Sample. Surveyed depth 6.92 ft. below original grade.
CFS-107-010	10/29/2002	9,918	N/A	13.7	0.8	6.54	0.669	599	**462**	**15.3**	584	354	NYSDEC Split Sample. Surveyed depth 1.42 ft. below original grade.
CFS-107-Dup	10/29/2002	8,299	N/A	5.6	1.2	0.67	0.413	<150	<41	5.2	47.9	20.7	Duplicate of sample CFS-107-006. Surveyed depth 13.49 ft. below original grade.

DATA SUMMARY

Average values	7.94	0.97	2.59	0.48	818	341	5	482	310
Maximum Value	14.10	1.70	11.20	0.67	1,560	1,340	15	2,820	1,920
Minimum Value	4.80	0.70	0.26	0.28	273	50	2	10	7
Std Deviation	3.12	0.28	3.38	0.12	546	404	4	819	555
Median Value	6.90	1.00	1.21	0.46	719	187	5	144	107
AM Criteria	<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450

Notes:
1) Duplicate data was not used in averages
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) Data from USACE and NYSDEC split samples is not yet available
4) No historical Thorium observed in this unit.

Table 12
Colonie FUSRAP Site
FSS Unit #108

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium-238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-108-001	11/14/2002	7,444	NA	6.1	0.8	1.35	0.27	110	137	2.0	249	233	Surveyed depth below grade 8.8 ft.
CFS-108-002	11/14/2002	8,334	NA	10.2	0.5	4.70	0.21	150	140	2.7	185	152	Surveyed depth below grade 14.3 ft.
CFS-108-003	11/14/2002	7,247	NA	4.6	0.7	0.38	0.22	150	38	3.4	12.5	15.0	Surveyed depth below grade 11.0 ft.
CFS-108-004	11/14/2002	7,858	NA	4.8	1.2	0.69	0.36	150	245	2.9	225	219	Surveyed depth below grade 11.3 ft.
CFS-108-005	11/14/2002	6,291	NA	5.2	0.6	0.52	0.26	**10,600**	**12,300**	**9.3**	**7,910**	**8,020**	USACE QA Split Sample. NYSDEC QA Split Sample. Surveyed depth below grade 17.0 ft.
CFS-108-006	11/14/2002	7,582	NA	5.4	0.7	0.26	0.22	213	262	2.8	219	174	Surveyed depth below grade 12.4 ft.
CFS-108-007	11/14/2002	8,268	NA	9.0	0.9	4.40	0.18	140	36	1.6	13.7	6.0	CFS-108-Duplicate. Surveyed depth below grade 6.5 ft.
CFS-108-008	11/14/2002	9,222	NA	18.4	0.6	24.30	0.12	194	250	1.8	236	191	NYSDEC QA Split Sample. Surveyed depth below grade 4.8 ft.
CFS-108-009	11/14/2002	8,075	NA	7.7	0.6	0.52	0.14	150	56.6	2.0	34.4	25.6	Surveyed depth below grade 9.3 ft
CFS-108-010	11/14/2002	8,523	NA	6.8	1.1	2.40	0.18	140	47.4	1.9	31.6	17.1	Surveyed depth below grade 3.6 ft.
CFS-108-Dup	11/14/2002	7,569	NA	8.0	0.8	1.13	0.24	130	50.5	2.1	14.2	6.3	CFS-108-007. Surveyed depth below grade 6.5 ft.

DATA SUMMARY

Average values	7.82	0.77	3.95	0.22	1199.7	1351.2	3.0	911.6	905.3
Maximum Value	18.40	1.20	24.30	0.36	10600.0	12300.0	9.3	7910.0	8020.0
Minimum Value	4.60	0.50	0.26	0.12	110.0	36.0	1.6	12.5	6.0
Std Deviation	4.15	0.23	7.34	0.07	3303.1	3848.1	2.3	2461.0	2501.5
Median Value	6.45	0.70	1.02	0.21	150.0	138.5	2.4	202.0	163.0
AM Criteria	<35	<2.8	<35	<2.8	1912	450	7.4	1912	450

Notes:
1) Duplicate data was not used in averages
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) Data from USACE and NYSDEC split samples is not yet available
4) No historical Thorium observed in this unit.

Table 12
Colonie FUSRAP Site
FSS Unit #109

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium-238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-109-001	8/13/2003	8,622	N/A	6.2	1.1	0.86	0.09	<190	66	1.4	94	70	Elev.~220.6; Depth = 6.3'
CFS-109-002	8/13/2003	8,186	N/A	5.3	0.5	1.7	0.07	<160	<40	1.2	8.2	3.6	Elev.~220.4; Depth = 5.6'
CFS-109-003	8/13/2003	9,736	N/A	9.5	1.7	2.35	0.11	366	347	3.5	356	264	Elev.~217.5; Depth = 8.6' USACE Split
CFS-109-004	8/13/2003	10,665	N/A	12.2	1.2	7.72	0.06	<140	89	3.4	319	254	Elev.~212.4; Depth = 16.3' NYSDEC Split
CFS-109-005	8/13/2003	8,740	N/A	6.0	1.0	0.96	0.02	<160	<37	2.4	34	21	Elev.~213.0; Depth = 14.8'
CFS-109-006	8/13/2003	4,965	N/A	8.9	0.9	0.38	0.20	**18,900**	**21,300**	7.3	**23,400**	**23,000**	Elev.~212.4'; Depth = 14.2'
CFS-109-007	8/13/2003	10,671	N/A	6.8	1.2	0.65	0.18	1,770	**1,640**	6.4	**2,410**	**1,260**	Elev.~215.1'; Depth = 8.6'
CFS-109-007R	8/20/2003	9,780	N/A	5.8	1.0	0.23	0.05	< 180	< 36	4.1	43.8	40.7	Elev.~216.2'; Depth = 13.7'
CFS-109-008	8/13/2003	8,955	N/A	6.8	0.8	1.1	0.14	<150	103	2.1	163	88	Elev.~218.3; Depth = 8.3' USACE Split
CFS-109-009	8/13/2003	9,744	N/A	17.8	1.4	16.9	0.22	659	**606**	10.5	895	**630**	Elev.~221.0'; Depth = 2.4' NYSDEC Split
CFS-109-010	8/13/2003	9,396	N/A	7.4	1.2	5.7	0.16	<140	< 36	2.6	125	84	Elev.~215.3; Depth =8.2'
CFS-109-Dup	8/13/2003	5,022	N/A	5.6	0.7	1.25	0.29	**29,400**	**32,500**	7.7	**25,400**	**22,200**	Duplicate of CFS-109-006

DATA SUMMARY

Average values	8.59	1.08	3.79	0.11	< 2,264	< 2,426	3.9	2,544	2,445
Maximum Value	17.8	1.7	16.9	0.22	18,900	21,300	11	23,400	23,000
Minimum Value	5.30	0.50	0.23	0.02	< 140	< 36	1.2	8.2	3.6
Std Deviation	3.86	0.33	5.22	0.07	10,617	8,599	2.9	7,333	7,225
Median Value	7.10	1.05	1.41	0.10	659	225	3.0	144	86
AM Criteria	<35	<2.8	<35	<2.8	1912	450	7.4	1912	450

Notes:
1) Duplicate data and original 007 sample were not used in averages
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) Data from USACE and NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #110

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium-238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-110-001	4/23/2003	8,353	Note 4	5.6	0.6	0.292	0.105	180	90	1.1	5.9	16	Sample depth = 4.7'
CFS-110-002	4/23/2003	7,382	Note 4	4.2	0.7	0.564	0.172	632	**584**	0.8	353	287	USACE and NYSDEC Split Sample depth = 5.0'
CFS-110-003	4/23/2003	8,820	Note 4	4.7	0.6	0.321	0.270	150	52	1.6	24	39	Sample depth = 4.6'
CFS-110-004	4/23/2003	8,866	Note 4	7.1	0.9	0.345	0.125	748	**878**	2.1	583	**511**	Ave. of CFS-110-004,-007 and -003 is 218 mg/kg; Sample depth = 4.2'
CFS-110-005	4/23/2003	7,691	Note 4	5.4	0.9	0.264	0.109	110	32	0.7	3.8	15	Sample depth = 5.7'
CFS-110-006	4/23/2003	7,995	Note 4	6.3	0.7	0.406	0.13	180	178	1.2	242	239	Sample depth = 3.9'
CFS-110-007	4/23/2003	8,093	Note 4	8.2	1.1	0.318	0.152	150	59	2.0	91	104	USACE Split, Sample depth = 4.5'
CFS-110-008	4/23/2003	8,351	Note 4	4.9	0.8	0.322	0.0515	150	120	5.7	421	392	Duplicate data point (CFS-110-DUP); Sample depth = 1.4'
CFS-110-009	4/23/2003	7,882	Note 4	5.6	1.1	0.297	0.138	130	54	2.6	32	50	NYSDEC Split, Sample depth = 1.3'
CFS-110-010	4/23/2003	9,047	Note 4	6.6	1.3	0.497	0.116	150	98	5.5	90	138	Sample depth = 1.6'
CFS-110-011	4/23/2003	8,019	Note 4	7.0	0.7	0.327	0.0825	130	35	1.1	5.6	16	Sample depth = 4.3'
CFS-110-Dup	4/23/2003	8,388	Note 4	6.3	1.1	0.615	0.0676	140	73	4.8	55	66	duplicate from CFS-110-008, Sample depth =1.4'

DATA SUMMARY

Average values	5.96	0.85	0.36	0.13	246	198	2.2	168	164	Average values
Maximum Value	8.20	1.30	0.56	0.27	748	878	5.7	583	**511**	Maximum Value
Minimum Value	4.20	0.60	0.26	0.05	110	32	0.7	4	15	Minimum Value
Std Deviation	1.20	0.23	0.09	0.06	222	275	1.8	202	171	Std Deviation
Median Value	5.60	0.80	0.32	0.13	150	90	1.6	90	104	Median Value
AM Criteria	<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes:
1) Duplicate data was not used in averages
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) Data from USACE and NYSDEC split samples is not yet available
4) No historical Thorium observed in this unit.
5) The USACE Splits were from CFS-110-002 and CFS-110-007
6) The NYSDEC Splits were from CFS-110-002 and CFS-110-009

Table 12
Colonie FUSRAP Site
FSS Unit #111

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium-238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-111-001	7/17/2003	7,028	N/A	7.8	1.6	0.556	0.130	<150	38	2.4	9.7	5.3	
CFS-111-002	7/17/2003	7,959	N/A	12.2	0.9	6.340	0.059	449	85	3.3	81	63	
CFS-111-003	7/17/2003	7,544	N/A	9.6	0.8	2.120	0.082	<160	343	4.7	496	369	
CFS-111-004	7/17/2003	6,945	N/A	6.5	0.8	0.317	0.135	<130	<40	2.2	9.1	7.1	USACE split
CFS-111-005	7/17/2003	6,907	N/A	7.6	0.7	0.189	0.042	<270	<34	1.4	4.9	7.4	
CFS-111-006	7/17/2003	6,840	N/A	5.6	0.5	0.289	0.094	<140	<36	2.5	6.7	2.7	
CFS-111-007	7/17/2003	6,937	N/A	5.9	0.5	0.204	0.031	<140	<36	2.0	6.0	4.5	NYSDEC split
CFS-111-008	7/17/2003	7,080	N/A	3.8	0.4	0.707	0.036	<140	<36	2.0	6.0	5.3	USACE split
CFS-111-009	7/17/2003	6,419	N/A	6.3	0.7	0.152	0.059	<120	<29	1.3	5.6	2.6	NYSDEC split
CFS-111-010	7/17/2003	6,761	N/A	8.3	0.5	0.139	0.059	<130	<32	1.8	10	3.3	
CFS-111-011	7/17/2003	7,384	N/A	6.6	0.6	2.390	0.035	<150	49	1.7	42	35	
CFS-111-012	7/17/2003	7,064	N/A	10.8	0.6	0.693	0.075	<130	<35	1.4	9.3	4.1	
CFS-111-DUP	7/17/2003	6,861	N/A	6.0	0.8	0.236	0.055	<140	<48	1.4	6.0	7.9	Duplicate of CFS-111-005

DATA SUMMARY

Average values	7.6	0.7	1.102	0.069	< 176	< 66	2.2	57	42	Average values
Maximum Value	12.2	1.6	6.3	0.14	449	343	4.7	496	369	Maximum Value
Minimum Value	3.8	0.4	0.1	0.03	< 130	< 29	1.3	5	3	Minimum Value
Std Deviation	2.4	0.3	1.7	0.03	#DIV/0!	144	1.0	140	104	Std Deviation
Median Value	7.1	0.7	0.4	0.06	449	67	2.0	9	5	Median Value
AM Criteria	<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes:

1) Duplicate data was not used in averages
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) Data from USACE and NYSDEC split samples is not yet available
4) No historical Thorium observed in this unit.
5) The USACE Splits were from CFS-111-004 and CFS-111-008
6) The NYSDEC Splits were from CFS-111-007 and CFS-111-009

Table 12
Colonie FUSRAP Site
FSS Unit #112

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium-238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-112-001	9/16/2003	6,727	N/A	7.1	0.7	0.11	0.088	435	<64	0.4	9.7	4.6	
CFS-112-002	9/16/2003	7,044	N/A	6.4	0.9	0.32	0.025	334	<48	1.3	14	11	
CFS-112-003	9/16/2003	7,368	N/A	8.1	0.7	0.59	0.11	318	77	1.2	227	177	USACE split
CFS-112-004	9/16/2003	6,988	N/A	5.3	0.7	0.35	0.070	<280	<78	1.3	21	15	
CFS-112-005	9/16/2003	7,556	N/A	5.4	0.8	0.23	0.019	732	<57	1.7	2.8	3.3	NYSDEC split
CFS-112-006	9/16/2003	7,440	N/A	5.5	0.8	0.23	0.053	315	<51	1.5	9.3	5.3	USACE split
CFS-112-007	9/16/2003	7,064	N/A	4.6	0.6	0.44	0.15	222	<48	1.1	26	14	NYSDEC split
CFS-112-008	9/16/2003	7,204	N/A	6.6	1.6	1.88	0.032	192	56	1.5	37	18	
CFS-112-009	9/16/2003	7,226	N/A	7.7	1.0	1.92	0.12	271	285	1.4	361	241	
CFS-112-DUP	9/16/2003	6,579	N/A	7.3	0.8	0.70	0.039	<190	<45	0.9	28	28	Duplicate of CFS-112-007

DATA SUMMARY

Average values	6.3	0.9	0.68	0.071	< 344	< 85	1.3	79	54	Average values
Maximum Value	8.1	1.6	1.92	0.15	732	285	1.7	361	241	Maximum Value
Minimum Value	4.6	0.6	0.11	0.019	192	< 48	0.4	3	3	Minimum Value
Std Deviation	1.2	0.3	0.67	0.046	170	127	0.4	127	89	Std Deviation
Median Value	6.4	0.8	0.35	0.070	317	77	1.3	21	14	Median Value
AM Criteria	<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes:
1) Duplicate data was not used in averages
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) Data from USACE and NYSDEC split samples is not yet available
4) No historical Thorium observed in this unit.
5) The USACE Splits were from CFS-112-003 and CFS-112-006
6) The NYSDEC Splits were from CFS-112-005 and CFS-112-007

Table 12
Colonie FUSRAP Site
FSS Unit #113

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium-238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-113-001	10/23/2003	7,073	N/A	5.5	0.8	0.23	0.13	< 140	< 37	2.0	32	37	
CFS-113-002	10/23/2003	7,729	N/A	7.7	1.2	0.66	0.26	< 210	145	2.5	233	156	NYSDEC split
CFS-113-003	10/23/2003	6,815	N/A	9.3	1.1	0.57	0.11	285	170	2.6	161	216	
CFS-113-004	10/23/2003	7,658	N/A	6.7	0.8	0.43	0.12	192	56	3.2	66	67	USACE split
CFS-113-005	10/23/2003	6,420	N/A	9.0	1.0	0.23	0.13	< 150	< 38	1.7	1.3	4.5	
CFS-113-006	10/23/2003	8,578	N/A	7.9	1.2	0.29	0.10	204	59	5.2	85	76	
CFS-113-007	10/23/2003	7,849	N/A	6.0	1.0	0.20	0.18	< 180	< 42	4.4	12	16	USACE split
CFS-113-008	10/23/2003	6,820	N/A	5.1	1.3	0.38	0.075	< 150	< 39	3.1	108	181	
CFS-113-009	10/23/2003	7,815	N/A	10.0	1.7	3.41	0.17	< 140	< 38	2.3	16	12	
CFS-113-010	10/23/2003	7,131	N/A	7.7	0.6	0.14	0.13	< 160	< 37	1.3	5.8	10	NYSDEC split
CFS-113-DUP	10/23/2003	7,842	N/A	5.8	0.7	0.37	0.21	311	150	2.6	156	158	Duplicate of CFS-113-002
							DATA SUMMARY						
Average values				7.5	1.1	0.65	0.141	< 181	< 66.1	2.8	72	78	Average values
Maximum Value				10.0	1.7	3.41	0.26	285	170	5.2	233	216	Maximum Value
Minimum Value				5.1	0.6	0.14	0.075	< 140	< 37	1.3	1.3	4.5	Minimum Value
Std Deviation				1.7	0.3	0.98	0.052	45	51	1.2	77	79	Std Deviation
Median Value				7.7	1.1	0.34	0.130	170	42	2.6	49	52	Median Value
AM Criteria				<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes:

1) Duplicate data was not used in averages
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) No historical Thorium observed in this unit.
4) The USACE Splits were from CFS-113-004 and CFS-113-007
5) The NYSDEC Splits were from CFS-113-002 and CFS-113-010
6) Data from USACE and NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #114

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium-238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-114-001	6/15/2004	8,520	N/A	13.4	1.6	0.1	0.42	210	49	1.5	5.7	2.4	
CFS-114-002	6/15/2004	7,944	N/A	6.4	0.9	0.4	0.46	264	54	1.3	12.1	4.6	
CFS-114-003	6/15/2004	9,678	N/A	11.1	1.0	3.1	0.53	220	52	3.8	20.4	6.5	NYSDEC split
CFS-114-004	6/15/2004	8,621	N/A	8.2	1.6	3.3	0.62	2,490	67	3.4	44.8	29.9	
CFS-114-005	6/15/2004	8,089	N/A	4.7	0.6	0.6	0.47	220	53	1.2	5.0	2.3	
CFS-114-006	6/15/2004	7,483	N/A	7.8	0.7	0.3	0.45	220	50	1.2	6.2	2.1	
CFS-114-007	6/15/2004	8,651	N/A	15.2	1.4	3.8	0.49	190	60	1.6	16.5	13.5	USACE split
CFS-114-008	6/15/2004	8,400	N/A	5.9	1.4	0.4	0.46	210	55	1.6	4.4	3.1	
CFS-114-009	6/15/2004	8,047	N/A	7.5	1.0	0.2	0.54	210	57	1.4	5.5	4.1	NYSDEC split
CFS-114-DUP	6/15/2004	9,743	N/A	9.4	0.9	2.7	0.58	240	59	3.3	19.0	6.7	Duplicate of CFS-114-003
							DATA SUMMARY						
			Average values	8.9	1.1	1.36	0.493	470.44	55.22	1.89	13.40	7.61	Average values
			Maximum Value	15.2	1.6	3.8	0.620	2,490	67	3.8	44.8	29.9	Maximum Value
			Minimum Value	4.7	0.6	0.1	0.420	190	49	1.2	4.4	2.1	Minimum Value
			Std Deviation	3.6	0.4	1.55	0.061	757.59	5.56	0.99	13.09	9.08	Std Deviation
			Median Value	7.8	1.0	0.40	0.470	220.00	54.00	1.50	6.20	4.10	Median Value
			AM Criteria	<35	<2.8	<35	<2.8	470	450	7.4	1912.0	450.0	AM Criteria

Notes:
1) Duplicate data was not used in averages
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) No historical Thorium observed in this unit.
4) The USACE Split is from CFS-114-007
5) The NYSDEC Splits were from CFS-114-003 and CFS-114-009
6) Data from USACE and NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #115

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium-238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-115-001	8/4/2004	7,767	N/A	7.5	1.0	0.6	0.5	609	< 63	1.7	12.0	7.4	NYSDEC Split
CFS-115-002	8/4/2004	7,526	N/A	7.4	1.1	0.3	0.5	< 220	< 55	1.3	7.7	2.4	
CFS-115-003	8/4/2004	7,935	N/A	6.9	0.7	0.2	0.3	< 210	< 56	1.2	9.9	2.6	
CFS-115-004	8/4/2004	8,375	N/A	6.1	0.8	0.4	0.8	< 190	< 56	1.9	7.3	2.5	
CFS-115-005	8/4/2004	8,092	N/A	6.6	1.7	1.2	0.6	< 210	< 48	1.8	8.5	3.4	USACE Split
CFS-115-006	8/4/2004	8,593	N/A	6.8	1.6	0.3	0.5	< 190	< 48	1.6	9.5	2.8	
CFS-115-007	8/4/2004	7,998	N/A	6.5	1.1	0.9	0.3	< 210	< 57	1.3	11.4	5.7	
CFS-115-008	8/4/2004	11,139	N/A	24.0	0.9	19.5	0.4	< 210	< 46	1.6	6.4	2.0	Duplicate
CFS-115-009	8/4/2004	7,755	N/A	8.8	1.0	0.3	0.5	< 190	< 51	2.1	7.7	2.5	
CFS-115-010	8/4/2004	8,351	N/A	11.8	0.9	3.1	0.4	< 250	< 59	1.2	7.5	2.3	
CFS-115-011	8/4/2004	8,527	N/A	7.0	1.3	0.3	0.4	< 270	< 56	1.6	8.3	2.5	NYSDEC Split
CFS-115-012	8/4/2004	8,346	N/A	8.8	0.9	2.9	0.7	< 270	< 71	1.9	138.0	95.2	
CFS-115-DUP	8/4/2004	11,083	N/A	28.4	1.5	19.7	0.5	< 210	< 47	1.6	6.5	2.0	CFS-115-008 Duplicate
DATA SUMMARY													
Average values				9.0	1.1	2.50	0.497	< 252	< 56	1.60	19.52	10.94	Average values
Maximum Value				24.0	1.7	19.5	0.750	609	< 71	2.1	138.0	95.2	Maximum Value
Minimum Value				6.1	0.7	0.2	0.300	< 190	< 46	1.2	6.4	2.0	Minimum Value
Std Deviation				5.0	0.3	5.45	0.150	116	7.0	0.30	37.35	26.58	Std Deviation
Median Value				7.2	1.0	0.54	0.490	< 210	< 56	1.60	8.40	2.55	Median Value
AM Criteria				<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes:

1) Duplicate data was not used in averages
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) No historical Thorium observed in this unit.
4) The USACE Split is from CFS-115-005
5) The NYSDEC Splits were from CFS-115-001 and CFS-115-011
6) Data from USACE and NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #116

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium 238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-116-001	11/9/2004	7,332	n/a	6.1	0.9	0.43	0.67	< 160	< 49	1.6	20.3	14.6	
CFS-116-002	11/9/2004	6,559	n/a	8.0	0.9	0.31	0.73	< 250	< 45	1.4	6.3	2.9	NYSDEC Split Sample
CFS-116-003	11/9/2004	7,191	n/a	13.2	0.7	0.73	0.73	< 220	< 49	1.2	21.8	9.8	USACE Split Sample
CFS-116-004	11/9/2004	6,635	n/a	5.6	0.6	0.28	0.71	< 210	< 59	1.8	5.9	2.6	
CFS-116-005	11/9/2004	7,110	n/a	7.0	0.8	0.44	0.90	< 250	< 52	2.5	6.7	2.4	
CFS-116-006	11/9/2004	7,039	n/a	6.4	1.3	0.39	0.59	< 270	< 62	1.4	5.8	2.2	
CFS-116-007	11/9/2004	7,247	n/a	7.1	0.8	0.70	0.61	< 220	< 57	1.7	11.7	6.1	NYSDEC Split Sample
CFS-116-008	11/9/2004	6,881	n/a	5.6	0.8	0.39	0.81	< 210	< 49	2.1	18.0	14.5	
CFS-116-009	11/9/2004	6,913	n/a	7.2	0.6	0.20	0.30	< 180	< 50	2.2	5.9	2.6	
CFS-116-DUP	11/9/2004	7,112	n/a	6.7	0.8	0.33	0.62	< 190	< 54	0.9	4.4	1.6	Duplicate of -006
DATA SUMMARY													
Average values				7.4	0.8	0.43	0.67	< 219	< 52	1.8	11.4	6.4	Average values
Maximum Value				13.2	1.3	0.73	0.90	< 270	< 62	2.5	21.8	14.6	Maximum Value
Minimum Value				5.6	0.6	0.20	0.30	< 160	< 45	1.2	5.8	2.2	Minimum Value
Std Deviation				2.3	0.2	0.18	0.17	35	5.6	0.4	6.8	5.2	Std Deviation
Median Value				7.0	0.8	0.39	0.71	< 220	< 50	1.7	6.7	2.9	Median Value
AM Criteria				<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes:

1) Duplicate data was not used in averages
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) No historical Thorium observed in this unit.
4) The USACE Split is from CFS-116-003
5) The NYSDEC Splits were from CFS-116-002 and CFS-116-007
6) Data from USACE and NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #117

Sample ID	Date Collected	FIDLER Static Count (cpm)	Spa 3 2*2 Static Count (cpm)	On-Site HPGe Result Uranuim-238 (pCi/g)	On-Site HPGe Result Thorium-232 (pCi/g)	Off-Site Alpha Spec Uranium-238 (pCi/g)	Off-Site Alpha Spec Thorium-232 (pCi/g)	On-Site Metals (XRF)		Off-Site TAL Metals			Notes
								Copper (ppm)	Lead (ppm)	Arsenic (ppm)	Copper (ppm)	Lead (ppm)	
CFS-117-001	11/21/2005	8,202	n/a	6.0	1.7	0.20	0.70	330	139	1.5	49.4	34.4	
CFS-117-002	11/21/2005	8,037	n/a	5.1	0.7	0.28	0.50	< 270	< 64	2.3	6.6	2.9	NYSDEC Split Sample
CFS-117-003	11/21/2005	8,329	n/a	7	0.9	0.90	0.61	< 340	< 91	1.7	196	240	
CFS-117-004	11/21/2005	8,172	n/a	12.5	0.8	2.25	0.56	< 370	189	1.3	152	142	
CFS-117-005	11/21/2005	8,071	n/a	5.1	1.4	0.37	0.61	< 270	< 76	0.8	2.8	3.5	
CFS-117-006	11/21/2005	8,351	n/a	6.3	1.6	0.46	0.73	< 310	< 82	0.9	8.2	7.5	USACE Split Sample
CFS-117-007	11/21/2005	7,602	n/a	4.9	1.3	0.40	0.59	< 250	< 54	0.9	4.3	4.9	NYSDEC Split Sample
CFS-117-008	11/21/2005	7,423	n/a	5.6	1.0	0.27	0.36	< 270	< 71	1.6	11.9	9.4	USACE Split Sample
CFS-117-009	11/21/2005	8,399	n/a	6.9	1.0	0.99	0.55	< 300	132	2.1	183	104	
CFS-117-DUP	11/21/2005	8,162	n/a	8.1	0.9	0.22	0.44	< 360	< 55	0.7	16.5	11.9	Duplicate of -005; QC Static Count 001

DATA SUMMARY

Average values	6.6	1.2	0.68	0.58	< 301	< 100	1.5	68.2	61.0	Average values
Maximum Value	12.5	1.7	2.25	0.73	< 370	189	2.3	196.0	240.0	Maximum Value
Minimum Value	4.9	0.7	0.20	0.36	< 250	< 54	0.8	2.8	2.9	Minimum Value
Std Deviation	2.3	0.4	0.65	0.11	40	44.3	0.5	83.5	84.0	Std Deviation
Median Value	6.0	1.0	0.40	0.59	< 300	< 82	1.5	11.9	9.4	Median Value
AM Criteria	<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes:

1) Duplicate data was not used in calculations
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) No historical Thorium observed in this unit.
4) The USACE Split is from CFS-117-006 and CFS-117-008.
5) The NYSDEC Splits were from CFS-117-002 and CFS-117-007.
6) Data from USACE and NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #118

Sample ID	Date Collected	FIDLER Static Count (cpm)	Spa 3 2*2 Static Count (cpm)	On-Site HPGe Result Uranuim-238 (pCi/g)	On-Site HPGe Result Thorium-232 (pCi/g)	Off-Site Alpha Spec Uranium-238 (pCi/g)	Off-Site Alpha Spec Thorium-232 (pCi/g)	On-Site Metals (XRF)		Off-Site TAL Metals			Notes
								Copper (ppm)	Lead (ppm)	Arsenic (ppm)	Copper (ppm)	Lead (ppm)	
CFS-118-001	3/21/2006	8,239	N/A	10.2	1.1	0.44	0.58	< 280	< 75	1.8	5.6	3.8	
CFS-118-002	3/21/2006	7,521	N/A	6.3	1.3	0.46	0.39	< 240	< 68	1.5	7.3	4.1	
CFS-118-003	3/21/2006	8,103	N/A	7.6	1.7	1.01	1.30	< 240	< 68	1.5	21	21	NYSDEC Split Sample
CFS-118-004	3/21/2006	7,287	N/A	10.9	1.4	0.42	0.63	< 220	< 56	1.7	7	5	USACE Split Sample
CFS-118-005	3/21/2006	7,828	N/A	7.3	1.0	0.31	0.58	< 250	< 70	1.6	6.3	2.5	NYSDEC Split Sample
CFS-118-006	3/21/2006	8,420	N/A	6.1	1.3	0.34	0.71	< 250	< 59	1.8	17.4	10.6	
CFS-118-007	3/21/2006	7,653	N/A	5.4	1.0	0.25	0.49	< 330	< 72	1.2	4.8	3.3	
CFS-118-008	3/21/2006	7,824	N/A	9.6	1.1	0.27	0.43	< 250	< 68	2.0	7.9	3.4	
CFS-118-009	3/21/2006	7,849	N/A	7.3	1.2	0.37	0.63	< 280	< 78	1.3	8	4	NYSDEC Split Sample
CFS-118-010	3/21/2006	7,336	N/A	6.5	1.1	0.69	0.24	< 250	< 79	1.0	16	11	
CFS-118-011	3/21/2006	7,770	N/A	5.9	0.4	0.34	0.51	< 280	< 84	1.4	6	3	
CFS-118-DUP	3/21/2006		N/A	4.9	1.4	0.36	0.55	< 250	< 75	1.7	5.9	3.9	Duplicate of 001
DATA SUMMARY													
Average values				7.6	1.1	0.45	0.59	< 261	< 71	1.5	9.6	6.5	Average values
Maximum Value				10.9	1.7	1.01	1.30	< 330	< 84	2.0	20.9	20.7	Maximum Value
Minimum Value				5.4	0.4	0.25	0.24	< 220	< 56	1.0	4.8	2.5	Minimum Value
Std Deviation				1.9	0.3	0.22	0.27	30	8.3	0.3	5.6	5.9	Std Deviation
Median Value				7.3	1.1	0.37	0.58	< 250	< 70	1.5	7.3	3.8	Median Value
AM Criteria				<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes:

1) Duplicate data was not used in calculations
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) No historical Thorium observed in this unit.
4) The USACE Split is from CFS-118-004.
5) The NYSDEC Splits were from CFS-118-003, CFS-118-005 and CFS-118-009.
6) Data from USACE and NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #119

Sample ID	Date Collected	FIDLER Static Count (cpm)	Spa 3 2*2 Static Count (cpm)	On-Site HPGe Result Uranuim-238 (pCi/g)	On-Site HPGe Result Thorium-232 (pCi/g)	Off-Site Alpha Spec Uranium-238 (pCi/g)	Off-Site Alpha Spec Thorium-232 (pCi/g)	On-Site Metals (XRF)		Off-Site TAL Metals			Notes
								Copper (ppm)	Lead (ppm)	Arsenic (ppm)	Copper (ppm)	Lead (ppm)	
CFS-119-001	6/14/2006	7,654	N/A	5.8	0.8	0.40	0.59	< 270	< 51	2.1	9.1	4.8	NYSDEC Split Sample
CFS-119-002	6/14/2006	8,010	N/A	9.7	0.7	0.79	0.44	< 300	< 67	1.2	10.4	7.6	
CFS-119-003	6/14/2006	7,814	N/A	12	0.7	2.27	0.86	374	< 73	1.3	31.2	20.0	
CFS-119-004	6/14/2006	8,240	N/A	6.6	1.0	1.61	0.48	< 460	472	4.3	1040.0	**615.0**	
CFS-119-005	6/14/2006	10,758	N/A	13.2	0.7	6.66	0.48	< 280	< 74	3.4	18.2	7.7	
CFS-119-006	6/14/2006	8,763	N/A	18.6	1.0	8.20	0.59	< 310	< 96	1.8	24.0	10.9	
CFS-119-007	6/14/2006	7,362	N/A	5.4	0.8	0.77	0.39	< 270	< 56	3.9	13.5	6.5	
CFS-119-008	6/14/2006	7,449	N/A	6.7	0.9	1.35	0.51	< 270	< 76	0.6	11.3	2.8	USACE Split Sample
CFS-119-009	6/14/2006	7,338	N/A	7.9	0.6	0.69	0.41	< 370	< 81	0.6	61.4	56.3	NYSDEC Split Sample
CFS-119-DUP	6/14/2006	7,362	N/A	7.9	0.8	1.27	0.60	< 340	< 51	1.0	13.2	3.3	Duplicate was Sample 008
DATA SUMMARY													
Average values				9.5	0.8	2.53	0.53	< 323	< 116	2.1	135.5	81.3	Average values
Maximum Value				18.6	1.0	8.20	0.86	< 460	472	4.3	1040.0	**615.0**	Maximum Value
Minimum Value				5.4	0.6	0.40	0.39	< 270	< 51	0.6	9.1	2.8	Minimum Value
Std Deviation				4.4	0.1	2.86	0.14	66	134.1	1.4	339.6	200.8	Std Deviation
Median Value				7.9	0.8	1.35	0.48	< 300	< 74	1.8	18.2	7.7	Median Value
AM Criteria				<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes:
1) Duplicate data was not used in calculations
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) No historical Thorium observed in this unit.
4) The USACE Split is from CFS-119-008.
5) The NYSDEC Splits were from CFS-119-001 and CFS-119-009.
6) Data from USACE and NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #120

Sample ID	Date Collected	FIDLER Static Count (cpm)	Spa 3 2*2 Static Count (cpm)	On-Site HPGe Result Uranuim-238 (pCi/g)	On-Site HPGe Result Thorium-232 (pCi/g)	Off-Site Alpha Spec Uranium-238 (pCi/g)	Off-Site Alpha Spec Thorium-232 (pCi/g)	On-Site Metals (XRF)		Off-Site TAL Metals			Notes
								Copper (ppm)	Lead (ppm)	Arsenic (ppm)	Copper (ppm)	Lead (ppm)	
CFS-120-001	7/7/2006	6,926	N/A	9.2	0.6	0.43	0.35	< 270	< 70	1.7	12.9	10.5	NYSDEC Split Sample
CFS-120-002	7/7/2006	7,528	N/A	11.1	0.6	0.52	0.39	< 390	< 82	1.4	27.4	15.8	USACE Split Sample
CFS-120-003	7/7/2006	6,923	N/A	6.7	0.6	0.81	0.40	< 330	< 74	2.7	33.1	28.4	
CFS-120-004	7/7/2006	7,907	N/A	8.4	0.8	0.37	0.71	< 370	< 66	1.4	7.4	3.9	
CFS-120-005	7/7/2006	7,545	N/A	7.6	0.8	0.58	0.47	< 250	< 64	1.6	14.7	5.1	NYSDEC Split Sample
CFS-120-006	7/7/2006	7,500	N/A	7.8	1.2	0.27	0.36	< 330	< 71	0.7	8.0	2.9	NYSDEC Split Sample
CFS-120-007	7/7/2006	7,684	N/A	7.3	0.8	1.00	0.57	< 270	< 76	1.6	34.5	27.2	
CFS-120-008	7/7/2006	7,958	N/A	6.5	1.2	0.45	0.69	< 280	< 89	2.3	14.0	8.2	
CFS-120-009	7/7/2006	7,680	N/A	4.7	0.7	0.28	0.38	< 360	< 63	1.2	8.6	6.8	
CFS-120-DUP	7/7/2006		N/A	6.4	0.7	0.39	0.64	< 300	< 64	0.6	7.6	2.5	Duplicate of 006
DATA SUMMARY													
Average values				7.7	0.8	0.52	0.48	< 317	< 73	1.6	17.8	12.1	Average values
Maximum Value				11.1	1.2	1.00	0.71	< 390	< 89	2.7	34.5	28.4	Maximum Value
Minimum Value				4.7	0.6	0.27	0.35	< 250	< 63	0.7	7.4	2.9	Minimum Value
Std Deviation				1.8	0.2	0.24	0.14	51	8.6	0.6	10.9	9.7	Std Deviation
Median Value				7.6	0.8	0.45	0.40	< 330	< 71	1.6	14.0	8.2	Median Value
AM Criteria				<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes:

1) Duplicate data was not used in calculations
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) No historical Thorium observed in this unit.
4) The USACE Split is from CFS-120-002.
5) The NYSDEC Splits were from CFS-120-001, CFS-120-005 and CFS-120-006.
6) Data from USACE and NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #121

Sample ID	Date Collected	FIDLER Static Count (cpm)	Spa 3 2*2 Static Count (cpm)	On-Site HPGe Result Uranuim-238 (pCi/g)	On-Site HPGe Result Thorium-232 (pCi/g)	Off-Site Alpha Spec Uranium-238 (pCi/g)	Off-Site Alpha Spec Thorium-232 (pCi/g)	On-Site Metals (XRF)		Off-Site TAL Metals			Notes
								Copper (ppm)	Lead (ppm)	Arsenic (ppm)	Copper (ppm)	Lead (ppm)	
CFS-121-001	7/20/2006	8,315	N/A	6.5	0.7	1.8	0.6	< 340	< 72	2.4	21.4	13.2	
CFS-121-002	7/20/2006	7,043	N/A	6.4	0.7	1.6	0.5	< 270	< 63	0.7	12.9	8.3	NYSDEC Split Sample
CFS-121-003	7/20/2006	8,983	N/A	10.3	0.7	9.0	0.4	483	< 110	4.4	142.0	115.0	NYSDEC Split Sample
CFS-121-004	7/20/2006	11,106	N/A	35.0	1.1	25.6	0.7	421	< 84	1.6	19.1	11.6	
CFS-121-005	7/20/2006	8,762	N/A	6.4	0.9	1.6	0.6	< 250	< 83	2.7	13.6	3.6	NYSDEC Split Sample
CFS-121-006	7/20/2006	8,369	N/A	6.8	0.9	1.4	0.7	< 370	< 85	1.0	11.9	7.7	
CFS-121-007	7/20/2006	8,101	N/A	6.6	1.4	0.6	0.5	< 400	< 53	0.2	8.5	5.6	USACE Split Sample
CFS-121-008	7/20/2006	7,899	N/A	7.3	1.0	2.1	1.0	< 360	< 78	0.9	18.3	14.0	
CFS-121-009	7/20/2006	8,523	N/A	8.9	0.8	4.5	0.4	< 400	< 120	1.3	450.0	173.0	
CFS-121-010	7/20/2006	7,847	N/A	11.3	0.7	3.1	0.5	< 250	< 71	1.2	37.7	23.2	
CFS-121-DUP	7/20/2006	7,898	N/A	9.5	1.5	2.5	0.4	< 340	< 69	0.8	22.0	15.9	Duplicate was 010

DATA SUMMARY

Average values	10.6	0.9	5.12	0.59	< 354	< 82	1.6	73.5	37.5	Average values
Maximum Value	35.0	1.4	25.60	0.95	483	< 120	4.4	450.0	173.0	Maximum Value
Minimum Value	6.4	0.7	0.62	0.41	< 250	< 53	0.2	8.5	3.6	Minimum Value
Std Deviation	8.8	0.2	7.59	0.17	78	20.2	1.2	138.1	58.0	Std Deviation
Median Value	7.1	0.9	1.92	0.56	< 365	< 81	1.3	18.7	12.4	Median Value
AM Criteria	<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes: 1) Duplicate data was not used in calculations
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column.
3) No historical Thorium observed in this unit.
4) The USACE Split is from CFS-121-007.
5) The NYSDEC Splits were from CFS-121-002, CFS-121-003 and CFS-121-005.
6) Data from USACE and NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #122

Sample ID	Date Collected	FIDLER Static Count (cpm)	Spa 3 2*2 Static Count (cpm)	On-Site HPGe Result Uranuim-238 (pCi/g)	On-Site HPGe Result Thorium-232 (pCi/g)	Off-Site Alpha Spec Uranium-238 (pCi/g)	Off-Site Alpha Spec Thorium-232 (pCi/g)	On-Site Metals (XRF)		Off-Site TAL Metals			Notes
								Copper (ppm)	Lead (ppm)	Arsenic (ppm)	Copper (ppm)	Lead (ppm)	
CFS-122-001	8/2/2006	8,065	N/A	6.2	1.1	1.5	0.7	< 400	< 85	0.9	6.5	5.3	
CFS-122-002	8/2/2006	7,725	N/A	11.3	0.6	0.4	0.7	< 340	< 84	2.0	1.9	2.9	USACE Split
CFS-122-003	8/2/2006	8,924	N/A	7.9	0.8	0.3	0.5	< 340	< 78	1.2	1.3	2.3	NYSDEC Split
CFS-122-004	8/2/2006	8,244	N/A	5.8	1.1	0.6	0.7	< 220	< 57	2.3	9.3	5.3	
CFS-122-005	8/2/2006	7,512	N/A	6.9	0.7	0.3	0.4	< 280	< 63	0.8	3.7	2.1	NYSDEC Split
CFS-122-006	8/2/2006	8,078	N/A	9.5	1.2	0.9	0.5	< 370	< 110	1.7	67.9	48.2	
CFS-122-007	8/2/2006	9,790	N/A	6.4	1.6	0.7	1.1	< 310	< 82	4.5	27.6	17.9	
CFS-122-008	8/2/2006	9,956	N/A	6.9	1.1	0.7	0.8	< 430	< 91	4.9	22.9	12.3	
CFS-122-009	8/2/2006	9,834	N/A	9.8	1.2	0.6	0.8	< 310	< 55	6.4	23.3	12.8	NYSDEC Split
CFS-122-DUP	8/2/2006	9,950	N/A	6.7	1.1	0.7	0.6	< 390	< 110	4.5	22.8	12.9	Duplicate of 008

DATA SUMMARY

Average values	7.9	1.0	0.7	0.7	< 333	< 78	2.8	18.3	12.1	Average values
Maximum Value	11.3	1.6	1.5	1.1	< 430	< 110	6.4	67.9	48.2	Maximum Value
Minimum Value	5.8	0.6	0.3	0.4	< 220	< 55	0.8	1.3	2.1	Minimum Value
Std Deviation	1.9	0.3	0.4	0.2	63	17.6	2.0	21.2	14.6	Std Deviation
Median Value	6.9	1.1	0.6	0.7	< 340	< 82	2.0	9.3	5.3	Median Value
AM Criteria	<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes:

1) Duplicate data was not used in calculations
2) Bold data indicates individual value above recommended soil clean-up goals. See notes column
3) No historical Thorium observed in this unit.
4) The USACE Split is from CFS-122-xxx
5) The NYSDEC Splits were from CFS-122-xxx, CFS-122-xxx and CFS-122-xxx.
6) Data from USACE and NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #123

Sample ID	Date Collected	FIDLER Static Count (cpm)	Spa 3 2*2 Static Count (cpm)	On-Site HPGe Result Uranuim-238 (pCi/g)	On-Site HPGe Result Thorium-232 (pCi/g)	Off-Site Alpha Spec Uranium-238 (pCi/g)	Off-Site Alpha Spec Thorium-232 (pCi/g)	On-Site Metals (XRF)		Off-Site TAL Metals			Notes
								Copper (ppm)	Lead (ppm)	Arsenic (ppm)	Copper (ppm)	Lead (ppm)	
CFS-123-001	9/20/2006	8,867	N/A	9.0	0.9	0.7	0.9	< 420	< 120	2.2	299	231	
CFS-123-002	9/20/2006	8,906	N/A	6.2	1.4	0.8	0.7	< 520	424	5.5	490	133	
CFS-123-003	9/20/2006	9,098	N/A	7.2	1.0	0.7	0.8	938	< 130	4.6	509	**451**	NYSDEC Split Sample
CFS-123-004	9/20/2006	9,437	N/A	9.7	1.2	0.7	0.8	< 330	< 98	6.2	26	11	
CFS-123-005	9/20/2006	9,174	N/A	6.5	1.2	1.6	0.6	855	< 150	5.7	161	116	NYSDEC Split Sample
CFS-123-006	9/20/2006	7,187	N/A	5.2	0.9	0.4	0.4	< 450	< 59	2.5	21	13	
CFS-123-007	9/20/2006	8,587	N/A	8.4	1.0	0.7	0.8	689	< 110	5.0	30	15	
CFS-123-008	9/20/2006	7,518	N/A	7.6	0.8	0.5	0.6	360	< 110	1.4	6	5	NYSDEC Split Sample
CFS-123-009	9/20/2006	8,944	N/A	4.9	1.2	1.8	0.9	< 540	255	4.1	442	261	USACE Split Sample
CFS-123-DUP	9/20/2006	8,971	N/A	7.5	1.4	1.5	0.6	954	241	4.8	894	310	Duplicate was 009

DATA SUMMARY

Average values	7.2	1.1	0.9	0.7	< 567	< 162	4.1	220	137	Average values
Maximum Value	9.7	1.4	1.83	0.91	938	424	6.2	509	451	Maximum Value
Minimum Value	4.9	0.8	0.4	0.4	< 330.0	< 59	1.4	6	5	Minimum Value
Std Deviation	1.7	0.2	0.5	0.2	215.8	112	1.7	216	153	Std Deviation
Median Value	7.2	1.0	0.7	0.8	< 520.0	< 120	4.6	161	116	Median Value
AM Criteria	<35	<2.8	<35	<2.8	1,912	450	7.4	1912	450	AM Criteria

Notes: 1) Duplicate data was not used in calculations
2) The USACE Split is from CFS-123-009.
3) The NYSDEC Splits were from CFS-123-003, CFS-123-005 and CFS-123-008.
4) No historical Thorium observed in this unit.
5) Data from USACE and NYSDEC split samples is not yet available

Table 12
Colonie FUSRAP Site
FSS Unit #124

Sample ID	Date Collected	FIDLER Static Count (cpm)	Spa 3 2*2 Static Count (cpm)	On-Site HPGe Result Uranuim-238 (pCi/g)	On-Site HPGe Result Thorium-232 (pCi/g)	Off-Site Alpha Spec Uranium-238 (pCi/g)	Off-Site Alpha Spec Thorium-232 (pCi/g)	On-Site Metals (XRF)		Off-Site TAL Metals			Notes
								Copper (ppm)	Lead (ppm)	Arsenic (ppm)	Copper (ppm)	Lead (ppm)	
CFS-124-001	9/20/2006	9,781	N/A	7.3	1.2	1.8	0.7	< 370	< 130	3.9	95	74	
CFS-124-002	9/20/2006	8,980	N/A	7.1	0.8	0.6	0.9	782	< 100	5.7	26	13	NYSDEC Split Sample
CFS-124-003	9/20/2006	9,192	N/A	15.2	1.1	5.5	0.6	< 340	212	4.8	171	119	
CFS-124-004	9/20/2006	8,960	N/A	7.6	1.6	1.4	0.8	< 420	< 91	5.4	24	12	
CFS-124-005	9/20/2006	8,833	N/A	7.5	1.0	0.8	0.8	1,390	< 150	6.1	23	13	NYSDEC Split Sample
CFS-124-006	9/20/2006	8,960	N/A	6.7	1.1	2.5	0.8	< 390	< 100	4.3	100	75	
CFS-124-007	9/20/2006	9,168	N/A	8.7	1.3	0.9	0.8	< 300	< 110	6.4	25	12	USACE Split Sample
CFS-124-008	9/20/2006	9,204	N/A	7.3	1.0	1.2	0.7	< 450	< 110	5.0	34	19	NYSDEC Split Sample
CFS-124-009	9/20/2006	8,906	N/A	8.9	1.0	1.2	0.8	< 360	< 140	6.6	54	28	
CFS-124-010	9/20/2006	9,622	N/A	7	1.0	0.8	0.8	< 400	179	6.8	435	127	
CFS-124-011R	9/27/2006	N/A	N/A	6.2	1.1	0.5	0.5	823	**535**	3.1	**2,450**	**734**	
CFS-124-011	9/20/2006	7,876	N/A	11	0.7	3.0	0.6	**2,240**	**1,620**	5.2	**2,780**	**1,130**	Data not used in statistics
CFS-124-DUP	9/20/2006	9,881	N/A	7.3	1.1	2.8	0.7	< 300	< 110	5.2	53	51	Duplicate was 006
DATA SUMMARY													
Average values				8.1	1.1	1.56	0.74	< 548	< 169	5.3	313	111	Average values
Maximum Value				15.2	1.6	5.49	0.94	1390	**535**	6.8	2450	734	Maximum Value
Minimum Value				6.2	0.8	0.51	0.51	< 300	< 91	3.1	23	12	Minimum Value
Std Deviation				2.5	0.2	1.43	0.12	329	127.0	1.2	719	211	Std Deviation
Median Value				7.3	1.1	1.16	0.76	< 400	< 130	5.4	54	28	Median Value
AM Criteria				<35	<2.8	<35	<2.8	1,912	450	7.4	1912	450	AM Criteria

Notes: 1) Duplicate data and CFS-124-011 were not used in calculations
2) No historical Thorium observed in this unit.
3) Data from NYSDEC split samples is not yet available
4) The USACE Split is from CFS-124-007.
5) The NYSDEC Splits were from CFS-124-002, CFS-124-005 and CFS-124-008.

Table 12
Colonie FUSRAP Site
FSS East Culvert

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-Site Alpha Spec Uranium 238	Off-Site Alpha Spec Thorium-232	On-Site Metals (XRF)		Off-Site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		(cpm)	*(cpm)*	*(pCi/g)*	*(pCi/g)*	*(pCi/g)*	*(pCi/g)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
Culvert Station +75	8/8/2001	N/D	N/A	8.4	0.9	0.8	0.3	90.9	104	3.3	109	67	Covers stations 0+51 thru 1+00. Final depth of 13 feet below grade.
Culvert 1+25	8/9/2001	N/D	N/A	8.9	1.1	0.8	0.4	534	440	10.2	564	**618**	Covers stations 1+01 thru 1+50. Sample replaced with Culvert 1+25R.
Culvert 1+25 DUP	8/9/2001	N/D	N/A	NA	NA	0.2	0.5	NA	NA	NA	NA	NA	Duplicate sample of Culvert 1+25.
Culvert 1+25R	9/13/2001	N/D	N/A	6.9	1.3	2.4	0.3	NA	NA	5.5	612	357	Location re-excavated and resampled. Final depth of 12.25 feet below grade.
Culvert 1+75	9/14/2001	N/D	N/A	8.7	0.8	24.4	0.4	NA	NA	4.5	1,210	912	Covers stations 1+51 thru 2+00. Sample replaced with Culvert 1+75R.
Culvert 1+75R	9/21/2001	N/D	N/A	5.4	1.1	0.0	0.3	NA	NA	1.5	2	4	Location re-excavated and resampled. Final depth of 13 feet below grade.
Culvert 2+25	9/19/2001	N/D	N/A	5.4	1.1	0.3	0.4	127	62.4	6.0	18	6	Covers stations 2+01 thru 2+50. Final Depth of 15 feet below grade
Culvert 2+25 DUP	9/19/2001	N/D	N/A	NA	NA	0.3	0.5	NA	NA	NA	NA	NA	Duplicate sample of Culvert 2+25.
Culvert 2+75	9/19/2001	N/D	N/A	4.3	1.0	0.3	0.6	50.5	24	33.4	10	6	Covers stations 2+51 thru structure 1. Final depth of 16 feet below grade.
NHW-01	8/2/2001	N/D	N/A	8.2	0.8	0.3	0.2	< 29	16	0.7	5	3	Sample replaced with NHW-01A. See Notes.
NHW-01A	8/16/2001	N/D	N/A	6.4	1.0	2.0	0.4	100	111	2.4	226	159	Resample collected after pumping out water and re-establishing grade. Final depth 13 feet below grade
NHW-02	8/2/2001	N/D	N/A	4.8	1.0	0.4	0.1	< 3.6	13.8	2.9	7	4	Sample replaced with NHW-02A. See Notes.
NHW-02A	8/16/2001	N/D	N/A	13.4	0.8	6.6	0.3	291	383	2.2	313	207	Resample collected after pumping out water and re-establishing grade. Final depth 13 feet below grade
NHW-03	8/2/2001	N/D	N/A	6.1	0.7	0.4	0.4	< 29	13.8	2.5	9	7	Sample replaced with NHW-03A. See Note 4.
NHW-03A	8/16/2001	N/D	N/A	6.5	0.6	1.2	0.2	< 68	65.3	1.6	144	68	Resample collected after pumping out water and re-establishing grade. Final depth 13 feet below grade
NHW-04	8/2/2001	N/D	N/A	6.9	1.0	1.8	0.3	199	181	2.1	107	68	Sample replaced with NHW-04A. See Notes.
NHW-04A	8/16/2001	N/D	N/A	7.2	1.0	2.2	0.5	< 78	91	2.5	69	53	Resample collected after pumping out water and re-establishing grade. Final depth 13 feet below grade
NHW-05	8/2/2001	N/D	N/A	8.9	1.0	0.4	0.3	< 28	25.2	1.6	10	8	Sample replaced with NHW-05A. See Notes.
NHW-05A	8/16/2001	N/D	N/A	22.1	1.0	23.2	0.3	536	**619**	3.4	655	430	Resample collected after pumping out water and re-establishing grade. Final depth 13 feet below grade

DATA SUMMARY

Average values	8.1	1.0	3.6	0.3	< 155	< 154	5.1	239	175	Average values
Maximum Value	22.1	1.3	24.40	0.60	536	619	33.4	1210	912	Maximum Value
Minimum Value	4.3	0.6	0.0	0.1	< 3.6	< 14	0.7	2	3	Minimum Value
Std Deviation	4.2	0.2	7.3	0.1	178.1	190	7.6	336	261	Std Deviation
Median Value	6.9	1.0	0.8	0.3	84.5	78	2.5	107	67	Median Value
AM Criteria	<35	<2.8	<35	<2.8	1,912	450	7.4	1912	450	AM Criteria

Notes: 1) Statistical information excludes data associated with Duplicate samples and from Replaced samples.
2) Original headwall samples were rendered unusable due to flooding 13 Aug 01.
3) Statistical information excludes data associated with duplicate samples and replaced samples.
4) All data has been reported in milligrams per kilogram (mg/kg).
5) Original headwall samples were rendered unusable due to flooding and intrusion of soil 13 Aug 01.
6) Bold data indicates individual value above recommended soil clean-up goals. See Notes Column.

Table 12
Colonie FUSRAP Site
FSS West Culvert

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-Site Alpha Spec Uranium 238	Off-Site Alpha Spec Thorium 232	On-Site Metals (XRF)		Off-Site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		(cpm)	*(cpm)*	*(pCi/g)*	*(pCi/g)*	*(pCi/g)*	*(pCi/g)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
Channel -1-25	9/27/2001	N/D	N/A	9.1	0.8	0.9	0.1	79	164	5.5	166	200	Covers stations -1-01 thru -1-50. Depth 4.0 ft. below grade.
CFS-SWK-01	7/23/2001	N/D	N/A	9.1	1.1	3.0	0.5	96	179	6.1	378	305	Southwest Keyhole Area. Depth 1.0 ft. below grade.
CFS-SWK-02	7/23/2001	N/D	N/A	10.5	1.3	5.0	0.4	168	397	**8.4**	555	**645**	Southwest Keyhole Area. Re-excavated and replaced with CFS-SWK-02A. Depth 1.8 ft. below grade.
CFS-SWK-02A	8/2/2001	N/D	N/A	6.1	1.7	0.5	0.3	27	44.8	4.0	18	48	Resample collected after re-excavation of SWK-02
CFS-SWK-03	7/23/2001	N/D	N/A	9.3	0.9	1.5	0.4	59	77	5.8	46	74	Southwest Keyhole Area. Depth 5.9 ft. below grade.
CFS-SWK-04	7/23/2001	N/D	N/A	9.7	0.9	4.2	0.5	107	167	**8.5**	377	387	Southwest Keyhole Area. Re-excavated and replaced with CFS-SWK-04A. Depth 1.6 ft. below grade.
CFS-SWK-04A	8/2/2001	N/D	N/A	7.7	1.0	0.5	0.3	29.8	46.3	3.8	21	28	Resample collected after re-excavation of SWK-04
CFS-SWK-05	7/23/2001	N/D	N/A	9.2	0.9	3.3	0.3	94	55.8	3.7	97	105	Southwest Keyhole Area. Depth 3.0 ft. below grade.
CKS-1	9/7/2001	N/D	N/A	13.6	0.8	4.4	0.3	315	341	3.7	235	231	Center South Keyhole Area. NYSDEC split sample collected. Duplicate collected at this location. Depth 8.0 ft. below grade.
CKS-1DUP	9/7/2001	N/D	N/A	NA	NA	5.8	0.3	NA	NA	NA	NA	NA	Duplicate of CKS-1.
CKS-2	9/7/2001	N/D	N/A	14	1.2	5.5	0.4	1520	**1370**	6.5	1,730	**1,300**	Center South Keyhole Area. NYSDEC split sample collected. Data excluded due to channel excavation. Final Depth 8.0 ft. below grade.
Channel 0-75	9/27/2001	N/D	N/A	5.4	0.9	0.4	0.4	< 30	11.5	2.4	7	5	Covers stations -0-50 thru -1-00. Replaces Sample CKS-2 Depth 5.0 ft. below grade.
CKS-3	9/7/2001	N/D	N/A	13.7	1.3	5.0	0.4	450	**546**	0.4	**4,690**	**783**	Center South Keyhole Area. NYSDEC split sample collected. Data excluded due to channel excavation. Final Depth 12 ft. below grade.
Channel 0-25	9/27/2001	N/D	N/A	5.3	0.6	0.3	0.1	35.1	23.8	0.5	2	1	Covers stations 0+00 thru -0-50. Replaces Sample CKS-3 Depth 12 ft. below grade.
CKS-4	9/7/2001	N/D	N/A	11.3	0.9	4.4	0.2	180	144	**14.1**	195	136	Center South Keyhole Area. NYSDEC split sample collected. Depth 1.0 ft. below grade. Average value from CKS-04, -05 and -06 for Arsenic is 6.11 mg/kg
CKS-5	9/7/2001	N/D	N/A	5.6	0.9	1.2	0.1	< 46	20.3	0.6	17	6	Center South Keyhole Area. NYSDEC split sample collected. Depth 1.0 ft. below grade.
CKS-6	9/7/2001	N/D	N/A	10.4	0.7	5.7	0.2	377	**470**	3.6	440	415	Center South Keyhole Area. NYSDEC split sample collected. Depth 10.5 ft. below grade.

DATA SUMMARY

Average values	9.4	1.0	3.0	0.3	226	254	4.8	561	292	Average values
Maximum Value	14.0	1.7	5.76	0.49	1520	0 1370	14.1	4690	1300	Maximum Value
Minimum Value	5.3	0.6	0.3	0.1	27.0	0.0 12	0.4	2	1	Minimum Value
Std Deviation	2.9	0.3	2.1	0.1	369.1	343	3.5	1180	356	Std Deviation
Median Value	9.3	0.9	3.3	0.3	95.0	154	3.9	181	168	Median Value
AM Criteria	<35	<2.8	<35	<2.8	1,912	450	7.4	1912	450	AM Criteria

Notes: 1) Statistical information excludes data associated with duplicate samples and replaced samples shown in italics above
2) All data has been reported in milligrams per kilogram (mg/kg).
3) Bold data indicates individual value above recommended soil clean-up goals. See Notes Column.

Table 12
Colonie FUSRAP Site
FSS North Lawn

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static Count	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium-238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Off-site TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-NLF-001	5/16/2005	9,084	N/A	8.2	1.0	0.7	1.1	<330	<85	**8.0**	12	26	
CFS-NLF-002	5/16/2005	8,418	N/A	7.2	0.9	0.5	0.6	<360	<96	1.2	2	7	USACE Split Sample
CFS-NLF-003	5/16/2005	7,581	N/A	5.6	0.7	0.3	0.4	978	440	2.6	606	361	
CFS-NLF-004	5/16/2005	7,820	N/A	7.0	0.8	0.3	0.7	<390	210	2.6	183	149	
CFS-NLF-005	5/16/2005	7,934	N/A	5.7	0.9	0.3	0.4	<330	<86	3.3	14	24	
CFS-NLF-006	5/16/2005	8,361	N/A	7.1	1.0	0.5	0.6	<330	<67	3.1	26	21	NYSDEC Split Sample
CFS-NLF-007	3/17/2005	7,633	N/A	7.0	0.5	0.4	0.5	329	251	3.5	115	101	
CFS-NLF-008	3/17/2005	7,189	N/A	11.3	0.6	0.2	0.4	210	64	2.8	23	43	
CFS-NLF-009	3/17/2005	8,448	N/A	5.3	0.8	0.6	0.6	472	337	3.6	288	228	NYSDEC Split Sample
CFS-NLF-010	4/13/005	7,938	N/A	6.4	0.9	0.3	0.8	250	127	2.1	134	94	
CFS-NLF-011	4/13/005	6,968	N/A	9.9	0.8	0.3	0.5	412	65	1.6	10	9	NYSDEC Split Sample
CFS-NLF-012	5/16/2005	8,243	N/A	7.1	0.7	0.5	0.5	**2,680**	**2,250**	7.3	**4,340**	**3,370**	
CFS-NLF-013	5/16/2005	7,787	N/A	6.5	0.7	0.4	0.6	<310	<82	2.1	8	5	NYSDEC Split Sample
CFS-NLF-014	4/13/005	7,619	N/A	5.9	1.2	0.2	0.6	190	53	2.3	6	3	USACE Split Sample
CFS-NLF-015	4/13/005	7,653	N/A	5.4	0.9	0.3	0.6	220	46	1.8	41	57	NYSDEC Split Sample
CFS-NLF-016	4/13/005	7,728	N/A	7.8	0.9	1.4	0.7	240	115	2.0	74	57	
CFS-NLF-017	4/13/005	8,381	N/A	6.9	0.8	0.5	0.6	317	65	2.1	35	31	
CFS-NLF-018	4/13/005	7,810	N/A	6.5	1.1	0.4	0.8	250	49	2.4	18	26	
CFS-NLF-DUP	5/16/2005	8,303	N/A	8.5	0.9	0.4	0.4	<330	<92	2.4	232	192	

DATA SUMMARY

Average values	7.04	0.84	0.45	0.61	546	313	3.0	330	256	Average values
Maximum Value	11.30	1.20	1.40	1.10	2,680	2,250	**8.0**	**4,340**	**3,370**	Maximum Value
Minimum Value	5.30	0.50	0.20	0.40	190	46	1.2	2	3	Minimum Value
Std Deviation	1.54	0.17	0.27	0.17	706	595	1.8	1,012	783	Std Deviation
Median Value	6.95	0.85	0.40	0.60	284	115	2.5	31	37	Median Value
AM Criteria	<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes: 1) Duplicate data was not used in averages

2) Bold data indicates individual value above recommended soil clean-up goals. See notes column

3) Data from USACE and NYSDEC split samples is not yet available

4) No historical Thorium observed in this unit.

5) The USACE Splits were from CFS-NLF-006, 009, 011, 013, and 015

6) The NYSDEC Splits were from CFS-NLF-002 and CFS-NLF-014

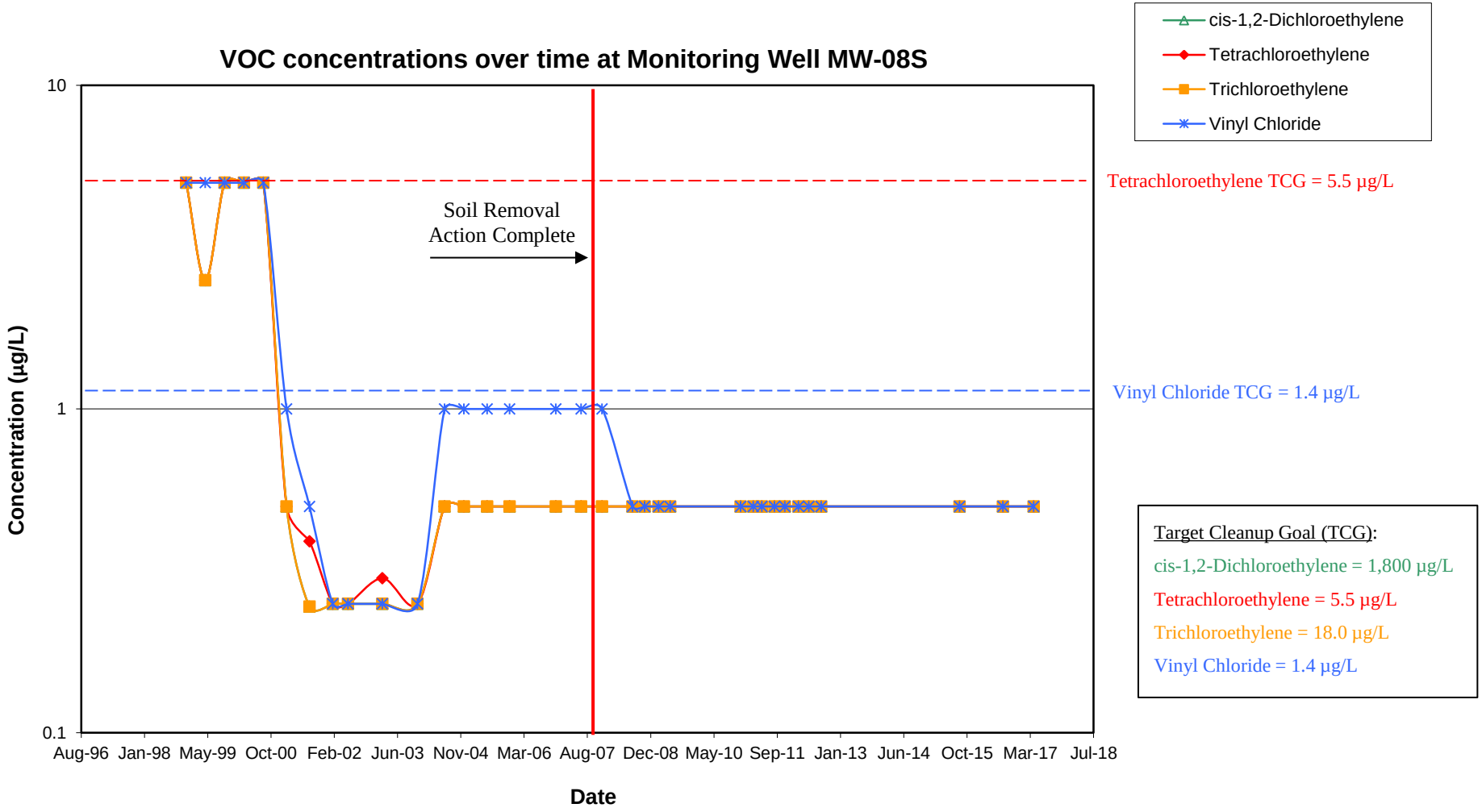
Table 12
Colonie FUSRAP Site
FSS Reference Area

Sample ID	Date Collected	FIDLER Static Count	Spa 3 2*2 Static	On-Site HPGe Result Uranuim-238	On-Site HPGe Result Thorium-232	Off-site Alpha Spec Uranium-238	Off-Site Alpha Spec Thorium-232	Onsite Metals (XRF)		Offsite TAL Metals			Notes
								Copper	Lead	Arsenic	Copper	Lead	
		cpm	*cpm*	*pCi/g*	*pCi/g*	*pCi/g*	*pCi/g*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	
CFS-BKG-001	7/24/2002	8,016	9,254	4.6	0.6	0.9	0.9	< 130	65	4.2	14.1	35.1	NYSDEC Split Sample
CFS-BKG-002	7/24/2002	8,140	8,221	8.5	0.8	0.9	0.5	< 140	56	4.0	10.4	9.3	NYSDEC Split Sample
CFS-BKG-003	7/24/2002	7,964	7,964	5.9	0.8	0.9	0.7	< 130	< 33	5.0	9.0	18.3	NYSDEC/USACE Split Sample
CFS-BKG-004	7/24/2002	8,791	8,601	6.2	0.6	1.0	0.5	< 130	58	4.2	10.4	12.5	NYSDEC Split Sample
CFS-BKG-005	7/24/2002	8,700	8,596	5.2	1.0	0.6	0.5	< 140	43	4.3	12.6	10.9	NYSDEC Split Sample
CFS-BKG-006	7/24/2002	8,892	8,767	8.7	1.2	0.9	0.7	< 140	47	4.3	14.8	9.8	NYSDEC/USACE Split Sample
CFS-BKG-007	7/24/2002	8,650	8,197	5.8	0.9	0.8	0.6	< 130	57	3.7	7.5	32.6	NYSDEC Split Sample
CFS-BKG-008	7/24/2002	8,669	8,324	7.8	0.9	0.8	0.8	< 120	< 32	2.6	6.8	7.2	NYSDEC Split Sample
CFS-BKG-009	7/24/2002	8,606	8,449	4.8	0.9	0.2	0.6	< 130	< 33	3.7	8.9	10.2	NYSDEC Split Sample
CFS-BKG-DUP	7/24/2002	8,900	8,775	N/A	N/A	1.1	0.6	N/A	N/A	3.8	7.6	21.9	Duplicate was-007
DATA SUMMARY													
Average values				6.39	0.86	0.78	0.65	< 132	< 47	4.0	10.5	16.2	Average values
Maximum Value				8.70	1.20	0.99	0.86	< 140	65	5.0	14.8	35.1	Maximum Value
Minimum Value				4.60	0.60	0.23	0.53	< 120	< 32	2.6	6.8	7.2	Minimum Value
Std Deviation				1.56	0.19	0.23	0.13	< 7	13	0.7	2.8	10.5	Std Deviation
Median Value				5.90	0.90	0.88	0.57	< 130	47	4.2	10.4	10.9	Median Value
AM Criteria				<35	<2.8	<35	<2.8	1,912	450	7.4	1,912	450	AM Criteria

Notes: 1) Duplicate data was not used in averages

APPENDIX C
Groundwater Time-Series Plots

Temporal Trends



Notes:
1. Time-trend plots include the four volatile organic compounds (VOCs) identified as constituents of concern (COCs) in the Groundwater Record of Decision (ROD).
2. VOCs not detected at the method reporting limit of 1.0 µg/L were plotted as one half of the method reporting limit (i.e., 0.5 µg/L).

Temporal Trends
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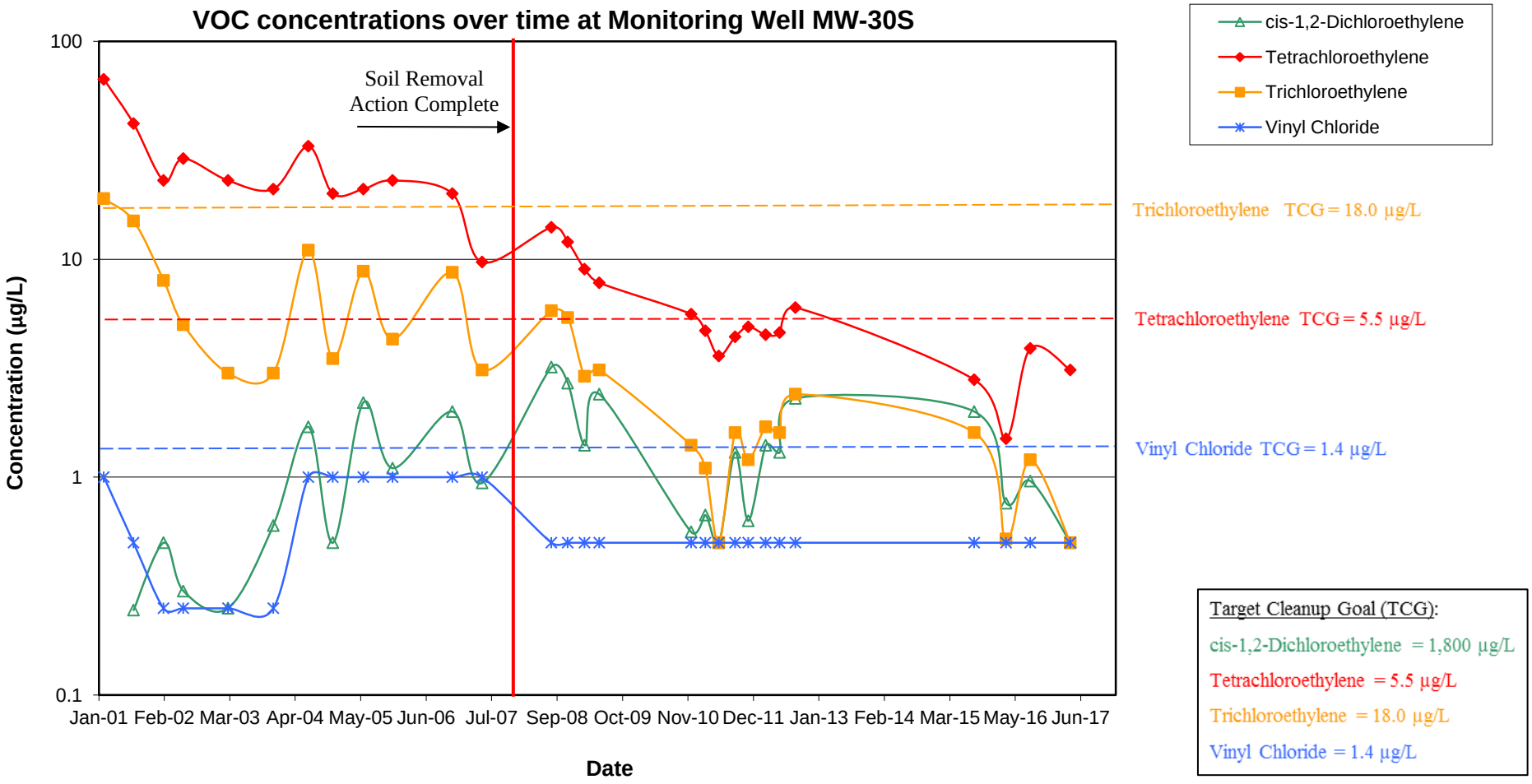
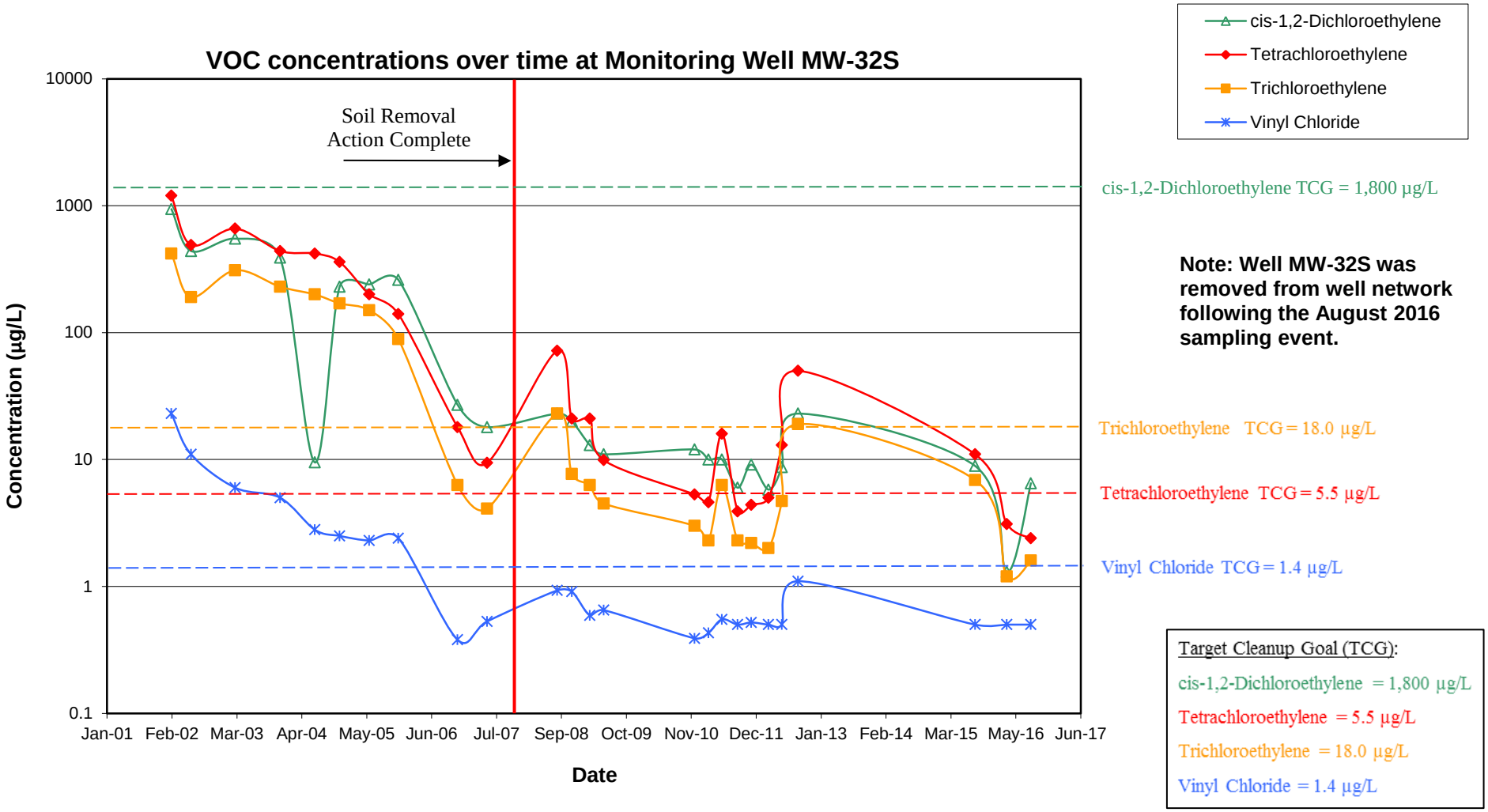


Notes:

1. Time-trend plots include the four volatile organic compounds (VOCs) identified as constituents of concern (COCs) in the Groundwater Record of Decision (ROD).
2. VOCs not detected at the method reporting limit of 1.0 µg/L were plotted as one half of the method reporting limit (i.e., 0.5 µg/L).

Temporal Trends

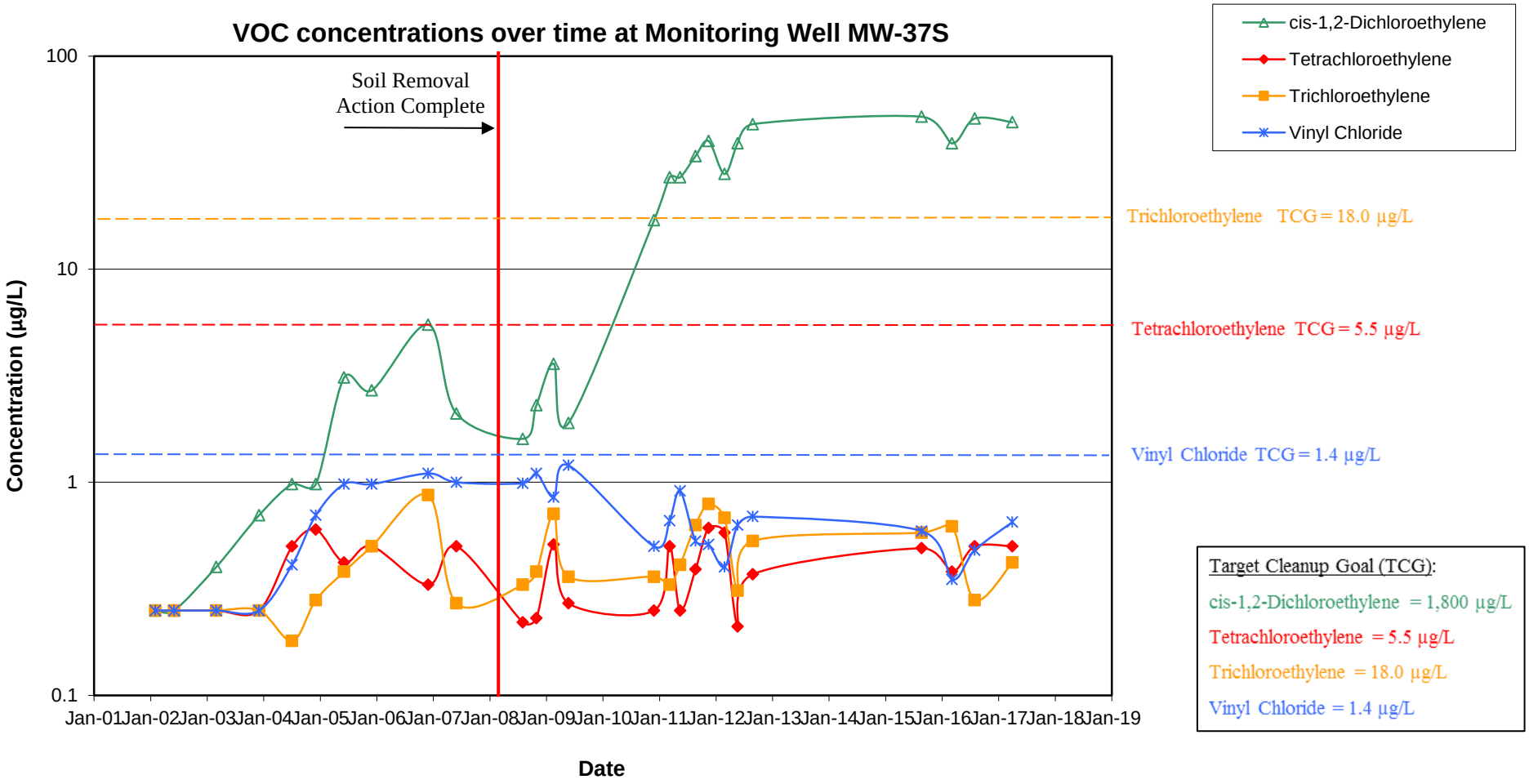


Note: Well MW-32S was removed from well network following the August 2016 sampling event.

Target Cleanup Goal (TCG):
- cis-1,2-Dichloroethylene = 1,800 µg/L
- Tetrachloroethylene = 5.5 µg/L
- Trichloroethylene = 18.0 µg/L
- Vinyl Chloride = 1.4 µg/L

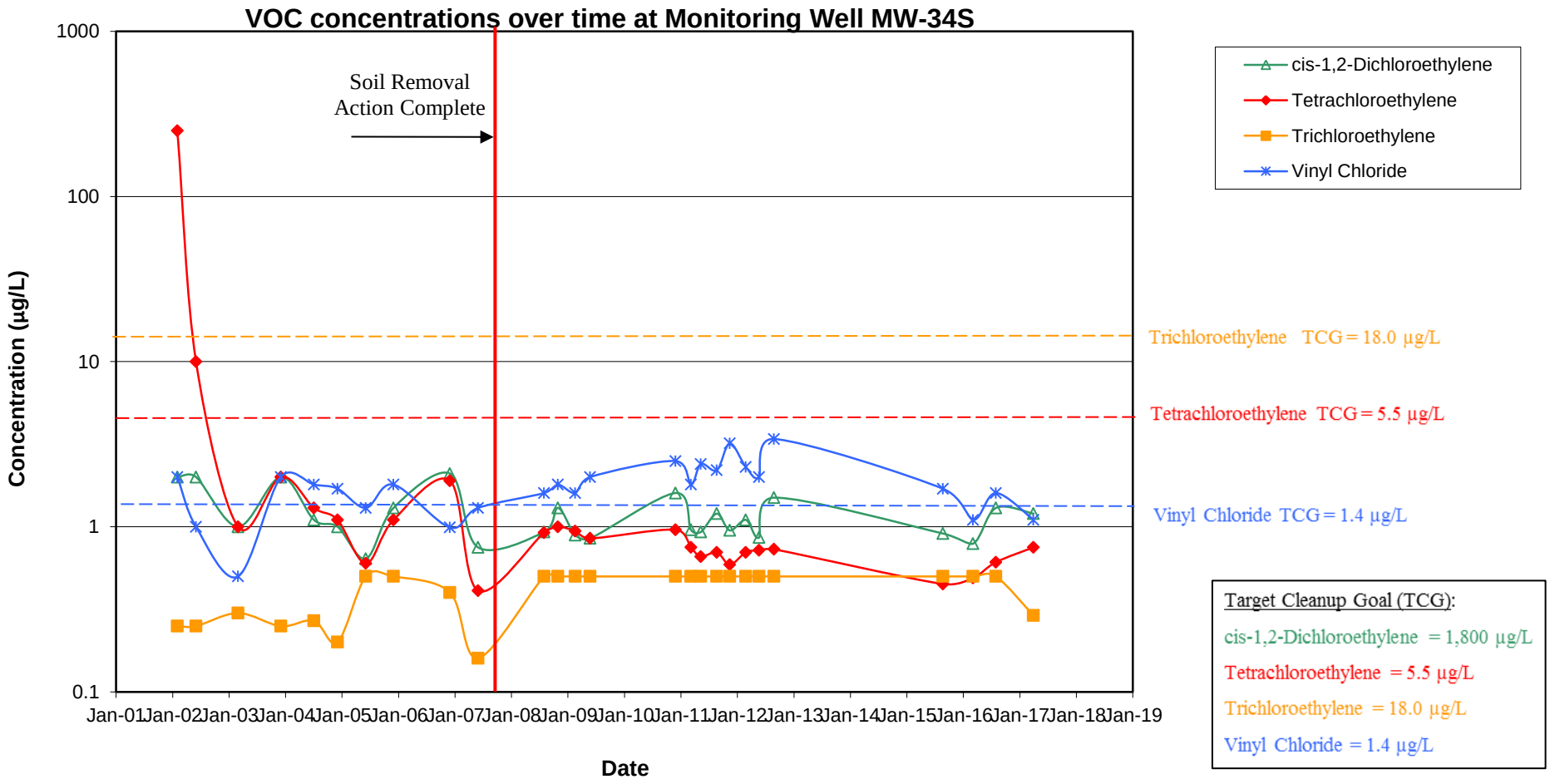
Notes:
1. Time-trend plots include the four volatile organic compounds (VOCs) identified as constituents of concern (COCs) in the Groundwater Record of Decision (ROD).
2. VOCs not detected at the method reporting limit of 1.0 µg/L were plotted as one half of the method reporting limit (i.e., 0.5 µg/L).

Temporal Trends



Note:
1. Time-trend plots include the four volatile organic compounds (VOCs) identified as constituents of concern (COCs) in the Groundwater Record of Decision (ROD).

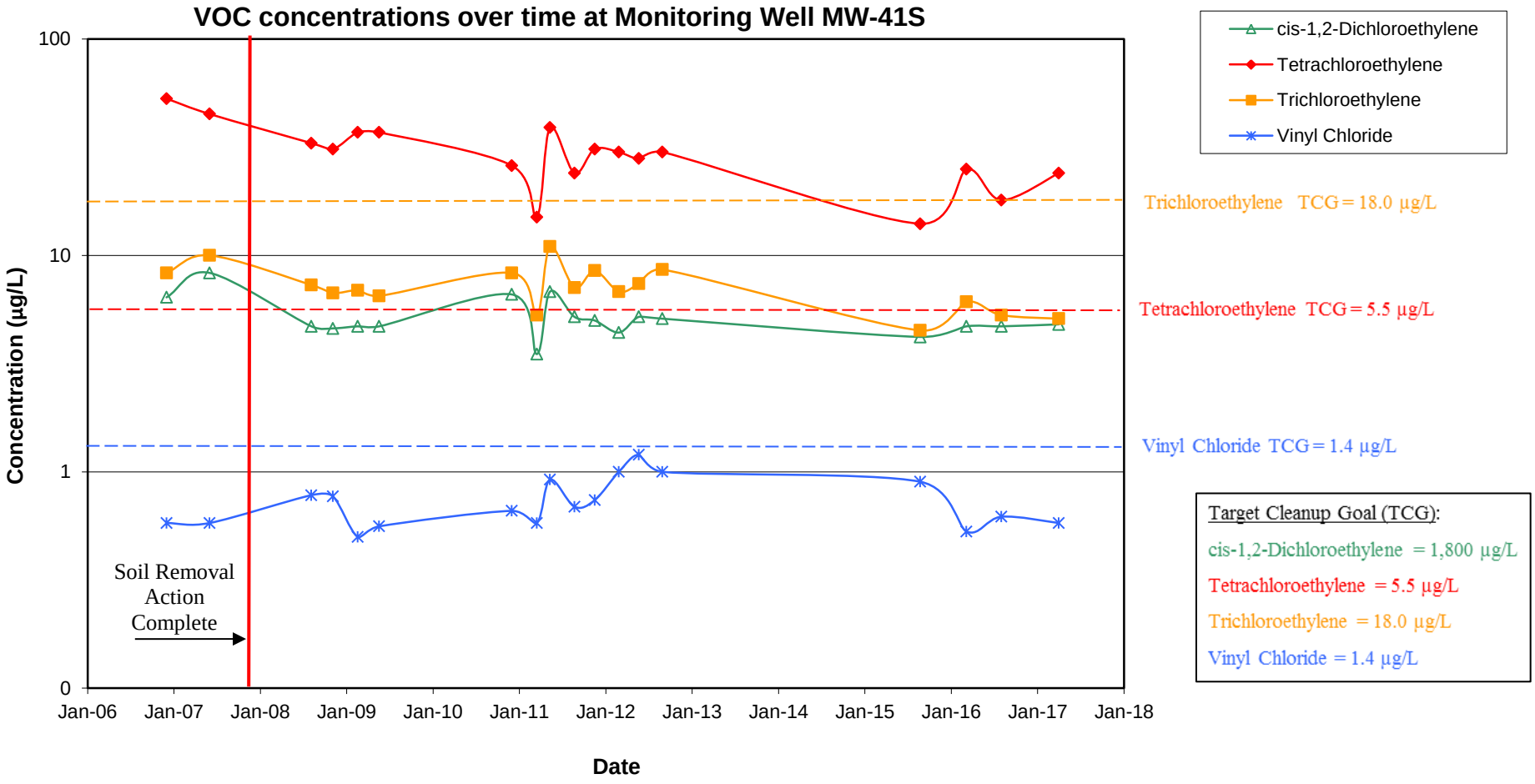
Temporal Trends



Notes:

1. Time-trend plots include the four volatile organic compounds (VOCs) identified as constituents of concern (COCs) in the Groundwater Record of Decision (ROD).
2. VOCs not detected at the method reporting limit of 1.0 µg/L were plotted as one half of the method reporting limit (i.e., 0.5 µg/L).

Temporal Trends



Note:

1. Time-trend plots include the four volatile organic compounds (VOCs) identified as constituents of concern (COCs) in the Groundwater Record of Decision (ROD).

Temporal Trends
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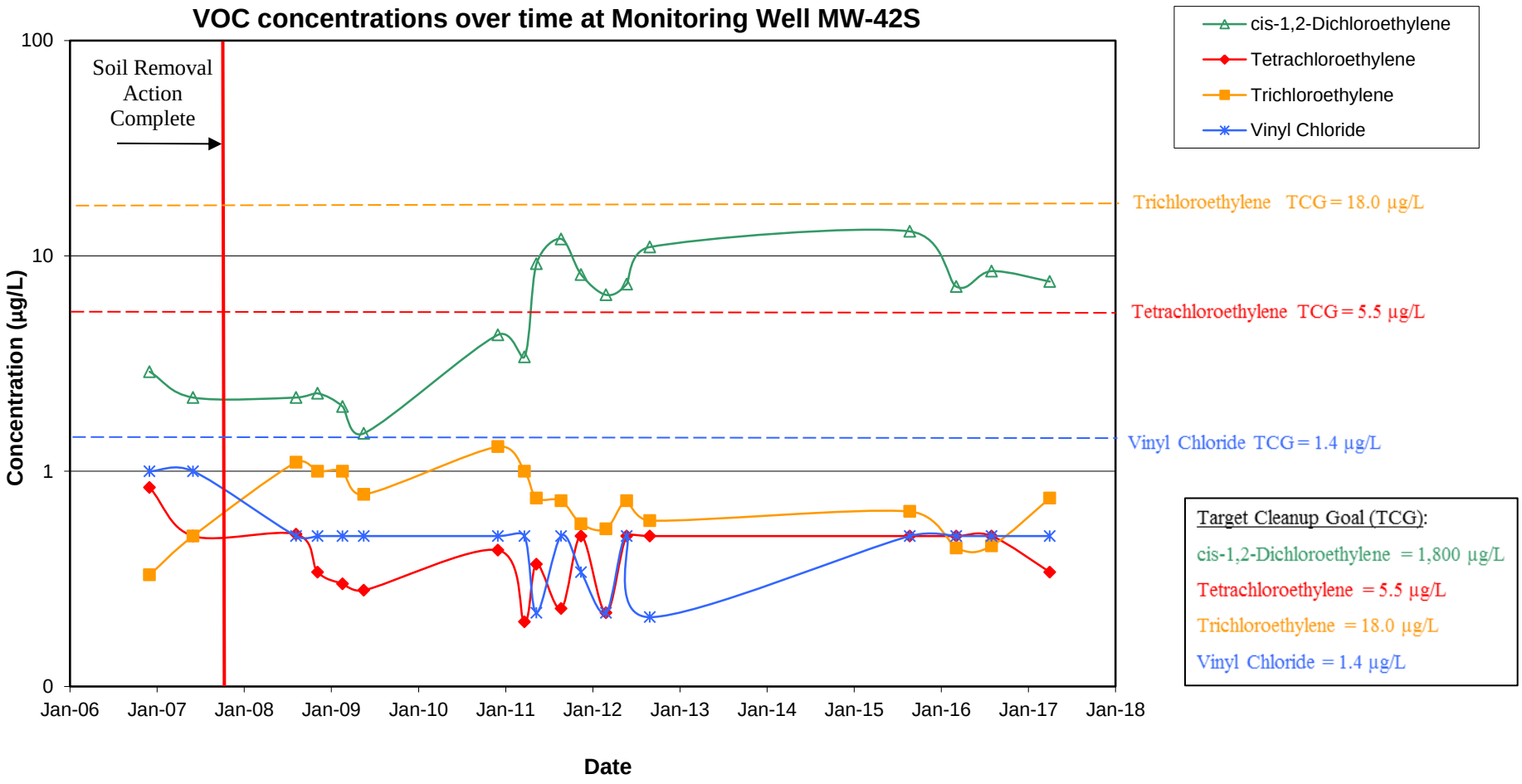
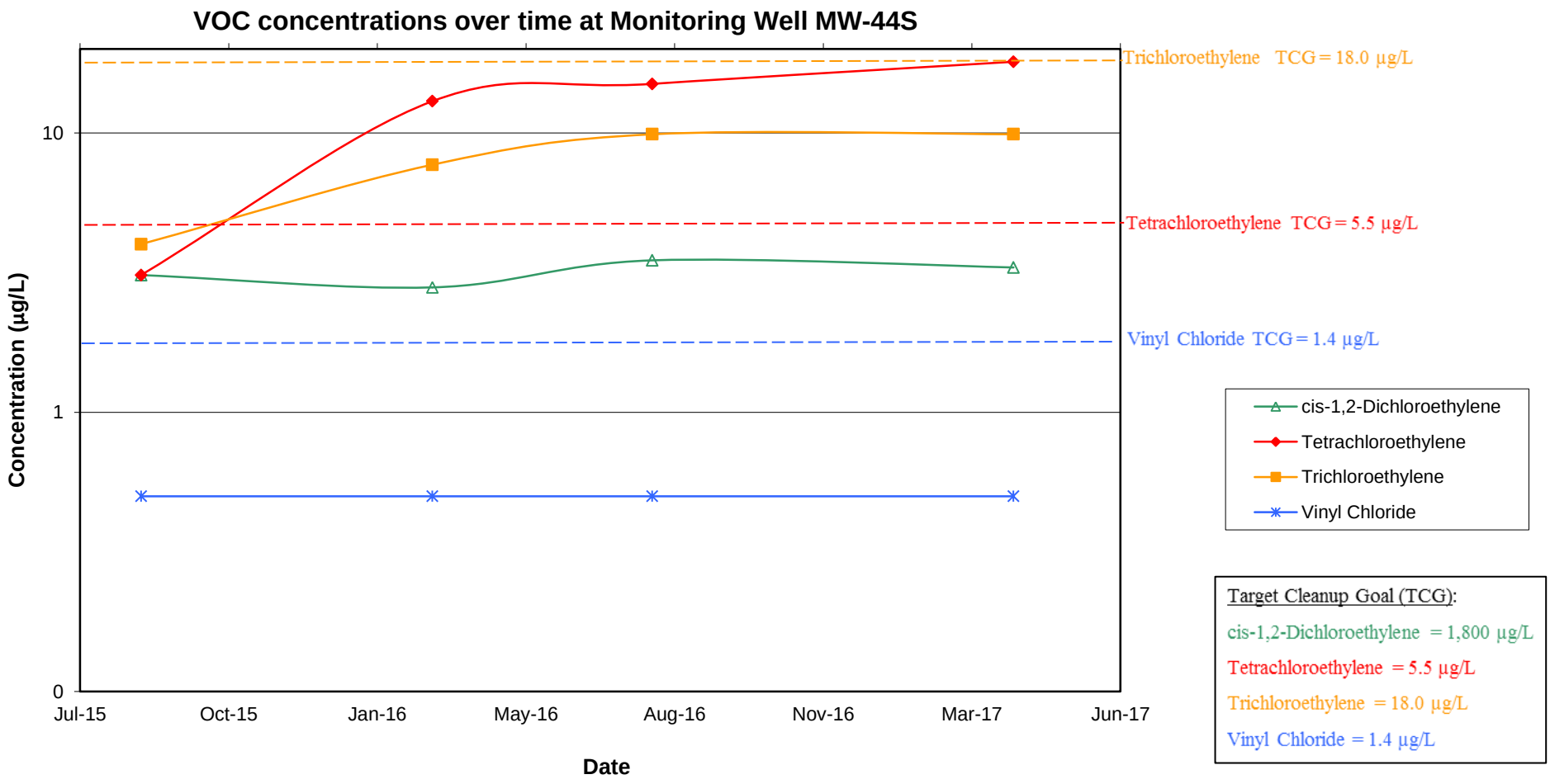


Notes:

1. Time-trend plots include the four volatile organic compounds (VOCs) identified as constituents of concern (COCs) in the Groundwater Record of Decision (ROD).
2. VOCs not detected at the method reporting limit of 1.0 µg/L were plotted as one half of the method reporting limit (i.e., 0.5 µg/L).

Temporal Trends



Notes:

1. Time-trend plots include the four volatile organic compounds (VOCs) identified as constituents of concern (COCs) in the Groundwater Record of DecisionROD.
2. VOCs not detected at the method reporting limit of 1.0 µg/L were plotted as one half of the method reporting limit (i.e., 0.5 µg/L).
3. Results represent the initial two samplings of newly-installed monitoring well MW-44S (27 July 2015).