FINAL
FORMER ALUMINUM LOUVRE (FAL) OU-3
REGIONAL CONCEPTUAL SITE MODEL
Nassau County, New York

Prepared For:

New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation
625 Broadway, 12th Floor
Albany, NY 12233-7012

Prepared By:

PARSONS

301 Plainfield Rd, Suite 350
Syracuse, New York 13212
Phone: (315) 451-9560
Fax: (315) 451-9570

October 2016

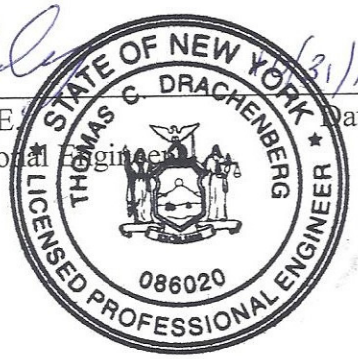
CERTIFICATION STATEMENT

FINAL
FORMER ALUMINUM LOUVRE (FAL) OU-3
REGIONAL CONCEPTUAL SITE MODEL

I, Thomas Drachenberg, certify that I am currently a NYS registered professional engineer or Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in the full accordance with the DER-approved work plan and any DER-approved modifications.

Thomas D. Drachenberg 6/3/16

Thomas Drachenberg, P.E. Date
New York State Professional Engineer
License No. 086020



PARSONS

301 Plainfield Road
Suite 350
Syracuse, NY 13212

Unauthorized alteration or addition to this engineering document is a violation of Section 7209. Provision 2 of the New York State Education Law

TABLE OF CONTENTS

Page

TABLE OF CONTENTS - CONTINUED

Page

TABLE OF CONTENTS - CONTINUED

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ACRONYMS

AMSL	Above Mean Sea Level
bgs	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information Systems
COC	Chemical of Concern
CPC	Claremont Polychemical Corporation
CSIA	Compound Specific Isotope Analysis
CVOC	Chlorinated Volatile Organic Compounds
DCA	Dichloroethane
DCE	Dichoroethene
FAL	Former Aluminum Louvre
ft.	Feet, Foot
FTC	Nassau County Firemen's Training Center
GPM	Gallons Per Minute
GW	Groundwater
NPL	National Priority List
NYSDEC	New York State Department of Environmental Conservation
OBL	Old Bethpage Landfill
PCE	Perchloroethene
RI/FS	Remedial Investigation/Feasibility Study
RAP	Remedial Action Plan
RCSM	Remedial Conceptual Site Model
ROD	Record of Decision
SVOC	Semi-Volatile Organic Compound
TCA	Trichloroethane
TCE	Trichlorethene
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VC	Vinyl Chloride
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

The purpose of this document is to present the Regional Conceptual Site Model that has been developed for the Former Aluminum Louvre (FAL) OU3 Site and associated Sites in eastern Nassau County, New York. The focus of this model is on groundwater, as directed by the (New York State Department of Environmental Conservation (NYSDEC). The goal is to have a document that summarizes the regional context of the sites and provide more unified understanding, as opposed to individual site documents that are currently available.

Available data received from NYSDEC was reviewed for this conceptual model, and no gathering of independent field data was completed. The available data for the conceptual model was gathered from four sites in the same general area:

- Old Bethpage Landfill (Site No. 130001)
- Claremont Polychemical Corporation (Site No. 130015)
- Nassau County Firemen's Training Center (Site No. 130042)
- Former Aluminum Louvre (Site Nos. 130195 and V00079)

The area of this Regional Conceptual Site Model (RCSM) is located in eastern Nassau County and slightly overlaps into western Suffolk County. The land use is a mix of industrial, residential, and open space (i.e. Bethpage State Park, predominantly a golf course). Significant residential areas surround the industrial area and open space.

The relevant hydrogeology is the Magothy Aquifer, which is a highly prolific water supply source used by public and private entities. The Magothy Aquifer extends vertically from the water table (between 25 and 50 feet below ground surface in the area) to the top of the Raritan Clay which is over 350 feet below the ground surface (locally). The aquifer consists mostly of sand and gravel with occasional discontinuous layers of fine grained material (silt and/or clay) that may cause semi-confined conditions in some areas. Groundwater flow in the area is generally to the southeast. Locally, flow direction is influenced by two pump and treat groundwater remediation systems (recovery, infiltration, and injection), local supply wells and potentially by irrigation wells at Bethpage State Park. Potable water supply wells are generally screened in the deeper portions of the Magothy Aquifer.

This RCSM focuses on chlorinated volatile organic compounds (CVOCs) as the main contaminant of concern. Each of the individual sites has a list of their own contaminants of concern, however the focus is on CVOCs due to the recalcitrant nature, mobility, and greater distribution in the region.

A general summary of the sites relevant to this RCSM is provided as Table 1 in the report. The four sites relevant to this RCSM (listed above) are each controlled by a different entity (government and/or private) and operated separately, although in some cases, the remediation systems are reliant on others (implicitly or explicitly). The FAL Site has a Record of Decision (ROD) for OU-1 (onsite) but no remediation system has been completed to date (based on the information provided to Parsons for review). The ROD outlines thermal source area treatment and

soil vapor extraction. Offsite groundwater originating at FAL will be remediated under a separate ROD (NYSDEC, 2013). The Claremont Polychemical Site currently operates two extraction wells EX-1 and EX-3 to capture onsite groundwater, while offsite contamination is addressed by the Town of Oyster Bay's system for Old Bethpage Landfill (OBL). The OBL operates five groundwater extraction wells to reduce groundwater volatiles organic compounds (VOCs) from traveling farther downgradient. This system has a significant capture zone due to the large volume of water being recovered (approximately 700 gpm). Nassau County Firemen's Training Center (FTC) previously operated a groundwater pump and treat system but discontinued pumping on the basis that the contributive plume has decreased sufficiently, and concentrations to the east of the site recovery wells are due to other upgradient impacts (County of Nassau Department of Public Works, 2009).

This report documents the recommendations that have been developed based on data provided and reviewed. Modifications to the recommendations in this report may be warranted if additional data collected or provided varies from data available during the preparation of this RCSM, or assumptions made in the absence of available data. Based on the information provided and reviewed as part of the development of this RCSM, the combined plumes appear to be controlled by the current systems, particularly the OBL system. However, the downgradient edge of the plume is un-delineated beyond the MW-11; therefore, migration beyond this well is undetermined. Exceedances of Class GA criteria were found in groundwater concentrations at MW-11A, as recently as 2015. Given the presence of several public water supply wells located downgradient, the potential for risk to human health and the environment, currently and/or in the future, is present. As previously proposed (CDM, 2008 and SAIC, 2011) further investigation, such as additional monitoring wells, of the downgradient plume is recommended. In addition to the delineation data gap, the analytical suite does not include emerging contaminants (1,4-dioxane and perfluorinated compounds) and given the area's history of CVOCs and fire training activities, these compounds should be added to the groundwater monitoring programs. The presence of these data gaps (both delineation and analytical), prevent further qualification or quantification of the level of risk posed by groundwater conditions. Additionally, further investigation is necessary to determine if further remedial actions are required to mitigate any potential risk.

SECTION 1

INTRODUCTION

The purpose of this document is to present the Regional Conceptual Site Model (RCSM) for the Former Aluminum Louvre (FAL) OU3 Site (Site) located in Bethpage/Old Bethpage, New York on the eastern border of Nassau County of Long Island (Figure 1). This document discusses the regional characteristics relevant to the remediation, while also providing site specific information when necessary. Characteristics such as land use, geology, hydrogeology, contaminate distribution, and potential risk are provided.

Sites included in the RCSM are the Old Bethpage Landfill (Site No. 130001), Claremont Polychemical Corporation (Site No. 130015), the Nassau County Firemen's Training Center (Site No. 130042), 310 Winding Road (Site Nos. 130109 and V00068), Old Bethpage Industrial Area Plume Trackdown (Site No. 130171), and the Former Aluminum Louvre (FAL) Site (Site Nos. 130195 and V00079). Site related documents that were provided by NYSDEC were reviewed and used as references within the scope of this study. Information outside the provided documents is referenced as appropriate throughout this document. A complete list of documents provided by NYSDEC that were used as reference is provided in Appendix A.

The purpose of the RCSM is to provide an overview conceptualization of the area and the multiple sites. The sites listed above are all within a small area and contribute, in varying degrees, to a relatively large CVOC plume (existing or previously existing). The remedial parties for individual sites include commercial and government stakeholders (i.e. Town of Oyster Bay, NYSDEC, Claremont Polychemical, and Nassau County). Given the commingled plumes, the relative proximity of each of the source areas, and various stakeholders, it is important to have a unified understanding of the area. This document serves as the conceptual model to assist in understanding the sites in a broader context.

Due to the lack of cohesion between sites and variability in record keeping/data management, this RCSM is presented as an overview of the regional area. Information from various reports and time frames were used for the evaluation without a true independent data analysis (time series, synoptic concentrations etc.), as this was not part of the scope. Additionally, the focus of the RCSM is on groundwater and fate/transport of VOCs (mainly CVOCs). While other concerns may exist (soils impacts, vapor intrusion, etc.), these were only briefly addressed, per NYSDEC direction.

SECTION 2

LAND USE AND SURFACE FEATURES

2.1 REGIONAL

The area of interest is along the eastern boundary of Nassau County and includes a small area of western Suffolk County (Figure 1). The area is approximately 7 miles south of Oyster Bay in the Long Island Sound, and approximately 6.5 miles north of South Oyster Bay adjacent to the Atlantic Ocean. The area is urban and industrial with significant residential population to the south and to the east; however, land use closer to the site properties consist of Bethpage State Park and the associated golf course. The closest residences are immediately west (less than a half mile) of the Old Bethpage Landfill, northwest of FAL, and southwest along the edge of the golf course (approximately a half mile southwest of the relevant site properties reviewed in this document).

The sites are approximately three and a quarter miles north of Massapequa Creek, and approximately five miles west of Carlls River, both of which flow into South Oyster Bay. There are no significant surface water features within approximately one mile of the sites, with the exception of treated water effluent recharge basins from relevant sites. These recharge basins (some active and some presumed inactive) are generally located in the northern end of the study area (i.e. near the Old Bethpage Landfill and north of the Claremont Polychemical Site).

2.2 OLD BETHPAGE LANDFILL (SITE NO. 130001)

The Old Bethpage Landfill (OBL) Site is located in the Town of Oyster Bay, Nassau County, New York, and is approximately 65 to 72 acres in size. The site borders the Nassau County Fire Training Center and Bethpage State Park to the south, Winding Road and the Old Bethpage Industrial Area to the east, and Bethpage-Sweethollow Road to the north. The landfill was operated by the Town of Oyster Bay as a municipal landfill since 1958. During this time, the landfill accepted industrial wastes from local industries in the 1960s and 1970s, along with municipal waste and garbage. The site was listed on the National Priorities List (NPL) by the United States Environmental Protection Agency (USEPA) on September 8, 1983. The landfill ceased operations on April 14, 1986 (see Section 5 for details on remedial actions).

2.3 CLAREMONT POLYCHEMICAL CORPORATION (SITE NO. 130015)

The Claremont Polychemical Corporation (CPC) Site is located on a 9.5-acre parcel of land in an industrial section of Old Bethpage, Nassau County, New York at 501 Winding Road. The site lies approximately 800 feet east of the border between Nassau and Suffolk County and is accessed via Winding Road on the property's western border. The property was used as a site for the manufacturing of pigments for plastics and inks, coated metal flakes, and vinyl stabilizers and operated from 1966-1980. The site was listed by the USEPA as an NPL site in June 1986.

The property had one two-story building, covering approximately 35,000 square feet (the former processing plant) that was removed in 2013 and currently has a water treatment building, covering approximately 5,200 square feet. The groundwater treatment system was installed by the

United States Environmental Protection Agency (USEPA) and the United States Army Corps of Engineers (USACE) and has been operating since February 2000. In 2014, changes in the extraction rate of the recovery wells were made. The system is still operating, but at a lower capacity after the changes in 2014 (see Section 5 for details on remedial actions).

2.4 NASSAU COUNTY FIREMEN'S TRAINING CENTER (SITE NO. 130042)

The Nassau County Fire Training Center (FTC) is a 12-acre property located in Nassau County, New York. It is bordered on the northwest by the OBL, and on the south by Bethpage State Park. The site has been used by Nassau County since 1960 as a training facility for volunteer firefighters, and fuel oil and gasoline were burned for fire-training exercises. From 1970-1980, the site also accepted and burned solvents.

The site was classified as a Class 2 Inactive Hazardous Waste Disposal Site in March 1988. A groundwater treatment system was installed and began operations in July 1999. The groundwater extraction and treatment system was shut down in 2014 following NYSDEC approval, (see Section 5 for Remedial Action details).

2.5 FORMER ALUMINUM LOUVRE (SITE NOS. 130195 AND V00079)

The Former Aluminum Louvre (FAL) Site includes two parcels located within the Old Bethpage Industrial Area at 161 Bethpage-Sweethollow Road and 301 Winding Road in Old Bethpage, Nassau County, New York. The main site features include two commercial buildings which are surrounded by paved outdoor parking and storage.

As of the ROD (2013):

- Each parcel contained one of the commercial buildings. Both properties on the site are zoned for light industrial use.
- The building on 161 Bethpage-Sweethollow Road contained three tenants: a paving company, AAA of New York and a general contracting company.
- The 301 Winding Road property had two tenants. One tenant removes solids from vegetable oil for use in producing biodiesel while the other tenant stores tires.
- The surrounding properties are used for a combination of commercial and light industrial. The nearest residential area is 0.35 miles northwest of the site.

The FAL Site was classified as a Class 2 inactive hazardous waste disposal site by NYSDEC. From 1986-1993, FAL generated halogenated solvent waste. The property at 161 Bethpage-Sweethollow Road is listed on the USEPA's Superfund Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) as a site that may be a potential source of VOCs in groundwater. The property at 301 Winding Road was used to manufacture louvers, which involved the stamping, cutting, and shaping of steel and aluminum, degreasing parts, and painting. Further details regarding the remedial actions are provided in Section 5.

SECTION 3

GEOLOGY AND HYDROGEOLOGY

The following sections describe the geology and hydrogeology of each site based on site specific investigations. While there is some redundancy, small geologic nuances between sites do exist, therefore separate sections are provided. The last subsection (Section 3.2.7) provides an overview of the geology and hydrogeology of the sites evaluated herein to develop a site geological conceptual model. Site specific information presented in the following sections has been summarized from the documents that were provided to Parsons by NYSDEC for review (see Attachment 1 for a listing of those documents).

3.1 GEOLOGY

3.1.1 Old Bethpage Landfill (Site No. 130001)

The soils in the area of the OBL Site consist mainly of sand with zones of coarser sand and gravel. Within the sand there are interbedded layers and lenses of silt and clay which are discontinuous across the RCSM area. The clays hydraulically separate the shallow unconfined groundwater from deeper unconfined to semi-confined aquifers in places. Several feet of fill may overlay the sand in areas (CDM, 2008).

Surficial deposits in the vicinity of the Site are mapped as outwash sand and gravel, consisting of stratified, well rounded, coarse to fine gravel with sand. To the east of the Site, the surficial deposits are mapped as a kame moraine. Kame moraine deposits have variable texture (size and sorting), from boulders to sand, and are deposited at an ice margin during deglaciation (Cadwell et al., 1986). Regionally, the surficial deposits are coastal plain deposits, which consist of the Monmouth group, Matawan group, and Magothy Formation. These groups and formation are generally composed of silty clay, glauconitic sandy clay, sand, and/or gravel (Fisher et al., 1970). Only the Magothy Formation is found at the OBL site with the Monmouth and Matawan Groups being absent locally (Fisher et al., 1970). The Magothy Formation is predominantly sand with variable/discontinuous silt and clay layers and varies in thickness up to approximately 650-750 feet. Below the Magothy Formation is the Raritan Clay which is approximately 150-200 feet thick and isolates the Magothy Formation from the Lloyd Formations. Figure 2 is a cross section from north to south across Long Island west of the relevant sites (Kings and Nassau County boundary), depicting this regional geology. Figure 3 is an aerial view of the region showing the locations of the individual sites included in this RCSM.

3.1.2 Claremont Polychemical Corporation (Site No. 130015)

At the CPC site, the Upper Glacial/Manetto Gravel is absent, and the Magothy Formation is the uppermost geologic unit. Fill material (approximately two to six feet thick when present) overlies the Magothy Formation in random areas across the north and east portions of the site. Site-specific subsurface investigations from soil borings and monitoring, injection, and extraction well installations to a maximum depth of 250 feet below ground surface (bgs) have identified "well-stratified fine to medium sand with silt lenses, abundant peat laminae, and discontinuous sand layers" (Ebasco, 1990a). Borings in the northern portion of the site also encountered

numerous interbedded silt and clay horizons. A comparison of site logs with municipal supply well logs to the north suggest that the site is located within a transitional area between the predominately sandy southern portion of the Magothy Formation and an interbedded clayey-sand portion to the north (Ebasco, 1990a).

A lignitic clay unit appears in portions of the site at depths below approximately 250 feet below ground surface (USEPA, 2014). The clay appears more laterally continuous in the southern portion of the site although its full lateral extent is not known. The sediment deposited in the region has glacial, fluvial, and deltaic origins. The fluvial and deltaic processes could indicate that the region has been subjected to periodic transgressive and regressive sequences of the sea level. During sea level regression, the region would be subjected to channeling, and reworking of the sands and sediment would occur during transgression (SAIC, 2005). The channeling associated with a fluvial system could affect any laterally continuous unit formed during a regressive sequence (SAIC, 2005).

3.1.3 Nassau County Firemen's Training Center (Site No. 130042)

Groundwater at the FTC occurs in the basal part of the glacial deposits (Upper Glacial Aquifer) and in the Magothy Formation (Magothy Aquifer). The upper part of the saturated zone is a thick sequence of sand with varying amounts of gravel, silt, and clay. Locally, the numerous clay and silt layers, which are almost always of limited areal extent, impede vertical ground water movement, resulting in increasing confinement with increased depth. However, there is not a continuous confining unit separating the shallow saturated zone from the deeper portions of the groundwater system (CDM, 2008).

3.1.4 Former Aluminum Louvre (Site Nos. 130195 and V00097)

The deposits underlying the FAL Site are remnant moraine and outwash sediments. In general, these Quaternary deposits form a relative thin layer over the much thicker Cretaceous units (Raritan and Magothy Formations) below. Observed materials consisted mostly of sand. Layers of clay and silty sand were also encountered. A layer of silty clay that was encountered between 11 and 16 feet bgs and ranged in thickness from less than one to over six feet coincided with some of the highest observed concentrations of VOCs across the site (HDR, 2013).

In the vicinity of the site, the upper glacial deposits are mostly absent, and the Magothy Formation is the uppermost geologic unit and stratigraphic unit of concern. The Magothy Formation reaches a maximum thickness of 650 to 750 feet thick in the area with the Raritan Clay below.

3.2 HYDROGEOLOGY

3.2.1 Old Bethpage Landfill (Site No. 130001)

The water table at the OBL Site is within the Magothy Formation. The depth to groundwater at the Site ranges from 20 to 95 feet bgs (100 – 25 ft above mean sea level [AMSL]). Groundwater generally flows from northwest to the southeast, consistent with regional groundwater flow direction in both the shallow and deep groundwater zones. Figure 4 shows the pertinent monitoring wells and groundwater extraction/recharge locations.

3.2.2 Claremont Polychemical Corporation (Site No. 130015)

The water table at the CPC Site is within the Magothy Formation. The depth to groundwater at the Site ranges from 65 to 95 feet bgs (65 to 35 ft AMSL). Groundwater generally flows to the south-southeast in both the shallow and deep groundwater zones. Estimated static hydraulic gradients range from 0.001 to 0.003 feet/foot. Horizontal flow velocities at site were calculated at approximately 0.43 ft/day. Slug tests performed during the Remedial Investigation calculated hydraulic conductivities ranging from 200-400 gallons per day/sq. feet. Vertical flow velocities were calculated at less than 0.5 ft/year and lacked any pattern or consistency.

Recharge occurs through precipitation, infiltration/reinjection of treated water, and upgradient subsurface flow. It is estimated that nearly 50% of annual precipitation can add to the recharge resulting in seasonal water level fluctuations of up to five feet (Rust, 1992 and Ebasco, 1990).

3.2.3 Nassau County Firemen's Training Center (Site No. 130042)

The water table at the FTC is within the Magothy Formation. The depth to groundwater at the Site ranges from 37 to 41 feet bgs (71 to 67 ft AMSL). Groundwater generally flows to the southeast in both the shallow and deep groundwater zones.

Locally, the numerous clay and silt layers, which are almost always of limited areal extent, impede vertical ground water movement, resulting in increasing confinement with increased depth, due to number of net effect of these low permeable lenses. However, there is not a continuous confining unit separating the shallow saturated zone from the deeper portions of the ground water system. In the northwestern part of the site, perched water occurs above a clay layer.

3.2.4 Old Bethpage Industrial Area Plume Trackdown (Site No. 130171)

Similar to other sites, the water table within the Old Bethpage Industrial Area is within the Magothy Formation, which is approximately 750 feet thick. The depth to groundwater at the Site ranges from 80 to 85 feet bgs (50 to 45 feet AMSL). Groundwater generally flows south-southwest.

3.2.5 Former Aluminum Louvre (Site Nos. 130195 and V00079)

The hydrogeologic setting in the area of the FAL site is primarily composed of a relatively thick sequence of unconsolidated deposits. The water table at the site is in the Magothy Formation which is roughly 750 feet thick in the area. The Raritan Clay below acts as a barrier between the Magothy and Lloyd aquifers.

The observed depth to groundwater at the site and vicinity during the RI and earlier investigations ranged from approximately 60 to 70 feet bgs. Work conducted at the FAL site and adjacent off-site areas indicated that shallow groundwater flow is generally to the south-southeast (CDM 2008, Malcolm Pirnie 2010, and Weston 2008). Three nearby remediation sites with groundwater pump-and-treat systems (OBLF, CPC, and Nassau County FTC) have the potential to influence groundwater flow locally; all three sites are to the south (southwest to southeast) and hydraulically downgradient of the FAL site.

3.2.6 Spatial/Depth Relationship of Wells

Each of the four site characterizations (where data were obtained from NYSDEC) within the study area separated the Magothy Formation into three depth ranges for the purpose of their study and investigations. Screened zones of individual wells typically targeted Zone A (shallowest of the three zones), Zone B, or Zone C. Table 2 presents the elevation ranges used at each of the sites as well as the elevation of the top and bottom elevation of the closest potable supply well (N-07852).

3.2.7 Regional Geologic and Hydrogeologic Summary

The sites and regional area are underlain by the upper Pleistocene and Magothy formations. The upper Pleistocene deposits are relatively thin and of less importance, as these mostly exist above the water table. Areas of localized fill are also found above the water table. The Magothy formation is most relevant to this RCSM due to its extent, thickness, and importance as a water resource. Thickening to the south, the Magothy is 200 – 600 feet in thickness (possibly as thick as 750 feet) and consists mostly of sand with zones of coarser sands and gravels. Intermittent/discontinuous silts exist throughout the Magothy (as thick as 20 feet or more but mostly thin, two to five feet intermittent zones. The Magothy is confined below by the Raritan Clay which overlies the Lloyd Formation. The Lloyd formation is confined and is the deepest unconsolidated unit of Long Island, lying unconformably upon basement crystalline bedrock.

3.2.8.1 Hydrogeologic Properties

In the area of the RCSM, the groundwater flow direction of the Magothy Formation (including Zones 1 – 3) is generally to the south-southeast towards the Atlantic Ocean (South Oyster Bay), which is approximately 6.5 miles to the south. Locally, the groundwater flow patterns are influenced by groundwater treatment measures such as groundwater recovery and groundwater recharge via infiltration and injection (post-treatment), as well as water supply withdrawals. Based on pumping rates and potentiometric surface maps, the remediation systems create significant groundwater capture zones around the OBL recovery wells RW-1 through RW-5 (see Figure 8). Superimposed on this capture area is the drawdown of Claremont groundwater extraction wells EW-1 and EW-3 (EW-2 was de-energized in 2014). Additionally, it is reported that local groundwater wells are used for watering the golf course; however, no details were identified in the documents available for review. Regional water supply wells likely induce significant depressions in the potentiometric elevation, thereby altering groundwater flow as well, given the reported flow rates (up to approximately 970 gpm). However, most of these wells are screened in the deeper portion of the aquifer.

Reported hydraulic conductivities, from the various sources, indicate that the Magothy ranges from approximately 98 to approximately 560 ft/day. Lower values are also reported but appear to be influenced by the assumed saturated thickness (based on transmissivity values) or these values represent finer grained portions of the aquifer. Given the significant thickness and high hydraulic conductivity, the Magothy is a very prolific aquifer. Reported regional gradients are approximately 0.001 to 0.003; however, local gradients to the pumping wells will cause a significant (and difficult to predict) localized groundwater velocity. Based the hydraulic parameters, the regional average linear velocity is reported to range from 0.1 – 0.5 ft/day.

3.2.8.2 Properties Limiting Vertical Migration

Groundwater flow is much greater horizontally than vertically in the study area due to groundwater recharge/discharge locations and anisotropy in the hydraulic conductivity field (micro and macro scale). Depositional processes create anisotropy in the microscale by silts and clays laying horizontally, thereby reducing vertical conductivity. In the macro-scale, thin and thick layers and lenses of silt and/or clay create planar horizontal zones restricting and/or impeding vertical flow. In the borings for each of the sites, discontinuous silts and clays were observed and in some cases likely create semi-confined conditions. The thickness of the silt and/or clays vary from less than an inch to several feet. Based on the review of background documents, the silt and/or clay layers are generally more frequently encountered in the northern part of the conceptual site model area. Figure 6 shows the cross-section A-A' running north to south across the study area. The map showing the aerial view of the cross-section location is provided in Figure 5. The thicker silt and/or clay layers are shown on the section while thinner lenses and layers (i.e. thinner than two feet thick) may not show up at the scale of the cross-section. This anisotropy in hydraulic conductivity significantly reduces the downward flow of groundwater to deeper zones.

3.2.8.3 Regional Groundwater Water Use

The Magothy aquifer is part of the Nassau-Suffolk Aquifer System which has been designated as a sole-source aquifer by the USEPA and as a Class GA water by NYSDEC. The best usage for Class GA waters is as a source of potable water supply. Several potable supply wells have or may have influence on the groundwater flow direction in the area of this study.

Nassau and Suffolk Counties operate various potable supply wells in the area of this RCSM surrounding the sites. To the east of the southern portion of the Bethpage State Park golf course, Suffolk County has two supply wells (S-39709 and S-20042) pumping at 525 and 262 gpm, respectively (SAIC, 2011). These two supply wells appear to be screened near the bottom of the Magothy aquifer.

Nassau County supply wells N-07852, N-7515 and N-7516 to the south and south-southwest of the RCSM (down/side gradient) are pumping approximately 236, 967 and 25 gpm, respectively. The screened depths of N-7515 and N-7516 were not identified in the files reviewed. Well N-07852 is screened from 299 to 356 feet bgs. Additionally, supply wells N-6644 and N-7438 are southwest of the RCSM area, adjacent to one another. The wells are pumping approximately 44 and 182 gpm, respectively. N-6644 is screened 175 to 221 feet below ground surface, near the top of the Magothy while N-7438 is screened closer to the bottom of the Magothy from 495 to 563 feet bgs (SAIC, 2011).

West of the RCSM (west of the OBL), Nassau County has three potable supply wells, N-8768, N-8767, and N-9591. These three wells pump at an estimated 476, 515, and 69 gpm, respectively. While the screened depths for N-8767 and N-8768 were not identified, N-9591 is screened close to the bottom of the Magothy between 606 and 682 feet below ground surface. Nassau County has three potable supply wells in the north-northwest of the RCSM. Supply wells N-7421, N-6956, and N-8054 are pumping at approximately 470, 468, and 52 gpm, respectively. Supply well N-7421 is screened from 482 to 527 feet below ground surface, deep in the Magothy, while N-6956 is screened from 514 feet below ground surface to a lower unknown depth, near the bottom

of the Magothy. The well screen depths and flows of the supply wells are from SAIC groundwater model report (2011), and flows were rounded to the nearest integer.

Estimated total potable water pumping rates in the vicinity of the RCSM are approximately 787 gpm to the east, 1,454 gpm to the south, 1,060 gpm to the northwest, and 989 gpm to the north. Total potable water supply from the Magothy aquifer in the vicinity of the RCSM is 4,290 gpm. The SAIC February 2011 Updated Groundwater Modeling Report for the Claremont Polychemical Superfund Site also identified potable water supply well N-11004. A flow rate was provided (638.4 gpm), but a specific location and screened depth were not identified in the documents available for review. The well (N-11004) is assumed to be to the south of the RSCM and if so, this would increase the pumping rate to the south to 1,699 gpm and the total for potable supply wells in the area to 4,928 gpm. Of all the supply wells, Nassau County well N-07852 is hydraulically closest to groundwater contamination from the sites due to its downgradient location. This well is reportedly operated at 236 gpm withdrawing from a depth of 299 to 356 feet below the ground surface, in the lower part of the Magothy aquifer.

Reporting of supply well flow rates and hydraulic influence are mostly limited to:

- Potentiometric surface maps generated by groundwater models (SAIC, 2011 and CDM, 2008) which only include supply well N-6644 and N-7515/7516 (adjacent to one another) and
- Historical drawdown flow verses flow rate observations (SAIC, 2011).

While the SAIC model included supply wells surrounding the RCMS area, most of these supply wells are deeper than the contaminant plume therefore were not depicted on potentiometric surface amps in the model report. At wells that were depicted the simulated cone of depression was one to five feet with a capture width of up to approximately 2000 feet (perpendicular to the ambient flow at the pumping well).

Transmissivity calculations were used by SAIC (2011) to support the groundwater model. For this RSCM 17 supply wells were analyzed using flow rate and associated drawdown observations. The range in flows was from 120 to 1500 gpm with an average flow rate of 1,006 gpm. Meanwhile the drawdowns ranged from 16 to 42 feet with an average of 30 gpm. As a check, Parsons conducted a simple Theis analysis with average drawdown and flow. The results indicate an approximate capture width (perpendicular to the ambient flow at the pumping well) of 1800 feet for each pumping well, which is comparable to the wells that were included in the SAIC numeric model.

SECTION 4

CONTAMINANTS OF CONCERN AND SPATIAL RCSM DISTRIBUTION

4.1 SITE SPECIFIC COCS

The following sections list the Site Specific COCs including "regional" VOCs (downgradient of the sites with disputed origin). Although all COC are listed below, the regional distribution discussion of this RCSM focuses CVOCs which appear to be the most recalcitrant/mobile COCs from all relevant sites. Each of the sites contains CVOCs in groundwater, so differentiation between source areas was not considered in this RSCM but may be possible through fingerprinting and/or compound specific isotope analysis (CSIA). Site specific information presented in the following sections has been summarized from the documents that were provided to Parsons by NYSDEC for review (see Attachment 1 for a listing of those documents). A general summary of each Site with associated COCs is provided in Table 1.

4.1.1 Old Bethpage Landfill (Site No. 130001)

The following Compounds of Concern (COCs) were identified in the ROD and the Remedial Action Plan (RAP) Reports for the site:

- Metals in groundwater (including manganese, sodium, and iron);
- VOCs (1,2-DCE, 1,1-DCA, VC, methylene chloride, TCE, chloroethane, BTEX) in groundwater; and
- Leachate plume, dissolved in groundwater, with constituents comprised of inorganic compounds and halogenated and non-halogenated VOCs.

4.1.2 Claremont Polychemical Corporation (Site No. 130015)

The following COCs were identified in the review of site background documents:

- PCE, TCE, cis-1,2-DCE, 1,2-DCA, 1,1-DCE, 1,1-DCA, and 1,1,1-TCA in groundwater; and
- Metals including barium, manganese, and iron in groundwater.

4.1.3 Nassau County Firemen's Training Center (Site No. 130042)

The following COCs were identified in the review of site background documents:

- Fuel oil contaminants, MEK, and BTEX in deep soils (10 to 40 feet bgs) resulting from dry wells with floating product at water table in areas;
- BTEX (associated with fuel oil and gasoline releases), chlorinated solvents, ketones, semi-volatile organic compounds (SVOCs), (including phenanthrene, fluorine, naphthalene, di-n-octyl-phthalate, methylnaphthalene, and pyrene associated with oil and gasoline releases), and inorganic leachate contamination (including elevated specific conductance, alkalinity, chlorides, hardness, ammonia, and some chlorinated organic compounds from the Old Bethpage Landfill) in site groundwater; and

- VOCs (including vinyl chloride, PCE, 1,1-DCE, 1,2-DCA, 1,1,1-TCA, TCE, benzene, and xylene) in the off-site groundwater plume.

4.1.4 Former Aluminum Louvre (Site Nos. 130195 and V00097)

Based on site investigations and the 2013 ROD (NYSDEC, March 2013) the original site COCs in groundwater were defined as follows:

- VOCs (including tetrachloroethylene (PCE), trichloroethene (TCE), vinyl chloride (VC), dichloroethylene (DCE), and 1,1,1-trichloroethane (1,1,1- TCA),
- No SVOCs are listed as COCs in the ROD ((NYSDEC, 2013)
- No metals are listed as site COCs in the ROD (NYSDEC, 2013).

The OU1 ROD caveats the COC list with the following statement "Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A." The appendix lists additional VOCs (1,1,2- trichloroethane, 1,1-dichoroethane, 1,2,3-trichloropropane, acetone, benzene, and tert-butyl methyl ether.

4.2 SOILS

Investigation and remedial activities (sampling and analytical results) around the onsite shallow impacted areas indicate that soils with elevated concentrations, either from direct leaching (not removed during excavation) or from sorption from dense non-aqueous phase liquid (DNAPL) and/or high dissolved concentrations may still remain. While this RCSM focuses on groundwater, these impacts could contribute to the groundwater plume for significant periods of time if not remediated.

4.3 GROUNDWATER

4.3.1 RCSM COCs and Contaminant Distribution

The regional COCs are the most recalcitrant compounds with the highest transport rates, namely CVOCs: tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), and vinyl chloride (VC). While other contaminants may be found in the groundwater in the area (e.g., fuel oils in the Fire Training Area), the other contaminants are not as pervasive.

In general, higher COC concentrations are found in the more shallow groundwater zones and decrease with depth and distance from individual sites. It appears that low level concentrations of CVOCs have migrated to the south and southeast from each of the sites, and have commingled (to some degree) in the downgradient plume southeast of the landfill. Figure 7 depicts the generalized extent of the relevant VOCs currently or recently (within the last 5 to 10 years) exceeding the groundwater standard. This depiction provides an understanding of current plume extent and areas that might be prone to rebound and/or localized low level VOCs (e.g. sorbed/diffused into silts and clays).

The CVOC plume extends at least as far downgradient as MW-11. The concentration there (cis-1,2-DCE at 34.6 µg/L and TCE at 5.3 µg/L in MW-11A, [Lockwood Kessler and

Bartlett, 015]) likely indicates the plume is not completely delineated to concentrations below the groundwater standard.

Groundwater concentrations in Zone 1 are mostly elevated in the area closest to each source area. COC concentrations in Zone 1 groundwater generally decline with depth and with lateral distance from the source. COC concentrations typically originate as free phase contaminant released from a source that travels through the soils overlying Zone 1 under the force of gravity. Once the source travels downward and encounters the water table (top of Zone 1), a dissolved plume is developed. The dissolved plume travels in the direction of groundwater flow with concentrations of individual COCs declining due to factors such as dilution, diffusion, dispersion, adsorption, and oxidation-reduction. Groundwater in Zone 1, 2 and 3 are of similar CVOCs namely: PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and VC.

4.3.2 RCSM Related Plumes

According to the Nassau County Department of Public Works Fireman's Training Center Groundwater Model Report (CDM, 2008), two downgradient groundwater contaminant plumes exist. The first (western) plume was from the Fireman's Training Center which was identified by predominantly PCE, TCE, cis-1,2-DCE, and benzene. The second (eastern) plume was presumed to be (according to Nassau County) from commingled sources from several sites including the former Claremont Polychemical Corporation Site, Old Bethpage Landfill, and Former American Louvre site (it should be noted that the 2008 CDM report lists this as Former American Louvre). The eastern plume was identified to have PCE, TCE, cis-1,2-DCE, benzene, dichlorodiflоromethane, 1,1-dichloroethylene, 1,2-dichloroethane, isopropylbenzene, 1,1,1-trichloroethane, 1,2,4-trimethylbenzene, VC, and O-xylene. Of these contaminants, isopropylbenzene, dichlorodifluoromethane, and 1,2,4-trimethylbenzene are not listed in Table 1 of this report because they were not identified as being associated with any of the Sites included in this RCSM based on the documents provided to Parsons for review.

While the concept of a "eastern and "western" plume for different sources is reasonable, this RCSM does not attempt to differentiate sources or imply responsible parties for the downgradient plume as the extent of co-mingling is unknown. The data from the CDM (2008) report were incorporated into Figure 7.

In the groundwater modeling report from SAIC (2011), one plume for PCE, TCE, and 1,1-DCE was depicted, and transport was modeled for 5 and 10 years into the future, as opposed to the FTC model which spatially differentiated the plume (see above). Elevated levels of PCE were depicted at the Claremont Polychemical Site and to the north of the Site, as well as in the southern part of the Old Bethpage golf course, south of the Fireman's Training Center, at well BP-14A. The TCE plume was depicted as having the highest concentrations in the area of the Claremont Polychemical Site and to the north, with the plume extending to the southeast along the northern and eastern side of the Old Bethpage golf course. TCE concentrations generally declined to the south. TCE simulations used one source north of the Claremont Polychemical Site. The model simulation suggested that none of plumes were impacting the down gradient public water supply wells. The predictive simulations, however, suggest CVOCs could reach the public water supply well in 5 to 10 years.

SECTION 5

REMEDIAL ACTIONS AND PERFORMANCE

5.1 SUMMARY OF GROUNDWATER REMEDIAL ACTIONS

The following section provides a summary of the groundwater remedies and is summarized in Table 3. Current, previous, associated and proposed changes are depicted over time. Site specific information presented in the following sections has been summarized from the documents that were provided to Parsons by NYSDEC for review (see Attachment 1 for a listing of those documents).

5.1.1 Old Bethpage Landfill (Site No. 130001)

A Remedial Investigation/Feasibility Study (RI/FS) was completed for the Site in February 1988. A ROD was administered by the USEPA for the site in 1988, which included plans to: enhance the landfill gas collection/treatment system, cap the remaining 43 acres of the landfill, enhanced leachate collection, and improve the groundwater recovery system. These improvements were: additional recovery wells, installation of an air stripper, and building a recharge basin for treated effluent.

A summary of the remedial chronology and current status is provided in Table 3 (Lockwood Kessler and Bartlett, 2015). As of 2015, the groundwater pump and treat system continued operation, pumping from mostly RW-3, RW-4 and RW-5, although alternating to RW-1 and RW-2 when RW-3 is down for maintenance. Total average pumping rate is 1.04 MGD or 722 GPM (2Q2015 RAP).

5.1.2 Claremont Polychemical Corporation (Site No. 130015)

The Claremont Site consisted of two relevant groundwater remedial objectives: (1) extraction and treatment of groundwater beneath the site and (2) addressing contaminated groundwater beyond the site boundaries. The remedy for groundwater beneath the Site consisted of the extraction and treatment of the contaminated groundwater by metals precipitation, air stripping and carbon adsorption, with injection of the treated water into the ground (USEPA, 2014). The contaminated groundwater beyond the Site boundary is addressed by allowing OBL groundwater capture systems to control the plume (USEPA, 2014).

5.1.3 Nassau County Firemen's Training Center (Site No. 130042)

The Nassau County site remediation consisted of implementation of a pump and treat system for on and off-site GW contamination. A summary of the remedial chronology and current status is provided in Table 3. The groundwater remediation via pump and treat started in 1999 and ran until pumping was terminated in approximately 2013 (based on filing of Post Termination letters to NYSDEC [Nassau Public Works, 2015] and Equis database information). The justification of the shutdown appears to have been low concentrations in the pumping wells (PRR, 2009. Nassau County claims eastern plume is not related to FTC (CDM, 2008). As of 2015 the post-termination groundwater monitoring program continues (Nassau Public Works, 2015).

5.1.4 Former Aluminum Louvre (Site Nos. 130195 and V00097)

The Former Aluminum Louvre site has progressed through site investigation and remedial investigation phases, with a ROD issued by NYSDEC in 2013. The ROD outlined in-situ thermal desorption treatment of unsaturated soils, vapor extraction with an ex-situ treatment unit, and air sparging to address groundwater contamination. No documents subsequent to the March 2013 ROD have been provided that verify remediation has been implemented.

5.2 REGIONAL SCALE

On a regional scale, the remediation that has taken place and is ongoing at the individual sites within the area of study has for the most part controlled the downgradient migration of contaminants from the source areas. However, groundwater contaminants have likely migrated beyond the groundwater capture system prior to completion of remedial measures. These concentrations may continue to migrate towards downgradient potable supply wells. While the impact of the contaminants may not have reached the potable supply wells at this time, there is the potential for their impacts to be realized in the future.

Results from the Claremont 2011 groundwater model indicate the downgradient supply well in 2021: "Of particular importance is that the modeling indicates that the migrating PCE plume will impact the Village of Farmingdale municipal water supply well N-07852 in 10 years. The modeling indicates that this well is at risk of contamination. This interpretation needs to be tempered by the fact that the southern extent of the plume used in this modeling effort is not completely defined due to a lack of data in this area. This indicates that additional plume delineation in this area is critical to the further evaluation of this situation." (SAIC 2011).

Furthermore, the groundwater fate and transport model developed for the Fireman's Training Center suggests: "Without retardation, particles are simulated to migrate within approximately 1,450 feet of N-07852, Village of Farmingdale well number 1-3. It is likely that the supply well would be impacted. However, these simulations evaluate particle migration only. Concentrations are not associated with these simulations and therefore, although it is stated that N-07852 may be impacted, concentrations may be at such a low level that they would be below current detection limits." (CDM, 2008).

Based on analysis conducted as part of this RCSM, the predictive analysis provided by the groundwater models referenced in the documents provided to Parsons for review appears to be reasonable.

SECTION 6

POTENTIAL RECEPTORS AND DEPICTED MIGRATION PATHWAYS

The following section provided an overview of the potential receptors and migration pathways for the VOCs as related to groundwater, in particular the plume area. This is not intended to be a true risk analysis, simply an overview of potential risk. Site specific information presented in the following sections has been summarized from the documents that were provided to Parsons by NYSDEC for review (see Attachment 1 for a listing of those documents).

6.1 POTENTIAL FOR GROUNDWATER PLUME TO IMPACT WATER SUPPLY

Based on the background data and reports provided for this RCSM, COCs may have not impacted the potable supply wells at this time, but the potential for COC impacts in the future is possible. COCs have been observed in downgradient monitoring wells that are beyond the hydraulic influence of the individual sites pump and treat systems. Over time, these COCs could continue to migrate downgradient and encounter the recharge zone of the potable water source. The VOCs levels are low (<50 ug/L), and may be hydraulically isolated to zones above the pumping well; however, any contamination of public water supply is undesirable. Well N-07852 is less than a half mile from observed VOCs at well MW-11 therefore, it represents the highest risk of impact from VOCs migrating from the north.

There are reportedly irrigation wells that provide groundwater to a golf course; however, no details were identified in the documents available for review regarding these wells. This groundwater use could represent a risk to workers or others who may use or contact the water.

6.2 VAPOR INTRUSION

The risk for vapor intrusion downgradient of the individual sites is very low due to the depth to the water table and the decreasing concentrations of chlorinated solvents in the downgradient direction. Additionally, in much of the downgradient areas, non-impacted groundwater or much less impacted groundwater overlies groundwater with higher concentrations of chlorinated solvents. At the individual sites, vapor intrusion has been investigated in the past, and remedial measures have been put in place to prevent vapor intrusion issues locally (e.g., in the area of the Old Bethpage Landfill).

6.3 WORKER EXPOSURE

The risk for worker exposure impacts downgradient of the individual sites is also very low due to the depth of groundwater exceeding the likely excavation depth for the purpose of construction. Unless the excavation is deep enough to encounter the water table, for example in the case of well installation, the worker exposure would be negligible. Risk associated with worker exposure onsite can be mitigated through institutional and engineering controls.

SECTION 7

CONCLUSIONS & RECOMMENDATIONS

This Section documents conclusions and recommendations based on data provided and reviewed during the development of the RCSM. Modifications to this RCSM and the associated conclusions/recommendations may be warranted if additional data collected or provided vary from previous data provided, or assumptions made in the absence of available data.

Based on the information provided and reviewed as part of the development of this RCSM, the combined plumes appear to be controlled by the current systems, particularly the OBL system. However, the downgradient edge of the plume is un-delineated beyond the MW-11; therefore, migration beyond this well is undetermined. Based on the RCSM, it is likely that this plume migrated downgradient of existing control systems prior to their installation. Exceedances of Class GA criteria were found in groundwater concentrations at MW-11A, as recently as 2015. In addition to the delineation data gap, the analytical suite does not include emerging contaminants (1,4-dioxane and perfluorinated compounds), which should be considered, given the area's history of CVOCs and fire training activities. Based on the presence of these data gaps (both delineation and analytical) and the proximity of several public water supply wells located downgradient, the potential for risk to human health and the environment, currently and/or in the future is present. Based on this potential risk, further investigation is recommended and warranted to fill the gaps identified, and provide further data to fully assess subsequent steps that may be required. To address these data gaps the following steps are recommended:

- The status of certain remedial systems was not identified in the documents provided. It is recommended that more current site documents be integrated into a revised RSCM when available.
- CVOC plume delineation: the CVOC plume exists above the groundwater standard south of MW-11 and it is currently unknown if the plume has reached the supply well N-07852. Further delineation of the downgradient plume, including (but not limited to) installation of monitoring wells is recommended.
- There are currently no recent and synoptic groundwater sampling/water level monitoring events or programs. A more robust understanding of the plume would be achieved if all wells (or significant number) were sampled and a synoptic water level event was conducted. It is recommended that either a unified water level event is conducted or individual sites conduct their measurements on the same day.
- EQuIS Data – the level of analysis was limited due to lack of data available in EQuIS. The data availability varies significantly from site to site, but the most significant data gaps are missing concentration data from groundwater sampling events, such as VOCs. It is recommended that all sites be required to submit sufficient data to EQuIS for plume quarrying. Furthermore, this database could be coalesced for ease in future analysis (if necessary).

- Limited analytical suite: the current analytical suite does not include emerging contaminants. Given the background of particular sites (e.g. FTC) and currently known CVOC impacts, it is recommended to analyze for relevant emerging VOCs such as 1,4-dioxane and perfluorinated compounds.

Following collection of additional data to fill the gaps identified above, subsequent revisions to this RCSM (as necessary) are recommended to further assess potential risks posed to human health and the environment.

SECTION 8

REFERENCES

Cadwell, D.H., and others, 1986, Surficial Geologic Map of New York, Lower Hudson sheet: New York State Museum – Geological Survey, Map and Chart Series #40, scale 1:250,000.

CDM (2008), Final Report, Nassau County Department of Public Works, Firemen's Training Center Groundwater Model. Camp, Dresser, and McKee, April 2008.

County of Nassau Department of Public Works (2009), Periodic Review Report, Nassau County Fire Training Center, Site Number 130042, Bethpage, NY. Nassau County Department of Public Works, October 19, 2009.

County of Nassau Department of Public Works (2015), Spring 2015 Semi-Annual Post Termination Monitoring Program Sampling Results – May 2015, Nassau County Fire Service Academy (A.K.A Firemen's Training Center) site. County of Nassau Department of Public Works, May 14, 2015.

Fisher, D.W., Isachsen, Y.W., and Rickard, L.V. (1970), Geologic Map of New York, Lower Hudson sheet: New York State Museum and Science Service Map and Chart Series No. 15, 6 sheets, scale 1:250,000. 1970.

HDR (2013), Remedial Investigation Report, Former Aluminum Louvre Corporation (NYSDEC Site Number 130195) Volumes 1 and 2. Prepared for New York State Department of Environmental Conservation. HDR, January 2013.

HRP Engineering (2015), 2015 Second Quarter Groundwater Monitoring Report, April – June 2015, Claremont Polychemical Corporation Site. Prepared for New York State Department of Environmental Conservation. HRP Engineering, P.C., July 22, 2015.

Lockwood Kessler and Bartlett (2014), 2013 Fourth Quarter and Annual Report, Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility, Town of Oyster Bay Department of Public Works, June 2014.

Lockwood Kessler and Bartlett (2015), Second Quarter 2015 RAP Report, Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility, Town of Oyster Bay Department of Public Works, October 2015.

Malcolm Pirnie (2010), Site Characterization Report, Old Bethpage Industrial Area Plume Trackdown, Oyster Bay and Huntington, New York. Site #1-30-171, Work Assignment # D004439-8. Prepared for New York State Department of Environmental Conservation. Malcolm Pirnie, Inc., February 2010.

NYSDEC (2013), Record of Decision (ROD), Former Aluminum Louvre Corporation, Operable Unit Number 01: On-Site Contamination, State Superfund Project, Old Bethpage, Nassau County, Site No. 130195. New York State Department of Environmental Conservation, March 2013.

NYSDEC (1993), Record of Decision (ROD), Nassau County Fire Training Center, Site Number 130042, Bethpage, NY. New York State Department of Environmental Conservation, February 1993.

SAIC (2006), Well Completion Report for the Installations of Additional Monitoring Wells – Phases I & II at the Claremont Polychemical Superfund Site Prepared for United States Army Corps of Engineers, Kansas City District. Science Applications International Corporation, December, 2005.

SAIC (2005), Groundwater Data Base and Plume Modeling Report for the Claremont Polychemical Superfund Site, Old Bethpage, New York. Prepared for United States Army Corps of Engineers, Kansas City District. Science Applications International Corporation, December, 2005.

SAIC (2011), Updated Groundwater Modeling Report for the Claremont Polychemical Superfund Site. Prepared for United States Army Corps of Engineers, Kansas City District. Science Applications International Corporation, February, 2011.

USEPA (1988), EPA Superfund Record of Decision (ROD), Old Bethpage Landfill, EPA Site ID NYD980531727, OU 01 Oyster Bay, NY. United States Environmental Protection Agency, March 17, 1988.

USEPA (1989), EPA Superfund, Record of Decision (ROD), Claremont Polychemical EPA ID: NYD002044584, OU-02, Old Bethpage, NY. United States Environmental Protection Agency, September 22, 1989.

USEPA (1989), Decision Summary, Record of Decision (ROD), Claremont Polychemical EPA ID: NYD002044584, OU-01, Old Bethpage, NY. United States Environmental Protection Agency, September 28, 1990.

USEPA (2014), Second Five-Year Review Report for Claremont Polychemical Corporation Superfund Site, Old Bethpage, Town of Oyster Bay, Nassau County, New York. United States Environmental Protection Agency, March 14, 2014.

Weston (2008a), Sampling Trip Report for Soil and Aqueous Samples collected during the First Phase of Aluminum Louvre Corp. Preliminary Assessment/Site Inspection (PA/SI). Prepared for the U.S. Environmental Protection Agency, New York, NY. Weston Solutions, Inc., January 4, 2008.

Weston (2008b), Sampling Trip Report for Aqueous Samples collected during the Second Phase of Aluminum Louvre Corp. Preliminary Assessment/Site Inspection (PA/SI). Prepared for the U.S. Environmental Protection Agency, New York, NY. Weston Solutions, Inc., January 25, 2008.

TABLES

Table 1
Overview of Sites Relevant to the Regional Conceptual Site Model

Site	General	VOCs[1,2]	Groundwater Remedy Status	Limitations / Considerations
Claremont (CPC)	9.5-acre parcel Chemical manufacturing	PCE; TCE, cis-1,2-DCE, 1,2-DCA, 1,1-DCE, 1,1-DCA, and 1,1,1-TCA	Pumping EX-1 and EX-3 (65 and 175 gpm) for onsite control Offsite deferred to capture by OBL Recovery wells	Unknown level of contribution to the downgradient plume
Former Aluminum Louvre (FAL)	Currently light Industrial usage Includes 2 parcels- 161 Bethpage-Sweethollow Road and 301 Winding Road (previously 310 Winding Road)	1,1-DCA; cis-1,2-DCE; trans-1,2-DCE; 1,1-DCE; 1,1,1- TCA TCE; VC; PCE; 1,1,2- TCA; 1,2,3-trichloropropane; acetone; benzene; and tert-butyl methyl ether	OU-1 (onsite) ROD March 2013 - includes in situ thermal treatment and air sparge/SVE. OU-2 (offsite) ROD to be issued in the future (2013 ROD)	- Unknown level of contribution to the downgradient plume, groundwater discharge analysis could help quantifying this - Source area treatment plan in ROD appears likely effective method for removing mass, if implemented this could decrease offsite flux.
Nassau County Firemen's Training Area (FTC)	12-acre site used by Nassau County volunteer firefighters.	VC; PCE; 1,1-DCE 1,2-DCA; 1,1,1-TCA; cis-1,2-DCE; TCE; benzene; and xylene	Groundwater pumping from 1999 to ~2013 from 7 ORW wells, although pumping was reduced over time. Operations ceased due to declines in concentrations.	Decisions to turn system off appear heavily weighted on recovery well concentrations. No monitoring time series analysis found in documents
Old Bethpage Landfill (OBL)	Approximately 65-72 acre accepted industrial wastes from local industries in the 1960s and 1970s, along with municipal waste and garbage	cis-1,2-DCE; 1,1-DCA; VC; methylene chloride TCE; chloroethane; and BTEX	Pumping from mostly RW-3, RW-4 and RW-5, although alternating to RW-1 and RW-2 when RW-3 is down for maintenance. Total average pumping rate was 1.04 MGD or 722 GPM (2Q2015 RAP).	Groundwater treatment system captures significant portions of area CVOC plume

Notes:
1. VOCs include primary chlorinated COCs and secondary chlorinated COCs associated with groundwater at each of the Sites. It should be noted that not all contaminants listed are associated with the plumes discussed in this RCSM

2. VOCs abbreviations indicate the following:

PCE = Tetrachloroethylene
DCE = Dichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
1,2-DCA = 1,2-dichloroethane
1,1-DCE = 1,1-dichloroethene / 1,1-dichloroethylene
1,1-DCA = 1,1-dichloroethane
1,1,1-TCA = 1,1,1-trichloroethane
TCA = trichloroethane
TCE = trichloroethene
DCA = dichloroethane
BTEX = benzene, toluene, ethylbenzene, xylene
1,1,2-TCA = 1,1,2-trichloroethane
trans-1,2-DCE = trans-1,2-dichloroethene
1,2,3-TCP = 1,2,3-trichloropropane
VC = Vinyl Chloride
1,2-DCE = 1,2-dichloroethene
1,1,1-TCA = 1,1,1-trichloroethane
cis-1,2-DCE = cis-1,2-dichloroethene

TABLE 2
Zone Elevation by Sites
Former Aluminum Louvre Site - Old Bethpage, Nassau County, New York

	Zone 1 elevation (ft msl)	Zone 2 elevation (ft msl)	Zone 3 elevation (ft msl)
Old Bethpage Landfill	76 to 43	30 to -30	-65 to -157
Claremont Polychemical	120 to 20	20 to -100	-100 to -230
Nassau County Fire TC	68 to -85	-85 to -150	-150 to ……
Former Aluminum Louvre Supply well (N-07852) Screen Zone	128 to 28	28 to -92	-92 to -222 -214 to -271

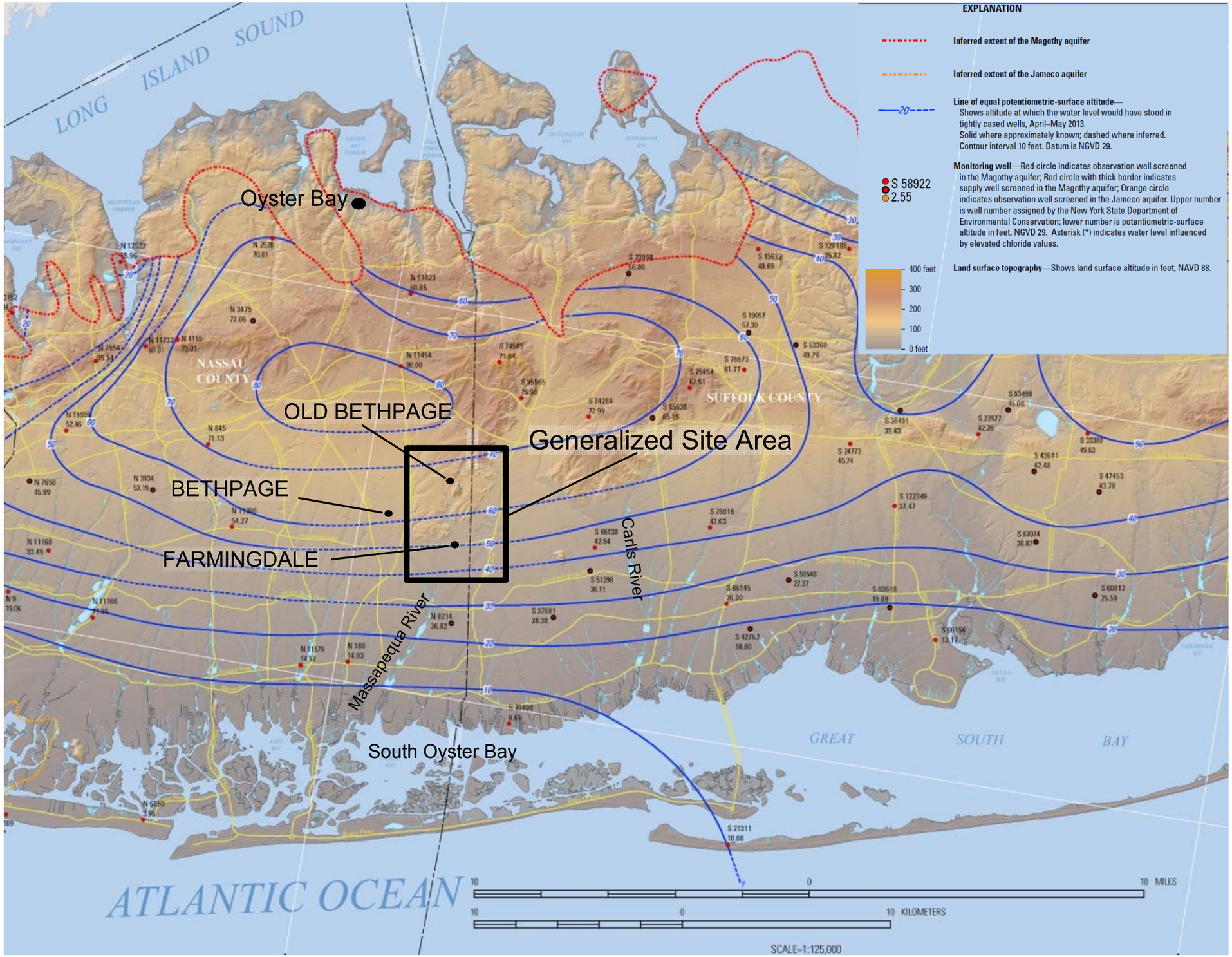
Note: Ft msl = feet mean sea level.

TABLE 3

Summary Of Site Specific Groundwater Pump and Treat Remedial Systems

Site	Actions
FAL	• 2013 – the ROD detailed thermal destruction, vapor extraction with ex-situ treatment unit, and air sparging to address groundwater contamination via source area treatment for OU-1. OU-2 ROD was yet to be completed as of 2013. The ROD currently has yet to be implemented (according to RCSM documents)
Old Bethpage Landfill	• 1991 - groundwater treatment system construction began. • April 1992 – groundwater treatment system began operation. Groundwater recovered from 5 recovery wells for a total of 1.5 MGD. • 4Q2012 – Changed to pumping from RW-1 and RW-2 on alternating days (approximately) apparently due to operational management. • Current status - Groundwater pump and treat system continues operation, pumping from mostly RW-3, RW-4 and RW-5, although alternating to RW-1 and RW-2 when RW-3 is down for maintenance. Total average pumping rate is 1.04 MGD or 722 GPM (2Q2015 RAP).
Claremont Polychemical Corporation	• February 2000 – began operation of groundwater treatment system. Three recovery wells (EX-1, EX-2, and EX-3) were pumping approximately 470 gpm for treatment of OU-IV (onsite VOCs). The downgradient plume (OU-5) is treated by OBLF groundwater capture system (as accepted by USEPA – 2nd 5 year review, 2014). • In May 2013, fixed end packers (packers) were installed in EX-1 and EX-2, effectively blocking the non-contaminated, bottom portion of EX-1 and EX-2 extraction well, at -115 feet AMSL and -125 feet AMSL, respectively. • August 2014 – EX-2 taken offline. EX-1 flow reduced to 60 gpm while EX-3 remained at capacity (presumably 175 gpm). • Current status - Groundwater pump and treat system continues operation.
Nassau County Fireman's Training Center	• July 1999 – Treatment system startup with three onsite (RW-1, 2, and 3) and 7 offsite (ORW-1 through 7) extraction wells. • August 2006 – ORW-1, 2, and 5 were taken offline. • Prior to 2009 – RW-2 and RW-3 taken offline. • Current status – System shutdown in approximately 2013 was justified by low concentrations in the pumping wells. Nassau County claims eastern plume is not related to FTC. Post-termination monitoring of groundwater continues.

FIGURES



Notes:

Map source: Water-Table and Potentiometric-Surface Altitudes in the Upper Glacial, Magothy, and Lloyd Aquifers of Long Island, New York, April–May 2013 By Michael D. Como, Michael L. Noll, Jason S. Finkelstein, Jack Monti, Jr., and Ronald Busciolano

FIGURE 1
SITE LOCATION AND
REGIONAL GROUNDWATER FLOW PATTERNS

NYSDEC FORMER ALUMINUM LOUVRE
REGIONAL CONCEPTUAL SITE MODEL

PREPARED BY:

PARSONS

JWS	Date: 5/24/16
	Date:
	Date:

buflan:\9.0 Reports\FIGURE 1.srf

NORTH

I-495

Plainview

Old Bethpage

Bethpage State Park

RT-135

Farmingdale

Bethpage State Parkway

Massapequa River

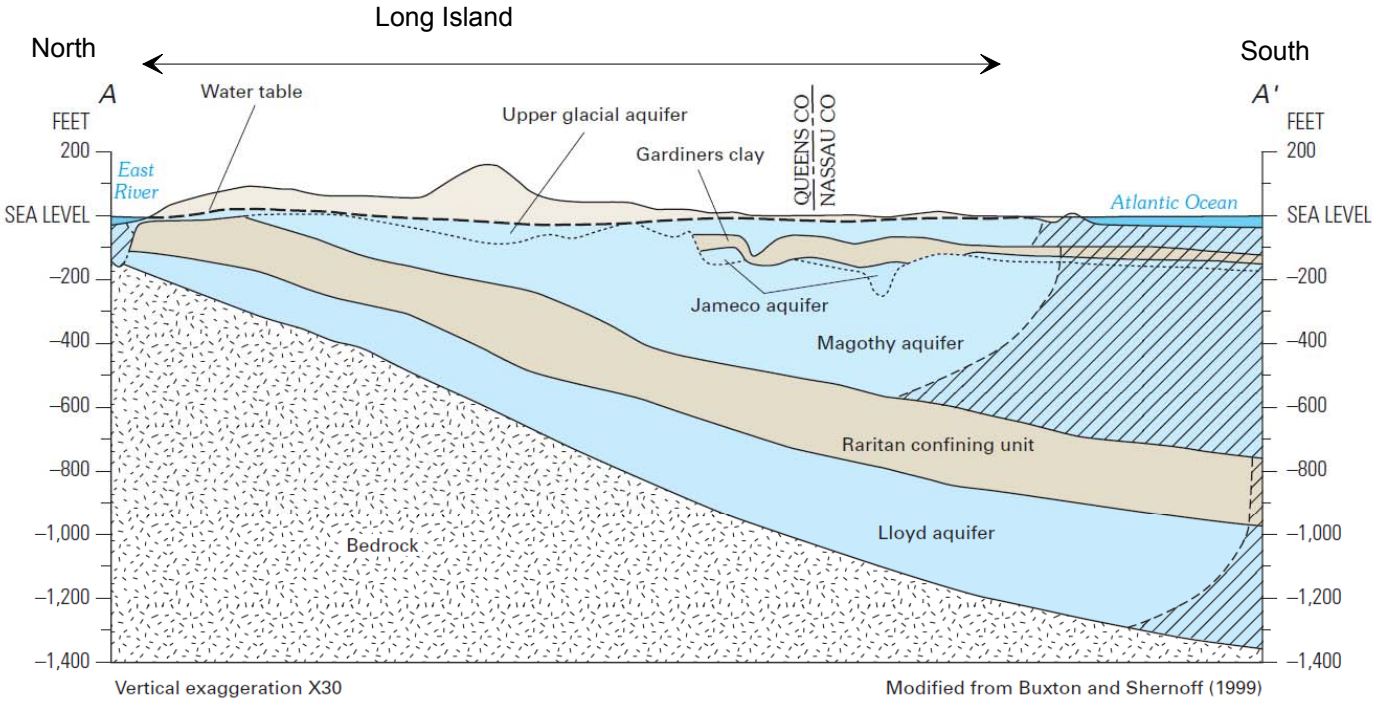
Claremont Polychemical Corporation Site
Former Aluminum Louvre (# V00079/130165)
Nassau County Fire Training Center
Old Bethpage Industrial Area (#130171)
Old Bethpage Landfill

0 0.225 0.45 0.9 Miles

PARSONS
PE&I
301 PLAINFIELD ROAD
SUITE 350
SYRACUSE, NY 13212
315-451-9560

Area Overview including Relevant Sites
NYSDEC Former Aluminum Louvre
Regional Conceptual Site Model

Drawn: C. Oneal	Parsons Project No.: 449647.02000
Date: 5/31/2016	
Revision: 2	Figure No.: 2
E:\GIS\DEC\ArOvrVw.mxd	



EXPLANATION

Area of salty ground water

Confining unit

Sea level refers to the National Geodetic Vertical Datum of 1929

Notes:

Map source: Ground Water in Freshwater-Saltwater Environments of the Atlantic Coast by Paul M Barlow, USGS Circular 1262, (2003)

FIGURE 3
LONG ISLAND GROUNDWATER

NYSDEC FORMER ALUMINUM LOUVRE
REGIONAL CONCEPTUAL SITE MODEL

PREPARED BY:

PARSONS

JWS	Date: 10/20/15
	Date:

bufflan\figure regxsec.srf

148W-TP (75,95, 125)
FILT- MW-04
148E-TP-(70, 95, 115, 125)
MW-161-1-(I,D)
MW-161-1-S
160-TP (75,95,125)
MW-301-01-S/I
148E-TP
161-CP2 (66,91,121)
ALC-MW3
ALC-OLD-MW1
301-2E
MW-301-01-D
301-CP2 (60, 91, 121)
MW-301-1-VD
MW-175-1-SID
MW-175-1-VD
MW-301-4 (I, S, D)
DB-ALC-MW-35
MW-195-1 (S,I,D)
ALC-OLD-MW2
ALC-MW4
MW-161-2 (S, I, D)
303-TP-E (65,95,125)
MW-301-3 (I, D)
MW-NEMF-3
MW-NEMF-3-(I, S,D)
MW-NEMF-3-ED
301-2E-(58, 91,111)
MW-303-1 (VD, I, ID)
MW-NEMF-3-VD
ALC-OLD-MW3
MW-NEMF-2 (S,I,D)
MW-NEMF-2-ED
MW-301-2 (I,D)
MW-NEMF-2-VD
301-7 (58, 91,121)
MW-NEMF-4-VD
MW-NEMF-4-D
303-TP-SE (65, 95, 125)
EW-6A-C
EW-7C-D
MW-NEMF-4-ED
LF-3
MW-NEMF-1 (I, S, D)
EW-10C
EW-13D
EW-9D
EW-4A-C
IW-1
IW-3
EW-8D
WT-01
PPW-1
IW-2
IW-4
Town - OBL Infiltration
DW-2
SW-1
EW-5
EW-12D
DW-1
EX-3
SW-2
EW-1C
EW-2A-D
EW-11D
EW-1A-B
INSET
NORTH
County (FTC) Infiltration
SEE INSET
M-29A-R
Town - OBL Infiltration
M-30A
LF-4
EX-1
N-09591
M-30B-R
M-29B
LF-2
MW-10A-D
TW-1
TW-3-R
MW-8A-C
Town - OBL Infiltration
MW-6A-F
RW-5
EW-3A-C
TW-2
MW-9A-D
LF-1
BP-7A-C
RW-3
RW-4
MW-5A-B
RW-1
EW-14D
S-39709
BP-8A
OBS-1
MW-7A-B-R
BP-6A-C
RW-2
ORW-1
ORW-2
ORW-3
BP-3A
S-20042
BP-5A-C
BP-4A-C
ORW-4
BP-15B-C
BP-14B-C
BP-11
ORW-5
BP-9B-C
BP-12A-C
ORW-6
MW-11A-B
BP-13B-C
ORW-7
BP-10B-C
N-9980
N-7438
N-06644
N-07852
N-11004
N-06916
N-7515
N-7516
N-0403
N-05147
Ottawa
Rochester
Buffalo
Albany
New York
Oyster Bay, NY
Infiltration Ponds
RW Locations
MW Locations
IW Wells
Water Supply Wells
Claremont Polychemical Corporation Site
Former Aluminum Louvre (# V00079/130165)
Nassau County Fire Training Center
Old Bethpage Industrial Area (#130171)
Old Bethpage Landfill
0 0.225 0.45 0.9
Miles

E:\GIS\DEC\PertMonGW_.mxd

PARSONS
PE&I
301 PLAINFIELD ROAD
SUITE 350
SYRACUSE, NY 13212
315-451-9560

Pertinent Monitoring and Groundwater Extraction/Recharge Locations
NYSDEC Former Aluminum Louvre
Regional Conceptual Site Model

Drawn: C. Oneal
Date: 5/31/2016
Revision: 2
Parsons Project No.: 449647.02000
Figure No.: 4
E:\GIS\DEC\PertMonGW_.mxd

NORTH

N-7421
N-6956
N-8054
County (FTC) Infiltration
Town - OBL Infiltration
M-29A-R
M-30A
LF-4
M-30B-R
M-29B
EX-1
A
TW-1
TW-3-R
TW-2
LF-1
LF-2
MW-6A-F
MW-8A-C
MW-10A-D
RW-5
EW-3A-C
MW-9A-D
RW-3
RW-4
BP-7A-C
MW-5A-B
RW-1
EW-14D
S-3970
BP-8A
OBS-1
MW-7A-B-R
BP-6A-C
ORW-1
RW-2
ORW-2
ORW-3
BP-3A
BP-5A-C
BP-4A-C
ORW-4
BP-15B-C
BP-14B-C
ORW-5
BP-11
BP-9B-C
BP-12A-C
ORW-6
BP-13B-C
ORW-7
BP-10B-C
MW-11A-B
N-9980
N-07852
A'
N-06644
N-11004
N-7515
N-7516

Ottawa
Rochester
Buffalo
Albany
Newark
Oyster Bay, NY

A-A' Cross Section
Infiltration Ponds
RW Locations
MW Locations
IW Wells
Water Supply Wells
Claremont Polychemical Corporation Site
Former Aluminum Louvre (# V00079/130165)
Nassau County Fire Training Center
Old Bethpage Industrial Area (#130171)
Old Bethpage Landfill

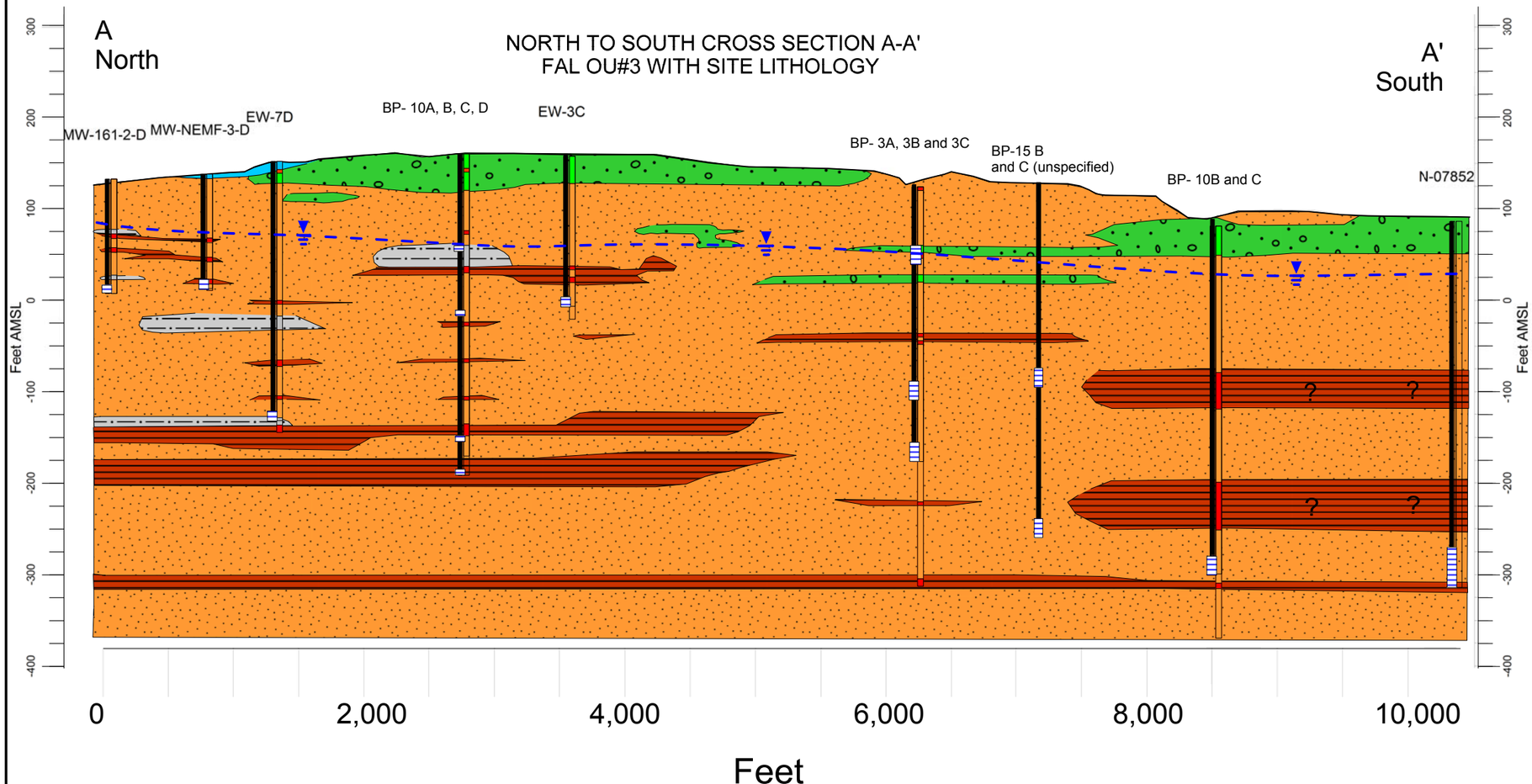
0 0.125 0.25 0.5 Miles

E:\GIS\DEC\X_A_A.mxd

PARSONS
PE&I
301 PLAINFIELD ROAD
SUITE 350
SYRACUSE, NY 13212
315-451-9560

Cross Section Location Map
Regional Conceptual Site Model

Drawn: C. Oneal	Parsons Project No.: 449647.02000
Date: 5/31/2016	
Revision: 2	Figure No.: 5
E:\GIS\DEC\X_A_A.mxd	



Notes:

The screen elevation for supply well N-07852 was not available in site documents, therefore it was estimated here.

Geology and well information provided from Equis data and site reports.

Lithology Index

- Clay (boring)
- Clay (model)
- Fill
- Gravel (boring)
- Gravel (model)
- Sand (boring)
- Sand (model)
- Silt (boring)
- Silt (model)

Notes:

LEGEND

Approximate Water Table

Reference Map

FIGURE 6
CROSS SECTION A-A'
FAL OU#3 WITH SITE LITHOLOGY

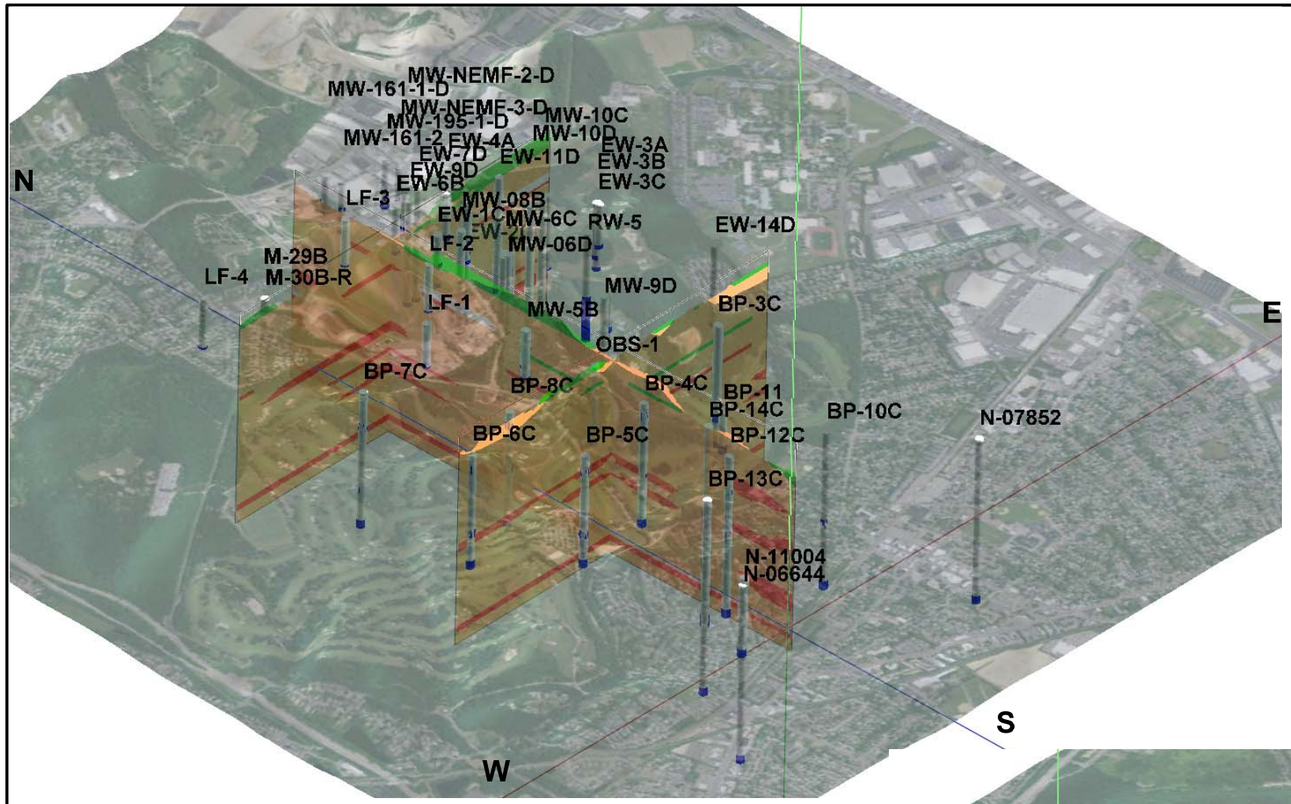
FORMER ALUMINUM LOUVRE OU#3
SITE REGIONAL CONCEPTUAL MODEL
OLD BETHPAGE, NEW YORK

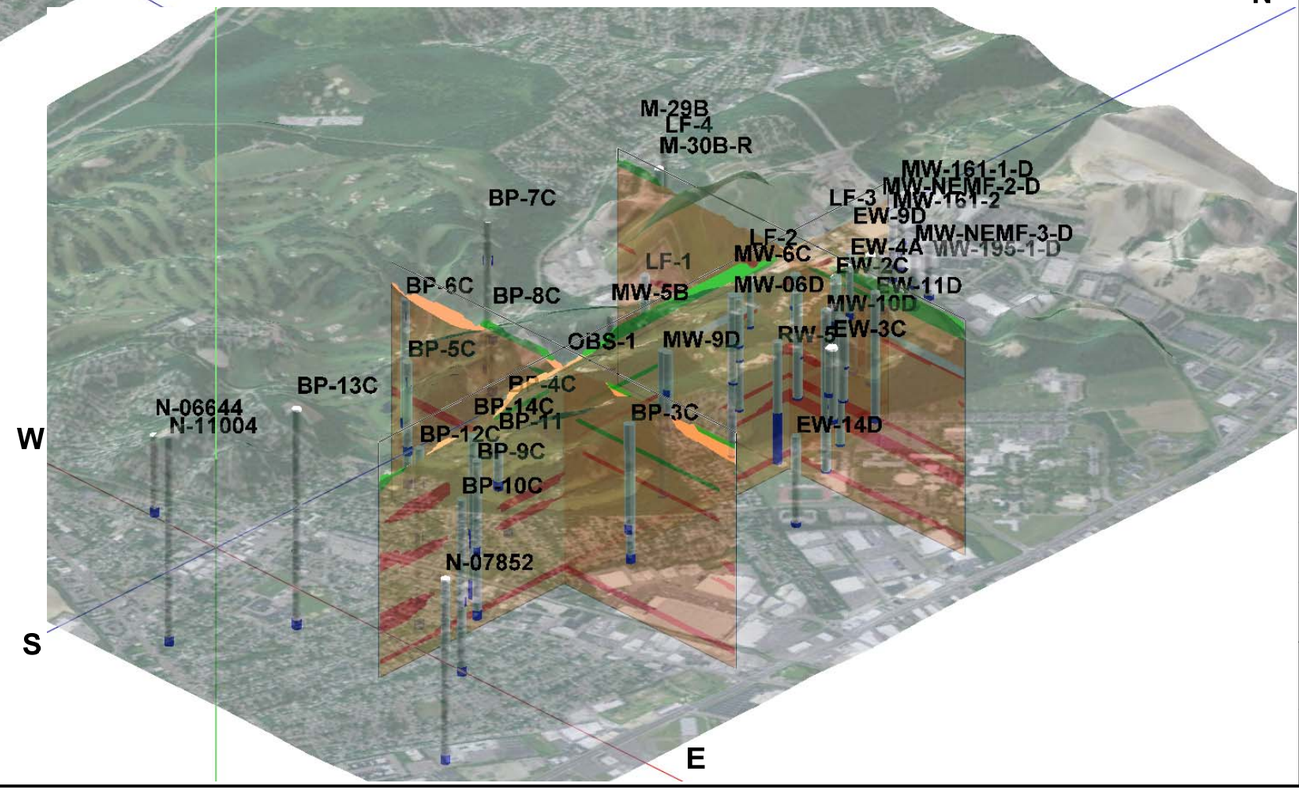
PREPARED BY:

PARSONS

RBP	Date: 05/13/2016
	Date:
	Date:

FAl section A-A' section2.srf and and rockwrks data





Notes:

Top image shows 3-dimensional model and lithology fence diagrams, as seen from the southwest. Site wells and associated screen depths are displayed.

Bottom image shows the same model and fence diagrams as seen from the southeast. Site wells and associated screen depths are displayed.

LEGEND

Well Construction

- casing
- screen

Lithology

- CLAY
- FILL
- GRAVEL
- SAND
- SILT

FIGURE 7
VIEW OF 3-DIMENSIONAL MODEL
FAL OU#3 WITH SITE LITHOLOGY
FENCE DIAGRAMS

FORMER ALUMINUM LOUVRE OU#3
SITE REGIONAL
CONCENCEPTUAL MODEL
OLD BETHPAGE, NEW YORK

PREPARED BY:

PARSONS

Created by: RBP	Date: 05/13/2016
Checked by:	Date:
Project Manager:	Date:

FAL Rockworks 17 Data:
FAL- fenceFigure7_SWview_SiteWells.Rw3D
FAL- fenceFigure7_SEview_SiteWells.Rw3D

NORTH

Approximate Capture Area of Claremont Ex-1 and EX-3.

Approximate capture area for Old Bethpage Landfill recovery wells at ~ 700 gpm

EX-3

EX-1

RW-5

RW-4

RW-3

RW-2

RW-1

N-07852

RW Locations
MW Locations
IW Wells
Water Supply Wells
Infiltration Ponds
Claremont Polychemical Corporation Site
Former Aluminum Louvre (# V00079/130165)
Nassau County Fire Training Center
Old Bethpage Industrial Area (#130171)
Old Bethpage Landfill

Generalized Groundwater Flow

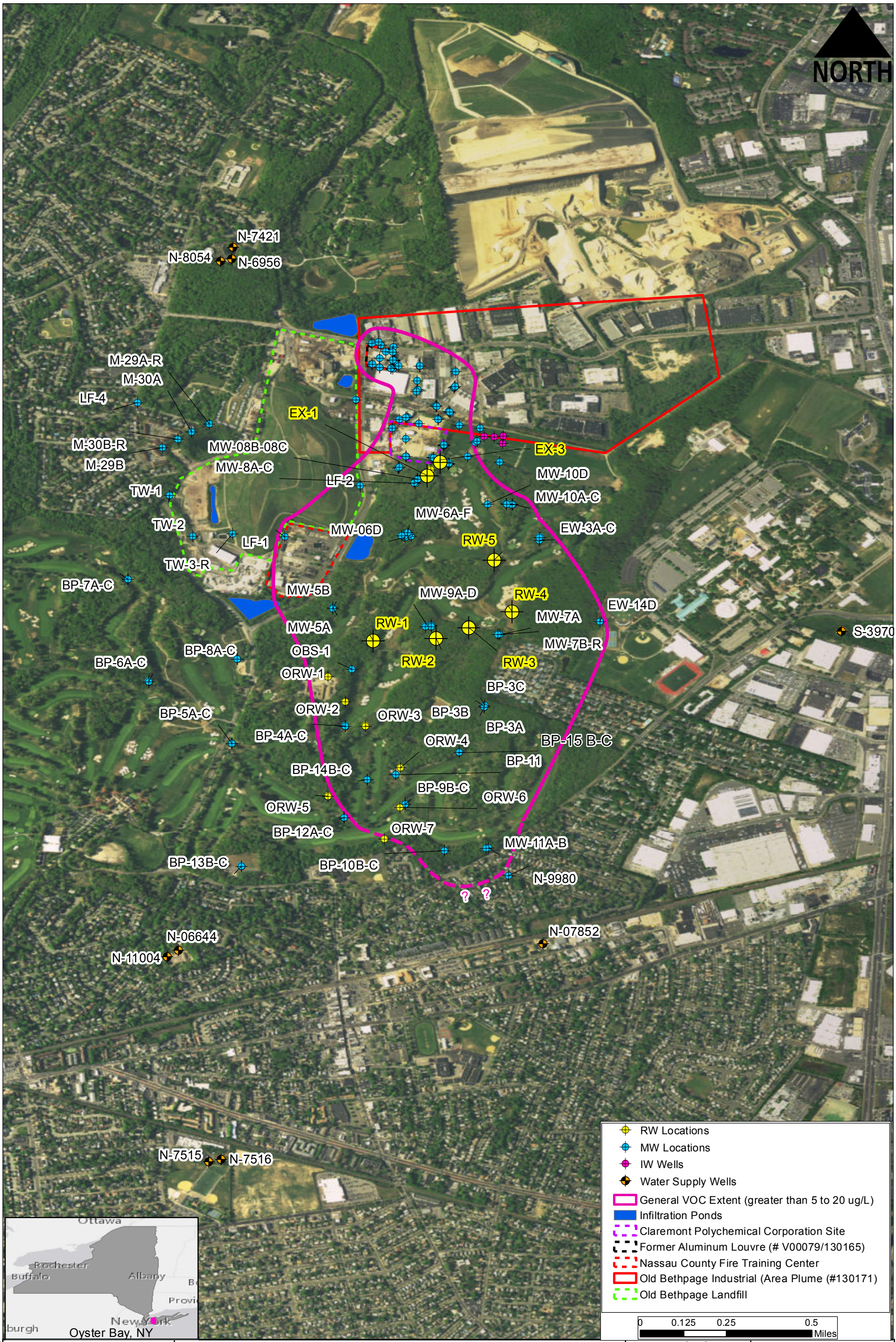
0 0.125 0.25 0.5 Miles

D:\GIS\DEC\capture_.mxd

PARSONS
PE&I
301 PLAINFIELD ROAD
SUITE 350
SYRACUSE, NY 13212
315-451-9560

Generalized Location of Groundwater Capture Areas
NYSDEC Former Aluminum Louver
Regional Conceptual Site Model

Drawn: C. Oneal	Parsons Project No.: 449647.02000
Date: 8/25/2016	
Revision: 2	Figure No.: 8
D:\GIS\DEC\capture_.mxd	



D:\GIS\DEC\plume.mxd

PARSONS
PE&I
301 PLAINFIELD ROAD
SUITE 350
SYRACUSE, NY 13212
315-451-9560

Generalized Location of Groundwater
VOCs above Drinking Water Standards
NYSDEC Former Aluminum Louver
Regional Conceptual Site Model

Drawn: C. Oneal	449647.02000
Date: 8/25/2016	
Revision: 2	Figure No.: 9
D:\GIS\DEC\plume.mxd	

APPENDIX A

NYSDEC PROVIDED DOCUMENTS

Appendix A
Former Aluminum Louvre OU-3
Reference Summary

Document Name	Associated Site	Date	Author	File Name
2005 Third Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Dec-05	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.1900-01-01.2005-12-2005_Third_Quarter_Report_Volume_1_and_2
2009 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Apr-12	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.1900-01-01.Q2-2009_RAP_Report
2009 Second Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Apr-12	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.1900-01-01.Q3-2009_RAP_Report
1991 Annual Report Summarizing the Results of the Landfill Gas Program	Old Bethpage Landfill #130001	Jun-92	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.1992-06-01.1991-Annual_Report
First Quarterly Report Initial Year of Groundwater Facility Treatment Operation	Old Bethpage Landfill #130001	Sep-92	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.1992-09-01.First_Quarterly_Report_Volume_2_of_2
Second Quarterly Report Initial Year of Groundwater Facility Treatment Operation Vol. 1 of 2	Old Bethpage Landfill #130001	Jan-93	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.1993-01-01.Second_Quarterly_Report_Volume_1_of_2
Second Quarterly Report Initial Year of Groundwater Facility Treatment Operation Vol. 2 of 2	Old Bethpage Landfill #130001	Jan-93	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.1993-01-01.Second_Quarterly_Report_Volume_2_of_2
1992 Annual Report Summarizing the Results of the Landfill Gas Monitoring Programs at the Old Bethpage Solid Waste Disposal Complex and Adjacent Areas	Old Bethpage Landfill #130001	May-93	Town of Oyster Bay Division of Environmental Control	Report.HW.130001.1993-05-01.1992_Annual_Report
1992-1993 Annual Summary Report Initial Year of Ground Facility Treatment Operation Vol. 2 of 2	Old Bethpage Landfill #130001	Oct-93	Town of Oyster Bay Division of Environmental Control	Report.HW.130001.1993-10-01.1992_1993_Annual_Summary_Report_Volume_2-of_2
Fifth Quarterly Report Second Year of Groundwater Facility Treatment Operation Vol. 1 of 2	Old Bethpage Landfill #130001	Nov-93	Town of Oyster Bay Division of Environmental Control	Report.HW.130001.1993-11-01.Fifth_Quartely_Report_Volume_1_of_2
Sixth Quarterly Report Second Year of Groundwater Facility Treatment Operation Vol. 1 of 2	Old Bethpage Landfill #130001	Apr-94	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.1994-04-01.Sixth_Quarterly_Report_Volume_1_of_2
Sixth Quarterly Report Second Year of Groundwater Facility Treatment Operation Vol. 2 of 2	Old Bethpage Landfill #130001	Apr-94	US Dept. of Health and Human Services	Report.HW.130001.1994-04-01.Sixth_Quarterly_Report_Volume_2_of_2
1993 Annual Report Summarizing the Results of the Landfill Gas Monitoring Programs at the Old Bethpage Solid Waste Disposal Complex and Adjacent Areas	Old Bethpage Landfill #130001	May-94	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.1994-05-01.1993_Annual_Report
Site Review and Update Old Bethpage Landfill Cerclis No. NYD980531727	Old Bethpage Landfill #130001	Aug-94	Hazen and Sawyer, PC Environmental Engineers and Scientists	Report.HW.130001.1994-09-14.Site Review and Update
1994 Annual Report Summarizing the Results of the Landfill Gas Monitoring Programs at the Old Bethpage Solid Waste Disposal Complex and Adjacent Areas	Old Bethpage Landfill #130001	May-95	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.1995-05-01.1994_Annual_Report
2000 Annual Report Summarizing the Results of the Landfill Gas Monitoring Programs at the Old Bethpage Solid Waste Disposal Complex and Adjacent Areas	Old Bethpage Landfill #130001	Nov-00	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2000-11-28.2000_Annual_Report
2000 Annual Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Mar-01	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2001-03-01.2000_Annual_Report
2001 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	May-01	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2001-05-01.2001_First_Quarter_Report_Volume_1_and_2
2001 Second Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Aug-01	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2001-08-01.2001_Second_Quarter_Report_Volume_1_and_2
2001 Fourth Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Dec-01	Hazen and Sawyer, PC Environmental Engineers and Scientists	Report.HW.130001.2001-12-01.2001_Fourth_Quarter_Report
2001 Third Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Dec-01	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2001-12-01.2001_Third_Quarter_Report_Volume_1_and_2
2001 Annual Report Summarizing the Results of the Landfill Gas Monitoring Programs at the Old Bethpage Solid Waste Disposal Complex and Adjacent Areas	Old Bethpage Landfill #130001	Nov-01	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2001-12-12.2001_Annual_Report
2001 Annual Summary Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Jan-02	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2002-01-01.2001_Auunual_Summary_Report
2002 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Jun-02	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2002-06-01.2002_First_Quarter_Report_Volume_1_and_2
2002 Second Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Aug-02	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2002-08-01.2002_Second_Quarter_Report_Volume_1_and_2
2002 Third Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Nov-02	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2002-11-01.2002_Third_Quarter_Report_Volume_1_and_2
2002 Fourth Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Apr-03	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2003-04-01.2002_Fourth_Quarter_Report_Volume_1_and_2
2002 Annual Summary Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	May-03	Hazen and Sawyer, PC Environmental Engineers and Scientists	Report.HW.130001.2003-05-01.2002_Annual_Summary_Report
2003 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Aug-03	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2003-08-01.2003_First_Quarter_Report_Volume_1_and_2
2003 Annual Report Summarizing the Results of the Landfill Gas Monitoring Programs at the Old Bethpage Solid Waste Disposal Complex and Adjacent Areas	Old Bethpage Landfill #130001	Dec-03	Science Applications International Corporation	Report.HW.130001.2003-12-01.2003_Annual_Report
2005 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Oct-05	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2005-10-01.2005_First_Quarter_Report_Volume_1-and_2
Final Well Completion Report for the Installation of Additional Monitoring Wells - Phases I & II at the Claremont Polychemical Superfund Site	Old Bethpage Landfill #130001	Nov-06	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2006-11-20.Well_Completion_Final_Report
2007 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Dec-07	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2007-12-31.Q1-2007_Report_Vol_1_of_2
2007 Fourth Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Jul-07	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2007-12-31.Q4-2007_RAP_Report
2007 Annual Summary Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Sep-09	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2007-12-31.Q4-2007_RAP_Report_Annual
2008 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Oct-11	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2008-03-31.Q1-2008_RAP_Report
2007 Second Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Mar-08	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2008-03-31.Q2-2007_Report_Vol_1_of_2
2008 Second Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Oct-11	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2008-06-30.Q2-2008_RAP_Report
2007 Third Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Jul-08	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2008-07-31.Q3-2007_Report_Vol_1_of_2
2008 Third Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Mar-12	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2008-08-31.Q3-2008_RAP_Report
2008 Fourth Quarter and Annual Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	May-12	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2008-12-31.Q4-2008_RAP_Report_Annual

Appendix A
Former Aluminum Louvre OU-3
Reference Summary

Document Name	Associated Site	Date	Author	File Name
2009 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Apr-12	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2009-03-31.Q1-2009_RAP_Report
2007 Fourth Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility Vol. 1 of 2	Old Bethpage Landfill #130001	Jul-09	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2009-07-31.Q4-2007_Report_Vol_1_of_2
2009 Fourth Quarter and Annual Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	May-12	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2009-12-31.Q4-2009_RAP_Report_Annual
2010 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Oct-11	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2010-03-31.Q1-2010_RAP_Report
2010 Second Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Oct-11	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2010-06-30.Q2-2010_RAP_Report
2010 Third Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Oct-11	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2010-09-30.Q3-2010_RAP_Report
2011 Fourth Quarter and Annual Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Sep-11	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2010-12-31.Q4-2010_RAP_Report_Annual
2011 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Sep-11	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2011-03-31.Q1-2011_RAP_Report
2011 Second Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Nov-11	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2011-12-01.Q2-2011_RAP_Report
2011 Third Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	May-12	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2012-05-07.Q3-2011_RAP_Report
2012 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Aug-12	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2012-08-29.Q1-2012_RAP_Report
2011 Fourth Quarter and Annual Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Sep-12	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2012-09-18.Q4-2011_RAP_Report_Annual
2012 Second Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Oct-12	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2012-10-12.Q2-2012_RAP_Report
2012 Third Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Mar-13	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2013-03-26.Q3-2012_RAP_Report
2012 Fourth Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Apr-13	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2013-04-29.Q4-2012_RAP_Report
2013 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Jul-13	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2013-07-31.Q1-2013_RAP_Report
2013 Second Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Aug-13	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2013-09-13.Q2-2013_RAP_Report
2013 Third Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Mar-14	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2014-03-17.Q3-2013_RAP_Report
2013 Fourth Quarter and Annual Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Jun-14	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2014-07-24.report.hw130001.2014-07-24.OBL_4Q2013-Annual_RAP_Report
2013 Fourth Quarter and Annual Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility (2nd copy)	Old Bethpage Landfill #130001	Jun-14	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2014-07-25.OBL_2013_4Q_and_Annual_RAP_Report
2014 First Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Jun-14	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2014-10-30.OBL 1Q2014 RAP Report
2014 Second Quarter Report Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility	Old Bethpage Landfill #130001	Oct-15	Lockwood, Kesller and Bartlett, Inc.	Report.HW.130001.2015-10-23.2Q2015 RAP Report
EPA Superfund Record of Decision: Old Bethpage Landfill	Old Bethpage Landfill #130001	Mar-88	USEPA	ROD.HW.130001.1988-03-17.ROD
Record of Decision: Former Aluminum Louvre Corporation Operable Unit #1: On-Site Contamination State Superfund Project	Former Aluminum Louvre #130195	Mar-13	USEPA Division of Environmental Remediation	Former Aluminum Louvre Site_130195
Records Search and Site Reconnaissance Report	Former Aluminum Louvre #130195	May-08	Malcom Pirnie, Inc.	Report.HW.130195.2008-05-30.Records_Search_and_Site_Reconnaissance_Report
Remedial Investigation Report Former Aluminum Louvre Corporation Volume 1	Former Aluminum Louvre #130195	Jan-13	HDR	Report.HW.130195.2013-01-01.Remedial_Investigation_Report_Volume_1
Remedial Investigation Report Former Aluminum Louvre Corporation Volume 2	Former Aluminum Louvre #130195	Jan-13	HDR	Report.HW.130195.2013-01-01.Remedial_Investigation_Report_Volume_2
Record of Decision: Former Aluminum Louvre Corporation Operable Unit #1: On-Site Contamination State Superfund Project (2nd copy)	Former Aluminum Louvre #130195	Mar-13	USEPA Division of Environmental Remediation	ROD.HW.130195.2013-03-29.OU1ROD
Site Map Former Aluminum Louvre Corporation	Former Aluminum Louvre #130195	Not Provided	Not Provided	Site Plan.HW.130195.2009-03-12.Boundary_GIS_Maps
Intermediate Remedial Design Phase Submittal Volume 1 of 4	Claremont Poly Chem #130015	Feb-93	SEC Donohue	Report.HW.130015.1993-02-12.OU1_Phase_I_Volume_1_of_4
Intermediate Remedial Design Phase Submittal Volume 2 of 4	Claremont Poly Chem #130015	Feb-93	SEC Donohue	Report.HW.130015.1993-02-12.OU1_Phase_I_Volume_2_of_4
Intermediate Remedial Design Phase Submittal Volume 3 of 4	Claremont Poly Chem #130015	Feb-93	SEC Donohue	Report.HW.130015.1993-02-12.OU1_Phase_I_Volume_3_of_4
Data Report July, 2003 Claremont Polychemical Superfund Site Long-Term Groundwater Monitoring	Claremont Poly Chem #130015	Jul-03	US Army Corps of Engineers	Report.HW.130015.2001-07-31.Data_Report_2003
Data Report December 2001 Claremont Polychemical Superfund Site Long-Term Groundwater Monitoring	Claremont Poly Chem #130015	Dec-01	US Army Corps of Engineers	Report.HW.130015.2001-12-01.Data_Report_No1_2001
Data Report July, 2003 Claremont Polychemical Superfund Site Long-Term Groundwater Monitoring	Claremont Poly Chem #130015	Jul-03	US Army Corps of Engineers	Report.HW.130015.2003-07-01.Data_Report_No2_2003
Final Data Report, August 2004 Claremont Polychemical Superfund Site Long-Term Groundwater Monitoring	Claremont Poly Chem #130015	Aug-03	US Army Corps of Engineers	Report.HW.130015.2004-08-31.Data_Report_No3_2004
Groundwater Data Base and Plume Monitoring Report for the Claremont Polychemical Superfund Site (Draft)	Claremont Poly Chem #130015	Dec-05	Science Applications International Corporation	Report.HW.130015.2006-01-27.plume_modeling_report
Final Well Completion Report for the Installation of Additional Monitoring Wells - Phases I & II at the Claremont Polychemical Superfund Site	Claremont Poly Chem #130015	Nov-06	Science Applications International Corporation	Report.HW.130015.2006-11-01.Well_Completion_Phases-1&2_Final_Report
Nassau County Department of Public Works Firemen's Training Center Groundwater Model	Claremont Poly Chem #130015	Apr-08	CDM	Report.HW.130015.2008-04-01.Groundwater_Model_2008_NCDPW
Quarterly Report for Superfund Cooperative Assistance Grant	Claremont Poly Chem #130015	Jan-08	NYSDEC	Report.HW.130015.2008-04-18.EPA_2nd_Qrtly_report_Jan-Mar_2008
Quarterly Report for Superfund Cooperative Assistance Grant	Claremont Poly Chem #130015	Apr-08	NYSDEC	Report.HW.130015.2008-07-11.EPA_3rd_Qrtly_report_Apr-June_2008
Five-Year Review Report for the Claremont Polychemical Corporation Superfund Site	Claremont Poly Chem #130015	Sep-08	USEPA	Report.HW.130015.2008-09-01.Five_Year_Review
Five-Year Review Report for the Claremont Polychemical Corporation Superfund Site (2nd copy)	Claremont Poly Chem #130015	Sep-08	USEPA	Report.HW.130015.2008-09-25.EPA_5_Year_Review
Quarterly Report for Superfund Cooperative Assistance Grant	Claremont Poly Chem #130015	Jul-08	NYSDEC	Report.HW.130015.2008-10-29.EPA_4th_Qrtly_report_July-Sept_2008
Quarterly Report for Superfund Cooperative Assistance Grant	Claremont Poly Chem #130015	Oct-08	NYSDEC	Report.HW.130015.2009-01-26.EPA_1st_Qrtly_report_Oct-Dec_2008-09
Claremont Polychemical NPL Site Cooperative Agreement Final Technical Report	Claremont Poly Chem #130015	Jun-09	Not Provided	Report.HW.130015.2009-07-16.Claremont_Grant_Final_Technical_Report

Appendix A
Former Aluminum Louvre OU-3
Reference Summary

Document Name	Associated Site	Date	Author	File Name
IRT Final Draft Data Report No. 12 October 2007 to October 2008 Reporting Period Claremont Polychemical Superfund Site Long-term Groundwater Monitoring	Claremont Poly Chem #130015	Apr-10	US Army Corps of Engineers	Report.HW.130015.2010-04-01.Oct2007-Oct2008_Data_Report_No12
Response to Comments on Updated Groundwater Modeling Report	Claremont Poly Chem #130015	Feb-11	Science Applications International Corporation	Report.HW.130015.2011-02-14.Updated_Groundwater_Modeling_Report_Complete_USACE
Response to Comments on Updated Groundwater Modeling Report	Claremont Poly Chem #130015	Apr-11	Science Applications International Corporation	Report.HW.130015.2011-04-28.Updated_Groundwater_Modeling_Report
Analytical Report	Claremont Poly Chem #130015	Sep-11	Test America	Report.HW.130015.2011-09-30.TestAmerica_GW_Analytical_Summer-2011
2011 Third Quarter Final Groundwater Monitoring Report July- September 2011	Claremont Poly Chem #130015	Mar-12	HRP Engineering, PC	Report.HW.130015.2012-03-28.Claremont_Polychemical_Quarterly_GW_Q3-2011
2011 Fourth Quarter Final Groundwater Monitoring Report October- December 2011	Claremont Poly Chem #130015	Mar-12	HRP Engineering, PC	Report.HW.130015.2012-03-28.Claremont_Polychemical_Quarterly_GW_Q4-2011
2012 First Quarter Final Groundwater Monitoring Report January- March 2012	Claremont Poly Chem #130015	May-12	HRP Engineering, PC	Report.HW.130015.2012-05-21.Claremont_Polychemical_Quarterly_GW_Q1-2012
2012 Second Quarter Groundwater Monitoring Report April- June 2012	Claremont Poly Chem #130015	Jul-12	HRP Engineering, PC	Report.HW.130015.2012-07-13.Claremont_Polychemical_Quarterly_GW_Q2-2012
Remedial System Optimization for Claremont Polychemical Corporation Site	Claremont Poly Chem #130015	Aug-12	HRP Engineering, PC	Report.HW.130015.2012-08-17.Claremont.RSO
2012 Third Quarter Groundwater Monitoring Report July- September 2012	Claremont Poly Chem #130015	Oct-12	HRP Engineering, PC	Report.HW.130015.2012-10-24.Claremont_Polychemical_Quarterly_GW_Q3-2012
2012 Fourth Quarter Final Groundwater Monitoring Report October- December 2012	Claremont Poly Chem #130015	Jan-12	HRP Engineering, PC	Report.HW.130015.2013-01-17.Claremont_Polychemical_Quarterly_GW_Q4-2012
2013 First Quarter Final Groundwater Monitoring Report January- March 2013	Claremont Poly Chem #130015	May-13	HRP Engineering, PC	Report.HW.130015.2013-05-07.Claremont_Polychemical_Quarterly_GW_Q1-2013
2013 Second Quarter Groundwater Monitoring Report April- June 2013	Claremont Poly Chem #130015	Jul-13	HRP Engineering, PC	Report.HW.130015.2013-07-19.Claremont_Polychemical_Quarterly_GW_Q2-2013
2013 Third Quarter Groundwater Monitoring Report July- September 2013	Claremont Poly Chem #130015	Oct-13	HRP Engineering, PC	Report.HW.130015.2013-10-25.Claremont_Polychemical_Quarterly_GW_Q3-2013
Claremont Polychemical Superfund Site (Site # 130015), Step Drawdown Test Results with Groundwater Recovery Rate Recommendations	Claremont Poly Chem #130015	Oct-13	HRP Associates, Inc.	Report.HW.130015.2013-10-29.Extraction_Well_Step-Down_Test
Second Five-Year Review Report for the Claremont Polychemical Corporation Superfund Site	Claremont Poly Chem #130015	Mar-14	USEPA	Report.HW.130015.2014-03-05.EPA_5_Year_Review
2014 First Quarter Final Groundwater Monitoring Report January- March 2014	Claremont Poly Chem #130015	May-14	HRP Engineering, PC	Report.HW.130015.2014-05-12.report.hw130015.2014-05-12.Claremont_Polychemical_Quarterly_GW_1Q2014
2014 Second Quarter Groundwater Monitoring Report April- June 2014	Claremont Poly Chem #130015	Aug-14	HRP Engineering, PC	Report.HW.130015.2014-08-05.report.hw130015.2014-08-05.Claremont_Polychemical_Quarterly_GW_2Q2014
Periodic Review Report (PRR) June 12, 2011 – September 1, 2014	Claremont Poly Chem #130015	Oct-14	HRP Engineering, PC	Report.HW.130015.2014-10-01.2014 Claremont Polychemical Periodic Review Report
2015 Second Quarter Groundwater Monitoring Report April- June 2015	Claremont Poly Chem #130015	Jul-15	HRP Engineering, PC	Report.HW.130015.2015-07-22.Claremont 2Q2015 Quarterly GW Report
Analysis of Claremont Extraction System	Claremont Poly Chem #130015	Feb-11	Science Applications International Corporation	report.hw130015.2011-02-01.SAIC_Analysis_of_Extraction_System_Capture_Efficiency
EPA Superfund Record of Decision: Claremont Polychemical	Claremont Poly Chem #130015	Sep-89	USEPA	ROD.HW.130015.1989-09-22.Claremont_Polychemical_EPA_OU2
Declaration for the Record of Decision	Claremont Poly Chem #130015	Jul-90	USEPA	ROD.HW.130015.1990-09-28.Claremont_Polychemical_EPA_OU1
Response to Comments on Updated Groundwater Modeling Report	Claremont Poly Chem #130015	Feb-11	Science Applications International Corporation	Updated Groundwater Modeling Report Complete to USACE 021411
Remediatl Investigation Report Addendum Appendix D-1: Analytical Data Report	Former Aluminum Louvre #V00079	Apr-99	ANA Lab Inc.	Report.VCP.V00079.1999-05-25.RI_Report_Addendum_Appedix_D1.pdf
Remediatl Investigation Report Addendum Appendix D-2: Analytical Data Report	Former Aluminum Louvre #V00079	Apr-99	ANA Lab Inc.	Report.VCP.V00079.1999-05-25.RI_Report_Addendum_Appedix_D2.pdf
Map: Firemen's Training Center Site Area B-Zone Water Level Contours	Nassau County Firemen's Training Center #130042	May-99	County of Nassau, NY	File.HW.130042.1900-01-01.1999 B zone GW contours
Map: Firemen's Training Center Site Area C-Zone Water Level Contours	Nassau County Firemen's Training Center #130042	May-99	County of Nassau, NY	File.HW.130042.1900-01-01.1999 C zone GW contours
Map: FTC/BSP B-Zone Potentiometric Surface	Nassau County Firemen's Training Center #130042	Jul-00	County of Nassau, NY	File.HW.130042.1900-01-01.2000 off site GW contours
Map: FTC/BSP B-Zone Potentiometric Surface	Nassau County Firemen's Training Center #130042	Oct-02	County of Nassau, NY	File.HW.130042.1900-01-01.2002 off site GW contours
Map: FTC/BSP B-Zone Potentiometric Surface	Nassau County Firemen's Training Center #130042	Jul-03	County of Nassau, NY	File.HW.130042.1900-01-01.2003 off site GW contours
Map: FTC/BSP B-Zone Potentiometric Surface	Nassau County Firemen's Training Center #130042	Jan-04	County of Nassau, NY	File.HW.130042.1900-01-01.2004 off site GW contours
Map: FTC/BSP B-Zone Potentiometric Surface	Nassau County Firemen's Training Center #130042	Jul-05	County of Nassau, NY	File.HW.130042.1900-01-01.2005 off site GW contours
Map: FTC/BSP Potentiometric Surface	Nassau County Firemen's Training Center #130042	Oct-06	County of Nassau, NY	File.HW.130042.1900-01-01.2006 hydraulic contour off site
Table: Recovery Well Volatile Organic Concentrations	Nassau County Firemen's Training Center #130042	Jun-05	Not Provided	File.HW.130042.1900-01-01.2006 RW VOCs
Baseline Environmental Monitoring Report	Nassau County Firemen's Training Center #130042	Jun-99	Nassau County Department of Public Works	Report.HW.130042.1999-06-01.Baseline_Environmental_Monitoring_Report_1999
Annual Environmental Monitoring Report	Nassau County Firemen's Training Center #130042	Jun-00	Nassau County Department of Public Works	Report.HW.130042.2000-06-01.Annual_Environmental_Monitoring_Report_2000
Annual Operations and Environmental Monitoring Summary	Nassau County Firemen's Training Center #130042	Jun-05	Nassau County Department of Public Works	Report.HW.130042.2001-12-31.Annual_Operations_Environmental_Monitoring_Summary_2001
Annual Operations and Environmental Monitoring Summary	Nassau County Firemen's Training Center #130042	Jun-05	Nassau County Department of Public Works	Report.HW.130042.2002-12-31.Annual_Operations_Environmental_Monitoring_Summary_2002
Claremont Polychemical Groundwater Database and Plume Modeling Report Meeting	Nassau County Firemen's Training Center #130042	Feb-06	Nassau County Department of Public Works	Report.HW.130042.2006-02-07.GW-Plume-Modeling_Boring-Logs_Supp-Wells_Claremont
Nassau County Department of Public Works Firemen's Training Center Groundwater Model Final Report	Nassau County Firemen's Training Center #130042	Apr-08	CDM	Report.HW.130042.2008-04-01.Groundwater_Model_2008_NCDPW
Fireman's Training Center (FTC) Periodic Review Report - 2009	Nassau County Firemen's Training Center #130042	Oct-09	Nassau County Department of Public Works	Report.HW.130042.2009-10-19.PRR_2009
Final Well Completion Report for the Installation of Additional Monitoring Wells - Phases I & II at the Claremont Polychemical Superfund Site (duplicate?)	Nassau County Firemen's Training Center #130042	Nov-06	Science Applications International Corporation	Report.HW.130042.2010-04-01.Well_Completion_Final_Report_Claremont
Post Termination Monitoring Summary	Nassau County Firemen's Training Center #130042	Jul-13	Nassau County Department of Public Works	Report.HW.130042.2013-08-16.PTM_Summary
Firemen's Training Center (Site #1-30-042) Post Termination Monitoring Program Sampling Results - May 2015	Nassau County Firemen's Training Center #130042	May-15	Nassau County Department of Public Works	Report.HW.130042.2015-05-20.Semi-Annual PTM Monitoring May 2015
Nassau County Fire Training Center Record of Decision	Nassau County Firemen's Training Center #130042	Feb-93	NYSDEC	ROD.HW.130042.1993-02-26.Nassau_County_Fire_Training_Center