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Northrop Grumman Systems Corporation

Pre-Design Report for the RW-21 Area

Operable Unit 3
(Former Grumman Settling Ponds),
Bethpage, New York
NYSDEC Site # 1-30-003A

February 16, 2016

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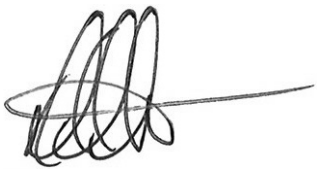

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PRE-DESIGN REPORT FOR THE RW-21 AREA

Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York

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ACRONYMS AND ABBREVIATIONS

Arcadis	Arcadis of New York, Inc. formerly ARCADIS
Park	Bethpage Community Park
Bls	below land surface
BPGWCS	Bethpage Park Groundwater Containment System
CAMP	Community Air Monitoring Plan
CSM	Conceptual Site Model
DUSRs	Data Usability Summary Reports
EVS	Earth Volumetric Studio
FS	Feasibility Study
Ft	Feet
Ft/day	Feet per day
GAC	Granular Activated Carbon
IDW	Investigation Derived Waste
ITRC	Interstate Technology and Regulatory Guidance
NAD 83	1983 North American Datum
NAVD 88	1988 North American Vertical Datum
NCDPW	Nassau County Department of Public Works
Northrop Grumman	Northrop Grumman Systems Corporation
NWIRP	Naval Weapons Industrial Reserve Plant (NWIRP)
NYSDEC	New York State Department of Environmental Conservation
OU	Operable Unit

POTW	Publicly-Owned Treatment Works
PPE	Personal Protective Equipment
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RCU	Raritan Confining Unit
RI	Remedial Investigation
ROD	Record of Decision
RW	Remedial Well
SIM	Selective Ion Monitoring
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TVOCs	Total volatile organic compounds
USEPA	United States Environmental Protection Agency
VOCs	Volatile organic compounds
VPBs	Vertical Profile Borings
µg/L	Micrograms per liter

1 INTRODUCTION

This Pre-Design Report for the RW-21 Area (Report) has been prepared by Arcadis of New York, Inc. (Arcadis), on behalf of Northrop Grumman Systems Corporation (Northrop Grumman), in accordance with the Order on Consent between Northrop Grumman and the New York State Department of Environmental Conservation (NYSDEC) for Operable Unit 3 (OU3) (NYSDEC 2014). A pre-design investigation was conducted to further characterize volatile organic compound (VOC) concentrations and hydrogeologic parameters to support a conceptual remedial design for the "hot spot" (hereinafter, the RW-21 Area). The RW-21 Area is located southeast of the former Grumman and Naval Weapons Industrial Reserve Plant (NWIRP) complex and south of the Bethpage Community Park (see **Figure 1** for the Site and RW-21 Area locations). The pre-design activities were performed pursuant to the NYSDEC-approved Pre-Design Work Plan for Groundwater Hotspot, Operable Unit 3 (Work Plan; Arcadis 2014); Work Plan approval was incorporated into the May 23, 2014 Order on Consent.

This report responds to the OU3 Record of Decision (OU3 ROD; NYSDEC 2013) direction to install one or more extraction wells to remediate a specifically identified RW-21 Area within the larger OU3 plume. The RW-21 Area was identified in the ROD as "presently located approximately 2,500 feet upgradient of, and approaching, the Bethpage Water District No. 4 well field." The OU3 ROD requirement for remediation of 90 percent of the mass discharge in the RW-21 Area is based on the recommendation in the 2011 "Remedy Optimization Team Report for the Bethpage Groundwater Plume Remedy" (Optimization Report) to prevent the movement further south of the "hot spot", which represents substantially higher concentrations of total volatile organic compounds (TVOCs) than in the rest of the OU3 plume. The Optimization Report recommended this approach because it determined that large-scale full plume containment is infeasible for a variety of reasons, and would not obviate the need for downgradient wellhead treatment at public water supplies where not already implemented.

The conceptual remedial approach described in this report was developed to focus on mass removal in high-permeability zones that occupy a relatively small portion of the aquifer cross section in the RW-21 Area. As such, this approach concentrates on the limited area that contributes the most TVOC mass to the plume and would not be applicable to the larger regional plume because of its size, complexity, diffuse distribution of TVOCs, and highly developed nature of the area.

2 BACKGROUND AND REGULATORY FRAMEWORK

As described in the 2011 Study Area Remedial Investigation (RI) Report (Arcadis 2011a), groundwater south of the Park is impacted by VOCs in excess of NYSDEC Standards, Criteria, and Guidance values. Regional groundwater flow in the area is to the south/southeast, with a downward component, and is locally modified by recharge to basins and by pumping of public supply wells, non-public supply wells, and remediation wells. **Figure 2** depicts recharge basins, public supply wells and remediation wells in and around the RW-21 Area.

The groundwater remedy recommended in the 2011 Study Area Feasibility Study (FS; Arcadis 2011b) includes installation and operation of a remedial well (RW-21) to address VOC-impacted groundwater in the RW-21 Area (i.e., "hotspot area" – see excerpt from OU3 ROD below). Following submittal of the Study Area RI and FS Reports by Northrop Grumman, the NYSDEC approved the reports and issued the OU3 ROD. The ROD states that the NYSDEC-selected groundwater remedy will, in part, consist of:

> *"…One or more groundwater extraction well(s) along with the necessary treatment will be installed in the groundwater plume emanating from OU3 (the exact number to be determined during the design phase). The wells will be located downgradient of the area(s) of elevated contaminant levels identified upgradient of Bethpage Water District Plant 4. This system will be designed to capture and treat the "hot spot" area of the plume to the extent practicable, at a minimum, capturing and treating 90 percent of the mass of groundwater migrating from the elevated "hotspot area" (the recommendation by the Technical Team for Optimization of the Bethpage Plume Remedy in their June 15, 2011 report prepared for the U.S. Navy). Considerations may be given to the use of Bethpage Water District facilities for all or part of treatment system."*

Consistent with the requirements of the OU3 ROD, the conceptual remedial approach proposed in Section 6 of this Report has been developed to focus remedial efforts on TVOC mass removal within the zone of highest mass discharge (i.e., central core of the OU3 plume exhibiting highest permeability and VOC concentration) within the RW-21 Area, since full hydraulic containment of the OU3 plume was determined to be infeasible. This determination of the infeasibility of full hydraulic containment is consistent with prior decisions made regarding the regional area of TVOC-impacted groundwater (Arcadis Geraghty & Miller, Inc. 2000; NYSDEC 2001; NAVFAC 2011 and 2012), based on the following reasons:

- Large scale of the regional plume (i.e., depth, thickness, width, and length),
- Hydrogeologic complexity (e.g., large variations in aquifer permeability over short vertical/horizontal distances),
- Potential short- and long-term impacts to groundwater resources (i.e., hydraulic interference with existing public water supply wells, saltwater intrusion),
- Bethpage and surrounding communities lack the open lands and infrastructure to accommodate large-scale construction. Long-term operation, maintenance, and monitoring activities would represent a continuous disruption.

The mass discharge approach described in this Report is consistent with best practices, as summarized by ITRC recommendations (ITRC 2010).

Upgradient of the RW-21 Area, Northrop Grumman has operated the Bethpage Park Groundwater Containment System (BPGWCS; formerly referred to as the Groundwater Interim Remedial Measure) along the southern boundary of the Park since 2009. The BPGWCS continuously extracts groundwater from the subsurface via four remedial wells.

Northrop Grumman currently monitors VOC concentrations in the RW-21 Area: MW109-3 and MW111-4 (sampled quarterly) and MW116-5 (sampled monthly) (**Figure 3**). The data from Wells MW109-3 (initially sampled in 2009) and MW111-4 (initially sampled in 2008) indicate greater than 60 percent reduction in VOCs over the monitoring period in both wells and Well MW116-5 indicates a flat to slightly decreasing trend since 2013. The Navy plans to drill VPBs in the area west of the RW-21 Area, including VP-143 (Resolution 2013) **(Figure 3)**. The respective parties separately provide Northrop Grumman and Navy data to NYSDEC and to the public.

3 OBJECTIVES

The pre-design investigation was conducted to meet the following objectives:

1. Further characterize the RW-21 Area at and near the location of FS- proposed Remedial Well RW-21.
2. Estimate the mass flux and mass discharge of TVOCs migrating within and from the RW-21 Area; The ROD states “[t]his hot spot is presently located approximately 2,500 feet upgradient of, and approaching, the Bethpage Water District No. 4 well field”.
3. Develop a conceptual design for a groundwater extraction well(s) and treatment that meets the ROD requirement to capture and treat at least 90 percent of the mass discharge of TVOCs migrating from the RW-21 Area (i.e., core of the TVOC plume), as opposed to full hydraulic containment.
4. The compound 1,4-dioxane was added as an analyte to the RW-21 Area pre-design investigation monitoring well sampling program on July 13, 2015 at the request of NYSDEC (NYSDEC 2015).

4 METHODOLOGY

The work was completed in accordance with the Work Plan. The following subsections summarize the work performed and any exceptions to the approved Work Plan.

4.1 Pre-Design Investigation Field Program

Vertical profile borings (VPBs) and monitoring wells were drilled by Uni-Tech Drilling Company, Inc., of Franklinville, New Jersey under the oversight of an Arcadis field geologist. VPBs were drilled along three east-west transects, as described in the Work Plan and shown on **Figure 3**.

4.1.1 VPB Drilling, Lithologic and Groundwater Sampling

From November 2014 to November 2015, a total of 11 VPBs were drilled and sampled in accordance with the Work Plan (RW-21_VP-1 to RW-21_VP-9; RW-21_VP-11; and RW-21_VP-12) (the formal RW-21 prefix is used only in this report subsection). Work was performed on rights of way owned by the Town of Oyster Bay (VP-3, VP-4, VP-5, VP-6, VP-7, VP-9 and VP-11) as well as property owned by Nassau County (VP-1 and VP-2), New York State Department of Transportation (VP-12), and the King Kullen Grocery Corporation (VP-8).

Information obtained included subsurface lithology, borehole geophysical data, and vertical profiles of VOCs in groundwater. Split-spoon soil sampling of the VPB boreholes was performed to obtain hydrogeologic information, support selection of VPB groundwater sample intervals, and select monitoring well screen intervals. Borehole geophysical logging (gamma, resistivity and spontaneous potential) supplemented the split-spoon sampling in selection of monitoring well screen intervals and obtaining hydrogeologic information. **Table 1** summarizes VPB groundwater sampling performed.

VPB depths ranged from 700 to 860 feet below land surface (ft. bls). VPBs were drilled using the mud rotary method. Groundwater samples collected from VPBs using the Hydropunch method were submitted for laboratory analysis of the Target Compound List (TCL) VOCs, plus Freons 12, 22, and 113.

VPB locations are shown on **Figure 3**. Split-spoon sample logs, geophysical logs, and VPB groundwater sampling logs are provided in **Appendices A, B,** and **C**, respectively.

4.1.2 Monitoring Well Installation

From December 2014 to November 2015, a total of 14 monitoring wells (MW-1, MW-2, MW3-1, MW3-2, MW-4, MW5-1, MW5-2, MW-6 through MW-9, MW-11, MW12-1 and MW12-2) were installed and developed. Depths of the monitoring wells range from 315 to 653 ft. bls. VPB split-spoon and geophysical logs as well as VOC analytical results were collectively evaluated to select the monitoring well screen interval, which corresponded to the highest VOC concentration in the associated VPB, and also generally the interval with the highest relative permeability. The relative permeability was evaluated based on visual inspection of geologic logs followed by interpretation of geophysical logs from the associated VPB. Additionally, data from nearby wells and VPBs were considered in selection of monitoring well screen intervals. **Table 2** summarizes monitoring well construction and survey information.

Monitoring well pairs were installed at selected locations, VP-3, VP-5, and VP-12 because:

- at the VP-3 location, two distinct depth intervals exhibited similar TVOC concentrations and relative permeability, so two monitoring wells were installed (MW3-1 and MW-3-2), and
- at the VP-5 and VP-12 locations, a shallower zone of VOC impacted groundwater was observed (further discussion on the occurrence of the shallower zone of VOC impacts is provided in Section 5.3), so one additional shallower well was installed at each location.

Following completion, the monitoring wells were developed using air-lifting, swabbing/surging, backwashing, and over-pumping methods. Field parameters measured during well development consisted of pH, conductivity, temperature, and turbidity.

Monitoring wells were surveyed horizontally to the 1983 North American Datum (NAD 83) and vertically to the 1988 North American Vertical Datum (NAVD 88) by Donald G. DeKenipp, L.S., P.C., a New York State-licensed surveyor.

Monitoring well construction logs, well development logs, and the surveyor's report are provided in **Appendix D**.

4.1.3 Water-Level Measurements, Hydraulic Gradients, and Groundwater Sampling

Water levels were measured on December 9, 2015 in 20 monitoring wells and Operable Unit 2 (OU2) Remedial Well 19 that are within or near the RW-21 Area (**Table 3**). Using the surveyed measuring point elevation, the water-level elevation for each well was calculated. Lines of equal water-level elevation were drawn from the interpretation of the water-level data and represent the configuration of the potentiometric surface; lines depicting the horizontal directions of groundwater flow were then added. The horizontal hydraulic gradient was calculated within the RW-21 Area between Monitoring Wells MW3-1 and MW-11 by dividing the difference in water-level elevation between these wells by the horizontal distance over which the change in water level occurred.

At the conclusion of well development, a grab sample was collected from each well from the discharge of the submersible pump for preliminary analysis of VOCs (following the request of NYSDEC, 1,4-dioxane was added as an analyte for Wells MW-1 and MW-2). Following installation of the 14 new RW-21 Area monitoring wells, a synoptic groundwater sampling event was conducted in December 2015. For this synoptic event, groundwater samples were collected from monitoring wells using a decontaminated, non-dedicated stainless steel bladder pump connected to a dedicated polyethylene tubing/stainless steel remote screen assembly (installed within the well screen). Well purging and sampling were performed using USEPA low-flow methods (USEPA 2010). Groundwater samples were analyzed by Accutest Laboratories for the TCL VOCs (plus Freons 12, 22, and 113) using USEPA Method 8260C and for 1,4-dioxane using USEPA Method 8270D using selective ion monitoring (SIM). Monitoring well sampling logs are provided in **Appendix C**.

4.1.4 Community Air Monitoring

Community air monitoring (for dust and VOCs) was performed and recorded during field activities, in accordance with the Community Air Monitoring Plan (CAMP). The CAMP data indicated no exceedances of CAMP action levels. Community air monitoring results are provided in **Appendix E**.

4.1.5 Waste Management

Investigation-derived waste (IDW) consisting of soil cuttings, fluids (i.e., water, drilling mud) generated during drilling, and spent personal protective equipment (PPE) were containerized in 55-gallon drums, 20,000 gallon portable tanks, or 10 cubic yard roll-offs, as appropriate. Drilling fluid was characterized by analyzing for VOCs and disposed at Paradise Oil, Ossining, New York. Spent PPE was disposed of at Covanta, in Hempstead, New York. Soil cuttings/drilling mud were characterized by analyzing for VOCs, semi-VOCs, metals, pesticides, and waste characteristics using the Toxicity Characteristic Leaching Procedure (TCLP). Following receipt of the TCLP results, the cuttings and mud were transported for off-site disposal. Based on analytical results obtained, drill cuttings were disposed of as characteristically non-hazardous waste at the 110 Sand Company, Melville, New York. Water (development water, decontamination water, and monitoring well purge water) was analyzed for VOCs. Water exhibiting TVOC concentrations less than 1,000 µg/L was discharged to the publicly-owned treatment works (POTW) intake on Northrop Grumman property, in accordance with the permit granted by the Nassau County Department of Public Works (NCDPW 2014). IDW records are provided in **Appendix F.**

4.2 Permeability Estimation

Hydraulic conductivity (referred to as permeability [relative to water] throughout the remainder of this report) estimates were obtained from mechanical grain size analysis and slug tests. A total of 41 soil samples from six VPBs (VP-3, VP-4, VP-5, VP-7, VP-9, and VP-11) were submitted to a geotechnical laboratory for grain size analysis. Samples were selected from depth intervals within the zone exhibiting TVOC concentrations equal to or greater than 1,000 µg/L (and directly above or below it) to be representative of the range of expected permeability values within the RW-21 Area. Sampling was biased toward the more permeable zones (sands and gravels) within which the majority of the VOC mass would be expected to migrate in the RW-21 Area.

The grain size distribution results were entered in HydrogeoSieveXL (Devlin, 2015), which is a spreadsheet-based tool that combines 15 different analytical methods to estimate permeability. Each method directly applies to a particular grain size or range of sizes, while also accounting for secondary characteristics such as angularity and sorting.

Slug tests were completed in October 2015 at Monitoring Wells MW-3-1, MW-7, and MW-11 to estimate permeability by depressing the water level in the well using compressed air and then measuring the water-level recovery (pneumatic slug test). A pressure transducer was installed in the well and used to measure static, displacement, and recovery water levels. Three slug tests were completed at each of the monitoring wells: two duplicate tests at the same initial displacement (instantaneous change in water level) followed by one with a higher initial displacement.

Response data (i.e., elapsed time and corresponding changes in water levels) collected during each slug test were plotted as normalized displacement versus time to evaluate the similarities between test data at each well. The wells each exhibited similar response data. Data collected from the wells were analyzed using the applicable analytical solution from AQTESOLV® for Windows©. Since the monitoring wells partially penetrate the aquifer, the unconfined Kansas Geological Survey (KGS) Solution (Hyder 1994) was used, as this solution accounts for the effects of partial aquifer penetration on the test results.

5 RESULTS AND INTERPRETATIONS

5.1 Data Quality Review and Validation

In accordance with the Work Plan and NYSDEC requirements, the quality of the laboratory data was evaluated by the data validator by examining the laboratory's internal quality assurance/quality control (QA/QC) laboratory-established acceptance limits. Initial and continuing calibration, surrogate, matrix spikes, laboratory control samples and method blanks were performed for every 20 samples analyzed; these parameters were evaluated during data validation. Acceptance criteria defined by quality assurance project plan (QAPP)-specified validation guidelines and the laboratory SOP criteria were met. Approximately 5 percent of the total samples collected were validated.

The Data Usability Summary Reports (DUSRs) are provided in **Appendix G**. NYSDEC Category B laboratory data package deliverables are provided as **Appendix H**.

5.2 Local Hydrogeology

The hydrogeology along the three east-west RW-21 Area transects was evaluated using soil descriptions from split-spoon samples, sieve analysis results, geophysical logs, and slug test results. Overall, the hydrogeology present at the three transects is consistent with the descriptions in the Study Area RI Report (Arcadis 2011a). The pre-design investigation confirmed and refined the following key elements of the hydrogeology in the RW-21 Area:

- The Cretaceous-age Magothy formation consists of interbedded fine to coarse sands and silts with discontinuous zones of lower permeability clays, sandy clays, and silty clays.
- A higher-permeability sand and gravel zone is present within the lower portion of the Magothy formation
- The bottom of the VOC plume in the RW-21 Area was identified at depths above the Raritan Confining Unit (RCU) (see Section 5.5); therefore, the top of the RCU was not penetrated during the investigation.

Table 3 provides the water-level data from monitoring wells. **Figure 2** provides the configuration of the potentiometric surface and horizontal direction of groundwater flow. Based on an evaluation of the water-level data along the groundwater flow path from Well MW3-1 to MW-11, the horizontal hydraulic gradient was calculated to be 0.003 ft./ft.; this value was then used in the determinations of mass flux and mass discharge (see Section 5.7). Generally, the direction of groundwater flow is consistent with the regional flow direction (south-southeast), with local variations due to pumping of public supply wells.

5.3 TVOC Distribution

The VPB and monitoring well VOC analytical results are provided in **Tables 4** and **5**, respectively. **Figures 3** through **7** collectively depict the characterization of the RW-21 Area. A three-dimensional (3D) model was created using Earth Volumetric Studio (EVS) software, developed by C Tech Development Corporation. TVOC data from the RW-21 Area VPBs, as well as data from previous investigations by

Northrop Grumman and the Navy (Arcadis 2011a; Resolution 2015; Arcadis 2013), were imported to the 3D model. The TVOC data were interpreted across the investigation area using the 3D analytical data and the Study Area conceptual site model (CSM). The groundwater VOC plume was then contoured at high resolution and displayed at 50 µg/L, 500 µg/L, 1,000 µg/L, and 5,000 µg/L TVOC concentrations. Based on the interpretation of the RW-21 Area data and existing data, the following key observations are made:

- Overall, TVOC concentrations are consistent with the findings of the Study Area RI report, however, this study further refined the understanding of the nature and extent of TVOCs in groundwater.

- The highest TVOC concentrations were identified generally at depths greater than 400 ft. bls, with the corresponding depth generally increasing to the south. TVOC concentrations equal to or greater than 500 µg/L on each transect were identified at the following intervals:

    - Northern Transect (Cross Section B-B'): 460 to 620 ft. bls

    - Central Transect (Cross Section C-C'): 550 to 620 ft. bls

    - Southern Transect (Cross Section D-D'): 575 to 650 ft. bls

- The zone of highest concentrations (greater than 5,000 µg/L) is limited in width to approximately 600 feet (**Figure 3**), and limited in thickness to approximately 50 feet (**Figure 4**). The peak RW-21 Area TVOC concentrations are highest at the northern transect, and decrease by a factor of 2.5 between the northern and central transects and by a factor of three between the central and southern transects. The interpreted width of the area within the 1,000 µg/L contour varies from approximately 2,000 ft. at the northern transect to 1,000 ft. at the southern transect (**Figure 3**), while the thickness progressively decreases with distance from the Site, from approximately 140 ft. on the northern transect, 65 ft. on the central transect, and 50 ft. on the southern transect (**Figure 4**).

- Trichloroethene (TCE) is the predominant VOC detected, and exceedances of the NYSDEC standard of 5 µg/L were detected in each VPB drilled within the RW-21 Area. The maximum concentration of TCE was detected in VP-3 (13,200 µg/L). Exceedances of cis-1,2 dichloroethene (DCE) were detected in each VPB drilled within the RW-21 Area. The maximum concentration of DCE was also detected in VP-3 (860 µg/L). The ratio of TCE and DCE to the sum of these constituents in monitoring wells is shown on **Figure 3**. These data indicate that the highest percentage of TCE is found in the central portion of the RW-21 Area, with generally lower percentages along the edges, although TCE remains the dominant compound detected.

- At some locations VOC impacts greater than 100 µg/L but less than 1,000 µg/L were identified at shallower depth/intervals, as follows: VP-4 (approximately 340 to 390 ft. bls); VP-5 (approximately 300 to 350 ft. bls); VP-8 (approximately 400 ft. bls); VP-11 (approximately 320 ft. bls), and VP-12 (approximately 420 ft. bls). Although these shallower impacts are not technically

considered to be within the RW-21 Area, as a conservative measure, these data were used in the mapping of the RW-21 Area.

The following table summarizes key observations made from Cross Section A-A' (**Figure 4**):

VPB ID	Depth of Maximum TVOC Concentration in VPB (ft bls)	Maximum VPB TVOC Concentration (µg/L)	Monitoring Well	Monitoring Well Maximum TVOC Concentration (µg/L)
VP-3	558	14,000	MW3-1	9,900
VP-7	581	5,300	MW-7	7,100
VP-11	642	2,000	MW-11	1,400

- On the northern transect (east-west Cross Section B-B' - **Figure 5**), the following key observations are made:
    - The maximum TVOC concentrations at VP-4 was 390 µg/L; the TVOC concentration of the associated Monitoring Well MW-4 was 440 µg/L. Well MW-4 is the easternmost well on this transect.
    - VP-1 was located to be the westernmost VPB, and anticipated to exhibit low concentrations (compared to the plume core). However, the TVOC concentration from Monitoring Well MW-1 was 3,000 µg/L, indicating a data gap is present in the area near VP-1. This area will be re-evaluated once a proposed VPB (VP-143; **Figure 3**) is completed by the Navy (to be advanced in the Fourth Quarter 2016) (Resolution 2013).
- On the central transect (east-west Cross Section C-C'- **Figure 6**), the following key observations are made:
    - The easternmost VPB (VP-8) had a maximum TVOC concentration of 430 µg/L; the TVOC concentration at Monitoring Well MW-8 was 810 µg/L.
    - The westernmost VPB (VP-5) had a maximum TVOC concentration of 96 µg/L; the TVOC concentration at Monitoring Wells MW5-1 and MW5-2 were 50 µg/L and 22 µg/L, respectively.
    - VP-5 and VP-8 and the associated monitoring wells showed TVOC concentrations significantly less than 1,000 µg/L.
- On the southern transect (east-west Cross Section D-D' – **Figure 7**), the following key observations are made:

- The westernmost VPB on the transect (VP-9) had a maximum TVOC concentration of 400 µg/L, at approximately 633 ft. bls. Monitoring Well MW-9 installed across this maximum concentration interval had a TVOC concentration of 650 µg/L.

- Location VP-11 had the highest TVOC concentration on the southern transect (see Cross Section A-A' observations above).

- The easternmost VPB on the transect (VP-12) had a maximum TVOC concentration of 96 µg/L, at approximately 420 ft. bls. The TVOC concentration in Monitoring Well MW12-1 (installed across this maximum concentration interval) was determined to be 130 µg/L, while TVOCs were not detected in Monitoring Well MW12-2.

- In addition to data collected during the RW-21 Area investigation, data from the following additional VPBs and wells were used to vertically and/or horizontally characterize the RW-21 Area along the southern transect (**Figure 3**):
  - VP-117 and Monitoring Well MW-117-5
  - VP-138 and Monitoring Wells RE104D1 and RE104D2 (projected 100 ft. south)
  - Monitoring Wells GM-36D and GM-36D2

Based on the data obtained during characterization of the RW-21 Area, it was determined that the plume core is present in at least one VPB on all three transects. As the data indicate the plume core is also present on the southern transect and as this transect is located closest to and upgradient of BWD Plant 4, to meet the OU3 ROD requirements, the southern transect was selected for the 90 percent VOC mass discharge analysis to support the location of a remedial (extraction) well(s). The zones of highest TVOC mass discharge were also determined on the central and northern transects to support the placement of a remedial well(s) to enhance removal of TVOC mass (see Section 5.6).

5.4 1,4-Dioxane

The results of 1,4-dioxane analysis of groundwater samples obtained from the RW-21 Area monitoring wells are provided in **Table 5**.

5.5 Aquifer Permeability

Based on the depositional environment and the Study Area RI Report (Arcadis 2011a), four hydrostratigraphic units have been identified in the Magothy aquifer: gravel, coarse sand, fine silty sand, and silts and clays. Each of these units possess distinct transport characteristics, which are directly related to their respective permeabilities. HydrogeoSieveXL was used to calculate permeability values from the sieve data; the output of these calculations is provided in **Appendix I**. **Table 6** summarizes the estimated permeability, soil classification, and hydrostratigraphic unit for each of the 41 soil samples analyzed. As reported by the geotechnical laboratory, soil types ranged from moderately well-sorted gravel (highest permeability) to sandy silt with fines (lowest permeability), which is consistent with the expected range of soil types. The corresponding permeability values calculated ranged from

approximately $2.8x10^{-3}$ to $2.8x10^{3}$ feet per day (ft./day), which are comparable to the expected range of values documented for the Magothy aquifer (McClymonds and Franke 1972).

Slug tests were also conducted in the three monitoring wells screened in the highest TVOC concentration interval identified on each of the three transects. These wells are screened in either the coarse sand or fine silty sand hydrostratigraphic unit. The range in permeability values for the slug tests is 2.1 to 11.3 ft/day, which is consistent with and within the range of calculated permeabilities obtained from the sieve analysis described above. **Table 7** and **Appendix J** present the results of the slug testing.

Using the permeability values obtained from the sieve evaluation and the slug testing, the distinct hydrostratigraphic units identified above were assigned preliminary permeability values. The sieve data evaluation calculated a maximum permeability of $2.8x10^{3}$ ft./day for the gravel unit, which is consistent with the typical value for a gravel. Permeability and mass discharge area are inversely proportional (i.e., higher permeability results in a smaller TVOC mass discharge area). Therefore, as a conservative measure, the permeability for gravel was set one order of magnitude lower ($2.8x10^{2}$ ft./day) than the sieve data indicated, resulting in a correspondingly larger mass discharge area. Sieve analyses were also performed on two samples collected from the silts and clays hydrostratigraphic unit. The sieve evaluation results for these two samples indicated a permeability of approximately $2.8x10^{-3}$ ft./day. Due to the limited dataset for silts and clays, and because $2.8x10^{-3}$ ft./day is somewhat higher than a typical value, the permeability for silts and clays was set one order of magnitude lower ($2.8x10^{-4}$ ft./day). A comparison of preliminary to final permeability values for the four hydrostratigraphic units is provided in the following table:

Hydrostratigraphic Unit	Preliminary Permeability (ft/day)	Final Permeability (ft/day)
Gravel	$2.8x10^{3}$	$2.8x10^{2}$
Coarse Sand	2.8	2.8
Fine Silty Sand	0.28	0.28
Silts and Clays	$2.8x10^{-3}$	$2.8x10^{-4}$

Although the four hydrostratigraphic units and associated permeability values were assigned based on the data, the permeability fields shown on east-west transects later in this report on Cross Sections B-B', C-C', and D-D' were contoured using EVS to illustrate gradational changes in permeability within and between the hydrostratigraphic units (**Figures 8** to **10**).

5.6 Mass Flux/Discharge Evaluation and Approach

Mass Flux/Discharge Evaluation

VOC mass flux was estimated (using RW-21 Area investigation data consisting of hydraulic gradient, permeability, and TVOC concentrations) following the protocols in the Interstate Technology and Regulatory Council's (ITRC) guidance document "Use and Measurement of Mass Flux and Mass Discharge". Mass flux and mass discharge approaches are becoming increasingly common, because they quantify source or plume strength at a given time and location and improve the understanding of natural attenuation and assessment of risks to downgradient receptors (ITRC, 2010).

Mass flux is the product of contaminant concentration and groundwater flux (volume of groundwater moving through a unit area of aquifer per unit of time), and therefore represents the rate of VOC mass movement through a unit subsection of aquifer along a cross sectional plane, as follows:

$$J = q_0 \cdot C = -K \cdot i \cdot C$$

Where
J = Mass flux, M / t / L^2
q_0 = groundwater flux, L^3 /L^2 / t
K = hydraulic conductivity (permeability), L / t
i = hydraulic gradient, dimensionless
C = contaminant concentration, M / L^3
L = length
M = mass of TVOCs
t = time

From this formula, the mass discharge is calculated by integrating the mass flux of the unit areas across the entire cross sectional plane across which the flux is occurring. Mass discharge is calculated using the following formula:

$$M_d = J \cdot A$$

Where
M_d = TVOC Mass Discharge, M / t
J = Mass flux, M / t / L^2
A = Area that the Flux J occurs within, L^2

It is well-documented that the Magothy aquifer is highly heterogeneous and anisotropic, and consequently permeability is inherently variable over small horizontal and vertical distances. Therefore, of the above-referenced parameters that are measured and used in the calculation of mass discharge at the RW-21 Area, aquifer permeability has the greatest effect on the quantification of mass discharge. The above formula shows a direct relationship between permeability and mass discharge, with typical permeability variations (one to two orders of magnitude) over small distances therefore resulting in corresponding

direct variations in mass discharge of comparable magnitude. ITRC (2010) confirmed such variations in mass discharge at a range of sites and states: "mass discharge estimates at actual sites range over orders of magnitude (….a range of less than 0.001 to greater than 100,000 pounds per day)". The goal of the RW-21 Area mass discharge evaluation is to determine the locations/depths where mass discharge is greatest, not to calculate an absolute mass discharge value. Consequently, the mass discharge values in the following sections should be considered in this context.

Mass Flux/Discharge Approach

As described in the previous section, mass flux is calculated by multiplying the VOC concentration by the groundwater flow rate (determined by hydraulic gradient and permeability). To estimate mass flux and mass discharge, the ITRC Transect Approach (ITRC 2010) was employed. This method consists of setting up a transect perpendicular to the contaminant transport direction, and using the concentrations and permeability along the transect and the hydraulic gradient across the transect to estimate mass flux. For this mass flux evaluation, the northern, central and southern transects were used (Cross Sections B-B', C-C', and D-D', respectively).

Cross Section B-B' includes the following VPBs and monitoring wells with TVOC concentrations above 500 µg/L:

- VP-1 and Monitoring Well MW-1
- VP-2 and Monitoring Well MW-2
- VP-3, Monitoring Well MW-3-1, and Monitoring Well MW-3-2

Cross Section C-C' includes the following VPBs and monitoring wells with TVOC concentrations above 500 µg/L:

- VP-6 and Monitoring Well MW-6
- VP-7 and Monitoring Well MW-7

Cross Section D-D' includes the following VPBs and monitoring wells exhibiting TVOC concentrations above 500 µg/L:

- VP-9 and Monitoring Well MW-9
- VP-11 and Monitoring Well MW-11
- VP-116 and Monitoring Well MW-116-5

To enable the calculation of mass flux and mass discharge, each transect was converted to a grid (i.e., Section B-B' consisting of 7,000 cells, each with dimensions of 5.5 feet by 24 feet; Section C-C' consisting of 7,000 cells, each with dimensions of 4 feet by 19 feet, and Section D-D consisting of 8,400 cells, each with dimensions of 4 feet by 17 feet; and); grid dimensions were selected to establish sufficient discretization of the fields shown on **Figures 11** to **13** to precisely and accurately represent the mass discharge variability across each transect. The TVOC concentration, permeability, and hydraulic gradient data used in the evaluation are summarized in the table below.

Data	Source
TVOC Concentration	o Contoured TVOC data in EVS, as described in Section 5.3. o The TVOC contours for the mass discharge calculation are shown on **Figures 8** to **10** for Section B-B', Section C-C', and Section D-D', respectively.
Permeability	o Permeability data was assigned based on the results of the slug tests and sieve evaluation for the hydrostratigraphic units described in Section 5.6. o Permeability data for the mass discharge calculation are shown on **Figures 8** to **10** for Section B-B', Section C-C', and Section D-D', respectively.
Hydraulic Gradient	Hydraulic gradient was calculated to be 0.003 ft./ft. (as described in Section 4.1.3).

The mass discharge calculated for each cell within the 500 µg/L contour on each of the three transects utilized data from EVS by multiplying permeability and TVOC concentration (**Figures 8** to **10**), hydraulic gradient (Section 5.2) and the grid cell area. The cumulative TVOC mass discharge for each transect was then determined by summing individual cell TVOC mass discharge values within the area bounded by the 500 µg/L TVOC contour. The resulting zones of mass discharge for Cross Sections B-B', C-C', and D-D' are shown on **Figures 11** through **13**. The characteristics of the mass discharge for each cross section/transect are presented on the table below:

Cross Section/Transect	Location of Maximum Mass Discharge	Hydrostratigraphic Unit(s)	Approximate Dimensions of Maximum Mass Discharge Zone	Total Mass Discharge within 500 µg/L Contour (lb/yr)	90% of Total Discharge within 500 µg/L Contour (lb/yr)
B-B' (northern transect; Figure 11)	Between VP-2/MW-2 and VP-3/MW-3	Coarse sand	• 800 feet wide and 50 feet thick at a depth of 550 to 600 ft. bls; • 200 feet wide and 25 feet thick at a depth of 475 to 500 ft. bls	75	68
C-C' (central transect; Figure 12)	VPB-7/MW-7	Coarse sand, gravel	400 ft. wide by 25 ft. thick at a depth of 580 to 605 ft. bls	70	63
D-D' (southern transect; Figure 13)	VPB-11/MW-11	Gravel	300 ft. wide by 20 ft. thick at a depth of 670 to 690 ft. bls	75	68

To understand the distribution of permeability and mass discharge along the axis of the highest concentrations in the RW-21 Area, the permeability distribution along with the mass discharge was overlain onto Cross Section A-A'. At the furthest upgradient (VP-3/MW-3) and central location (VP-7/MW-7), the highest mass discharge is present in coarse sands. At the furthest downgradient location (VP-11/MW-11), the highest mass discharge is present in the gravel hydrostratigraphic unit. The data indicate that the area of highest mass discharge is deepening to the south, while also narrowing and thinning

(**Figure 14**). The permeability field shown on Cross Section A-A' was contoured using EVS to illustrate gradational changes in permeability within and between the hydrostratigraphic units

The 90 percent TVOC mass discharge areas on Sections B-B', C-C', and D-D' are bounded by the dashed lines shown on **Figures 11, 12,** and **13**, respectively. The area representing 90 percent of the TVOC mass discharge occupies approximately 38 percent, 14 percent, and 5 percent of the aquifer cross sectional area of the northern, central, and southern transects, respectively (**Figures 11, 12, and 13**). The OU3 ROD calls for capture and treatment of a minimum 90 percent of the TVOC mass discharge from the RW-21 Area, so the conceptual design (Section 6) provides for the appropriate capture and treatment of the area representing 90 percent of the mass discharge. he conceptual design presented in Section 6 incorporates removal of additional TVOC mass through an additional remedial well within an area of 90 percent mass discharge.

The mass discharge analysis described above is conservative in meeting the objectives of the RW-21 Area investigation. The following steps were applied to account for any potential uncertainty in the dataset for aquifer permeability and TVOC concentration:

- The final permeability value assigned to the gravel unit (Section 5.5) falls within the range of appropriate values for a gravel unit. However, this value is one order of magnitude less permeable compared to the highest permeability value calculated from the sieve analyses, resulting in an increase in the calculated area representing 90 percent of the TVOC mass discharge.

- The mass discharge evaluation considered a groundwater exhibiting TVOC concentrations greater than 500 µg/L in the calculation of mass discharge.

The mass discharge values given above represent current ambient conditions. As mass discharge is directly related to TVOC concentration, an increase in TVOC concentration will result in a linear increase in the mass discharge rate. The data obtained from the RW-21 Area investigation identified higher concentrations of TVOCs upgradient of VP-11. Therefore, the mass discharge rate is expected to increase with time at the southern transect, followed by a decreasing trend. This decreasing trend in the mass discharge rate should develop based on the decreasing TVOC concentrations trends observed in upgradient Monitoring Wells MW109-3 and MW111-4 and continued long-term operation of the BPGWCS, which is creating a clean water front south of the Site.

6 CONCEPTUAL REMEDIAL DESIGN

The OU3 ROD selected groundwater extraction and treatment as the groundwater remedy for the RW-21 Area. The conceptual design presented below proposes a two-well remedial system that achieves the remedial objectives and enhances mass removal rates. This section provides a conceptual design for the groundwater extraction and treatment system as well as a general discussion of remedy implementation, including operation, maintenance, and monitoring (OM&M).

6.1 Groundwater Extraction Conceptual Design

6.1.1 Groundwater Flow Model

The calibrated and NYSDEC-accepted groundwater flow model utilized as part of the Study Area FS (Arcadis 2011b) was updated and used to model the OU3 RW-21 Area groundwater system (in terms of head distribution and groundwater flow) to support the groundwater remedial (extraction) well location(s) and design. The groundwater advective (bulk movement) analyses were performed through use of a three-dimensional particle tracking code, which uses output generated directly from the flow model.

The purpose of this modeling evaluation was to determine the groundwater remedial well location(s), screen interval(s), and pumping rate(s) needed to meet the OU3 ROD requirement for capturing and treating at least 90 percent of the mass discharge of TVOCs migrating from the RW-21 Area, while also increasing TVOC mass removal within the RW-21 Area.

This modeling evaluation was completed after the mass flux/mass discharge evaluation and relied upon data developed from that effort. Specifically, soil boring logs and estimated field measured values of aquifer permeability were reviewed and compared to the assigned permeability in the model. Based on this comparison, the initial permeability assigned in the model of 25 ft./day was retained, as it was determined to be representative of the permeability for transport zones within the Magothy aquifer, considering the range of values within this heterogeneous/anisotropic aquifer, as summarized in the table below:

Source:	Arcadis Model	USGS Reference	RW-21 Area Sieve Analysis	RW-21 Area Slug Tests	RW-21 Area EVS Model
Basis:	Calibrated flow model from Study Area FS Report (Arcadis 2011b)	Developed for Bethpage-Hicksville Region (1988)	Discrete samples ranging from fine silty sand to gravel from VPBs **(Table 6)**	Measurements made from monitoring wells in transport zones along plume axis **(Table 7)**	Spatial average of permeability **(Figures 8** to **10)**
Value Assignment:	Bulk Average	Bulk Average	Point Measurements	Point Measurements	Bulk Average
Permeability Range/Value (ft/day):	25	50	0.28 to 2,800	2.1 to 11.3	19

The lateral extent of the 90 percent TVOC mass discharge areas is shown in plan view on **Figure 15.** Cross Sections A-A', B-B', C-C', and D-D' depict the horizontal and vertical extent of the 90 percent TVOC mass discharge areas on **Figures 16** through **19**, respectively. As described in Section 5.3, the data indicate TVOC concentrations greater than 1,000 µg/L are present on the southern transect (Section D-D'). A remedial well was simulated on Cross Section D-D', which is the transect furthest downgradient and closest to BWD Plant 4 **(Figure 13**). A second remedial well was simulated on Cross Section B-B' (**Figure 11**), which also coincides with the highest TVOC concentrations identified in the RW-21 Area. The purpose of this well would be to increase TVOC mass removal.

Groundwater flow model simulations were conducted to horizontally and vertically locate remedial wells and assign pumping rates that would meet the above-described goals. Simulations were conducted with nearby public supply wells operating at their average pumping rates, OU2 and OU3 remedial wells pumping at their respective design pumping rates, and recharge basins receiving water at their average rates. The modeling simulations consisted of the following process: well location(s)/depth(s) was selected, pumping rates were assigned, and capture zones were determined using reverse particle tracking (particles moving away from the well[s]). The cumulative capture zone produced from these simulations was then compared to the areas representing 90 percent of the mass discharge of TVOCs on Cross Sections B-B' and D-D' to determine whether it was sufficient to capture this area. This process was repeated, as needed, until the goals had been satisfied.

The simulation results indicate that two remedial wells (RW-20 and RW-21) (**Figure 15**) meet the above objectives. Details are shown in the following table:

Well ID	Location	Pumping Rate (GPM)	Approx. Screen Interval (ft msl)	Purpose
RW-20	VP-11/MW-11	500	-510 to -576	TVOC Mass Removal at zone of 90% Mass Discharge on Cross Section D-D' (**Figures 13** and **15**)
RW-21	VP-3/MW3-1/MW3-2	500	-410 to -476	TVOC Mass Removal at zone of 90% Mass Discharge on Cross Section B-B' (**Figures 11** and **15**)

Although the two-well remedial approach described above satisfies the ROD requirements, it does not provide full containment of the plume and relies on existing well-head treatment on downgradient public supply wells.

A summary of the output from the groundwater flow model is provided as **Appendix K**.

6.1.2 Remedial Wells

Based on the output of the groundwater model, the remedial well locations and depths were determined as described above and are shown on **Figures 11**, **13**, and **15**. In general, the developed nature of the area makes it difficult to site the remedial wells.

The area under consideration for the installation of Well RW-20 is within a residential area of Bethpage, near the intersection of William Street and Broadway, which consists of single-family residential homes. A preliminary assessment of this area did not identify any open lots. Potential locations to install RW-20 include the street, sidewalk or grass median that are within the Town of Oyster Bay right-of-way.

The area under consideration for the installation of Well RW-21 is within a commercial area of Bethpage, near the intersection of Central Avenue and Broadway, and consists of commercial businesses, municipal/commercial parking lots, churches and single-family residential homes. A preliminary assessment of this area identified open area near the southern portion of the Town of Oyster Bay Parking Field B-2.

The wellheads would be enclosed in below-grade, locked vaults (installed flush with existing grade and not readily observable) along with associated discharge piping, shut-off valves, electrical junction boxes and controls. Electric would be metered and supplied via underground conduit from a nearby electric pole.

A submersible groundwater pump would be used to extract and transfer the groundwater from the remedial well, via double-walled piping, to a treatment building. All piping would be below-grade and would also be installed within the Town of Oyster Bay and/or utility rights-of-way. Cleanouts and double-walled piping leak detection wells would be installed throughout the length of the conveyance piping.

6.2 Treatment System Conceptual Design

The densely developed nature of the Bethpage area would make it difficult to site remedial wells, treatment system(s), and pipelines. One potential location being evaluated for the treatment system is an open area adjacent to the existing Navy GM-38 groundwater treatment system (**Figure 15**). The final location for the treatment system would be contingent on the execution of negotiated access and/or use agreements with the respective property owners.

Figure 20 provides a conceptual process flow for the treatment system, as well as assumed concentrations for the influent and effluent groundwater and air. As a conservative estimate, the highest VOC concentrations detected at VP-3 and VP-11 were used as the remedial well influent concentrations for Wells RW-20 and RW-21, respectively. The mass balanced concentrations were then used to model and assess treatment system component sizing at the combined influent flowrate of 1,000 gpm. System components would consist of the following elements:

- A modular “sliding tray-type” low-profile air stripping system to remove VOCs from the influent groundwater. The modular nature of this type of low-profile air stripping system is easily adaptable to changing influent VOC concentrations over time. Influent groundwater would be treated to comply with applicable NYSDEC Groundwater Quality Standards, as defined by 6 NYCRR Part 703. The air stripping system would include a process blower, transfer pump, and primary logic controls.

- Emission control units containing vapor phase granular activated carbon (VPGAC) to remove the VOCs from the air stripper vapor phase. The system would be installed with two units that could

be operated in a lead/lag configuration. Treated discharge vapor would comply with applicable NYSDEC Air Toxics Regulatory Standards, as defined by 6 NYCRR Part 212.

- A duct heater to increase the temperature of the VOC-laden vapor to reduce the relative humidity of the vapor stream for more efficient use of the VPGAC
- Treated water conveyance consisting of single-walled underground piping to the Arthur Avenue recharge basin

The treatment system building would be designed with additional space to accommodate future system expansion, if needed.

6.3 Remedial Design and Implementation

6.3.1 Remedial Design

The remedial design would consist of the following:

- Review of applicable federal, state and local permits/equivalency requirements;
- Topographic, underground utility and physical features survey of the planned remedial wells, pipeline and treatment system locations;
- Plan for pumping test at the planned remedial well locations to confirm capture zone and treatment system influent concentrations;
- Remedial well installation plan;
- Directional drilling/trenching/piping/backfilling plan;
- Treatment system plan including process and equipment layout and specifications; and
- Site restoration plan.

6.3.2 Remedial Construction

Following approval of the design, the remedial construction would be conducted, and would generally consist of the following:

- Obtain permits
- Install remedial wells and monitoring wells
- Conduct remedial well pumping test(s)
- Construct treatment system, building, pipeline, and appurtenances

- Tie into existing infrastructure (e.g., storm water basin discharge)
- Site restoration (including restoration of landscaping)
- System start-up and troubleshooting

6.3.3 Implementation

Prior to implementation, applicable federal, state, and local permits and approvals (or equivalencies) would be obtained to ensure the project complies with pertinent regulations and requirements.

OM&M of the treatment system would begin following system construction and the startup/troubleshooting period. The goals of OM&M would be to:

- Operate and maintain the treatment system in accordance with equipment manufacturer recommendations and a site-specific OM&M manual (to be developed).
- Inspect and evaluate system data periodically to confirm that the treatment system continues to meet performance requirements (to be developed in the site-specific OM&M manual) ROD requirements.
- Monitor and report performance of the treatment system by:
    - Sampling and analysis of appropriate media (i.e., air and groundwater).
    - Assessing compliance with discharge criteria referenced in Section 6.2, above; and,
- Inspect and evaluate site-wide data periodically to determine when operation of the treatment system has met the project close-out objectives (to be developed).

A formal OM&M manual would be provided to the NYSDEC, typically within 60 days of beginning full-time operation of the treatment system. This would allow for sufficient system operation time to develop site-specific OM&M requirements and protocols based on the results of the system startup/troubleshooting period.

7 FINDINGS AND CONCLUSIONS

1. The hydrogeology and direction of groundwater flow are consistent with the findings of the Study Area RI Report.

2. TVOC concentrations are consistent with the findings of the Study Area RI report; however, this study further refined the understanding of the nature and extent of TVOCs in groundwater.

3. The RW-21 Area was identified at depths greater than 400 ft. bls, with the depth increasing to the south. The RW-21 Area was vertically delineated on all three transects and horizontally delineated on all three transects, with the exception of the western portion of the northern transect near VP-1.

4. The zone of TVOC concentrations greater than 5,000 µg/L is limited in width to approximately 600 feet, and limited in thickness to approximately 50 ft. TCE is the predominant VOC detected, with cis-1,2-DCE also detected.

5. Along the northern and central transects, the highest TVOC mass discharge is located at and near Monitoring Wells MW-3-1/3-2 and MW-7, respectively. The zones of highest discharge consists of mass traveling in the coarse sand hydrostratigraphic unit. Along the southern transect, the highest TVOC mass discharge is located at and near Monitoring Well MW-11. The zone of highest discharge consists of mass traveling in the top of the gravel hydrostratigraphic unit.

6. The area representing 90 percent of the TVOC mass discharge occupies approximately 38 percent, 14 percent, and 5 percent of the aquifer cross sectional area of the northern, central, and southern transects, respectively.

7. Groundwater flow model simulations performed as part of the conceptual design indicate that two remedial wells located at Monitoring Wells MW3-1/MW3-2 (RW-21) and MW-11 (RW-20) each pumping at 500 gpm would meet the ROD requirement for removal of 90 percent of TVOC mass discharge, while also extracting additional TVOC mass. Although this two-well remedial approach satisfies the ROD requirements, it does not provide full containment of the plume and relies on existing wellhead treatment on downgradient public supply wells.

8. The conceptual design considers available lands near the RW-21 Area; however, selection of the treatment system location is subject to access. Key system elements would consist of the following:

    - Two remedial wells installed in subgrade vaults

    - Dual-walled below grade piping transferring influent water to treatment building

- Treatment building equipped with modular, low-profile air stripper and VPGAC emissions treatment
- Single walled discharge piping transferring treated water to the Arthur Avenue Basin

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TABLES

Table 1
Pre-Design Investigation Summary, Pre-Design Sampling for the RW-21 Area,
Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds)
Bethpage, New York.

ARCADIS Design & Consultancy for natural and built assets

VPB Identification	Total Depth (ft bls)	Groundwater/Soil Sampling Intervals (ft bls)	Monitoring Well Identification	Terminal Depth (ft bls)
Vertical Profile Borings (1) (2) (3)				
RW-21_VP-1	760	300-760	RW-21_MW-1	630
RW-21_VP-2	760	300-740	RW-21_MW-2	615
RW-21_VP-3	860	300-860	RW-21_MW-3-1	571
			RW-21_MW-3-2	610
RW-21_VP-4	710	300-710	RW-21_MW-4	389
RW-21_VP-5	716	300-716	RW-21_MW-5-1	315
			RW-21_MW-5-2	575
RW-21_VP-6	742	300-742	RW-21_MW-6	629
RW-21_VP-7	827	300-827	RW-21_MW-7	595
RW-21_VP-8	700	460-470	RW-21_MW-8	475
RW-21_VP-9	706	300-706	RW-21_MW-9	645
RW-21_VP-11	817	300-817	RW-21_MW-11	653
RW-21_VP-12	700	300-700	RW-21_MW-12-1	430
			RW-21_MW-12-2	605

Notes and Abbreviations:

(1) The complete description of drilling, sampling, and logging methods is provided in the NYSDEC-approved Pre-Design Work Plan for Groundwater Hotspot (2014). VPBs drilled using the mud rotary method. Soil samples collected using split spoon. Groundwater samples collected using Hydropunch Sampler. Monitoring wells installed in VPB boreholes, with the exception of Monitoring Well MW3-2, which was installed in a separate borehole using the mud rotary method. Monitoring wells sampled using non-dedicated SS bladder pump following the low flow sampling method.

(2) VPB groundwater and soil samples collected from 300 ft bls to terminal depth, generally at 20 foot intervals. Actual sampling intervals were selected based on field conditions (see Table 2 for actual sampling intervals).

(3) VPB groundwater samples analyzed for the TCL VOCs using USEPA Method 8260C. Field parameters were also measured and included pH, specific conductance, and temperature. For some intervals, limited sample volume did not allow for measurement of all field parameters.

(4) Monitoring well groundwater samples analyzed for the TCL VOCs using USEPA Method 8260C and 1,4-dioxane using USEPA Method 8270D-SIM. Field parameters were also measured and included pH, specific conductance, and temperature.

ft bls Feet below land surface
VP Vertical profile boring
TCL Target compound list
VOCs Volatile organic compounds
USEPA United States Environmental Protection Agency
MR Mud Rotary
HP Hydropunch
SS Stainless Steel
SIM Selected Ion Monitoring

Table 2
Monitoring Well Construction Details, Pre-Design Sampling for the RW-21 Area
Northrop Grumman Systems Corporation
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

ARCADIS Design & Consultancy for natural and built assets

Well Identification	Casing/Screen Material [1]	Well Diameter (in)	Surface Casing	Land Surface Elevation (ft msl)	Measuring Point Elevation [2] (ft msl)	Monitoring Well Screened Interval (ft bls)	Monitoring Well Screened Elevation [3] (ft msl)	Total Depth (ft bls)	Installation Date	Easting	Northing
RW-21_MW-1	Sch. 80 PVC/SS	4	FM	101.20	101.29	615 - 625	-513.71 - -523.71	630	9/2/2015	208881.8951	1127553.4758
RW-21_MW-2	Sch. 80 PVC/SS	4	FM	96.30	96.28	600 - 610	-503.72 - -513.72	615	9/10/2015	208791.7513	1128067.7396
RW-21_MW-3-1	Sch. 80 PVC/SS	4	FM	97.30	97.37	556 - 566	-458.63 - -468.63	571	3/23/2015	208817.2785	1128668.6002
RW-21_MW-3-2	Sch. 80 PVC/SS	4	FM	97.50	97.53	595 - 605	-497.47 - -507.47	610	6/5/2015	208825.3031	1128671.0207
RW-21_MW-4	Sch. 80 PVC/PVC	4	FM	102.30	102.31	369 - 384	-266.69 - -281.69	389	12/2/2014	209294.5626	1129040.9556
RW-21_MW-5-1	Sch. 40 PVC/SS	2	FM	96.80	96.84	300 - 310	-203.16 - -213.16	315	5/20/2015	207865.1152	1127799.8648
RW-21_MW-5-2	Sch. 40 PVC/SS	2	FM	96.80	96.84	560 - 570	-463.16 - -473.16	575	5/20/2015	207865.1824	1127799.6306
RW-21_MW-6	Sch. 80 PVC/SS	4	FM	94.00	94.02	604 - 624	-509.98 - -529.98	629	7/8/2015	208130.2012	1128363.4712
RW-21_MW-7	Sch. 80 PVC/PVC	4	FM	96.60	96.57	580 - 590	-483.43 - -493.43	595	3/19/2015	208050.2982	1128845.8452
RW-21_MW-8	Sch. 80 PVC/SS	4	Stick Up	96.60	98.51	460 - 470	-361.49 - -371.49	475	11/21/2015	207946.307	1129530.4140
RW-21_MW-9	Sch. 80 PVC/PVC	4	FM	91.60	91.60	630 - 640	-538.40 - -548.40	645	4/23/2015	207306.0451	1128312.9746
RW-21_MW-11	Sch. 80 PVC/PVC	4	FM	94.30	94.35	638 - 648	-543.65 - -553.65	653	3/25/2015	207341.3501	1128811.6969
RW-21_MW-12-1	Sch. 40 PVC/SS	2	FM	74.80	74.69	415 - 425	-340.31 - -350.31	430	10/23/2015	207768.9912	1130115.4222
RW-21_MW-12-2	Sch. 40 PVC/SS	2	FM	74.80	74.69	590 - 600	-515.31 - -525.31	605	10/23/2015	207768.8816	1130115.6128

Notes and Abbreviations:

Elevations were surveyed to North American Vertical Datum (NAVD) (1988). Northing and easting surveyed to North American Datum (NAD) (1983).

[1] All monitoring wells have a 0.01 in. slot screen openings.

[2] Measuring point elevation is top of inner casing.

[3] Screen elevation calculated using measuring point elevation.

ft bmp Feet below measuring point
ft msl Feet relative to mean sea level
Sch. Schedule
PVC Polyvinyl chloride
SS Stainless steel
FM Flush mount

ARCADIS Design & Consultancy for natural and built assets

Table 3
Hydraulic Measurements in Monitoring Wells (December 2015), Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York

Well Identification	Measuring Point Elevation (ft msl)	Depth to Water (ft bmp)	Water-Level Elevation (ft msl)
RW-21_MW-1	101.29	45.79	55.50
RW-21_MW-2	96.28	41.00	55.28
RW-21_MW-3-1	97.37	42.18	55.19
RW-21_MW-3-2	97.53	42.32	55.21
RW-21_MW-4	102.31	45.50	56.81
RW-21_MW-5-1	96.84	41.22	55.62
RW-21_MW-5-2	96.84	42.87	53.97
RW-21_MW-6	94.02	41.03	52.99
RW-21_MW-7	96.57	44.10	52.47
RW-21_MW-8	98.51	45.73	52.78
RW-21_MW-9	91.60	40.32	51.28
RW-21_MW-11	94.35	43.20	51.15
RW-21_MW-12-1	74.69	22.25	52.44
RW-21_MW-12-2	74.69	22.43	52.26
MW-111-4	103.38	43.95	59.43
MW-116-5	93.58	41.28	52.30
MW-117-5	94.80	41.41	53.39
MW-118-5	85.53	35.59	49.94
GM-15D2	109.78	50.50	59.28
WELL 19	108.70	66.93	41.77

Notes and Abbreviations:

1) Water levels are collected on December 9, 2015.
2) Measuring point is top of casing unless otherwise noted.
ft msl feet relative to mean sea level
ft bmp feet below measuring point

Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-1	RW-21_VP-1	RW-21_VP-1	RW-21_VP-1	RW-21_VP-1	RW-21_VP-1	RW-21_VP-1
Sample Depth (ft bls):		326-327	342-343	380-381	405-406	420-421	440-441	440-441
Sample Date:		8/10/2015	8/10/2015	8/12/2015	8/12/2015	8/13/2015	8/13/2015	8/13/2015
Sample ID:		RW-21_VP-1(326-327)	RW-21_VP-1(342-343)	RW-21_VP-1 (380-381)	RW-21_VP-1 (405-406)	RW-21_VP-1 (420-421)	RW-21_VP-1 (440-441)	REP081315AM1
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	**1.0**	**0.61 J**	**0.77 J**	< 1.0	< 1.0	**0.28 J**	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**0.58 J**	**0.38 J**	**0.36 J**	< 1.0	**1.2**	**0.40 J**	**0.34 J**
1,1-Dichloroethene	5	**0.78 J**	< 1.0	< 1.0	< 1.0	< 1.0	**0.97 J**	**0.70 J**
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**4.2 J**	< 10	**3.3 J**	**4.5 J**	**7.7 J**	**8.8 J**	**8.5 J**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	**4.2**	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	**0.30 J**	**0.46 J**	**0.33 J**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**0.47 J**	< 1.0	**0.41 J**	< 1.0	**0.47 J**	**4.4**	**3.3**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.59 J**	**0.45 J**
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**15.9**	**11.4**	**3.1**	< 1.0	**2.2**	**6.2**	**4.8**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**23**	**12**	**7.9**	**8.7**	**12**	**22**	**18**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-1	RW-21_VP-1	RW-21_VP-1	RW-21_VP-1	RW-21_VP-1	RW-21_VP-1	RW-21_VP-1
Sample Depth (ft bls):		460-461	480-481	500-501	520-521	590-591	600-601	620-621
Sample Date:		8/13/2015	8/13/2015	8/17/2015	8/17/2015	8/19/2015	8/19/2015	8/19/2015
Sample ID:		RW-21_VP-1 (460-461)	RW-21_VP-1 (480-481)	RW-21_VP-1(500-501)	RW-21_VP-1(520-521)	RW-21_VP-1(590-591)	RW-21_VP-1(600-601)	RW-21_VP-1(620-621)
Constituent								
Units in (ug/L)								
	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.27 J**	**1.1**
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.33 J**	**0.69 J**
1,1-Dichloroethane	5	< 1.0	< 1.0	**0.35 J**	< 1.0	< 1.0	**0.76 J**	**2.8**
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.79 J**	**2.7**
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**1.5**	**3.2**
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.71 J**
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**12.0**	**11.8**	**10.6**	**11.8**	**13.9**	**6.0 J**	**5.4 J**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	**0.36 J**	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	**0.20 J**	< 1.0	< 1.0	**1.1**	**3.0**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	**0.28 J**	< 1.0	**0.88 J**	38.4	91.6
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.65 J**	**2.7**
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.94 J
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**0.51 J**	**0.51 J**	**0.86 J**	**0.37 J**	**3.4**	227	744
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**13**	**12**	**12**	**12**	**19**	**280**	**860**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-1	RW-21_VP-1	RW-21_VP-1	RW-21_VP-1	RW-21_VP-1	RW-21_VP-1	RW-21_VP-1
Sample Depth (ft bls):		640-641	660-661	682-683	700-701	720-721	740-741	760-761
Sample Date:		8/19/2015	8/19/2015	8/20/2015	8/20/2015	8/24/2015	8/24/2015	8/24/2015
Sample ID:		RW-21_VP-1(640-641)	RW-21_VP-1(660-661)	RW-21_VP-1(682-683)	RW-21_VP-1(700-701)	RW-21_VP-1(720-721)	RW-21_VP-1(740-741)	RW-21_VP-1(760-761)
Constituent	NYSDEC SCGs							
Units in (ug/L)								
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**9.4 J**	**8.6 J**	**14.4**	**8.6 J**	**15.1**	< 10	**10.8**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	**1.2 J**	**15.3**	**0.38 J**
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**1.8**	**0.59 J**	**0.70 J**	**0.54 J**	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**16.6**	**6.3**	**5.3**	**3.9**	**2.8**	**0.57 J**	**0.76 J**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**28**	**15**	**20**	**13**	**19**	**16**	**12**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2
Sample Depth (ft bls):		302-303	303-304	322-323	341-342	363-364	382-383	402-403
Sample Date:		8/6/2015	8/18/2015	8/18/2015	8/18/2015	8/19/2015	8/19/2015	8/19/2015
Sample ID:		RW-21_VP-1(302-303)	RW-21_VP-2(303-304)	RW-21_VP-2(322-323)	RW-21_VP-2(341-342)	RW-21_VP-2(363-364)	RW-21_VP-2(382-383)	RW-21_VP-2(402-403)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	**0.57 J**	**0.39 J**	**0.63 J**	**0.50 J**	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**0.46 J**	**0.47 J**	**0.93 J**	**1.3**	< 1.0	< 1.0	**0.28 J**
1,1-Dichloroethene	5	**0.59 J**	< 1.0	**0.75 J**	**0.60 J**	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	**6.3 J**	< 10	**7.5 J**	**7.4 J**	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	**0.37 J**	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	**0.96 J**	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	**0.31 J**	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	**0.30 J**	**0.52 J**	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	**0.58 J**	**2.1**	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	**0.17 J**	< 1.0	**0.34 J**	**0.92 J**	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	**0.44 J**	**0.51 J**	< 1.0	< 1.0	**0.91 J**	**0.94 J**
Toluene	5	< 1.0	**0.33 J**	**0.21 J**	**0.19 J**	**2.8**	**0.26 J**	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**24.1**	**6.6**	**11.6**	**5.5**	**0.31 J**	**2.5**	**3.2**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**26**	**15**	**15**	**17**	**15**	**3.7**	**4.4**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2
Sample Depth (ft bls):		422-423	442-443	462-463	482-483	482-483	502-504	522-523
Sample Date:		8/19/2015	8/19/2015	8/20/2015	8/20/2015	8/20/2015	8/20/2015	8/20/2015
Sample ID:		RW-21_VP-2(422-423)	RW-21_VP-2(442-443)	RW-21_VP-2 (462-463)	RW-21_VP-2 (482-483)	REP082015KM1	RW-21_VP-2 (502-504)	RW-21_VP-2 (522-523)
Constituent								
Units in (ug/L)								
	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	**1.3**	**1.3**	**0.97 J**	**0.30 J**
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	**4.6**	**4.8**	**4.4**	**0.75 J**
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	**3.3**	**3.1**	**2.3**	**0.56 J**
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	**0.55 J**	**0.52 J**	**0.82 J**	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	**6.0 J**	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**4.7 J**	< 10	**13.0**	< 10	< 10	< 10	**7.4 J**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	**0.36 J**	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	**1.3**	**1.4**	**3.3**	**0.35 J**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	**14.7**	**14.2**	**11.0**	**3.2**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	**0.64 J**	< 1.0	**0.45 J**	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	**0.25 J**	< 1.0	**0.21 J**	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	**4.8**	**4.1**	**1.7**	**0.79 J**
Toluene	5	**0.62 J**	< 1.0	**0.55 J**	**0.23 J**	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	**0.90 J**	**0.29 J**	**45.4**	**38.9**	**34.5**	**7.9**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**6.6**	**0.9**	**21**	**76**	**68**	**59**	**21**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2
Sample Depth (ft bls):		542-543	545-546	560-561	561-562	582-583	602-603	622-623
Sample Date:		8/20/2015	8/18/2015	8/18/2015	8/24/2015	8/24/2015	8/24/2015	8/24/2015
Sample ID:		RW-21_VP-2 (542-543)	RW-21_VP-1(545-546)	RW-21_VP-1(560-561)	RW-21_VP-2(561-562)	RW-21_VP-2(582-583)	RW-21_VP-2(602-603)	RW-21_VP-2(622-623)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	**0.26 J**	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**0.23 J**	< 1.0	**0.82 J**	**0.72 J**	**0.20 J**	**0.33 J**	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	**0.59 J**	**0.57 J**	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.61 J**	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**6.6 J**	**12.2**	**11.7**	**11.3**	**15.1**	**7.3 J**	**10.4**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**0.21 J**	< 1.0	**0.27 J**	**0.41 J**	**0.27 J**	**0.69 J**	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**4.3**	< 1.0	**1.7**	**7.0**	**6.4**	**16.9**	**1.1**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	**0.52 J**	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	**0.26 J**	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	**0.69 J**	< 1.0	**0.55 J**	< 1.0
Toluene	5	**0.19 J**	< 1.0	< 1.0	**0.53 J**	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**9.0**	**0.42 J**	**2.8**	**9.6**	**23.0**	**78.1**	**19.3**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**21**	**13**	**18**	**32**	**45**	**100**	**31**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-2	RW-21_VP-3
Sample Depth (ft bls):		642-643	662-663	681-682	701-702	722-723	741-742	299-300
Sample Date:		8/25/2015	8/25/2015	8/25/2015	8/25/2015	8/27/2015	8/27/2015	3/31/2015
Sample ID:		RW-21_VP-2(642-643)	RW-21_VP-2(662-663)	RW-21_VP-2(681-682)	RW-21_VP-2(701-702)	RW-21_VP-2(722-723)	RW-21_VP-2(741-742)	RW-21_VP-3(299-300)
Constituent	NYSDEC SCGs							
Units in (ug/L)								
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 J
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**3.6**
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**6.7 J**	**4.8 J**	**11.3**	**7.4 J**	**7.3 J**	**6.7 J**	**5.3 J**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0 J
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	**0.35 J**	< 2.0	< 2.0	< 2.0	**0.26 J**	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0 J
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**1.1**	**1.4**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	**0.23 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**0.95 J**	**77.5**	**1.7**	**1.7**	**0.34 J**	**0.74 J**	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**9.3**	**84**	**13**	**9.1**	**7.9**	**7.4**	**8.9**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3
Sample Depth (ft bls):		299-300	318-319	338-339	362-363	384-385	399-400	419-420
Sample Date:		3/31/2015	3/31/2015	3/31/2015	3/31/2015	3/31/2015	4/1/2015	4/1/2015
Sample ID:		REP033115DM	RW-21_VP-3(318-319)	RW-21_VP-3(338-339)	RW-21_VP-3(362-363)	RW-21_VP-3(384-385)	RW-21_VP-3(399-400)	RW-21_VP-3(419-420)
Constituent	NYSDEC SCGs							
Units in (ug/L)								
1,1,1-Trichloroethane	5	< 1.0 J	< 1.0 J	< 1.0 J	**0.77 J**	**0.94 J**	**0.55 J**	**3.0 J**
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0 J	< 5.0 J	< 5.0 J	< 5.0 J	< 5.0 J	< 5.0 J	< 5.0 J
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**3.7**	**1.2**	**0.37 J**	**2.8**	**2.7**	**2.0**	**9.7**
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	**1.4**	**1.2**	**1.1**	**5.7**
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**1.2**
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	**6.3 J**	**15.3**	< 10
Benzene	1	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	**0.32 J**	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0 J	< 4.0 J	< 4.0 J	< 4.0 J	< 1.0 J	< 1.0 J	< 1.0 J
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 5.0 J	< 5.0 J	< 5.0 J	< 5.0 J	< 2.0 J	< 2.0 J	< 2.0 J
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	**0.38 J**	**0.43 J**	**0.83 J**	**2.7**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	**0.85 J**	**0.68 J**	**2.5**	**11.2**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	**0.70 J**	< 1.0	< 1.0	**13.8**
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	**0.25 J**	**0.90 J**	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	< 1.0	< 1.0	**2.6**	**5.6**	**12.2**	**65.6**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**3.7**	**1.2**	**0.37**	**9.5**	**18**	**36**	**110**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3
Sample Depth (ft bls):		438-439	458-459	478-479	498-499	519-520	538-539	558-559
Sample Date:		4/1/2015	4/1/2015	4/1/2015	4/2/2015	4/2/2015	4/2/2015	4/2/2015
Sample ID:		RW-21_VP-3(438-439)	RW-21_VP-3(458-459)	RW-21_VP-3(478-479)	RW-21_VP-3(498-499)	RW-21_VP-3(519-520)	RW-21_VP-3(538-539)	RW-21_VP-3(558-559)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	**2.2 J**	**2.2 J**	**4.7 J**	**2.7 J**	< 1.0 J	< 50 J	< 50 J
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0 J	< 5.0 J	< 25 J	< 25 J	< 5.0 J	< 250 J	< 250 J
1,1,2-Trichloroethane	1	< 1.0	< 1.0	**3.8 J**	**1.8 J**	< 1.0	< 50	< 50
1,1-Dichloroethane	5	**9.5**	**9.7**	**15.4**	**12.1**	< 1.0	< 50	**27.4 J**
1,1-Dichloroethene	5	**4.7**	**4.6**	**16.4**	**11.4**	< 1.0	< 50	**26.5 J**
1,2-Dichloroethane	0.6	**1.3**	**0.51 J**	**39.9**	**20.3**	**0.27 J**	< 50	**45.4 J**
1,2-Dichloropropane	1	< 1.0	< 1.0	**5.5**	< 5.0	< 1.0	< 50	< 50
2-Butanone (MEK)	50	< 10	< 10	< 50	< 50	< 10	< 500	< 500
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 25	< 25	< 5.0	< 250	< 250
Acetone	50	< 10	< 10	< 50	< 50	**7.1 J**	< 500	< 500
Benzene	1	< 0.50	< 0.50	< 2.5	< 2.5	< 0.50	< 25	< 25
Bromodichloromethane	50	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
Bromoform	50	< 1.0 J	< 1.0 J	< 5.0 J	< 5.0 J	< 1.0 J	< 50 J	< 50 J
Bromomethane	5	< 2.0	< 2.0	< 10	< 10	< 2.0	< 100	< 100
Carbon Disulfide	60	< 2.0	< 2.0	< 10	< 10	< 2.0	< 100	< 100
Carbon Tetrachloride	5	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
CFC-12	5	< 2.0 J	< 2.0 J	< 10 J	< 10 J	< 2.0 J	< 100 J	< 100 J
Chlorobenzene	5	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
Chlorodibromomethane	50	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
Chlorodifluoromethane	5	< 5.0	< 5.0	< 25	< 25	< 5.0	< 250	< 250
Chloroethane	5	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
Chloroform	7	**1.8**	**1.0**	**34.0**	**14.9**	< 1.0	**25.8 J**	**35.1 J**
Chloromethane	5	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
cis-1,2-Dichloroethene	5	**7.5**	**1.1**	**860**	**684**	**4.9**	**544**	**779**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
Dichloromethane	5	< 2.0	< 2.0	< 10	< 10	< 2.0	< 100	< 100
Ethylbenzene	5	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
m,p-Xylene	5	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 25	< 25	< 5.0	< 250	< 250
o-Xylene	5	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
Styrene (Monomer)	5	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
Tetrachloroethene	5	**13.4**	**16.4**	**5.7**	**13.7**	< 1.0	< 50	< 50
Toluene	5	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	**7.8**	**3.5 J**	< 1.0	< 50	< 50
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
Trichloroethene	5	**46.3**	**10.4**	**2410 D**	**1610 D**	**16.2**	**6750**	**13200 D**
Vinyl chloride	2	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 50	< 50
TVOCs		**87**	**46**	**3400**	**2400**	**28**	**7300**	**14000**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3
Sample Depth (ft bls):		578-579	598-599	618-619	643-644	658-660	700-701	710-711
Sample Date:		4/2/2015	4/3/2015	4/3/2015	4/6/2015	4/6/2015	4/7/2015	4/7/2015
Sample ID:		RW-21_VP-3(578-579)	RW-21_VP-3(598-599)	RW-21_VP-3(618-619)	RW-21_VP-3 (643-644)	RW-21_VP-3 (658-660)	RW-21_VP-3 (700-701)	RW-21_VP-3 (710-711)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 25 J	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 130 J	< 100	< 100	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**10.6 J**	**8.4 J**	**7.7 J**	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	**19.8 J**	**10.8 J**	**7.2 J**	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 250	< 200	< 200	< 10	< 10	**6.3 J**	< 10
4-Methyl-2-Pentanone	NE	< 130	< 100	< 100	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 250	< 200	< 200	**20.8**	< 10	**11.9**	**5.9 J**
Benzene	1	< 13	< 10	< 10	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 25 J	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 50	< 40	< 40	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 50	< 40	< 40	< 2.0	< 2.0	**0.37 J**	< 2.0
Carbon Tetrachloride	5	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 50 J	< 40	< 40	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 130	< 100	< 100	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**16.1 J**	**9.8 J**	**5.7 J**	**0.21 J**	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**283**	**208**	**149**	**2.1**	**0.63 J**	**0.56 J**	< 1.0
cis-1,3-Dichloropropene	0.4	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 50	< 40	< 40	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 130	< 100	< 100	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 25	< 20	< 20	**0.24 J**	< 1.0	**0.22 J**	< 1.0
trans-1,2-Dichloroethene	5	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**4270**	**4660 D**	**2910**	**30.6**	**25.5**	**11.8**	**6.4**
Vinyl chloride	2	< 25	< 20	< 20	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**4600**	**4900**	**3100**	**54**	**26**	**31**	**12**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3
Sample Depth (ft bls):		715-716	720-721	725-726	730-731	735-736	740-741	745-746
Sample Date:		4/7/2015	4/7/2015	4/7/2015	4/8/2015	4/8/2015	4/8/2015	4/8/2015
Sample ID:		RW-21_VP-3 (715-716)	RW-21_VP-3 (720-721)	RW-21_VP3(725-726)	RW-21_VP-3(730-731)	RW-21_VP-3(735-736)	RW-21_VP-3(740-741)	RW-21_VP-3(745-746)
Constituent	NYSDEC SCGs							
Units in (ug/L)								
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**3.7 J**	**13.4**	< 10	< 10	< 10	< 10	**4.7 J**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	**0.31 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	**0.60 J**	**0.26 J**	< 1.0	< 1.0	< 1.0	**0.18 J**
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**3.9**	**3.6**	**5.1**	**2.2**	**0.28 J**	**2.3**	**0.46 J**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**7.6**	**18**	**5.4**	**2.2**	**0.28**	**2.3**	**5.3**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3
Sample Depth (ft bls):		755-756	760-761	775-776	780-781	785-786	790-791	795-796
Sample Date:		4/8/2015	4/9/2015	4/9/2015	4/9/2015	4/9/2015	4/10/2015	4/10/2015
Sample ID:		RW-21_VP-3 (755-756)	RW-21_VP-3 (760-761)	RW-21_VP-3 (775-776)	RW-21_VP-3 (780-781)	RW-21_VP-3 (785-786)	RW-21_VP-3 (790-791)	RW-21_VP-3 (795-796)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	**10.5**	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	**0.65 J**	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	**4.1**	**0.36 J**	**0.90 J**	< 1.0	**18.7**	**0.99 J**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**0.0**	**4.1**	**0.36**	**0.9**	**0.0**	**30**	**0.99**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3
Sample Depth (ft bls):		801-802	806-807	811-812	815-816	820-821	825-826	830-831
Sample Date:		4/13/2015	4/13/2015	4/13/2015	4/13/2015	4/14/2015	4/14/2015	4/14/2015
Sample ID:		RW-21_VP-3(801-802)	RW-21_VP-3(806-807)	RW-21_VP-3(811-812)	RW-21_VP-3(815-816)	RW-21_VP-3(820-821)	RW-21_VP-3(825-826)	RW-21_VP-3(830-831)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	**6.6 J**	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**8.9 J**	**7.4 J**	**8.6 J**	**8.0 J**	**15.2**	**9.3 J**	**3.4 J**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0 J	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0 J	< 2.0	< 2.0 J	< 2.0 J	< 2.0 J
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0 J	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.62 J**	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.37 J**	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	**0.48 J**	< 1.0	**0.42 J**	**0.41 J**	**0.67 J**
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**2.5**	< 1.0	**3.5**	**0.44 J**	**5.8**	**0.30 J**	**1.3**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**18**	**7.4**	**13**	**8.4**	**21**	**11**	**5.4**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-3	RW-21_VP-4
Sample Depth (ft bls):		835-836	840-841	844-845	849-850	855-856	860-861	302-303
Sample Date:		4/14/2015	4/14/2015	4/15/2015	4/15/2015	4/15/2015	4/15/2015	12/5/2014
Sample ID:		RW-21_VP-3(835-836)	RW-21_VP-3(840-841)	RW-21_VP-3(844-845)	RW-21_VP-3(849-850)	RW-21_VP-3(855-856)	RW-21_VP-3(860-861)	RW-21_VP-4(302-303)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	**9.9 J**	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.20**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.57**
Toluene	5	**0.18 J**	< 1.0	< 1.0	**0.23 J**	< 1.0	**0.24 J**	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	**0.93 J**	**2.0**	**1.1**	< 1.0	< 1.0	**1.2**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**0.18**	**0.93**	**2**	**11**	**0.0**	**0.24**	**2**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-4	RW-21_VP-4	RW-21_VP-4	RW-21_VP-4	RW-21_VP-4	RW-21_VP-4	RW-21_VP-4
Sample Depth (ft bls):		322-323	347-348	347-348	371	371-507	381-382	406-407
Sample Date:		12/8/2014	12/8/2014	12/8/2014	12/9/2014	12/15/2014	12/10/2014	12/10/2014
Sample ID:		RW-21_VP-4(322-323)	RW-21_VP-4(347-348)	REP120814KM1	RW21_VP-4_371	RW-21_VP-4(506-507)	RW-21_VP-4 (381-382)	RW-21_VP-4 (406-407)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	**0.58**	**0.61**	**1.6**	< 1.0	**2.3**	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	0.43	< 1.0	**0.43**	< 1.0
1,1-Dichloroethane	5	< 1.0	**3.6**	**3.7**	**10**	< 1.0	**9.9**	**1.2**
1,1-Dichloroethene	5	< 1.0	**1.8**	**2.0**	**5.7**	< 1.0	**7.0**	**0.94**
1,2-Dichloroethane	0.6	< 1.0	**0.77**	**0.80**	**2.5**	< 1.0	**2.9**	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	**0.52**	< 1.0	**0.41**	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	**4.6**	**4.7**	**10.2**
Benzene	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	**0.37**	< 1.0	**0.52**	< 1.0
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	**0.85**	**0.87**	**2.0**	< 1.0	**2.3**	**0.29**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	**133**	**132**	**321**	**1.2**	**281**	**10.8**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.54**
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.30**
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5	< 1.0	**1.8**	**1.9**	**2.2**	< 1.0	**1.7**	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	**0.37**	< 1.0	**5.2**
trans-1,2-Dichloroethene	5	< 1.0	**1.1**	**1.2**	**2.3**	< 1.0	**2.2**	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	**202**	**203**	**540**	**10.2**	**674**	**48.6**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**0.0**	**350**	**350**	**890**	**16**	**990**	**78**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-4	RW-21_VP-4	RW-21_VP-4	RW-21_VP-4	RW-21_VP-4	RW-21_VP-4	RW-21_VP-4
Sample Depth (ft bls):		420-421	440-441	460-461	481-482	506-521	540-541	560-561
Sample Date:		12/11/2014	12/11/2014	12/11/2014	12/12/2014	12/15/2014	12/15/2014	12/15/2014
Sample ID:		RW-21_VP-4(420-421)	RW-21_VP-4(440-441)	RW-21_VP-4(460-461)	RW-21_VP-4(481-482)	RW-21_VP-4(520-521)	RW-21_VP-4(540-541)	RW-21_VP-4(560-561)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	**0.82 J**	< 1.0	**0.42**	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	**2.1**	< 1.0	**1.1**	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	**2.8**	< 1.0	**1.0**	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	**4.4**	< 1.0	**2.9**	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	**1.0**	< 1.0	**0.79**	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	**7.0**	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**5.5 J**	**3.4 J**	**18.4**	**3.6**	**7.5**	< 10	< 10
Benzene	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	**0.47 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	**4.0**	< 1.0	**1.6**	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**2.7**	**28.5**	**0.52 J**	**24.8**	**0.41**	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	**2.1**	1.7	**0.46 J**	1.1	**0.54**	**0.23**	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**13.4**	**323**	**1.2**	**248**	**2.0**	**1.2**	**0.93**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**24**	**370**	**21**	**290**	**17**	**1.4**	**0.93**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-4	RW-21_VP-4	RW-21_VP-4	RW-21_VP-4	RW-21_VP-4	RW-21_VP-4	RW-21_VP-4
Sample Depth (ft bls):		580-581	600-601	630-631	642-643	660-661	680-681	702-703
Sample Date:		12/16/2014	12/16/2014	12/16/2014	12/17/2014	12/17/2014	12/17/2014	12/17/2014
Sample ID:		RW-21_VP-4(580-581)	RW-21_VP-4(600-601)	RW-21_VP-4(630-631)	RW-21_VP-4(642-643)	RW-21_VP-4(660-661)	RW-21_VP-4(680-681)	RW-21_VP-4(702-703)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	**4.9**	< 10	< 10	*6.8*	< 10	**15.4**
Benzene	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	**0.39**	< 1.0	< 1.0	**0.26**	**0.27**	**0.26**	**1.0**
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**1.6**	**1.6**	**2.4**	**0.73**	**0.82**	**1.1**	**0.57**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**2**	**6.5**	**2.4**	**0.99**	**7.9**	**1.4**	**17**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-5
Sample Depth (ft bls):		307-308	307-308	326-327	347-348	377-378	387-388	407-408
Sample Date:		4/30/2015	4/30/2015	4/30/2015	4/30/2015	4/30/2015	4/30/2015	4/30/2015
Sample ID:		RW-21_VP-5 (307-308)	REP043015SL	RW-21_VP-5 (326-327)	RW-21_VP-5 (347-348)	RW-21_VP-5 (377-378)	RW-21_VP-5 (387-388)	RW-21_VP-5 (407-408)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**2.2**	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	**3.3**	**3.4**	< 5.0	**2.5**	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	**1.0**	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	**0.97**	< 1.0	**1.6**	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**1.9**	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**11.0**	< 10	**9.8**	**5.3**	**16.3**	**14.9**	**10.5**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	**0.33**	**0.34**	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	**1.0**	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**1.1**	**1.2**	< 1.0	**4.5**	**0.39**	**0.69**	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	**0.56**	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	**0.21**	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	**3.4**	**3.6**	**1.6**	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	**0.31**	< 1.0	**0.23**	**0.44**	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**122**	**128**	**38.5**	**137**	**24.9**	**25.9**	**3.5**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**140**	**140**	**50**	**150**	**43**	**48**	**14**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-5
Sample Depth (ft bls):		430-431	447-448	466-467	526-527	541-542	547-548	566-567
Sample Date:		5/4/2015	5/4/2015	5/4/2015	5/5/2015	5/6/2015	5/6/2015	5/6/2015
Sample ID:		RW-21_VP-5(430-431)	RW-21_VP-5(447-448)	RW-21_VP-5(466-467)	RW-21_VP-5(526-527)	RW-21_VP-5(541-542)	RW-21_VP-5(547-548)	RW-21_VP-5(566-567)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	**0.71**	**1.5**	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	**2.5**	**8.5**	< 1.0	< 1.0	**1.7**	**1.9**
1,1-Dichloroethene	5	< 1.0	**0.93**	**3.3**	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	**0.68**	< 1.0	< 1.0	**0.71**	**0.96**
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**5.3**	< 10	< 10	**13.8**	**6.9**	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	**0.48**	< 1.0	< 1.0	< 1.0	**0.28**
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	**0.22**	**1.9**	< 1.0	< 1.0	**2.0**	**3.2**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	**3.4**	< 1.0	< 1.0	**3.2**	**3.8**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	**0.27**	< 1.0	< 1.0	< 1.0	**0.20**	**1.0**	**0.21**
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**2.1**	**1.6**	**14.2**	< 1.0	**0.42**	**6.9**	**12.4**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**7.7**	**6**	**34**	**14**	**7.5**	**16**	**23**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-5
Sample Depth (ft bls):		566-567	590-591	595-596	606-607	626-627	646-647	666-667
Sample Date:		42130	5/6/2015	5/6/2015	5/6/2015	5/7/2015	5/7/2015	5/7/2015
Sample ID:		REP050615SL	RW-21_VP-5(590-591)	RW-21_VP-5(595-596)	RW-21_VP-5 (606-607)	RW-21_VP-5 (626-627)	RW-21_VP-5 (646-647)	RW-21_VP-5 (666-667)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**1.9**	< 1.0	< 1.0	< 1.0	1.1	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	**1.0**	< 1.0	< 1.0	< 1.0	0.43	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	**9.8**	**6.6**	< 10	12.2	7.7	10.9
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	**0.32**	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	**0.25**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	**0.41**	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**3.0**	< 1.0	< 1.0	< 1.0	1.3	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**3.3**	< 1.0	< 1.0	< 1.0	4.1	< 1.0	0.39
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	**0.25**	**0.76**	**1.1**	**0.66**	**0.83**	**0.54**	**0.99**
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**10.9**	**0.86**	**0.69**	**0.92**	**10.3**	**0.37**	**1.1**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**21**	**11**	**8.4**	**2.3**	**30**	**8.6**	**13**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-5	RW-21_VP-5	RW-21_VP-5	RW-21_VP-6	RW-21_VP-6	RW-21_VP-6	RW-21_VP-6
Sample Depth (ft bls):		686-687	695-696	715-716	302-303	321-322	343-344	365-366
Sample Date:		5/7/2015	5/7/2015	5/11/2015	6/16/2015	6/16/2015	6/16/2015	6/16/2015
Sample ID:		RW-21_VP-5 (686-687)	RW-21_VP-5 (695-696)	RW-21_VP-5(715-716)	RW-21_VP-6(302-303)	RW-21_VP-6(321-322)	RW-21_VP-6(343-344)	RW-21_VP-6(365-366)
Constituent	NYSDEC SCGs							
Units in (ug/L)								
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.76 J**
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**1.9**
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.79 J**
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**6.6**	**7.3**	**21.8**	**11.2**	**5.1 J**	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	**0.41 J**	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	**0.47 J**	**0.45 J**	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.29 J**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	**0.69 J**	**0.43 J**	**0.43 J**	**0.47 J**
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	**0.37 J**	**0.20 J**	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.79 J**	**0.91 J**
Toluene	5	**1.5**	**1.3**	**0.62 J**	**1.5**	**0.60 J**	**0.74 J**	**0.46 J**
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**0.66**	**0.81**	< 1.0	< 1.0	< 1.0	**16.0**	**7.1**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**8.8**	**9.4**	**22**	**15**	**6.8**	**18**	**13**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-6	RW-21_VP-6	RW-21_VP-6	RW-21_VP-6	RW-21_VP-6	RW-21_VP-6	RW-21_VP-6
Sample Depth (ft bls):		381-382	401-402	421-422	441-442	462-463	480-481	502-503
Sample Date:		6/17/2015	6/17/2015	6/17/2015	6/17/2015	6/17/2015	6/17/2015	6/18/2015
Sample ID:		RW-21_VP-6(381-382)	RW-21_VP-6(401-402)	RW-21_VP-6(421-422)	RW-21_VP-6(441-442)	RW-21_VP-6(462-463)	RW-21_VP-6(480-481)	RW-21_VP-6(502-503)
Constituent	NYSDEC SCGs							
Units in (ug/L)								
1,1,1-Trichloroethane	5	< 1.0	**1.1**	< 1.0	< 1.0	**1.8**	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**1.1**	**2.1**	**0.69 J**	**2.3**	**5.8**	**1.0**	**1.2**
1,1-Dichloroethene	5	**0.54 J**	**1.2**	< 1.0	< 1.0	**2.0**	< 1.0	**0.51 J**
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**24.8**	**5.6 J**	**4.0 J**	**4.1 J**	**5.3 J**	**17.8**	**8.1 J**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	**0.34 J**	**0.37 J**	**0.40 J**	**0.36 J**	< 2.0	**0.28 J**
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**0.23 J**	**0.34 J**	< 1.0	< 1.0	**0.51 J**	< 1.0	**0.24 J**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.68 J**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	**2.6**	< 1.0	< 1.0	< 1.0	< 1.0	**0.37 J**	**0.27 J**
m,p-Xylene	5	**10.8**	**0.58 J**	< 1.0	< 1.0	**0.52 J**	**1.3**	**0.77 J**
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	**3.4**	< 1.0	< 1.0	< 1.0	**0.20 J**	**0.45 J**	**0.37 J**
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	**0.78 J**	< 1.0	< 1.0	< 1.0	< 1.0	**0.56 J**
Toluene	5	**0.32 J**	**0.54 J**	< 1.0	< 1.0	**0.42 J**	< 1.0	**0.90 J**
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**4.6**	**13.1**	< 1.0	< 1.0	**1.7**	**0.50 J**	**2.0**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**48**	**26**	**5.1**	**6.8**	**19**	**21**	**16**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-6	RW-21_VP-6	RW-21_VP-6	RW-21_VP-6	RW-21_VP-6	RW-21_VP-6	RW-21_VP-6
Sample Depth (ft bls):		520-521	542-543	568-569	581-582	606-607	621-622	640-641
Sample Date:		6/18/2015	6/18/2015	6/18/2015	6/19/2015	6/22/2015	6/22/2015	6/23/2015
Sample ID:		RW-21_VP-6(520-521)	RW-21_VP-6(542-543)	RW-21_VP-6(568-569)	RW-21_VP-6(581-582)	RW-21_VP-6(606-607)	RW-21_VP-6(621-622)	RW-21_VP-6 (640-641)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	**1.1**	< 2.5	< 10	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 13	< 50	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	**0.81 J**	**1.7 J**	**2.4 J**	< 1.0
1,1-Dichloroethane	5	**0.68 J**	< 1.0	< 1.0	**5.6**	**0.58 J**	**4.0 J**	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	**3.0**	< 2.5	< 10	< 1.0
1,2-Dichloroethane	0.6	**0.86 J**	< 1.0	< 1.0	**3.8**	**6.0**	**12.6**	**0.42 J**
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	1.5 J	< 10	< 1.0
2-Butanone (MEK)	50	< 10	**7.3 J**	**7.6 J**	< 10	< 25	< 100	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 13	< 50	< 5.0
Acetone	50	**15.3**	**14.6**	**27.0**	**6.4 J**	**25.5**	< 100	**14.6**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 1.3	< 5.0	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 20	< 2.0
Carbon Disulfide	60	< 2.0	**0.49 J**	**0.41 J**	**0.26 J**	< 5.0	< 20	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	**0.34 J**	< 2.5	< 10	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 20	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 13	< 50	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
Chloroform	7	**0.86 J**	< 1.0	< 1.0	**12.4**	**5.2**	**17.2**	**0.27 J**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
cis-1,2-Dichloroethene	5	**15.5**	**0.31 J**	**0.86 J**	**80.6**	**132**	**389**	**6.5**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 20	< 2.0
Ethylbenzene	5	**0.39 J**	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
m,p-Xylene	5	**1.6**	< 1.0	< 1.0	**0.46 J**	< 2.5	< 10	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 13	< 50	< 5.0
o-Xylene	5	**0.58 J**	< 1.0	< 1.0	**0.20 J**	< 2.5	< 10	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
Tetrachloroethene	5	**0.53 J**	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
Toluene	5	**0.32 J**	**0.28 J**	< 1.0	**0.43 J**	< 2.5	< 10	0.21 J
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
Trichloroethene	5	**30.8**	< 1.0	**0.59 J**	**163**	**662**	**1220**	**96.5**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 10	< 1.0
TVOCs		**67**	**23**	**36**	**280**	**830**	**1600**	**120**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Constituent Units in (ug/L)	NYSDEC SCGs	RW-21_VP-6 661-662 6/23/2015 RW-21_VP-6 (661-662)	RW-21_VP-6 661-662 6/23/2015 REP062315AM1	RW-21_VP-6 682-683 6/23/2015 RW-21_VP-6 (682-683)	RW-21_VP-6 700-701 6/23/2015 RW-21_VP-6 (700-701)	RW-21_VP-6 726-727 6/25/2015 RW-21_VP-6(726-727)	RW-21_VP-6 741-742 6/25/2015 RW-21_VP-6(741-742)	RW-21_VP-7 302-303 1/19/2015 RW-21_VP-7(302-303)
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**0.77 J**	**0.60 J**	< 1.0	< 1.0	< 1.0	< 1.0	**1.1**
1,1-Dichloroethene	5	**1.0**	**0.66 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	**0.94 J**	**0.87 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	**11.0**	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**8.0 J**	**7.4 J**	< 10	**7.5 J**	**12.5**	**22.8**	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	**0.27 J**	< 2.0	< 2.0	< 2.0	< 2.0	**0.32 J**	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**0.35 J**	**0.31 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**14.9**	**11.8**	**0.63 J**	**0.79 J**	**0.41 J**	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	**0.40 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	**0.18 J**	**0.22 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
Tetrachloroethene	5	**0.45 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	**0.37 J**	**0.44 J**	< 1.0	**0.32 J**	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**390**	**227**	**15.7**	**5.6**	**1.9**	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**420**	**250**	**16**	**14**	**15**	**34**	**1.1**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Constituent Units in (ug/L)	NYSDEC SCGs	RW-21_VP-7 320-321 1/19/2015 RW-21_VP-7(320-321)	RW-21_VP-7 345-346 1/19/2015 RW-21_VP-7(345-346)	RW-21_VP-7 362-363 1/19/2015 RW-21_VP-7(362-363)	RW-21_VP-7 380-381 1/20/2015 RW-21_VP-7 (380-381)	RW-21_VP-7 401-402 1/20/2015 RW-21_VP-7 (401-402)	RW-21_VP-7 421-422 1/20/2015 RW-21_VP-7 (421-422)	RW-21_VP-7 441-442 1/20/2015 RW-21_VP-7 (441-442)
1,1,1-Trichloroethane	5	**1.9**	< 1.0	< 1.0	**0.43**	< 1.0	**0.80**	**1.1**
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**5.8**	< 1.0	< 1.0	**1.5**	< 1.0	**2.5**	**3.6**
1,1-Dichloroethene	5	**2.1**	< 1.0	< 1.0	< 1.0	< 1.0	**1.0**	**1.4**
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**0.45**	< 1.0	< 1.0	< 1.0	< 1.0	**0.35**	**0.44**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.39**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	**0.36**	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	**0.26**	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**0.81**	< 1.0	< 1.0	**4.1**	< 1.0	**3.8**	**3.0**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**11**	**0.0**	**0.0**	**6.7**	**0.0**	**8.5**	**9.9**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-7	RW-21_VP-7	RW-21_VP-7	RW-21_VP-7	RW-21_VP-7	RW-21_VP-7	RW-21_VP-7
Sample Depth (ft bls):		468-469	481-482	502-503	521-522	544-545	561-562	581-582
Sample Date:		1/21/2015	1/21/2015	1/21/2015	1/21/2015	1/21/2015	1/22/2015	1/22/2015
Sample ID:		RW-21_VP-7 (468-469)	RW-21_VP-7 (481-482)	RW-21_VP-7 (502-503)	RW-21_VP-7 (521-522)	RW-21_VP-7 (544-545)	RW-21_VP-7(561-562)	RW-21_VP-7(581-582)
Constituent								
Units in (ug/L)								
	NYSDEC SCGs							
1,1,1-Trichloroethane	5	**1.1**	**0.82**	< 1.0	< 1.0	**2.5**	**2.1**	**2.6**
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	**0.65**	**0.63**	**4.7**
1,1-Dichloroethane	5	**3.1**	**3.1**	**1.4**	< 1.0	**9.9**	**6.2**	**6.7**
1,1-Dichloroethene	5	**2.0**	**1.3**	**0.81**	< 1.0	**5.5**	**4.2**	**7.3**
1,2-Dichloroethane	0.6	**0.44**	**0.60**	**1.2**	< 1.0	**4.1**	**5.4**	**21.6**
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	**0.38**	**0.61**	**10.6**
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.28
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	**0.45**	**0.34**	**2.7**
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**0.97**	**1.2**	**3.1**	< 1.0	**8.1**	**8.8**	**22.4**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**13.6**	**1.9**	**2.0**	< 1.0	**59.9**	**84.2**	**295**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	**4.0**	**0.84**	**4.9**
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.77**	**3.8**
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**32.4**	**14.7**	**19.5**	**0.39**	**244**	**265**	**4870**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**54**	**24**	**28**	**0.39**	**340**	**380**	**5300**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-7	RW-21_VP-7	RW-21_VP-7	RW-21_VP-7	RW-21_VP-7	RW-21_VP-7	RW-21_VP-7
Sample Depth (ft bls):		605-606	620-621	641-642	661-662	682-683	700-701	705-706
Sample Date:		1/22/2015	1/22/2015	1/23/2015	1/23/2015	1/28/2015	1/29/2015	1/29/2015
Sample ID:		RW-21_VP-7(605-606)	RW-21_VP-7(620-621)	RW-21_VP-7(641-642)	RW-21_VP-7(661-662)	RW_21_VP-7(682-683)	RW-21_VP-7(700-701)	RW-21_VP-7(705-706)
Constituent								
Units in (ug/L)								
	NYSDEC SCGs							
1,1,1-Trichloroethane	5	**0.90**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	**0.76**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**3.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	**1.9**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	**5.3**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	**1.9**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**5.0**	< 10	**6.9**	**5.9**	< 10	**9.7**	**8.1**
Benzene	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	**0.24**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**3.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**64.1**	**2.3**	< 1.0	**1.9**	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5	**0.73**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	**1.4**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**882**	**54.1**	**7.6**	**38.8**	**3.6**	**4.5**	**3.3**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**970**	**56**	**15**	**47**	**3.6**	**14**	**11**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-7	RW-21_VP-7	RW-21_VP-7	RW-21_VP-7	RW-21_VP-7	RW-21_VP-7	RW-21_VP-7
Sample Depth (ft bls):		715-716	721-722	731-732	735-736	760-761	765-766	775-776
Sample Date:		2/4/2015	2/4/2015	2/5/2015	2/5/2015	2/9/2015	2/11/2015	2/11/2015
Sample ID:		RW-21_VP-7(715-716)	RW-21_VP-7(721-722)	RW-21_VP-7(731-732)	RW-21_VP-7(735-736)	RW-21_VP-7(760-761)	RW-21_VP-7(765-766)	RW-21_VP-7(775-776)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	**7.1**	< 5.0	< 5.0	< 5.0
Acetone	50	**11.3**	< 10	**3.0**	**29.9**	**7.1**	**9.5**	**5.9**
Benzene	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	**0.34**	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	**0.99**	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	**0.80**	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	**0.25**	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**2.9**	**1.9**	**1.1**	**0.93**	**1.2**	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**14**	**1.9**	**4.1**	**40**	**8.3**	**9.5**	**5.9**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Constituent Units in (ug/L)	NYSDEC SCGs	RW-21_VP-7 791-792 2/11/2015 RW-21_VP-7(791-792)	RW-21_VP-7 797-798 2/12/2015 RW-21_VP-7(797-798)	RW-21_VP-7 806-807 2/12/2015 RW-21_VP-7(806-807)	RW-21_VP-7 816-817 2/12/2015 RW-21_VP-7(816-817)	RW-21_VP-7 826-827 2/17/2015 RW-21_VP-7(826-827)	RW-21_VP-7 837-838 2/18/2015 RW-21_VP-7(837-838)	RW-21_VP-8 300-301 11/5/2015 RW-21-VP-8(300-301)
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	**4.0**	< 10	**10**
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	**17.3**	< 10	**10.8**	**6.3**	**32.0**
Benzene	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.62 J**
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	**0.23**	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.22 J**
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	< 1.0	**0.30**	< 1.0	**0.33**	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**0.0**	**0.0**	**18**	**0.0**	**15**	**6.3**	**43**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-8	RW-21_VP-8	RW-21_VP-8	RW-21_VP-8	RW-21_VP-8	RW-21_VP-8	RW-21_VP-8
Sample Depth (ft bls):		325-326	341-342	361-362	381-382	402-403	402-403	422-423
Sample Date:		11/5/2015	11/9/2015	11/9/2015	11/9/2015	11/10/2015	11/10/2015	11/10/2015
Sample ID:		RW-21-VP-8(325-326)	RW-21_VP-8(341-342)	RW-21_VP-8(361-362)	RW-21_VP-8(381-382)	RW-21_VP-8(402-403)	REP111015SL1	RW-21_VP-8(422-423)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	**0.43 J**	< 1.0	**0.51 J**	**0.59 J**	**0.79 J**
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	**0.20 J**	< 1.0	**1.4**	**1.5**	**1.2**
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	**0.56 J**	**0.64 J**	**0.59 J**
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**14.0**	**6.3 J**	< 10	**8.2 J**	< 10	< 10	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	**0.45 J**	< 1.0	**0.57 J**	**0.70 J**	**0.56 J**
Chloromethane	5	**0.48 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	**3.0**	**3.2**	**2.5**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.44 J**	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	< 1.0	**0.27 J**	**0.33 J**	**33.3**	**35.9**	**13.9**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**14**	**6.3**	**1.0**	**8.5**	**39**	**43**	**20**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-8	RW-21_VP-8	RW-21_VP-8	RW-21_VP-8	RW-21_VP-8	RW-21_VP-8	RW-21_VP-8
Sample Depth (ft bls):		441-442	466-467	481-482	502-503	525-526	546-547	561
Sample Date:		11/10/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/12/2015	11/12/2015
Sample ID:		RW-21_VP-8(441-442)	RW-21_VP-8(466-467)	RW-21_VP-8(481-482)	RW-21_VP-8(502-503)	RW-21_VP-8(525-526)	RW-21_VP-8(546-547)	RW-21_VP-8(561-562)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	**0.29 J**	**1.7**	< 1.0	**0.66 J**	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	**0.34 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**1.2**	**8.0**	**0.31 J**	**1.7**	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	**0.52 J**	**5.4**	< 1.0	**2.0**	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	**4.1**	< 1.0	**1.7**	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	**0.76 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	**5.1 J**	**7.7 J**	< 10	**10.2**	**10.3**	**4.6 J**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	**0.44 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**0.48 J**	**3.4**	< 1.0	1.2	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**19.8**	**121**	**3.2**	**16.9**	**0.49 J**	**0.42 J**	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	**0.53 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	**1.5**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**28.0**	**277**	**14.9**	**170**	**1.6**	**1.9**	**0.67 J**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**51**	**430**	**26**	**190**	**12**	**12**	**5.3**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-8	RW-21_VP-8	RW-21_VP-8	RW-21_VP-8	RW-21_VP-8	RW-21_VP-8	RW-21_VP-8
Sample Depth (ft bls):		581-582	601-602	620-621	641-642	660-661	680-681	700-701
Sample Date:		11/16/2015	11/16/2015	11/16/2015	11/17/2015	11/17/2015	11/17/2015	11/17/2015
Sample ID:		RW_21-VP-8(581-582)	RW_21-VP-8(601-602)	RW_21-VP-8(620-621)	RW_21-VP-8(641-642)	RW_21-VP-8(660-661)	RW_21-VP-8(680-681)	RW_21-VP-8(700-701)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**10.5**	**5.7 J**	**11.6**	**3.7 J**	**14.5**	**7.6 J**	**3.5 J**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	**0.59 J**	< 1.0	**0.66 J**	< 1.0	**0.71 J**	**0.51 J**	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	**0.21 J**	< 1.0	**0.24 J**	< 1.0	**0.21 J**	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	**0.22 J**	< 1.0	**0.20 J**	< 1.0	**0.22 J**	**0.21 J**	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**0.77 J**	**0.25 J**	**0.38 J**	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**12**	**6.0**	**13**	**3.7**	**16**	**8.3**	**3.5**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-9	RW-21_VP-9	RW-21_VP-9	RW-21_VP-9	RW-21_VP-9	RW-21_VP-9	RW-21_VP-9
Sample Depth (ft bls):		337-338	347-348	347-348	391-392	407-408	430-431	446-447
Sample Date:		4/2/2015	4/2/2015	4/2/2015	4/6/2015	4/6/2015	4/6/2015	4/7/2015
Sample ID:		RW-21_VP-9(337-338)	RW-21_VP-9(347-348)	REP040215SL	RW-21_VP-9(391-392)	RW-21_VP-9(407-408)	RW-21_VP-9(430-431)	RW-21_VP-9(446-447)
Constituent	**NYSDEC SCGs**							
Units in (ug/L)								
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	**0.66**	**0.76**	**1.2**
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	**1.0**	**0.49**	**0.59**
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	**1.0**	**1.1**	**0.95**
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**19.3**	< 10	< 10	**10.4**	< 10	< 10	**6.1**
Benzene	1	**0.29**	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	**0.27**	< 2.0	< 2.0	**0.36**
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	**0.22**	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	**0.87**	< 1.0	< 1.0	**0.57**
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	**1.4**	**2.9**	**1.3**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	**0.61**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	**0.29**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	**0.64**	**0.59**	< 1.0	**0.43**	< 1.0	< 1.0
Toluene	5	**0.61**	< 1.0	< 1.0	0.47	**1.2**	**0.31**	**0.78**
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**4.7**	**6.5**	**6.4**	**6.3**	**123**	**87.5**	**62.8**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**26**	**7.1**	**7**	**18**	**130**	**93**	**75**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-9	RW-21_VP-9	RW-21_VP-9	RW-21_VP-9	RW-21_VP-9	RW-21_VP-9	RW-21_VP-9
Sample Depth (ft bls):		467-468	491-492	507-508	530-531	556-557	567-568	591-592
Sample Date:		4/7/2015	4/7/2015	4/7/2015	4/7/2015	4/8/2015	4/8/2015	4/9/2015
Sample ID:		RW-21_VP-9(467-468)	RW-21_VP-9(491-492)	RW-21_VP-9(507-508)	RW-21_VP-9(530-531)	RW-21_VP-9(556-557)	RW-21_VP-9(567-568)	RW-21_VP-9(591-592)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	**0.84**	< 1.0	< 1.0	< 1.0	< 1.0	**0.49**	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**3.5**	< 1.0	**1.3**	< 1.0	**0.35**	**3.3**	< 1.0
1,1-Dichloroethene	5	**1.3**	< 1.0	< 1.0	< 1.0	< 1.0	**0.93**	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.39**	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	**29.4**	< 10	**12.0**	**5.9**	< 10	**6.5**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.43**	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**0.25**	< 1.0	< 1.0	< 1.0	**0.31**	**1.2**	**1.1**
Chloromethane	5	< 1.0	**0.42**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**1.3**	**0.45**	< 1.0	< 1.0	**0.63**	**0.95**	**1.3**
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	**0.45**	**2.0**	**1.4**	**2.1**	**1.5**	**1.7**	**0.79**
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**14.7**	**20.8**	**3.3**	**9.0**	**8.1**	**7.2**	**4.9**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**22**	**53**	**6**	**23**	**17**	**17**	**15**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-9	RW-21_VP-9	RW-21_VP-9	RW-21_VP-9	RW-21_VP-9	RW-21_VP-9	RW-21_VP-11
Sample Depth (ft bls):		606-607	632-633	650-651	667-668	692-693	706-707	302-303
Sample Date:		4/9/2015	4/9/2015	4/9/2015	4/9/2015	4/13/2015	4/13/2015	1/19/2015
Sample ID:		RW-21_VP-9(606-607)	RW-21_VP-9(632-633)	RW-21_VP-9 (650-651)	RW-21_VP-9 (667-668)	RW-21_VP-9(692-693)	RW-21_VP-9(706-707)	RW-21_VP-11(302-303)
Constituent								
Units in (ug/L)								
	NYSDEC SCGs							
1,1,1-Trichloroethane	5	**0.65**	**2.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	0.81	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**3.9**	**8.2**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	**1.9**	**4.9**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	**2.4**	**4.3**	< 1.0	**0.61**	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	< 10	< 10	**15.6**	< 10	**15.9**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	**0.79 J**	< 2.0
Carbon Tetrachloride	5	< 1.0	**0.51**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.65**
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	11.2	14.5	**0.40**	3.2	< 1.0	< 1.0	**0.39**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**29.4**	**123**	**3.2**	**7.0**	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
Tetrachloroethene	5	< 1.0	**0.47**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	**0.55**	**0.71**	**0.87**	**30.6**	**0.40 J**	**0.26 J**	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**64.9**	**241**	**19.8**	**1.1**	**0.26 J**	**3.4**	**4.3**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**110**	**400**	**24**	**43**	**16**	**4.5**	**21**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11
Sample Depth (ft bls):		322-323	322-323	345-346	350-351	365-366	382-383	402-403
Sample Date:		1/19/2015	1/19/2015	1/21/2015	1/21/2015	1/21/2015	1/21/2015	1/22/2015
Sample ID:		RW-21_VP-11(322-323)	REP011915SL	RW-21_VP-11(345-346)	RW-21_VP-11(350-351)	RW-21_VP-11(365-366)	RW-21_VP-11(382-383)	RW-21_VP-11(402-403)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	**0.67**	**0.82**	< 1.0	< 1.0	**0.62**	< 1.0	**1.0**
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**2.5**	**2.7**	< 1.0	< 1.0	**4.7**	< 1.0	**4.2**
1,1-Dichloroethene	5	**0.99**	**1.2**	< 1.0	< 1.0	**0.65**	< 1.0	1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	**13.0**	**12.9**	< 10	**10.9**	< 10
Benzene	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	**0.34**	**0.36**	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**0.41**	**0.41**	**0.25**	< 1.0	**0.26**	< 1.0	**0.40**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**0.48**	**0.56**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	**0.23**	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**173**	**195**	**2.7**	**3.1**	**14.3**	**2.0**	**20.7**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**180**	**200**	**17**	**16**	**21**	**13**	**27**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11
Sample Depth (ft bls):		422	442-443	462-463	482-483	512-513	512-513	522-523
Sample Date:		1/22/2015	1/22/2015	1/22/2015	1/23/2015	2/3/2015	2/3/2015	2/4/2015
Sample ID:		RW-21_VP-11(422-423)	RW-21_VP-11(442-443)	RW-21_VP-11(462-463)	RW-21_VP-11(482-483)	RW-21_VP-11(512-513)	REP020315SL	RW-21_VP-11(522-523)
Constituent	NYSDEC SCGs							
Units in (ug/L)								
1,1,1-Trichloroethane	5	< 1.0	< 1.0	**0.95**	< 1.0	**1.7**	**1.8**	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	**4.3**	**2.3**	**8.8**	**8.8**	**0.96**
1,1-Dichloroethene	5	< 1.0	< 1.0	**0.92**	< 1.0	**2.5**	**2.5**	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	**5.2**	**5.3**	**8.6**
4-Methyl-2-Pentanone	NE	< 5.0	**3.1**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	**28.0**	**3.6**	**11.3**	**5.8**	**4.8**	**50.7**
Benzene	1	< 1.0	< 1.0	< 1.0	**0.36**	< 1.0	< 1.0	**0.45**
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	**0.41**	< 2.0	**0.35**	< 2.0	< 2.0	**0.46**
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	**0.42**	**0.58**	**0.52**	**0.55**	**0.31**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.33**
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	**0.64**	**0.72**	**0.82**
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	**0.26**	**0.22**	**0.47**
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	**0.23**	< 1.0	**0.36**	< 1.0	< 1.0	**0.45**
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**1.7**	**5.9**	**5.9**	**1.7**	**4.3**	**4.1**	**0.66**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**1.7**	**38**	**16**	**17**	**30**	**29**	**64**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11
Sample Depth (ft bls):		547-548	562-563	582-583	603-604	623-624	642-643	686-687
Sample Date:		2/4/2015	2/4/2015	2/5/2015	2/5/2015	2/5/2015	2/11/2015	2/12/2015
Sample ID:		RW-21_VP-11(547-548)	RW-21_VP-11(562-563)	RW-21_VP-11(582-583)	RW-21_VP-11(603-604)	RW-21_VP-11(623-624)	RW-21_VP-11(642-643)	RW-21_VP-11(686-687)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	**0.80**	< 1.0	< 1.0	**2.2**	< 1.0	< 4.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	**1.2**	< 1.0	< 4.0	< 1.0
1,1-Dichloroethane	5	**3.0**	< 1.0	< 1.0	**6.0**	< 1.0	**1.8**	< 1.0
1,1-Dichloroethene	5	**1.4**	< 1.0	< 1.0	**5.4**	< 1.0	< 4.0	< 1.0
1,2-Dichloroethane	0.6	**0.50**	< 1.0	< 1.0	**7.1**	< 1.0	**4.5**	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	**0.88**	< 1.0	< 4.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 40	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0
Acetone	50	**13.3**	**11.6**	**8.6**	**3.8**	**9.0**	< 40	**6.7**
Benzene	1	< 1.0	< 1.0	< 1.0	**0.32**	< 1.0	< 4.0	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 16	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	**0.28**	< 1.0	< 4.0	< 1.0
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0
Chloroform	7	**0.89**	< 1.0	< 1.0	**18.9**	**0.72**	3.8	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0
cis-1,2-Dichloroethene	5	**3.6**	< 1.0	< 1.0	105	**3.1**	**75.5**	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0
Ethylbenzene	5	**0.90**	**0.98**	**0.37**	< 1.0	**0.45**	< 4.0	< 1.0
m,p-Xylene	5	**4.0**	**3.7**	**0.74**	**0.54**	**1.6**	< 4.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0
o-Xylene	5	**1.6**	**1.6**	**0.39**	**0.25**	**0.84**	< 4.0	< 1.0
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 20	< 5.0
Tetrachloroethene	5	**0.53**	< 1.0	< 1.0	**0.70**	< 1.0	< 4.0	< 1.0
Toluene	5	**0.47**	**0.64**	**0.41**	**0.24**	**0.92**	< 4.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	0.81	< 1.0	< 4.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0
Trichloroethene	5	**14.8**	**0.51**	**2.0**	**540**	**14.4**	**1870**	**0.29**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0
TVOCs		**46**	**19**	**13**	**690**	**31**	**2000**	**7**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11
Sample Depth (ft bls):		701-702	711-712	742-743	752-753	762-764	767-768	771-772
Sample Date:		2/12/2015	2/18/2015	3/11/2015	3/11/2015	3/11/2015	3/12/2015	3/12/2015
Sample ID:		RW-21_VP-11(701-702)	RW-21_VP-11(711-712)	RW-21_VP-11(742-743)	RW-21_VP-11(752-753)	RW-21_VP-11(762-764)	RW-21_VP-11(767-768)	RW-21_VP-11(771-772)
Constituent Units in (ug/L)	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	**6.3**	< 5.0	**1.7**	< 5.0	< 5.0	< 5.0
Acetone	50	**8.8**	**6.0**	< 10	**8.2**	**2.7**	**6.2**	**4.1**
Benzene	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	**0.22**	< 2.0	**0.23**
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	**0.22**	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	**0.36**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	**0.70**	< 1.0	< 1.0	**0.67**	< 1.0	0.38	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	**0.48**	< 1.0	< 1.0	**0.43**	< 1.0	**0.26**	< 1.0
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	**0.92**	< 1.0	**0.44**	**0.66**	**0.39**	**0.66**	**0.29**
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**4.2**	**1.1**	< 1.0	**0.64**	< 1.0	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**15**	**13**	**0.44**	**13**	**3.3**	**7.5**	**4.6**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11	RW-21_VP-11
Sample Depth (ft bls):		771-772	777-778	781-782	796-797	806-807	812-813	817-818
Sample Date:		3/12/2015	3/12/2015	3/12/2015	3/12/2015	3/13/2015	3/16/2015	3/16/2015
Sample ID:		REP031215SL	RW-21_VP-11(777-778)	RW-21_VP-11(781-782)	RW-21_VP-11 (796-797)	RW-21_VP-11 (806-807)	RW-21_VP-11(812-813)	RW-21_VP-11(817-818)
Constituent								
Units in (ug/L)								
	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	**4.3**	**8.6**	**15.8**	< 10	**9.5**	**7.5**	**4.9**
Benzene	1	< 1.0	0.23	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	**0.37**	< 2.0	< 2.0	< 2.0	< 2.0	**0.34**	**0.23**
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	**0.21**	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	0.53	< 1.0	< 1.0	**0.44**	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	**0.21**	**0.37**	**0.28**	< 1.0	**0.20**	< 1.0	< 1.0
Styrene (Monomer)	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	**0.49**	**0.84**	**0.52**	< 1.0	**0.32**	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	**0.47**	**0.53**	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**5.4**	**11**	**17**	**0.0**	**11**	**7.8**	**5.1**

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Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-12	RW-21_VP-12	RW-21_VP-12	RW-21_VP-12	RW-21_VP-12	RW-21_VP-12	RW-21_VP-12
Sample Depth (ft bls):		300-301	320-321	340-341	340-341	360-361	380-381	400-401
Sample Date:		10/6/2015	10/6/2015	10/6/2015	10/6/2015	10/6/2015	10/7/2015	10/7/2015
Sample ID:		RW-21_VP-12(300-301)	RW-21_VP-12(320-321)	RW-21_VP-12(340-341)	REP100615AM1	RW-21_VP-12(360-361)	RW-21_VP-12 (380-381)	RW-21_VP-12 (400-401)
Constituent	NYSDEC SCGs							
Units in (ug/L)								
1,1,1-Trichloroethane	5	**0.38 J**	< 1.0	**0.30 J**	**0.36 J**	**0.43 J**	**0.94 J**	**0.98 J**
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**0.69 J**	**0.22 J**	**0.41 J**	**0.43 J**	**0.66 J**	**2.1**	**2.1**
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.87 J**	**0.73 J**
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	**3.9 J**	< 10	< 10	< 10	**4.8 J**	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**0.25 J**	**0.20 J**	**0.24 J**	**0.31 J**	**0.43 J**	**0.78 J**	**0.59 J**
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	**0.41 J**	**0.52 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**0.65 J**	< 1.0	**2.2**	**2.8**	**7.5**	**19.3**	**24.8**
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**2.4**	**4.8**	**3.2**	**3.9**	**9**	**29**	**29**

Notes and Abbreviations on last page

Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-12	RW-21_VP-12	RW-21_VP-12	RW-21_VP-12	RW-21_VP-12	RW-21_VP-12	RW-21_VP-12
Sample Depth (ft bls):		420-421	440-441	461-462	481-482	500-501	525-526	540-541
Sample Date:		10/7/2015	10/7/2015	10/8/2015	10/8/2015	10/12/2015	10/12/2015	10/12/2015
Sample ID:		RW-21_VP-12 (420-421)	RW-21_VP-12 (440-441)	RW-21_VP12(461-462)	RW-21_VP12(481-482)	RW_21-VP-12(500-501)	RW_21-VP-12(525-526)	RW_21-VP-12(540-541)
Constituent								
Units in (ug/L)								
	NYSDEC SCGs							
1,1,1-Trichloroethane	5	**1.9**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	**7.6**	< 1.0	**0.73 J**	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	**2.2**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	**1.7**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	**4.8 J**	< 10	< 10	**5.1 J**	**9.0 J**	< 10
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	**0.88 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	**0.75 J**	**0.62 J**	**1.8**	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	**9.3**	< 1.0	**0.36 J**	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.28 J**	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**72.9**	**1.1**	**4.0**	**0.28 J**	< 1.0	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**96**	**5.9**	**5.8**	**0.9**	**6.9**	**9.28**	**0.0**

Notes and Abbreviations on last page

Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-12	RW-21_VP-12	RW-21_VP-12	RW-21_VP-12	RW-21_VP-12	RW-21_VP-12	RW-21_VP-12
Sample Depth (ft bls):		560-561	580-581	600-601	620-621	640-641	660-661	680-681
Sample Date:		10/13/2015	10/13/2015	10/13/2015	10/13/2015	10/13/2015	10/14/2015	10/14/2015
Sample ID:		RW_21-VP-12(560-561)	RW_21-VP-12(580-581)	RW_21-VP-12(600-601)	RW_21-VP-12(620-621)	RW_21-VP-12(640-641)	RW_21-VP-12 (660-661)	RW_21-VP-12 (680-681)
Constituent	NYSDEC SCGs							
Units in (ug/L)								
1,1,1-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-Pentanone	NE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	50	< 10	< 10	**6.4 J**	**6.5 J**	< 10	**4.2 J**	**8.2 J**
Benzene	1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide	60	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CFC-12	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene (Monomer)	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	5	< 1.0	< 1.0	< 1.0	**0.30 J**	**0.17 J**	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	0.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	**0.38 J**	< 1.0	< 1.0	**0.33 J**	**0.37 J**	< 1.0	< 1.0
Vinyl chloride	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs		**0.38**	**0.0**	**6.4**	**7.13**	**0.54**	**4.2**	**8.2**

Notes and Abbreviations on last page

Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Sample Location:		RW-21_VP-12						
Sample Depth (ft bls):		700-701						
Sample Date:		10/14/2015						
Sample ID:		RW_21-VP-12 (700-701)						
Constituent								
Units in (ug/L)								
	NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 1.0						
1,1,2,2-Tetrachloroethane	5	< 1.0						
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0						
1,1,2-Trichloroethane	1	< 1.0						
1,1-Dichloroethane	5	< 1.0						
1,1-Dichloroethene	5	< 1.0						
1,2-Dichloroethane	0.6	< 1.0						
1,2-Dichloropropane	1	< 1.0						
2-Butanone (MEK)	50	< 10						
4-Methyl-2-Pentanone	NE	< 5.0						
Acetone	50	**6.5 J**						
Benzene	1	< 0.50						
Bromodichloromethane	50	< 1.0						
Bromoform	50	< 1.0						
Bromomethane	5	< 2.0						
Carbon Disulfide	60	< 2.0						
Carbon Tetrachloride	5	< 1.0						
CFC-12	5	< 2.0						
Chlorobenzene	5	< 1.0						
Chlorodibromomethane	50	< 1.0						
Chlorodifluoromethane	5	< 5.0						
Chloroethane	5	< 1.0						
Chloroform	7	< 1.0						
Chloromethane	5	< 1.0						
cis-1,2-Dichloroethene	5	< 1.0						
cis-1,3-Dichloropropene	0.4	< 1.0						
Dichloromethane	5	< 2.0						
Ethylbenzene	5	< 1.0						
m,p-Xylene	5	< 1.0						
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0						
o-Xylene	5	< 1.0						
Styrene (Monomer)	5	< 1.0						
Tetrachloroethene	5	< 1.0						
Toluene	5	< 1.0						
trans-1,2-Dichloroethene	5	< 1.0						
trans-1,3-Dichloropropene	0.4	< 1.0						
Trichloroethene	5	< 1.0						
Vinyl chloride	2	< 1.0						
TVOCs		**6.5**						

Notes and Abbreviations on last page

Table 4
Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Vertical Profile Borings, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation,
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York.

Notes and Abbreviations:

1. Results validated following protocols specified in May 2014 Pre-Design Work Plan for Groundwater Hotspot (ARCADIS, 2014).
2. Samples analyzed for the TCL VOCs using USEPA Method 8260.
3. TVOCs represent sum of VOCs and are rounded to two significant figures. 1,4-dioxane not included in sum of VOCs.

Bold value indicates a detection

	Indicates an exceedance of an SCG
NYSDEC	New York State Department of Environmental Conservation
USEPA	United States Enviromental Protection Agency
TCL	Target compound list
VOCs	Volatile organic compounds
SCGs	Standard, criteria, and guidance values
ft bls	Feet below land surface
ug/L	Micrograms per liter
TVOCs	Total volatile organic compounds
NE	Not established
REP	Field replicate
J	Value is estimated
D	Value from a secondary dilution
--	Not analyzed
B	Compound detected in associated blank sample
<10.0	Compound not detected above its laboratory quantification limit

Table 5
Monitoring Well Analytical Results (VOCs and 1,4-Dioxane)
Northrop Grumman Systems Corporation
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York

Constituent (unit in ug/L)	NYSDEC SCGs	Sample Location: RW-21_MW-1 Sample Date: 9/15/2015 Sample Depth (ft bls): 615-625 Sample ID: RW-21-MW-1_20150915	Sample Location: RW-21_MW-1 Sample Date: 12/22/2015 Sample Depth (ft bls): 615-625 Sample ID: RW_21-MW-1_20151222	Sample Location: RW-21_MW-2 Sample Date: 9/22/2015 Sample Depth (ft bls): 600-610 Sample ID: RW-21_MW-2_20150922	Sample Location: RW-21_MW-2 Sample Date: 12/16/2015 Sample Depth (ft bls): 600-610 Sample ID: REP121615PP1	Sample Location: RW-21_MW-2 Sample Date: 12/16/2015 Sample Depth (ft bls): 600-610 Sample ID: RW-21_MW-2_20151216
1,1,1-Trichloroethane	5	< 25	**4.2**	**4.3 J**	**4.5**	**4.4**
1,1,2,2-Tetrachloroethane	5	< 25	<1.0	< 10	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 130	<5.0	< 50	**0.80 J**	**0.91 J**
1,1,2-Trichloroethane	1	< 25	**2.8**	< 10	**2.2**	**2.1**
1,1-Dichloroethane	5	< 25	**9.2**	**9.1 J**	**9.8**	**9.8**
1,1-Dichloroethene	5	< 25	**10.5**	**10.3**	**12.3**	**12.2**
1,2-Dichloroethane	0.6	**9.7 J**	**13.5**	**15.2**	**11.9**	**11.9**
1,2-Dichloropropane	1	< 25	**4.2**	< 10	**2.8**	**2.7**
2-Butanone (MEK)	50	< 250	<10	< 100	<10	<10
4-Methyl-2-Pentanone	NE	< 130	<5.0	< 50	<5.0	<5.0
Acetone	50	< 250	<10	< 100	<10	<10
Benzene	1	< 13	<0.50	< 5.0	<0.50	<0.50
Bromodichloromethane	50	< 25	<1.0	< 10	<1.0	<1.0
Bromoform	50	< 25	<1.0	< 10	<1.0	<1.0
Bromomethane	5	< 50	<2.0	< 20	<2.0	<2.0
Carbon Disulfide	60	< 50	**0.27 J**	< 20	<2.0	<2.0
Carbon Tetrachloride	5	< 25	**0.35 J**	< 10	**0.62 J**	**0.60 J**
CFC-12	5	< 50	<2.0	< 20	<2.0	<2.0
Chlorobenzene	5	< 25	<1.0	< 10	<1.0	<1.0
Chlorodibromomethane	50	< 25	<1.0	< 10	<1.0	<1.0
Chlorodifluoromethane	5	< 130	<5.0	< 50	<5.0	<5.0
Chloroethane	5	< 25	<1.0	< 10	<1.0	<1.0
Chloroform	7	**8.8 J**	**8.0**	**9.0 J**	**7.1**	**7.1**
Chloromethane	5	< 25	<1.0	< 10	<1.0	<1.0
cis-1,2-Dichloroethene	5	**335**	**364**	**367**	**343**	**343**
cis-1,3-Dichloropropene	0.4	< 25	<1.0	< 10	<1.0	<1.0
Dichloromethane	5	< 50	<2.0	< 20	<2.0	<2.0
Ethylbenzene	5	< 25	<1.0	< 10	<1.0	<1.0
m,p-Xylene	5	< 25	<1.0	< 10	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 130	<5.0	< 50	<5.0	<5.0
o-Xylene	5	< 25	<1.0	< 10	<1.0	<1.0
Styrene (Monomer)	5	< 25	<1.0	< 10	<1.0	<1.0
Tetrachloroethene	5	< 25	**1.8**	**8.8 J**	**5.7**	**5.9**
Toluene	5	< 25	**0.36 J**	< 10	**0.17 J**	**0.16 J**
trans-1,2-Dichloroethene	5	< 25	**1.6**	< 10	**1.3**	**1.3**
trans-1,3-Dichloropropene	0.4	< 25	<1.0	< 10	<1.0	<1.0
Trichloroethene	5	**3550 J**	**2600**	**4160**	**2640**	**2740**
Vinyl chloride	2	< 25	<1.0	< 10	**0.23 J**	**0.25 J**
TVOC		**3900**	**3000**	**4600**	**3000**	**3100**
1,4-Dioxane	NE	**17.7**	**22.6**	**24.3**	**27.0**	**23.1**

Footnotes on last page.

Table 5
Monitoring Well Analytical Results (VOCs and 1,4-Dioxane)
Northrop Grumman Systems Corporation
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York

Constituent (unit in ug/L)	NYSDEC SCGs	Sample Location: RW-21_MW-3-1 Sample Date: 5/7/2015 Sample Depth (ft bls): 556-566 Sample ID: RW-21-MW-3_20150507	Sample Location: RW-21_MW-3-1 Sample Date: 12/17/2015 Sample Depth (ft bls): 556-566 Sample ID: RW_21-MW-3-1_20151217	Sample Location: RW-21_MW-3-2 Sample Date: 6/11/2015 Sample Depth (ft bls): 595-605 Sample ID: RW-21-MW-3-2 (061115)	Sample Location: RW-21_MW-3-2 Sample Date: 12/17/2015 Sample Depth (ft bls): 595-605 Sample ID: RW_21-MW-3-2_20151217	Sample Location: RW-21_MW-4 Sample Date: 1/9/2015 Sample Depth (ft bls): 369-384 Sample ID: RW_21_MW-4_20150109
1,1,1-Trichloroethane	5	< 100	**11.4 J**	< 20	**4.0 J**	**2.7**
1,1,2,2-Tetrachloroethane	5	< 100	< 20	< 20	<10	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 500	< 100	< 100	<50	< 5.0
1,1,2-Trichloroethane	1	< 100	**8.9 J**	< 20	**3.9 J**	**0.42**
1,1-Dichloroethane	5	**29.7 J**	**29.9**	**6.8 J**	**7.4 J**	**10**
1,1-Dichloroethene	5	< 100	**31.6**	< 20	**8.3 J**	**6.5**
1,2-Dichloroethane	0.6	**39.7 J**	**40.6**	**8.7 J**	**11.6**	**3.1**
1,2-Dichloropropane	1	< 100	**15.6 J**	< 20	**5.2 J**	< 1.0
2-Butanone (MEK)	50	< 1000	< 200	< 200	<100	< 10
4-Methyl-2-Pentanone	NE	< 500	< 100	< 100	<50	< 5.0
Acetone	50	< 1000	< 200	< 200	<100	< 10
Benzene	1	< 50	< 10	< 10	<5.0	< 1.0
Bromodichloromethane	50	< 100	< 20	< 20	<10	< 1.0
Bromoform	50	< 100	< 20	< 20	<10	< 4.0
Bromomethane	5	< 200	< 40	< 40	<20	< 2.0
Carbon Disulfide	60	< 200	< 40	< 40	<20	< 2.0
Carbon Tetrachloride	5	< 100	5.2 J	< 20	<10	**0.70**
CFC-12	5	< 200	< 40	< 40	<20	< 5.0
Chlorobenzene	5	< 100	< 20	< 20	<10	< 1.0
Chlorodibromomethane	50	< 100	< 20	< 20	<10	< 1.0
Chlorodifluoromethane	5	--	< 100	< 100	<50	< 5.0
Chloroethane	5	< 100	< 20	< 20	<10	< 1.0
Chloroform	7	**24.9 J**	**27.2**	**6.6 J**	**10.1**	**2.4**
Chloromethane	5	< 100	< 20	< 20	<10	< 1.0
cis-1,2-Dichloroethene	5	**913**	**842**	**172**	**161**	**295**
cis-1,3-Dichloropropene	0.4	< 100	< 20	< 20	<10	< 1.0
Dichloromethane	5	< 200	< 40	< 40	<20	< 2.0
Ethylbenzene	5	< 100	< 20	< 20	<10	< 1.0
m,p-Xylene	5	< 100	< 20	< 20	<10	< 1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 500	< 100	< 100	<50	< 5.0
o-Xylene	5	< 100	< 20	< 20	<10	< 1.0
Styrene (Monomer)	5	< 100	< 20	< 20	<10	< 5.0
Tetrachloroethene	5	< 100	< 20	< 20	<10	**2.3**
Toluene	5	< 100	< 20	< 20	<10	**0.90**
trans-1,2-Dichloroethene	5	< 100	< 20	< 20	<10	**1.8**
trans-1,3-Dichloropropene	0.4	< 100	< 20	< 20	<10	< 1.0
Trichloroethene	5	**13700**	**8870 D**	**5270**	**3220**	**647**
Vinyl chloride	2	< 100	**< 20**	< 20	<10	< 1.0
TVOC		**15000**	**9900**	**5500**	**3400**	**970**
1,4-Dioxane	NE	--	**114D**	--	**42.8**	--

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Table 5
Monitoring Well Analytical Results (VOCs and 1,4-Dioxane)
Northrop Grumman Systems Corporation
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York

Constituent (unit in ug/L)	NYSDEC SCGs	Sample Location: RW-21_MW-4 Sample Date: 12/15/2015 Sample Depth (ft bls): 369-384 Sample ID: RW_21-MW-4_20151215	Sample Location: RW-21_MW-5-1 Sample Date: 7/28/2015 Sample Depth (ft bls): 300-310 Sample ID: RW-21_MW-5-1_20150728	Sample Location: RW-21_MW-5-1 Sample Date: 12/15/2015 Sample Depth (ft bls): 300-310 Sample ID: RW_21-MW-5-1_20151215	Sample Location: RW-21_MW-5-2 Sample Date: 7/29/2015 Sample Depth (ft bls): 560-570 Sample ID: RW-21_MW-5-2_20150729	Sample Location: RW-21_MW-5-2 Sample Date: 12/15/2015 Sample Depth (ft bls): 560-570 Sample ID: RW_21-MW-5-2_20151215
1,1,1-Trichloroethane	5	**0.94 J**	< 1.0	<1.0	**0.35 J**	<1.0
1,1,2,2-Tetrachloroethane	5	<1.0	< 1.0	<1.0	< 1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	<5.0	**1.9 J**	**0.77 J**	< 5.0	<5.0
1,1,2-Trichloroethane	1	**0.22 J**	< 1.0	<1.0	< 1.0	<1.0
1,1-Dichloroethane	5	**5.2**	< 1.0	<1.0	**3.9**	**2.6**
1,1-Dichloroethene	5	**3.1**	< 1.0	<1.0	**1.2**	**0.65 J**
1,2-Dichloroethane	0.6	**1.5**	< 1.0	<1.0	**1.5**	**1.3**
1,2-Dichloropropane	1	<1.0	< 1.0	<1.0	< 1.0	<1.0
2-Butanone (MEK)	50	<10	< 10	<10	< 10	<10
4-Methyl-2-Pentanone	NE	<5.0	< 5.0	<5.0	< 5.0	<5.0
Acetone	50	<10	< 10	<10	< 10	<10
Benzene	1	<0.50	< 0.50	<0.50	< 0.50	<0.50
Bromodichloromethane	50	<1.0	< 1.0	<1.0	< 1.0	<1.0
Bromoform	50	<1.0	< 1.0	<1.0	< 1.0	<1.0
Bromomethane	5	<2.0	< 2.0	<2.0	< 2.0	<2.0
Carbon Disulfide	60	<2.0	< 2.0	<2.0	< 2.0	<2.0
Carbon Tetrachloride	5	**0.23 J**	< 1.0	<1.0	**1.1**	**0.64 J**
CFC-12	5	<2.0	< 2.0	<2.0	< 2.0	<2.0
Chlorobenzene	5	<1.0	< 1.0	<1.0	< 1.0	<1.0
Chlorodibromomethane	50	<1.0	< 1.0	<1.0	< 1.0	<1.0
Chlorodifluoromethane	5	<5.0	< 5.0	<5.0	< 5.0	<5.0
Chloroethane	5	<1.0	< 1.0	<1.0	< 1.0	<1.0
Chloroform	7	**1.2**	< 1.0	<1.0	**4.6**	**3.4**
Chloromethane	5	<1.0	< 1.0	<1.0	< 1.0	<1.0
cis-1,2-Dichloroethene	5	**181**	**0.76 J**	**0.36 J**	**6.2**	**4.3**
cis-1,3-Dichloropropene	0.4	<1.0	< 1.0	<1.0	< 1.0	<1.0
Dichloromethane	5	<2.0	< 2.0	<2.0	< 2.0	<2.0
Ethylbenzene	5	<1.0	< 1.0	<1.0	< 1.0	<1.0
m,p-Xylene	5	<1.0	< 1.0	<1.0	< 1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	<5.0	< 5.0	<5.0	< 5.0	<5.0
o-Xylene	5	<1.0	< 1.0	<1.0	< 1.0	<1.0
Styrene (Monomer)	5	<1.0	< 1.0	<1.0	< 1.0	<1.0
Tetrachloroethene	5	**0.79 J**	**2.6**	**1.7**	< 1.0	<1.0
Toluene	5	**0.71 J**	< 1.0	<1.0	< 1.0	**0.39 J**
trans-1,2-Dichloroethene	5	**0.87 J**	< 1.0	<1.0	< 1.0	<1.0
trans-1,3-Dichloropropene	0.4	<1.0	< 1.0	<1.0	< 1.0	<1.0
Trichloroethene	5	**249**	**85.3**	**47.3**	**18.5**	**8.6**
Vinyl chloride	2	<1.0	< 1.0	<1.0	< 1.0	<1.0
TVOC		**440**	**91**	**50**	**37**	**22**
1,4-Dioxane	NE	**4.70**	--	**4.52**	--	**1.25**

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Table 5
Monitoring Well Analytical Results (VOCs and 1,4-Dioxane)
Northrop Grumman Systems Corporation
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York

Constituent (unit in ug/L)	NYSDEC SCGs	Sample Location: RW-21_MW-6 Sample Date: 7/27/2015 Sample Depth (ft bls): 604-624 Sample ID: RW-21_MW-6_20150727	RW-21_MW-6 12/16/2015 604-624 RW_21-MW-6_20151216	RW-21_MW-7 3/30/2015 580-590 RW-21-VP-7-MW-7_20150330	RW-21_MW-7 12/17/2015 580-590 RW_21-MW-7_20151217	RW-21_MW-8 12/2/2015 460-470 RW-21-MW-8_20151202
1,1,1-Trichloroethane	5	**1.7 J**	**2.3**	< 50	<50	**2.9 J**
1,1,2,2-Tetrachloroethane	5	< 5.0	<1.0	< 50	<50	< 5.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 25	<5.0	< 250	<250	< 25
1,1,2-Trichloroethane	1	**3.8 J**	**2.8**	< 50	<50	< 5.0
1,1-Dichloroethane	5	**4.2 J**	**6.5**	< 50	**14.6 J**	**15.0**
1,1-Dichloroethene	5	**5.7**	**7.0**	< 50	<50	**9.3**
1,2-Dichloroethane	0.6	**17.7**	**16.8**	**24.6**	**35.1 J**	**4.6 J**
1,2-Dichloropropane	1	**4.4 J**	**3.0**	< 50	<50	< 5.0
2-Butanone (MEK)	50	< 50	**26.3**	< 500	<500	< 50
4-Methyl-2-Pentanone	NE	< 25	**2.9 J**	< 250	<250	< 25
Acetone	50	< 50	<10	< 500	<500	< 50
Benzene	1	< 2.5	<0.50	< 50	<25	< 2.5
Bromodichloromethane	50	< 5.0	<1.0	< 50	<50	< 5.0
Bromoform	50	< 5.0	<1.0	< 200	<50	< 5.0
Bromomethane	5	< 10	<2.0	< 100	<100	< 10
Carbon Disulfide	60	< 10	<2.0	< 100	<100	< 10
Carbon Tetrachloride	5	< 5.0	**0.60 J**	< 50	<50	< 5.0
CFC-12	5	< 10	<2.0	< 250	<100	< 10
Chlorobenzene	5	< 5.0	<1.0	< 50	<50	< 5.0
Chlorodibromomethane	50	< 5.0	**2.6**	< 50	<50	< 5.0
Chlorodifluoromethane	5	< 25	<5.0	< 250	<250	< 25
Chloroethane	5	< 5.0	<1.0	< 50	<50	< 5.0
Chloroform	7	**18.0**	**19.0**	**24.1**	**29.3 J**	**4.0 J**
Chloromethane	5	< 5.0	<1.0	< 50	<50	< 5.0
cis-1,2-Dichloroethene	5	**563**	**449**	**477**	**523**	**314**
cis-1,3-Dichloropropene	0.4	< 5.0	<1.0	< 50	<50	< 5.0
Dichloromethane	5	< 10	<2.0	< 100	<100	< 10
Ethylbenzene	5	< 5.0	<1.0	< 50	<50	< 5.0
m,p-Xylene	5	< 5.0	<1.0	< 50	<50	< 5.0
Methyl N-Butyl Ketone (2-Hexanone)	50	< 25	<5.0	< 250	<250	< 25
o-Xylene	5	< 5.0	<1.0	< 50	<50	< 5.0
Styrene (Monomer)	5	< 5.0	<1.0	< 250	<50	< 5.0
Tetrachloroethene	5	**6.1**	**3.6**	< 50	<50	< 5.0
Toluene	5	< 5.0	<1.0	< 50	<50	< 5.0
trans-1,2-Dichloroethene	5	**5.9**	**1.7**	< 50	<50	**3.3 J**
trans-1,3-Dichloropropene	0.4	< 5.0	<1.0	< 50	<50	< 5.0
Trichloroethene	5	**3030**	**1800**	**5380**	**6490**	**589**
Vinyl chloride	2	< 5.0	**0.29 J**	< 50	<50	< 5.0
TVOC		**3700**	**2300**	**5900**	**7100**	**940**
1,4-Dioxane	NE	--	**15.8**	--	**75.1**	**6.9**

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Table 5
Monitoring Well Analytical Results (VOCs and 1,4-Dioxane)
Northrop Grumman Systems Corporation
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York

Constituent (unit in ug/L)	NYSDEC SCGs	Sample Location: RW-21_MW-8 Sample Date: 12/21/2015 Sample Depth (ft bls): 460-470 Sample ID: RW-21_MW-8_20151221	RW-21_MW-9 5/14/2015 630-640 RW-21-MW-9_20150514	RW-21_MW-9 12/18/2015 630-640 RW_21_MW-9_20151218	RW-21_MW-11 4/3/2015 638-648 RW-21-VP-11-MW-11_20150403	RW-21_MW-11 12/18/2015 638-648 RW_21_MW-11_20151218
1,1,1-Trichloroethane	5	**2.8**	**1.9**	**2.0**	**0.92 J**	<5.0
1,1,2,2-Tetrachloroethane	5	<1.0	< 1.0	<1.0	< 1.0	<5.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	<5.0	< 5.0	<5.0	< 5.0	<25
1,1,2-Trichloroethane	1	<1.0	**1.4**	**1.2**	**1.0**	<5.0
1,1-Dichloroethane	5	**14.4**	**7.6**	**9.5**	**2.0**	**1.5 J**
1,1-Dichloroethene	5	**8.8**	**5.5**	**5.6**	**2.6**	<5.0
1,2-Dichloroethane	0.6	**4.1**	**6.3**	**6.5**	**4.0**	**3.7 J**
1,2-Dichloropropane	1	**0.74 J**	**0.75 J**	**0.71 J**	**2.3**	<5.0
2-Butanone (MEK)	50	<10	< 10	<10	< 10	<50
4-Methyl-2-Pentanone	NE	<5.0	< 5.0	<5.0	< 5.0	<25
Acetone	50	<10	< 10	<10	< 10	<50
Benzene	1	<0.50	< 0.50	<0.50	< 0.50	<2.5
Bromodichloromethane	50	<1.0	< 1.0	<1.0	< 1.0	<5.0
Bromoform	50	<1.0	< 1.0	<1.0	< 1.0	<5.0
Bromomethane	5	<2.0	< 2.0	<2.0	< 2.0	<10
Carbon Disulfide	60	<2.0	< 2.0	<2.0	< 2.0	<10
Carbon Tetrachloride	5	**0.93 J**	**0.61 J**	**0.38 J**	**0.28 J**	<5.0
CFC-12	5	<2.0	< 2.0	<2.0	< 2.0	<10
Chlorobenzene	5	<1.0	< 1.0	<1.0	< 1.0	<5.0
Chlorodibromomethane	50	<1.0	< 1.0	<1.0	< 1.0	<5.0
Chlorodifluoromethane	5	<5.0	< 5.0	<5.0	< 5.0	<25
Chloroethane	5	<1.0	< 1.0	<1.0	< 1.0	<5.0
Chloroform	7	**3.3**	**16.2**	**16.0**	**3.5**	**4.9 J**
Chloromethane	5	<1.0	< 1.0	<1.0	< 1.0	<5.0
cis-1,2-Dichloroethene	5	**322**	**174**	**157**	**75.6**	**63.2**
cis-1,3-Dichloropropene	0.4	<1.0	< 1.0	<1.0	< 1.0	<5.0
Dichloromethane	5	<2.0	< 2.0	<2.0	< 2.0	<10
Ethylbenzene	5	<1.0	< 1.0	<1.0	< 1.0	<5.0
m,p-Xylene	5	<1.0	< 1.0	<1.0	< 1.0	<5.0
Methyl N-Butyl Ketone (2-Hexanone)	50	<5.0	< 5.0	<5.0	< 5.0	<25
o-Xylene	5	<1.0	< 1.0	<1.0	< 1.0	<5.0
Styrene (Monomer)	5	<1.0	< 1.0	<1.0	< 1.0	<5.0
Tetrachloroethene	5	**0.57 J**	**1.0**	<1.0	**1.2**	<5.0
Toluene	5	<1.0	< 1.0	<1.0	< 1.0	<5.0
trans-1,2-Dichloroethene	5	**1.4**	**1.3**	**0.83 J**	**0.73 J**	<5.0
trans-1,3-Dichloropropene	0.4	<1.0	< 1.0	<1.0	< 1.0	<5.0
Trichloroethene	5	**452**	**643**	**450**	**1910 D**	**1360**
Vinyl chloride	2	<1.0	< 1.0	<1.0	< 1.0	<5.0
TVOC		**810**	**860**	**650**	**2000**	**1400**
1,4-Dioxane	NE	**8.38**	--	**5.88**	--	**6.64**

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Table 5
Monitoring Well Analytical Results (VOCs and 1,4-Dioxane)
Northrop Grumman Systems Corporation
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York

Constituent (unit in ug/L)	NYSDEC SCGs	Sample Location: RW-21_MW-12-1 Sample Date: 11/10/2015 Sample Depth (ft bls): 415-425 Sample ID: RW-21_MW 12-1_20151110	Sample Location: RW-21_MW-12-1 Sample Date: 12/14/2015 Sample Depth (ft bls): 415-425 Sample ID: RW_21-MW-12-1_20151214	Sample Location: RW-21_MW-12-2 Sample Date: 11/3/2015 Sample Depth (ft bls): 590-600 Sample ID: RW-21_MW-12-2	Sample Location: RW-21_MW-12-2 Sample Date: 1/11/2016 Sample Depth (ft bls): 590-600 Sample ID: RW-21_MW-12-2_20160111	
1,1,1-Trichloroethane	5	**2.5**	**3.1**	< 1.0	< 1.0	
1,1,2,2-Tetrachloroethane	5	< 1.0	<1.0	< 1.0	< 1.0	
1,1,2-trichloro-1,2,2-trifluoroethane	5	< 5.0	<5.0	< 5.0	< 5.0	
1,1,2-Trichloroethane	1	< 1.0	<1.0	< 1.0	< 1.0	
1,1-Dichloroethane	5	**8.3**	**9.5**	< 1.0	< 1.0	
1,1-Dichloroethene	5	**2.7**	**3.6**	< 1.0	< 1.0	
1,2-Dichloroethane	0.6	**1.7**	**2.0**	< 1.0	< 1.0	
1,2-Dichloropropane	1	< 1.0	<1.0	< 1.0	< 1.0	
2-Butanone (MEK)	50	< 10	<10	< 10	< 10	
4-Methyl-2-Pentanone	NE	< 5.0	<5.0	< 5.0	< 5.0	
Acetone	50	< 10	<10	< 10	< 10	
Benzene	1	< 0.50	<0.50	< 0.50	< 0.50	
Bromodichloromethane	50	< 1.0	<1.0	< 1.0	< 1.0	
Bromoform	50	< 1.0	<1.0	< 1.0	< 1.0	
Bromomethane	5	< 2.0	<2.0	< 2.0	< 2.0	
Carbon Disulfide	60	< 2.0	<2.0	< 2.0	< 2.0	
Carbon Tetrachloride	5	< 1.0	<1.0	< 1.0	< 1.0	
CFC-12	5	< 2.0	<2.0	< 2.0	< 2.0	
Chlorobenzene	5	< 1.0	<1.0	< 1.0	< 1.0	
Chlorodibromomethane	50	< 1.0	<1.0	< 1.0	< 1.0	
Chlorodifluoromethane	5	< 5.0	<5.0	< 5.0	< 5.0	
Chloroethane	5	< 1.0	<1.0	< 1.0	< 1.0	
Chloroform	7	**1.1**	**1.1**	< 1.0	< 1.0	
Chloromethane	5	< 1.0	<1.0	< 1.0	< 1.0	
cis-1,2-Dichloroethene	5	**11.2**	**14.1**	< 1.0	< 1.0	
cis-1,3-Dichloropropene	0.4	< 1.0	<1.0	< 1.0	< 1.0	
Dichloromethane	5	< 2.0	<2.0	< 2.0	< 2.0	
Ethylbenzene	5	< 1.0	<1.0	< 1.0	< 1.0	
m,p-Xylene	5	< 1.0	<1.0	< 1.0	< 1.0	
Methyl N-Butyl Ketone (2-Hexanone)	50	< 5.0	<5.0	< 5.0	< 5.0	
o-Xylene	5	< 1.0	<1.0	< 1.0	< 1.0	
Styrene (Monomer)	5	< 1.0	<1.0	< 1.0	< 1.0	
Tetrachloroethene	5	< 1.0	<1.0	< 1.0	< 1.0	
Toluene	5	**0.43 J**	<1.0	< 1.0	< 1.0	
trans-1,2-Dichloroethene	5	< 1.0	<1.0	< 1.0	< 1.0	
trans-1,3-Dichloropropene	0.4	< 1.0	<1.0	< 1.0	< 1.0	
Trichloroethene	5	**98.0**	**103**	< 1.0	< 1.0	
Vinyl chloride	2	< 1.0	<1.0	< 1.0	<1.0	
TVOC		**130**	**130**	0	0	
1,4-Dioxane	NE	**2.5**	**4.73**	--	<0.10	

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Table 5
Monitoring Well Analytical Results (VOCs and 1,4-Dioxane)
Northrop Grumman Systems Corporation
Operable Unit 3 (Former Grumman Settling Ponds),
Bethpage, New York

Notes and Abbreviations:

1. Results validated following protocols specified in May 2014 Pre-Design Work Plan for Groundwater Hotspot (ARCADIS, 2014).
2. TCL VOCs analyzed using USEPA Method 8260; 1,4-Dioxane analyzed using USEPA Method 8270 SIM.
3. TVOCs are rounded to two significant figures.

Bold value indicates a detection

	Indicates an exceedance of an SCG
NYSDEC	New York State Department of Environmental Conservation
USEPA	United States Enviromental Protection Agency
TCL	Target compound list
VOCs	Volatile organic compounds
SIM	Selective Ion Monitoring
SCGs	Standard, criteria, and guidance values
ft bls	Feet below land surface
ug/L	Micrograms per liter
TVOCs	Total volatile organic compounds
NE	Not established
REP	Field replicate
J	Value is estimated
<10	Compound not detected above its laboratory quantification limit

Table 6.
Estimates of Permeability from Sieve Analysis of Soil Samples, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York

Boring Location	Sample Depth Interval (ft bls)	Permeability (K) (ft/day)	Hydrostratigraphic unit
RW-21_VP-3	518 - 519.1	3.66E-01	Fine silty sand
	538 - 538.9	4.65E-01	Fine silty sand
	558 - 559.2	4.56E-01	Fine silty sand
	578 - 578.8	3.06E+01	Coarse Sand
	598 -600	7.71E+00	Coarse Sand
	618 - 618.7	1.27E+00	Fine silty sand
	638 - 640	2.47E+00	Fine silty sand
RW-21_VP-4	345 - 347	2.83E-01	Fine silty sand
	380 - 381	5.93E-01	Fine silty sand
	400 - 400.9	2.66E-01	Fine silty sand
	420 - 420.7	1.45E-01	Fine silty sand
	440 - 440.8	2.60E-01	Fine silty sand
	460 - 460.5	2.02E+00	Fine silty sand
	480 - 480.7	3.12E-01	Fine silty sand
RW-21_VP-5	305 - 307	2.71E+01	Coarse Sand
	325 - 325.5	3.46E-01	Fine silty sand
	345 - 347	3.97E-02	Fine silty sand
	365 - 366	6.46E+01	Coarse Sand
	375 - 377	5.50E-01	Fine silty sand
	385 - 387	2.50E+00	Fine silty sand
	405 - 407	4.76E-01	Fine silty sand
	465 - 466	3.74E+01	Coarse Sand
	565 - 566	2.98E+00	Fine silty sand
	585 - 587	5.13E-01	Fine silty sand
RW-21_VP-7	520 - 521.3	3.57E-03	Silts and Clays
	540 - 542	1.66E+00	Fine silty sand
	560 - 561.3	3.80E-01	Fine silty sand
	580 - 581.2	4.00E+00	Coarse Sand
	600 - 601.2	5.02E+00	Coarse Sand
	620 - 620.7	4.17E+00	Coarse Sand
RW-21_VP-9	605 - 606	2.59E+00	Fine silty sand
	630 - 632	1.92E+00	Fine silty sand
	645 - 646	6.89E+01	Coarse Sand
RW-21_VP-11	580 - 582	3.91E-01	Fine silty sand
	600 - 602	2.92E-01	Fine silty sand
	620 - 622	4.90E+00	Coarse Sand
	640 - 642	1.98E-01	Fine silty sand
	660 - 662	9.50E+03	Gravel
	670 - 670.5	5.19E+02	Gravel
	680 - 681	7.20E+01	Gravel
	685 - 686	4.03E-03	Silts and Clays

Notes and Abbreviations:
Sample depth intervals shown above represent actual depths reported to laboratory, based on sample recovery. Samples collected from 2-inch diamater split spoons and submitted to the Arcadis Kennesaw Geotechnical Laboratory for analysis using American Society for Testing and Materials (ASTM) Method D-6913. Up to 12 seives were used in the analysis. Select samples were subject to hydrometer analysis using ASTM Method D-422. Geotechnical Report is provided in Appendix I.

K - Geometric mean of applicable permeability estimates for each sample calculated using HydrogeoSieve XL (Devlin 2015). Output from HydrogeoSieveXL is provided in Appendix J and consists of the following: grain size distribution curve, histogram of conventional grain size classes, and a table of grain size characteristics and calculated permeability.

ft bls - feet below land surface
ft/day - feet per day

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Table 7.
Results of Slug Test Analysis from Monitoring Wells, Pre-Design Sampling for the RW-21 Area, Northrop Grumman Systems Corporation Operable Unit 3 (Former Grumman Settling Ponds) Bethpage, New York.

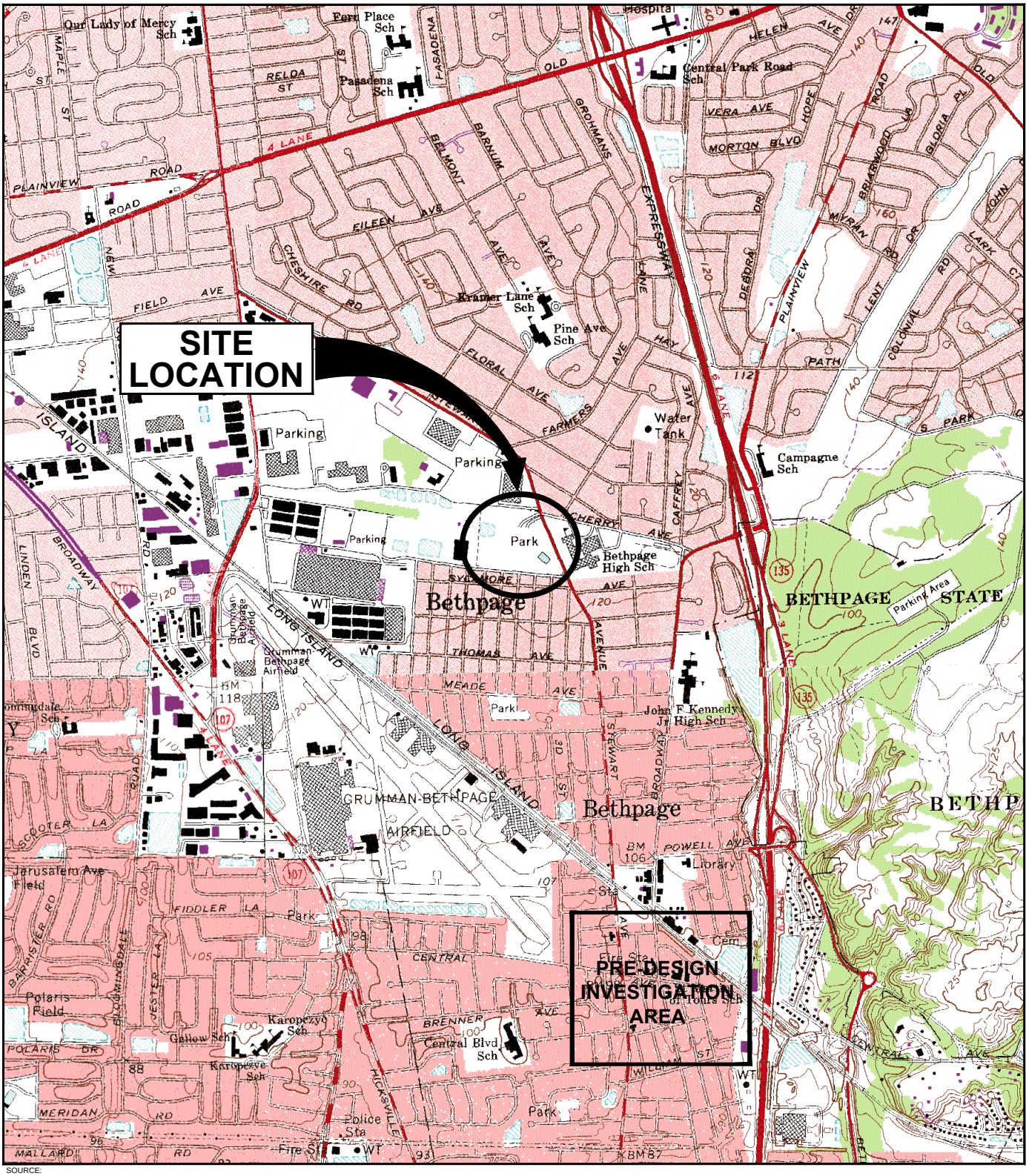
Well Identification	Monitoring Well Screened Interval (ft bls)	Monitoring Well Screened Interval (ft msl)	Permeability (ft/day)
RW-21_MW-3-1	556 - 566	-458.70 - -468.70	11.3
RW-21_MW-7	580 - 590	-483.40 - -493.40	2.1
RW-21_MW-11	638 - 648	-543.70 - -553.70	4.0

Notes and Abbreviations:

Slug Tests were performed using American Society for Testing and Material Method D7242. A modified Midwest Geosciences Group Pneumatic "HI-K" Slug™ assembly and a commercially available air compressor were used to perform a minimum of three slug tests at each location at target applied pressures of 0.8 pounds per square inch (psi), 0.8 psi and 1.6 psi. Test was repeated two to three times at each well location. Slug test data are provided in Appendix J.

ft bls - feet below land surface
ft msl - feet relative to mean sea level
ft/day - feet per day

FIGURES



SOURCE:
USGS 7.5 MIN. AMITYVILLE QUADRANGLE, AMITYVILLE, N.Y., 1994, FREEPORT QUADRANGLE, FREEPORT, N.Y., 1994, HICKSVILLE QUADRANGLE, HICKSVILLE, N.Y., 1967, PHOTOREVISED 1979, HUNTINGTON, N.Y., 1967, PHOTOREVISED 1979

0 2000' 4000'

SCALE IN FEET

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

PRE-DESIGN INVESTIGATION AREA AND SITE LOCATION

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FIGURE 1

CITY:SYRACUSE-NY DIV/GROUP:ENV DB:A.SANCHEZ LD:ALS PIC:(Opt) PM(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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HICKSVILLE.TIF
HUNTINGTON.TIF

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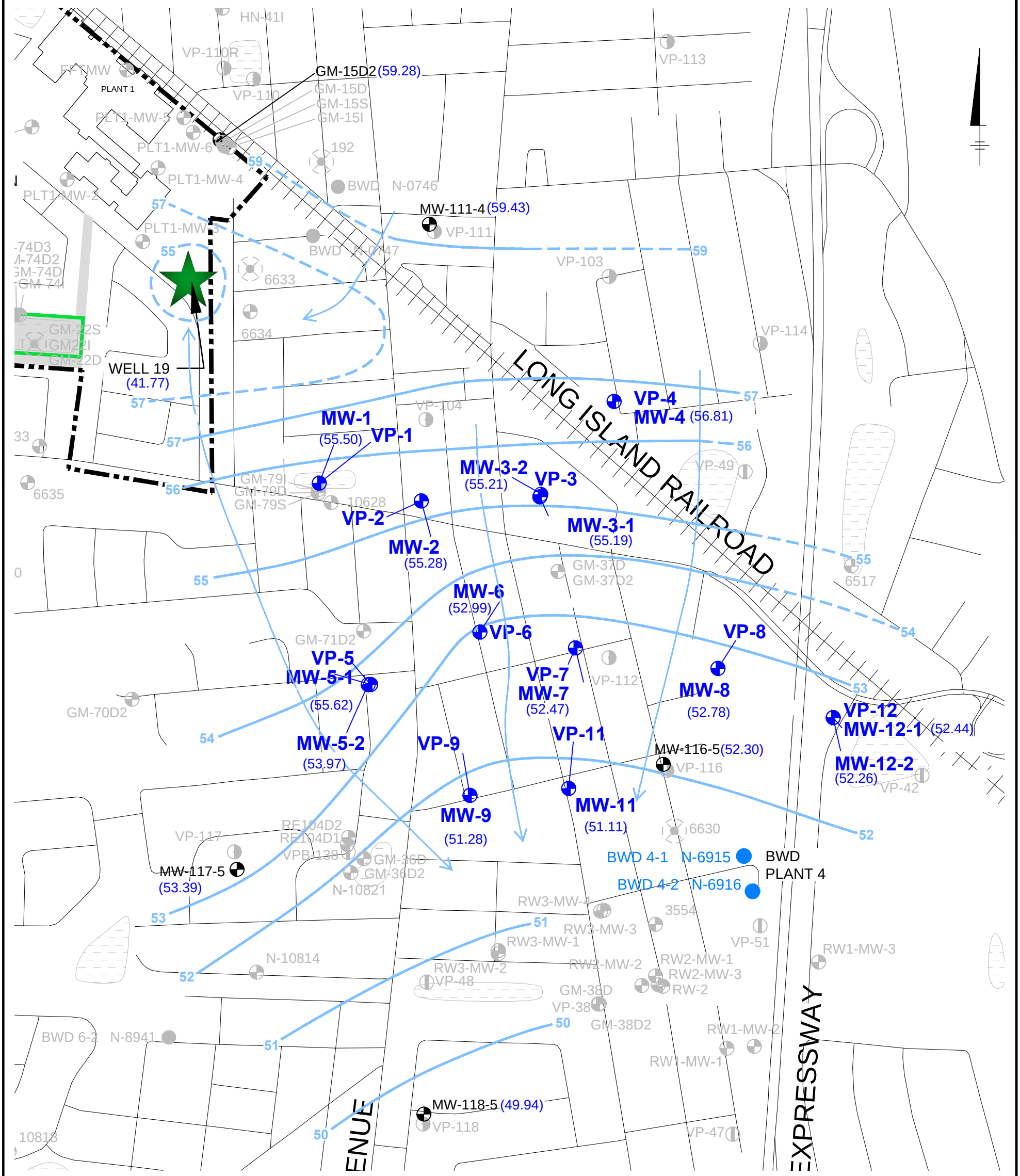

LEGEND:

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE CORPORATION SITE
- LONG ISLAND RAILROAD
- RECHARGE BASIN
- STUDY AREA PUBLIC SUPPLY WELL
- EXISTING OU2 REMEDIAL WELL
- RW-21_MW-11 (51.11) — VERTICAL PROFILE BORING AND MONITORING WELL INSTALLED FOR GROUNDWATER HOTSPOT PROGRAM AND MONTIORING WELL WATER LEVEL ELEVATION FT MSL (OTHER WELLS OWNED BY NAVY, NORTHROP GRUMMAN OR OTHERS SHOWN IN GRAY FOR REFERENCE ONLY)
- BWD — BETHPAGE WATER DISTRICT
- HORIZONTAL COMPONENT OF GROUNDWATER FLOW
- 58 — LINE OF EQUAL WATER-LEVEL ELEVATION IN FT MSL, DASHED WHERE APPROXIMATE

NOTES:

1. WATER LEVELS MEASURED FROM NEWLY INSTALLED MONITORING WELLS LOCATED WITHIN THE RW-21 AREA PLUS SELECTED OTHER WELLS WITHIN AND SCREENED AT A SIMILAR DEPTH.

0 500' 1000'
APPROXIMATE SCALE IN FEET

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3 (FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

POTENTIOMETRIC SURFACE AND GROUNDWATER FLOW DIRECTION (DECEMBER 2015)

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FIGURE 2

CITY:SYRACUSE-NY DIV/GROUP:ENV DB:A.SANCHEZ LD:ALS PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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BROADWAY

LONG ISLAND RAILROAD

PLANT 1

WELL 19

MW-109-3
VP-109R
VP-109
VP-101
GM-15S
HN-41S
HN-41I
VP-110R
FFTMW
GM-15D2
GM-15D
GM-15S
GM-15I
VP-110
PLT1-MW-5
PLT1-MW-6
192
PLT1-MW-4
PLT1-MW-2
PLT1-MW-3
BWD N-0746
MW-111-4
BWD N-0747
VP-111
6633
VP-103
VP-113
VP-114
6634
GM-22S
GM-22I
GM-22D
VP-104
33
6635
10628
VP-49
6517
VPB-143
GM-37D
GM-37D2
GM-71D2
GM-70D2
VP-112
VP-42
6630
VP-117
VPB-138S
GM-36D
GM-36D2
N-10821
RW3-MW-4
RW3-MW-3
3554
VP-51
RW3-MW-1
RW3-MW-2
N-10814
VP-48
RW2-MW-2
RW2-MW-1
RW2-MW-3
RW-2
GM-38D
GM-38D2
VP-38
RW1-MW-3
RW1-MW-2

VP-1
MW-1 (3000)
B
VP-2
MW-2 (3100)
MW-3-2 (3400)
A
VP-3
MW-3-1 (9900)
B' MW-4 (440)
VP-4
(2300) MW-6
VP-6
MW-7 (7100)
RW-7
C'
VP-8
MW-8 (810)
C
VP-5
(50) MW-5-1
(22) MW-5-2
D'
VP-12
MW-12-1 (130)
MW-12-2 (0)
MW-116-5 (1600)
VP-9
( ) MW-9
VP-11
MW-11 (1400)
A'
( ) RE104D3
(9) RE104D2
RE104D1
D
MW-117-5 (7)
BWD 4-1 N-6915
BWD 4-2 N-6916
BWD PLANT 4

LEGEND:

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE CORPORATION SITE
- LONG ISLAND RAILROAD
- RECHARGE BASIN
- STUDY AREA PUBLIC SUPPLY WELL
- EXISTING OU2 REMEDIAL WELL
- VERTICAL PROFILE BORING AND MONITORING WELL INSTALLED FOR RW-21 AREA PROGRAM (OTHER WELLS OWNED BY NAVY, NORTHROP GRUMMAN OR OTHERS SHOWN IN GRAY FOR REFERENCE ONLY)
- PROPOSED NAVY VPB
- BWD — BETHPAGE WATER DISTRICT
- A—A' LINE OF CROSS SECTION
- RATIO OF cis-1,2-DCE/(cis-1,2 DCE+TCE)
- RATIO OF TCE/(cis-1,2 DCE+TCE)

TVOC CONCENTRATION CONTOURS IN GROUNDWATER IN µg/L (DASHED WHERE APPROXIMATE)

- 500
- 1000
- 5000

(980) TVOC CONCENTRATION IN µg/L

TVOC DATA DISPLAYED CONSISTS OF MONITORING WELL RESULTS.

NOTES:

1. TVOC PLUME EXTENDS TO NORTH, BUT IS NOT SHOWN, AS OUTSIDE RW-21 AREA2
2. CONTOURING BASED ON TVOC CONCENTRATIONS FROM NEWLY INSTALLED MONITORING WELLS LOCATED WITHIN THE RW-21 AREA, PLUS SELECTED OTHER WELLS WITHIN AND NEAR THE RW-21 AREAA AT A SIMILAR DEPTH.
3. WELL MW-117-5 RESULTS FROM JUNE 2013 COMPREHENSIVE GROUNDWATER SAMPLING EVENT.
4. WELLS RE104D2 AND RE104D3 RESULTS SEPTEMBER 2015 (RESOLUTION 2015).

0 500' 1000'
APPROXIMATE SCALE IN FEET

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3 (FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

MAXIMUM EXTENT OF CONCENTRATIONS OF TVOCs IN RW-21 AREA (DECEMBER 2015) AND LINE OF CROSS SECTIONS

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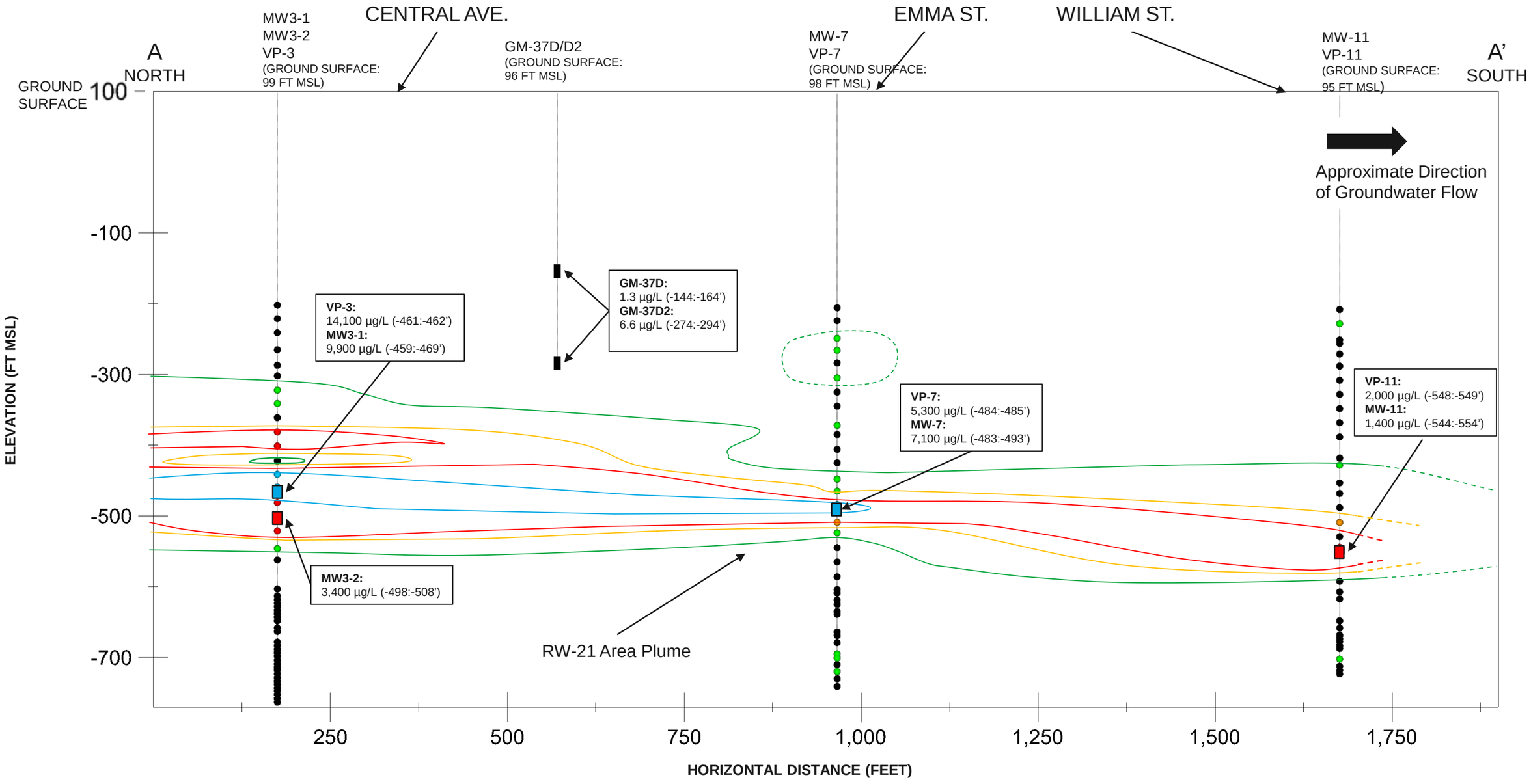
FIGURE 3



Hydropunch/Monitoring Well TVOC Concentrations

- > 5,000 µg/L
- 1,000 - 5,000 µg/L
- 500 - 1,000 µg/L
- 50 - 500 µg/L
- < 50 µg/L

TVOC Concentration Contours in Groundwater (SEE NOTES 4 & 5)

- 5,000 µg/L
- 1,000 µg/L
- 500 µg/L
- 50 µg/L

Notes:

1. TVOC: Total Volatile Organic Compound
2. µg/L: micrograms per liter
3. No Vertical Exaggeration
4. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
5. Contours based on collective interpretation of monitoring well and screening-level VPB data. Historical VPB data (prior to 2014) provided for completeness of contouring; however, contours based on historical data are dashed unless confirmed by recent monitoring well sampling results.
6. Hydropunch data shown as circles; Monitoring Well data from December 2015 shown as rectangles.
7. Approximate groundwater flow direction is shown on Figure 2.
8. Results from Monitoring Wells GM-37D and GM-37D2 from April to May 2015 annual sampling event.
9. FT MSL: feet relative to mean sea level

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

Cross Section A-A'
Total Volatile Organic Compound Concentrations

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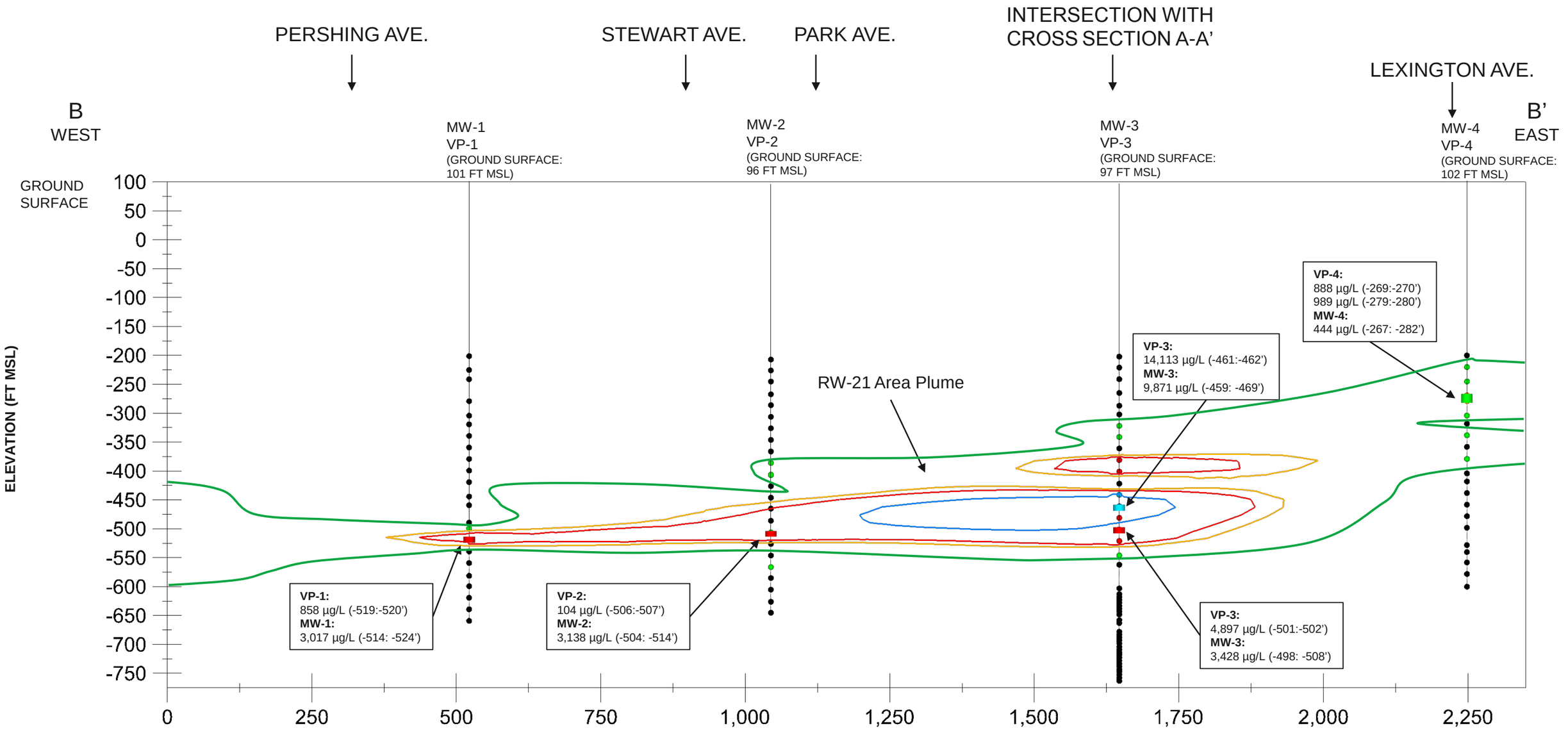
FIGURE
4



Hydropunch/Monitoring Well TVOC Concentrations (SEE NOTE 6)

- > 5,000 µg/L
- 1,000 - 5,000 µg/L
- 500 - 1,000 µg/L
- 50 - 500 µg/L
- < 50 µg/L

TVOC Concentration Contours in Groundwater (SEE NOTES 4 & 5)

- 5,000 µg/L
- 1,000 µg/L
- 500 µg/L
- 50 µg/L

Notes:

1. TVOC: Total Volatile Organic Compound
2. µg/L: micrograms per liter
3. No Vertical Exaggeration
4. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
5. Contours based on collective interpretation of monitoring well and screening-level VPB data. Historical VPB data (prior to 2014) provided for completeness of contouring; however, contours based on historical data are dashed unless confirmed by recent monitoring well sampling results.
6. Hydropunch data shown as circles; Monitoring Well data from December 2015 shown as rectangles.
7. Approximate groundwater flow direction is shown on Figure 2.
8. FT MSL: feet relative to mean sea level

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

Cross Section B-B'
Total Volatile Organic Compound Concentrations

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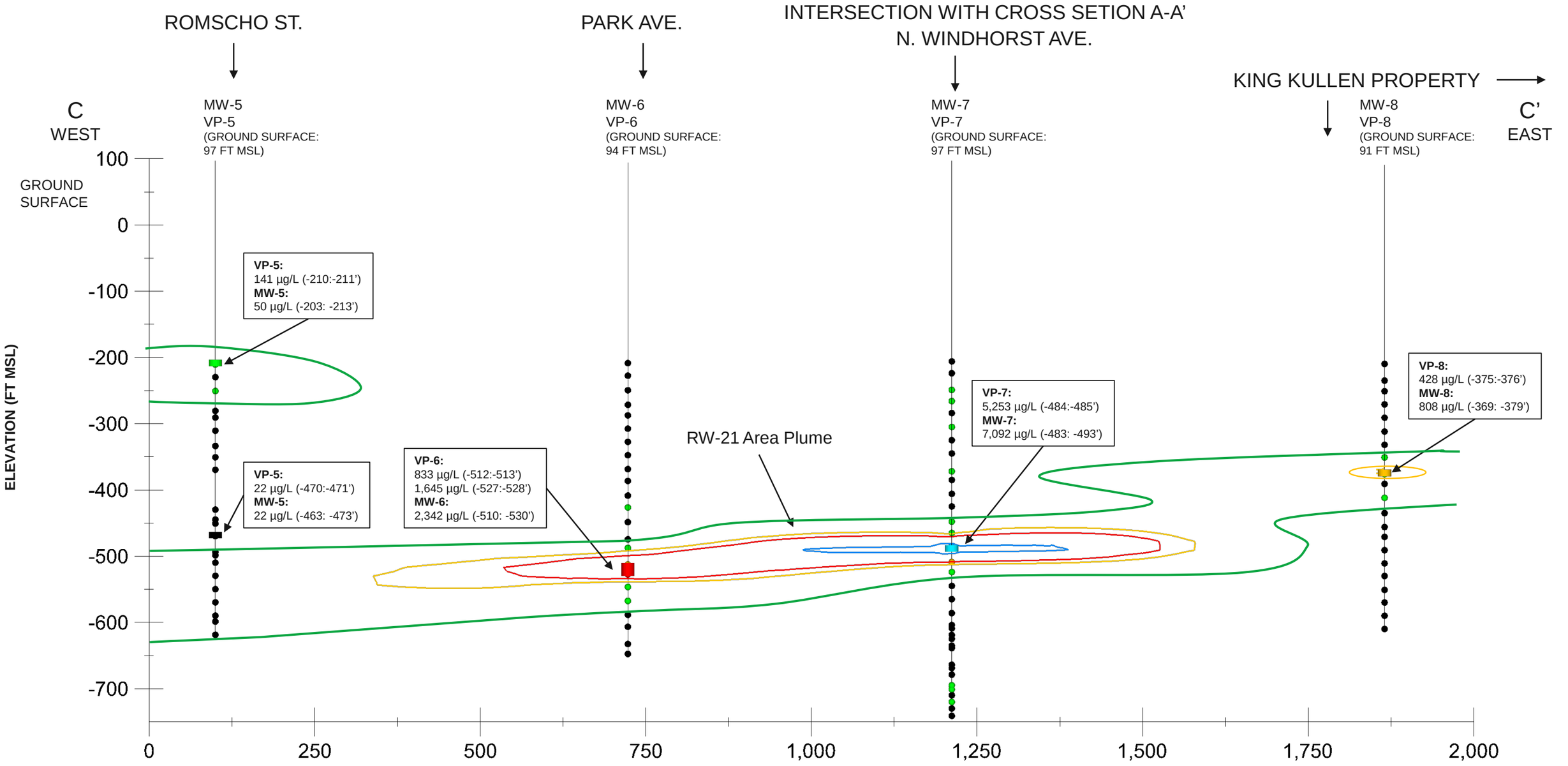
FIGURE
5



Hydropunch/Monitoring Well TVOC Concentrations (SEE NOTE 6)

- > 5,000 µg/L
- 1,000 - 5,000 µg/L
- 500 - 1,000 µg/L
- 50 - 500 µg/L
- < 50 µg/L

TVOC Concentration Contours in Groundwater (SEE NOTES 4 & 5)

- 5,000 µg/L
- 1,000 µg/L
- 500 µg/L
- 50 µg/L

Notes:

1. TVOC: Total Volatile Organic Compound
2. µg/L: micrograms per liter
3. No Vertical Exaggeration
4. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
5. Contours based on collective interpretation of monitoring well and screening-level VPB data. Historical VPB data (prior to 2014) provided for completeness of contouring; however, contours based on historical data are dashed unless confirmed by recent monitoring well sampling results.
6. Hydropunch data shown as circles; Monitoring Well data from December 2015 shown as rectangles.
7. Approximate groundwater flow direction is shown on Figure 2.
8. FT MSL: feet relative to mean sea level

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

Cross Section C-C'
Total Volatile Organic Compound Concentrations

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FIGURE
6

INTERSECTION WITH CROSS SECTION A-A'

D WEST

HILLTOP AVE

STEWART AVE

JOHN ST.

BROADWAY

HERMAN AVE.

D' EAST

GROUND SURFACE

MW-117-5
VP-117
(GROUND SURFACE: 95 FT MSL)

RE-104D1
RE-104D2
RE-104D3
VPB-138
(GROUND SURFACE: 95 FT MSL)

GM-36D/D2
(GROUND SURFACE: 91 FT MSL)

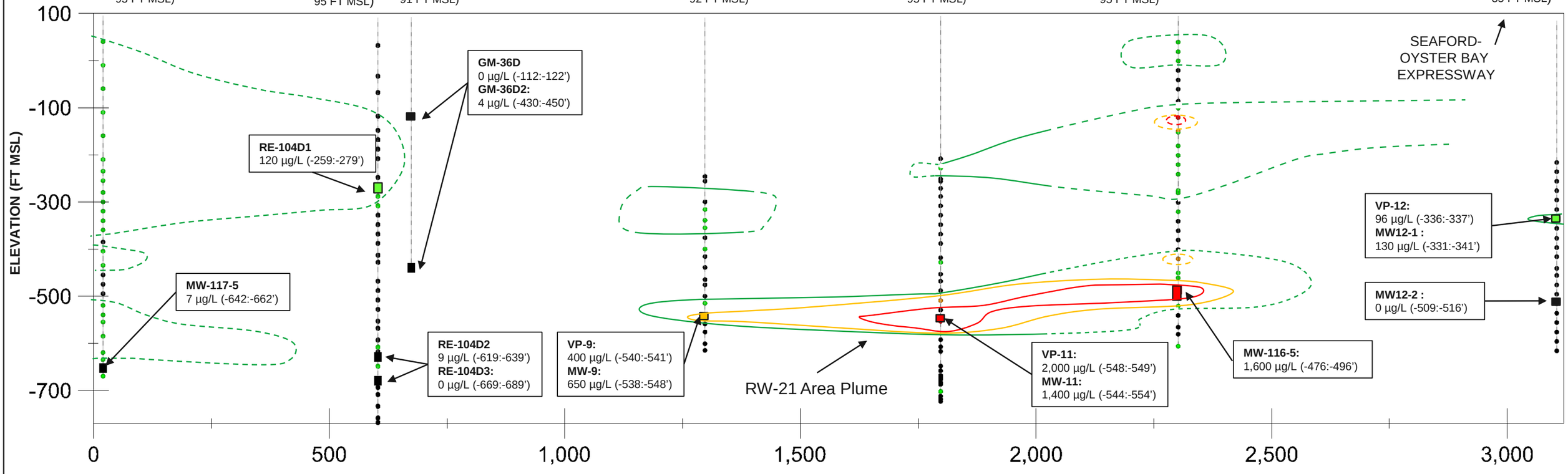
MW-9
VP-9
(GROUND SURFACE: 92 FT MSL)

MW-11
VP-11
(GROUND SURFACE: 95 FT MSL)

MW-116-5/VP-116
(GROUND SURFACE: 95 FT MSL)

MW12-1
MW12-2
VP-12
(GROUND SURFACE: 85 FT MSL)

SEAFORD-OYSTER BAY EXPRESSWAY



Hydropunch/Monitoring Well TVOC Concentrations

- 1,000 - 5,000 µg/L
- 500 - 1,000 µg/L
- 50 - 500 µg/L
- < 50 µg/L

TVOC Concentration Contours in Groundwater (See Notes 4 and 5)

- 1,000 µg/L
- 500 µg/L
- 50 µg/L

Notes:
1. TVOC: Total Volatile Organic Compound
2. µg/L: micrograms per liter
3. No Vertical Exaggeration
4. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
5. Contours based on collective interpretation of monitoring well and screening-level VPB data. Historical VPB data (prior to 2014) provided for completeness of contouring; however, contours based on historical data are dashed unless confirmed by recent monitoring well sampling results.
6. Hydropunch data shown as circles; Monitoring Well data from December 2015 shown as rectangles.
7. Approximate groundwater flow direction is shown on Figure 2.
8. Well results: MW117-5 - June 2013 Comprehensive Groundwater Sampling Event; Wells RE104D2 and D3 - September 2015 (Resolution 2015); MW116-5 - December 2015 monthly sampling event; GM-36D and D2 - April 2015 Annual sampling event.
9. FT MSL: feet relative to mean sea level

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

Cross Section D-D'
Total Volatile Organic Compound Concentrations

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FIGURE
7

B
WEST

B’
EAST

PERSHING AVE.

STEWART AVE.

PARK AVE.

INTERSECTION WITH
CROSS SECTION A-A’

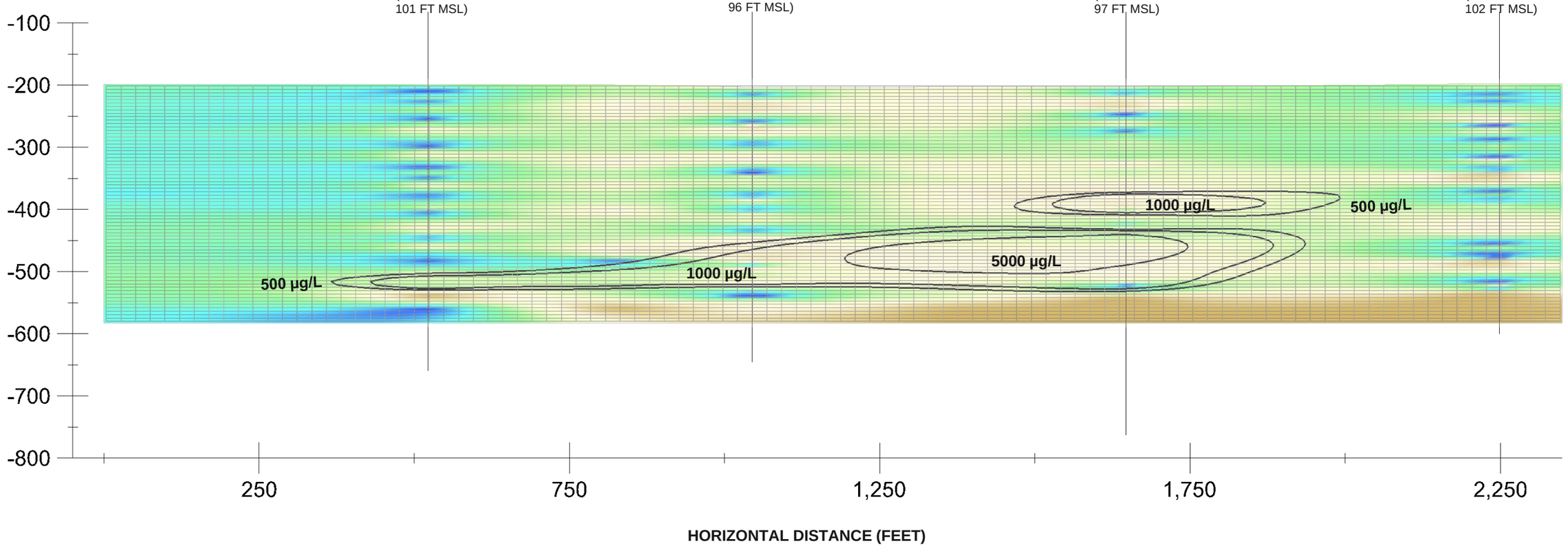
LEXINGTON AVE.

MW-1
VP-1
(GROUND SURFACE:
101 FT MSL)

MW-2
VP-2
(GROUND SURFACE:
96 FT MSL)

MW-3
VP-3
(GROUND SURFACE:
97 FT MSL)

MW-4
VP-4
(GROUND SURFACE:
102 FT MSL)



Permeability

284 ft/day (Gravel)

4.25 ft/day (Coarse Sand)

2.83 ft/day (Fine Silty Sand)

2.8×10^{-4} ft/day (Silts and Clays)

500 µg/L — **Groundwater TVOC Concentration Contour**

Notes:
1. TVOC: Total Volatile Organic Compound
2. µg/L: micrograms per liter
3. ft/day: feet per day
4. FT MSL: feet relative to mean sea level
5. No Vertical Exaggeration
6. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
7. Section area is a portion of Cross Section B-B’ where TVOC plume exceeds 500 µg/L.
8. Permeability interpolated on grid shown, where each cell has a calculated permeability in ft/day.
9. Approximate groundwater flow direction is shown on Figure 2.

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

Cross Section B-B’ - Total Volatile Organic Compound Concentrations and Permeability

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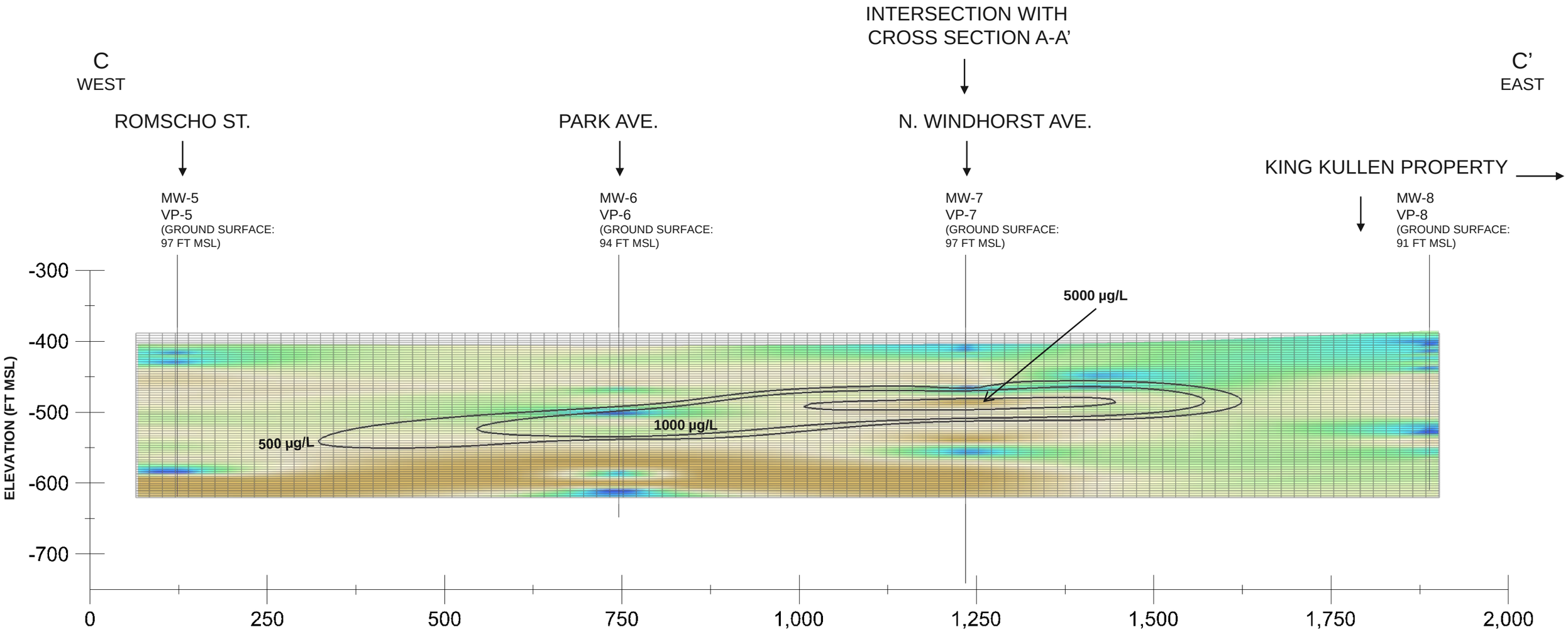
FIGURE
8



Permeability

284 ft/day (Gravel)

4.25 ft/day (Coarse Sand)

2.83 ft/day (Fine Silty Sand)

2.8×10^{-4} ft/day (Silts and Clays)

500 µg/L

Groundwater TVOC Concentration Contour

Notes:

1. TVOC: Total Volatile Organic Compound
2. µg/L: micrograms per liter
3. ft/day: feet per day
4. FT MSL: feet relative to mean sea level
5. No Vertical Exaggeration
6. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
7. Section area is a portion of Cross Section C-C' where TVOC plume exceeds 500 µg/L.
8. Permeability interpolated on grid shown, where each cell has a calculated permeability in ft/day.
9. Approximate groundwater flow direction is shown on Figure 2.

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

Cross Section C-C' - Total Volatile Organic Compound Concentrations and Permeability

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FIGURE
9

D
WEST

INTERSECTION WITH
CROSS SECTION A-A'

D'
EAST

JOHN ST.

BROADWAY

HERMAN AVE.

SEAFORD-
OYSTER BAY
EXPRESSWAY

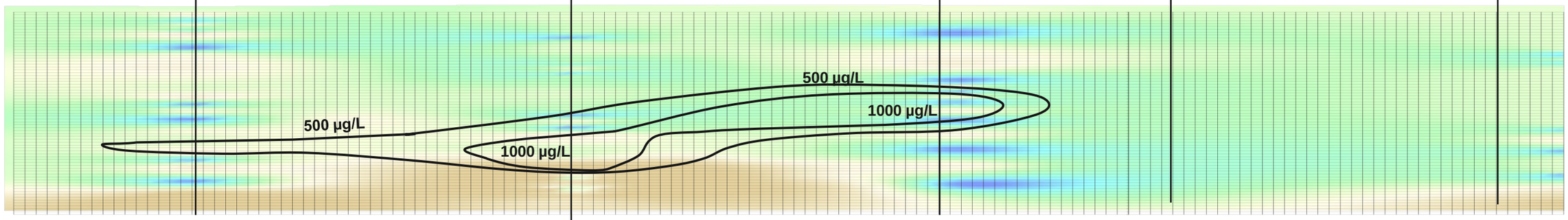
VP-9
(GROUND SURFACE:
92 FT MSL)

VP-11
(GROUND SURFACE:
95 FT MSL)

MW-116-5
(GROUND SURFACE:
95 FT MSL)

VP-8
(GROUND SURFACE:
90 FT MSL)

VP-12
(GROUND SURFACE:
85 FT MSL)



-300
-500
-700

ELEVATION (FT MSL)

0
500
1,000
1,500
2,000

HORIZONTAL DISTANCE (FEET)

Permeability

284 ft/day (Gravel)

4.25 ft/day (Coarse Sand)

2.83 ft/day (Fine Silty Sand)

2.8×10^{-4} ft/day (Silts and Clays)

500 µg/L

Groundwater TVOC Concentration Contour

Notes:
1. TVOC: Total Volatile Organic Compound
2. µg/L: micrograms per liter
3. ft/day: feet per day
4. FT MSL: feet relative to mean sea level
5. No Vertical Exaggeration
6. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
7. Section area is a portion of Cross Section D-D' where TVOC plume exceeds 500 µg/L.
8. Permeability interpolated on grid shown, where each cell has a calculated permeability in ft/day.
9. Approximate groundwater flow direction is shown on Figure 2.

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

Cross Section D-D' - Total Volatile Organic Compound Concentrations and Permeability

ARCADIS

FIGURE
10

B
WEST

B’
EAST

PERSHING AVE.

STEWART AVE.

PARK AVE.

INTERSECTION WITH
CROSS SECTION A-A’

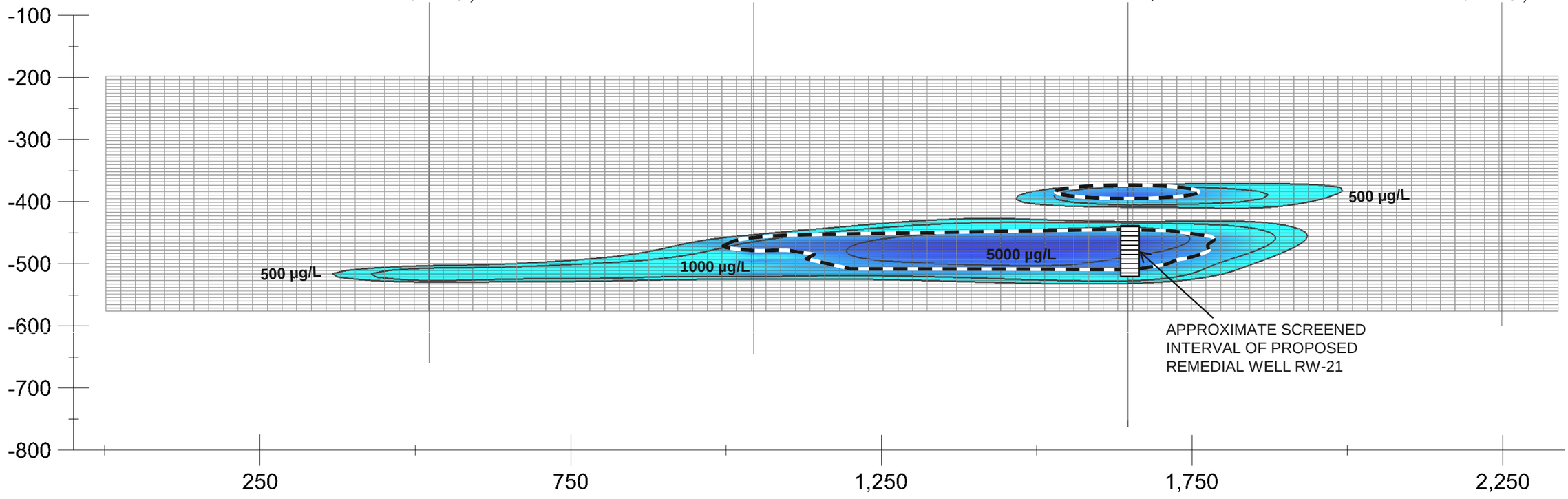
LEXINGTON AVE.

MW-1
VP-1
(GROUND SURFACE:
101 FT MSL)

MW-2
VP-2
(GROUND SURFACE:
96 FT MSL)

MW-3
VP-3
(GROUND SURFACE:
97 FT MSL)

MW-4
VP-4
(GROUND SURFACE:
102 FT MSL)



TVOC Mass Discharge

0.6 lb/year

<0.001 lb/year

500 µg/L — **Groundwater TVOC Concentration Contour**

Boundary of 90% Mass Discharge Area

Notes:
1. TVOC: Total Volatile Organic Compound
2. µg/L: micrograms per liter
3. lb/year: pounds per year
4. FT MSL: feet relative to mean seal level
5. No Vertical Exaggeration
6. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
7. Section area is a portion of Cross Section B-B’ where TVOC plume exceeds 500 µg/L.
8. Mass Discharge interpolated on grid, where each cell has a calculated Mass Discharge in lb/year.
9. Approximate groundwater flow direction is shown on Figure 2.

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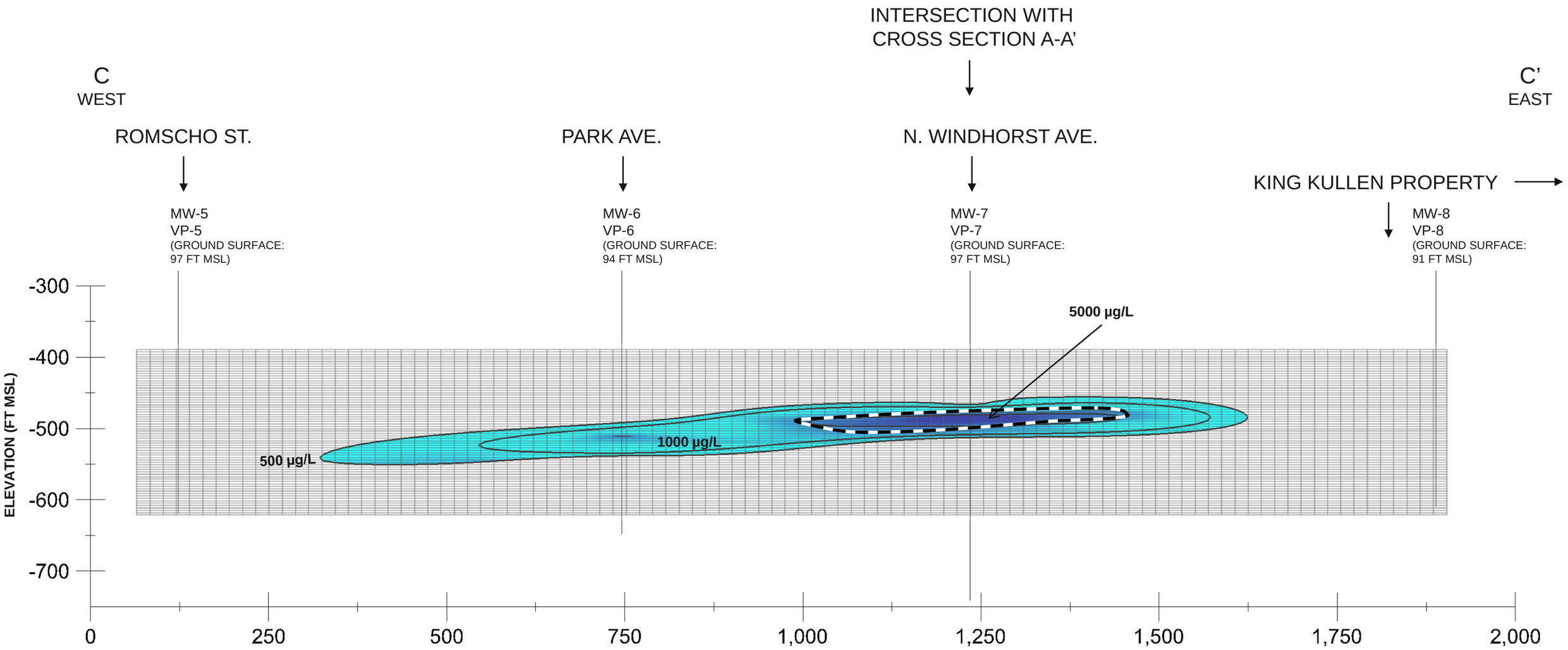
BETHPAGE, NEW YORK

Cross Section B-B’ - Mass Discharge of TVOCs and 90 Percent Mass Discharge Area within the 500 µg/L TVOC Contour

ARCADIS

FIGURE
11



TVOC Mass Discharge

8.5 lb/year

<0.001 lb/year

500 µg/L — **Groundwater TVOC Concentration Contour**

Boundary of 90% Mass Discharge Area

Notes:

1. TVOC: Total Volatile Organic Compound
2. µg/L: micrograms per liter
3. lb/year: pounds per year
4. FT MSL: feet relative to mean seal level
5. No Vertical Exaggeration
6. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
7. Section area is a portion of Cross Section C-C' where TVOC plume exceeds 500 µg/L.
8. Mass Discharge interpolated on grid, where each cell has a calculated Mass Discharge in lb/year.
9. Approximate groundwater flow direction is shown on Figure 2.

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Cross Section C-C' - Mass Discharge of TVOCs and 90 Percent Mass Discharge Area within the 500 µg/L TVOC Contour

ARCADIS

FIGURE
12

D
WEST

INTERSECTION WITH
CROSS SECTION A-A'

D'
EAST

JOHN ST.

BROADWAY

HERMAN AVE.

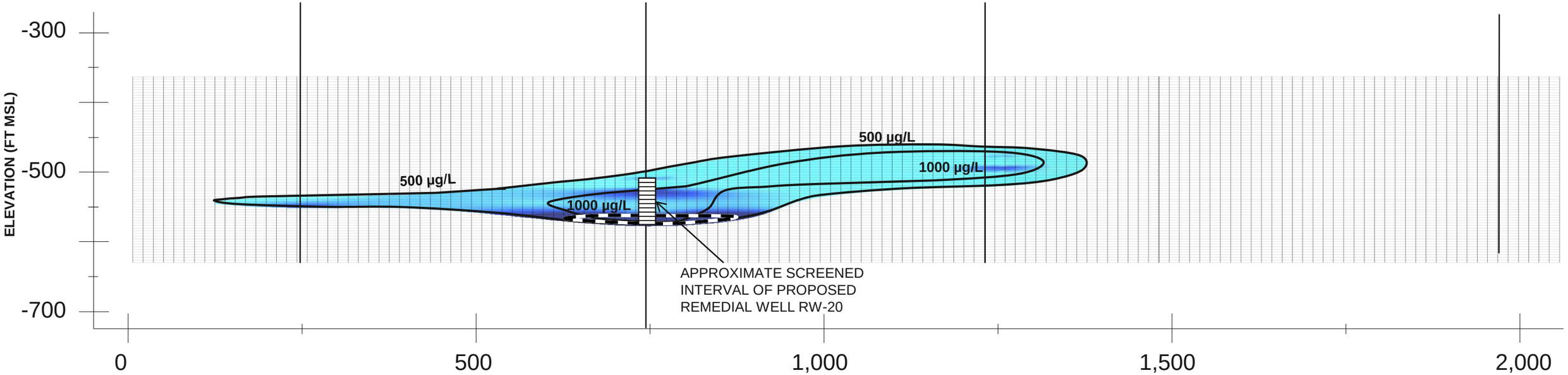
SEAFORD-OYSTER BAY
EXPRESSWAY.

VP-9
(GROUND SURFACE: 92 FT MSL)

VP-11
(GROUND SURFACE: 95 FT MSL)

MW-116-5
(GROUND SURFACE: 95 FT MSL)

VP-12
(GROUND SURFACE: 85 FT MSL)



TVOC Mass Discharge

3 lb/year

<0.01 lb/year

500 µg/L — **Groundwater TVOC Concentration Contour**

Boundary of 90% Mass Discharge Area

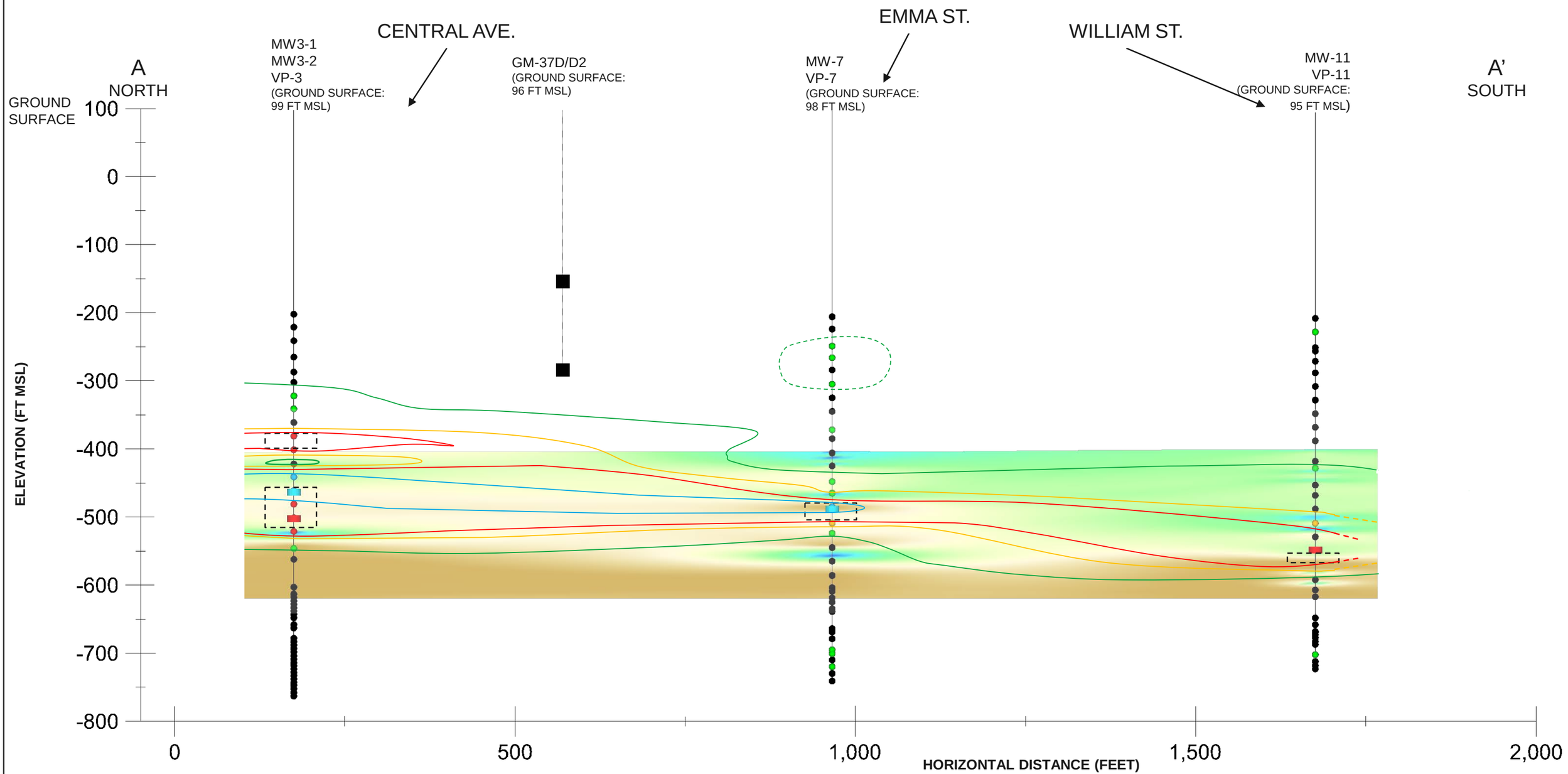
Notes:
1. TVOC: Total Volatile Organic Compound
2. µg/L: micrograms per liter
3. lb/year: pounds per year
4. FT MSL: feet relative to mean seal level
5. No Vertical Exaggeration
6. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
7. Section area is a portion of Cross Section D-D' where TVOC plume exceeds 500 µg/L.
8. Mass Discharge interpolated on grid, where each cell has a calculated Mass Discharge in lb/year.
9. Approximate groundwater flow direction is shown on Figure 2.

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

Cross Section D-D' - Mass Discharge of TVOCs and 90 Percent Mass Discharge Area within the 500 µg/L TVOC Contour

ARCADIS

FIGURE
13



Permeability

- 285 ft/day (Gravel)
- 4.25 ft/day (Coarse Sand)
- 2.83 ft/day (Fine Silty Sand)
- 2.8×10^{-4} ft/day (Silts and Clays)

Hydropunch/Monitoring Well TVOC Concentrations (See Notes 5 and 6)

- > 5,000 µg/L
- 1,000 - 5,000 µg/L
- 500 - 1,000 µg/L
- 50 - 500 µg/L
- < 50 µg/L
- 90% Mass Discharge Area

TVOC Concentration Contours in Groundwater (See Notes 4 and 5)

- 5,000 µg/L
- 1,000 µg/L
- 500 µg/L
- 50 µg/L

Notes:

1. TVOC — Total Volatile Organic Compound
2. µg/L — micrograms per liter
3. ft/day — feet per day
4. No Vertical Exaggeration
5. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
6. Section area is zoomed into Section A-A' where TVOCs exceed 500 µg/L.
7. Permeability interpolated on grid shown, where each cell has a calculated permeability in ft/day.
8. Approximate groundwater flow direction is shown on Figure 2.

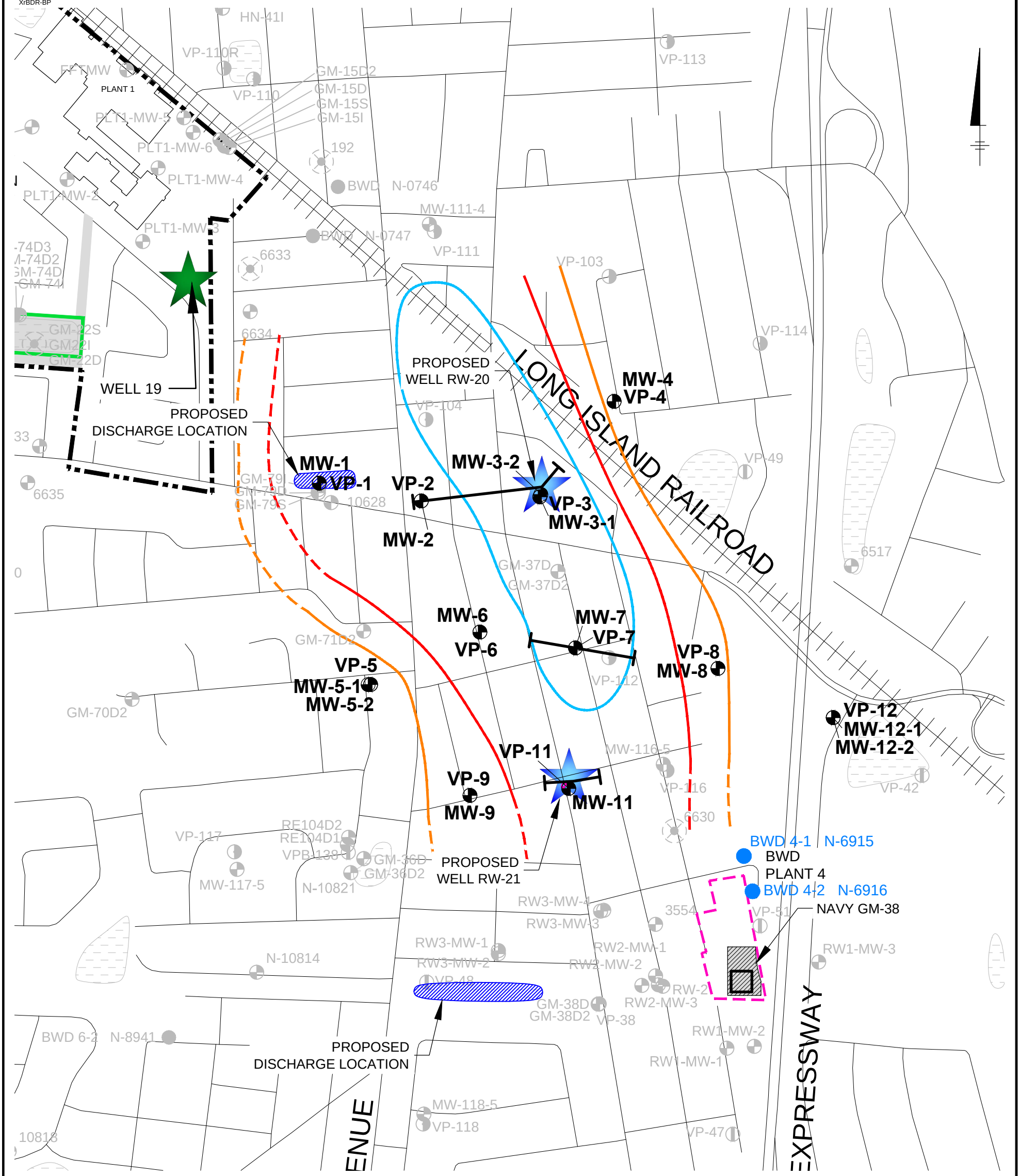
NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

Cross Section A-A' - Total Volatile Organic Compound Concentration, Permeability and Mass Discharge

ARCADIS

FIGURE
14

CITY:SYRACUSE-NY DIV/GROUP:ENV DB:A.SANCHEZ LD:ALS PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
\\arcadis-us.com\officedata\Syracuse-NY\ENVCAD\SYRACUSE\ACT\NY001052\0000\GWHB6\NY1052F15.dwg LAYOUT: 15 SAVED: 2/15/2016 4:10 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 2/15/2016 5:22 PM BY: IAMICELI, KIMBERLY
XREFS: IMAGES: PROJECTNAME: ----
Xr1052X01
XrBDR-BP



LEGEND:

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE CORPORATION SITE
- LONG ISLAND RAILROAD
- RECHARGE BASIN
- STUDY AREA PUBLIC SUPPLY WELL
- EXISTING OU2 REMEDIAL WELL
- VERTICAL PROFILE BORING AND MONITORING WELL INSTALLED FOR RW-21 AREA PROGRAM (OTHER WELLS OWNED BY NAVY, NORTHROP GRUMMAN OR OTHERS SHOWN IN GRAY FOR REFERENCE ONLY)
- BWD — BETHPAGE WATER DISTRICT
- APPROXIMATE PROPERTY BOUNDARY FOR POTENTIAL TREATMENT SYSTEM
- PROPOSED REMEDIAL WELL
- LATERAL EXTENT OF 90% OF VOC MASS DISCHARGE

TVOC CONCENTRATION CONTOURS IN GROUNDWATER IN µg/L (DASHED WHERE APPROXIMATE)

- 500
- 1000
- 5000

NOTES:

1. TVOC PLUME EXTENDS TO NORTH, BUT IS NOT SHOWN, AS OUTSIDE RW-21 AREA.
2. APPROXIMATE CUMULATIVE EXTENT OF CAPTURE ZONE IN MODEL LAYERS 8 THROUGH 11; CAPTURE ZONE IS ESTIMATED BASED ON PROPOSED RECOVERY WELLS RW-20 AND RW-21 WITH PUMPING RATES OF 500 GPM.

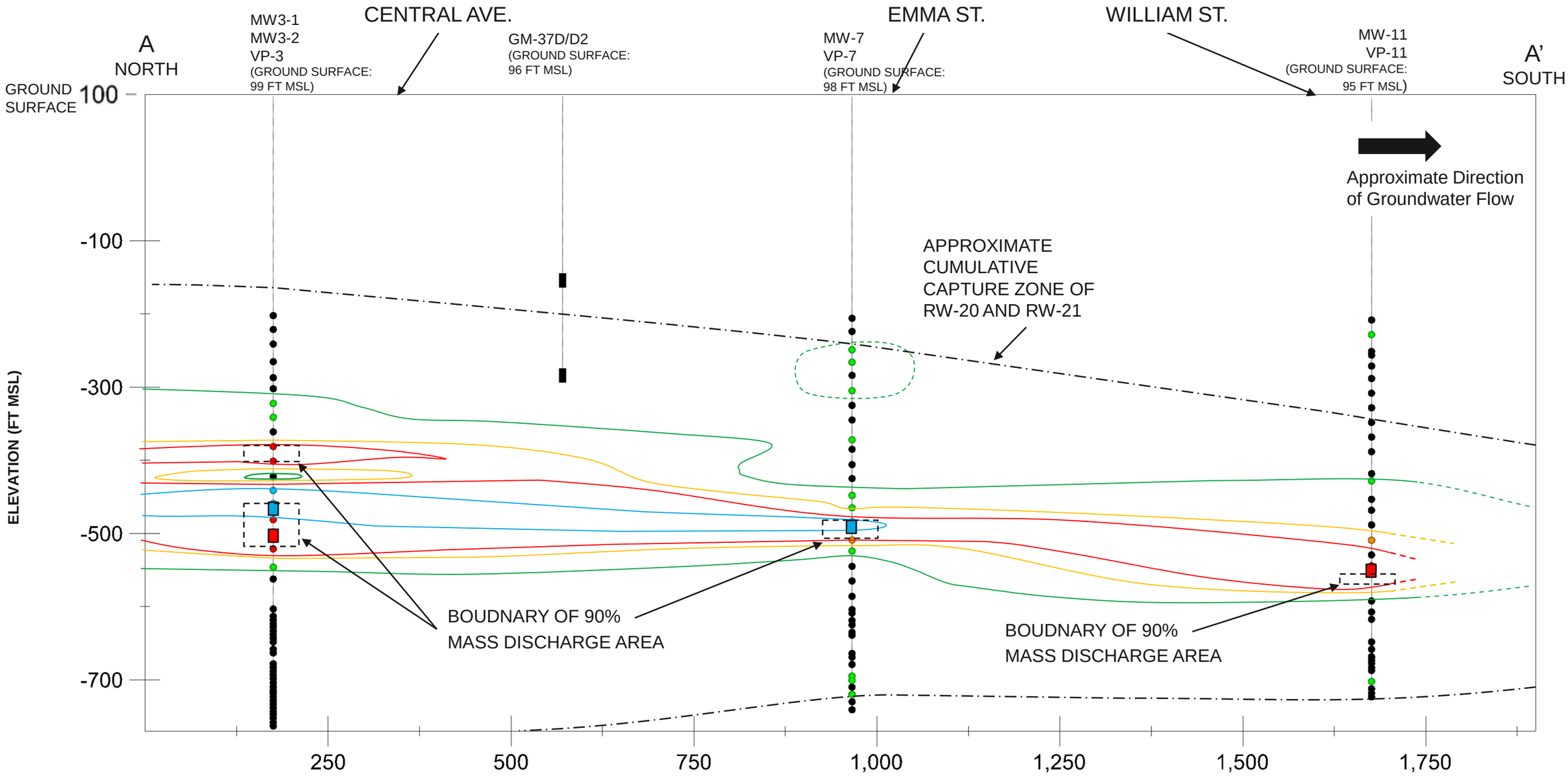
0 500' 1000'
APPROXIMATE SCALE IN FEET

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

MASS DISCHARGE TRANSECTS AND TREATMENT SYSTEM SITE PLAN

ARCADIS Design & Consultancy for natural and built assets

FIGURE 15



Hydropunch/Monitoring Well TVOC Concentrations (SEE NOTE 6)

- > 5,000 µg/L
- 1,000 - 5,000 µg/L
- 500 - 1,000 µg/L
- 50 - 500 µg/L
- < 50 µg/L

TVOC Concentration Contours in Groundwater (SEE NOTES 4 & 5)

- 5,000 µg/L
- 1,000 µg/L
- 500 µg/L
- 50 µg/L

Notes:

1. TVOC: Total Volatile Organic Compound
2. µg/L: micrograms per liter
3. No Vertical Exaggeration
4. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
5. Contours based on collective interpretation of monitoring well and screening-level VPB data. Historical VPB data (prior to 2014) provided for completeness of contouring; however, contours based on historical data are dashed unless confirmed by recent monitoring well sampling results.
6. Hydropunch data shown as circles; Monitoring Well data shown as rectangles.
7. Approximate groundwater flow direction is to the South/Southeast (shown on Figure 2).
8. Results from Monitoring Wells GM-37D and GM-37D2 from April to May 2015 annual sampling event.
9. Approximate cumulative extent of capture zone is estimated based on proposed recovery wells RW- 20 and RW-21 each pumping at 500 GPM. Cumulative capture zone extends beyond the limits of the cross section to the north and south (approximately 500 ft south of Well RW-21).

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
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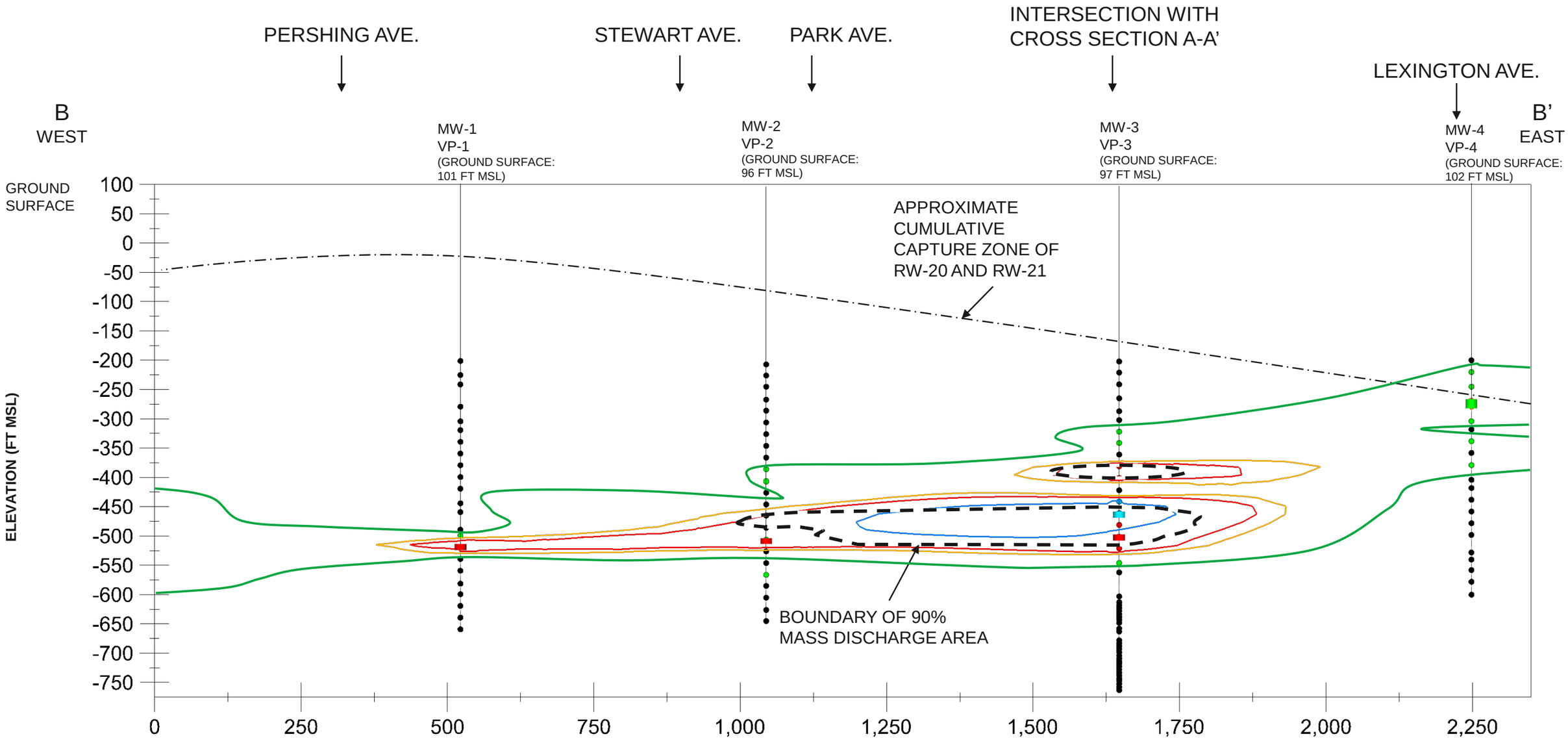
BETHPAGE, NEW YORK

Cross Section A-A' – Approximate Cumulative Capture Zone and 90 Percent Mass Discharge Area within the 500 µg/L TVOC Contour

ARCADIS

FIGURE
16



Hydropunch/Monitoring Well TVOC Concentrations (SEE NOTE 6)

- > 5,000 µg/L
- 1,000 - 5,000 µg/L
- 500 - 1,000 µg/L
- 50 - 500 µg/L
- < 50 µg/L

TVOC Concentration Contours in Groundwater (SEE NOTES 4 & 5)

- 5,000 µg/L
- 1,000 µg/L
- 500 µg/L
- 50 µg/L

Notes:

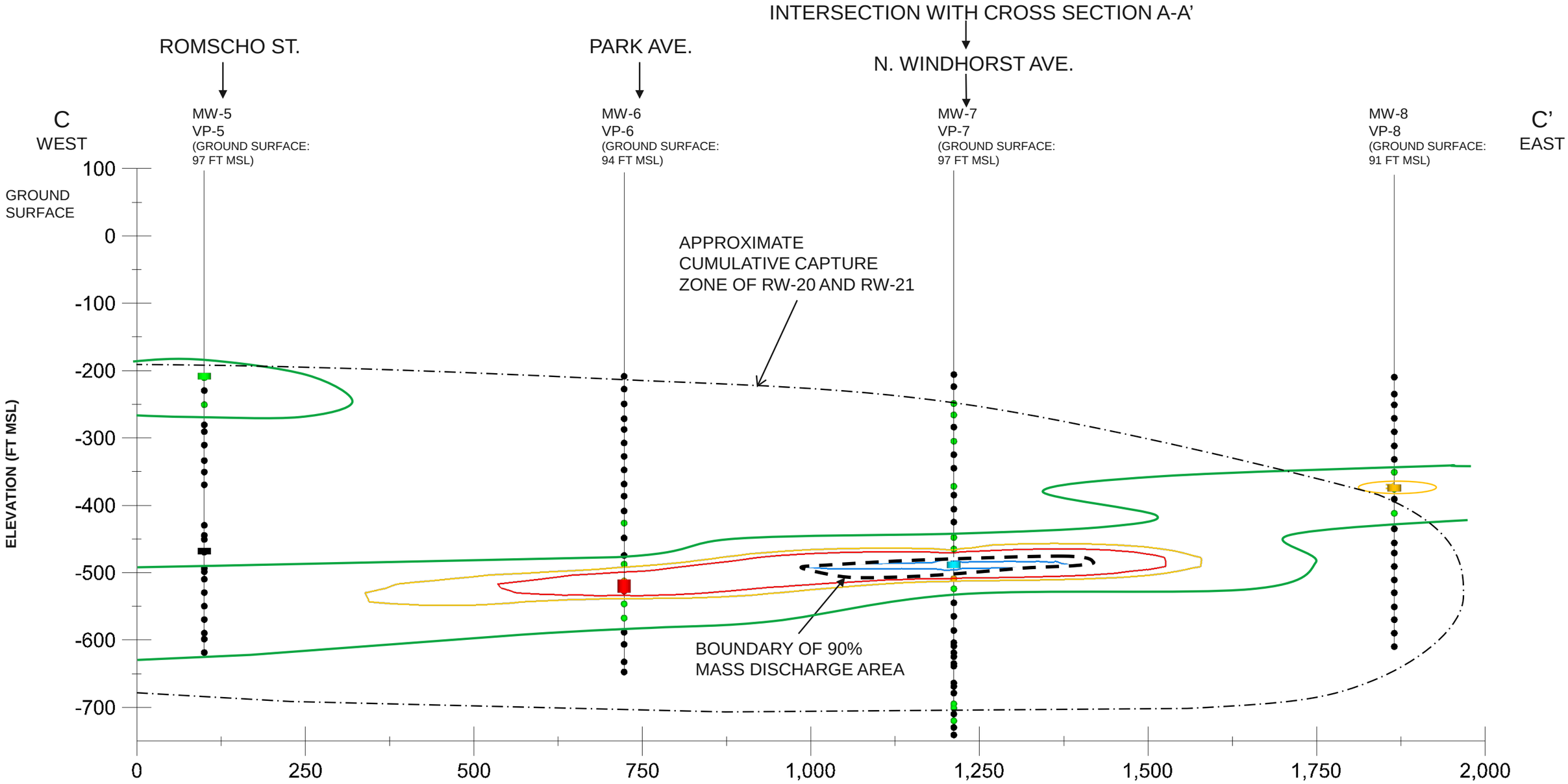
1. TVOC: Total Volatile Organic Compound
2. µg/L: micrograms per liter
3. No Vertical Exaggeration
4. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
5. Contours based on collective interpretation of monitoring well and screening-level VPB data. Historical VPB data (prior to 2014) provided for completeness of contouring; however, contours based on historical data are dashed unless confirmed by recent monitoring well sampling results.
6. Hydropunch data shown as circles; Monitoring Well data shown as rectangles.
7. Approximate groundwater flow direction is to the South/Southeast (shown on Figure 2).
8. Approximate cumulative extent of capture zone is estimated based on proposed recovery wells RW-20 and RW-21 each pumping at 500 GPM. Cumulative capture zone extends beyond the limits of the cross section to the west and east.

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

Cross Section B-B' – Approximate Cumulative Capture Zone and 90 Percent Mass Discharge Area within the 500 µg/L TVOC Contour

ARCADIS

FIGURE
17



Hydropunch/Monitoring Well TVOC Concentrations (SEE NOTE 6)

- > 5,000 µg/L
- 1,000 - 5,000 µg/L
- 500 - 1,000 µg/L
- 50 - 500 µg/L
- < 50 µg/L

TVOC Concentration Contours in Groundwater (SEE NOTES 4 & 5)

- 5,000 µg/L
- 1,000 µg/L
- 500 µg/L
- 50 µg/L

Notes:

1. TVOC: Total Volatile Organic Compound
2. µg/L micrograms per liter
3. No Vertical Exaggeration
4. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
5. Contours based on collective interpretation of monitoring well and screening-level VPB data. Historical VPB data (prior to 2014) provided for completeness of contouring; however, contours based on historical data are dashed unless confirmed by recent monitoring well sampling results.
6. Hydropunch data shown as circles; Monitoring Well data shown as rectangles.
7. Approximate groundwater flow direction is to the South/Southeast (shown on Figure 2).
8. Approximate cumulative extent of capture zone is estimated based on proposed recovery wells RW-20 and RW-21 each pumping at 500 GPM. Cumulative capture zone extends beyond the limits of the cross section to the west and east. Cumulative capture zone extends beyond the limits of the cross section to the west.

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

Cross Section C-C' – Approximate Cumulative Capture Zone and 90 Percent Mass Discharge Area within the 500 µg/L TVOC Contour

ARCADIS

FIGURE
18

INTERSECTION WITH CROSS SECTION A-A'

D WEST

HILLTOP AVE

STEWART AVE

JOHN ST.

BROADWAY

HERMAN AVE.

D' EAST

GROUND SURFACE

MW-117-5
VP-117
(GROUND SURFACE: 95 FT MSL)

RE-104D1
RE-104D2
RE-104D3
VPB-138
(GROUND SURFACE: 95 FT MSL)
(PROJECTED 100FT SOUTH)

GM-36D/D2
(GROUND SURFACE: 91 FT MSL)

MW-9
VP-9
(GROUND SURFACE: 92 FT MSL)

MW-11
VP-11
(GROUND SURFACE: 95 FT MSL)

MW-116-5/VP-116
(GROUND SURFACE: 95 FT MSL)

MW12-1
MW-12-2
VP-12
(GROUND SURFACE: 85 FT MSL)

SEAFORD-OYSTER BAY EXPRESSWAY

APPROXIMATE CUMULATIVE CAPTURE ZONE OF RW-20 AND RW-21

BOUNDARY OF 90% MASS DISCHARGE AREA

ELEVATION (FT MSL)

100
-100
-300
-500
-700

0
500
1,000
1,500
2,000
2,500
3,000

HORIZONTAL DISTANCE (FEET)

Hydropunch/Monitoring Well TVOC Concentrations (SEE NOTE 6)

- 1,000 - 5,000 µg/L
- 500 - 1,000 µg/L
- 50 - 500 µg/L
- < 50 µg/L

TVOC Concentration Contours in Groundwater (SEE NOTES 4 & 5)

- 1,000 µg/L
- 500 µg/L
- 50 µg/L

Notes:
1. TVOC: Total Volatile Organic Compound
2. µg/L micrograms per liter
3. No Vertical Exaggeration
4. TVOC contours on the cross section represent a two-dimensional slice of three-dimensional TVOC plumes contoured in the 3D model.
5. Contours based on collective interpretation of monitoring well and screening-level VPB data. Historical VPB data (prior to 2014) provided for completeness of contouring; however, contours based on historical data are dashed unless confirmed by recent monitoring well sampling results.
6. Hydropunch data shown as circles; Monitoring Well data shown as rectangles.
7. Approximate groundwater flow direction is to the South/Southeast (shown on Figure 2).
8. Well results: MW117-5 - June 2013 Comprehensive Groundwater Sampling Event; Wells RE104D2 and D3 - September 2015 (Resolution 2015); MW116-5 - December 2015 monthly sampling event; GM-36D and D2 - April 2015 Annual sampling event.
9. Capture zone is estimated based on proposed recovery wells RW-20 and RW-21 each pumping at 500 GPM.

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
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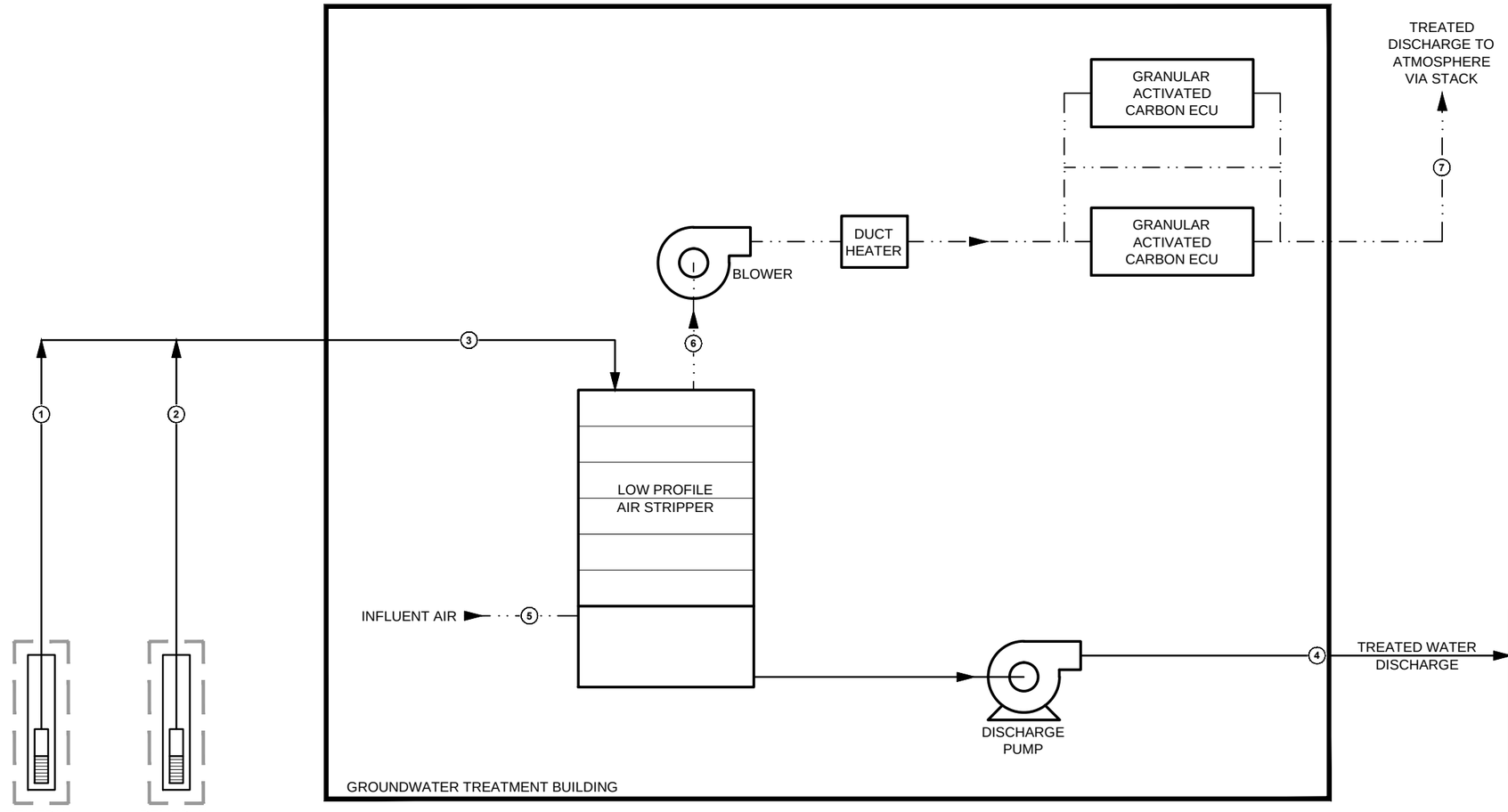
BETHPAGE, NEW YORK

Cross Section D-D' – Approximate Cumulative Capture Zone and 90 Percent Mass Discharge Area within the 500 µg/L TVOC Contour

ARCADIS

FIGURE 19



LEGEND:

- PROCESS WATER
- PROCESS AIR
- FLOW DIRECTION
- (1) PROCESS DESIGNATION
- ECU EMISSION CONTROL UNIT

PROCESS	1	2	3	4	5	6	7
Concentration (ppb)							
Trichloroethene	13,700	5,380	9,540	1.9	0	43,785	<438
cis-1,2 Dichloroethene	913	477	695	<1	0	4,320	<43.2
Mass Loading (lbs/day)							
Trichloroethene	82.3	32.3	114.6	0.023	0	114.6	<1.15
cis-1,2 Dichloroethene	5.5	2.9	8.4	<0.06	0	8.4	<0.0084
Flow Rate (gpm)	500	500	1,000	1,000	---	---	---
Flow Rate (SCFM)	---	---	---	---	5,200	5,200	5,200

NOTE:
ALL PROCESS DATA REPRESENTS DESIGN VALUES FOR THE PURPOSE OF SIZING THE TREATMENT SYSTEM EQUIPMENT.

NORTHROP GRUMMAN SYSTEMS CORPORATION
OPERABLE UNIT 3
(FORMER GRUMMAN SETTLING PONDS)
BETHPAGE, NEW YORK

CONCEPTUAL TREATMENT SYSTEM FLOW DIAGRAM

ARCADIS Design & Consultancy for natural and built assets

FIGURE 20

Arcadis of New York, Inc.

Two Huntington Quadrangle

Suite 1S10

Melville, New York 11747

Tel 631 249 7600

Fax 631 249 7610

www.arcadis.com