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2008 Annual Groundwater Monitoring Report

Operable Unit 2

Northrop Grumman Systems Corporation

Bethpage, New York

NYSDEC Site #s 1-30-0003A & B

June 18, 2009

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Tables

Figures

Appendix

1. Introduction

This groundwater monitoring report was prepared to document the operation, maintenance, and monitoring (OM&M) activities for the Operable Unit 2 (OU2) groundwater remedy at the Northrop Grumman Systems Corporation (Northrop Grumman) Bethpage, New York facility. These activities are currently being conducted by Northrop Grumman, in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved OU2 Groundwater Monitoring Plan (ARCADIS Geraghty & Miller, Inc. 2001), as modified in June 2006 (ARCADIS G&M, Inc. 2006) and the Public Water Supply Contingency Plan (PWSCP) (ARCADIS G&M Inc. 2003a) collectively to meet the remedial objectives set forth in the March 2001 OU2 Record of Decision (ROD) (NYSDEC 2001).

This report describes the performance and effectiveness monitoring of the on-site portion of the OU2 groundwater remedy for the period from September 30, 2008 through December 29, 2008, which is referred to in this report as the Fourth Quarter 2008 report period, or the current period. This report also constitutes the 2008 Annual Report, and compares the current data to Year 2008 data and to longer-term data trends, as applicable.

The monitoring program, as well as the findings, conclusions, and recommendations will be re-evaluated, as additional data become available. The complete description of the on-site portion of the OU2 groundwater remedy, the monitoring program, and rationale/basis for collection and evaluation of data can be found in the NYSDEC-approved OU2 Groundwater Monitoring Plan (ARCADIS Geraghty & Miller, Inc. 2001), as modified in June 2006 (ARCADIS G&M, Inc. 2006) and the PWSCP (ARCADIS G&M Inc. 2003a).

2. Monitoring Program

The results obtained from monitoring activities conducted during this reporting period are provided in Tables 1 through 10 and are described and discussed in the following report sections: Remedial System Operational Performance (Section 3), Groundwater Flow (Section 4), and Groundwater Quality (Section 5).

Except as described in Tables 1 through 10 and in Sections 3, 4, and 5 of this report, the procedures, methodologies, and monitoring network utilized for the subject period are consistent with procedures and methodologies used previously (ARCADIS Geraghty & Miller, Inc. 2001; ARCADIS G&M, Inc. 2003a). The complete description

of the procedures to collect groundwater samples from outpost wells and evaluate and document the results is provided in the PWSCP (ARCADIS G&M, Inc. 2003a).

The locations of the Northrop Grumman site, the OU2 on-site groundwater remedy, the neighboring properties (i.e., the former Naval Weapons Industrial Reserve Plant [NWIRP] and former Occidental Chemical Corporation [OCC]/RUCO Polymer Corporation sites), and existing wells utilized in the monitoring programs are shown on Figure 1. Appendix A of this report contains the field documentation for monitoring activities performed during 2008 by ARCADIS (i.e., groundwater sampling logs and chain-of-custody records).

3. Remedial System Performance Monitoring

This report section summarizes the routine performance monitoring conducted during the Fourth Quarter 2008 and Year 2008 for the on-site portion of the OU2 groundwater remedy, which included the following:

(1) remedial well water quality monitoring, remedial treatment systems effluent water quality monitoring, remedial treatment systems efficiency monitoring, and determination of volatile organic compound (VOC) mass removal, and

(2) monitoring of remedial well pumpage and remedial treatment systems treated effluent discharge to on-site recharge basins.

Also summarized in this report section are the remedial treatment system and remedial well troubleshooting as well as non-routine maintenance activities performed by ARCADIS and Northrop Grumman during the Fourth Quarter 2008.

As stated in previous reports, the on-site remedial wells and remedial treatment systems will be referred to by names that are consistent with Northrop Grumman nomenclature, as summarized in the following table. All monitoring activities will utilize the revised nomenclature.

Former Nomenclature	Revised Nomenclature
Remedial Wells	
GP-1	Well 1
GP-3	Well 3
ONCT-1	Well 17
ONCT-2	Well 18
ONCT-3	Well 19
Remedial Treatment Systems	
GP-1	Tower 96
ONCT	Tower 102

3.1 Water Quality, Treatment Efficiencies, and Mass Removal

Tables 1 and 7 provide the total VOC (TVOC) concentrations detected in the remedial wells. Table 1 provides remedial well TVOC concentrations and treatment efficiencies for the Tower 96 and Tower 102 remedial treatment system air strippers for the current period, VOC mass removed by the remedial wells for the current period and Year 2008, and cumulative TVOC mass removed since Tower 102 remedial system startup.

TVOC concentrations from the remedial wells ranged from 121.2 micrograms per liter (µg/L) (Well 18) to 3,080 µg/L (Well 3) this period. The discussion of water quality data and trends for the remedial wells is provided in Section 5.1.4 of this report.

A total of approximately 3,308 pounds of VOCs were removed from the aquifer by the remedial wells and treated during the current period. For Year 2008, approximately 13,122 lbs of VOC mass were removed from the aquifer and treated by the OU2 remedial systems. Since full-time startup of the Tower 102 remedial system in November 1998, approximately 133,944 lbs of VOCs have been removed from the aquifer and treated by the Tower 96 and Tower 102 remedial systems.

Northrop Grumman's State Pollutant Discharge Elimination System (SPDES) discharge monitoring results (Permit No. NY0096792) are representative of treated water quality and are used in calculating remedial system treatment efficiency and determining the quality of water returned to the aquifer. SPDES discharge monitoring data are documented on a monthly basis by Northrop Grumman to NYSDEC under separate cover in Discharge Monitoring Reports (DMRs). Northrop Grumman Outfalls 006 and 005, respectively, represent the termini of the Tower 102 and Tower 96 systems effluent water (i.e., inlets to the South Recharge Basins and West Recharge

Basins), respectively. Based on VOC concentrations in the remedial wells and the SPDES discharge this period, the efficiencies of the Tower 96 and Tower 102 remedial treatment systems for the current period were calculated to be greater than 99.9 percent and 99.9 percent, respectively.

3.2 Remedial System Pumpage and Discharge

Table 1 summarizes the remedial well pumpage (with comparison to design criteria) for the current period and Year 2008. For the current period, Remedial Wells 1, 3, 17, 18, and 19 collectively pumped approximately 487 million gallons (MG) of groundwater, which is equivalent to approximately 99 percent of the design remedial well pumpage volume (493 MG). For Year 2008, the remedial system pumped approximately 2,032 MG, equivalent to slightly greater than 100 percent of the total design remedial well pumpage volume of 2,025 MG.

Based on measurements collected by ARCADIS, the South Recharge Basins collectively received the treated effluent discharge from the Tower 102 remedial treatment system along with incidental stormwater runoff and contribution from the Tower 96 remedial system for a total average of approximately 2,797 gpm, equivalent to 362.5 MG, during the current period.

As discussed in previous reports, a portion of the treated water from the Tower 96 remedial treatment system is provided on demand to the Calpine Energy facility for consumptive use. The demand rate is controlled by a "Cla-Val" located within a subsurface transmission pipeline between Tower 96 and the Calpine Energy facility. Based on raw water consumption information provided by Calpine Energy to Northrop Grumman the weighted average facility demand by Calpine for this period was 167 gpm, indicating that the West Recharge Basins received an average discharge rate from the Tower 96 remedial system of approximately 1,383 gpm this period, equivalent to 179.2 MG.

Based on water-level and pumping data presented in Table 3, OU2 remedial well specific capacities remain above the minimum required to sustain the design pumping rates, as such no maintenance was needed on remedial wells this period.

3.3 Troubleshooting/Maintenance Activities

This section summarizes the non-routine shut down activities pertaining to the on-site portion of the OU2 Groundwater Remedy in 2008:

- From August 25 to December 15, 2008, Remedial Well 18 was shut down for replacement of the vertical turbine pump.

Other, minor short-term repairs, testing of new component systems, and temporary power outages were also noted.

4. Groundwater Flow

Hydraulic monitoring was performed semi-annually in Year 2008, on April 10 and August 29, 2008. Tables 2 and 3 provide the spring and fall water-level measurement data from the semi-annual events, respectively. Table 4 provides the comparison of vertical hydraulic gradients (calculated from August 2008 water-level measurements) to model-predicted gradients for key monitoring well pairs. Figures 2, 3, and 4 depict groundwater elevations and flow directions in the shallow (water table), intermediate, and deep2 zones, respectively.

Based on the hydraulic monitoring results obtained from the 2008 semi-annual events, groundwater flow conditions are consistent with prior years during which the OU2 remedial system was determined to be providing hydraulic containment of VOCs in groundwater on the Northrop Grumman and NWIRP sites. Specifically, the data indicate vertical hydraulic gradients in the shallow-intermediate wells pairs are oriented downward and are close to or greater than model predicted values (Table 4). As shown on Figures 2 and 3, mounding of the water table and potentiometric surface exists in the shallow and intermediate zones, respectively, extending beneath the South Recharge Basins and across the Northrop Grumman site southern boundary. Downward vertical gradients were also present in the intermediate-deep and deep-deep2 well pairs, supporting the conclusion that groundwater is flowing in a predominantly vertical direction in the deep zone along the Northrop Grumman site southern boundary. Data obtained in Year 2008 indicates that the combination of shallow recharge at the South Recharge Basins coupled with pumpage of the remedial wells in the D2 zone forms a hydraulic barrier to groundwater flow that is preventing the off-site migration of VOC-impacted groundwater. The capture zone formed by the combined pumpage of OU2 remedial wells extended approximately 600 feet downgradient of Well 17 (Figure 4).

5. Groundwater Quality

This report section describes the analytical results of the various groundwater quality monitoring activities for the Fourth Quarter 2008 that are specified in the NYSDEC-

approved Groundwater Monitoring Plan (ARCADIS G&M, Inc., 2001; ARCADIS G&M, Inc. 2006) and the PWSCP (ARCADIS G&M Inc., 2003b). Analytical results are summarized in Tables 5 through 10.

5.1 Volatile Organic Compounds

The evaluation of VOC concentrations is presented herein in consideration of the following factors: (1) proximity to the hydraulic barrier formed by the on-site portion of the OU2 groundwater remedy (i.e., upgradient, along the Northrop Grumman site southern boundary, and downgradient of the hydraulic barrier), (2) hydrogeologic zone (i.e., shallow, intermediate, deep, and D2 zones), and (3) NYSDEC Standards, Criteria, and Guidance Values.

Tables 5 through 10 provide the complete analytical results of samples collected for VOC analysis from monitoring wells, remedial wells, outpost wells, and remedial treatment systems for this period. Time-concentration graphs depicting the long-term VOC concentration trends are shown on Figures 5 through 11.

5.1.1 Shallow Zone

The analytical results of monitoring in the shallow zone in 2008 are provided in prior reports (ARCADIS of New York, Inc. 2008a; b, and c) and these data are incorporated herin by reference. Shallow wells sampled during the Third Quarter 2008 (GM-15S, GM-21S, GM-78S, HN-40S, and HN-42S) exhibited no detections of VOCs. Wells located near or immediately downgradient of the Northrop Grumman site southern boundary (GM-21S and GM-78S) continue to exhibit results similar to data collected since the start up of the OU2 Groundwater Remedy in November 1998, confirming that the operation of the on-site portion of the OU2 groundwater remedy has formed an effective hydraulic barrier that prevents the off-site migration of VOC-impacted groundwater in the shallow zone

5.1.2 Intermediate Zone

Analytical data for intermediate monitoring wells are provided in Table 5. Intermediate wells sampled during this period (GM-20I, GM-21I, and GM-79I) are located immediately downgradient of the Northrop Grumman site southern boundary.

Laboratory results indicated no detections of VOCs along the Northrop Grumman site southern boundary during this period or Year 2008. These analytical results confirm

that the operation of the on-site portion of the OU2 groundwater remedy has formed an effective hydraulic barrier that prevents the off-site migration of VOC-impacted groundwater in the intermediate zone.

5.1.3 Deep Zone

Groundwater monitoring data from the deep zone for the Fourth Quarter 2008 is summarized in Table 6 and key data trends are shown in Figures 6, 7, 8, 10, and 11. Data trend graphs include key wells with detectable concentrations of VOCs that were sampled in Year 2008.

Well GM-13D (most recently sampled in the Third Quarter 2008[(ARCADIS of New York, Inc. 2008c]), located upgradient of the OU2 Groundwater Remedy, continued to exhibit a downward trend in TVOC concentrations with a decrease in TVOC concentrations of nearly 90 percent since 2000 (Figure 7).

Well GM-74D, located upgradient of the remedial wells, did not exhibit detections in the Year 2008. The other four deep monitoring wells (i.e., GM-39D_A, GM-39D_B, and GM-73D) located on-site, along the Northrop Grumman site southern boundary, and upgradient of the remedial wells (Figure 1), exhibited SCG exceedences in the Year 2008. These monitoring wells are within the capture zone of the remedial wells; therefore, groundwater in this area is hydraulically contained and over time will be extracted and treated.

Groundwater quality data from wells immediately downgradient of the Northrop Grumman site (Wells GM-20D and GM-21D) exhibited no VOC detections during this period and Year 2008. Well GM-79D continues to exhibit a downward trend (Figure 8).

Wells located further downgradient of the hydraulic barrier exhibited TVOC concentrations consistent with the expected concentrations in the portions of the groundwater VOC plume not actively remediated. The deep well located at the GM-75D2 Area (Well GM-34D) historically exhibited VOCs exceeding SCGs and VOC concentrations that have increased for the period of record (Figure 10). Well GM-34D is located south of Well GM-75D2 (Figure 1 – see Section 5.1.4 for additional detail).

In the GM-38 Area, southeast of the Site, Well GM-38D continues to exhibit VOC concentrations consistent with the long-term trend (Figure 11).

Groundwater quality data continues to support the conclusion that the expected bifurcation of the VOC plume is occurring along the Northrop Grumman site southern boundary, as shown by no detections in wells located within the capture zone immediately off site. SCG exceedences continue to persist in wells screened in the portion of the groundwater VOC plume not actively remediated.

In general, the water quality data from the deep wells sampled during the current period and Year 2008 continue to support the interpretation of the hydraulic data and confirm that the operation of the on-site portion of the OU2 groundwater remedy has formed an effective hydraulic barrier that prevents the off-site migration of VOC-impacted groundwater in the deep zone.

5.1.4 Deep2 Zone and Remedial Wells

Groundwater monitoring data from the D2 zone are summarized in Table 7 and data trends are presented on Figures 5, 6, 9, 10, and 11. The data trend graphs presented in this report include key wells with detectable concentrations of VOCs that were sampled this period.

Well GM-33D2 (Figure 5), located along the southwestern boundary of the Northrop Grumman site, exhibited three VOCs (freon 113, trichloroethlene, and tetrachloroethene) that exceeded SCGs in this period, with similar exceedances detected the first three quarters of Year 2008. The trend in TVOC concentrations in Well GM-33D2 remains downward, consistent with the long-term trend. Well GM-73D2 (Figure 5) continues to exhibit a downward trend in VOC concentrations. The other Northrop Grumman site boundary D2 wells (GM-15D2 and GM-74D2 – Figure 6) continue to exhibit stable VOC concentrations less than 50 µg/L. Wells GM-15D2, GM-33D2, GM-73D2, and GM-74D2 are located within the capture zone of the remedial wells (which are screened in the D2 zone) and therefore groundwater in this area is hydraulically contained and over time will be extracted and treated by the on-site portion of the OU2 groundwater remedy.

For the GM-75D2 Area, off-site Wells GM-34D2, GM-35D2 and GM-75D2 had one or more SCG exceedances each during this period, with TVOC concentrations of 300 µg/L, 210 µg/L and 190 µg/L, respectively. These data are consistent with concentrations expected in the off-site portion of the VOC plume not actively remediated. TVOC concentrations in Well GM-75D2 (Figure 10) have shown a decreasing trend since the Year 2002 (although the TVOC concentration has remained stable since mid 2005), while TVOC concentrations in Well GM-34D2 (Figure 10) have

been increasing over the period of record. The data indicate that TVOC concentrations in Well GM-35D2 (Figure 10) exhibit a slight downward trend since 2002. Currently, the Department of the Navy has prepared a work plan for investigation of groundwater in the GM-75D2 Area.

The GM-38 Area monitoring results during Year 2008 were provided in prior reports (ARCADIS of New York, Inc. 2008 a; b, c). TVOC concentrations in Well GM-38D2 have decreased since Year 2002 (Figure 11). Remediation of VOCs in the GM-38 Area will be performed by the Department of the Navy.

The other off-site D2 zone monitoring wells continue to exhibit stable to decreasing TVOC concentration trends.

For the remedial wells, TVOC concentrations ranged from 121.2 µg/L (Well 18) to 3,080 µg/L (Well 3). The remedial wells exhibit overall stable to decreasing trends since mid-2006. Well 3 continues to exhibit the highest TVOC concentrations. Refer to Section 3 of this report for a discussion of remedial well performance and VOC mass removed.

In general, the water quality data from the D2 wells sampled during the current period and Year 2008 continue to support the interpretation of the hydraulic data and confirm that the operation of the on-site portion of the OU2 groundwater remedy has formed an effective hydraulic barrier that prevents the off-site migration of VOC-impacted groundwater in the D2 zone.

5.2 Outpost Monitoring

The results of the current outpost well monitoring round are provided in Table 8. The complete description of the procedures to collect groundwater samples from the outpost wells and evaluate and document the results is provided in the PWSCP (ARCADIS G&M, Inc., 2003b).

VOCs were not detected in Outpost Wells OW1-2, OW3-1, OW3-2, OW4-1, and OW4-2 during this period and the period of record. Outpost Wells OW1-1 and OW1-3, exhibited detections of site-related VOCs below their respective SCGs, but above the TVOC outpost trigger values this period. Wells OW2-1 and OW2-2 were not monitored during Year 2008 due to an ongoing investigation of benzene and MTBE implemented by the NYSDEC. As no new exceedances of outpost trigger values occurred in Year

2008, the requirements for notification/reporting of the initial trigger value exceedances, as outlined in the PWSCP (ARCADIS G&M, Inc., 2003b), have already been met.

Based on information provided by Aqua New York, TCE was detected in two public supply wells in the Aqua New York Seaman's Neck Road wellfield (downgradient of Outpost Wells 3-1 and 3-2). Specifically TCE was detected in Supply Well 3S at 0.64 µg/L in September 2006 and in Supply Well 4S at 0.5 µg/L in February 2007. A field investigation to delineate TCE in groundwater near the Aqua New York Seaman's Neck Road wellfield is currently planned by the Navy.

5.3 Vinyl Chloride Monomer

Vinyl chloride monomer (VCM) was detected in Well 3 during this period and the Year 2008, but was not detected in the other remedial wells or monitoring wells sampled this period. Implementation of remediation of groundwater to address VCM upgradient (northwest) of Well 3 is currently underway by Occidental Chemical Corporation (OCC) under USEPA oversight.

5.4 Cadmium and Chromium

Cadmium and chromium analytical results for Year 2008 are provided in prior reports (ARCADIS of New York, Inc. 2008a; c). Trend analyses of chromium in wells monitored are provided on Figures 13 and 14. While cadmium trends are shown on Figure 12.

No cadmium exceedances were detected in Wells GM-78S and GM-78I, downgradient of former Northrop Grumman Plant 2.

Chromium concentrations for the wells near former Northrop Grumman Plant 2 (MW-01GF and MW-02GF) continued to be below the SCG (Figure 13). Since 2006, the chromium concentration trends in the wells near former Northrop Grumman Plant 1 have been stable to decreasing over time. Notably, the Cr concentration in Well MW-05 has decreased by a factor of four since late 2005 (Figure 14).

5.5 Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) detected during Year 2008 are provided in Table 9. One TIC was detected in HN-24I. A review of the cumulative TIC data shows no discernable trends in concentrations or consistency in TIC detections.

5.6 QA/QC Samples and Data Validation

The results of analysis of QA/QC(field blank and trip blank) samples from the current period are provided in Table 10.

ARCADIS performed validation of all groundwater quality data collected (including TICs) by following the contract laboratory program national functional guidelines for organic and inorganic data review (USEPA 1999). The quality of the data is considered acceptable with the qualifications indicated on Tables 5 through 10.

6. Annual Groundwater Model Update Evaluation

In accordance with the provisions of the PWSCP, ARCADIS has conducted a 2008 calendar year evaluation to assess the efficacy of the OU2 outpost well network in meeting the objectives set forth in the PWSCP. Specifically, ARCADIS considered public water purveyors well pumpage and water quality data within the area of the NYSDEC-accepted groundwater model domain, as well as water quality data collected by ARCADIS and Northrop Grumman from the OU2 and OU3 (Former Grumman Settling Ponds) groundwater monitoring network (including vertical profile boring data) A comparison of these data with data currently incorporated in both the conceptual site model and the numerical groundwater model was performed. The following discussions describe the water quality and pumpage evaluations and subsequent updates performed in Year 2008.

6.1 Purpose of the Evaluation

The purpose of conducting the evaluation/comparison was to determine if the assigned initial TVOC concentration distribution (the representation of contaminant mass within the aquifer) in the Year 2000 Model was still representative of conditions observed (based on groundwater sampling) between Year 2004 and Year 2007. Likewise, a comparison of model-assigned pumping rates to records of remedial system operation and public supply well pumpage for the same period was made to ensure the model accurately represented present-day (2007) conditions.

6.2 Pumpage Update

A comparison of model-assigned pumping rates to records of both remedial system operation and public supply well pumpage was made to ensure the model accurately represented present-day conditions.

Specifically, average supply well pumping rates for public supply wells from Year 2004 through the end of Year 2007 were computed for each public supply and remedial well located within the model domain. The computed rates were then compared to the model assigned rates. In general, significant differences (defined as differences greater than 30 percent) in pumping rates were noted throughout the data set. As a result, the pumping rates for all production wells (remedial and supply) were modified to reflect actual 2007 rates.

The groundwater flow model was then re-run incorporating the updated pumping rates. The resulting head distribution and flow field was then reviewed. Simulation results indicated that the model accurately represented actual flow field conditions on a regional scale; the effect of the revised pumping rates on the overall flow field was minimal. However, potentially significant changes proximal to production wells could exist and need to be fully evaluated.

6.3 TVOC Distribution Update

Groundwater quality data (from the beginning of 2004 through the end of 2007) was compared to TVOC concentration distributions in the existing Grumman Regional Groundwater Model (Year 2000 Model). The water quality data was comprised of data collected by ARCADIS for Northrop Grumman during routine groundwater sampling rounds and the sampling of vertical profile borings (VPBs) and analytical water quality results supplied by municipal water suppliers.

The evaluation process consisted of the following:

1. Groundwater quality data from the sampling of monitoring and supply wells and vertical profile borings was compiled from sampling events between early Year 2004 and the end of Year 2007.

2. For monitoring and supply wells, when multiple data collection events occurred during this period, the value used to represent TVOC concentrations in the aquifer in the immediate vicinity of the well was a calculated average representative of this time period.

3. For VPBs, each boring generated numerous discrete sample results (samples were typically collected at 10 or 20ft intervals). Rather than averaging this data by location, all the data was used to develop the vertical distribution of VOC impacts at the profiled locations.

4. Based on all the data described above, an external software package (Environmental Visualization System [EVS]) was then used to develop a three-dimensional representation of the distribution of VOC impacts observed for the 2004-2007 time-period.

5. The project team performed a quality review of the generated plume distribution to ensure that it represented the data it was based on and was consistent with the 2000 plume distribution in terms of the transient transport migration that could have been expected to occur between the two time periods.

6. The 2004-2007 three dimensional plume representation was then compared to the initial TVOC concentrations assigned in the 2000 Model on a model-wide basis.

Based on this comparison, it was determined that significant revision of the TVOC plume representation in the model was necessary. The EVS-generated 2004-2007 TVOC plume was then imported to the groundwater model to be used as initial conditions for predictive simulations.

6.4 Results

Based on the model update evaluation performed, a model re-run and an update to the outpost well monitoring program, per the provisions in the PWSCP, is recommended.

7. Summary and Conclusions

1. The following data indicate that the OU2 groundwater remedy continues to meet remedial performance goals for Year 2008.

   a. During the current period, the OU2 remedial wells pumped 487 MG, or approximately 99 percent of the design volume of groundwater, while the recharge basins received a collective total of 541.7 MG of treated groundwater compared to a design value of 342 MG. For the Year 2008, the OU2 remedial wells pumped 2,032 MG, or slightly less than 100 percent of the design volume of groundwater, while the recharge basins received approximately 1,957.3 MG of treated groundwater, compared to a design value of 1409 MG.

b. Based on data presented in prior reports, OU2 remedial well specific capacities remain above the minimum required to sustain the design pumping rates.

c. Approximately 3,308 lbs of VOCs were removed from the aquifer and treated by the on-site portion of the OU2 groundwater remedy during the current period. In Year 2008, approximately 13,122 lbs of VOCs were removed from the aquifer and treated, and approximately 133,944 lbs of VOCs were removed and treated since full-time system startup in November 1998.

d. The treatment efficiencies of both groundwater treatment systems remain above 99 percent for the current period.

2. The following data indicate that the OU2 groundwater remedy continues to meet remedial effectiveness goals for Year 2008.

   a. The hydraulic data indicate hydraulic containment has been achieved in a manner consistent with previous years.

   b. Wells immediately downgradient of the hydraulic barrier show no or trace VOC concentrations or decreasing VOC concentration trends. Groundwater quality data indicates that bifurcation of the VOC plume is occurring in the deep and D2 zones south of the hydraulic barrier.

3. Other significant findings and conclusions with respect to groundwater are summarized as follows:

   a. Based data for Year 2008, in the shallow, intermediate, and deep zones, the majority of wells located along the Northrop Grumman site perimeter showed trace or non-detectable concentrations of VOCs.

   b. The majority of D2 wells located along and immediately downgradient of the Northrop Grumman site southern boundary exhibit stable or decreasing concentrations of VOCs. Such wells are located within the capture zone of the remedial wells. Wells located in areas not actively remediated (further downgradient of the Northrop Grumman site) exhibit concentrations indicative of expected VOC plume heterogeneity. Additional investigation of groundwater in the GM-75D2 Area and remediation of deep/D2 zone groundwater in the GM-38 Area will be performed by the Navy.

c. Site-related VOCs were detected in Outpost Wells OW1-1 and OW1-3. The remaining outpost wells currently monitored exhibited no VOC detections. Aqua New York Seaman's Neck Road wellfield (downgradient of Wells OW3-1 and OW3-2) has exhibited trace TCE concentrations in the two supply wells. These detections are currently being investigated by the Navy.

d. The Cd/Cr analytical results from groundwater monitoring wells around and downgradient of former Plant 2 indicated Cd close to or below the SCG. Cr concentrations continue to be below the SCG. Based on these data, the requirements for post-closure Cd/Cr monitoring of former Plant 2 have been met.

e. Cr concentrations near former Plant 1 continue to exhibit stable to declining trends.

8. Recommendations

Based on the results included in this report, ARCADIS recommends the following:

1. The groundwater monitoring of wells at former Plant 2 for Cd/Cr can be discontinued at this time.

2. The current model should be re-run and the outpost well monitoring program should be updated (if required), per the provisions in the PWSCP.

9. References

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Table 1. Operational Summary for the On-Site Portion of the OU2 Groundwater Remedy, Fourth Quarter 2008, Year 2008, and Period of Record, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Identification	Design Pumping/ Recharge Rate [a] (gpm)	4th Quarter Actual Average Pumping/Recharge Rate [b] (gpm)	4th Quarter Design Total Pumpage/Recharge (MG)	4th Quarter Actual Total Pumpage/ Recharge (MG)	4th Quarter Percent of Total Design Pumpage/ Recharge	Annual 2008 Design Total Pumpage/Recharge (MG)	Annual 2008 Actual Total Pumpage/Recharge (MG)	Annual 2008 Percent of Total Design Pumpage/ Recharge	4th Quarter TCE Concentration (ug/L)	4th Quarter TVOC Concentration [c] (ug/L)	4th Quarter 2008 VOC Mass Removed [d] (lbs)	Annual 2008 VOC Mass Removed [d] (lbs)	Cumulative VOC Mass Removed [g] (lbs)
Remedial Wells		**Groundwater Removed from Aquifer**											
Well 1	800	861	103.7	110.5	107%	426.2	439.5	103%	400	500	460	1,794	29,385
Well 3	700	689	90.7	88.4	97%	373.0	373.8	100%	2,900	3,080	2,267	9,023	52,976
Well 17	1,000	1,339	129.6	161.4	125%	532.8	579.9	109%	240	264	355	1,339	44,269
Well 18	600	709	77.8	14.7	19%	319.7	229.5	72%	100	121	15	237	4,196
Well 19	700	951	90.7	112.2	124%	373.0	408.9	110%	200	226	211	729	3,118
Rounded Totals:	**3,800**	**4,549**	**493**	**487**	**99%**	**2,025**	**2,032**	100%	--	--	**3,308**	**13,122**	**133,944**
Recharge Basins [a]		**Treated Water Recharged to Aquifer**											
West Recharge Basins	412	1,383	53	179.2	338%	220	534.2	243%	--	--	--	--	--
South Recharge Basins	2,231	2,797	289.1	362.5	125%	1,188.7	1,423.1	120%	--	--	--	--	--
Rounded Totals:	**2,643**	**4,180**	**342**	**541.7**	**158%**	**1,409**	**1,957.3**	**139%**	--	--	--	--	--
Treated Water Sent to Calpine													
Calpine Demand	600-1000	167	78-130	21.4	--	320-533	187.6	--	--	--	--	--	--
Treatment Efficiencies		**Average SPDES Outfall TVOC Concentrations Fourth Quarter 2008 (ug/L)[f]**											
Tower 96 System Efficiency [e]:		**>99.9%**	--	**<0.5**	--	--	--	--	--	--	--	--	--
Tower 102 System Efficiency [e]:		**99.9%**	--	**0.2**	--	--	--	--	--	--	--	--	--

see footnotes on last page

Table 1. Operational Summary for the On-Site Portion of the OU2 Groundwater Remedy, Fourth Quarter 2008, Year 2008, and Period of Record, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

(a) - Remedial well pumping rates based on computer modeling (ARCADIS G& M, Inc. 2003c). Acceptable minimum recharge rates based on computer modeling (ARCADIS G&M, Inc. 2004b). Design pumping and recharge rates were modified in April 2005. Recharge includes remedial well pumpage (minus Calpine demand, OCC/RUCO biosparge system demand, and pipe loss) and incidental runoff from precipitation. Current average recharge rates have been determined using the entire 90-day span of time as opposed to current average pumping rates, which account for varying amounts of downtime, as indicated below.

b) - OU2 wells were operational during the Fourth Quarter 2008, at the following percentages: Well 1 (99%), Well 3 (99%); Well 17 (93%), Well-18 (16%), and Well 19 (91%). The Actual Average Pumping Rates and rate of treated water sent to Calpine are for when the wells are pumping.

(c) - The TVOC concentration for each well was calculated based on Fourth Quarter 2008 groundwater monitoring data (Table 7).

(d) - TVOC mass removed is based on the TVOC data given above and the following formula:

(TVOC concentration in ug/L) X (gallons pumped) X (3.785 L/gal) X (1 x 10^{-6} g/ug) X (2.2 x 10^{-3} lb/g)

(e) Air stripping efficiency calculated from values above and in Table 2 using the following formula:

$$1 - \left[\left(\frac{\text{Average SPDES TVOC Concentration at Outfall}}{\frac{[(\text{TVOC}_{\text{Well 1}} \times Q_{\text{Well 1}}) + (\text{TVOC}_{\text{Well 2}} \times Q_{\text{Well 2}})]}{(Q_{\text{Well 1}} + Q_{\text{Well 2}})}} \right) \right]$$

When non-detectable levels of VOCs are found in the effluent, a value of zero is used to estimate the efficiency of the air stripper.

(f) Towers 96 and 102 outfalls are identified as Outfalls 005 and 006, respectively (commonly known as the Plant 5 Recharge Basins and South Recharge Basins, respectively). Complete SPDES reporting provided to NYSDEC by Northrop Grumman under separate cover.

--	Not Available or Not Applicable	lb/g	pounds per gram
TVOC	Total Volatile Organic Compounds	lbs	pounds
g/ug	grams per microgram	MG	Million Gallons
gpm	gallons per minute	ug/L	micrograms per liter
L/gal	Liters per gallon	OU2	Operable Unit 2
SPDES	State Pollutant Discharge Elimination System	Q	Pumping Rate
Northrop Grumman	Northrop Grumman Systems Corporation	NYSDEC	New York State Department of Environmental Conservation

Table 2. Water-Level Measurement Data, April 10, 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Well Identification	Measuring Point Elevation (ft msl)	Depth to Water (ft bmp)	Water-Level Elevation (ft msl)
Shallow Wells			
FW-03	124.30	52.58	71.72
N-9921	94.23	29.09	65.14
N-10597	109.85	38.57	71.28
N-10600	102.41	35.94	66.47
N-10631	103.47	35.25	68.22
N-10633	103.80	35.57	68.23
N-10634	101.20	36.45	64.75
N-10821	91.58	31.73	--
GM-15S	109.44	41.25	68.19
GM-16SR	115.86	44.71	71.15
GM-17SR	115.79	44.63	71.16
GM-18S	107.60	38.41	69.19
GM-19S	109.86	38.57	71.29
GM-21S	105.81	30.76	75.05
GM-78S	104.94	37.95	66.99
GM-79S (N-10628)	100.88	36.71	64.17
HN-24S	120.32	48.82	71.50
HN-40S	116.35	45.52	70.83
HN-42S	120.32	47.73	72.59
MW-3R	101.45	31.57	69.88
Intermediate Wells			
N-10624	93.61	28.62	64.99
GM-15I	109.25	41.07	68.18
GM-16I	115.81	44.83	70.98
GM-17I	115.83	44.80	71.03
GM-18I	109.03	39.48	69.55
GM-19I	109.86	39.50	70.36
GM-20I	103.88	33.11	70.77
GM-21I	105.72	33.62	72.10
GM-74I	107.42	35.45	71.97
GM-78I	105.06	38.23	66.83
GM-79I	100.88	37.03	63.85
HN-24I	125.80	52.29	73.51
HN-40I	115.91	45.31	70.60
HN-42I	119.61	47.04	72.57

See notes on last page

Table 2. Water-Level Measurement Data, April 10, 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Well Identification	Measuring Point Elevation (ft msl)	Depth to Water (ft bmp)	Water-Level Elevation (ft msl)
Deep Wells			
N-10627	93.70	29.17	64.53
GM-13D	113.97	42.91	71.06
GM-15D	109.84	43.68	66.16
GM-17D	115.68	46.96	68.72
GM-18D	108.88	42.18	66.70
GM-20D	103.92	34.93	68.99
GM-21D	105.66	39.70	65.96
GM-34D	71.19	11.41	59.78
GM-36D	91.63	32.08	59.55
GM-37D	97.26	36.04	61.22
GM-38D	91.75	35.23	56.52
$GM\text{-}39D_A$ [4]	102.23	35.58	66.65
$GM\text{-}39D_B$ [4]	102.08	38.55	63.53
GM-73D	104.87	40.72	64.15
GM-74D	107.43	41.65	65.78
GM-79D	101.25	38.45	62.80
HN-29D	115.11	not taken	--
Deep2 Wells			
GM-15D2	109.78	46.35	63.43
GM-33D2	106.85	46.19	60.66
GM-34D2 [5]	71.19	12.94	58.25
GM-35D2	96.28	36.51	59.77
GM-36D2	91.60	34.18	57.42
GM-37D2	97.17	36.64	60.53
GM-38D2	91.56	37.42	54.14
GM-70D2	99.58	37.88	61.70
GM-71D2	98.45	38.36	60.09
GM-73D2	104.62	42.75	61.87
GM-74D2	107.36	48.22	59.14
GM-75D2	93.63	32.18	61.45
Well 1 [1]	116.78	74.00	42.78
Well 3 [2]	117.78	98.00	19.78
Well 17 [3]	104.10	60.00	44.10
Well 18 [3]	110.00	62.00	48.00
Well 19	108.70	63.13	45.57

See notes on last page

Table 2. Water-Level Measurement Data, April 10, 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Well Identification	Measuring Point Elevation (ft msl)	Depth to Water (ft bmp)	Water-Level Elevation (ft msl)
Outpost Wells			
BPOW1-1	73.65	26.60	47.05
BPOW1-2	73.54	27.13	46.41
BPOW1-3	73.37	27.11	46.26
BPOW2-1	60.06	not taken	--
BPOW2-2	59.96	not taken	--
BPOW3-1	63.19	23.75	39.12
BPOW3-2	63.72	25.00	38.90
BPOW4-1	67.34	24.07	43.27
BPOW4-2	67.18	24.82	42.36

(1) Water level was measured by inflating airline set at 119 ft bmp (gauge at wellhead) and subtracting the reading on the gauge from 120 to obtain the depth to water in ft bmp.

(2) Water level was measured by inflating an airline set at 150 ft bmp (gauge at well head) and subtracting the reading on the gauge from 150 to obtain the depth to water in ft bmp.

(3) Water level was measured by inflating airline set at 110 ft bmp (gauge at wellhead) and subtracting the reading on the gauge from 110 to obtain the depth to water in ft bmp.

(4) Wells GM-39_A and GM-39_B are screened at the approximate midpoint and basal portion of the deep zone, respectively.

ft msl feet relative to mean sea level

ft bmp feet below measuring point

-- Not Measured

Table 3. Water-Level Measurement Data and Remedial Well Specific Capacities, August 29, 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Well Identification	Measuring Point Elevation (ft msl)	Depth to Water (ft bmp)	Water-Level Elevation (ft msl)
Shallow Wells			
FW-03	124.30	53.52	70.78
N-9921	94.23	31.05	63.18
N-10597	109.85	39.18	70.67
N-10600	102.41	37.25	65.16
N-10631	103.47	37.40	66.07
N-10633	103.80	37.50	66.30
N-10634	101.20	38.52	62.68
N-10821	91.58	33.65	57.93
GM-15S	109.44	42.95	66.49
GM-16SR	115.86	45.41	70.45
GM-17SR	115.79	43.45	72.34
GM-18S	107.60	39.68	67.92
GM-19S	109.86	40.15	69.71
GM-21S	105.81	33.53	72.28
GM-78S	104.94	39.69	65.25
GM-79S (N-10628)	100.88	38.66	62.22
HN-24S	120.32	49.70	70.62
HN-40S	116.35	46.72	69.63
HN-42S	120.32	48.92	71.40
MW-3R	101.45	34.36	67.09
Intermediate Wells			
N-10624	93.61	30.67	62.94
GM-15I	109.25	42.74	66.51
GM-16I	115.81	45.42	70.39
GM-17I	115.83	43.72	72.11
GM-18I	109.03	40.70	68.33
GM-19I	109.86	41.29	68.57
GM-20I	103.88	36.13	67.75
GM-21I	105.72	36.20	69.52
GM-74I	107.42	37.70	69.72
GM-78I	105.06	39.95	65.11
GM-79I	100.88	39.08	61.80
HN-24I	125.80	Not taken	--
HN-40I	115.91	46.62	69.29
HN-42I	119.61	48.30	71.31

See notes on last page

Table 3. Water-Level Measurement Data and Remedial Well Specific Capacities, August 29, 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Well Identification	Measuring Point Elevation (ft msl)	Depth to Water (ft bmp)	Water-Level Elevation (ft msl)
Deep Wells			
N-10627	93.70	31.21	62.49
GM-13D	113.97	44.05	69.92
GM-15D	109.84	45.55	64.29
GM-17D	115.68	47.61	68.07
GM-18D	108.88	43.71	65.17
GM-20D	103.92	37.69	66.23
GM-21D	105.66	41.70	63.96
GM-34D	71.19	13.63	57.56
GM-36D	91.63	34.36	57.27
GM-37D	97.26	38.47	58.79
GM-38D	91.75	38.53	53.22
GM-39D$_A$ [4]	102.23	37.64	64.59
GM-39D$_B$ [4]	102.08	40.68	61.40
GM-73D	104.87	42.54	62.33
GM-74D	107.43	43.53	63.90
GM-79D	101.25	40.69	60.56
HN-29D	115.11	44.72	70.39
Deep2 Wells			
GM-15D2	109.78	48.60	61.18
GM-33D2	106.85	49.09	57.76
GM-34D2	71.19	15.91	55.28
GM-35D2	96.28	39.17	57.11
GM-36D2	91.60	37.50	54.10
GM-37D2	97.17	39.53	57.64
GM-38D2	91.56	42.04	49.52
GM-70D2	99.58	40.19	59.39
GM-71D2	98.45	41.21	57.24
GM-73D2	104.62	44.89	59.73
GM-74D2	107.36	47.71	59.65
GM-75D2	93.63	34.45	59.18
Well 1 [1]	116.78	74.00	42.78
Well 3 [2]	117.78	102.00	NA
Well 17 [3]	104.10	68.00	36.10
Well 18 [3]	110.00	Not taken	--
Well 19	108.70	70.62	38.08

See notes on last page

Table 3. Water-Level Measurement Data and Remedial Well Specific Capacities, August 29, 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Well Identification	Measuring Point Elevation (ft msl)	Depth to Water (ft bmp)	Water-Level Elevation (ft msl)
Outpost Wells			
BPOW1-1	73.65	29.20	44.45
BPOW1-2	73.54	31.47	42.07
BPOW1-3	73.37	31.57	41.80
BPOW2-1	60.06	Not taken	--
BPOW2-2	59.96	Not taken	--
BPOW3-1	63.19	27.34	35.85
BPOW3-2	63.72	28.83	34.89
BPOW4-1	67.34	28.88	38.46
BPOW4-2	67.18	27.95	39.23

Remedial Well Specific Capacities [5]

Well ID	Pumping Depth to Water (ft bls)	Static Depth to Water (ft bls) [6]	Drawdown (s) (ft)	Third Quarter 2008 Pumping Rate (Q)(gpm) [7]	Specific Capacity (Q/s)(gpm/ft) [7]
Well 1	74.00	55.75	18.25	848	46.47
Well 3	102.00	55.40	46.60	732	15.71
Well 17	68.00	44.12	23.88	1168	48.91
Well 18	NA	50.15	--	NA	--
Well 19	70.62	49.13	21.49	976	45.42

Notes

Water levels measured on August 29, 2008 when Well 18 was not running.

(1) Water level was measured by inflating airline set at 119 ft bmp (gauge at wellhead) and subtracting the reading on the gauge from 120 to obtain the depth to water in ft bmp.

(2) Water level was measured by inflating an airline set at 150 ft bmp (gauge at well head) and subtracting the reading on the gauge from 150 to obtain the depth to water in ft bmp.

(3) Water level was measured by inflating airline set at 110 ft bmp (gauge at wellhead) and subtracting the reading on the gauge from 110 to obtain the depth to water in ft bmp.

(4) Wells GM-39_A and GM-39_B are screened at the approximate midpoint and basal portion of the deep zone, respectively.

(5) Specific capacity values are qualitative in nature, due to fluctuations in static water levels. Sharp declines in specific capacity could indicate the need for well redevelopment.

(6) For Wells 17, 18, and 19 baseline static depth to water measurements were collected in 1997 prior to OU2 system start-up; baseline pumping depth to water and rate measurements (not shown) used with baseline static depth to water measurements to calculate baseline specific capacities, were collected in 1999 during OU2 system operation.
For Well 1, baseline static depth to water and specific capacity measurements were collected in 2001, during pump replacement.
For Well 3, baseline static depth to water and specific capacity measurements were collected in March-April 2005, during re-development activities.

(7) Pumping rate determined at time of pumping depth to water measurement.

ft msl feet relative to mean sea level
ft bmp feet below measuring point
-- Not Measured

Table 4. Comparison of August 29, 2008 Vertical Hydraulic Gradients to Model-Predicted Gradients, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Well Pair ID	Well Screen Midpoint Elevation (ft msl)	Water-Level Elevation (ft msl)	Vertical Gradient [2] (ft/ft) * 10^{-3}	Model-Predicted, OU2 Steady-State Vertical Gradient (ft/ft) * 10^{-3}	Increase Compared to Model-Predicted, Steady-State Vertical Gradient
Shallow-Intermediate Wells					
GM-15S	34.53	66.49			
GM-15I	9.29	66.51	-0.79	4.20	-4.99
GM-16SR	66.77	70.45			
GM-16I	-24.19	70.39	0.66	1.11	-0.45
GM-17SR	50.79	72.34			
GM-17I	5.83	72.11	5.12	4.50	0.62
GM-19S	59.36	69.71			
GM-19I	-25.14	68.57	13.49	2.44	11.05
GM-21S	40.81	72.28			
GM-21I	-29.28	69.52	39.38	18.44	20.94
GM-78S	39.94	65.25			
GM-78I	5.56	65.11	4.07	8.73	-4.66
GM-79S	35.88	62.22			
GM-79I	-73.91	61.80	3.83	0.91	2.92
Intermediate-Deep Wells					
GM-15I	9.29	66.51			
GM-15D	-227.34	64.29	9.38	6.52	2.86
GM-17I	5.83	72.11			
GM-17D	-172.32	68.07	22.68	7.86	14.82
GM-18I	9.03	68.33			
GM-18D	-186.12	65.17	16.19	7.74	8.45
GM-20I	3.88	67.75			
GM-20D	-117.08	66.23	12.57	18.22	-5.65
GM-21I	-29.28	69.52			
GM-21D	-177.34	63.96	37.55	43.97	-6.42
GM-74I	8.42	69.72			
GM-74D	-192.57	63.90	28.96	20.17	8.79
GM-79I	-73.91	61.80			
GM-79D	-183.75	60.56	11.29	15.48	-4.19

See notes on last page

Table 4. Comparison of August 29, 2008 Vertical Hydraulic Gradients to Model-Predicted Gradients, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Well Pair ID	Well Screen Midpoint Elevation (ft msl)	Water-Level Elevation (ft msl)	Vertical Gradient [2] (ft/ft) * 10^{-3}	Model-Predicted, OU2 Steady-State Vertical Gradient (ft/ft) * 10^{-3}	Increase Compared to Model-Predicted, Steady-State Vertical Gradient
Deep-Deep 2 Wells					
GM-15D	-227.34	64.29			
GM-15D2	-436.41	61.18	14.88	14.19	0.69
GM-18D	-186.12	65.17			
GM-33D2	-403.15	57.76	34.14	12.30	21.84
GM-34D	-242.81	57.56			
GM-34D2	-443.81	55.28	11.34	2.33	9.01
GM-36D	-117.37	57.27			
GM-36D2	-443.40	54.10	9.72	2.75	6.97
GM-37D	-154.74	58.79			
GM-37D2	-282.83	57.64	8.98	3.88	5.10
GM-38D	-238.25	53.22			
GM-38D2	-393.44	49.52	23.84	6.08	17.76
GM-39D$_A$ [1]	-169.77	64.59			
GM-39D$_B$ [1]	-312.92	61.40	22.28	13.46	8.82
GM-73D	-301.13	62.33			
GM-73D2	-437.38	59.73	19.08	18.78	0.30
GM-74D	-192.57	63.90			
GM-74D2	-444.64	59.65	16.86	28.26	-11.40
N-10627	-198.80	62.49			
GM-75D2	-421.37	59.18	14.87	2.25	12.62

Notes

(1) Wells GM-39D$_A$ and GM-39D$_B$ are screened at the approximate midpoint and basal portion of the deep zone, respectively.

(2) Vertical hydraulic gradients are calculated as follows:

$$\frac{(\text{Water-Level Elevation}_1 - \text{Water-Level Elevation}_2)}{(\text{Screen Midpoint Elevation}_1 - \text{Screen Midpoint Elevation}_2)}$$

$_1$ - Shallower well of pairing
$_2$ - Deeper well of pairing
A positive "+" gradient value indicates a downward hydraulic gradient.
A negative "-" gradient value indicates an upward hydraulic gradient.

ft msl feet relative to mean sea level

ARCADIS

Table 5. Concentration of Volatile Organic Compounds Detected in Intermediate Monitoring Wells, Fourth Quarter 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria[1] and Guidance Values (ug/l)	Well:	GM-20I	GM-21I	GM-79I
		Sample ID:	GM-20I	GM-21I	GM-79I
		Date:	12/30/2008	12/30/2008	12/15/2008
1,1,1-Trichloroethane	5		< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	5		< 5	< 5	< 5
1,1,2-Trichloroethane	5		< 5	< 5	< 5
1,1-Dichloroethane	5		< 5	< 5	< 5
1,1-Dichloroethene	5		< 5	< 5	< 5
1,2-Dichloroethane	5		< 5	< 5	< 5
1,2-Dichloropropane	5		< 5	< 5	< 5
2-Butanone	50		< 50	< 50	< 50
2-Hexanone	50		< 50	< 50	< 50
4-methyl-2-pentanone	50		< 50	< 50	< 50
Acetone	50		< 50	< 50	< 50
Benzene	0.7		< 0.7	< 0.7	< 0.7
Bromodichloromethane	50		< 5	< 5	< 5
Bromoform	50		< 5	< 5	< 5
Bromomethane	5		< 5	< 5	< 5
Carbon Disulfide	50		< 50	< 50	< 50
Carbon tetrachloride	5		< 5	< 5	< 5
Chlorobenzene	5		< 5	< 5	< 5
Chlorodibromomethane	5		< 5	< 5	< 5
Chloroethane	5		< 5	< 5	< 5
Chloroform	7		< 7	< 7	< 7
Chloromethane	5		< 5	< 5	< 5
cis-1,2-dichloroethene	5		< 5	< 5	< 5
cis-1,3-dichloropropene	5		< 5	< 5	< 5
Dibromochloromethane	5		< 5	< 5	< 5
Ethylbenzene	5		< 5	< 5	< 5
Methylene Chloride	5		< 5	< 5	< 5
Styrene	5		< 5	< 5	< 5
Tetrachloroethene	5		< 5	< 5	< 5
Toluene	5		< 5	< 5	< 5
trans-1,2-dichloroethene	5		< 5	< 5	< 5
trans-1,3-dichloropropene	5		< 5	< 5	< 5
Trichloroethylene	5		< 5	< 5	< 5
Trichlorotrifluoroethane (Freon 113)	5		< 5	< 5	< 5
Vinyl Chloride	2		< 2	< 2	< 2
Xylene-o	5		< 5	< 5	< 5
Xylenes - m,p	5		< 5	< 5	< 5
Total VOCs			0	0	0

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller, Inc. 2000) that are based on the NYSDEC TOGs (NYSDEC 1998); most stringent value listed.

NYSDEC New York State Department of Environmental Conservation

TOGs Technical and Operational Guidance Series

ug/L Micrograms per liter

VOCs Volatile Organic Compounds

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Table 6. Concentration of Volatile Organic Compounds Detected in Deep Monitoring Wells, Fourth Quarter 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria[1] and Guidance Values (ug/l)	Well:	GM-20D	GM-21D	GM-34D	GM-79D
		Sample ID:	GM-20D	GM-21D	GM-34D	GM-79D
		Date:	12/30/2008	12/15/2008	12/29/2008	12/15/2008
1,1,1-Trichloroethane	5		< 5	< 5	< 25	< 5
1,1,2,2-Tetrachloroethane	5		< 5	< 5	< 25	< 5
1,1,2-Trichloroethane	5		< 5	< 5	< 25	< 5
1,1-Dichloroethane	5		< 5	< 5	< 25	< 5
1,1-Dichloroethene	5		< 5	< 5	< 25	< 5
1,2-Dichloroethane	5		< 5	< 5	< 25	< 5
1,2-Dichloropropane	5		< 5	< 5	< 25	< 5
2-Butanone	50		< 50	< 50	< 250	< 50
2-Hexanone	50		< 50	< 50	< 250	< 50
4-methyl-2-pentanone	50		< 50	< 50	< 250	< 50
Acetone	50		< 50	< 50	< 250	< 50
Benzene	0.7		< 0.7	< 0.7	< 3.5	< 0.7
Bromodichloromethane	50		< 5	< 5	< 25	< 5
Bromoform	50		< 5	< 5	< 25	< 5
Bromomethane	5		< 5	< 5	< 25	< 5
Carbon Disulfide	50		< 50	< 50	< 250	< 50
Carbon tetrachloride	5		< 5	< 5	< 25	< 5
Chlorobenzene	5		< 5	< 5	< 25	< 5
Chlorodibromomethane	5		< 5	< 5	< 25	< 5
Chloroethane	5		< 5	< 5	< 25	< 5
Chloroform	7		< 7	< 7	< 35	< 7
Chloromethane	5		< 5	< 5	< 25	< 5
cis-1,2-dichloroethene	5		< 5	< 5	< 25	< 5
cis-1,3-dichloropropene	5		< 5	< 5	< 25	< 5
Dibromochloromethane	5		< 5	< 5	< 25	< 5
Ethylbenzene	5		< 5	< 5	< 25	< 5
Methylene Chloride	5		< 5	< 5	< 25	< 5
Styrene	5		< 5	< 5	< 25	< 5
Tetrachloroethene	5		< 5	< 5	< 25	< 5
Toluene	5		< 5	< 5	< 25	< 5
trans-1,2-dichloroethene	5		< 5	< 5	< 25	< 5
trans-1,3-dichloropropene	5		< 5	< 5	< 25	< 5
Trichloroethylene	5		< 5	< 5	**790**	**48**
Trichlorotrifluoroethane (Freon 113)	5		< 5	< 5	< 25	< 5
Vinyl Chloride	2		< 2	< 2	< 10	< 2
Xylene-o	5		< 5	< 5	< 25	< 5
Xylenes - m,p	5		< 5	< 5	< 25	< 5
Total VOCs			0	0	**790**	**48**

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller, Inc. 2000) that are based on the NYSDEC TOGs (NYSDEC 1998); most stringent value listed.

Bold **Constituent detected**

	Constituent exceeds SCG value
NYSDEC	New York State Department of Environmental Conservation
TOGs	Technical and Operational Guidance Series
ug/L	Micrograms per liter
VOCs	Volatile Organic Compounds

Table 7. Concentration of Volatile Organic Compounds Detected in Deep2 Monitoring Wells, and Groundwater Remedial Wells and Treatment Systems, Fourth Quarter 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria[1] and Guidance Values (ug/l)	Well:	GM-33D2	GM-34D2	GM-35D2	GM-75D2	WELL 17	WELL 18
		Sample ID:	GM-33D-2	GM-34D-2	GM-35D-2	GM-75D-2	WELL 17	WELL 18
		Date:	12/17/2008	12/29/2008	12/30/2008	12/17/2008	12/17/2008	12/17/2008
1,1,1-Trichloroethane	5		< 5	< 10	< 10	< 5	< 10	< 5
1,1,2,2-Tetrachloroethane	5		< 5	< 10	< 10	< 5	< 10	< 5
1,1,2-Trichloroethane	5		< 5	< 10	< 10	< 5	< 10	< 5
1,1-Dichloroethane	5		< 5	< 10	< 10	< 5	< 10	< 5
1,1-Dichloroethene	5		< 5	< 10	< 10	< 5	< 10	**6.2**
1,2-Dichloroethane	5		< 5	< 10	< 10	< 5	< 10	< 5
1,2-Dichloropropane	5		< 5	< 10	< 10	< 5	< 10	< 5
2-Butanone	50		< 50	< 100	< 100	< 50	< 100	< 50
2-Hexanone	50		< 50	< 100	< 100	< 50	< 100	< 50
4-methyl-2-pentanone	50		< 50	< 100	< 100	< 50	< 100	< 50
Acetone	50		< 50	< 100	< 100	< 50	< 100	< 50
Benzene	0.7		< 0.7	< 1.4	< 1.4	< 0.7	< 1.4	< 0.7
Bromodichloromethane	50		< 5	< 10	< 10	< 5	< 10	< 5
Bromoform	50		< 5	< 10	< 10	< 5	< 10	< 5
Bromomethane	5		< 5	< 10	< 10	< 5	< 10	< 5
Carbon Disulfide	50		< 50	< 100	< 100	< 50	< 100	< 50
Carbon tetrachloride	5		< 5	< 10	< 10	< 5	< 10	< 5
Chlorobenzene	5		< 5	< 10	< 10	< 5	< 10	< 5
Chlorodibromomethane	5		< 5	< 10	< 10	< 5	< 10	< 5
Chloroethane	5		< 5	< 10	< 10	< 5	< 10	< 5
Chloroform	7		< 7	< 14	< 14	< 7	< 14	< 7
Chloromethane	5		< 5	< 10	< 10	< 5	< 10	< 5
cis-1,2-dichloroethene	5		< 5	< 10	< 10	< 5	< 10	< 5
cis-1,3-dichloropropene	5		< 5	< 10	< 10	< 5	< 10	< 5
Dibromochloromethane	5		< 5	< 10	< 10	< 5	< 10	< 5
Ethylbenzene	5		< 5	< 10	< 10	< 5	< 10	< 5
Methylene Chloride	5		< 5	< 10	< 10	< 5	< 10	< 5
Styrene	5		< 5	< 10	< 10	< 5	< 10	< 5
Tetrachloroethene	5		**11**	**10**	< 10	< 5	**24**	**15**
Toluene	5		< 5	< 10	< 10	< 5	< 10	< 5
trans-1,2-dichloroethene	5		< 5	< 10	< 10	< 5	< 10	< 5
trans-1,3-dichloropropene	5		< 5	< 10	< 10	< 5	< 10	< 5
Trichloroethylene	5		**57**	**290**	**210**	**190**	**240**	**100**
Trichlorotrifluoroethane (Freon 113)	5		**23**	< 10	< 10	< 5	< 10	< 5
Vinyl Chloride	2		< 2	< 4	< 4	< 2	< 4	< 2
Xylene-o	5		< 5	< 10	< 10	< 5	< 10	< 5
Xylenes - m,p	5		< 5	< 10	< 10	< 5	< 10	< 5
Total VOCs			**91**	**300**	**210**	**190**	**264**	**121.2**

See last page for notes

Table 7. Concentration of Volatile Organic Compounds Detected in Deep2 Monitoring Wells, and Groundwater Remedial Wells and Treatment Systems, Fourth Quarter 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria[1] and Guidance Values (ug/l)	Well: Sample ID: Date:	WELL 19 WELL 19 12/17/2008	T- 102 EFF TOWER 102 EFF 12/17/2008	GP-1 WELL 1 12/17/2008	GP-3 WELL 3 12/17/2008	T- 96 EFF TOWER 96 EFF 12/17/2008
1,1,1-Trichloroethane	5		< 5	< 5	< 13	< 100	< 5
1,1,2,2-Tetrachloroethane	5		< 5	< 5	< 13	< 100	< 5
1,1,2-Trichloroethane	5		< 5	< 5	< 13	< 100	< 5
1,1-Dichloroethane	5		< 5	< 5	< 13	< 100	< 5
1,1-Dichloroethene	5		< 5	< 5	< 13	< 100	< 5
1,2-Dichloroethane	5		< 5	< 5	< 13	< 100	< 5
1,2-Dichloropropane	5		< 5	< 5	< 13	< 100	< 5
2-Butanone	50		< 50	< 50	< 130	< 1000	< 50
2-Hexanone	50		< 50	< 50	< 130	< 1000	< 50
4-methyl-2-pentanone	50		< 50	< 50	< 130	< 1000	< 50
Acetone	50		< 50	< 50	< 130	< 1000	< 50
Benzene	0.7		< 0.7	< 0.7	< 1.8	< 14	< 0.7
Bromodichloromethane	50		< 5	< 5	< 13	< 100	< 5
Bromoform	50		< 5	< 5	< 13	< 100	< 5
Bromomethane	5		< 5	< 5	< 13	< 100	< 5
Carbon Disulfide	50		< 50	< 50	< 130	< 1000	< 50
Carbon tetrachloride	5		< 5	< 5	< 13	< 100	< 5
Chlorobenzene	5		< 5	< 5	< 13	< 100	< 5
Chlorodibromomethane	5		< 5	< 5	< 13	< 100	< 5
Chloroethane	5		< 5	< 5	< 13	< 100	< 5
Chloroform	7		< 7	< 7	< 18	< 140	< 7
Chloromethane	5		< 5	< 5	< 13	< 100	< 5
cis-1,2-dichloroethene	5		**18**	< 5	< 13	< 100	< 5
cis-1,3-dichloropropene	5		< 5	< 5	< 13	< 100	< 5
Dibromochloromethane	5		< 5	< 5	< 13	< 100	< 5
Ethylbenzene	5		< 5	< 5	< 13	< 100	< 5
Methylene Chloride	5		< 5	< 5	< 13	< 100	< 5
Styrene	5		< 5	< 5	< 13	< 100	< 5
Tetrachloroethene	5		**7.5**	< 5	**100**	< 100	< 5
Toluene	5		< 5	< 5	< 13	< 100	< 5
trans-1,2-dichloroethene	5		< 5	< 5	< 13	< 100	< 5
trans-1,3-dichloropropene	5		< 5	< 5	< 13	< 100	< 5
Trichloroethylene	5		**200 D**	< 5	**400**	**2900**	< 5
Trichlorotrifluoroethane (Freon 113)	5		< 5	< 5	< 13	< 100	< 5
Vinyl Chloride	2		< 2	< 2	< 5	**180**	< 2
Xylene-o	5		< 5	< 5	< 13	< 100	< 5
Xylenes - m,p	5		< 5	< 5	< 13	< 100	< 5
Total VOCs			**225.5**	0	**500**	**3080**	0

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller, Inc. 2000) that are based on the NYSDEC TOGs (NYSDEC 1998); most stringent value listed.

Bold **Constituent detected**

Constituent exceeds SCG value

NYSDEC New York State Department of Environmental Conservation

TOGs Technical and Operational Guidance Series

ug/L Micrograms per liter

VOCs Volatile Organic Compounds

Table 8. Concentrations of Site-Related Volatile Organic Compounds Detected in Outpost Wells, Fourth Quarter 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York. (1)

CONSTITUENT (Units in ug/L)	NYSDEC Standards Criteria[5] and Guidance Values (ug/l)	Well: Sample ID: Date:	BPOW 1-1 BPOW 1-1 12/18/2008	BPOW 1-2 BPOW 1-2 12/18/2008	BPOW 1-3 BPOW 1-3 12/18/2008	BPOW 3-1 BPOW 3-1 12/23/2008	BPOW 3-2 BPOW 3-2 12/23/2008	BPOW 4-1 BPOW 4-1 12/18/2008	BPOW 4-2 BPOW 4-2 12/18/2008
1,1,1-Trichloroethane	5		**1.8**	< 0.5 U	**2**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2,2-Tetrachloroethane	5		< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2-Trichloroethane	5		< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1-Dichloroethane	5		**1.8**	< 0.5 U	**2**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1-Dichloroethene	5		**1.2**	< 0.5 U	**1.9**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloroethane	5		< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Carbon Tetrachloride	5		< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chlorobenzene	5		< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloroform	7		< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
cis-1,2-Dichloroethene	5		< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichlorotrifluoroethane (Freon 113)	5		< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Tetrachloroethene	5		< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
trans-1,2-Dichloroethene	5		< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichloroethene	5		**1.3**	< 0.5 U	**0.58**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Vinyl Chloride	5		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.5 U
Total Site-Related VOCs [2] [4]:			**6.1**	0	**6.48**	0	0	0	0
TVOC Trigger Value [3]:			**0.6**	**0.6**	**0.6**	**1.5**	**1.5**	**1.5**	**1.5**

Note:

(1) Outpost wells OW2-1 and OW2-2 were not sampled by Northrop Grumman this round, due to ongoing NYSDEC investigation of non-site related VOCs (benzene and methyl tertiary butyl ether) detected in these wells.

(2) Site-related VOCs were established in the Public Water Supply Contingency Plan (PWSCP) (ARCADIS G&M, Inc. 2003).

(3) TVOC Trigger Values were established in the PWSCP (ARCADIS G&M, Inc. 2003).

(4) The TVOC Trigger Value for Cluster 1 was initially exceeded on April 23, 2004; confirmatory sampling and reporting was conducted as per the PWSCP (ARCADIS G&M, Inc. 2003).

(5) Standards, Criteria, and Guidance (SCG) values based on the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller, Inc. 2000) that are based on the NYSDEC TOGs (NYSDEC 1998);most stringent value listed.

Bold **Constituent detected**

NYSDEC New York State Department of Environmental Conservation

TOGs Technical and Operational Guidance Series

TVOC Total Volatile Organic Compounds

ug/L Micrograms per liter

VOCs Volatile Organic Compounds

ARCADIS

Table 9. Concentrations of Tentatively Identified Compounds (TICs) Detected in Groundwater Samples in Year 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Well Identification (units in ug/L)	Sample ID	Sample Date	Trichloromonofluoromethane
HN-24I	HN-24I	3/13/2008	7 JN
HN-24I	REP031308	3/13/2008	8 JN
HN-24I	HN-24I	8/12/2008	8 JN

Notes

TICs are identified based on review of mass spectrometry results via a comprehensive library search of all organic compounds.

ug/L Micrograms per liter

N Presumptive evidence of this constituent. Calibration not run for this constituent; therefore, the result should be used for qualitative purposes only.

J Estimated value

Table 10. Concentrations of Volatile Organic Compounds Detected in Blank Samples, Fourth Quarter 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Constituent (units in ug/L)	Well ID: / Sample ID: / Sample Date:	Trip Blank [1] TB121508-1 12/15/2008	Trip Blank [1] TB121708-A 12/17/2008	Trip Blank[2] TB121808 12/18/2008	Trip Blank[2] TB121908 2/19/2008
1,1,1,2-Tetrachloroethane		--	--	< 0.5	< 0.5
1,1,1-Trichloroethane		< 5	< 5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane		< 5	< 5	< 0.5	< 0.5
1,1,2-Trichloroethane		< 5	< 5	< 0.5	< 0.5
1,1-Dichloroethane		< 5	< 5	< 0.5	< 0.5
1,1-Dichloroethene		< 5	< 5	< 0.5	< 0.5
1,1-Dichloropropene		--	--	< 0.5	< 0.5
1,2,3-Trichlorobenzene		--	--	< 0.5	< 0.5
1,2,3-Trichloropropane		--	--	< 0.5	< 0.5
1,2,4-Trichlorobenzene		--	--	< 0.5	< 0.5
1,2,4-Trimethylbenzene		--	--	< 0.5	< 0.5
1,2-Dibromo-3-Chloropropane		--	--	< 0.5	< 0.5
1,2-Dibromoethane		--	--	< 0.5	< 0.5
1,2-Dichlorobenzene		--	--	< 0.5	< 0.5
1,2-Dichloroethane		< 5	< 5	< 0.5	< 0.5
1,2-Dichloropropane		< 5	< 5	< 0.5	< 0.5
1,3,5-Trimethylbenzene		--	--	< 0.5	< 0.5
1,3-Dichloropropane		--	--	< 0.5	< 0.5
1,4-Dichlorobenzene		--	--	< 0.5	< 0.5
2,2-Dichloropropane		--	--	< 0.5	< 0.5
2-Butanone		< 50	< 50	--	--
2-Chlorotoluene		--	--	< 0.5	< 0.5
2-Hexanone		< 50	< 50	--	--
2-Phenylbutane		--	--	< 0.5	< 0.5
4-Chlorotoluene		--	--	< 0.5	< 0.5
4-Methyl-2-Pentanone		< 50	< 50	--	--
Acetone		< 50	< 50	--	--
Benzene		< 0.7	< 0.7	< 0.5	< 0.5
Bromobenzene		--	--	< 0.5	< 0.5
Bromodichloromethane		< 5	< 5	< 0.5	< 0.5
Bromoform		< 5	< 5	< 0.5	< 0.5
Bromomethane		< 5	< 5	< 0.5	< 0.5
Carbon Disulfide		< 50	< 50	--	--
Carbon Tetrachloride		< 5	< 5	< 0.5	< 0.5

Footnotes on last page.

Table 10. Concentrations of Volatile Organic Compounds Detected in Blank Samples, Fourth Quarter 2008, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Constituent (units in ug/L)	Well ID: / Sample ID: / Sample Date:	Trip Blank [1] TB121508-1 12/15/2008	Trip Blank [1] TB121708-A 12/17/2008	Trip Blank [2] TB121808 12/18/2008	Trip Blank [2] TB121908 2/19/2008
CFC-11(Trichlorofluoromethane)		--	--	< 0.5	< 0.5
Chlorobenzene		< 5	< 5	< 0.5	< 0.5
Chlorobromomethane		--	--	< 0.5	< 0.5
Chlorodibromomethane		< 5	< 5	< 0.5	< 0.5
Chloroethane		< 5	< 5	< 0.5	< 0.5
Chloroform		< 7	< 7	< 0.5	< 0.5
Chloromethane		< 5	< 5	< 0.5	< 0.5
cis-1,2-Dichloroethene		< 5	< 5	< 0.5	< 0.5
cis-1,3-Dichloropropene		< 5	< 5	< 0.5	< 0.5
Cymene		--	--	< 0.5	< 0.5
Dibromomethane		--	--	< 0.5	< 0.5
Dichlorodifluoroethane (Freon 12)		< 5	< 5	< 0.5	< 0.5
Ethylbenzene		< 5	< 5	< 0.5	< 0.5
Hexachloro-1,3-Butadiene		--	--	< 0.5	< 0.5
Isopropylbenzene		--	--	< 0.5	< 0.5
m-Dichlorobenzene		--	--	< 0.5	< 0.5
Methyl Tert-Butyl Ether		--	--	< 0.5	< 0.5
Methylene Chloride		< 5	< 5	< 0.5	< 0.5
Naphthalene		--	--	< 0.5	< 0.5
n-Butylbenzene		--	--	< 0.5	< 0.5
n-Propylbenzene		--	--	< 0.5	< 0.5
Styrene		< 5	< 5	< 0.5	< 0.5
tert-Butyl Alcohol		--	--	< 20	< 20
tert-Butylbenzene		--	--	< 0.5	< 0.5
Tetrachloroethene		< 5	< 5	< 0.5	< 0.5
Toluene		< 5	< 5	< 0.5	< 0.5
trans-1,2-Dichloroethene		< 5	< 5	< 0.5	< 0.5
trans-1,3-Dichloropropene		< 5	< 5	< 0.5	< 0.5
Trichloroethylene		< 5	< 5	< 0.5	< 0.5
Trichlorotrifluoroethane (Freon 113)		< 5	< 5	< 0.5	< 0.5
Vinyl Chloride		< 2	< 2	< 0.5	< 0.5
Xylene-o		< 5	< 5	< 0.5	< 0.5
Xylenes –m,p		< 5	< 5	< 0.5	< 0.5
Total VOCs		0	0	0	0

Footnotes on last page.

Table 10. Concentrations of Volatile Organic Compounds Detected in Blank Samples, Fourth Quarter 2008
Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

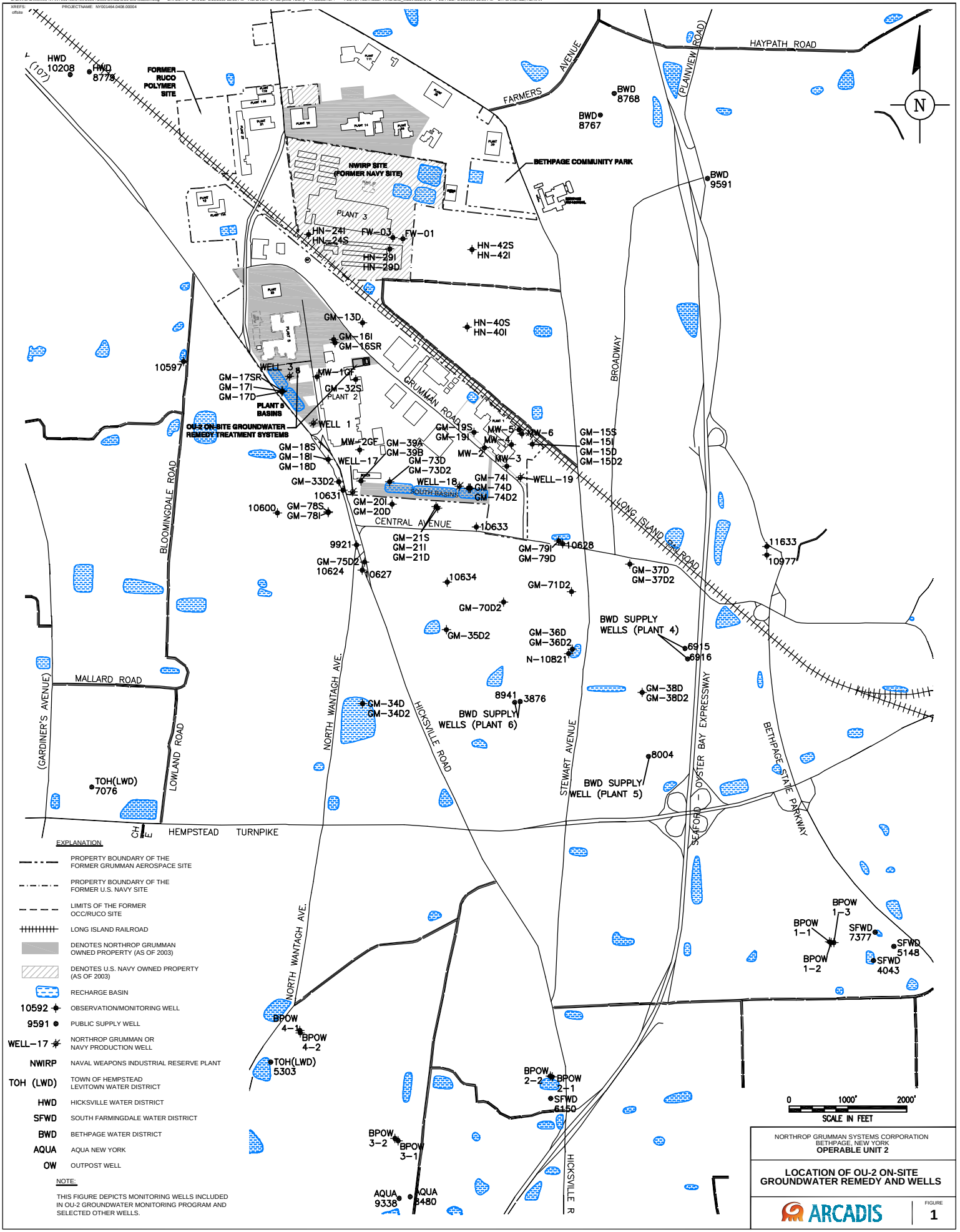
Constituent (units in ug/L)	Well ID: / Sample ID: / Sample Date:	Trip Blank[2] TB122308 12/23/2008	Trip Blank [1] TB122908 12/29/2008	Trip Blank [1] TB123008 12/30/2008	Field Blank [1] FB122908 12/29/2008
1,1,1,2-Tetrachloroethane		< 0.5			
1,1,1-Trichloroethane		< 0.5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane		< 0.5	< 5	< 5	< 5
1,1,2-Trichloroethane		< 0.5	< 5	< 5	< 5
1,1-Dichloroethane		< 0.5	< 5	< 5	< 5
1,1-Dichloroethene		< 0.5	< 5	< 5	< 5
1,1-Dichloropropene		< 0.5	--	--	--
1,2,3-Trichlorobenzene		< 0.5	--	--	--
1,2,3-Trichloropropane		< 0.5	--	--	--
1,2,4-Trichlorobenzene		< 0.5	--	--	--
1,2,4-Trimethylbenzene		< 0.5	--	--	--
1,2-Dibromo-3-Chloropropane		< 0.5	--	--	--
1,2-Dibromoethane		< 0.5	--	--	--
1,2-Dichlorobenzene		< 0.5	--	--	--
1,2-Dichloroethane		< 0.5	< 5	< 5	< 5
1,2-Dichloropropane		< 0.5	< 5	< 5	< 5
1,3,5-Trimethylbenzene		< 0.5	--	--	--
1,3-Dichloropropane		< 0.5	--	--	--
1,4-Dichlorobenzene		< 0.5	--	--	--
2,2-Dichloropropane		< 0.5	--	--	--
2-Butanone		--	< 50	< 50	< 50
2-Chlorotoluene		< 0.5	--	--	--
2-Hexanone		--	< 50	< 50	< 50
2-Phenylbutane		< 0.5	--	--	--
4-Chlorotoluene		< 0.5	--	--	--
4-Methyl-2-Pentanone		--	< 50	< 50	< 50
Acetone		--	< 50	< 50	< 50
Benzene		< 0.5	< 0.7	< 0.7	< 0.7
Bromobenzene		< 0.5	--	--	--
Bromodichloromethane		< 0.5	< 5	< 5	< 5
Bromoform		< 0.5	< 5	< 5	< 5
Bromomethane		< 0.5	< 5	< 5	< 5
Carbon Disulfide		--	< 50	< 50	< 50
Carbon Tetrachloride		< 0.5	< 5	< 5	< 5

Footnotes on last page.

Table 10. Concentrations of Volatile Organic Compounds Detected in Blank Samples, Fourth Quarter 2008
Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Constituent (units in ug/L)	Well ID: / Sample ID: / Sample Date:	Trip Blank[2] TB122308 12/23/2008	Trip Blank [1] TB122908 12/29/2008	Trip Blank [1] TB123008 12/30/2008	Field Blank [1] FB122908 12/29/2008
CFC-11(Trichlorofluoromethane)		< 0.5	--	--	--
Chlorobenzene		< 0.5	< 5	< 5	< 5
Chlorobromomethane		< 0.5	--	--	--
Chlorodibromomethane		< 0.5	< 5	< 5	< 5
Chloroethane		< 0.5	< 5	< 5	< 5
Chloroform		< 0.5	< 7	< 7	< 7
Chloromethane		< 0.5	< 5	< 5	< 5
cis-1,2-Dichloroethene		< 0.5	< 5	< 5	< 5
cis-1,3-Dichloropropene		< 0.5	< 5	< 5	< 5
Cymene		< 0.5	--	--	--
Dibromomethane		< 0.5	--	--	--
Dichlorodifluoroethane (Freon 12)		< 0.5	< 5	< 5	< 5
Ethylbenzene		< 0.5	< 5	< 5	< 5
Hexachloro-1,3-Butadiene		< 0.5	--	--	--
Isopropylbenzene		< 0.5	--	--	--
m-Dichlorobenzene		< 0.5	--	--	--
Methyl Tert-Butyl Ether		< 0.5	--	--	--
Methylene Chloride		< 0.5	< 5	< 5	< 5
Naphthalene		< 0.5	--	--	--
n-Butylbenzene		< 0.5	--	--	--
n-Propylbenzene		< 0.5	--	--	--
Styrene		< 0.5	< 5	< 5	< 5
tert-Butyl Alcohol		< 20	--	--	--
tert-Butylbenzene		< 0.5	--	--	--
Tetrachloroethene		< 0.5	< 5	< 5	< 5
Toluene		< 0.5	< 5	< 5	< 5
trans-1,2-Dichloroethene		< 0.5	< 5	< 5	< 5
trans-1,3-Dichloropropene		< 0.5	< 5	< 5	< 5
Trichloroethylene		< 0.5	< 5	< 5	< 5
Trichlorotrifluoroethane (Freon 113)		< 0.5	< 5	< 5	< 5
Vinyl Chloride		< 0.5	< 2	< 2	< 2
Xylene-o		< 0.5	< 5	< 5	< 5
Xylenes –m,p		< 0.5	< 5	< 5	< 5
Total VOCs		0	0	0	0

(1) Sample analysis by CLP Method OLM 4.2.
(2) Sample analysis by USEPA Method 524.2.
-- Not Analyzed
CLP Contract Laboratory Program
USEPA Unites States Environmental Protection Agency
ug/L Micrograms per liter
VOCs Volatile organic compounds



EXPLANATION

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE SITE
- PROPERTY BOUNDARY OF THE FORMER U.S. NAVY SITE
- LIMITS OF THE FORMER OCC/RUCO SITE
- LONG ISLAND RAILROAD
- DENOTES NORTHROP GRUMMAN OWNED PROPERTY (AS OF 2003)
- DENOTES U.S. NAVY OWNED PROPERTY (AS OF 2003)
- RECHARGE BASIN
- 10592 — OBSERVATION/MONITORING WELL
- 9591 — PUBLIC SUPPLY WELL
- WELL-17 — NORTHROP GRUMMAN OR NAVY PRODUCTION WELL
- NWIRP — NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
- TOH (LWD) — TOWN OF HEMPSTEAD LEVITOWN WATER DISTRICT
- HWD — HICKSVILLE WATER DISTRICT
- SFWD — SOUTH FARMINGDALE WATER DISTRICT
- BWD — BETHPAGE WATER DISTRICT
- AQUA — AQUA NEW YORK
- OW — OUTPOST WELL

NOTE:

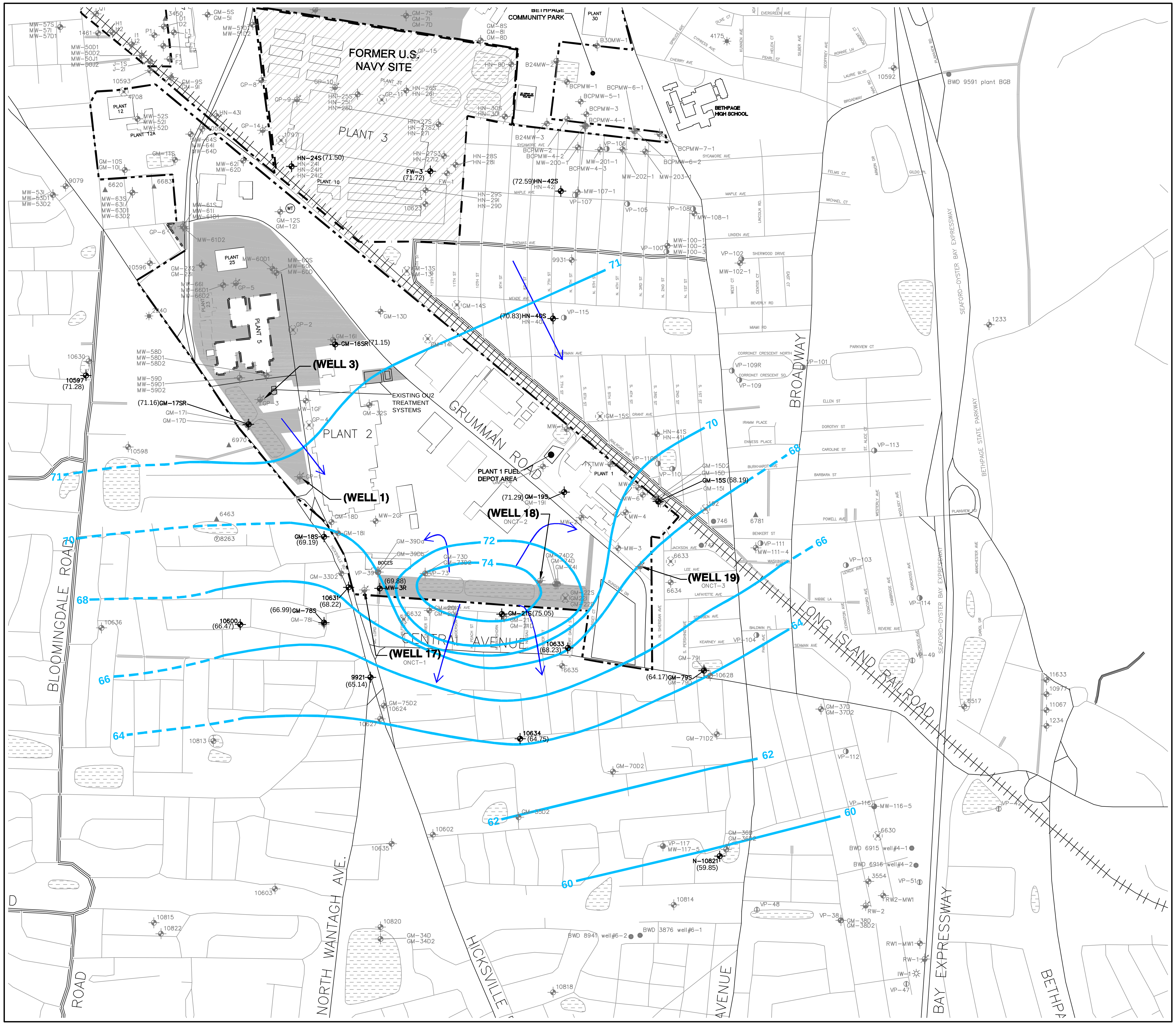
THIS FIGURE DEPICTS MONITORING WELLS INCLUDED IN OU-2 GROUNDWATER MONITORING PROGRAM AND SELECTED OTHER WELLS.

NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK
OPERABLE UNIT 2

LOCATION OF OU-2 ON-SITE GROUNDWATER REMEDY AND WELLS

ARCADIS

FIGURE 1



EXPLANATION:

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE SITE
- PROPERTY BOUNDARY OF THE FORMER U.S. NAVY SITE
- LONG ISLAND RAILROAD
- DENOTES NORTHROP GRUMMAN OWNED PROPERTY (AS OF 2003)
- DENOTES U.S. NAVY OWNED PROPERTY (AS OF 2003)
- RECHARGE BASIN
- WT — WATER TOWER
- OBSERVATION/MONITORING WELL
- INDUSTRIAL WELL
- PUBLIC SUPPLY WELL
- IRRIGATION WELL
- NORTHROP GRUMMAN OR NAVY PRODUCTION WELL
- ABANDONED WELL
- COMPLETED OU-2 VERTICAL PROFILE BORING
- COMPLETED OU-3 VERTICAL PROFILE BORING
- 66 — LINE OF EQUAL POTENTIOMETRIC SURFACE ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (DASHED WHERE INFERRED)
- (59.85) — WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- HORIZONTAL COMPONENT OF GROUNDWATER FLOW
- OU-2 — OPERABLE UNIT 2
- OU-3 — OPERABLE UNIT 3

0 800' 1600'

SCALE IN FEET

NOTES:

1. NORTHROP GRUMMAN REMEDIAL WELLS 1, 3, 17, 18 AND 19 SCREENED IN DEEP 2 ZONE.
2. BETHPAGE WATER DISTRICT WELL 3876 SCREENED IN DEEP ZONE.
3. BETHPAGE WATER DISTRICT WELLS 6915, 6916 AND 8941 SCREENED IN DEEP 2 ZONE.

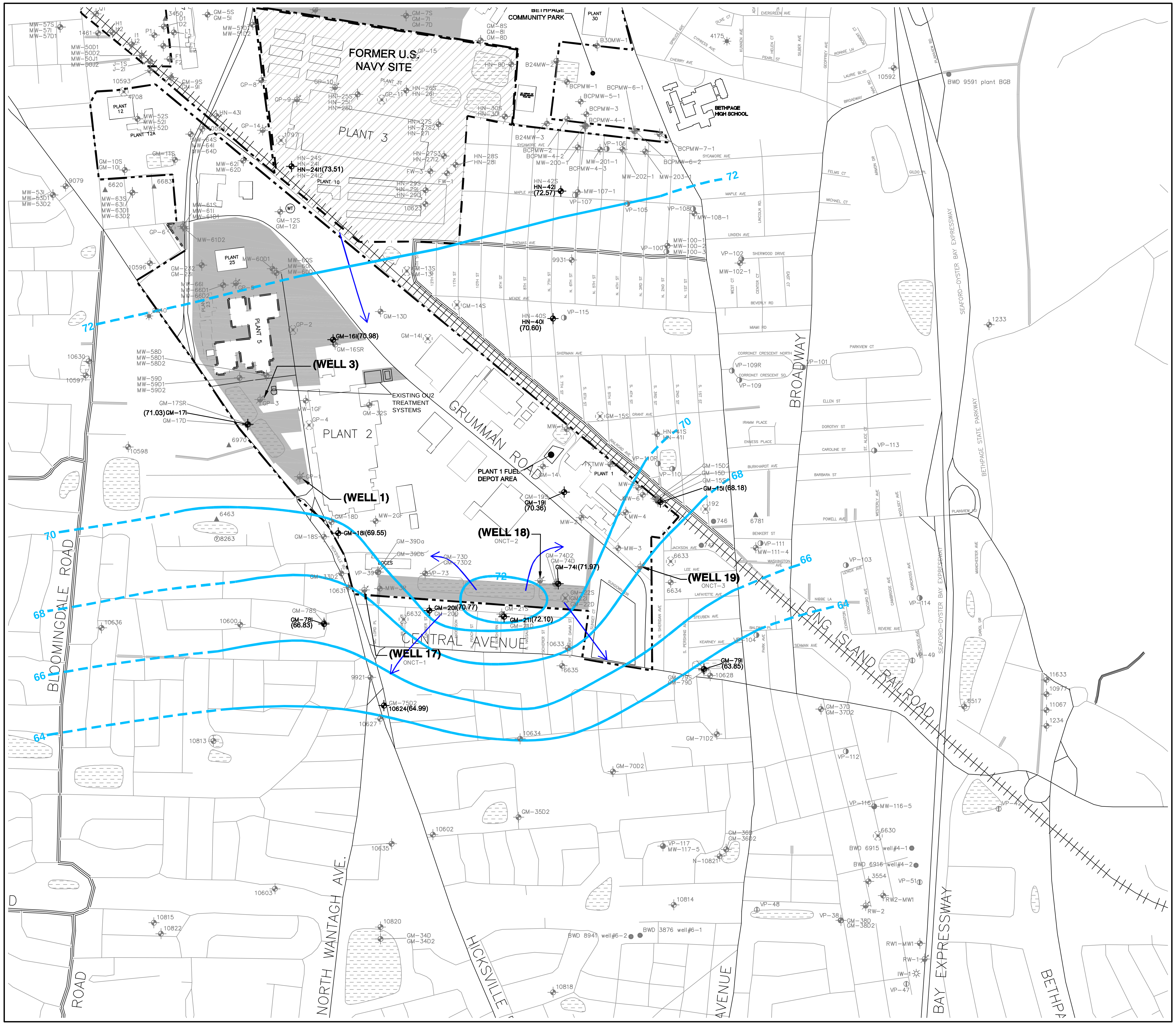
ALL COORDINATES REFERENCED TO NORTH AMERICAN DATUM 1983

NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK
OPERABLE UNIT 2

WATER-TABLE CONFIGURATION AND HORIZONTAL GROUNDWATER FLOW DIRECTION IN THE SHALLOW ZONE, APRIL 10, 2008

ARCADIS

FIGURE
2



N

EXPLANATION:

PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE SITE

PROPERTY BOUNDARY OF THE FORMER U.S. NAVY SITE

LONG ISLAND RAILROAD

DENOTES NORTHROP GRUMMAN OWNED PROPERTY (AS OF 2003)

DENOTES U.S. NAVY OWNED PROPERTY (AS OF 2003)

RECHARGE BASIN

WATER TOWER

OBSERVATION/MONITORING WELL

INDUSTRIAL WELL

PUBLIC SUPPLY WELL

IRRIGATION WELL

NORTHROP GRUMMAN OR NAVY PRODUCTION WELL

ABANDONED WELL

COMPLETED OU-2 VERTICAL PROFILE BORING

COMPLETED OU-3 VERTICAL PROFILE BORING

66 LINE OF EQUAL POTENTIOMETRIC SURFACE ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (DASHED WHERE INFERRED)

(63.85) WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

HORIZONTAL COMPONENT OF GROUNDWATER FLOW

OU-2 OPERABLE UNIT 2

OU-3 OPERABLE UNIT 3

NOTES:

1. NORTHROP GRUMMAN REMEDIAL WELLS 1, 3, 17, 18 AND 19 SCREENED IN DEEP 2 ZONE.
2. BETHPAGE WATER DISTRICT WELL 3876 SCREENED IN DEEP ZONE.
3. BETHPAGE WATER DISTRICT WELLS 6915, 6916 AND 8941 SCREENED IN DEEP 2 ZONE.

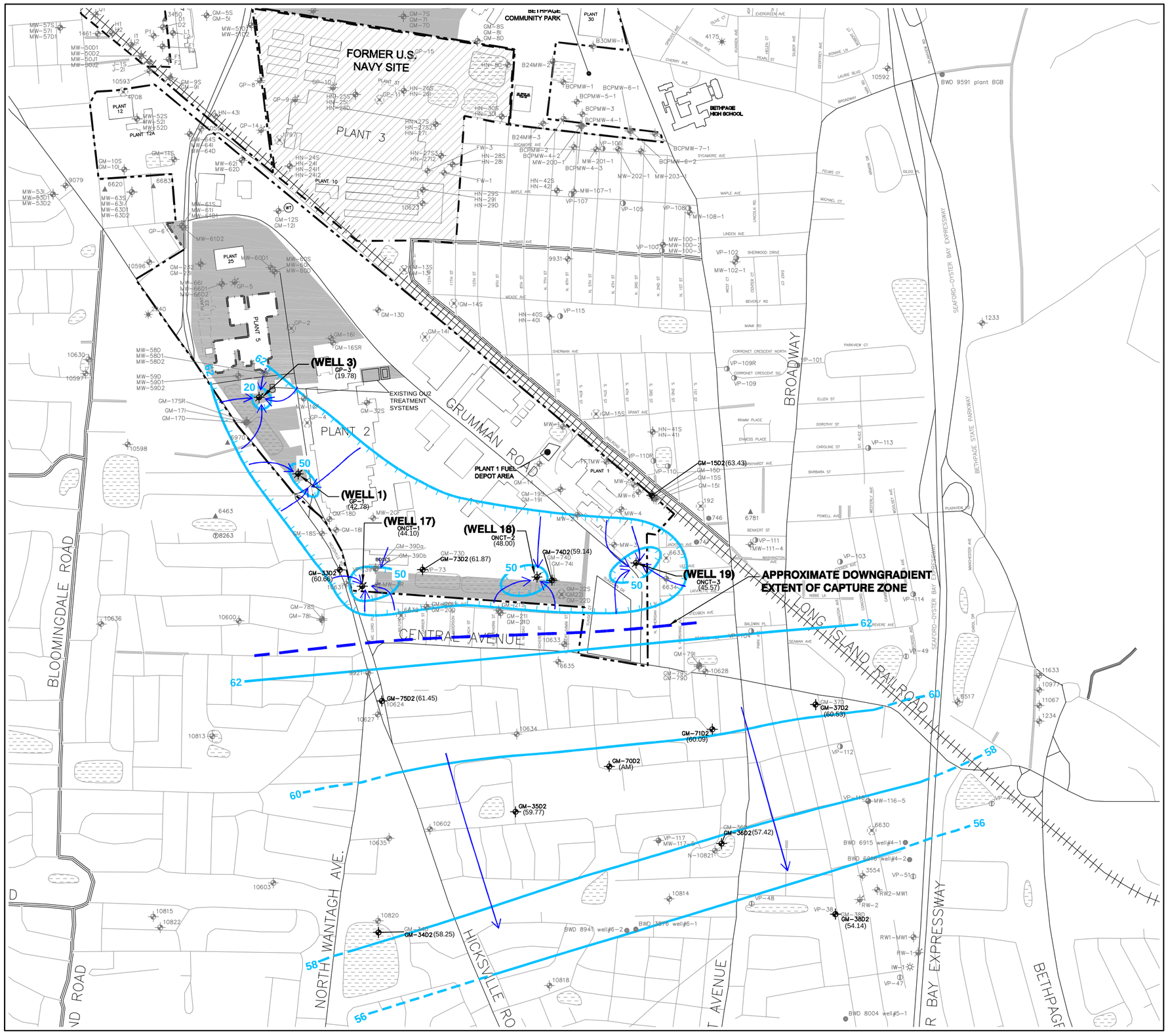
ALL COORDINATES REFERENCED TO NORTH AMERICAN DATUM 1983

NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK
OPERABLE UNIT 2

POTENTIOMETRIC SURFACE ELEVATION AND HORIZONTAL GROUNDWATER FLOW DIRECTION IN THE INTERMEDIATE ZONE, APRIL 10, 2008

ARCADIS

FIGURE
3



EXPLANATION:

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE SITE
- PROPERTY BOUNDARY OF THE FORMER U.S. NAVY SITE
- LONG ISLAND RAILROAD
- DENOTES NORTHROP GRUMMAN OWNED PROPERTY (AS OF 2003)
- DENOTES U.S. NAVY OWNED PROPERTY (AS OF 2003)
- RECHARGE BASIN
- OBSERVATION/MONITORING WELL
- INDUSTRIAL WELL
- PUBLIC SUPPLY WELL
- IRRIGATION WELL
- NORTHROP GRUMMAN OR NAVY PRODUCTION WELL
- ABANDONED WELL
- COMPLETED OU-2 VERTICAL PROFILE BORING
- COMPLETED OU-3 VERTICAL PROFILE BORING
- 62 — LINE OF EQUAL POTENTIOMETRIC SURFACE ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL, DENOTES DECREASE IN WATER-LEVEL ELEVATION
- 60 — LINE OF EQUAL POTENTIOMETRIC SURFACE ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (DASHED WHERE INFERRED)
- (54.14) WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- (AM) ANOMALOUS MEASUREMENT
- HORIZONTAL COMPONENT OF GROUNDWATER FLOW
- OU-2 OPERABLE UNIT 2
- OU-3 OPERABLE UNIT 3

NOTES:

1. NORTHROP GRUMMAN REMEDIAL WELLS 1, 3, 17, 18 AND 19 SCREENED IN DEEP 2 ZONE.
2. BETHPAGE WATER DISTRICT WELL 3876 SCREENED IN DEEP ZONE.
3. BETHPAGE WATER DISTRICT WELLS 6915, 6916 AND 8941 SCREENED IN DEEP 2 ZONE.

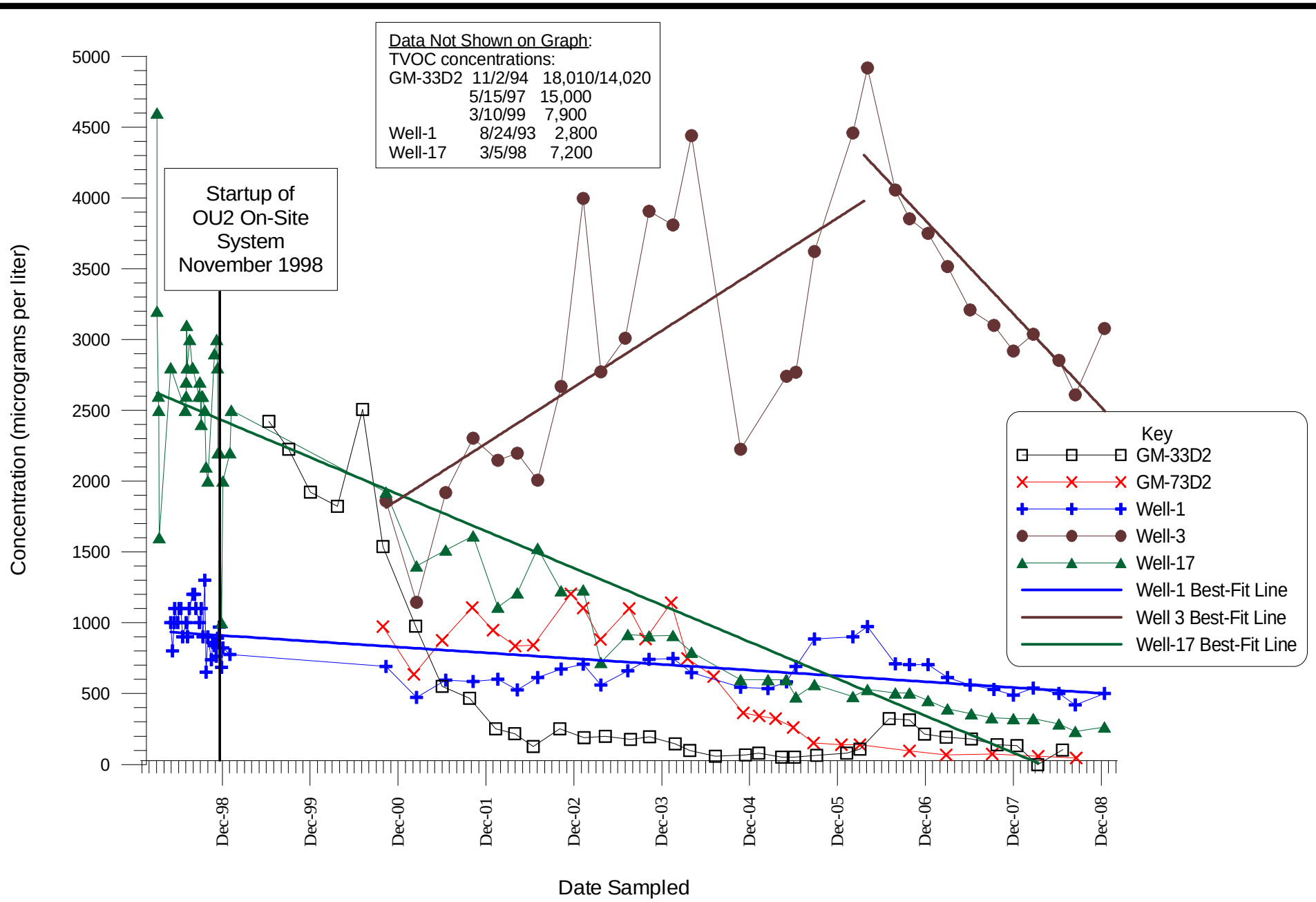
ALL COORDINATES REFERENCED TO NORTH AMERICAN DATUM 1983

NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK
OPERABLE UNIT 2

POTENTIOMETRIC SURFACE ELEVATION AND HORIZONTAL GROUNDWATER FLOW DIRECTION IN THE DEEP 2 ZONE, APRIL 10, 2008

ARCADIS

FIGURE 4



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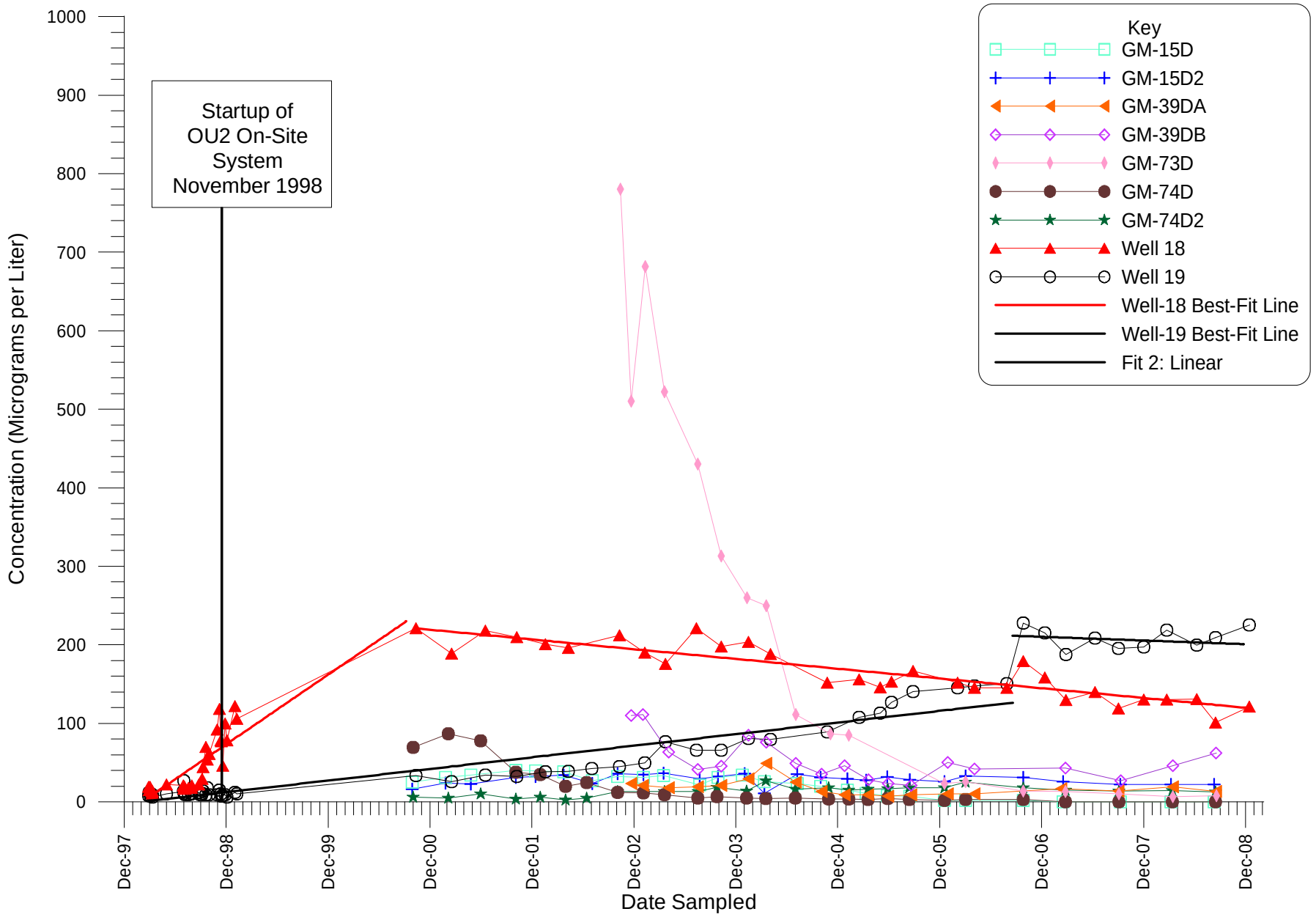
ARCADIS

Total Volatile Organic Compound Concentrations (Southern and Southwestern Site Boundary) in OU2 Remedial Wells and Monitoring Wells GM-33D2 and GM-73D2
Northrop Grumman Systems Corporation, Bethpage, New York

FIGURE
5



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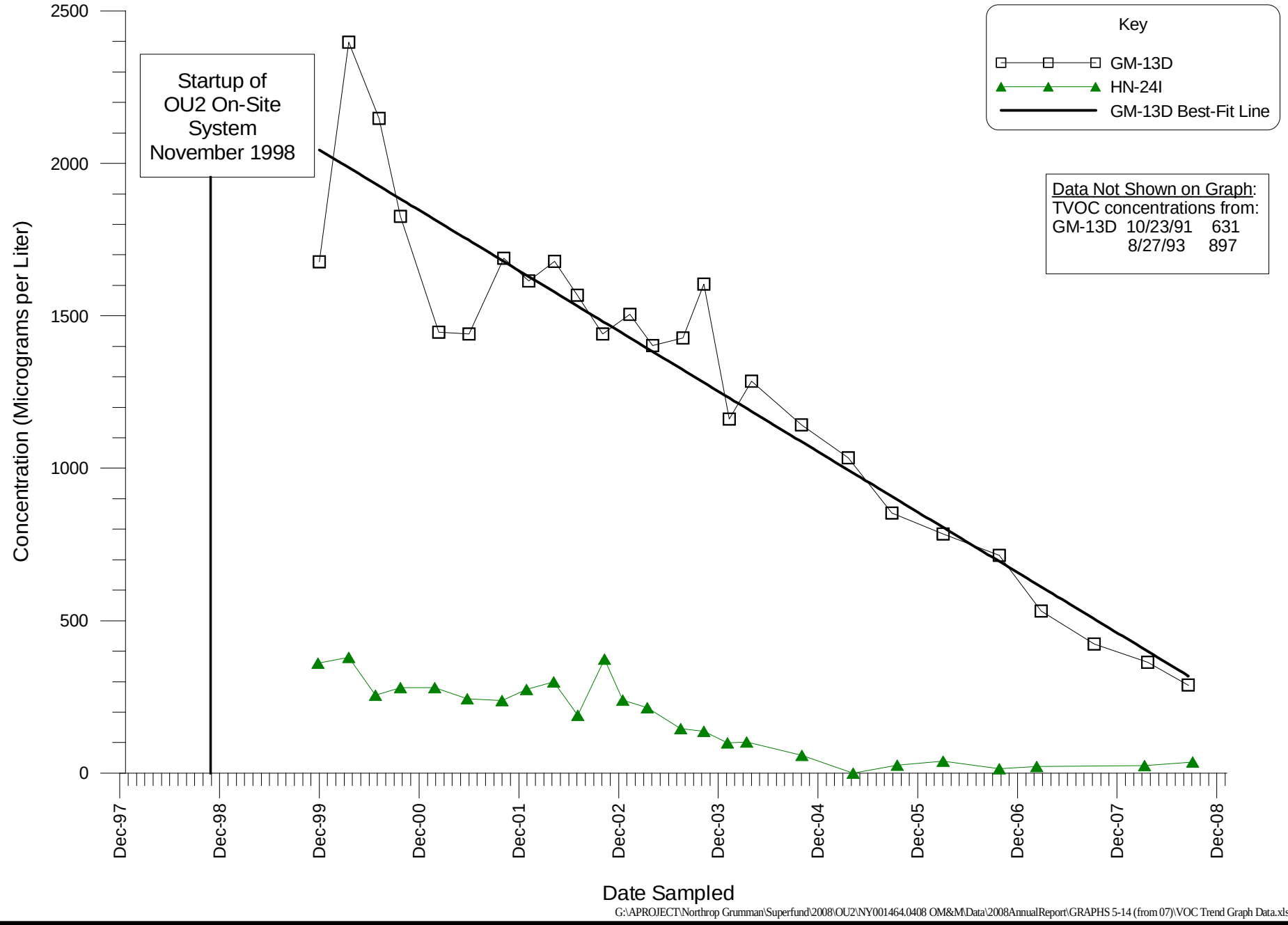
ARCADIS

Total Volatile Organic Compound Concentrations (Southeastern Site Boundary) in On-Site Deep and Deep2 Monitoring Wells and OU2 Remedial Wells 18 and 19 Northrop Grumman Systems Corporation, Bethpage, New York

FIGURE 6



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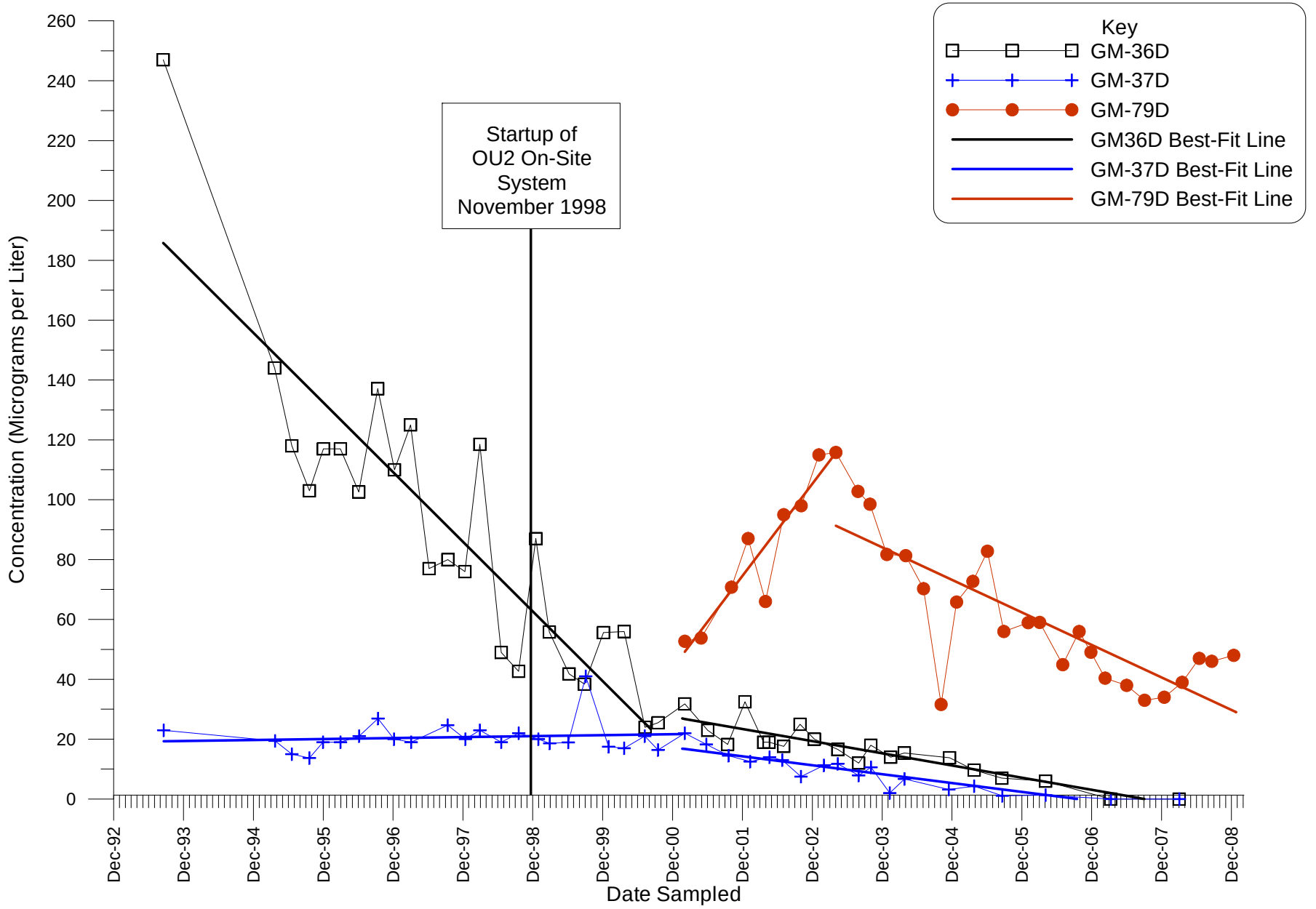
ARCADIS

Total Volatile Organic Compound Concentrations in On-Site Intermediate and Deep Monitoring Wells Northrop Grumman Systems Corporation, Bethpage, New York

FIGURE 7



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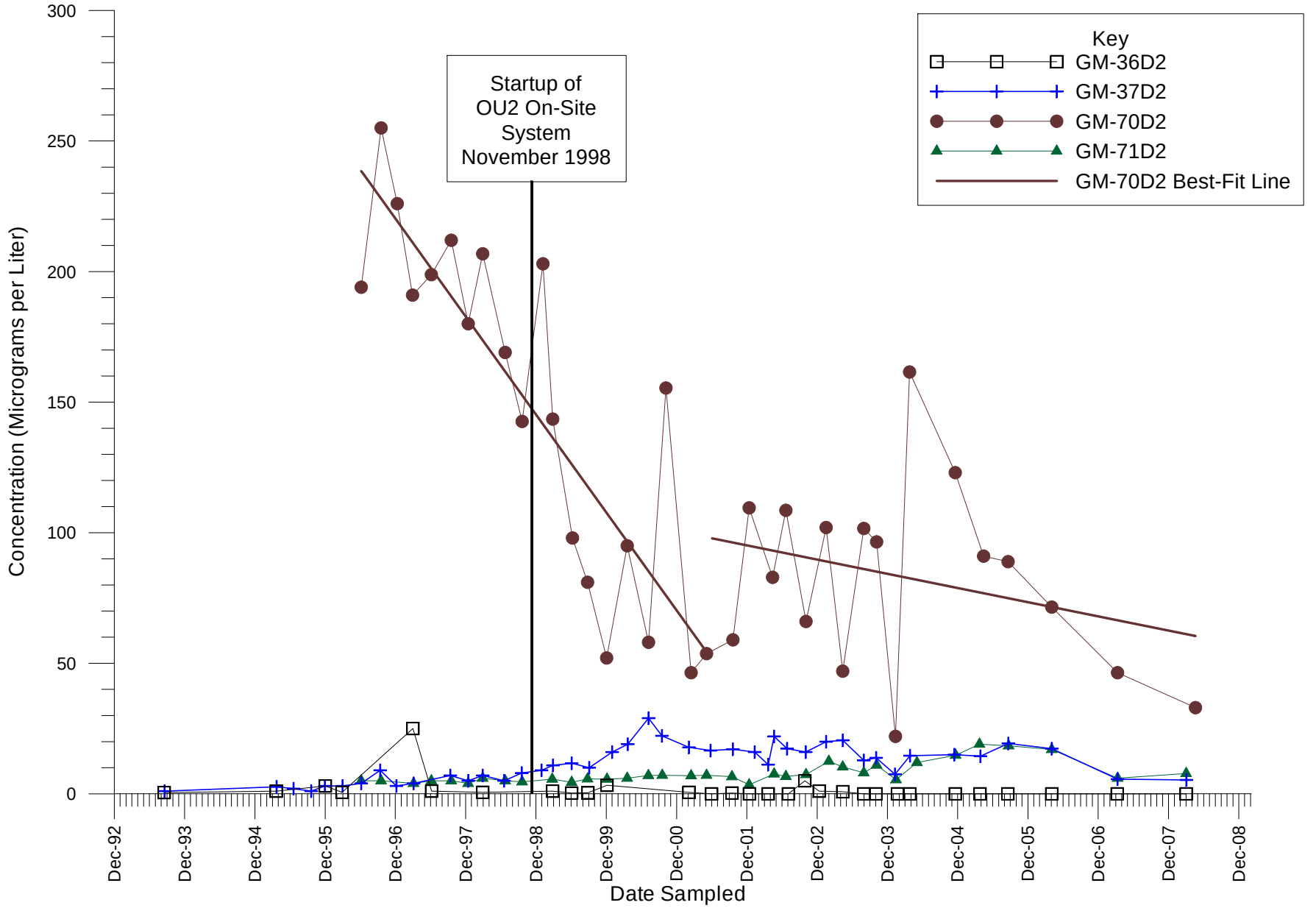
ARCADIS

Total Volatile Organic Compound Concentrations in Off-Site Deep Monitoring Wells (Southeast of the Site) Northrop Grumman Systems Corporation, Bethpage, New York

FIGURE 8



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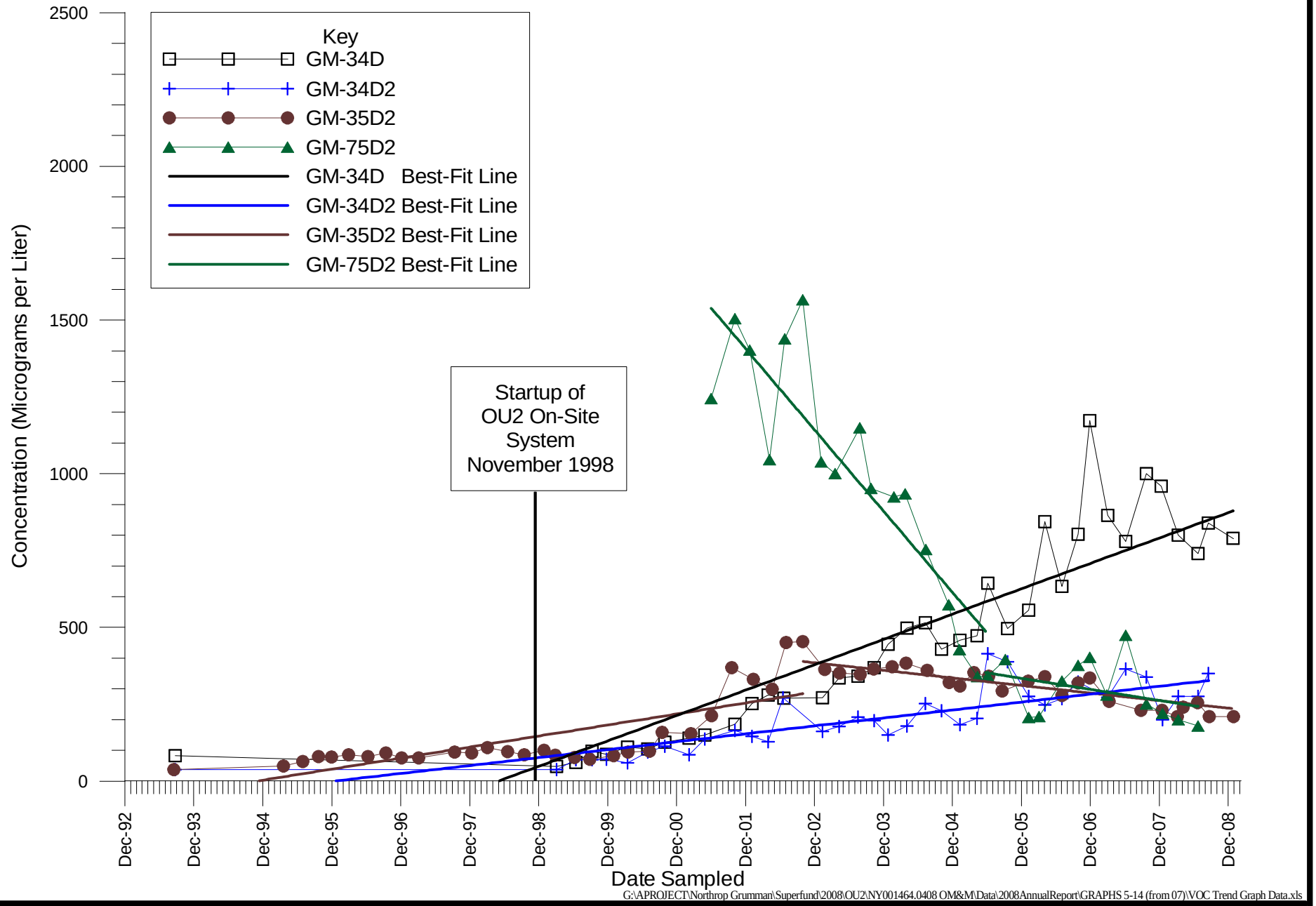
ARCADIS

Total Volatile Organic Compound Concentrations in Off-Site Deep2 Monitoring Wells (Southeast of the Site) Northrop Grumman Systems Corporation, Bethpage, New York

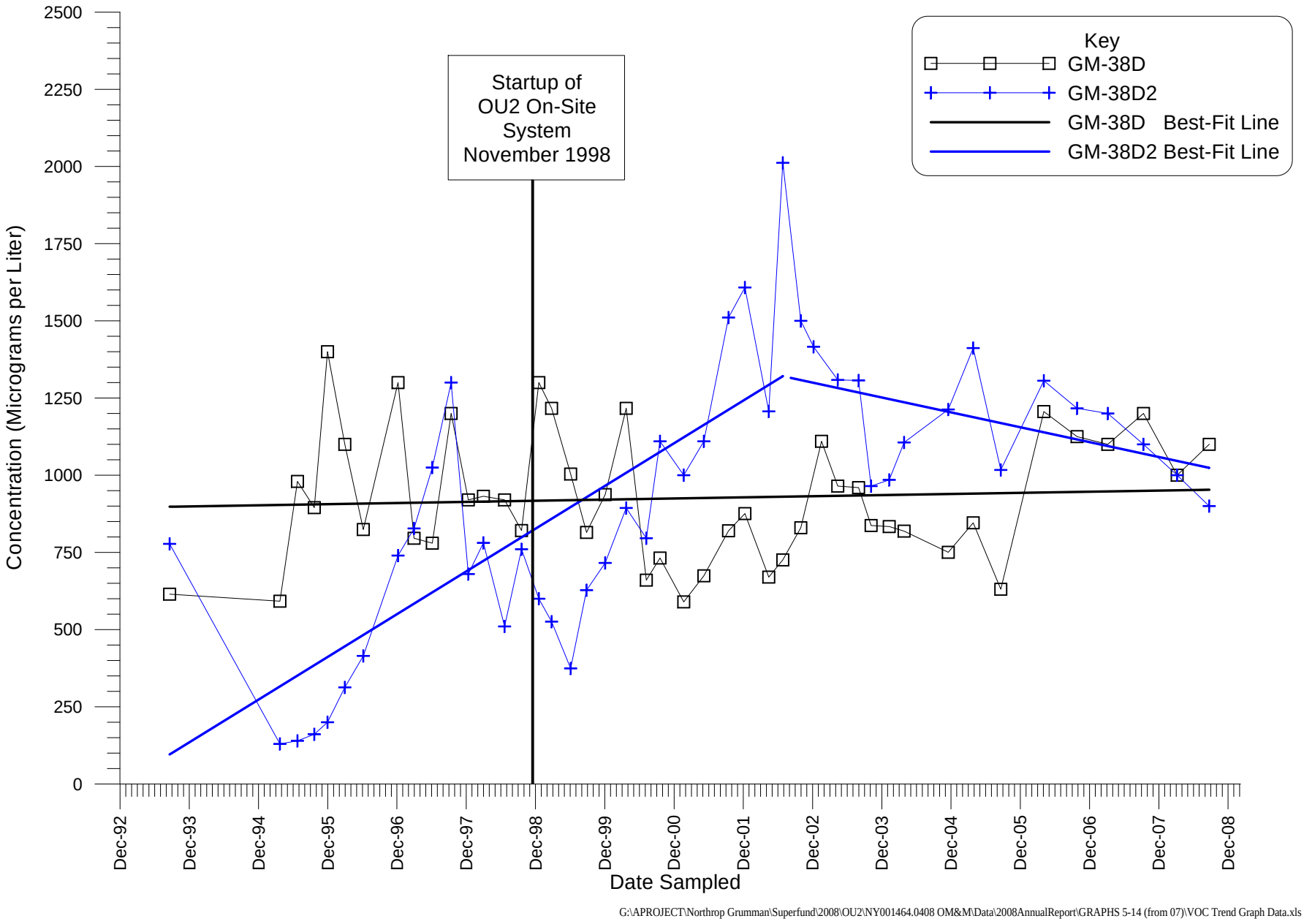
FIGURE 9



ARCADIS

Total Volatile Organic Compound Concentrations in Off-Site Deep and Deep2 Monitoring Wells (South of the Site) Northrop Grumman Systems Corporation, Bethpage, New York

FIGURE 10



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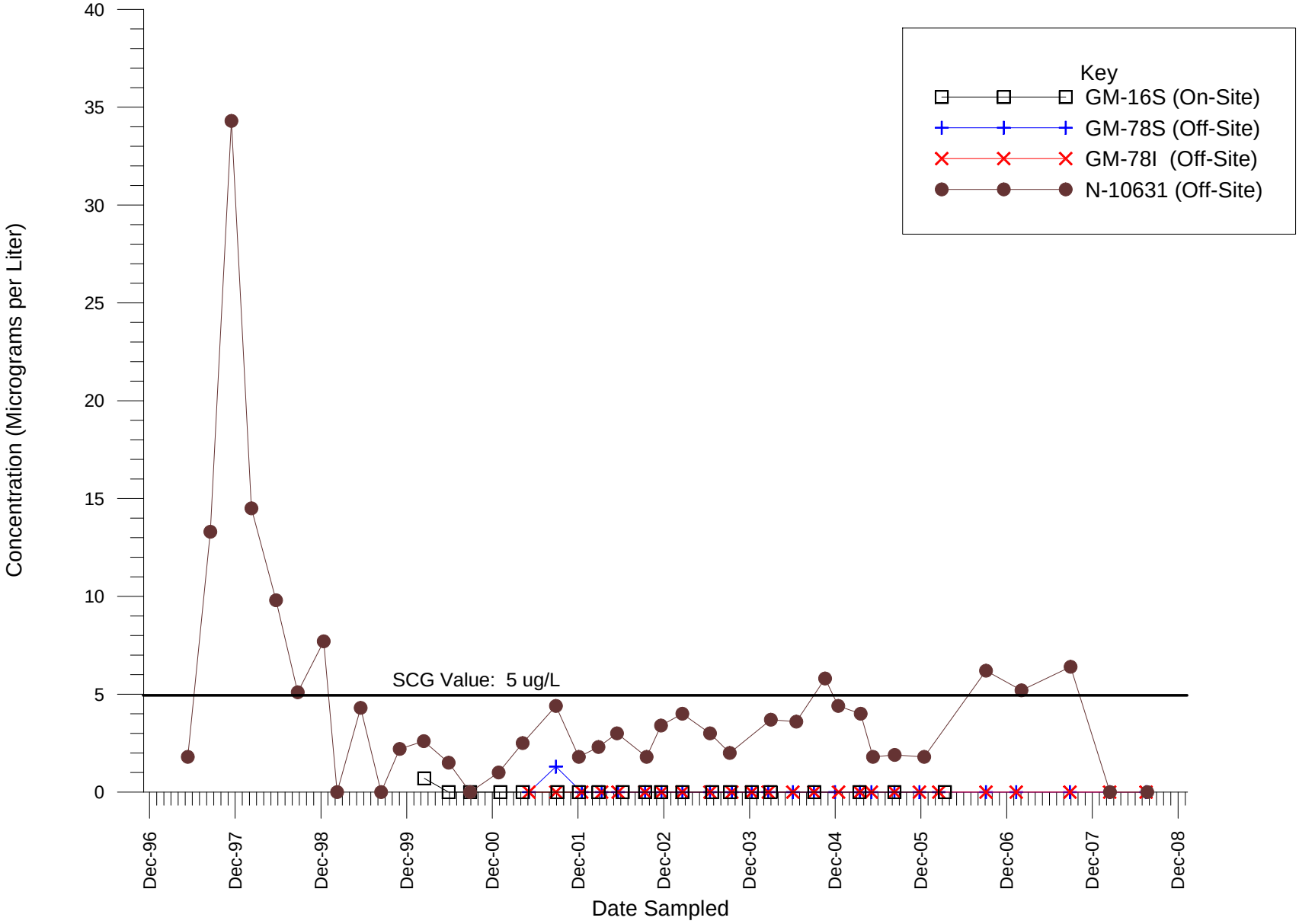
ARCADIS

Total Volatile Organic Compound Concentrations in GM-38 Area Deep and Deep2 Monitoring Wells Northrop Grumman System Corporation, Bethpage, New York

FIGURE 11



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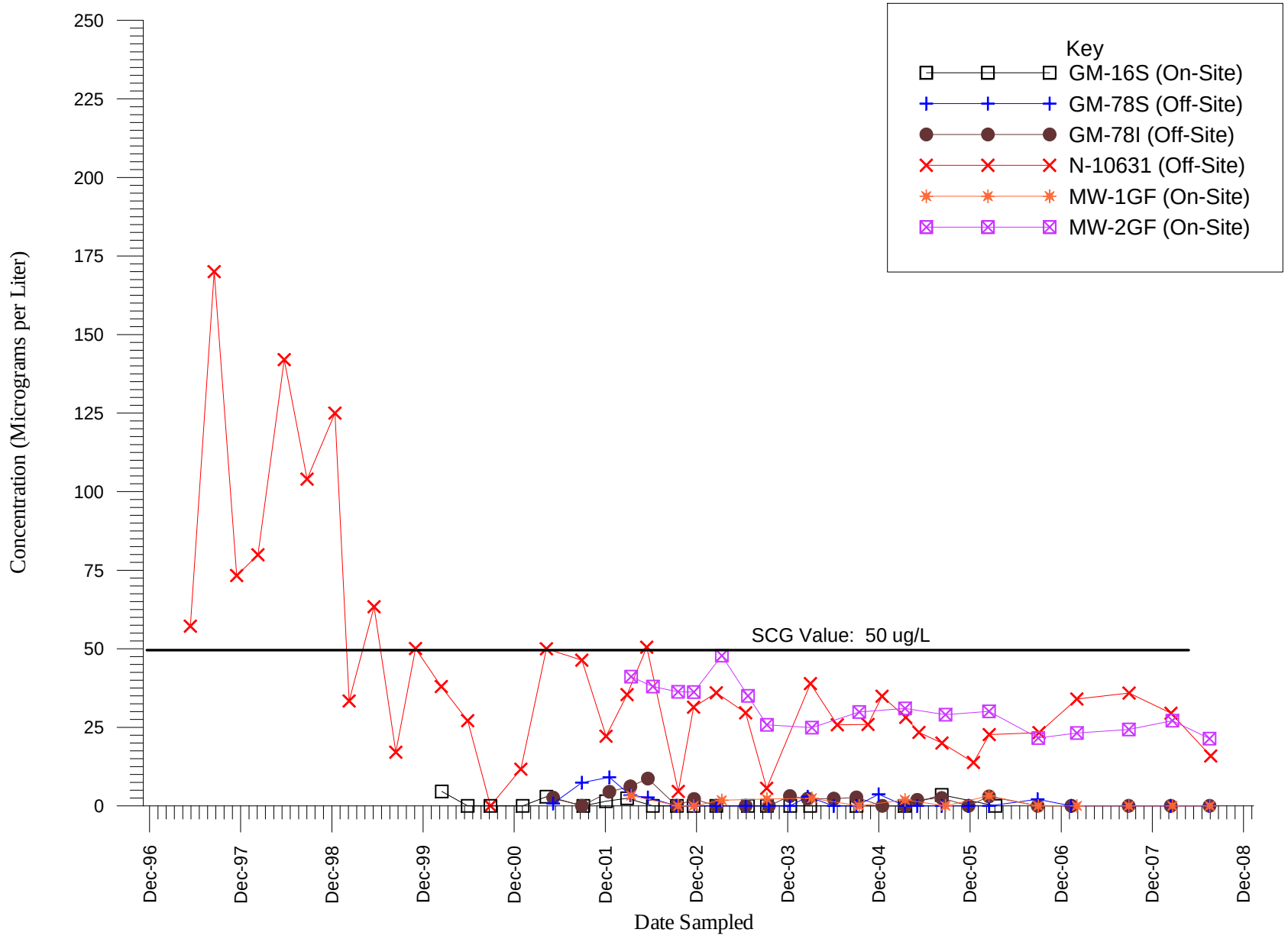
ARCADIS

Total Cadmium Concentrations in Monitoring Wells
Near Former Plant 2
Northrop Grumman Systems Corporation, Bethpage, New York

FIGURE
12



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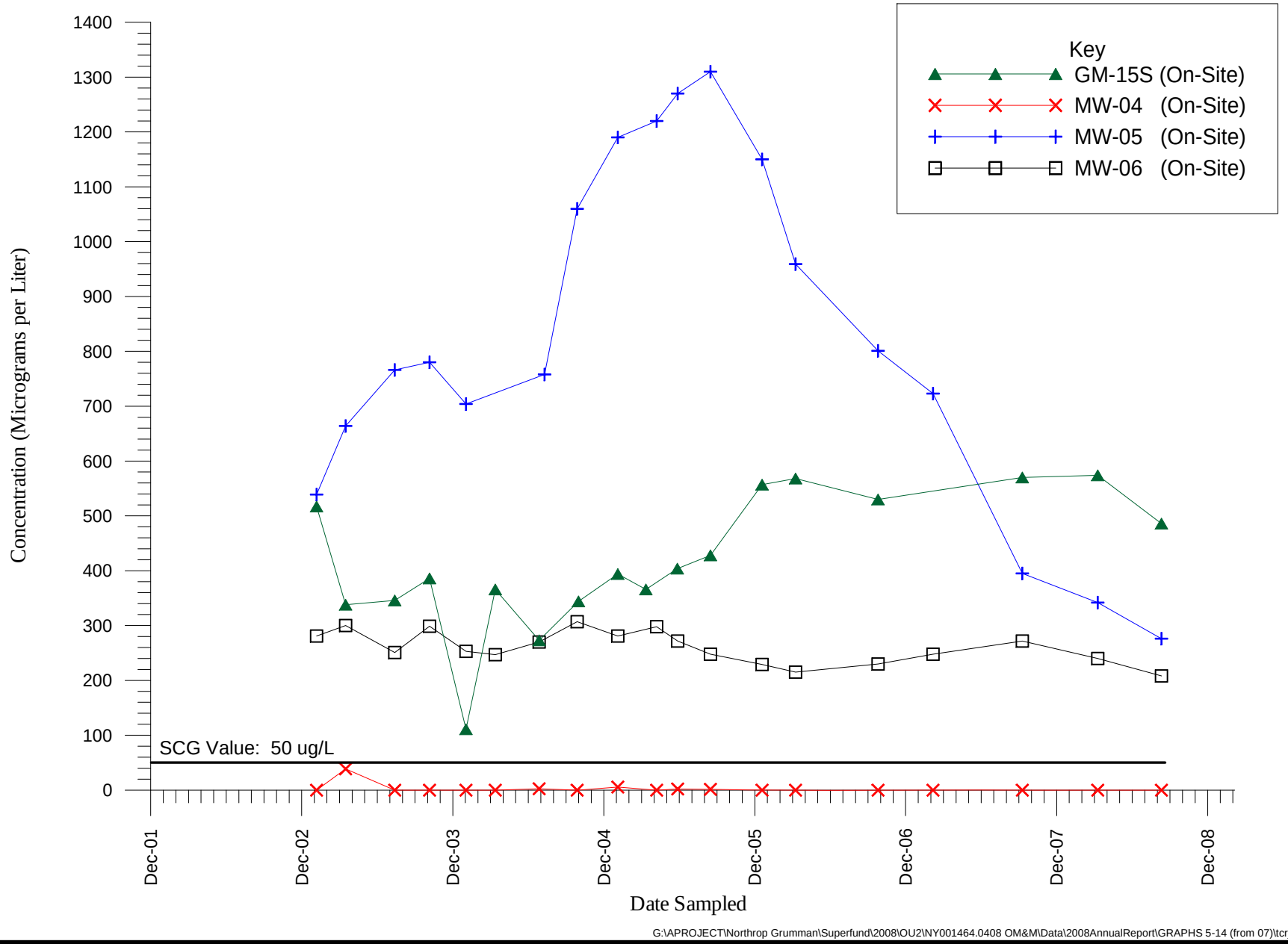
ARCADIS

Total Chromium Concentrations in Monitoring Wells
Near Former Plant 2
Northrop Grumman Systems Corporation, Bethpage, New York

FIGURE
13



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ARCADIS

Total Chromium Concentrations in Monitoring Wells
Near Former Plant 1
Northrop Grumman Systems Corporation, Bethpage, New York

FIGURE
14

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Appendix A

Groundwater Sampling Logs and
Chain of Custody Records

ARCADIS

NY60146404080002 **Water-Level Log**

Project Name and No. Grumman OU2

Site Location Bethpage, NY

Prepared By Williams / Prezorski

Date 4-10-08

Well (s)	Held (ft)	Wet (ft)	Depth to Water (ft)	Time	MP	Remarks
BPOW1-1			26.60			
BPOW1-2			27.13			
BPOW1-3			27.11			
BPOW3-1			23.75			
BPOW3-2			25.00			
BPOW4-2			24.07			
BPOW4-1			24.82			
34D			11.41			
34D2			12.94			
19S			38.57			Need New manhole
19I			39.50			Need New manhole. Need Rehab & New lock.
Well 19 ONCT3			63.13			727.9 GPM
15I			41.07			
15SR			41.25			
15D2			46.35			
15D			43.68			
13D			42.91			
HN-24I			52.29			Wasps inside outer casing
HN-24S			48.82			
FW-03			52.58			No lock on well

ARCADIS

NY001464.0408.00002 **Water-Level Log**

Project Name and No. Grumman OU2

Site Location Bethpage, NY

Prepared By Williams / Prezorski

Date 4/10/08

Well (s)	Held (ft)	Wet (ft)	Depth to Water (ft)	Time	MP	Remarks
N-10597			38.57			
Well 17 ONCT 1			110 - 50' = 60			1027.3 GPM
3R			31.57			
74I			35.45			
74D			41.65			
74D2			48.22			
Well 18 ONCT 2			110 - 48 = 62			606 gpm
73D2			42.75			
73D			40.72			
39D2			38.55			
39D			35.58			
18D			42.18			
18I			39.48			
18S			38.41			
Well 1			119 - 45 = 74			~~Redirected meter~~ disconnected. 834 GPM Hose shortened by 1'
16SR			44.71			
16I			44.83			
Well 3			150 - 52 = 98			730 GPM
17I			44.80			
17D			46.96			DTW = 46.96

ARCADIS

Water-Level Log

Project Name and No. NY001464.0408.00002 Grumman Ou

Site Location Bethpage, NY

Prepared By Williams / Prezorski

Date 4-10-08

Well (s)	Held (ft)	Wet (ft)	Depth to Water (ft)	Time	MP	Remarks
175			44.63			
9921			29.09			
10627			29.17			
10624			28.62			
75D2			32.18			
35D2			36.51			
N-10634			36.45			
71D2			38.36			
70D2			37.88			
36D2			34.18			
36D			32.08			
10821			31.73			
37D2			36.64			
37D			36.04			
38D			35.23			Need new lock
38D2			37.42			
42I			47.04			
42S			47.73			
40I			45.31			
40S			45.52			

ARCADIS

Water-Level Log

Project Name and No. NY001464.0408.00002 N- Grummen OU2

Site Location Bethpage, NY

Prepared By Williams | Prizorski

Date 4/10/08

Well (s)	Held (ft)	Wet (ft)	Depth to Water (ft)	Time	MP	Remarks
79I			37.03			
79D			38.45			
79S			36.71			
10633			35.57			
21S			30.76			
21I			33.62			
21D			39.70			
20I			33.11			
20D			34.83 * taken from top of PVC casing			Pump + hoses pulled. Add 1/10' to DTW
10631			35.25			
3302			46.19			
78S			37.95			
78I			38.23			
10600			35.94			

Table 3. Water-Level Measurement Data, Third Quarter 2008, Operable Unit 2, Northrop Grumman Corporation, Bethpage, New York.

Well Identification		Measuring Point Elevation (ft msl)		Depth to Water (ft bmp)	Water-Level Elevation (ft msl)	Pumping Rate GPM
Shallow Wells						
FW-03		124.30		53.52		
N-9921	31.05	94.23		31.05		
N-10597	39.18	109.85		39.19		
N-10600		102.41		37.25		
N-10631	37.40	103.47		37.40		
N-10633		103.80		37.50		
N-10634	38.52	101.20		38.52		
N-10821		91.58		33.65		
GM-15S		109.44		42.95		
GM-16SR	45.41	115.86		45.41		
GM-17SR	43.45	115.79		43.45		
GM-18S		107.60		39.68		
GM-19S		109.86		40.15		
GM-21S		105.81		33.53		
GM-78S		104.94		39.69		
GM-79S (N-10628)	38.66	100.88		38.66		
HN-24S	49.70	120.32		49.70		
HN-40S		116.35		46.72		
HN-42S		120.32		48.92		
MW-3R	34.36	101.45		34.36		
Intermediate Wells						
N-10624	30.67	93.61		30.67		
GM-15I		109.25		42.74		
GM-16I	45.42	115.81		45.43		
GM-17I	43.72	115.83		43.72		
GM-18I	40.70	109.03		40.70		
GM-19I		109.86		41.29		
GM-20I		103.88		36.13		
GM-21I		105.72		36.20		
GM-74I		107.42		37.70		
GM-78I		105.06		39.95		
GM-79I		100.88		39.08		
HN-24I		125.80		Beep		
HN-29I		116.42		44.28		
HN-40I		115.91		46.62		
HN-42I		119.61		48.30		

See notes on last page

Well 18 Is off

71D2 Need new lock

191 Need new lock. cap not on well.

#195 Needs new lock

Need new manhole at 191 & 195.

Table 3. Water-Level Measurement Data, Third Quarter 2008, Operable Unit 2, Northrop Grumman Corporation, Bethpage, New York.

Well Identification		Measuring Point Elevation (ft msl)		Depth to Water (ft bmp)	Water-Level Elevation (ft msl)	Pumping Rate GPM
Deep Wells						
N-10627		93.70		31.21		
GM-13D		113.97		44.05		
GM-15D		109.84		45.55		
GM-17D		115.68		47.61		
GM-18D		108.88		43.71		
GM-20D		103.92		37.69		
GM-21D		105.66		41.70		
GM-34D		71.19		13.63		
GM-36D		91.63		34.36		
GM-37D		97.26		38.47		
GM-38D		91.75		38.53		
GM-39D$_A$		102.23		37.64		
GM-39D$_B$		102.08		40.68		
GM-73D		104.87		42.54		
GM-74D		107.43		43.53		
GM-79D		101.25		40.69		
HN-29D		115.11		44.72		
Deep2 Wells						
GM-15D2		109.78		48.60		
GM-33D2		106.85		49.09		
GM-34D2	15.91	71.19		15.91		
GM-35D2		96.28		39.17		
GM-36D2		91.60		37.50		
GM-37D2		97.17		39.53		
GM-38D2		91.56		42.04		
GM-70D2		99.58		40.19		
~~GM-71D2~~		~~98.45~~		41.21		
GM-73D2		104.62		44.89		
GM-74D2		107.36		47.71		
GM-75D2		93.63		34.45		
WELL 1	120' airline	116.78		119-45=74		848 -732
WELL 3	150' airline	NA		150-48=102		
WELL 17	110' airline	104.10		110-42=68		1167.6 -18
WELL 18	110' airline	110.00		No airline hose		
WELL 19	no airline	108.70		70.62		976.3

See notes on last page

Well 1 airline hose missing one foot.

Table 3. Water-Level Measurement Data, Third Quarter 2008, Operable Unit 2, Northrop Grumman Corporation, Bethpage, New York.

Well Identification		Measuring Point Elevation (ft msl)		Depth to Water (ft bmp)	Water-Level Elevation (ft msl)	Pumping Rate GPM
Outpost Wells						
BPOW1-1		73.65		29.20		
BPOW1-2		73.54		31.47		
BPOW1-3		73.37		31.57	31.57 NO PLUG	
BPOW2-1		60.06				
BPOW2-2		59.96			~~28.05~~	
BPOW3-1	27.34	63.19		27.34		
BPOW3-2		63.72		28.83		
BPOW4-1		67.34		28.88		
BPOW4-2		67.18		27.95		

ft msl feet relative to mean sea level
ft bmp feet below measuring point
NM Not Measured

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Page _____ of _____

Water Sampling Log

Project NORTHROP- GRUMMAN Project No. 40014464.0408.00002

Site Location _____ Date 3-31-11

Well No. BPOW-1 Replicate No._____ Weather RAINY 40

Sampling Personnel GWCB Sampling Time: Begin _____ End _____

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	241
Depth to Water (ft bmp)	
Depth to Packer (ft bmp)	169
Water Column in Well (ft)	72
Casing Diameter	4(0.65)
Gallons in Well	46.8 x 3
Gallons Purged Prior to Sampling	140
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	120 PSI
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin _____ End _____	

Field Parameters

Color	COLORLESS			
Odor	NONE			
Appearance	CLEAR			
	I	1V	2V	3V
pH (s.u.)	7.15	5.24	5.21	5.41
Conductivity (~~mS/cm~~) or (µmhos/cm) [1]	348	186.0	185.4	189.2
Temperature (°C)	11.6	11.8	11.6	11.8
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: _____

Parameter	Container	No.	Preservative

PID Reading ~

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

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Infrastructure, environment, facilities

Page _____ of _____

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464.0408.00001

Site Location BETHPAGE NY Date 3-31-08

Well No. BPDW1-2 Replicate No. _____ Weather RAIN 40°

Sampling Personnel GW & CB Sampling Time: Begin _____ End _____

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	335
Depth to Water (ft bmp)	
Depth to Packer (ft bmp)	294
Water Column in Well (ft)	41
Casing Diameter	4" (0.65)
Gallons in Well	26.65 x 3
Gallons Purged Prior to Sampling	80
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	170
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin _____ End _____	

Field Parameters

Color	COLORLESS
Odor	NONE
Appearance	CLEAR

	I	1V	2V	3V
pH (s.u.)	5.52	5.48	5.35	5.26
Conductivity ~~(mS/cm) or~~ (µmhos/cm) [1]	76.9	68.8	69.9	72.7
Temperature (°C)	12.9	11.6	11.3	11.3
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: MEASURED VOLUME IN DRUMS

Parameter	Container	No.	Preservative

PID Reading _____

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

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Water Sampling Log

Project NORTHROP GRUMMAN Project No. NY001464.0408.00002

Site Location Date 3-31-08

Well No. BPOW1-3 Replicate No. ____ Weather RAINY 40°

Sampling Personnel GW CB Sampling Time: Begin ____ End ____

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	419
Depth to Water (ft bmp)	
Depth to Packer (ft bmp)	344
Water Column in Well (ft)	75
Casing Diameter	4 (0.65)
Gallons in Well	48.75 x3
Gallons Purged Prior to Sampling	146.25
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	185 PSI
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin ____ End ____	

Field Parameters

Color COLORLESS

Odor NONE

Appearance CLEAR

	I	1V	2V	3V
pH (s.u.)	5.65	5.66	4.47	4.41
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]	689	243	182.6	184
Temperature (°C)	12.5	11.4	11.3	11.4
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks:

Parameter	Container	No.	Preservative

PID Reading —

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

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Page _____ of _____

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. 4008464.0408.00002

Site Location BETHPAGE NY Date 4-1-08

Well No. BPOW3-1 Replicate No. _____ Weather OVERCAST 40°

Sampling Personnel G.W. CB Sampling Time: Begin _____ End _____

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	516
Depth to Water (ft bmp)	
Depth to Packer (ft bmp)	414
Water Column in Well (ft)	102
Casing Diameter	4" (0.65)
Gallons in Well	66.3 ×3
Gallons Purged Prior to Sampling	198.9
Pump Intake Setting (ft bmp)	2
Packer Pressure (psi)	220
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin _____ End _____	

Field Parameters

Color	COLORLESS
Odor	NONE
Appearance	CLEAR

	I	1V	2V	3V
pH (s.u.)	4.50	4.47	4.14	4.19
Conductivity (~~mS/cm~~) or (µmhos/cm) [1]	156.6	163.9	162.9	161.7
Temperature (°C)	13.9	12.8	12.6	12.6
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: _____

Parameter	Container	No.	Preservative

PID Reading 0.0

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

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Water Sampling Log

Project: NORTHROP-GRUMMAN Project No.: NY001464.0408.00002
Site Location: BETHPAGE NY Date: 4-1-08
Well No.: BPOW3-2 Replicate No.: ____ Weather: ____

Sampling Personnel: GW CB Sampling Time: Begin ____ End ____

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	647
Depth to Water (ft bmp)	503
Depth to Packer (ft bmp)	503
Water Column in Well (ft)	144
Casing Diameter	4(0.65)
Gallons in Well	93.6 x3
Gallons Purged Prior to Sampling	280
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	255
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time	Begin ____ End ____

Field Parameters

Color: COLORLESS
Odor: NONE
Appearance: CLEAR

	I	1V	2V	3V
pH (s.u.)	4.94	4.89	4.99	4.94
Conductivity ~~(mS/cm)~~ or (μmhos/cm) 1)	933	247	100.0	89.2
Temperature (°C)	13.3	12.7	12.4	12.7
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: VOLUME MEASURED FROM DRUMS

Parameter	Container	No.	Preservative

PID Reading ——

Well Casing Volumes

Gal./Ft. 1 1/4" = 0.06 2" = 0.16 3" = 0.37 4" = 0.65
1 1/2" = 0.09 2-½" = 0.26 3-½" = 0.50 6" = 1.47

1) Circle one unit type

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Infrastructure, environment, facilities

Page _____ of _____

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY0001464.0402.0002

Site Location BETHPAGE Date 4-1-08

Well No. BPOW 4-1 Replicate No. _____ Weather _____

Sampling Personnel GW CB Sampling Time: Begin _____ End _____

Purge Data

Measuring Point (describe)	TOC	
Sounded Well Depth (ft bmp)	5 SCREEN 652	5 SCREEN 652
Depth to Water (ft bmp)	222	~~652~~
Depth to Packer (ft bmp)	503	652
Water Column in Well (ft)	149	~~240~~ 640
Casing Diameter	4 (0.65)	~~6 x 3~~ (1.16)
Gallons in Well	96.5 x 3	640 x 3
Gallons Purged	290 + 9 =	
Prior to Sampling	309	
Pump Intake		
Setting (ft bmp)		
Packer Pressure (psi)	255	
Pumping Rate (gpm)		
Evacuation Method		
Sampling Method		
Purge Time	Begin _____	End _____

Field Parameters

Color COLORLESS

Odor NONE

Appearance CLEAR

	I	1V	2V	3V
~~pH~~ (s.u.)	5.48	5.48	5.47	
Conductivity (~~mS/cm~~) or (µmhos/cm) [1]	63.0	105.9	80.8	
Temperature (°C)	12.0	12.4	13.2	
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: _____

Parameter	Container	No.	Preservative

PID Reading _____

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

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Infrastructure, environment, facilities

Page _____ of _____

Water Sampling Log

Project NORTHROP - GRUMMAN Project No. NY001464.0408.00002

Site Location BETHPAGE NY Date 4-1-08

Well No. BPOW4-2 Replicate No. _____ Weather _____

Sampling Personnel _____ Sampling Time: Begin _____ End _____

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	764
Depth to Water (ft bmp)	22.00
Depth to Packer (ft bmp)	5.03
Water Column in Well (ft)	261
Casing Diameter	4" (0.65)
Gallons in Well	169.65 x 3
Gallons Purged Prior to Sampling	509
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	255
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin _____ End _____	

Field Parameters

Color: COLORLESS

Odor: NONE

Appearance: CLEAR

	I	1V	2V	3V
pH (s.u.)	4.61	4.33	4.27	4.27
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]	114.1	192.7	157.7	140.7
Temperature (°C)	14.2	12.9	13.0	13.0
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: VOLUME TAKEN FROM DRUMS FILLED

Parameter	Container	No.	Preservative

PID Reading _____

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

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Water Sampling Log

Project Northrop Grumman Project No. NY 00 1464 040 8.00067 Page 1 of 1

Site Location Bethpage NY Date 3/13/08

Site/Well No. FW-03 Replicate No.

Weather Sunny 40's Sampling Time: Begin 14:37 End 14:38

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	64
Depth to Water (ft bmp)	52.88
Depth to Packer (ft bmp)	
Water Column in Well (ft)	11.12
Casing Diameter	2" (0.16)
Gallons in Well	1.77
Gallons Pumped/Bailed Prior to Sampling	5.33
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	1 gpm
Evacuation Method	Grundfos pump
Sampling Method	3 vol/ea
Purge Time	Begin 14:37 End

Field Parameters

	1	1V	2V	3V
Color	brown	brown	clay	clay
Odor	none	none	none	none
Appearance				
pH (s.u.)	5.95	6.24	6.33	6.33
Conductivity (mS/cm)				
(µmhos/cm)	245	249	253	263
Temperature (°C)	13.1	14.2	14.8	14.8
~~DO (mg/L)~~				
~~Turbidity (NTU)~~				103.9
Time	14:32	14:33	14:35	14:38
DTW (ft bmp)				

Remarks: VOCs.

Constituents Sampled: See COC Sampling Personnel: DBG / fw

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

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Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NORTHROP-GRUMMAN
Project Number: N400144104.0002
Site Location: BETHPAGE NY
Well ID: GM-130
Date: 3-24-08
Sampled By: GW
Sampling Time:
Recorded By: GW
Weather:
Coded Replicate No.:

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material:
Purge Method: LOW FLOW
Casing Diameter:
Screen Interval (ft bmp): Top: Bottom:
Sounded Depth (ft bmp):
Pump Intake Depth (ft bmp):
Depth to Water (ft bmp):
Purge Time: Start: Finish:

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
2:05		450mL		11.7	7.08	212	95	3.96		43.10
2:10				13.0	7.07	164.7	103	1.76		
2:15				13.5	6.96	160.5	114	1.37		
2:20				14.0	6.38	160.8	125	1.04		
2:25				14.3	6.04	163.7	130	0.88		43.15
2:30				14.5	6.03	165.6	132	.72		
2:35				14.6	5.98	165.4	135	.74		
2:40				14.5	5.99	165.3	138	.73		43.05
2:45				14.6	6.07	165.3	132	3.12		
2:50				14.6	6.06	165.5	130	4.77		
2:55								7		
3:00										
3:05										
3:10										
3:15										

PURGE COMPLETE

Collected Sample Condition
Color: COLORLESS
Odor: SLIGHT
Appearance:

Parameter	Container	No.	Preservative

PID Reading:

Comments: PUMP NEEDS TO BE CHECKED

1) Circle one unit type

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Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY00 1464.0408 0007 Well GM-15D Date 3/11/08

Total depth (ft bmp) 342 Screen Setting (ft bmp) 332-342 Casing Diameter (inches) 4"

Measuring Point Description _____ Static Water Level (ft bmp) 43.76

Pump Intake (ft bmp) Midpoint 337 Sampling Time: Begin 10:30 End 11:30

Weather clear, Sunny 40's

Sampled by : DJG

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
10:30	400	43.76	4.19	12.7	356	285	1.07		clear, odorless
10:35	400	43.74	4.14	13.4	315	295	2.44		
10:40	400	43.74	4.16	13.3	298	304	2.04		
10:45	400	43.78	4.16	12.7	380	304	4.71		
10:50	400	43.84	4.00	13.1	391	332	4.66		
10:55	400	43.05	3.99	12.9	368	315	4.63		
11:00	400	43.43	4.03	13.0	347	339	5.12		
11:05	400	43.84	3.94	13.2	379	344	5.07		
11:10	400	43.61	4.14	13.1	349	343	4.55		
11:15	400	43.63	4.02	13.3	322	363	4.43		
11:20	400	43.89	3.96	12.1	352	331	5.16		
11:25	400	43.53	4.04	13.3	353	342	4.74		
11:30	400	43.84	4.01	13.1	369	343	4.42		

Sample collected 11:30

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0403.00002 Well BM-15D2 Date 3/10/08

Total depth (ft bmp) 556 Screen Setting (ft bmp) 536-556 Casing Diameter (inches) 4"

Measuring Point Description _____ Static Water Level (ft bmp) 46.37

Pump Intake (ft bmp) 546 midpoint Sampling Time: Begin 9:30 End 10:30

Weather clear, sunny, 40's

Sampled by : DJG

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
9:30	350	46.37	5.72	9.2	191.8	210	8.76		clear, odorless
9:35	350	46.37	4.10	12.6	62.9	205	3.22		
9:40	350	46.37	3.99	12.3	190.3	238	1.71		
9:45	350	46.37	4.06	13.1	219	259	4.30		
9:50	350	46.37	4.06	12.4	184	266	4.93		
9:55	350	46.37	4.17	12.8	214	273	4.46		
10:00	350	46.37	4.16	13.0	190	278	5.16		
10:05	350	46.37	4.17	13.3	228	286	5.40		
10:10	350	46.37	4.26	13.2	215	260	4.56		
10:15	350	46.37	4.27	12.5	200	275	5.26		
10:20	350	46.37	4.29	12.9	184	285	5.80		
10:25	350	46.37	4.23	12.6	187.0	280	5.87		
10:30	350	46.37	4.34	12.4	204	270	4.85		

* Sample collected @ 10:30

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Water Sampling Log

Project Northrop Grumman Project No. NY001464.0468.00003 Page 1 of 1

Site Location Bethpage, NY Date 3/4/08

Site/Well No. GM-15I Replicate No.

Weather Sunny 40's Sampling Time: Begin 12:15 End 13:50

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	105
Depth to Water (ft bmp)	41.27
Depth to Packer (ft bmp)	92
Water Column in Well (ft)	13
Casing Diameter	4" (0.64
Gallons in Well	8.32
Gallons Pumped/Bailed Prior to Sampling	24.96
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	dedicated bladder
Sampling Method	3 Volume
Purge Time	Begin 12:15 End 13:50

Field Parameters

Color clear

Odor none

Appearance

	1	1V (8.32)	2V (17)	3V (25)
pH (s.u.)	4.68	4.83	4.60	4.65
Conductivity (mS/cm) (µmhos/cm)	300	270	256	268
Temperature (°C)	12.7	11.9	13.2	13.2
DO (mg/L)	6.18	6.69	6.27	6.24
Turbidity (NTU)				
Time	12:15	12:48	13:21	13:50
DTW (ft bmp)	41.25			
(MV)orp	275	274	253	294

Remarks: Sample collected @ 13:50 92 - 41.27 = 50.73(0.43) + 25 = 46.81

Constituents Sampled: See COC Sampling Personnel: DBG

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

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Low Flow Groundwater Sampling Form

Page ____ of ____

Project/No. 14001464.0468.00002 Well GM-TI Date 8-7-08

Total depth (ft bmp) 120 Screen Setting (ft bmp) 100-120 ~~MSD PUMP~~ Casing Diameter (inches) 4

Measuring Point Description ____ Static Water Level (ft bmp) 45.04

Pump Intake (ft bmp) 110 ~~MSD PUMP~~ Sampling Time: Begin 2:40 End 3:27

Weather ____

Sampled by : G. [illegible]

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
[illegible]	240	~~B~~ 45.04	5.50	11.4	108.9	169	6.54		
[illegible]	245		5.67	11.2	109.2	168	6.75		
[illegible]	2:50		5.90	11.0	110.4	160	7.01		
[illegible]	2:55	45.04	5.96	11.0	110.8	157	6.94		
[illegible]	3:00		6.02	11.0	113.4	158	6.88		
[illegible]	305	45.04	6.03	11.0	114.2	155	6.91		
[illegible]	3:10		6.05	11.0	115.9	155	6.92		
[illegible]	3:15		6.05	11.0	116.4	154	6.91		
3:25	3:20	45.04	6.07	11.1	117.1	154	6.87		
	3:25		6.07	11.1	117.1	155	7.01	1.64	

ARCADIS

Low Flow Groundwater Sampling Form

Page ____ of ____

Project/No. NY001464.0408.00002 Well GM-7D Date 3-7-08

Total depth (ft bmp) 298 Screen Setting (ft bmp) 278-298 Casing Diameter (inches) 4"

Measuring Point Description ____ Static Water Level (ft bmp) 47.55

Pump Intake (ft bmp) 288 Sampling Time: Begin 1:35 End 2:40

Weather OVERCAST 35°

Sampled by : G. WILLIAMS

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
1:35		47.55	5.75	10.4	126.3	125	7.85		
1:40			5.78	10.5	125.1	128	7.27		
1:45			5.60	10.8	121.6	149	6.80		
1:50		47.54	5.56	11.4	116.2	155	6.72		
1:55			5.53	11.5	115.1	160	6.78		
2:00			5.51	11.4	114.4	162	6.64		
2:05			5.51	11.3	112.7	165	6.59		
2:10		47.54	5.47	11.3	111.9	166	6.57		
2:15			5.45	11.4	110.3	168	6.58		
2:20			5.45	11.4	110.5	168	6.62		
2:25		47.54	5.44	11.6	109.8	169	6.54		
2:30			5.42	11.4	109.5	173	6.68		
2:35			5.42	11.4	109.3	172	6.56	3.25	

ARCADIS

Water Sampling Log

Project NY001464.0409.0002 Project ~~No.~~ Northrop Grumman Page 1 of 1

Site Location Beth Page, NY Date 3/13/13

Site/Well No. GM-15 S Replicate No.

Weather Sunny 40 Sampling Time: Begin 10:26 End 10:56

Evacuation Data

Measuring Point	41.59
Sounded Well Depth (ft bmp)	41.59
Depth to Water (ft bmp)	80
Depth to Packer (ft bmp)	
Water Column in Well (ft)	
Casing Diameter	4
Gallons in Well	24.5
Gallons Pumped/Bailed Prior to Sampling	73.7
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	2.5
Evacuation Method	3 volume
Sampling Method	Grundfos pump
Purge Time	Begin 10:26 End

Field Parameters

Color clear

Odor none

Appearance

	I	1V	2V	3V
pH (s.u.)	7.40	4.91	4.86	4.88
Conductivity (mS/cm)				
(µmhos/cm)	96.1	163.8	196.4	217
Temperature (°C)	13.6	14.4	14.0	13.7
~~DO (mg/L)~~				
Turbidity (NTU)				21.9
Time	10:26	10:36	10:46	10:56
DTW (ft bmp)	42.39	42.41	42.35	4

Remarks: Metals, VOC

Constituents Sampled: See COC Sampling Personnel: DBG / GW

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS GERAGHTY & MILLER

DAILY LOG

Well(s) 6M-18D Project/No. NY001464.0408.~~0000~~ 00002 Page ____ of ____

Site Location G. WILLIAMS

Prepared By G. WILLIAMS

Date/Time	Description of Activities						
3-21-08	ph	Cond	TEMP	ORP	DO	TURB	DTW
4:15	5.36	114.1	13.1	240	7.84		42.23
4:20	5.55	113.5	14.6	238	6.02		
4:25	5.56	114.3	15.0	240	6.47		
4:30	5.56	124.0	15.0	240	6.94		
4:35	5.56	126.1	15.4	239	6.91		42.23
4:40	5.55	127.1	15.4	239	6.96		
4:45	5.56	132.4	15.2	238	6.83		
4:50	5.53	133.3	15.2	239	6.90		
4:55	5.53	133.7	15.7	238	6.92		
5:00	5.54	133.8	15.1	239	7.01		42.22
5:05	5.52	134.2	15.1	240	7.36		
5:10	5.55	133.9	15.0	239	7.44		
5:15	5.55	134.4	14.9	239	7.16	3.98	42.23

ARCADIS

Water Sampling Log

Project: Northrop Grumman | Project No.: NY001464.0408.00002 | Page: 1 of 1

Site Location: Bethpage, NY | Date: 3/4/08

Site/Well No.: GM-20D | Replicate No.:

Weather: Partly cloudy 50's. | Sampling Time: Begin 10:35 End 11:49

Evacuation Data

Measuring Point	TOC
Sounded Well Depth (ft bmp)	226
Depth to Water (ft bmp)	35.39
Depth to Packer (ft bmp)	213
Water Column in Well (ft)	13
Casing Diameter	4" (0.64)
Gallons in Well	8.32
Gallons Pumped/Bailed Prior to Sampling	24.96
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	dedicated bladder
Purge Time	Begin 10:35 End 11:49

Field Parameters

	1	1V	2V	3V
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance	-			
pH (s.u.)	8.97	8.41	7.32	7.31
Conductivity ~~(mS/cm)~~ (µmhos/cm)	141.4	121.1	116.9	116.8
Temperature (°C)	13.0	13.0	13.2	13.4
DO (mg/L)	~~3~~	8.39	8.86	6.94
Turbidity (NTU)	3.40	4.75	3.15	7.43
Time				
DTW (ft bmp)	35.40	35.55	35.45	35.45

Remarks: *NEEDS Bladder Replaced 213 - 35.39 = 177 (.43) + 25 = 101.3 psi

*Sample collected @ 11:50

Constituents Sampled: See COC | Sampling Personnel: DBC

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Water Sampling Log

Project ADDENDUM-GRUMMAN Project No. NY001464.0008.00002

Site Location BETHPAGE Page 1 of 1

Site/Well No. GM-20I Date 3-3-08

Weather CLEAR 40° Replicate No.

Sampling Time: Begin 1:20 End 15:40

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	105
Depth to Water (ft bmp)	32.65
Depth to Packer (ft bmp)	92
Water Column in Well (ft)	13
Casing Diameter	4" (64)
Gallons in Well	~~6.648~~
Gallons Pumped/Bailed Prior to Sampling	24
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin	13:20 End 15:40

Field Parameters

	I	1V	2V	3V
Color	clear	clear	clear	clear
Odor	none	no	no	no
Appearance				
pH (s.u.)	7.42	11.15	11.17	11.05
Conductivity ~~(mS/cm)~~ (µmhos/cm)	319	273	266	257
Temperature (°C)	11.4	12.7	12.7	13.0
DO (mg/L)				
Turbidity (NTU)		3.63	4.77	3.60
Time				
DTW (ft bmp)				32.65

Remarks: DTW ~~32~~.65

92-33 = 59(.43) + 25 = 70 (30)

* collected sample @ 15:45

Constituents Sampled: See COC Sampling Personnel: DBG

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Water Sampling Log

Project Northrop Grumman Project No. NY001464.0408.00007 Page 1 of 1

Site Location Bethpage, NY Date 3/4/08

Site/Well No. GM-21I Replicate No.

Weather Rain 50° Sampling Time: Begin 14:08 End 15:48

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	140
Depth to Water (ft bmp)	34.10
Depth to Packer (ft bmp)	92
Water Column in Well (ft)	13
Casing Diameter	4" (0.64)
Gallons in Well	8.45
Gallons Pumped/Bailed Prior to Sampling	25.35
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	3 Volume
Sampling Method	dedicated bladder
Purge Time	Begin 14:08 End 15:48

Field Parameters

	1	1V	2V	3V
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance				
pH (s.u.)	9.75	9.75	9.76	9.53
Conductivity (mS/cm)				
(µmhos/cm)	138.6	138.0	136.6	138
Temperature (°C)	11.6	11.6	11.7	11.6
DO (mg/L)	~~2.57~~			
Turbidity (NTU)	2.57	2.96	3.08	6.81
Time				
DTW (ft bmp)				

Remarks: 92 - 34.10 = 57.9 (0.43) + 25 = 49.8 psi

*Sample Time 15:50

Constituents Sampled: See COC Sampling Personnel: SBG

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY00 1464.0408.00002 Well GM-21D Date 3/4/08

Total depth (ft bmp) 288 Screen Setting (ft bmp) _____ Casing Diameter (inches) 4"

Measuring Point Description _____ Static Water Level (ft bmp) 40.31

Pump Intake (ft bmp) _____ Sampling Time: Begin 13:00 End 14:05

Weather Overcast 50's

Sampled by : DBG

Sample Time 14:05

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos/cm or ~~ms/cm~~	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
13:05	400	40.11	5.95	12.2	108.9	130	7.30	4.51	
13:10	400	40.11	5.31	12.0	117.3	174	5.33	4.03	
13:15	400	40.11	5.07	11.9	115	202	5.41	3.07	
13:20	400	40.11	5.06	11.8	108.8	239	5.31	2.91	
13:25	400	40.11	4.93	11.8	107.7	243	5.28	2.90	
13:30	400	40.11	4.91	11.7	105.9	250	5.50	1.99	
13:35	400	40.11	4.89	11.7	103.5	262	5.55	1.69	
13:40	400	40.11	4.89	11.7	103.0	264	5.63	2.78	
13:45	400	40.11	4.89	11.4	103.1	272	5.76	2.70	
13:50	400	40.11	4.88	11.4	102.9	275	5.82	1.95	
13:55	400	40.11	4.88	11.4	102.8	279	5.61	1.74	
14:00	400	40.11	4.87	11.3	102.5	280	5.69	1.50	
14:05	400	40.11	4.87	11.3	102.6	282	5.75	1.52	

ARCADIS

Water Sampling Log

Project NORTHROP GRUMMAN Project No. NY001464.0408.00002 Page ___ of ___

Site Location BETHPAGE Date 3-18-08

Site/Well No. GM-21S Replicate No. ___

Weather OVERCAST 45° Sampling Time: Begin 1:00 End 1:40

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	67.00
Depth to Water (ft bmp)	31.25
Depth to Packer (ft bmp)	
Water Column in Well (ft)	35.75
Casing Diameter	2" (0.16)
Gallons in Well	5.7
Gallons Pumped/Bailed Prior to Sampling	18 GAL
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	Q=1.5T=12 10=4
Evacuation Method	
Sampling Method	
Purge Time Begin	1:15 End 1:27

Field Parameters

	1	1V	2V	3V
Color				COLORLESS
Odor				NONE
Appearance				CLEAR
pH (s.u.)	12.598	7.64	7.41	7.42
Conductivity (~~mS/cm~~)				
(µmhos/cm)	121.4	124.3	111.4	
Temperature (°C)	16.2	12.1	16.2	16.0
DO (mg/L)				
Turbidity (NTU)				
Time	1:15	1:19	1:23	1:27
DTW (ft bmp)				

Remarks: ___

Constituents Sampled: See COC Sampling Personnel: G.W. PP

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

Low Flow Groundwater Sampling Log

Project Number:	N4001464.0408	Task:	01002	Well ID:	GM-33D-2
Date:	3-14-08	Sampled By:	GD		
Sampling Time:		Recorded By:	GD		
Weather:	OVERCAST 40°	Coded Replicate No.:			

Instrument Identification

Water Quality Meter(s): YSI 600XL Serial #:

Purging Information

Casing Material:	PVC	Purge Method:	LOW FLOW		
Casing Diameter:	4	Screen Interval (ft bmp):	Top		Bottom
Sounded Depth (ft bmp):	46.45	Pump Intake Depth (ft bmp):			
Depth to Water (ft bmp):		Purge time	Start:		Finish:

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. umhos (~~ms/cm~~)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
2:50				15.7	6.66	102.1	157	8.21		46.45	
2:55				15.5	6.61	100.4	163	6.59			
3:00				15.3	6.12	99.1	164	6.20		46.42	
3:05				15.2	6.08	99.0	165	6.38			
3:10				15.1	6.02	98.6	165	6.26		46.43	
3:15				15.1	6.04	98.5	163	6.52			
3:20				15.3	6.05	98.4	164	6.52			
3:25				15.2	6.07	98.3	163	6.48			
3:30				15.0	5.61	98.9	171	6.63		46.46	
3:35				14.9	5.64	99.0	181	7.27			
3:40				15.0	5.25	99.4	187	7.12			
3:45				14.9	5.30	99.2	193	7.48			
3:50				14.8	5.25	99.2	192	7.35	6.36	46.46	

Sample Condition Color: COLORLESS Odor: NONE Appearance: CLEAR

Sample Collection

Parameter:	Container:	No.	Preservative:

PID Reading 0.0

Comments

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0408.00002 Well GM-34D Date 3/13/08

Total depth (ft bmp) 319 Screen Setting (ft bmp) 309-319 Casing Diameter (inches) 2"

Measuring Point Description _____ Static Water Level (ft bmp) 11.80

Pump Intake (ft bmp) 314 mid point Sampling Time: Begin 11:00 End 12:00

Weather Sunny 40's

Sampled by : DBG/GW

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. (umhos) or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
11:00	400		6.47	10.7	196	177	1.99	7.45	clear, odorless
11:05	400	11.50	6.74	11.1	195.6	172	1.53		
11:10	400		6.88	11.4	194.5	170	1.41	4.36	
11:15	400	11.50	7.36	11.9	191.9	157	1.07		
11:20	400		7.80	12.1	189.5	142	0.99	3.53	
11:25	400	11.50	7.82	12.2	189.4	142	1.03		
11:30	400		8.20	12.3	188.7	123	0.89	4.45	
11:35	400	11.50	8.98	12.4	188.1	79	0.90		
11:40	400		8.98	12.4	188.6	78	0.94	6.48	
11:45	400	11.50	8.84	12.4	190.7	78	1.04		
11:50	400		8.82	12.4	191.1	80	1.03	3.90	
11:55	400	11.50	8.29	12.5	193.2	94	1.19		
12:00	400		8.25	12.5	194.2	97	1.22	3.91	

Vac's

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0408.00002 Well GM-34D Date 3/13/08

Total depth (ft bmp) 319 Screen Setting (ft bmp) 309-319 Casing Diameter (inches) 2"

Measuring Point Description _____ Static Water Level (ft bmp) 11.80

Pump Intake (ft bmp) 314 mid pump Sampling Time: Begin 11:00 End 12:00

Weather Sunny 40's

Sampled by : DBG/GW

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
11:00	400		6.47	10.7	196	177	1.99	7.45	clear, odorless
11:05	400	11.50	6.74	11.1	195.6	172	1.53		
11:10	400		6.88	11.4	194.5	170	1.41	4.36	
11:15	400	11.50	7.36	11.9	191.9	157	1.07		
11:20	400		7.80	12.1	189.5	142	0.99	3.53	
11:25	400	11.50	7.82	12.2	189.4	142	1.03		
11:30	400		8.20	12.3	188.7	123	0.89	4.45	
11:35	400	11.50	8.98	12.4	188.1	79	0.90		
11:40	400		8.98	12.4	188.6	78	0.94	6.48	
11:45	400	11.50	8.84	12.4	190.7	78	1.04		
11:50	400		8.82	12.4	191.1	80	1.03	3.90	
11:55	400	11.50	8.29	12.5	193.2	94	1.19		
12:00	400		8.25	12.5	194.2	97	1.22	3.91	

VOC's

ARCADIS

Water Sampling Log

Project Northrop Grumman Project No. NY001464.0408.00007 Page 1 of 1

Site Location Bethpage, NY Date 3/10/08

Site/Well No. GM-35D2 Replicate No.

Weather Clear, Sunny 30's Sampling Time: Begin 13:11 End 14:40

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	530
Depth to Water (ft bmp)	36.64
Depth to Packer (ft bmp)	507
Water Column in Well (ft)	23 (0.64)
Casing Diameter	4"
Gallons in Well	14.72
Gallons Pumped/Bailed Prior to Sampling	44.16
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	dedicated bladder
Sampling Method	3x volume
Purge Time	Begin 13:11 End 14:40

Field Parameters

Color: Clear

Odor: none

Appearance:

	1	15 1V	30 2V	45 3V
pH (s.u.)	4.64	4.68	4.62	4.56
Conductivity (mS/cm) (µmhos/cm)	247	250	283	260
Temperature (°C)	12.2	12.7	13.1	12.9
DO (mg/L)	5.03	4.48	4.21	4.10
Turbidity (NTU)				
Time	13:12	13:43	14:08	14:40
DTW (ft bmp)	36.89	36.87	36.89	36.90
(MV) ORP	256	243	235	252

Remarks: Split collected here 507-36.64 = 470.16 (0.43) +25 = 227

Sample collected at 14:40

Constituents Sampled: See COC Sampling Personnel: DRG

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464.0408.00002 Page ___ of ___

Site Location BETHPAGE N.Y. Date 4-9-08

Site/Well No. GM-350-2 Replicate No. ___

Weather CLEAR 45° Sampling Time: Begin 2:30 End ___

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	36.66
Depth to Packer (ft bmp)	518
Water Column in Well (ft)	22
Casing Diameter	4 (0.65)
Gallons in Well	14.30
Gallons Pumped/Bailed Prior to Sampling	45
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	230
Pumping Rate (gpm)	
Evacuation Method	3 well volumes
Sampling Method	
Purge Time	Begin ___ End ___

Field Parameters

Color: COLORLESS

Odor: NONE

Appearance: CLEAR

	1	1V	2V	3V
pH (s.u.)	7.65	5.82	5.83	5.78
Conductivity (~~mS/cm~~)				
(µmhos/cm)	135.7	132.9	132.0	132.0
Temperature (°C)	14.7	15.0	14.7	14.7
DO (mg/L)				
Turbidity (NTU)				2.8
Time				
DTW (ft bmp)				

Remarks: 518 - 36 = 482 x .43 + 25 = 230 SEE PAGE 1111

Constituents Sampled: See COC Sampling Personnel: G. WILLIAMS

Well Casing Volumes

Gal./Ft.	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Water Sampling Log

Project: Northrop Grumman | Project No. NY001464.0409.00007 | Page 1 of 1

Site Location: Bethpage, NY | Date: 3/5/08

Site/Well No. GM-36 D | Replicate No.

Weather: Sunny 40s | Sampling Time: Begin 12:30 End 14:00

Evacuation Data	
Measuring Point	
Sounded Well Depth (ft bmp)	214
Depth to Water (ft bmp)	32.78
Depth to Packer (ft bmp)	201
Water Column in Well (ft)	
Casing Diameter	4" (0.64)
Gallons in Well	8.32
Gallons Pumped/Bailed Prior to Sampling	24.96
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	110
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	Dedicated bladder
Purge Time	Begin 12:30 End 14:00

Field Parameters	I	1V	2V	3V
Color	clear	clear	clear	clear
Odor	None	None	None	None
Appearance	–	–	–	–
pH (s.u.)	4.17	5.11	4.83	4.88
Conductivity (mS/cm)				
(µmhos/cm) (circled)	284	290	286	277
Temperature (°C)	11.7	11.7	12.3	11.7
DO (mg/L)				
Turbidity (NTU)				
Time				
DTW (ft bmp)	32.98	32.80	27.28	29.55

Remarks: 201 - 32.78 = 168.22 (0.47) + 25 = 72.37 = 97.3 BF

* Sample time: 14:00 — Split Sample taken here.

Constituents Sampled: See COC | Sampling Personnel: DBG

Well Casing Volumes

Gal./Ft.	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Water Sampling Log

Project Northrop Grumman Project No. NY001464.0408.0 0003 Page 1 of 1

Site Location Bethpage NY Date 3/5/09

Site/Well No. GM-34D2 Replicate No. ______

Weather Overcast 40's Sampling Time: Begin 10:05 End 12:29

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	540
Depth to Water (ft bmp)	34.48
Depth to Packer (ft bmp)	520
Water Column in Well (ft)	518
Casing Diameter	4" (.66)
Gallons in Well	14.7
Gallons Pumped/Bailed Prior to Sampling	44.16
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	270
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	Dedicated bladder
Purge Time	Begin 10:05 End 12:29

Field Parameters

	I	1V	2V	3V
Color	clear	clear	clear	clear
Odor	None	none	None	none
Appearance	-	-	-	-
pH (s.u.)	8.14	11.35	9.88	8.29
Conductivity ~~(mS/cm)~~ (µmhos/cm)	329	1119	414	293
Temperature (°C)	12.2	12.8	12.8	11.7
DO (mg/L)				
Turbidity (NTU)				
Time				
DTW (ft bmp)	35.02	35.02	35.02	35.02

255

518-34.48-483.92(0.43=207.91/20=23

Remarks:

* Sample time 12:30 - Split Sample taken Here

Constituents Sampled: See COC Sampling Personnel: DRG

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Water Sampling Log

Project Northern Gateway Project No. MY00 1464.0405 00007 Page 1 of 1

Site Location Buffalo, NY Date 3/6/08

Site/Well No. ~~MW~~ 37D Replicate No.

Weather clear - 50's Sampling Time: Begin 8:45 End 10:55

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	262
Depth to Water (ft bmp)	36.71
Depth to Packer (ft bmp)	239
Water Column in Well (ft)	23
Casing Diameter	4" (0.64)
Gallons in Well	14.72
Gallons Pumped/Bailed Prior to Sampling	44.16
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	140
Pumping Rate (gpm)	
Evacuation Method	3 Volumes
Sampling Method	Dedicated bladder
Purge Time	Begin 8:45 End 10:55

Field Parameters

	1	1V	2V	3V
Color	clear	clear	clear	clear
Odor	none	none	none	None
Appearance				
pH (s.u.)	3.90	3.79	3.75	3.89
Conductivity (mS/cm)				
(umhos/cm)	453	443	412	441
Temperature (°C)	11.7	11.3	10.7	12.2
DO (mg/L)				
Turbidity (NTU)				
Time				
DTW (ft bmp)	36.00	35.71	35.53	31.97

Remarks: 239 - 36.71 = 202.29 (0.43) ~140 / 15 = 111 psi

Collected Sample @ 10:55 Split Sample taken here.

Constituents Sampled: See COC Sampling Personnel: DBG

Well Casing Volumes

Gal./Ft.	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Water Sampling Log

Project: Northrop Grumman | Project No.: NY001464.0403.00001 | Page: 1 of 1

Site Location: Beth Page | Date: 3/6/08

Site/Well No.: GM-37DD | Replicate No.:

Weather: Clear, Sunny 40's | Sampling Time: Begin 12:45 End 15:20

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	390
Depth to Water (ft bmp)	37.37
Depth to Packer (ft bmp)	367
Water Column in Well (ft)	23
Casing Diameter	4" (0.64)
Gallons in Well	14.72
Gallons Pumped/Bailed Prior to Sampling	44.16
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	3 Volumes
Sampling Method	Dedicated bladder
Purge Time	Begin 12:45 End 15:20

Field Parameters

	1	1V	2V	3V
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance				
pH (s.u.)	3.99	3.95 (60)	4.01	4.05
Conductivity (mS/cm)				
(µmhos/cm)	295	307	311	325
Temperature (°C)	12.6	12.3	12.5	12.2
DO (mg/L)				
Turbidity (NTU)				
Time				
DTW (ft bmp)	37.27	37.29	37.40	37.38

Remarks: 367 - 37.37 = 329.63 (0.44) 145 - 14

Sample collected @ 15:20 Split Sample taken here

Constituents Sampled: See COC | Sampling Personnel: DKG

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0403.00007 Well GM-38D Date 3/16/06

Total depth (ft bmp) 340 Screen Setting (ft bmp) 330-340 Casing Diameter (inches) 4"

Measuring Point Description _____ Static Water Level (ft bmp) 35.97

Pump Intake (ft bmp) 330 midpoint Sampling Time: Begin 11:25 End 12:25

Weather clear, sunny 30°

Sampled by : DBG *Split taken here

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
11:25	400	35.90	5.32	10.6	312	214	3.93		clear / color less
11:30	400	36.00	5.55	11.0	288	203	1.50		
11:35	400	36.00	5.19	10.9	321	201	1.30		
11:40	400	36.00	5.13	11.0	274	210	1.06		
11:45	400	36.00	4.88	11.6	286	221	0.87		
11:50	400	36.00	4.55	11.7	298	238	1.44		
11:55	400	36.00	4.40	11.5	287	258	0.98		
12:00	400	36.00	4.38	11.5	300	263	1.04		
12:05	400	36.00	4.32	11.3	277	262	0.94		
12:10	400	36.00	4.35	11.4	304	263	0.96		
12:15	400	36.00	4.44	11.8	321	270	0.97		
12:20	400	36.00	4.35	10.8	314	271	1.15		
12:25	400	36.00	4.41	11.7	309	275	1.13		

* 12:25 Sample collected

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. 60001464.0408-0002 Well GM-38D2 Date 3/10/09

Total depth (ft bmp) 495 Screen Setting (ft bmp) 475-495 Casing Diameter (inches) 4

Measuring Point Description _____ Static Water Level (ft bmp) 38.10

Pump Intake (ft bmp) 485 (mid point) Sampling Time: Begin 10:16 End 11:20

Weather clear, Sunny 20° Sampled by : JBG

* Split taken here (DO)

(DO) Redox mV Conduct (umhos)

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	~~Cond.~~ umhos or ms/cm	~~Redox~~ (mV)	DO (mg/L)	TURB (NTU)	Notes
10:20	350	38.30	5.26	11.5	(DO) 270 270	(DO) 270 270	2.85		clear / odorless
10:25	350	38.38	5.25	11.5	(DO) 270 270	269 270	2.64		
10:30	350	38.46	5.12	11.3	255	174	2.32		
10:35	350	38.46	5.20	11.7	273	181	1.98		
10:40	350	38.46	5.21	11.7	272	183	1.54		
10:45	350	38.46	5.13	11.5	233	182	1.46		
10:50	350	38.46	4.96	11.4	207	196	1.24		
10:55	350	38.46	4.78	11.4	209	209.1	1.06		
11:00	350	38.46	4.68	11.0	210	181.1	1.05		
11:05	350	38.46	4.64	10.3	211	177	1.13		
11:10	350	38.46	4.67	11.1	226	179.4	1.11		
11:15	350	38.46	4.59	11.1	231	184.0	1.35		
11:20	350	38.46	4.60	11.2	232	181.8	1.30		

* 11:25 collected sample

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NORTHROP GRUMMAN
Project Number: NY001441.0408.00002
Site Location: BETHPAGE
Well ID: 6M-39D
Date: 3-18-08
Sampled By: GW
Sampling Time:
Recorded By: GW
Weather: DRIZZLY 40°
Coded Replicate No.:

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material:
Purge Method: LOW FLOW
Casing Diameter:
Screen Interval (ft bmp) Top: Bottom:
Sounded Depth (ft bmp):
Pump Intake Depth (ft bmp):
Depth to Water (ft bmp): 35.84
Purge Time Start: Finish:

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
3:35		450		11.6	5.94	115.5	225	6.86		35.84
3:40		↓		11.7	5.94	115.2	222	6.82		
3:45				12.2	6.02	114.3	220	6.61		
3:50				12.6	5.90	116.5	224	6.53		
3:55				12.6	5.85	116.9	224	6.81		35.88
4:00				12.6	6.84	117.8	225	6.81		
4:05				12.6	5.84	116.9	227	6.83		
4:10				12.4	5.84	116.5	232	6.90		
4:15				12.4	5.85	116.8	228	6.91		35.89
4:20				12.3	5.83	116.7	230	6.96		
4:25				12.5	5.83	116.9	231	7.02		
4:30				12.5	5.81	116.8	228	6.98		
4:35		↓		12.5	5.84	116.6	226	6.99	1.96	

Collected Sample Condition
Color: COLORLESS
Odor: NONE
Appearance: CLEAR

Parameter	Container	No.	Preservative

PID Reading: 0.0

Comments:

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NORTHROP GRUMMAN
Project Number: NY001464.0408.0002
Site Location: BETHPAGE
Well ID: GM-39D-2
Date:
Sampled By: GW
Sampling Time:
Recorded By: GW
Weather:
Coded Replicate No.:

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material:
Casing Diameter:
Sounded Depth (ft bmp):
Depth to Water (ft bmp):
Purge Method:
Screen Interval (ft bmp): Top: Bottom:
Pump Intake Depth (ft bmp):
Purge Time: Start: Finish:

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
2:25		490		11.0	6.02	133.4	234	8.06		38.68
2:30				11.6	6.01	126.0	235	7.19		
2:35				12.4	5.67	119.9	236	~~5.67~~ 6.91		
2:40				12.7	5.61	118.0	234	7.03		38.69
2:45				12.6	5.61	117.9	236	7.07		
2:50				12.6	5.61	117.7	231	7.06		
2:55				12.6	5.59	117.9	235	7.01		38.78
3:00				12.5	5.58	117.8	236	7.00		
3:05				12.6	5.56	117.8	240	7.05		
3:10				12.6	5.56	117.9	240	7.03		
3:15				12.7	5.56	117.8	284	7.03		
320				12.7	5.55	117.4	238	~~7.09~~		
3:25		V		12.7	5.55	117.7	236	7.07	2.54	

Collected Sample Condition
Color: COLORLESS
Odor: NONE
Appearance: CLEAR

Parameter	Container	No.	Preservative

PID Reading: 0.0

Comments:

1) Circle one unit type

ARCADIS

Water Sampling Log

Project Northrop Grumman Project No. NY 001464.0409.0002 Page 1 of 1

Site Location Bethpage, NY Date 3/5/09

Site/Well No. GM-7107 Replicate No.

Weather Overcast 40's Sampling Time: Begin 14:30 End 16:10

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	464
Depth to Water (ft bmp)	39.93
Depth to Packer (ft bmp)	441
Water Column in Well (ft)	23
Casing Diameter	4" (0.64)
Gallons in Well	14.72
Gallons Pumped/Bailed Prior to Sampling	214.16
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	210
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	Dedicated Bladder
Purge Time	Begin 14:30 End 16:10

Field Parameters

	I	1V	2V	3V
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance	—	—	—	—
pH (s.u.)	4.03	4.29	4.22	4.09
Conductivity ~~(mS/cm)~~ (µmhos/cm)	361	342	340	342
Temperature (°C)	11.9	12.1	11.9	11.2
DO (mg/L)				
Turbidity (NTU)				
Time				
DTW (ft bmp)	38.92	38.91	38.92	38.91

Remarks: 441 - 38.92 = 402.7 (0.64) + 05 = 197.9

Sample collected 16:10 Split sample taken there

Constituents Sampled: See COC Sampling Personnel: DBG

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NORTHROP (GRUMMAN)
Project Number: N4001461,04DB-D002 Site Location: BETHPAGE Well ID: 6M-73D
Date: 3-18-08 Sampled By: GW
Sampling Time: _____ Recorded By: GW
Weather: _____ Coded Replicate No. _____

Instrument Identification
Water Quality Meter(s): _____ Serial #: _____

Casing Material: _____ Purge Method: _____
Casing Diameter: _____ Screen Interval (ft bmp) Top: _____ Bottom: _____
Sounded Depth (ft bmp): _____ Pump Intake Depth (ft bmp): _____
Depth to Water (ft bmp): _____ Purge Time Start: _____ Finish: _____

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
10:10		480		9.0	6.54	252	217	7.19		40.98
10:15				10.7	5.67	151.9	233	6.68		
10:20				10.8	5.61	148.5	234	6.69		
10:25				11.3	5.61	130.8	236	6.68		40.98
10:30				11.3	5.42	123.6	238	6.58		
10:35				11.3	5.38	122.6	241	6.56		
10:40				11.4	5.36	122.3	239	6.55		
10:45				11.6	5.36	121.6	239	6.59		40.98
10:50				11.7	5.34	121.3	239	6.53		
10:55				11.7	5.34	121.3	239	6.51		
11:00				11.9	5.34	121.2	241	6.62		
11:05				12.0	5.33	121.6	238	6.61		40.98
11:10				12.0	5.33	120.8	241	6.58		

Collected Sample Condition: Color _____ Odor _____ Appearance _____

Parameter	Container	No.	Preservative

PID Reading: _____

Comments: _____

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: ~~NYO~~ NORTHROP-GRUMMAN OU-2
Project Number: N40614464.0408.00002
Site Location: BETHPAGE NY
Well ID: GM-130-2
Date:
Sampled By: GW
Sampling Time:
Recorded By: GW
Weather:
Coded Replicate No.: MS/MSD REP3-17-08

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material: PVC
Casing Diameter: 4"
Sounded Depth (ft bmp):
Depth to Water (ft bmp): 40.38

Purge Method:
Screen Interval (ft bmp) Top: Bottom:
Pump Intake Depth (ft bmp):
Purge Time Start: Finish:

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
5:25		450 mL/min		9.8	5.73	101.1	230	8.28		40.38
5:30				9.9	5.69	101.6	232	7.90		
5:35				10.1	5.70	102.0	230	6.52		
5:40				10.3	5.70	102.5	236	5.92		40.38
5:45				10.4	5.69	104.1	232	6.54		
5:50				10.5	5.61	106.7	232	6.64		
5:55				10.5	5.61	107.6	230	6.59		
6:00				10.5	5.61	108.7	232	6.53		40.38
6:05				10.6	5.60	111.1	231	6.70		
6:10				10.6	5.60	111.5	234	6.67		
6:15				10.6	5.60	112.2	232	6.75	1.30	40.38
6:20										
6:25										

Collected Sample Condition
Color: COLORLESS
Odor: NONE
Appearance: CLEAR

Parameter	Container	No.	Preservative

PID Reading: 0.0

Comments:

1) Circle one unit type

ARCADIS G&M, Inc.

Low-Flow Groundwater Sampling Log

Project Number: NY001464.0408.00002 Task: 00002 Well ID: GM-74A
Date: 3-17-08 Sampled By: GW
Sampling Time: Recorded By: GW
Weather: CLEAR 40° Coded Replicate No.:

Instrument Identification
Water Quality Meter(s): Serial #:

Purging Information
Casing Material: Purge Method: LOW FLOW
Casing Diameter: Screen Interval (ft bmp): Top Bottom
Sounded Depth (ft bmp): Pump Intake Depth (ft bmp):
Depth to Water (ft bmp): 42.07 Purge time Start: Finish:

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
2:50		450		9.8	~~8.28~~ 5.60	102.8	233	7.98		42.07	
2:55				10.7	5.44	101.3	245	5.88			
3:00				11.0	5.42	99.4	245	6.03		42.10	
3:05				11.0	5.41	99.0	246	6.06			
3:10				11.1	5.41	98.3	246	6.04			
3:15				11.3	5.40	97.2	247	6.09			
3:20				11.4	5.38	97.5	244	6.24		42.08	
3:25				11.4	5.39	97.3	246	6.06			
3:30				11.4	5.39	98.7	243	5.93			
3:35				11.5	5.38	98.3	244	6.35			
3:40				11.4	5.38	98.7	244	6.32			
3:45				11.5	5.38	98.1	244	6.34	2.35		
3:50				11.4	5.38	98.7	243	6.38			

Sample Condition Color: COLORLESS Odor: NONE Appearance: CLEAR
Sample Collection

Parameter:	Container:	No.	Preservative:

PID Reading 0.0

Comments

ARCADIS

Low Flow Groundwater Sampling Form

Page ____ of ____

Project/No. 40001464.0408.00002 Well GM-74D-2 Date 3-17-08

Total depth (ft bmp) ____ Screen Setting (ft bmp) ____ Casing Diameter (inches) ____

Measuring Point Description ____ Static Water Level (ft bmp) 48.54

Pump Intake (ft bmp) ____ Sampling Time: Begin ____ End ____

Weather CLEAR 40°

Sampled by : G. WILLIAMS

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
3:55	450	48.54	5.47	11.9	98.2	240	6.70		
4:00			5.50	11.9	98.0	238	6.73		
4:05			5.60	11.1	91.6	231	2.57		
4:10			5.65	11.5	87.6	228	1.28		
4:15		48.54	5.67	11.8	85.7	225	1.06		
4:20			5.68	11.9	82.1	226	1.98		
4:25			5.66	11.6	81.1	226	1.99		
4:30		48.54	5.65	11.5	80.7	228	2.18		
4:35			5.63	11.5	81.8	226	2.25		
4:40			5.63	11.5	82.2	225	2.33		
4:45			5.63	11.5	83.5	226	2.38		
4:50			5.62	11.6	84.4	227	2.45		
4:55		48.54	5.62	11.7	85.8	227	2.42	2.93	

Low-Flow Groundwater Sampling Log

Project Number: NY001464.0408
Date: 3-17-08
Sampling Time:
Weather:
Task: 00002
Sampled By: GW
Recorded By: GO
Coded Replicate No.:
Well ID: GM-74I

Instrument Identification
Water Quality Meter(s):
Serial #:

Purging Information
Casing Material:
Casing Diameter:
Sounded Depth (ft bmp):
Depth to Water (ft bmp):
Purge Method: Low flow
Screen Interval (ft bmp): Top ______ Bottom ______
Pump Intake Depth (ft bmp):
Purge time Start: ______ Finish: ______

Field Parameter Measurements Taken During Purging

Time	Minutes Elapsed	Rate (mL/min)	Volume Purged	Temp (°C)	pH (SI Units)	Spec. Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)	Comments
1:50				9.9	6.72	227	179	8.82		36.00	
1:55				10.0	6.67	217	180	8.87			
2:00				10.3	6.47	143.4	194	8.89			
2:05				10.6	6.38	137.8	201	8.82			
2:10				10.6	6.38	132.6	203	8.95			
2:15				10.6	6.36	129.4	204	8.82		36.15	
2:20				10.9	6.26	110.08	211	9.00			
2:25				10.9	6.26	110.6	212	8.70		36.12	
2:30				10.8	6.26	110.5	214	8.73			
2:35				10.8	6.26	109.6	215	8.90	3.74		

Sample Condition Color: Colorless Odor: None Appearance: Clear

Sample Collection

Parameter:	Container:	No.	Preservative:

PID Reading: 0.0

Comments:

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY0012464.0408 00001 Well GM-75D2 Date 3/14/18

Total depth (ft bmp) 562 Screen Setting (ft bmp) 542-562 Casing Diameter (inches) 4

Measuring Point Description _____ Static Water Level (ft bmp) 32.36

Pump Intake (ft bmp) 552 Sampling Time: Begin 10:25 End 11:25

Weather Overcast 40's

Sampled by : DBB / GM

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
10:25	350	32.30	8.81	7.9	165.8	38	12.23	32.7	clay, cobbles
10:30	350		7.85	9.2	165.9	46	12.22		
10:35	350	32.30	6.65	10.7	160.8	61	12.19	2.26	
10:40	350		6.11	11.8	150.2	71	12.19		
10:45	350	32.30	5.85	12.0	147.3	85	12.19	2.05	
10:50	350		5.72	12.1	144.4	91	12.18		
10:55	350	32.30	5.48	12.4	140.2	118	12.15		
11:00	350		5.30	12.4	138.6	145	12.10	2.83	
11:05	350	32.30	5.25	12.4	138.0	160	12.09		
11:10	350		5.23	12.4	138.1	162	12.08	2.48	
11:15	350	32.30	5.19	12.9	136.1	174	12.01		
11:20	350		5.17	12.9	135.8	176	11.99	2.42	
11:25	350	32.30	5.16	12.8	135.8	177	11.97	2.18	
~~11:30~~	~~350~~								

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Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY0:1464.0402.00002 Well GM-78I Date 3/12/08

Total depth (ft bmp) ~~130~~ 110 Screen Setting (ft bmp) ~~90-130~~ 90-110 Casing Diameter (inches) 4"

Measuring Point Description _____ Static Water Level (ft bmp) ~~38.59~~ 38.56

Pump Intake (ft bmp) _____ Sampling Time: Begin 13:55 End _____

Weather Clear, sunny, 40's

Sampled by : DSL/GW

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
13:55	450	38.59	5.43	13.2	131.7	116	5.55		
14:00	450	38.59	5.44	13.1	131.6	118	5.39		
14:05	450	38.59	5.42	13.0	131.7	121	5.12		
14:10	450	38.59	5.39	13.2	131.1	129	4.90		
14:15	450	38.59	5.42	13.7	130.3	142	5.74		
14:20	450	38.59	5.40	13.7	129.7	139	5.77		
14:25	450	38.59	5.38	13.8	130.2	140	5.03		
14:30	450	38.59	5.37	14.1	129.2	142	5.00		
14:35	450	38.59	5.37	13.9	129.5	143	4.96		
14:40	450	38.59	5.36	13.9	129.4	144	4.84		
14:45	450	38.59	5.36	14.1	129.2	145	4.82		
14:50	450	38.59	5.36	14.1	129.3	146	4.81		
14:55	450	38.59	5.36	14.1	129.1	146	4.82	2.45	

VOCs + Methy

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Water Sampling Log

Project Northrop Grumman Project No. MY00 1464.0408.0002 Page 1 of 1

Site Location Bethpage, NY Date 3/12/08

Site/Well No. GM-78S Replicate No. _____

Weather Overcast 40's Sampling Time: Begin 13:15 End 13:46

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	70
Depth to Water (ft bmp)	38.22
Depth to Packer (ft bmp)	
Water Column in Well (ft)	31.78
Casing Diameter	4"
Gallons in Well	20.3
Gallons Pumped/Bailed Prior to Sampling	61
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	2
Evacuation Method	Grundfos pump
Sampling Method	3 volume
Purge Time	Begin 13:15 End 13:46

Field Parameters

	1	1V	2V	3V
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance				
pH (s.u.)	5.40	5.37	5.36	5.39
Conductivity (mS/cm) (µmhos/cm)	165.9	193	188.2	192.3
Temperature (°C)	13.3	13.7	13.7	14.0
~~DO (mg/L)~~				
Turbidity (NTU)				
Time	13:15	13:25	13:35	13:45
DTW (ft bmp)				

Remarks: VOC's + Metals

Constituents Sampled: See COC Sampling Personnel: DAG / GW

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS GERAGHTY & MILLER

DAILY LOG

Well(s) GM-79D Project/No. NY001464.0408 00002 Page ____ of ____

Site Location BETHPAGE NY

Prepared By G. WILLIAMS

Date/Time	Description of Activities						
3-21-08	pH	COND	TEMP	ORP	DO	TURB	DTW
2:50	5.78	119	13.1	228	7.25		38.69
2:55	5.77	119	13.0	228	6.65		
3:00	5.69	120	12.8	241	5.01		
3:05	5.64	116	13.2	245	8.75		
3:10	5.40	114	13.5	243	9.75		
3:15	5.39	112	13.4	246	10.32		38.69
3:20	5.39	112	13.5	247	9.16		
3:25	5.38	109	13.5	248	9.39		
3:30	5.38	110	13.5	247	9.37		
3:35	5.38	108	13.6	245	9.28		
3:40	5.36	110	13.6	246	9.62		
3:45	5.36	108	13.8	247	9.60		38.71
3:50	5.36	109	13.8	249	9.55	16.1	
	COLORLESS NONE CLEAR						

ARCADIS GERAGHTY & MILLER

DAILY LOG

Well(s) GM-79S Project/No. NY001464.0668.00002 Page ____ of ____

Site Location BENNINGTON NY

Prepared By G. WILLIAMS

Date/Time	Description of Activities						
3-21-08	pH	COND	TEMP	ORP	DO	~~TURB~~ DTW	DTW ~~TURB~~
1:55	5.85	144	13.3	219	3.60		37.36
2:00	5.86	144	13.4	222	3.82		
2:05	5.88	134	13.5	221	3.99		
2:10	5.88	124	13.6	222	4.31		3735
2:15	5.86	125	13.4	223	4.42		
2:20	5.87	123	13.4	222	4.65		
2:25	5.85	125	13.4	223	4.85		37.34
2:30	5.85	123	13.3	226	4.86		
2:35	5.81	124	13.3	226	4.82	96	
2:40	5.81	122	13.4	225	4.93		
	COLOR	ODOR	APPEARANCE				
	COLORLESS	NONE	~~CLEAR~~ CLOUDY				

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Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. MY00/464.0409.00002 Well HN-24I Date 3/13/08

Total depth (ft bmp) 158 Screen Setting (ft bmp) 148-158 Casing Diameter (inches) 4"

Measuring Point Description _____ Static Water Level (ft bmp) 52.55

Pump Intake (ft bmp) 153 Sampling Time: Begin 15:00 End 16:00

Weather Sunny 40's Rep collected here (Rep 3-13-08)

Sampled by : DBG / GL MS/MSD collected here

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. (umhos or ms/cm)	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
15:00	300		6.03	10.8	328	86	7.61	128	
15:05	360	52.60	5.99	10.5	326	87	8.20		
15:10	300		5.99	10.5	326	87	8.15		
15:15	300	52.62	5.94	10.5	328	88	7.93	43.8	
15:20	300		5.86	10.5	330	94	7.87		
15:25	300	52.67	5.87	10.7	330	98	7.86	7.11	
15:30	300		5.74	11.1	330	104	7.07		
15:35	300	52.67	5.74	11.4	332	111	7.18	5.58	
15:40	300		5.70	11.2	330	115	6.99		
15:45	300	52.67	5.68	11.2	333	118	6.84	4.80	
15:50	300		5.67	11.2	332	119	6.76		
15:55	300	52.67	5.67	11.4	333	121	6.68	5.54	
16:00	300	52.62	5.67	11.3	331	122	6.66	6.08	

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0405 00007 Well HN-40I Date 3/13/08

Total depth (ft bmp) 118 Screen Setting (ft bmp) 108-118 Casing Diameter (inches) 4"

Measuring Point Description _____ Static Water Level (ft bmp) 45.97

Pump Intake (ft bmp) 113 Sampling Time: Begin 8:35 End 9:35

Weather Sunny 40's

Sampled by : DBG / GW

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
8:35	450	45.90	6.33	10.6	264	161	8.07		clear, colorless
8:40	450		6.17	11.1	262	172	7.50		
8:45	450	45.90	5.68	12.1	261	197	6.66		
8:50	450		5.56	12.9	257	195	6.43		
8:55	450	45.90	5.50	13.6	255	196	6.66		
9:00	450		5.47	13.8	253	196	6.28		
9:05	450	45.90	5.45	14.1	254	197	6.47	24.1	
9:10	450		5.42	14.1	253	197	6.36		
9:15	450	45.90	5.40	14.2	254	197	6.41	15.7	
9:20	450		5.40	14.2	254	197	6.47		
9:25	450	45.90	5.40	14.4	255	197	6.51	11.7	
9:30	450		5.40	14.6	254	197	6.39		
9:35	450	45.90	5.40	14.7	257	197	6.41	10.96	

VOC's

ARCADIS

Water Sampling Log

Project: Northrop Grumman | Project No.: NY001464.0408.00007 | Page: 1 of 1

Site Location: Bethpage, NY | Date: 3/13/08

Site/Well No.: HW-40S | Replicate No.:

Weather: | Sampling Time: Begin 9:55 End:

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	59
Depth to Water (ft bmp)	46.03
Depth to Packer (ft bmp)	
Water Column in Well (ft)	12.97
Casing Diameter	4"
Gallons in Well	8.30
Gallons Pumped/Bailed Prior to Sampling	24.9
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	1gpm
Evacuation Method	Grundfos pump
Sampling Method	3 Volumes
Purge Time	Begin 9:55 End

Field Parameters

Field Parameters	1	8.3 1V	16.6 2V	25 3V
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance				
pH (s.u.)	5.37	5.37	5.37	5.33
Conductivity (mS/cm)				
(µmhos/cm)	204	203	168.4	172.1
Temperature (°C)	14.4	15.7	15.7	15.8
DO (mg/L)	8.63	8.25	8.24	7.37
Turbidity (NTU)	15.2	15.0	10.26	7.65
Time	9:55	10:03	10:12	10:20
DTW (ft bmp)				
ORP (MV)	198	204	205	

Remarks: VOCs

Constituents Sampled: See COC | Sampling Personnel: DRG / GW

Well Casing Volumes

Gal./Ft.	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

HN-42I

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. MY00 1464.0406.0002 Well ~~HN~~-42I Date 3/12/18

Total depth (ft bmp) 110 Screen Setting (ft bmp) 100-110 Casing Diameter (inches) 4

Measuring Point Description _____ Static Water Level (ft bmp) 47.03

Pump Intake (ft bmp) 105 mid pt. W. Sampling Time: Begin 15:44 End 16:45

Weather Sunny, 40s

Sampled by : DBG / GW

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
15:45	500	47.65	6.11	11.3	592	-18	5.43		
15:50	500		11.57	11.5	588	-21	5.45		
15:55	500	46.75	11.55	11.7	611	-21	5.57		
16:00	500		11.55	11.4	654	-18	5.47		
16:05	500	46.80	11.59	11.1	669	-16	5.47		
16:10	500	~~47.40~~	11.59	10.8	678	-14	5.37		
16:15	500	47.40	11.60	10.8	689	-11	5.41		
16:20	500		11.67	10.8	719	-10	5.23		
16:25	500	47.47	11.67	10.8	721	-10	5.24		
16:30	500		11.67	11.0	722	-8	5.31		
16:35	500	47.47	11.67	11.0	720	-8	5.24	5.25	
16:40	500		11.61	11.1	710	-7	5.35		
16:45	500	47.47	11.61	11.1	703	-7	5.33	4.58	

VOC's.

ARCADIS

Water Sampling Log

Project: Northrop Grumman Project No.: NY 001464.0405.00003 Page: 1 of 1

Site Location: Bath PAGE, NY Date: 3/12/08

Site/Well No.: HW-47S Replicate No.:

Weather: Sunny 40's Sampling Time: Begin 17:00 End 17:23

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	60
Depth to Water (ft bmp)	48.25
Depth to Packer (ft bmp)	
Water Column in Well (ft)	11.75
Casing Diameter	4 (0.64)
Gallons in Well	7.53
Gallons Pumped/Bailed Prior to Sampling	22.5
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	1gpm
Evacuation Method	Grundfos pump
Sampling Method	3 Volumes
Purge Time	Begin 17:00 End

Field Parameters

	I	1V	2V	3V
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance				
pH (s.u.)	7.84	6.62	5.12	5.64
Conductivity (mS/cm) (µmhos/cm)	386	328	354	376
Temperature (°C)	12.8	13.8	14.2	14.5
~~DO (mg/L)~~				
Turbidity (NTU)	3.88	3.56	4.91	4.03
Time	17:00	17:07	17:15	17:23
DTW (ft bmp)		48.31	48.30	48.30
(MV) ORP	58	90	142	173

Remarks: VOC's

Constituents Sampled: See COC Sampling Personnel: DSG / GW

Well Casing Volumes

Gal./Ft.	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY004410408.00002 Page ___ of ___

Site Location BETHPAGE NY Date 3-18-08

Site/Well No. MW-16F Replicate No. ___

Weather CLEAR 45° Sampling Time: Begin ___ End ___

Evacuation Data		Field Parameters	I	1V	2V	3V
Measuring Point		Color				
Sounded Well Depth (ft bmp)	58	Odor				
Depth to Water (ft bmp)	42.14	Appearance				
Depth to Packer (ft bmp)		pH (s.u.)	6.07	6.00	6.00	6.00
Water Column in Well (ft)	16.86	Conductivity				
Casing Diameter	4 (0.65)	~~(mS/cm)~~				
Gallons in Well	10.9	(µmhos/cm)	409	422	434	435
Gallons Pumped/Bailed Prior to Sampling	33	Temperature (°C)	17.1	16.6	16.2	16.2
Sample Pump Intake Setting (ft bmp)		DO (mg/L)				
Packer Pressure (psi)		Turbidity (NTU)	6.13	5.68	4.00	3.55
Pumping Rate (gpm)	Q=1.5 T=22 V=7	Time	12:26	12:33	12:40	12:47
Evacuation Method		DTW (ft bmp)				
Sampling Method						
Purge Time Begin ___ End ___						

Remarks: ___

Constituents Sampled: See COC Sampling Personnel: GW PP

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Water Sampling Log

Project NORTHROP - GRUMMAN Project No. NY001469.0408 000002 Page ___ of ___

Site Location BETHPAGE Date 3-18-08

Site/Well No. MW-2 OF Replicate No. ___

Weather ___ Sampling Time: Begin ___ End ___

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	59.00
Depth to Water (ft bmp)	41.48
Depth to Packer (ft bmp)	
Water Column in Well (ft)	17.52
Casing Diameter	4 (0.64)
Gallons in Well	11.2
Gallons Pumped/Bailed Prior to Sampling	33.
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	Q=1.5 T=2210
Evacuation Method	[redacted]
Sampling Method	
Purge Time	Begin ___ End ___

Field Parameters

	1	1V	2V	3V
Color				
Odor				
Appearance				
pH (s.u.)	6.10	6.29	6.36	6.36
Conductivity ~~(mS/cm)~~ (µmhos/cm)	1329	1327	1356	1371
Temperature (°C)	15.6 [redacted]	15.7	15.8	15.7
DO (mg/L)				
Turbidity (NTU)	16.5	10.59	6.49	3.54
Time	11:40	11:47	11:54	12:02
DTW (ft bmp)				

Remarks: ___

Constituents Sampled: See COC Sampling Personnel: GW PD

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Low Flow Groundwater Sampling Form

N-10627

Page 1 of 1

Project/No. NY 0614b408.0908.00003 Well ~~N-10631~~ Date 3/14/08

Total depth (ft bmp) ~~67~~ 295 Screen Setting (ft bmp) 290-295 Casing Diameter (inches) 4"

Measuring Point Description Static Water Level (ft bmp) ~~35.55~~ 35.22

Pump Intake (ft bmp) 292 midpoint Sampling Time: Begin 9:10 End 10:10

Weather Overcast-40's

Sampled by : DKG / GW

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
9:10	500		8.24	7.4	253	87	12.99	134	Light brown
9:15	500	30.60	8.64	8.4	225	76	12.95		
9:20	500		9.45	10.4	204	55	12.89	29.1	
9:25	500	31.05	9.55	10.9	192.5	44	12.86		
9:30	500		10.04	12.3	197.4	5	12.76		
9:35	500		10.08	12.5	201	0	12.69	30.5	
9:40	500	31.68	10.11	12.3	204	-1	12.64		
9:45	500		10.12	12.4	202	-2	12.62	27.8	
9:50	500	31.75	10.10	12.5	194.9	-3	12.54		
9:55	500		9.99	12.4	182.2	0	12.48	29.2	
10:00	500	31.60	9.89	12.5	174.7	4	12.46		
10:05	500		9.72	12.5	170.6	9	12.39	24.1	
10:10	500	31.54	9.69	12.5	167.7	11	12.34	20.2	

9:10

ARCADIS

Water Sampling Log

Project: Northrop Grumman | Project No.: NY 001464.0408.0003 | Page: 1 of 1

Site Location: Bethpage, NY | Date: 3/13/09

Site/Well No.: N-10631 | Replicate No.:

Weather: Sunny 40's | Sampling Time: Begin 1703 End

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	67
Depth to Water (ft bmp)	35.55
Depth to Packer (ft bmp)	
Water Column in Well (ft)	31.45
Casing Diameter	2"
Gallons in Well	5.03
Gallons Pumped/Bailed Prior to Sampling	15.09 +5.4 = 20.12
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	Grundfos pump
Sampling Method	3 vol
Purge Time	Begin End

Field Parameters

4V

	I	1V	2V	3V
Color	Lt Brown	clear	clear	clear
Odor	Yes	no	no	no
Appearance				
pH (s.u.)	6.39	6.98	7.15	7.13
Conductivity (mS/cm) (µmhos/cm)	1970	1962	879	413
Temperature (°C)	13.8	15.3	15.5	15.5
DO (mg/L)				
Turbidity (NTU)	88.2	28.2	24.9	17.8
Time	17:03	17:08	17:13	17:18 (DUP) 17:23
DTW (ft bmp)				
mV (cond)	84	42	26	19

Remarks: Total / dissolved Cad, Chromium, VOC
4 well volumes Removed.

Constituents Sampled: See COC | Sampling Personnel: DSB / GW

Well Casing Volumes

Gal./Ft.	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Water Sampling Log

Project Northrop Grumman Project No. NY 00 1464.0406.00002 Page 1 of 1

Site Location Bethpage NY Date 3/18/06

Site/Well No. PLT 1MW-04 Replicate No.

Weather Sunny 40's Sampling Time: Begin 12:04 End 12:17

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	56.5
Depth to Water (ft bmp)	40.69
Depth to Packer (ft bmp)	
Water Column in Well (ft)	15.81
Casing Diameter	2" 0.16
Gallons in Well	2.53
Gallons Pumped/Bailed Prior to Sampling	7.50
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	Q=1 T=8 IV=2.53
Evacuation Method	Grundfos Pump
Sampling Method	3 Vol
Purge Time	Begin 12:04 End 12:17

Field Parameters

	I	1V	2V	3V
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance				
pH (s.u.)	5.37	5.41	5.61	5.63
Conductivity (mS/cm)				
(µmhos/cm)	357	358	362	359
Temperature (°C)	12.5	12.6	14.2	14.4
~~DO (mg/L)~~				
Turbidity (NTU)	14.0			3.57
Time	12:04	12:07	12:10	12:12
DTW (ft bmp)				

Remarks: Metals

Constituents Sampled: See COC Sampling Personnel: DSG/GW

Well Casing Volumes

Gal./Ft.	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Water Sampling Log

Project: North Rip Grumman Project No.: MY001464.0408.00601 Page: 1 of 1

Site Location: Bethpage NY Date: 3/12/09

Site/Well No.: PLT-1MW-05 Replicate No.:

Weather: Sunny 40's Sampling Time: Begin 11:17 End 11:28

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	58
Depth to Water (ft bmp)	38.62
Depth to Packer (ft bmp)	
Water Column in Well (ft)	~~3.10~~ 19.38
Casing Diameter	2"
Gallons in Well	3.10
Gallons Pumped/Bailed Prior to Sampling	9.3
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	Q= 1 T=9 11:3
Evacuation Method	Grundfos pump
Sampling Method	3 vol.
Purge Time	Begin 11:17 End 11:28

Field Parameters

Color: clear

Odor: none

Appearance:

	I	1V	2V	3V
pH (s.u.)	5.46	5.40	5.09	5.11
Conductivity (mS/cm)				
(µmhos/cm)	188.5	190.0	117.1	202
Temperature (°C)	14.1	13.5	11.7	14.8
~~DO (mg/L)~~				
Turbidity (NTU)	>200	28.1	7.32	
Time	11:17	11:20	11:24	11:28
DTW (ft bmp)				

Remarks: Metals

Constituents Sampled: See COC Sampling Personnel: DAG, GW

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

ARCADIS

Water Sampling Log

Project: Northrop Grumman   Project No.: NY001464.0408.00002   Page 1 of 1

Site Location: Bethpage, NY   Date: 3/12/08

Site/Well No.: PLT1 MW-06   Replicate No.: ____

Weather: Sunny 45°   Sampling Time: Begin 11:42 End ____

Evacuation Data

Measuring Point	
Sounded Well Depth (ft bmp)	62
Depth to Water (ft bmp)	41.68
Depth to Packer (ft bmp)	
Water Column in Well (ft)	20.32
Casing Diameter	2"
Gallons in Well	3.25 (0.16)
Gallons Pumped/Bailed Prior to Sampling	9.75
Sample Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	Q=1 t=10 1V=3.2
Evacuation Method	Grundfos pump
Sampling Method	3 Volume
Purge Time	Begin 11:42 End 11:52

Field Parameters

Color: clear

Odor: none

Appearance: ____

	I	1V	2V	3V
pH (s.u.)	5.23	5.09	5.02	5.11
Conductivity (mS/cm) (µmhos/cm)	283	281	298	313
Temperature (°C)	13.2	12.3	12.3	12.8
DO (mg/L)				
Turbidity (NTU)	7200	190	75	23
Time	11:42	11:45	11:48	11:52
DTW (ft bmp)				

Remarks: Metals

Constituents Sampled: See COC   Sampling Personnel: DBG, GW

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	mS/cm	Milisiemens per centimeter	VOC	Volatile Organic Compounds
°C	Degrees Celsius	s.u.	Standard units	umhos/cm	Micromhos per centimeter
ft	feet	NTU	Nephelometric Turbidity Units		
gpm	Gallons per minute	N/A	Not Applicable		
mg/L	Miligrams per liter	COC	Chain of Custody		

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Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464.0008.00002

Site Location BETHPAGE Date 8-19-02

Well No. ~~CLOUDY 78~~ N-1063 Replicate No. — Weather CLOUDY 78

Sampling Personnel GS SO Sampling Time: Begin 3 PM End 5 PM

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	67.00
Depth to Water (ft bmp)	37.04
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	30'
Casing Diameter	2" (0.16)
Gallons in Well	5.8
Gallons Purged Prior to Sampling	18
Pump Intake Setting (ft bmp)	65
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	
Sampling Method	Bladder pump.
Purge Time	Begin 3 PM End 5 PM

Field Parameters

	1	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	8.29	6.70	6.45	
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]	729	1005	1072	
Temperature (°C)	19.8	16.9	15.6	
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)			14	
Time				
DTW (ft bmp)				

Remarks:

Parameter	Container	No.	Preservative
See COC.			

PID Reading

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0608.00002 Well N10627 Date 8-19-08

Total depth (ft bmp) 295 Screen Setting (ft bmp) 290 - 295 Casing Diameter (inches) 4

Measuring Point Description TOC Static Water Level (ft bmp) 30.67

Pump Intake (ft bmp) 293 Sampling Time: Begin 1 PM End 2:17 PM

Weather cloudy

Sampled by : GW / SX

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. (umhos) or ~~ms/cm~~	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
1:17 PM		30.67	5.04	26.5	104.4	+127	5.13		
1:22 PM			7.31	23.8	112.5	+58	2.35		
1:27			8.28	21.7	114.2	+7	1.08		
1:32			8.84	21.7	118.6	-23	0.66		
1:37		32.16	9.88	21.2	133	-85	0.53		
1:42			10.13	21.1	140.3	-118	0.50		
1:47			10.22	21.0	149.7	-122	0.47		
1:52			10.26	21.0	153.5	-128	0.45		
1:57		32.25	10.28	20.9	157.1	-131	0.46		
2:02			10.28	20.8	155.8	-130	0.47		
2:07			10.30	20.8	155.2	-99	0.45		
2:12			10.30	20.8	152.7	-128	0.46		
2:17			10.31	20.7	149.7	-135	0.51	15	

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Infrastructure, environment, facilities

Water Sampling Log

Project NGC OU2 Project No. NY001464.0804.00002

Site Location Bethpage, NY Date 8/15/08

Well No. MW-16F Replicate No. NA Weather Cloudy, 80°F

Sampling Personnel Prezgorski, P. / Cherlin, J.A.C. Sampling Time: Begin 1425 End 1429

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	58
Depth to Water (ft bmp)	42.25
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	15.75
Casing Diameter	4" (0.65)
Gallons in Well	10.24
Gallons Purged	x3
Prior to Sampling	30.71
Pump Intake	
Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	1
Evacuation Method	Sch pump / redi flo
Sampling Method	3 well volume purge
Purge Time	Begin 1347 End 1424

Field Parameters

	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	6.02	5.84	5.51	5.50
Conductivity (mS/cm) or (µmhos/cm) [1]	399	175.8	162.5	159.5
Temperature (°C)	17.8	17.6	16.6	17.5
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	20	10	7.8	14
Time	1347	1358	1409	1424
DTW (ft bmp)	—	—	—	—

Remarks: Q=1 T=31 V=11

Sample turbidity 12 NTC

Parameter	Container	No.	Preservative
See COC			

PID Reading 0 ppm

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

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Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: NY001464.0408.00002
Site Location: Bethpage, NY | Date: 9-14-08
Well No.: MW-2GF | Replicate No.: N/A | Weather: Humid 80s F
Sampling Personnel: Prezorski, Charlie | Sampling Time: Begin 16:58 End 17:00

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	59
Depth to Water (ft bmp)	43.05
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	15.95
Casing Diameter	4" (0.65)
Gallons in Well	10.37
Gallons Purged	x3
Prior to Sampling	31.10
Pump Intake	
Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	1
Evacuation Method	Sub pump / redi-flo
Sampling Method	3 well volume
Purge Time	Begin 16:30 End 16:58

Field Parameters

Color	Colorless
Odor	odorless
Appearance	clear

	I	1V	2V	3V
pH (s.u.)	6.32	6.55	6.51	6.50
Conductivity (~~mS/cm~~) or (µmhos/cm) [1]	150.2	150.9	148.9	144.6
Temperature (°C)	17.4	15.9	16.0	16.1
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	16	22	20	16
Time	16:30	16:40	16:50	16:58
DTW (ft bmp)	43.05	—	—	—

Remarks:

Parameter	Container	No.	Preservative
See COC			

PID Reading: Humid

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

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Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: NY001464.0408.00002
Site Location: Bethpage, NY | Date: 8/13/08
Well No.: PLT1-MW-04 | Replicate No.: NA | Weather: clear 80's
Sampling Personnel: Prezorski, Cherlin | Sampling Time: Begin 17:34 End 17:35

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	56.5
Depth to Water (ft bmp)	41.65
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	14.85
Casing Diameter	2" (0.16) PVC
Gallons in Well	2.38
Gallons Purged Prior to Sampling	7.13 x3
Pump Intake Setting (ft bmp)	/
Packer Pressure (psi)	—
Pumping Rate (gpm)	1
Evacuation Method	3 Well Volume
Sampling Method	Redflow pump
Purge Time	Begin 17:25 End 17:34

Field Parameters

Color	Colorless
Odor	odorless
Appearance	Clear

	I	1V	2V	3V
pH (s.u.)	6.13	6.19	6.15	6.18
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]	475	479	484	490
Temperature (°C)	16.8	15.4	14.8	14.4
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	F.S	11	9.1	13
Time	17:25	17:28	17:31	17:34
DTW (ft bmp)	41.65	—	—	—

Remarks:

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0 ppm at wellhead

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project N-Grumman OU2 Project No. NY001464.0408.00002
Site Location Bethpage, NY Date 8/13/08
Well No. PLT1 MW-05 Replicate No. NA Weather clear 80s F
Sampling Personnel Prezorski, Cherlin Sampling Time: Begin 16:44 End 16:50

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	58
Depth to Water (ft bmp)	39.98
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	18.02
Casing Diameter	2" (0.16) PVC
Gallons in Well	2.88
Gallons Purged	x3
Prior to Sampling	8.65
Pump Intake	
Setting (ft bmp)	/
Packer Pressure (psi)	—
Pumping Rate (gpm)	1
Evacuation Method	3 well volume
Sampling Method	Rediflow pump
Purge Time	Begin 16:35 End 16:44

Field Parameters

Color colorless
Odor odorless
Appearance clear

	1	1V	2V	3V
pH (s.u.)	6.09	6.19	6.17	6.18
Conductivity (~~mS~~/cm) or	—	—	—	—
(µmhos/cm) [1]	158.4	149.9	150.7	149.8
Temperature (°C)	19.2	17.2	16.7	16.2
	—	—	—	—
DO (mg/L)				
ORP (mV)	/	/	/	/
Turbidity (NTU)	80	20	14	8.9
Time	16:35	16:38	16:41	16:44
DTW (ft bmp)	39.98	—	—	—

Remarks:

Parameter	Container	No.	Preservative
Sec roc			

PID Reading 0 ppm at wellhead

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

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Infrastructure, environment, facilities

Water Sampling Log

Project N-Grumman OU2 Project No. NY001464.0408.00002

Site Location Bethpage, NY Date 8/13/09

Well No. PLT1MW-06 Replicate No. NA Weather clear 80s F

Sampling Personnel Prezorski, Cherlin Sampling Time: Begin 15:48 End 15:50

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	62
Depth to Water (ft bmp)	42.71
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	19.29
Casing Diameter	2"(0.16) / PVC
Gallons in Well	3.09
Gallons Purged	x3
Prior to Sampling	9.26
Pump Intake	
Setting (ft bmp)	/
Packer Pressure (psi)	—
Pumping Rate (gpm)	1
Evacuation Method	3 WV
Sampling Method	Red. Flow Pump
Purge Time	Begin 15:35 End 15:48

Field Parameters

		I	1V	2V	3V
Color		colorless			
Odor		odorless			
Appearance		clear			
pH (s.u.)		5.70	5.76	5.77	5.78
Conductivity		—	—	—	—
~~(mS/cm)~~ or					
(µmhos/cm) [1]		192.1	324.0	324.0	324.0
Temperature (°C)		18.9	18.3	17.3	16.8
DO (mg/L)		—	—	—	—
ORP (mV)		—	—	—	—
Turbidity (NTU)		960	60	58	45
Time		15:35	15:~~39~~	15:~~43~~	15:~~48~~
DTW (ft bmp)		42.71	—	—	—

Remarks: Turbidity = 30 NTU at sample time.

Parameter	Container	No.	Preservative
See COC			

PID Reading 0.0 ppm

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001407.0408.00002
Site Location BETHPAGE NY Date 8-12-08
Well No. MW-42S Replicate No. — Weather P. Cloudy, 80F
Sampling Personnel Williams, Cherlin GW/SAC Sampling Time: Begin ~~15:55~~ 16:00 End 16:05

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	60.00
Depth to Water (ft bmp)	48.45
Depth to Packer (ft bmp)	~~47.15~~
Water Column in Well (ft)	11.15
Casing Diameter	4 (0.65)
Gallons in Well	6.74
Gallons Purged Prior to Sampling	20.22
Pump Intake Setting (ft bmp)	~5' from bottom
Packer Pressure (psi)	—
Pumping Rate (gpm)	~.19pm
Evacuation Method	Sub pump/Peristaltic
Sampling Method	~~Peristaltic~~ Bucket/grab
Purge Time	Begin 15:35 End 15:56

Field Parameters

Color	Colorless
Odor	odorless
Appearance	clear

	I	1V	2V	3V
pH (s.u.)	8.52	5.63	5.48	5.44
Conductivity (~~mS/cm~~) or (µmhos/cm) [1]	554	~~544~~	512	519
Temperature (°C)	15.6	16.3	16.1	16.2
DO (mg/L)	6.62	~~7.25~~	6.17	6.08
ORP (mV)	103	115	122	121
Turbidity (NTU)	29	13	8.8	8.8
Time	15:35	15:42	15:49	15:56
DTW (ft bmp)	48.45	—	—	—

Remarks:

Parameter	Container	No.	Preservative
See COC			

PID Reading N/A

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NORTHROP-GRUMMAN
Project Number: NY001464.0408.00002
Site Location: BETHPAGE, NY
Well ID: HN-24I
Date: 9-5-08
Sampled By: GW/BJH
Sampling Time: 1245
Recorded By (Williams): GW/BJH
Weather: SUN 80's
Coded Replicate No.: NA

Instrument Identification
Water Quality Meter(s): _____ Serial #: _____

Casing Material: _____ Purge Method: Rediflow Pump / Low Flow
Casing Diameter: _____ Screen Interval (ft bmp) Top: _____ Bottom: _____
Sounded Depth (ft bmp): _____ Pump Intake Depth (ft bmp): _____
Depth to Water (ft bmp): 53.53 Purge Time Start: _____ Finish: _____

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
1155	0	450		18.0	6.49	379	36	5.44		53.53
1200		450		17.8	5.12	385	35	5.40		53.53
1205	10	450		17.8	5.14	393	36	5.28		53.53
1210		450		17.5	5.14	401	44	5.28		53.53
1215	20	450		17.6	5.13	403	38	5.50		53.63
1220		450		17.6	5.13	405	38	5.27		53.63
1225	30	450		17.6	5.13	405	39	5.29		53.63
1230		450		17.3	5.15	406	46	5.16		53.63
1235	40	450		17.3	5.15	406	45	5.10		53.63
1240		450		17.4	5.17	405	48	5.18	16	
1245	50		S	A	M	P	L	E	D	
1250										
1255	60									
1300										

Collected Sample Condition: Color COLORLESS Odor NONE Appearance CLEAR

Parameter	Container	No.	Preservative
SEE COC			

PID Reading: 0.0

Comments: _____

1) Circle one unit type

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NGC / NY001464.0408.00003 Well HN-42I Date 8/12/08

Total depth (ft bmp) 110' Screen Setting (ft bmp) 100-110' Casing Diameter (inches) 4"

Measuring Point Description TOC Static Water Level (ft bmp) 48.13'

Pump Intake (ft bmp) ≈ 5' from bottom Sampling Time: Begin 14:35 End 15:20

Weather P. Cloudy, 80°F

Sampled by : GW / JAC (Williams / Cherlin)

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. ~~umhos or~~ mS/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
8/12/08 / 14:35	600	48.13	11.93	16.5	822	91	4.70	—	
14:40	↓	—	11.88	16.9	789	89	4.93	—	
14:45	↓	48.40	11.85	17.6	767	83	5.12	—	
14:50	↓	—	11.82	17.9	714	84	5.18	—	
14:55	↓	48.41	11.81	18.0	703	85	5.25	—	
15:00	↓	[illegible]	11.80	18.1	698	85	5.36	—	
15:05	↓	49.14	11.80	18.0	652	61	5.34	—	
15:10	↓	—	11.82	17.9	643	39	5.32	—	
15:15	↓	—	11.82	17.8	6.29	51	5.18	—	
15:20	↓	~	11.82	17.7	618	69	5.04	11.0	

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Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464.0408.00002
Site Location BETHPAGE NY Date 8-12-08
Well No. HN-40S Replicate No. — Weather CLEAR 83°
Sampling Personnel GW/JAC (Williams, Cherlin) Sampling Time: Begin 17:01 End 7:05

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	59.00
Depth to Water (ft bmp)	48.59
Depth to Packer (ft bmp)	~~10.41~~
Water Column in Well (ft)	10.41
Casing Diameter	4 (0.65)
Gallons in Well	(6.76x3) = 20.28
Gallons Purged Prior to Sampling	↓
Pump Intake Setting (ft bmp)	2.5' from bottom
Packer Pressure (psi)	—
Pumping Rate (gpm)	2.1 GPM
Evacuation Method	sub pump / redi-flo
Sampling Method	3 well volume
Purge Time	Begin 16:40 End 17:01

Field Parameters

Color Colorless
Odor odorless
Appearance clear

	I	1V	2V	3V
pH (s.u.)	5.32	5.09	5.22	5.27
Conductivity (~~mS/cm~~) or (µmhos/cm) [1]	— / 153.4	— / 143.6	— / 138.3	— / 135.7
Temperature (°C)	16.4	16.2	15.6	15.8
DO (mg/L)	10.84	8.01	7.61	7.87
ORP (mV)	172	168	169	181
Turbidity (NTU)	65	29	12	7.6
Time	16:40	16:47	16:54	17:01
DTW (ft bmp)	48.59	—	—	—

Remarks:

Parameter	Container	No.	Preservative
See COC			

PID Reading

Well Casing Volumes

Gal./Ft.				
	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NGC/NY001464.0498-00001 Well HN-40I Date 8/12/08

Total depth (ft bmp) 118' Screen Setting (ft bmp) 108-118' Casing Diameter (inches) 4"

Measuring Point Description ~~[illegible]~~ TOC Static Water Level (ft bmp) 46.45

Pump Intake (ft bmp) 25' from bottom Sampling Time: Begin 17:15 End 18:00

Weather p. cloudy, 80°F

Sampled by: GW/JAC

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ~~ms/cm~~	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
8/12/08 17:15	~700	46.45	5.15	16.5	275.0	153	8.10	—	
17:20		—	5.06	16.2	255.4	149	8.08	—	
17:25		46.~~[illegible]~~	5.01	16.1	221.7	142	8.04	—	
17:30		—	4.98	15.9	203.3	145	7.95	—	
17:35		46.65	4.93	15.4	175.1	141	7.87	—	
17:40		—	4.93	15.3	175.3	154	7.90	—	
17:45		46.66	4.95	15.3	175.1	165	7.91	—	
17:50		—	4.95	15.3	174.8	156	7.93	—	
17:55		—	4.96	15.2	174.5	142	7.89	—	
18:00		—	4.95	15.2	174.5	134	7.95	14.3	

[illegible]

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: NORTHROP-GRUMMAN | Project No.: NY001464.0408.00002
Site Location: BETHPAGE NY | Date: 9-5-08
Well No.: FW-03 | Replicate No.: NA | Weather:
Sampling Personnel: GW BTH (Williams) | Sampling Time: Begin 10:30 End 11:15

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	64.00
Depth to Water (ft bmp)	53.71
Depth to Packer (ft bmp)	
Water Column in Well (ft)	10.29
Casing Diameter	2" (0.16)
Gallons in Well	1.6
Gallons Purged	x3
Prior to Sampling	5
Pump Intake Setting (ft bmp)	5' OFF BOTTOM
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	3WV
Purge Time	Begin 10:50 End 10:55

Field Parameters

Color: YELLOW TINT
Odor: NONE
Appearance: TURB

	I	1V	2V	3V
pH (s.u.)	7.08	6.56	6.52	6.48
Conductivity (mS/cm) or (µmhos/cm) [1]	6.82	480	445	433
Temperature (°C)	17.4	16.1	15.8	15.5
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				>50
Time				
DTW (ft bmp)				

Remarks:

Parameter	Container	No.	Preservative
SEE COC			

PID Reading: 0.0

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. N400146.0408.00002
Site Location Bethpage, NY Date 8-5-08
Well No. BPOW1-1 Replicate No. NA Weather
Sampling Personnel Williams Sampling Time: Begin 1:00 End 2:01

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	241
Depth to Water (ft bmp)	29.31
Depth to Packer (ft bmp)	169
Water Column in Well (ft)	72
Casing Diameter	4" (0.65)
Gallons in Well	46.8
Gallons Purged	x 3
Prior to Sampling	140
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	120PSF
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin ____ End ____	

Field Parameters

Color	COLORLESS
Odor	NONE
Appearance	CLEAR

	I	1V	2V	3V
pH (s.u.)	5.79	4.72	4.68	4.63
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]	131.1	129.4	135.3	132.6
Temperature (°C)	20.2	13.3	11.8	
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: DTW 29.31
169 - 28 x .43 + 50 = 120PSF

Parameter	Container	No.	Preservative
See COC			

PID Reading

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. N40001464.0408.00002

Site Location BETHPAGE NY Date 8-5-08

Well No. BPDW 1-2 Replicate No. NA Weather

Sampling Personnel Williams, Cherlin GW JC Sampling Time: Begin 2:30 End

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	355.
Depth to Water (ft bmp)	31.50
Depth to Packer (ft bmp)	294
Water Column in Well (ft)	41
Casing Diameter	4"(0.65)
Gallons in Well	26.65 x 3
Gallons Purged Prior to Sampling	80
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	170
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin	End

Field Parameters

Color

Odor

Appearance

	I	1V	2V	3V
pH (s.u.)	4.79	4.75	4.65	4.62
Conductivity ~~(mS/cm)~~ or ~~(umhos/cm)~~ µ	666	552	594	613
Temperature (°C)	15.9	13.9	11.9	11.0
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				8.7
Time				
DTW (ft bmp)	31.5		33.	

Remarks:

294 - 31 x .43 + 50 = 170 PSI

Parameter	Container	No.	Preservative
See COC			

PID Reading

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP. GRUMMAN Project No. NY001464.0408.00002
Site Location BETHPAGE NY Date 8-5-02
Well No. BPOW 1-3 Replicate No. NA Weather CLEAN 85°
Sampling Personnel Williams, Cherlin GW JC Sampling Time: Begin 4:00 End

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	419
Depth to Water (ft bmp)	30.35
Depth to Packer (ft bmp)	344
Water Column in Well (ft)	75
Casing Diameter	4(0.65)
Gallons in Well	48.75
Gallons Purged Prior to Sampling	146.25
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin	End

Field Parameters

		1V	2V	3V
Color	Colorless			
Odor	None			
Appearance	Clear			
pH (s.u.)	4.22	4.14	4.15	4.11
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]	144.1	193.8	175.4	156.7
Temperature (°C)	13.9	12.3	10.8	10.7
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				14
Time				
DTW (ft bmp)				

Remarks:

Parameter	Container	No.	Preservative
See COC			

PID Reading

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464.0408.00002
Site Location BETHPAGE NY Date 8-7-08
Well No. BPOW 3-1 Replicate No. ____ Weather CLEAR 85°
Sampling Personnel Williams, Cherlin GW JC Sampling Time: Begin 10:50 End 12:15

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	516
Depth to Water (ft bmp)	26.50
Depth to Packer (ft bmp)	414
Water Column in Well (ft)	102
Casing Diameter	4" (0.65)
Gallons in Well	66.3 x 3
Gallons Purged Prior to Sampling	199
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin ____ End ____	

Field Parameters

	Color	Odor	Appearance	I	1V	2V	3V
pH (s.u.)				4.15	4.08	4.02	4.01
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]				121.8	117.8	117.3	119.3
Temperature (°C)				15.1	14.2	14.1	14.0
DO (mg/L)							
ORP (mV)							
Turbidity (NTU)							2.1
Time							
DTW (ft bmp)							

Remarks: 414 − 26.50 x 43 + 50 = 220 PSI

Parameter	Container	No.	Preservative
See COC			

PID Reading ____

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464.0408.00002

Site Location BETHPAGE Date 8-7-08

Well No. BROW 3-2 Replicate No. _____ Weather CLEAR/T-STORMS 85°

Sampling Personnel Williams, Cherlin GW JC Sampling Time: Begin 12:50 End 3:30

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	647
Depth to Water (ft bmp)	28.90
Depth to Packer (ft bmp)	503
Water Column in Well (ft)	144
Casing Diameter	4" (0.65)
Gallons in Well	93.60
Gallons Purged	x 3
Prior to Sampling	280
Pump Intake	
Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin	End

Field Parameters

	Color	Odor	Appearance
	COLORLESS	SLIGHT	~~NOW~~ CLEAR

	I	1V	2V	3V
pH (s.u.)	4.92	4.61	4.61	4.65
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]	69.9	89.5	74.5	71.5
Temperature (°C)	15.5	13.0	12.2	12.0
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				3.3
Time				
DTW (ft bmp)				

Remarks: 503 - 29 x .43 + 60 = 255 PSI

Parameter	Container	No.	Preservative
See COC			

PID Reading ←

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP GRUMMAN Project No. NY001464.0408.00002
Site Location BETHPAGE NY Date 8-6-08
Well No. BPOW-4-1 Replicate No. MS/MSD Weather
Sampling Personnel Williams - Cherlin GW JC Sampling Time: Begin 11:30 End 2:10

Purge Data

	STANDPIPE	SCREEN
Measuring Point (describe)	TOC	
Sounded Well Depth (ft bmp)	652	692
Depth to Water (ft bmp)	[illegible]	[illegible]
Depth to Packer (ft bmp)	503	652
Water Column in Well (ft)	149	40
Casing Diameter	4 (0.65)	2 (0.16)
Gallons in Well	96.85 x 3	6.4 x 3
Gallons Purged	290	19.2
Prior to Sampling	309 (290 + 19.2)	
Pump Intake Setting (ft bmp)		
Packer Pressure (psi)	25 PSI	
Pumping Rate (gpm)		
Evacuation Method		
Sampling Method		
Purge Time	Begin	End

Field Parameters

Color COLORLESS
Odor NONE
Appearance CLEAR

	I	1V	2V	3V
pH (s.u.)	5.01	4.84	5.03	5.10
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]	129.8	78.2	58.6	50.9
Temperature (°C)	24.1	15.3	13.5	13.6
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				11
Time				
DTW (ft bmp)	26.26		28.50	

Remarks: SAMPLED BY GW JC

Parameter	Container	No.	Preservative
See COC			

PID Reading —

Gal./Ft.	Well Casing Volumes		
$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464.0408.00002

Site Location Date 8-6-08

Well No. BPOW-4-2 Replicate No. REP8-6-08 Weather CLEAR 85°

Sampling Personnel Williams, Cherlin GW JC Sampling Time: Begin 2:15 End 6:00

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	764
Depth to Water (ft bmp)	29.64
Depth to Packer (ft bmp)	503
Water Column in Well (ft)	261
Casing Diameter	4" (0.65)
Gallons in Well	169.65 x 3
Gallons Purged Prior to Sampling	509
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	255
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	PACKERED 3 WV
Purge Time	Begin 2:30 End 5:30

Field Parameters

Color	COLORLESS
Odor	NONE
Appearance	CLEAR

	I	1V	2V	3V
pH (s.u.)	4.25	4.23	4.28	4.26
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]	105.4	137.2	102.6	94.9
Temperature (°C)	13.9	13.4	15.5	13.1
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				4.4
Time				
DTW (ft bmp)				

Remarks: 503 - 26 x 43.1 + 50 = 255 PSE

SAMPLED BY GW JC

Parameter	Container	No.	Preservative

PID Reading —

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0408.0002 Well GM-13D Date 8/20/08

Total depth (ft bmp) 210 Screen Setting (ft bmp) 200-210 Casing Diameter (inches) 4

Measuring Point Description TOC. Static Water Level (ft bmp) 43.97

Pump Intake (ft bmp) 205 Sampling Time: Begin 3pm End 4:31 pm

Weather Sunny Replicate: MS / MSD.

Sampled by: GW/SX

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
3:31 PM		43.97	5.73	22.0	126.0	153	2.04		
3:36			5.67	21.1	126.9	154	1.56		
3:41			5.65	19.5	128.4	160	0.71		
3:46		44.28	5.40	18.9	127.9	165	0.48		
3:51			5.34	18.5	128.9	171	0.42		
3:56			5.31	18.5	129.4	176	0.38		
4:01		44.15	5.31	18.9	130	179	0.53		
4:06			5.29	19.5	130.2	183	0.56		
4:11			5.31	19.8	129.8	187	0.64		
4:16			5.33	19.6	129.7	188	0.59		
4:21			5.32	19.2	129.1	190	0.62		
4:26			5.34	19.1	128.8	191	0.64		
4:31		44.14	5.33	19.2	128.8	192	0.68	5.9	

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NGC OU2 Project No. NY001464.0408.00001

Site Location Bethpage, NY Date 8/13/08

Well No. GM-15S Replicate No. NA Weather sunny 80s F

Sampling Personnel Prezorski/JAE Sampling Time: Begin 14:34 End 14:40

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	80
Depth to Water (ft bmp)	42.75'
Depth to Packer (ft bmp)	
Water Column in Well (ft)	37.25'
Casing Diameter	4" (0.65)
Gallons in Well	24.21
Gallons Purged	x3
Prior to Sampling	72.64
Pump Intake	
Setting (ft bmp)	/
Packer Pressure (psi)	/
Pumping Rate (gpm)	2
Evacuation Method	Redi-flo pump
Sampling Method	3 well volume purge
Purge Time	Begin 13:58 End 14:34

Field Parameters

Color	colorless
Odor	odorless
Appearance	clear

	I	1V	2V	3V
pH (s.u.)	5.89	5.62	5.53	5.51
Conductivity (~~mS/cm~~) or (µmhos/cm) [1]	152.7	179.4	181.1	181.1
Temperature (°C)	17.0	16.6	16.4	16.9
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	24	11	11	8.4
Time	13:58	~~14:00~~	~~14:11~~ 14:22	~~14:30~~ 14:34
DTW (ft bmp)	72.64	14:00	14:22	

Remarks:

Parameter	Container	No.	Preservative
see COC			

PID Reading 0.0 ppm

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project N-Grumman Ow2 NY001464.0408.00002 Project No. NY001464.0408.00002

Site Location Bethpage, NY Date 8-26-08

Well No. GM-15I Replicate No. NA Weather Clear 78°

Sampling Personnel William Sampling Time: Begin 12:40 pm End 2:30

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	105
Depth to Water (ft bmp)	
Depth to Packer (ft bmp)	94
Water Column in Well (ft)	11
Casing Diameter	4 (0.65)
Gallons in Well	7.15
Gallons Purged	x 3
Prior to Sampling	22
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	80
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin	End

Field Parameters

Color	Colorless
Odor	None
Appearance	Clear

	I	1V	2V	3V
pH (s.u.)	5.63	5.22	5.13	
Conductivity ~~(mS/cm)~~ or (µmhos/cm)	133.1	107.2	105.2	
Temperature (°C)	15.4	17.4	16.4	
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: SGA-11

Parameter	Container	No.	Preservative
See COC			

PID Reading

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

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Low-Flow Groundwater Sampling Log

Project	NGC OU2				
Project Number	NY001464.0408.00003	Site Location	Bethpage, NY	Well ID	GM-15D
Date	8/13/08	Sampled By	P.P. / J.A.C. Prezorski / Cherlin		
Sampling Time	11:50	Recorded By	JAC Cherlin		
Weather	Sunny	Coded Replicate No.	NA		

Instrument Identification

Water Quality Meter(s) ______ Serial # ______

Casing Material	PVC	Purge Method	Dedicated Bladder / Low Flow		
Casing Diameter	4"	Screen Interval (ft bmp)	Top 332	Bottom	342
Sounded Depth (ft bmp)	342	Pump Intake Depth (ft bmp)	337		
Depth to Water (ft bmp)	45.36	Purge Time	Start 10:45 AM	Finish	11:45 AM

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~)[1]	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
10:45	—	—	—	17.6	5.57	150.5	95	2.15	—	—
10:50	—	—	—	17.7	5.54	146.8	92	2.22	6.1	45.79
10:55	—	—	—	17.8	5.18	144.4	98	4.81	—	—
11:00	—	—	—	17.7	5.16	143.5	101	4.86	5.9	45.80
11:05	—	—	—	17.7	4.92	142.5	118	4.89	—	—
11:10	—	—	—	17.7	4.93	141.1	116	4.98	5.7	45.60
11:15	—	—	—	17.7	4.87	139.9	116	4.99	—	—
11:20	—	—	—	17.7	4.55	134.3	129	5.03	4.9	45.68
11:25	—	—	—	17.8	4.20	132.1	138	5.07	—	—
11:30	—	—	—	17.9	4.84	130.3	151	5.13	4.5	45.70
11:35	—	—	—	17.7	4.84	135.6	141	5.18	—	—
11:40	—	—	—	17.5	4.82	138.0	131	5.22	4.2	45.70
11:45	—	—	—	17.6	4.83	138.0	122	5.31	4.2	—

Collected Sample Condition Color colorless Odor odorless Appearance Clear

Parameter	Container	No.	Preservative
see COC			

PID Reading 0.0 ppm

Comments

1) Circle one unit type

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Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NGC OU2
Project Number: NY001464.0408.0000 Site Location: Bethpage, NY Well ID: GM-15D2
Date: 8/13/08 Sampled By: GW/JAC / Prezorski
Sampling Time: 1303 Recorded By: Prezorski / Cherlin
Weather: Sunny Coded Replicate No.: NA

Instrument Identification
Water Quality Meter(s) Serial #

Casing Material: PVC Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp) Top: 536 Bottom: 556
Sounded Depth (ft bmp): 556 Pump Intake Depth (ft bmp): 546
Depth to Water (ft bmp): 48.49' Purge Time Start: 12:00 Finish: 1300

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
12:00	—	—	—	19.5	5.26	81.5	128	1.90	—	—
12:05				18.5	5.05	82.3	120	3.61		48.20
12:10				18.7	5.07	82.6	119	4.07		
12:15				20.2	5.07	82.5	125	4.61		48.21
12:20				20.9	5.09	82.4	131	4.89		
12:25				20.9	5.09	82.1	134	5.11		48.21
12:30				20.9	5.11	82.0	134	4.89		
12:35				21.1	5.10	81.9	137	4.68		48.21
12:40				21.1	5.10	81.9	135	4.32		
12:45				21.2	5.10	81.6	135	4.13		48.21
12:50				21.2	5.10	81.4	134	4.38		
12:55				21.1	5.11	81.3	132	4.40		48.21
1300				21.1	5.11	81.3	131	4.12	3.3	

Collected Sample Condition Color: colorless Odor: None Appearance: clear

Parameter	Container	No.	Preservative
8260C			

PID Reading: 0.0 ppm

Comments: Purge tubing on hot asphalt & Increasing temp readings

1) Circle one unit type

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0408.00002 Well QM-17F Date 8-11-08

Total depth (ft bmp) 120 Screen Setting (ft bmp) 100 - 120' Casing Diameter (inches) 4"

Measuring Point Description TOC Static Water Level (ft bmp) _____

Pump Intake (ft bmp) _____ Sampling Time: Begin _____ End _____

Weather _____

Sampled by : Williams

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. (umhos) or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
4:20	450ml/m	43.80	5.44	21.1	94.1	129	6.43		
4:25			5.60	20.2	96.5	101	5.59		
4:30			5.66	20.2	97.1	93	5.06		
4:35		43.92	5.68	20.3	97.5	95	5.60		
4:40			5.70	20.6	98.1	88	5.03		
4:45			5.72	20.6	99.4	85	5.37		
4:50			5.71	20.6	99.3	85	5.38		
4:55			5.71	20.6	99.7	102	5.47		
5:00			5.73	20.4	99.8	77	4.99		
5:05			5.71	20.4	99.7	79	5.06		
5:10			5.72	20.4	99.7	78	5.16	9.7	

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0408.00002 Well 6M-B 17D Date 8-11-08

Total depth (ft bmp) 298 Screen Setting (ft bmp) _____ Casing Diameter (inches) 4"

Measuring Point Description TOC Static Water Level (ft bmp) _____

Pump Intake (ft bmp) _____ Sampling Time: Begin _____ End _____

Weather _____

Sampled by : Williams

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. (umhos) or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
3:00		47.50	5.25	22.3	99.5	104	6.68		
3:05			5.19	20.8	99.4	101	6.72		
3:10			5.17	20.8	99.8	99	6.65		
3:15		47.57	5.12	20.5	99.6	102	6.84		
3:20			5.10	20.4	98.8	115	6.48		
3:25			5.09	20.4	98.2	107	6.08		
3:30			5.07	20.5	97.4	104	6.43		
3:35		47.56	5.08	20.0	95.8	106	5.64		
3:40			5.08	19.6	95.9	121	5.91		
3:45			5.07	19.7	96.7	114	5.87		
3:50			5.05	20.0	95.8	113	6.01		
3:55			5.05	20.2	94.9	112	5.77		
4:00			5.05	20.0	94.7	113	5.64	14	

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Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464.0408.00002

Site Location Date 8-26-08

Well No. GM-18I Replicate No. Weather

Sampling Personnel G. Williams Sampling Time: Begin 2:45 End

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	105
Depth to Packer (ft bmp)	94
Water Column in Well (ft)	11
Casing Diameter	4 (0.65)
Gallons in Well	7.1
Gallons Purged	x3
Prior to Sampling	22
Pump Intake	
Setting (ft bmp)	
Packer Pressure (psi)	80
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	3WV W/PACKER
Purge Time	Begin End

Field Parameters

Color	COLORLESS
Odor	NONE
Appearance	CLEAN

	I	1V	2V	3V
pH (s.u.)	5.88	5.28	5.37	5.21
Conductivity (~~mS/cm~~) or (µmhos/cm) 1)	160.	161.6	164.7	167.2
Temperature (°C)	16.5	17.4	16.9	17.3
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				5.3
Time				
DTW (ft bmp)				

Remarks:

Parameter	Container	No.	Preservative
See COC			

PID Reading

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0408.00002 Well GM-18D Date 8-26-08

Total depth (ft bmp) 300 Screen Setting (ft bmp) _____ Casing Diameter (inches) 4 11

Measuring Point Description TOC Static Water Level (ft bmp) _____

Pump Intake (ft bmp) _____ Sampling Time: Begin _____ End _____

Weather CLEAR 78°

Sampled by : Williams

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. (umhos or ms/cm)	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
~~8-26-08~~		43.51				~~49~~	~~1.41~~		
4:30		43.51	5.24	19.6	112.9	47	7.41		
4:35			5.23	19.6	112.2	43	5.99		
4:40			5.23	20.1	113.6	49	6.71		
4:45		43.46	5.22	20.2	113.5	~~48~~	5.53		
4:50			5.20	20.2	113.7	58	6.52		
4:55			5.20	20.1	113.5	59	6.38		
5:00			5.20	20.1	113.4	65	6.25		
~~5:05~~			5.20	20.1	113.5	64	6.45		
~~5:10~~			5.20	19.8	113.2	80	6.53		
5:15		43.49	5.19	19.6	113.2	76	6.34		
5:20			5.19	19.1	113.5	90	~~6.54~~ 6.54		
5:25			5.19	19.1	113.5	88	6.40		
5:30			5.19	18.9	113.1	87	6.75		
6:35			5.19	18.7	113.5	91	6.77	4.10	

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: NY001464.0408.00002
Site Location: Bethpage, NY | Date: 8/29/08
Well No.: GM-20I | Replicate No.: NA | Weather: clear 80°F
Sampling Personnel: Prezorski | Sampling Time: Begin 1628 End 1631

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	105
Depth to Water (ft bmp)	36.21
Depth to Packer (ft bmp)	94
Water Column in Well (ft)	11
Casing Diameter	4" (0.65)
Gallons in Well	7.15
Gallons Purged	x3
Prior to Sampling	22
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	80 (Rounded)
Pumping Rate (~~gpm~~)	1850 ml/min
Evacuation Method	Dedicated Bladder pump
Sampling Method	3 well volume
Purge Time	Begin 1539 End 1627

Field Parameters

	I	1V	2V	3V
Color	colorless	clear	colorless	clear
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	10.90	10.52	10.50	10.46
Conductivity (~~mS/cm~~) or (µmhos/cm) [1]	126.4	111.4	110.2	110.9
Temperature (°C)	14.7	13.8	13.5	13.4
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	—	—	—	9.8
Time	—	—	—	—
DTW (ft bmp)	—	½	½	½

Remarks: 1 = 5gal container
94 - 36.21 x .43 + 50 = 75 psi

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0 ppm

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: N60146.0408.0002
Site Location: Bethpage, NY | Date: 8/28/08
Well No.: GM-20D | Replicate No.: NA | Weather: clear 80s F

Sampling Personnel: Prezorski; | Sampling Time: Begin 1506 | End 1509

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	226
Depth to Water (ft bmp)	37.58
Depth to Packer (ft bmp)	215
Water Column in Well (ft)	11
Casing Diameter	4" (0.65)
Gallons in Well	7.15
Gallons Purged	+3
Prior to Sampling	22
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	130
Pumping Rate (~~gpm~~)	1950 ml/min
Evacuation Method	Dedicated Bladder/packer
Sampling Method	3 well volume
Purge Time	Begin 1421 End 1504

Field Parameters

	I	1V	2V	3V
Color	clear	clear	clear	clear
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	8.49	6.46	5.87	5.88
Conductivity (~~mS/cm~~) or	—	—	—	—
(µmhos/cm) [1]	91.8	91.5	90.5	91.0
Temperature (°C)	14.4	13.6	13.6	13.5
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	—	—	—	4.0
Time	—	—	—	—
DTW (ft bmp)	—	ø + ½	½ ø	ø ½

Remarks: ø = 5 gal container
215 - 37.58 X .43 + 50 = 130 PSI rounded up

Parameter	Container	No.	Preservative
see COC			

PID Reading: 0

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: NGC OU2
Project No.: NY001464.0804.0008
Site Location: Bethpage, NY
Date: 8/15/08
Well No.: GM-21S (corrected to GM-21S)
Replicate No.: NA
Weather: Cloudy, 80°F
Sampling Personnel: Prezioti / Cherlin (M.P / JAC)
Sampling Time: Begin 15:49 End 15:55

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	67
Depth to Water (ft bmp)	31.74'
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	35.26
Casing Diameter	2" (0.16)
Gallons in Well	5.64 ×3
Gallons Purged Prior to Sampling	16.92 (17)
Pump Intake Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm) (Q)	1
Evacuation Method	sub pump / Mon'flo
Sampling Method	3 well volume
Purge Time	Begin 15:34 End 15:49

Field Parameters

	I	1V	2V	3V
Color	Brown	Colorless	Colorless	Colorless
Odor	odorless	odorless	odorless	odorless
Appearance	turbid	Clear	Clear	Clear
pH (s.u.)	7.10	7.11	7.03	6.95
Conductivity (~~mS/cm~~) or (µmhos/cm) 1)	84.9	82.6	88.4	81.7
Temperature (°C)	18.9	18.6	18.1	18.1
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	—	—	—	12
Time	15:34	15:39	15:44	15:49
DTW (ft bmp)	31.74	—	—	—

Remarks: Q = 1, t = 17, 1V = 17/3

Parameter	Container	No.	Preservative
See COC			

PID Reading: Humid

Well Casing Volumes				
Gal./Ft.	1 1/4" = 0.06	(2" = 0.16)	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: NY001464.0408.00002
Site Location: Bethpage, NY | Date: 8/28/08
Well No.: GM-21I | Replicate No.: NA | Weather: clear 80s F
Sampling Personnel: Prezorski | Sampling Time: Begin 1339 End 1343

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	140
Depth to Water (ft bmp)	36.30
Depth to Packer (ft bmp)	129
Water Column in Well (ft)	11
Casing Diameter	4" (0.65)
Gallons in Well	7.15
Gallons Purged	+3
Prior to Sampling	22
Pump Intake Setting (ft bmp)	/
Packer Pressure (psi)	90
Pumping Rate ~~(gpm)~~	2400 ml/min
Evacuation Method	Dedicated Bladder/packer
Sampling Method	3 Well Volume
Purge Time	Begin 1253 End 1338

Field Parameters

	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	9.40	9.60	9.61	9.59
Conductivity (mS/cm) or (µmhos/cm) [1]	—	—	—	—
	146.1	119.7	109.8	104.2
Temperature (°C)	15.3	14.8	14.5	14.0
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	—	—	—	3.4
Time	—	—	—	—
~~DTW (ft bmp)~~	—	½	½	½

Remarks: ∅ = 5 gal container
DTW = 36.30
129 − 36.30 × .43 + 50 = 90 PSI rounded up

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0 ppm

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: N-Grumman OU2
Project Number: NYCOL464.0408.00002
Site Location: Bethpage, NY
Well ID: GM-21D
Date: 9/28/08
Sampled By: Prezorski
Sampling Time: 11:32 AM
Recorded By: Prezorski
Weather: clear 80°F
Coded Replicate No.: NA

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material: PVC
Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4"
Screen Interval (ft bmp): Top 278 Bottom 288
Sounded Depth (ft bmp): 288
Pump Intake Depth (ft bmp): 283
Depth to Water (ft bmp): 41.51
Purge Time: Start 10:30 AM Finish 11:30 AM

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) [1]	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
10:30		400		19.3	5.44	102.1	-63	6.28		
10:35		425		16.8	4.97	85.0	-43	4.65		41.61
10:40		↓		17.2	4.96	81.1	-7	5.06		
10:45				17.3	5.00	80.7	26	4.91		41.55
10:50				17.3	4.96	81.0	62	5.04		
10:55				17.4	4.95	81.4	74	5.03		41.56
11:00				17.4	4.95	82.0	74	4.84		
11:05		↓		17.5	4.95	82.4	76	4.51		41.56
11:10		425		17.6	4.93	82.2	77	4.54		
11:15		↓		17.7	4.93	82.1	80	4.86		41.55
11:20		↓		17.7	4.93	82.0	78	4.44		
11:25		↓		17.7	4.93	82.1	80	4.54		41.56
11:30		425		17.6	4.93	82.4	79	4.41	3.6	

Collected Sample Condition — Color: clear — Odor: none — Appearance: clear

Parameter	Container	No.	Preservative
See CoC			

PID Reading: 0 ppm

Comments:

1) Circle one unit type

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0408.00002 Well GM-33D2 Date 8/19/08

Total depth (ft bmp) 520 bls Screen Setting (ft bmp) 500 - 520 bls Casing Diameter (inches) 4

Measuring Point Description TOC Static Water Level (ft bmp) 47.70

Pump Intake (ft bmp) 510 Sampling Time: Begin 5:20pm End 7pm

Weather Sunny

Sampled by : GW / SX

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
5:26pm	~~b~~	47.70	6.45	20.9	81.50	24	6.51		
5:31pm			6.83	19.4	81.10	46	5.77		
5:36		47.80	5.96	18.7	80.90	80	5.56		
5:41			5.77	18.6	80.6	88	5.38		
5:46		47.81	5.71	18.4	80.6	98	5.36		
5:51			5.70	18.1	80.7	107	5.43		
5:56			5.63	18.0	80.8	112	5.47		
6:01			5.62	18.0	80.6	116	5.64		
6:06			5.62	17.9	80.8	121	5.65		
6:11			5.61	17.7	80.4	121	5.72		
6:16			5.63	17.5	80.8	116	5.75		
6:21			5.62	17.4	80.8	114	5.91	3.2	
6:26pm									

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: N-Grumman OU-2
Project Number: NY001464.0408.00002
Site Location: Bethpage
Well ID: GM-34D
Date: 8/21/08
Sampled By: Pat Prezorski / Sunny Xu
Sampling Time: 2:15pm
Recorded By: Sunny Xu
Weather: Sunny 80's F
Coded Replicate No.: NA

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material: steel
Purge Method: dedicated bladder pump
Casing Diameter: 2"
Screen Interval (ft ~~bmp~~): Top 308 b/s Bottom 318 b/s
Sounded Depth (ft bmp): 319
Pump Intake Depth (ft bmp):
Depth to Water (ft bmp): 13.53
Purge Time: Start 1PM Finish 2:14pm

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
1:09PM				21.3	6.55	139.8	30	1.18		13.53
1:14				18.4	7	143.0	1	0.52		
1:19				19.4	7.22	142.7	-14	.34		
1:24				19.6	7.43	142.1	-26	0.31		13.65
1:29				19.5	7.55	142.4	-34	0.29		
1:34				19.5	9.21	140.6	-78	0.29		
1:39				19.5	9.19	143.2	-78	0.30		13.60
1:44				19.6	9.15	144.1	-77	0.30		
1:49				19.6	8.79	146.5	-72	0.31		13.60
1:54				19.5	8.08	147.3	-64	0.30		
1:59				19.6	7.36	146.4	-44	0.32		13.58
2:04				19.7	6.76	146.0	-37	0.33		
2:09				19.6	6.65	145.5	-31	0.34		13.57
2:14				19.5	6.44	144.8	-22	0.35	11	

Collected Sample Condition: Color clear Odor None Appearance clear

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0ppm

Comments:

1) Circle one unit type

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001466.0408.0002 Well GM-34D2 Date 8/21/08

Total depth (ft bmp) 520 bls Screen Setting (ft bmp) 510-520 bls Casing Diameter (inches) 4

Measuring Point Description TOC Static Water Level (ft bmp) 16.34

Pump Intake (ft bmp) bladder / non-dedicated Sampling Time: Begin 1256 End 1300

Weather Sunny 80s F

Sampled by: Patricia. Presenti / Sunny. X.

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. (umhos) or ~~ms/cm~~	~~Redox~~ ORP (mV)	DO (mg/L)	TURB (NTU)	Notes
11:45AM		16.34	6.48	21.2	155.2	74	1.74		
11:50			6.65	18.2	119.3	56	0.79		
11:55		16.26	6.64	18.4	97.1	40	0.54		
12:00 pm			6.68	19.1	93.2	32	0.56		
12:05		16.26	6.72	19.4	89.5	25	0.40		
12:10			6.78	19.3	85.6	18	0.60		
12:15		16.30	6.78	19.5	83.6	4	0.34		
12:20			6.54	20.1	84.4	-12	0.31		
12:25		16.38	6.10	20.3	92.4	-13	0.50		
12:30			5.94	20.1	94.3	-2	1.15		
12:35		16.38	5.83	20.1	92.5	9	1.71		
12:40			5.83	20.0	90.9	18	2.13		
12:45			5.72	19.9	89.2	31	2.56	45	
12:50			5.74	20	88.0	41	2.80	—	
12:55		16.38	5.68	20	87.6	48	3.00	29	No QA/QC

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: N- Grumman OU-3 | Project No.: NY001464.0408.00002 ~~GM-35 D2 BB~~
Site Location: Bethpage, NY. | Date: 8-25-08
Well No.: GM-35 D2 | Replicate No.: ~~MS~~ MS/MSD | Weather: Cloudy
Sampling Personnel: Pat Ponczorski / Sunny Xu | Sampling Time: Begin: 15:42 BB | End: 16:50.

Purge Data

Measuring Point (describe)	TOC.
Sounded Well Depth (ft bmp)	530
Depth to Water (ft bmp)	~~38.70~~
Depth to Packer (ft bmp)	507
Water Column in Well (ft)	23
Casing Diameter	4"(0.65)
Gallons in Well	14.95
Gallons Purged	x3
Prior to Sampling	45
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	250
Pumping Rate (gpm)	2700 ml/min.
Evacuation Method	Dedicated Bladder Pump
Sampling Method	3 WV
Purge Time	Begin ____ End ____

Field Parameters

	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	none	none	none	None
Appearance	clear	clear	clear	clear
pH (s.u.)	5.95	5.86	6.07	6.17
Conductivity ~~(mS/cm)~~ or (µmhos/cm)	141.0	430.0 ~~mS/cm~~ BB ↓	342.0	129.4
Temperature (°C)	15.9	15.5	15.4	15.7
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	—	—	—	3.9
Time 5gal. DTW (ft bmp)	—	—	—	—

Remarks: #= 5gal container
Split sample with Bethpage water district

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0ppm

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	(4" = 0.65)
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: N-Grumman OU-3
Project Number: NY001464.0408.0002
Site Location: Bethpage, NY
Well ID: GM-38D
Date: 8-25-08
Sampled By: Pat Prezborski / Sunny Xu
Sampling Time: 13:52
Recorded By: Sunny Xu
Weather: Cloudy / Drizzle
Coded Replicate No.: N/A
Instrument Identification:
Water Quality Meter(s):
Serial #:
Casing Material: PVC
Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 4"
Screen Interval (ft bmp): Top 320 bls Bottom 340 bls
Sounded Depth (ft bmp): 340
Pump Intake Depth (ft bmp): 330
Depth to Water (ft bmp): 38.26 ft.
Purge Time: Start 12:45pm Finish 1350

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos ~~or mS/cm~~) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
12:45pm				11.3	5.45	119.5	-28	1.36		
12:50				15.6	5.17	120.7	-18	0.61		
12:55				16.0	5.00	120.5	4	0.52		38.30
13:00				16.3	4.90	118.2	23	0.56		
13:05				16.4	4.84	117.8	35	0.78		38.28
13:10				16.2	4.83	116.5	44	1.11		
13:15				16.0	4.84	116.0	49	1.16		38.22
13:20				16.2	4.84	115.8	56	1.17		
13:25				16.3	4.84	115.4	53	1.15		38.20
13:30				16.7	4.86	115.0	76	0.98		
13:35				16.7	4.86	114.8	82	0.99		38.20
13:40				16.8	4.85	114.6	107	1.04		
13:45				16.7	4.88	114.5	90	1.09		
13:50				16.9	4.88	114.2	91	1.09	3.2	38.20

Collected Sample Condition: Color clear Odor None Appearance clear

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0ppm

Comments: Split sample with Bethpage with district

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: N-Grumman OU3
Project Number: NY001464.0408.0002
Site Location: Bethpage, NY
Well ID: GM-38D2
Date: 8-25-08
Sampled By: Pat Prezorski / Sunny Xu
Sampling Time: 15:07
Recorded By: Sunny Xu
Weather: Cloudy
Coded Replicate No.: NA
Instrument Identification:
Water Quality Meter(s):
Serial #:
Casing Material: PVC
Casing Diameter: 4"
Sounded Depth (ft bmp): 495
Depth to Water (ft bmp): 40.73
Purge Method:
Screen Interval (ft bmp): Top 475 bls Bottom 495 bls
Pump Intake Depth (ft bmp): 485
Purge Time: Start 1405 Finish 1505

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos ~~or mS/cm~~) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
14:05				17.5	5.28	74.2	99	5.25		40.82
14:10				17.5	5.29	72.9	87	4.92		
14:15				18.0	5.22	71.8	90	4.55		40.80
14:20				18.3	5.22	71.4	109	4.34		
14:25				18.2	5.20	71.4	97	4.10		40.78
14:30				18.2	5.21	71.4	98	3.95		
14:35				18.3	5.32	86.5	95	3.66		40.70
14:40				18.2	5.33	107.5	87	3.43		
14:45				18.3	5.64	127.3	83	3.22		40.60
14:50				18.2	5.73	154.8	75	2.87		
14:55				18.4	5.76	165.6	70	2.80		40.50
15:00				18.6	5.75	176.5	67	2.20		
15:05				18.9	5.76	174.8	62	1.86	4.3	

Collected Sample Condition: Color colorless Odor None Appearance clear

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0 ppm

Comments: Split Sample with Bethpage with Pittard

1) Circle one unit type

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0408.0002 Well GM-39D Date 8/20/08

Total depth (ft bmp) 340 Screen Setting (ft bmp) 320-340 Casing Diameter (inches) 4

Measuring Point Description TOC Static Water Level (ft bmp) 37.31

Pump Intake (ft bmp) 330 Sampling Time: Begin 1:02 PM End 2:30 PM

Weather Sunny

Sampled by : G.W./S.K. REP 82008

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
1:02 PM		37.31	5.86	20.8	94.4	119	6.48		
1:07 PM			5.84	19.0	93.2	115	6.14		
1:12			5.69	18.1	93.0	116	6.19		
1:17		37.52	5.59	17.8	93.4	120	6.36		
1:22			5.56	17.7	93.3	123	6.45		
1:27		37.50	5.54	17.8	93.5	124	6.40		
1:32			5.55	17.6	93.3	125	6.51		
1:37			5.53	17.6	93.1	127	6.45		
1:42			5.53	17.7	93.1	129	6.60		
1:47			5.53	17.9	93.2	132	6.33		
1:52			5.52	18.0	92.9	133	6.31		
1:57			5.54	17.8	92.9	133	6.38		
2:02		37.48	5.53	17.9	92.9	137	6.52	3.2	
~~2:07~~									
~~2:12~~									
~~2~~									

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0408.00002 Well GM-39D2 Date 8/20/08

Total depth (ft bmp) 495 Screen Setting (ft bmp) 475-495 Casing Diameter (inches) 4

Measuring Point Description TOC Static Water Level (ft bmp) 40.07

Pump Intake (ft bmp) 485 Sampling Time: Begin 11:47 AM End 1PM

Weather Sunny

Sampled by : GW / S.X.

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos or ms/cm	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
11:47 AM		40.07	5.93	20.3	98.6	119	8.60		
11:52			5.92	18.4	96.8	120	8.52		
11:57		40.40	5.49	18.0	96.4	117	8.44		
12:02 PM			5.43	18.4	96.0	115	8.16		
12:07		40.40	5.26	18.5	96.2	116	8.04		
12:12			5.24	18.6	95.9	124	7.92		
12:17			5.26	18.5	95.6	119	7.82		
12:22			5.24	18.5	95.7	120	7.74		
12:27			5.25	18.4	96.0	121	7.67		
12:32			5.24	18.4	95.8	124	7.62		
12:37			5.25	18.3	95.8	124	7.58		
12:42			5.25	18.5	95.8	129	7.49		
12:47		40.34	5.31	18.5	95.7	131	7.30	2.5	

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: N-Grumman OU-2
Project Number: NY001464.0408.00002
Site Location: Bethpage, NY
Well ID: GM-73D
Date: 8/21/08
Sampled By: Pat. Pawlorski / Sunny X.
Sampling Time: 5:36pm
Recorded By: XV
Weather: Sunny 90s F
Coded Replicate No.: NA

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material: PVC
Purge Method: Dedicated Bladder pump
Casing Diameter: 4 in.
Screen Interval (ft bmp): Top 401 bls Bottom 411 bls.
Sounded Depth (ft bmp): 411
Pump Intake Depth (ft bmp): 406
Depth to Water (ft bmp): 42.60
Purge Time: Start 4:35pm Finish 5:35pm

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
4:35pm				18.2	4.72	97.8	166	6.69		
4:40				16.6	4.75	98.8	166	7.04		
4:45				16.1	4.73	98.8	167	7.25		42.50
4:50				16.0	4.75	97.8	167	7.26		
4:55				16.0	4.74	97.2	167	7.34		42.55
5:00				15.8	4.75	96.4	169	7.36		
5:05				15.7	4.74	96.5	169	7.36		42.48
5:10				15.7	4.77	96.3	169	7.36		
5:15				15.7	4.74	96.3	169	7.36		42.47
5:20				15.7	4.75	96.1	169	7.36		
5:25				15.6	4.74	96.0	171	7.38		42.50
5:30				15.7	4.76	95.8	171	7.41		
5:35				15.8	4.80	96.2	172	7.40	3.2	42.48

Collected Sample Condition: Color colorless Odor None Appearance clear

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0 ppm

Comments:

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: N-Grumman OU-2
Project Number: NY001464.0408.00002
Site Location: Bethpage
Well ID: GM-73D2
Date: 8/21/08
Sampled By: Pat Prezorski / Sunny Xu
Sampling Time: 4:26pm
Recorded By: Sunny Xu
Weather: Sunny 80s F
Coded Replicate No.: NA

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material: PVC
Casing Diameter: 4 inch
Sounded Depth (ft bmp): 552
Depth to Water (ft bmp): 44.69

Purge Method: dedicated bladder pump.
Screen Interval (ft bmp): Top 532 Bottom 552
Pump Intake Depth (ft bmp): 542
Purge Time: Start 3:25pm Finish 4:25pm

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
3:25pm				19.2	6.44	124.0	128	8.64		44.69
3:30				17.0	5.04	114.9	132	7.45		
3:35				16.6	4.78	106.4	135	7.22		42.86
3:40				16.6	4.73	102.8	138	7.24		/
3:45				16.5	4.74	99.6	143	7.40		42.69
3:50				16.4	4.72	98.6	148	7.30		
3:55				16.3	4.73	97.1	147	7.27		42.63
4:00				16.2	4.74	96.5	150	7.39		
4:05				16.2	4.74	95.6	151	7.41		42.87
4:10				16.1	4.75	95.8	152	7.21		
4:15				16.1	4.76	94.9	154	7.27		42.60
4:20				16.1	4.76	94.5	156	7.24		
4:25				16.0	4.77	94.2	158	7.30	← 3.1	

Collected Sample Condition: Color clear Odor no odor Appearance clear

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0ppm

Comments: Well ID 73D2

1) Circle one unit type

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0408.00002 Well GM-74I Date 8-18-08

Total depth (ft bmp) 114 bls Screen Setting (ft bmp) 94 bls - 114 bls Casing Diameter (inches) 4

Measuring Point Description TOC Static Water Level (ft bmp) 36.72

Pump Intake (ft bmp) 104 bls Sampling Time: Begin 2 pm End 2:48 pm

Weather Clear 82°

Sampled by : G.W.

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos ~~or ms/cm~~	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
2:00		36.72	5.53	23.1	333	32	6.64		
2:05			5.23	21.8	239	23	6.12		
2:10			5.10	21.5	126.7	22	5.96		
2:15		36.77	5.15	21.1	98.1	24	5.99		
2:20			5.12	20.9	97.1	25	5.76		
2:25			5.18	20.7	94.1	19	5.79		
2:30		36.80	5.18	20.6	91.1	17	5.66		
2:35			5.15	20.4	89.0	31	5.97		
2:40			5.19	20.3	84.0	26	5.72		
2:45			5.22	20.4	88.7	25	5.71		
2:50			5.21	20.4	88.6	24	5.72		
								>20	

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Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464.0408.00002 Well GM-74D Date 8-18-08

Total depth (ft bmp) 305 bls Screen Setting (ft bmp) 295 bls – 305 bls Casing Diameter (inches) 4

Measuring Point Description TOC Static Water Level (ft bmp) 43.20

Pump Intake (ft bmp) 300 Sampling Time: Begin 3 PM End 4 PM

Weather CLEAR 82

Sampled by : GW.

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos ~~or ms/cm~~	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
3:00	480 ml/min	43.20	4.62	24.0	83.9	59.	5.69		
3:05			4.50	23.0	82.9	81	5.02		
3:10			4.52	21.1	82.8	98	4.75		
3:15		43.44	4.48	20.9	83.7	124	4.80		
3:20			4.47	20.8	84.2	125	4.83		
3:25			4.49	20.8	84.3	125	4.91		
3:30			4.53	20.7	84.3	128	4.84		
3:35			4.44	20.6	84.7	147	4.81		
3:40			4.60	20.6	84.2	138	4.84		
3:45		43.44	4.48	20.5	84.2	141	4.83		
3:50			4.50	20.5	83.7	145	4.88		
3:55			4.52	20.5	83.8	155	4.85		
4:00			4.50	20.5	83.9	153	5.10	2.9	

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. NY001464408.00002 Well GM-74D-2 Date 8-18-08

Total depth (ft bmp) 562 Screen Setting (ft bmp) 542 - 562 Casing Diameter (inches) 4

Measuring Point Description TOC Static Water Level (ft bmp) 50.15

Pump Intake (ft bmp) 552 Sampling Time: Begin 4:10 pm End 5:10 pm

Weather

Sampled by : Gary Williams

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos ~~or ms/cm~~	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
4:10		50.15	4.74	24.8	79.9	151	4.53		
4:15			4.80	23.0	73.9	159	3.34		
4:20			4.72	21.9	73.6	145	1.80		
4:25			4.92	20.5	77.1	136	1.75		
4:30			4.91	20.5	76.9	147	1.72		
4:35		50.14	4.89	20.5	77.1	145	1.80		
4:40			4.83	20.5	77.2	137	1.84		
4:45			4.84	20.4	75.9	136	1.82		
4:50			4.81	20.3	75.2	136	1.84		
4:55			4.87	20.5	73.7	140	1.77		
5:00			4.76	20.2	73.8	140	1.84		
505			4.74	20.2	73.8	139	1.90		
5:10			4.79	20.1	73.1	140	1.95	2.7	

ARCADIS

Low Flow Groundwater Sampling Form

Page 1 of 1

Project/No. N400146[illegible].0408.00002 Well GM-75D-2 Date 8-19-00

Total depth (ft bmp) ~~552~~ X.X. 525 Screen Setting (ft bmp) 505 - 525 Casing Diameter (inches) 4

Measuring Point Description TOC Static Water Level (ft bmp) 34.27

Pump Intake (ft bmp) 515 Sampling Time: Begin 11:20AM End 1 PM

Weather Sunny

Sampled by : GW SX

Date/Time	Rate (ml/min)	DTW (ft bmp)	pH (s.u.)	TEMP. (C)	Cond. umhos ~~or ms/cm~~	Redox (mV)	DO (mg/L)	TURB (NTU)	Notes
11:50 AM		34.27	5.28	20.9	122.9	77	5.41		
11:55			5.29	20.6	117.6	56	5.43		
12:00PM		34.28	5.13	20.2	110.3	57	5.06		
12:05			5.12	20.4	108.1	70	4.55		
12:10		34.32	5.10	20.2	106.5	81	4.23		
12:15			5.06	20.2	106.1	90	4.00		
12:20			5.06	20.3	105.9	102	3.78		
12:25			5.03	20.4	105.5	110	3.72		
12:30			5.03	20.5	105.1	118	3.89		
12:35			5.04	20.1	104.3	120	3.83		
12:40			5.02	19.7	104.3	125	3.82		
12:45			5.01	19.9	104.3	127	3.77		
12:50		34.35	5.01	19.9	104.2	130	3.77	4.2	

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project N-Grumman OU2 Project No. NY001464.0408.00002

Site Location Bethpage, NY Date 8/14/08

Well No. GM-78S Replicate No. MS/MSD Weather Humid 80sF

Sampling Personnel Prezorski, Cherlin Sampling Time: Begin 1441 End 1445

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	70
Depth to Water (ft bmp)	39.57
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	30.43
Casing Diameter	4" (0.65)
Gallons in Well	19.78
Gallons Purged	x3
Prior to Sampling	60
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	2
Evacuation Method	Redflow pump
Sampling Method	3 Well Volume
Purge Time Begin	1408 End 1430

Field Parameters

	I	1V	2V	3V
Color	Colorless	Colorless	Colorless	Colorless
Odor	None	None	None	None
Appearance	Clear	Clear	Clear	Clear
pH (s.u.)	6.05	5.92	5.92	5.78
Conductivity (mS/cm) or (µmhos/cm) 1)	121.3	127.3	126.8	126.8
Temperature (°C)	16.1	15.2	15.1	14.9
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	31	28	14	9.1
Time	1408	1418	1428	1438
DTW (ft bmp)				

Remarks: Q=2 T=30 1V=10

Parameter	Container	No.	Preservative
See COC			

PID Reading Open at wellhead

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NGC OU2
Project Number: NY001469.0408.00005
Site Location: Bethpage, NY
Well ID: GM-78I
Date: 8/14/08
Sampled By: PP/JAC
Sampling Time: 1338
Recorded By: J. Cherlin / P. Prezorski
Weather: Humid P. Cloudy 80s F
Coded Replicate No.: Rep081408
Instrument Identification:
Water Quality Meter(s):
Serial #:

Casing Material: PVC
Casing Diameter: 4
Sounded Depth (ft bmp): 110
Depth to Water (ft bmp): 40.00
Purge Method: low flow / Peristaltic pump
Screen Interval (ft bmp): Top 90 Bottom 110
Pump Intake Depth (ft bmp): 100
Purge Time: Start 12:34 Finish 1335

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
12:35				16.0	5.60	123.8	97	6.81	5.7	
12:40				16.7	5.60	123.6	60	5.65	3.2	39.83
12:45				18.4	5.37	61.7	52	4.72	2.8	
12:50				19.0	5.44	61.6	46	4.69	2.6	39.84
12:55				19.0	5.44	123.8	42	4.58	2.7	
1300				19.2	5.53	124.0	43	4.55	3.1	39.83
1305				19.2	5.53	124.0	47	4.57	2.6	
1310				18.3	5.59	124.5	50	4.66	2.5	39.85
1315				18.5	5.59	124.6	52	4.61	3.1	
1320				18.5	5.63	125.0	51	4.73	2.9	39.84
1325				17.8	5.63	125.6	56	4.70	2.0	
1330				18.1	5.61	125.2	58	4.65	2.2	39.85
1335				18.1	5.61	125.2	62	4.72	2.0	

Collected Sample Condition: Color clear Odor None Appearance clear

Parameter	Container	No.	Preservative
see COC			

PID Reading: High Humidity

Comments:

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project	N-Grumman OU-2		
Project Number	NY001464.0408.00002	Site Location	Bethpage
Well ID	GM-39I		
Date	8/22/08	Sampled By	Gary Williams / Sunny Xu
Sampling Time	←	Recorded By	Sunny Xu
Weather	Sunny	Coded Replicate No.	—

Instrument Identification

Water Quality Meter(s) _____ Serial # _____

Casing Material	PVC	Purge Method	bladder pump / low flow		
Casing Diameter	4 in.	Screen Interval (ft bmp)	Top 170 bls	Bottom	180 bls
Sounded Depth (ft bmp)		Pump Intake Depth (ft bmp)	175		
Depth to Water (ft bmp)	38.94	Purge Time	Start 14:15	Finish	15:00

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
14:15				21.5	5.65	155.1	71	7.01		38.94
14:20				19.9	5.42	110.8	67	6.33		
14:25				18.4	5.33	97.2	63	5.83		38.94
14:30				17.6	5.17	95.0	64	5.97		
14:35				17.1	5.09	93.6	67	5.95		38.92
14:40				17.1	5.09	93.4	69	5.85		
14:45				17.0	5.08	92.7	71	5.93		38.97
14:50				16.7	5.05	92.3	81	6.02		
14:55				16.7	5.07	92.6	81	6.05		
15:00				16.7	5.06	92.2	81	6.00	23	38.92

Collected Sample Condition Color clear Odor no odor Appearance clear

Parameter	Container	No.	Preservative
See COC.			

PID Reading _____

Comments _____

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: Northrop Grumman
Project Number: NY001464.0408.00002 Site Location: Bethpage, NY Well ID: GM-79D.
Date: 8-22-08 Sampled By: Gary Williams / Sunny Xu
Sampling Time: 16:10. Recorded By: Sunny Xu
Weather: Sunny Coded Replicate No.:

Instrument Identification
Water Quality Meter(s): Serial #:

Casing Material: PVC Purge Method: bladder pump / low flow
Casing Diameter: 4 in. Screen Interval (ft bmp) Top: 280 b/s Bottom: 290 b/s
Sounded Depth (ft bmp): Pump Intake Depth (ft bmp): 285
Depth to Water (ft bmp): 40.41 Purge Time Start: 15:10 Finish: 16:10.

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos) ~~or .mS/cm~~ 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
15:10				22.0	5.08	89.6	112	5.92		40.41
15:15				21.9	5.05	89.3	114	5.60		
15:20				20.7	5.05	88.8	119	4.90		40.41
15:25				19.5	4.98	89.0	125	3.45		
15:30				18.8	4.94	89.1	129	3.20		40.40
15:35				18.6	4.95	89.5	132	3.48		
15:40				18.3	4.93	89.5	137	3.72		40.40
15:45				18.3	4.93	89.3	138	3.84		
15:50				18.2	4.95	89.8	141	3.97		40.40
15:55				18.3	4.95	90.0	146	4.02		
16:00				18.5	4.92	90.3	148	3.97		40.41
16:05				18.5	4.92	89.9	151	4.06		
16:10				18.3	4.92	89.0	152	4.11	5.1	40.39

Collected Sample Condition Color: odorless Odor: none Appearance: clear

Parameter	Container	No.	Preservative
see CoC			

PID Reading:

Comments:

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: NY001464.0408.00002
Site Location: Bethpage NY | Date: 6/27/08
Well No.: BPOW 1-1 | Replicate No.: MS/MSD MS/MSD | Weather: upper 80's F
Sampling Personnel: Prezorski / Kirschner | Sampling Time: Begin 1201 End 1208

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	241
Depth to Water (ft bmp)	27.94
Depth to Packer (ft bmp)	169
Water Column in Well (ft)	72
Casing Diameter	4" (0.65)
Gallons in Well	46.8
Gallons Purged	x 3
Prior to Sampling	140
Pump Intake	
Setting (ft bmp)	
Packer Pressure (psi)	115
Pumping Rate (gpm)	
Evacuation Method	dedicated submersible pump/packer
Sampling Method	3WV
Purge Time	Begin 11:39 End 1201

Field Parameters

		1	1V	2V	3V
Color		Colorless	colorless	colorless	colorless
Odor		odorless	odorless	none	None
Appearance		clear	clear	clear	clear
pH (s.u.)		5.02	4.99	4.94	~~4.96~~ 4.96
Conductivity	~~(mS/cm)~~ or (µmhos/cm) [1]	142.9	149.0	148.8	147.8
Temperature (°C)		13.3	13.3	12.8	12.9
DO (mg/L)		—	—	—	—
ORP (mV)		—	—	—	—
Turbidity (NTU)		—	—	—	4.5
Time		1141	1147	1152	1200
DTW (ft bmp)		28.40			28.18

Remarks: Parameters every 4 Gal

169 - 27.94 X 1.43 + 50 = 111

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0ppm

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: NY001464.0408.00002
Site Location: Bethpage, NY | Date: 6/27/08
Well No.: BPOW 1-2 | Replicate No.: NA | Weather: upper 80's F
Sampling Personnel: Prezorski, Kirschner | Sampling Time: Begin 1031 End 1032

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	335
Depth to Water (ft bmp)	29.30
Depth to Packer (ft bmp)	294
Water Column in Well (ft)	41
Casing Diameter	4" (0.65)
Gallons in Well	26.65 x3
Gallons Purged Prior to Sampling	80.00
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	170
Pumping Rate (gpm)	
Evacuation Method	dedicated submersible pump/packer
Sampling Method	3 WV
Purge Time	Begin 1012 End 1032

Field Parameters

	I	1V	2V	3V
Color	Clear	Colorless →		
Odor	none	odorless →		
Appearance	clear	clear →		
pH (s.u.)	5.45	5.15	5.08	5.00
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]	81.0	76.8	71.1	69.1
Temperature (°C)	15.0	12.6	12.2	14.5
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	—	—	—	5.7
Time	~~1012~~ 1010	~~1021~~ 1019	1024	1030
DTW (ft bmp)			31.40	31.22

Remarks: Parameters every 2 casings

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0 ppm

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: NY001464.0408.00002
Site Location: Bethpage, NY | Date: 6/27/08
Well No.: BPOW 1-3 | Replicate No.: NA | Weather: upper 80's F
Sampling Personnel: Prezorski, Kirschner | Sampling Time: Begin 1506 End 1508

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	419
Depth to Water (ft bmp)	30.21
Depth to Packer (ft bmp)	344
Water Column in Well (ft)	75
Casing Diameter	4" (0.65)
Gallons in Well	48.75
Gallons Purged	x3
Prior to Sampling	146.25
Pump Intake	
Setting (ft bmp)	
Packer Pressure (psi)	195
Pumping Rate (gpm)	
Evacuation Method	Dedicated submersible pump/packer
Sampling Method	3 well volume
Purge Time	Begin 1439 End 1507

Field Parameters

	I	1V	2V	3V
Color	clear	clear	clear	colorless
Odor	odorless	odorless	odorless	None
Appearance	clear	clear	clear	clear
pH (s.u.)	4.97	5.10	5.26	4.97
Conductivity (~~mS/cm~~) or (µmhos/cm) [1]	179.0	320	275	221
Temperature (°C)	18.5	13.7 14.6	16.0	13.5
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	—	—	—	25
Time	1441	1448	1456	1506
DTW (ft bmp)	33.05		33.00	31.45

Remarks: Parameter every 50 gd
344 - 30.21 x .43 + 50 = 195
Rate lowered at 3V

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0 ppm

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	(4" = 0.65)
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464004800002

Site Location Date 6-30-08

Well No. BPOW 3-1 Replicate No. REP 6-30-08 Weather

Sampling Personnel GW JC Sampling Time: Begin 4:30 End

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	516
Depth to Water (ft bmp)	
Depth to Packer (ft bmp)	414
Water Column in Well (ft)	102
Casing Diameter	4 (0.65)
Gallons in Well	66.3 x 3
Gallons Purged Prior to Sampling	199
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	220 PSI
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time	Begin ____ End ____

Field Parameters

Color	COLORLESS
Odor	NONE
Appearance	CLEAR

	I	1V	2V	3V
pH (s.u.)	4.05	3.88	3.89	3.91
Conductivity (mS/cm) or (µmhos/cm) [1]	124.9	126.7	128.9	129.0
Temperature (°C)	14.6	13.6	12.3	14.0
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks:

Parameter	Container	No.	Preservative

PID Reading

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464.0408.00002

Site Location BETHPAGE NY Date 6-26-08

Well No. BPOW-3-2 Replicate No. _____ Weather _____

Sampling Personnel _____ Sampling Time: Begin _____ End _____

Purge Data

Measuring Point (describe) TOC

Sounded Well Depth (ft bmp) 647

Depth to Water (ft bmp) 28.15

Depth to Packer (ft bmp) 503

Water Column in Well (ft) 144

Casing Diameter 4" (0.65)

Gallons in Well 93.6 x 3

Gallons Purged Prior to Sampling 280

Pump Intake Setting (ft bmp) _____

Packer Pressure (psi) _____

Pumping Rate (gpm) _____

Evacuation Method _____

Sampling Method _____

Purge Time Begin _____ End _____

Field Parameters

Color _____

Odor _____

Appearance _____

	I	1V	2V	3V
pH (s.u.)	6.35	6.24	3.41	3.83
Conductivity ~~(mS/cm) or~~ (µmhos/cm) [1]	149.2	116.9	86.3	77.8
Temperature (°C)	16.0	15.2	15.2	~~15.2~~ 14.0
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: 503 - 28.15 x .43 + 50 = 255 PSI

Parameter	Container	No.	Preservative

PID Reading _____

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP GRUMMAN Project No. NY003411.0408.00002

Site Location BETHPAGE NY. Date 6.30.08

Well No. BPOW 4-1 Replicate No. MS/MSD Weather OVERCAST 85°

Sampling Personnel G.W. JC Sampling Time: Begin ____ End ____

Purge Data

Measuring Point (describe)	TOC	
Sounded Well Depth (ft bmp)	652	692
Depth to Water (ft bmp)	503	
Depth to Packer (ft bmp)		
Water Column in Well (ft)	149	40
Casing Diameter	4(0.65)	2"(0.16)
Gallons in Well	96.85 x 3	6.4 x 3
Gallons Purged	290	192
Prior to Sampling	309	
Pump Intake Setting (ft bmp)		
Packer Pressure (psi)	255	
Pumping Rate (gpm)		
Evacuation Method		
Sampling Method	PACKERED 3 WV	
Purge Time	Begin ____	End ____

Field Parameters

Color NONE

Odor NONE

Appearance CLEAR

	I	1V	2V	3V
pH (s.u.)	5.11	5.19	5.23	5.33
Conductivity (mS/cm) or (µmhos/cm) [1]	1243	98.5	85.9	65.6
Temperature (°C)	14.4	15.4	15.8	13.4
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks:

PSI = 255

Parameter	Container	No.	Preservative

PID Reading ____

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464.0408.00002

Site Location _____ Date 6-26-08

Well No. BPOW 4-2 Replicate No. _____ Weather _____

Sampling Personnel GG DK Sampling Time: Begin _____ End _____

Purge Data

Measuring Point (describe)	
Sounded Well Depth (ft bmp)	764
Depth to Water (ft bmp)	~~34.05~~
Depth to Packer (ft bmp)	503
Water Column in Well (ft)	261
Casing Diameter	4 (0.65)
Gallons in Well	261
Gallons Purged	x3
Prior to Sampling	509
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin _____ End _____	

Field Parameters

	I	1V	2V	3V
Color				
Odor				
Appearance				
pH (s.u.)	~~3.27~~ 4.34	4.54	4.46	4.23
Conductivity (~~mS/cm~~) or (µmhos/cm) [1]	105.6	172.6	148	138.5
Temperature (°C)	15.4	16.2 (5)	15.4	14.5
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: 503 − 34.05 x .43 + 50 = 255 PSI

Parameter	Container	No.	Preservative

PID Reading _____

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: NY001464.0408.00002
Site Location: Bethpage, NY | Date: 6/24/08
Well No.: GM-18I | Replicate No.: NA | Weather: 80°s F
Sampling Personnel: Prezorski | Sampling Time: Begin 1720 End 1723

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	105
Depth to Water (ft bmp)	38.94
Depth to Packer (ft bmp)	94
Water Column in Well (ft)	11
Casing Diameter	4" (0.65)
Gallons in Well	7.15
Gallons Purged	x3
Prior to Sampling	22
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	75
Pumping Rate (gpm)	1520 ml/min
Evacuation Method	Dedicated Bladder pump
Sampling Method	3WV
Purge Time Begin ~~1523~~ 1617 End 1718	

Field Parameters

	I	1V	2V	3V
Color	colorless	Colorless	colorless	Colorless
Odor	None	None	None	None
Appearance	Sed clear	clear	clear	clear
pH (s.u.)	6.01	5.73	5.61	5.56
Conductivity (mS/cm) or (µmhos/cm) [1]	125.4	129.8	132.1	130.7
Temperature (°C)	16.0	16.3	16.0	16.1
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	—	—	—	6.5
Time	—	1636	1654	1718
~~DTW (ft bmp)~~ 5 gal container		½	½	½

Remarks: At start (1523) Flow rate 90-100 ml/min. Tubing & Pump pulled & inspected. Screen cleaned. ½ = 5 gal container

105 - 38.94 x .43 + 50 = 75PSI

Parameter	Container	No.	Preservative
See COC			

PID Reading: Needs changing

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: NY001464.0408.00002
Site Location: Bethpage, NY | Date: 6/24/08
Well No.: GM-20D | Replicate No.: NA | Weather: clear 80s F
Sampling Personnel: Prezorski | Sampling Time: Begin 1441 End 1445

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	226
Depth to Water (ft bmp)	36.02
Depth to Packer (ft bmp)	215
Water Column in Well (ft)	11
Casing Diameter	4" (0.65)
Gallons in Well	7.15
Gallons Purged	x3
Prior to Sampling	22
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	130
Pumping Rate (gpm)	1650 ml/min
Evacuation Method	Dedicated Bladder packer
Sampling Method	3WV
Purge Time	Begin 1344 End 1439

Field Parameters

	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	9.21	8.20	7.52	6.94
Conductivity (mS/cm) or (µmhos/cm) [1]	102.1	93.5	93.8	92.6
Temperature (°C)	13.8	13.6	13.6	13.6
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	—	—	—	3.4
Time		1405	1421	1439
~~DTW~~ (ft bmp)	—	ϕ ½	½ ϕ	ϕ ½

Remarks: 215 − 36.02 × .43 + 50 = 138 rounded up
ϕ = 5 gal container
Tubing, pump & packer placed back in well.

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0ppm

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: NY001464.0408.00002
Site Location: Bethpage, NY | Date: 6/24/08
Well No.: GM-20I | Replicate No.: NA | Weather: clear 80s
Sampling Personnel: Prezorski | Sampling Time: Begin 1203 End 1206

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	105
Depth to Water (ft bmp)	33.83
Depth to Packer (ft bmp)	94
Water Column in Well (ft)	11
Casing Diameter	4" (0.65)
Gallons in Well	7.15
Gallons Purged	x3
Prior to Sampling	22
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	80
Pumping Rate (gpm)	
Evacuation Method	Dedicated Bladder/packer
Sampling Method	3WV
Purge Time	Begin 10:51 AM End 1200

Field Parameters

	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	none	none	none	none
Appearance	clear	clear	clear	clear
pH (s.u.)	9.73	10.40	10.29	10.30
Conductivity (mS/cm) or (µmhos/cm) [1]	353	218	162.6	174.1
Temperature (°C)	14.6	12.5	12.5	12.6
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	—	—	—	5.3
Time	10:51	11:12		1200
~~DTW (ft bmp)~~ 5 gal container	—	ø ½	½ ø	ø ½

Remarks: 94 - 33.83 x 1.43 + 50 = 90 PSI
ø = 5 gal container
New plastic hose connections

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0 ppm

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NORTHROP GRUMMAN
Project Number: N400146.0408.0000 | Site Location: BETHPAGE NY | Well ID: GM-21D
Date: 6-18-08 | Sampled By: GW
Sampling Time: | Recorded By: GW
Weather: CLEAR 80° | Coded Replicate No.:

Instrument Identification
Water Quality Meter(s): | Serial #:

Casing Material: | Purge Method:
Casing Diameter: | Screen Interval (ft bmp) Top: | Bottom:
Sounded Depth (ft bmp): | Pump Intake Depth (ft bmp):
Depth to Water (ft bmp): | Purge Time Start: | Finish:

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) [1]	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
2:25		450mL/m		19.6	5.14	909	210	7.15		46.11
2:30				17.3	4.92	922	237	4.79		
2:35				16.3	4.87	924	247	5.37		
2:40				15.3	4.83	93.5	224	5.49		
2:45				15.0	4.81	94.1	254	5.69		
2:50				14.8	4.80	94.7	264	5.70		
2:55				14.8	4.80	94.5	268	5.74		41.14
3:00				14.9	4.78	94.7	272	5.81		
3:05				14.7	4.78	94.8	260	—		
3:10				14.5	4.76	95.4	261	5.85		
3:15				14.5	4.76	95.5	272	5.91		
3:20				14.7	4.75	95.9	278	5.82	8.4	41.15
3:25				15.0	4.75	95.8	270	5.73		

Collected Sample Condition | Color: COLORLESS | Odor: NONE | Appearance: CLEAR

Parameter	Container	No.	Preservative

PID Reading:

Comments:

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: NY001464.0408.00002
Site Location: Bethpage, NY | Date: 6/23/08
Well No.: GM-21I | Replicate No.: NA | Weather: Rain 80 F

Sampling Personnel: Prezorski | Sampling Time: Begin 1408 | End 1411

Purge Data

Measuring Point (describe)	Toc
Sounded Well Depth (ft bmp)	140
Depth to Water (ft bmp)	37.21
Depth to Packer (ft bmp)	129
Water Column in Well (ft)	11
Casing Diameter	4" (0.65)
Gallons in Well	7.15
Gallons Purged	x3
Prior to Sampling	22
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	90
Pumping Rate (gpm)	1330 ml/min
Evacuation Method	Dedicated Bladder pump
Sampling Method	3 WV
Purge Time	Begin 1255 End 1405

Field Parameters

	I	1V	2V	3V
Color	colorless	colorless	colorless	colorless
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	8.02	9.60	9.73	9.74
Conductivity (mS/cm) or (µmhos/cm) [1]	166.1	114.4	109.8	107.1
Temperature (°C)	12.7	12.4	12.1	13.6
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	—	—	—	2.5
Time	1255	1331	1347	
~~DTW (ft bmp)~~ 5 gal container	—	∅ + ½	½ + ∅	∅ + ½

Remarks: 129 − 37.21 × .43 + 50 = 90 PSI
∅ = 5 gal container

Parameter	Container	No.	Preservative
See COC			

PID Reading: Rain

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: N-Grumman OU2
Project Number: NY001476.0408.00002 Site Location: Bethpage, NY Well ID: GM-33D2
Date: 6/25/08 Sampled By: Brzozki
Sampling Time: 1317 Recorded By: Brzozki
Weather: clear 80s F Coded Replicate No.: NA

Instrument Identification
Water Quality Meter(s): Serial #:

Casing Material: PVC Purge Method: dedicated Bladder / Low Flow
Casing Diameter: 4" Screen Interval (ft bmp) Top: 500 Bottom: 520
Sounded Depth (ft bmp): ~~47.00~~ 520 Pump Intake Depth (ft bmp): 510
Depth to Water (ft bmp): 47.00 Purge Time Start: 12:10 Finish: 1315

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~)[1]	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
12:10				19.1	5.31	87.5	154	5.86		
12:15				18.6	5.64	87.1	159	5.20		46.92
12:20				16.2	5.65	87.2	163	5.73		
12:25				17.0	5.66	87.7	172	5.66		46.92
12:30				18.3	5.68	87.0	177	5.46		
12:35				18.3	5.76	86.6	152	5.50		46.89
12:40				18.2	5.73	86.6	161	5.47		
12:45				18.1	5.82	86.5	166	5.15		46.88
12:50				18.3	5.80	87.1	182	6.11		
12:55				19.2	5.60	87.2	182	6.54		46.90
1300				18.1	5.29	88.0	201	5.86		
1305				17.8	4.97	88.0	222	5.85		46.90
1310				17.9	5.02	88.8	239	6.58		
1315				17.9	4.96	89.4	249	6.30	3.5	46.92

Collected Sample Condition Color: clear Odor: NONE Appearance: clear

Parameter	Container	No.	Preservative
See COC			

PID Reading:

Comments:

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: N-Grumman OU2
Project Number: NY001469.0408.00002
Site Location: Bethpage, NY
Well ID: GM-34D
Date: 6/25/08
Sampled By: Grzorski / Williams
Sampling Time: 1505
Recorded By: Grzorski
Weather: Clear 80s F
Coded Replicate No.: NA

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material: steel
Purge Method: Dedicated Bladder / Low Flow
Casing Diameter: 2"
Screen Interval (ft bmp): Top 309 Bottom 319
Sounded Depth (ft bmp): 319
Pump Intake Depth (ft bmp): 314
Depth to Water (ft bmp): 12.71
Purge Time: Start 1400 Finish 1505

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~)[1]	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
1400				15.4	7.59	161.6	119	3.77		
1405				16.3	7.91	160.2	105	.85		12.57
1410				17.3	7.91	158.7	102	.64		
1415				18.1	8.05	156.7	-14	.48		12.62
1420				17.9	8.91	155.1	-163	.40		
1425				17.9	8.96	155.6	-142	.40		12.68
1430				18.3	8.74	155.1	-103	.37		
1435				18.4	8.38	160.6	-68	.36		12.68
1440				18.2	7.67	160.3	-28	.35		
1445				18.5	7.15	163.0	11	.37		12.68
1450				17.5	6.88	164.0	27	.36		
1455				17.1	6.72	165.5	35	.37		12.66
1500				17.9	6.58	166.3	40	.38		
1505				18.3	6.52	166.4	42	.43	5.1	

Collected Sample Condition: Color Colorless Odor None Appearance Clear

Parameter	Container	No.	Preservative
See COC			

PID Reading:

Comments: Has Dedicated Bladder pump

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: N-Grumman OU2
Project Number: NY001464.0408.00002 | Site Location: Bethpage, NY | Well ID: GM-34D2
Date: 6/25/09 | Sampled By: Prezorski / Williams
Sampling Time: | Recorded By: Prezorski
Weather: clear 80s F | Coded Replicate No.: NA

Instrument Identification:
Water Quality Meter(s): | Serial #:

Casing Material: steel | Purge Method: NON-dedicated Bladder Pump / Low Flow
Casing Diameter: 4" | Screen Interval (ft bmp): Top 510 | Bottom 520
Sounded Depth (ft bmp): 520 | Pump Intake Depth (ft bmp): 515
Depth to Water (ft bmp): 14.82 | Purge Time: Start 1520 | Finish 1650

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
1520				17.8	6.82	123.6	54	2.38		
1525				19.2	6.66	94.6	47	.78		14.20
1530				19.4	6.91	91.6	42	.53		
1535				19.2	7.08	87.3	34	.39		14.49
1540				19.1	7.18	86.9	31	.38		
1545				17.8	7.24	86.9	30	.37		14.58
1550				18.4	7.28	86.8	22	.31		
1555				20.3	7.20	85.4	-39	.18		14.65
1600				21.5	6.83	96.5	-74	.11	Turbid	
1605				21.5	6.57	102.3	-66	.13	Turbid	14.70
1610				20.9	6.39	101.2	-43	.24	Turbid	
1615				20.7	6.28	99.6	-21	.56	Turbid	14.40
1620				20.1	6.18	97.5	5	.99	190	
1625				20.0	6.12	96.1	21	1.50	160	

Collected Sample Condition | Color | Odor | Appearance

Parameter	Container	No.	Preservative
See COC			

PID Reading:

Comments: See 2nd page

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project	N - Grumman OU2				
Project Number	NY001464.0408.00002	Site Location	Bethpage, NY	Well ID	GM-34D2
Date	6/25/08	Sampled By	Prezorski / Williams		
Sampling Time	1650	Recorded By	Prezorski		
Weather	90s F, clear	Coded Replicate No.	NA		

Instrument Identification

Water Quality Meter(s) _____ Serial # _____

Casing Material	steel	Purge Method	Non-dedicated Bladder Pump/Low Flow		
Casing Diameter	4"	Screen Interval (ft bmp)	Top 510	Bottom 520	
Sounded Depth (ft bmp)	520	Pump Intake Depth (ft bmp)	515		
Depth to Water (ft bmp)		Purge Time	Start	Finish	

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~ [1])	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
1630				19.6	6.08	94.5	31	1.65	120	
1635				19.4	6.03	93.4	45	2.27	85	
1640				19.5	6.01	92.4	53	2.42	65	
1645				19.4	6.00	92.2	59	2.67	55	14.62
1650				19.1	5.98	91.5	65	2.81	45	

Collected Sample Condition Color Clear Odor None Appearance Clear

Parameter	Container	No.	Preservative
See COC			

PID Reading _____

Comments Page 2 of 2

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: N-Grumman OU2 | Project No.: NY061464.0408.00002
Site Location: Bethpage, NY | Date: 6-23-08
Well No.: GM-35D2 | Replicate No.: NA | Weather: clear 80 F
Sampling Personnel: Prezorski | Sampling Time: Begin 1745 End 1749

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	530
Depth to Water (ft bmp)	38.02
Depth to Packer (ft bmp)	507
Water Column in Well (ft)	23
Casing Diameter	4" (0.65)
Gallons in Well	14.95
Gallons Purged	x3
Prior to Sampling	45
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	255
Pumping Rate (gpm)	1560 ml/min
Evacuation Method	dedicated bladder/packer
Sampling Method	3WV
Purge Time	Begin 1559 End 1743

Field Parameters

	I	1V	2V	3V
Color	colorless	clear	clear	clear
Odor	None	None	None	None
Appearance	clear	clear	clear	clear
pH (s.u.)	8.67	6.51	5.67	5.35
Conductivity (mS/cm) or	—	—	—	—
(µmhos/cm) [1]	109.3	111.3	111.8	111.8
Temperature (°C)	14.9	14.7	14.9	14.8
DO (mg/L)	—	—	—	—
ORP (mV)	—	—	—	—
Turbidity (NTU)	2.5	2.6	2.5	2.4
Time	—	1631	1706	1743
DTW (ft bmp)	—	///	///	///

Remarks: 507 − 38.02 x .43 + 50 = 255 Rounded up — Rate Increase to 1650 ml/min
Ø = 5 gal container
Split sample with H2M

Parameter	Container	No.	Preservative
See COC			

PID Reading: 0ppm

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project	N-Grumman OU2				
Project Number	NY001464.0408.00002	Site Location	Bethpage, NY	Well ID	GM-75D2
Date	6/25/08	Sampled By	Przorski		
Sampling Time	11:02 AM	Recorded By	Przorski		
Weather	clear 80s F	Coded Replicate No.	Rep062508		
Instrument Identification					
Water Quality Meter(s)		Serial #			
Casing Material	PVC	Purge Method	Dedicated Bladder / Low Flow		
Casing Diameter	4"	Screen Interval (ft bmp)	Top 505	Bottom	525
Sounded Depth (ft bmp)	525	Pump Intake Depth (ft bmp)	515		
Depth to Water (ft bmp)	33.53	Purge Time	Start 9:57 AM	Finish	11:00 AM

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~) [1]	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
10:00				17.8	6.44	385	169	6.01		
10:05				17.0	5.67	361	190	5.48		33.48
10:10				16.8	5.59	363	202	5.23		
10:15				16.8	5.41	361	218	5.44		33.48
10:20				16.8	5.41	360	233	5.01		
10:25				16.8	5.36	360	244	4.64		33.48
10:30				16.9	5.36	358	251	4.72		
10:35				16.9	5.35	358	258	4.72		33.45
10:40				16.9	5.33	357	264	4.54		
10:45				16.9	5.30	357	271	4.75		33.45
10:50				16.9	5.30	355	273	4.94		
10:55				16.9	5.30	355	278	4.77		33.45
11:00				16.8	5.30	355	280	4.64	2.7	

Collected Sample Condition — Color clear — Odor None — Appearance clear

Parameter	Container	No.	Preservative
per COC			

PID Reading

Comments

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NORTHROP-GRUMMAN
Project Number: N40014H-0408.0002
Site Location: BETHPAGE NY
Well ID: GM-79D
Date: 6-12-08
Sampled By: GW
Sampling Time:
Recorded By: GW
Weather: CLEAR 80°
Coded Replicate No.:

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material:
Purge Method: LOW FLOW
Casing Diameter:
Screen Interval (ft bmp): Top: Bottom:
Sounded Depth (ft bmp):
Pump Intake Depth (ft bmp):
Depth to Water (ft bmp): 39.85
Purge Time: Start: Finish:

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
12:10		450mL		20.5	5.47	98.7	177	6.37		39.85
12:15		↓		20.1	5.38	97.4	190	6.88		
12:20				19.6	5.22	96.3	205	5.21		
12:25				19.2	5.22	95.2	214	4.09		
12:30				18.9	5.12	94.9	198	4.15		
12:35				17.9	5.09	94.5	218	4.38		39.85
12:40				17.2	5.07	94.5	229	4.47		
12:45				17.2	5.07	94.4	228	4.56		
12:50				17.1	5.07	94.4	218	4.50		
12:55				17.3	5.07	94.5	225	4.54		
1:00				18.1	5.06	94.1	234	4.60		
1:05				17.7	5.06	94.0	237	4.63		
1:10				17.3	5.06	94.2	225	4.65	15	39.92

Collected Sample Condition
Color: COLORLESS
Odor: NONE
Appearance: CLEAR

Parameter	Container	No.	Preservative

PID Reading: 0.0

Comments:

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NORTHROP-GRUMMAN
Project Number: N400464.0408.00002
Site Location: BETHPAGE NY
Well ID: GM-79I
Date: 6-18-08
Sampled By: GW
Sampling Time:
Recorded By:
Weather: CLEAR 80°
Coded Replicate No.:

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material:
Casing Diameter:
Sounded Depth (ft bmp):
Depth to Water (ft bmp):
Purge Method:
Screen Interval (ft bmp) Top: Bottom:
Pump Intake Depth (ft bmp):
Purge Time Start: Finish:

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
11:05		450 m/m		14.8	6.06	118.3	191	7.41		38.20
11:10				14.7	6.01	110.2	194	6.14		
11:15				14.3	5.71	101.7	197	5.64		
11:20				14.0	5.63	101.2	196	5.63		38.32
11:25				13.9	5.57	100.6	184	5.60		
11:30				13.9	~~5.24~~	100.6	187	5.64		
11:35				13.8	5.52	99.7	196	5.86		
11:40				13.6	5.48	99.5	197	6.00		
11:45				13.5	5.48	99.4	192	5.96		
11:50				13.9	5.46	99.3	199	6.02	130	38.28

Collected Sample Condition
Color: NONE
Odor: NONE
Appearance: CLOUDY

Parameter	Container	No.	Preservative

PID Reading: 0.0

Comments:

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project	NORTHROP GRUMMAN				
Project Number	N4001469.0107.00002	Site Location	BETHPAGE	Well ID	GM-79E
Date	12-15-08	Sampled By	GW		
Sampling Time		Recorded By			
Weather	CLEAR 45°	Coded Replicate No.			

Instrument Identification

Water Quality Meter(s) _____ Serial # _____

Casing Material		Purge Method			
Casing Diameter		Screen Interval (ft bmp)	Top	Bottom	
Sounded Depth (ft bmp)	38.36	Pump Intake Depth (ft bmp)			
Depth to Water (ft bmp)		Purge Time	Start	Finish	

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
1:40				14.3	6.44	81.3	84	7.15		38.36
1:45				14.4	6.12	79.1	92	7.38		
1:50				14.6	5.86	75.1	89	7.27		38.36
1:55				14.8	5.58	72.3	112	7.25		
2:00				14.8	5.50	71.7	115	7.28		38.36
2:05				14.8	5.32	70.3	118	7.25		
2:10				14.8	5.28	69.3	131	7.22		
2:15				14.8	5.22	69.0	134	7.33		
2:20				14.7	5.22	68.4	110	7.35		
2:25				14.7	5.18	68.4	95	7.33		
2:30				14.7	5.18	68.1	90	7.42		38.36

Collected Sample Condition Color COLORLESS Odor NONE Appearance CLEAR

Parameter	Container	No.	Preservative

PID Reading —

Comments _____

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NORTHROP-GRUMMAN
Project Number: NY001464.0408.0002
Site Location:
Well ID: GM-79D
Date: 12-15-08
Sampled By: GW
Sampling Time:
Recorded By: GW
Weather:
Coded Replicate No.:

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material:
Purge Method:
Casing Diameter:
Screen Interval (ft bmp): Top: Bottom:
Sounded Depth (ft bmp):
Pump Intake Depth (ft bmp):
Depth to Water (ft bmp): 39.64
Purge Time: Start: Finish:

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (~~umhos or~~ ~~mS/cm~~) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
~~8~~ 2:40				13.8	5.02	68.8	19	5.30		39.64
2:45				14.0	4.94	69.1	15	3.67		
2:50				14.0	4.86	69.1	14	4.27		
2:55				14.0	4.82	68.9	18	4.45		39.66
3:00				13.9	4.73	68.9	58	4.56		
3:05				13.9	4.73	68.8	45	4.61		
3:10				13.9	4.72	68.8	41	4.60		
3:15				13.9	4.68	68.5	45	4.61		
3:20				13.9	4.69	68.4	51	4.60		
3:25				13.9	4.69	68.1	67	4.66		
3:30				13.9	4.65	67.8	61	4.64		39.60
3:35				13.8	4.63	67.6	66	4.64		
3:40				13.8	4.62	67.6	70	4.62		

Collected Sample Condition
Color: COLORLESS
Odor: NONE
Appearance: CLEAR

Parameter	Container	No.	Preservative

PID Reading:

Comments:

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NORTHROP - GRUMMAN
Project Number: N40014464.0408.00002
Site Location: BETHPAGE NY.
Well ID: GM-210
Date: 12-15-08
Sampled By: GW
Sampling Time: _____
Recorded By: GW
Weather: _____
Coded Replicate No.: _____

Instrument Identification
Water Quality Meter(s): _____ Serial #: _____

Casing Material: _____ Purge Method: _____
Casing Diameter: _____ Screen Interval (ft bmp) Top: _____ Bottom: _____
Sounded Depth (ft bmp): _____ Pump Intake Depth (ft bmp): _____
Depth to Water (ft bmp): 40.98 Purge Time Start: _____ Finish: _____

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos ~~or mS/cm~~ 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
4:10				12.7	4.42	63.3	103	6.81		40.98
4:15				12.5	4.37	62.5	80	5.26		
4:20				12.4	4.37	62.3	81	5.25		
4:25				12.4	4.35	62.2	81	5.35		
4:30				12.3	4.31	62.1	89	5.58		41.05
4:35				12.4	4.28	62.1	90	5.68		
4:40				12.3	4.28	62.2	94	5.66		
4:45				12.4	4.21	62.1	99	5.67		
4:50				12.3	4.27	61.9	99	5.64		
4:55				12.3	4.27	61.9	99	5.60		
5:00				12.3	4.27	62.1	98	5.73		
5:05				12.2	4.28	62.4	100	5.83		
5:10				12.2	4.28	62.5	102	5.86		41.05

Collected Sample Condition — Color: COLORLESS Odor: NONE Appearance: CLEAR

Parameter	Container	No.	Preservative

PID Reading: _____

Comments: _____

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: NORTH ROF-GROUNDWATER
Project Number: NY001464.0
Site Location:
Well ID: GM-750-2
Date: 12-17-08
Sampled By: GW
Sampling Time:
Recorded By: GW VR
Weather: High 40s overcast part rain
Coded Replicate No.:

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material:
Purge Method:
Casing Diameter:
Screen Interval (ft bmp): Top: Bottom:
Sounded Depth (ft bmp):
Pump Intake Depth (ft bmp):
Depth to Water (ft bmp): 33.45
Purge Time: Start: Finish:

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~ 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
1:00				12.3	6.43	93.0	75	6.49		33.45
1:05				14.3	6.32	85.2	44	4.90		
1:10				12.4	5.71	82.1	27	4.71		33.45
1:15				12.4	5.51	79.6	18	4.83		
1:20				12.5	5.44	78.7	17	4.77		33.45
1:25				12.5	5.34	78.0	21	4.45		
1:30				12.4	5.27	77.4	32	4.44		33.45
1:35				12.5	5.27	77.4	34	4.45		33.45
1:40				12.3	5.18	77.0	40	4.32		33.39
1:45				11.9	5.08	76.7	46	4.26		
1:50				12.1	5.12	76.6	67	4.49		
1:55				12.1	5.12	76.8	60	4.30		33.39
2:00				12.1	5.11	76.9	61	4.29	6	

Collected Sample Condition
Color: COLORLESS
Odor: ~~NO~~ SLIGHT
Appearance: CLEAR

Parameter	Container	No.	Preservative

PID Reading:

Comments:

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project _____
Project Number _____ Site Location _____ Well ID GM 33-D2
Date 12/17/08 Sampled By GW
Sampling Time _____ Recorded By GW/VR
Weather High 40's overcast Coded Replicate No. _____

Instrument Identification
Water Quality Meter(s) _____ Serial # _____

Casing Material _____ Purge Method _____
Casing Diameter _____ Screen Interval (ft bmp) Top _____ Bottom _____
Sounded Depth (ft bmp) _____ Pump Intake Depth (ft bmp) _____ _____
Depth to Water (ft bmp) 47.32 Purge Time Start 1430 Finish _____

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or ~~mS/cm~~ [1])	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
1435				12.7	5.60	64	79	6.55		~~47~~ 37.35
1440				12.4	5.~~64~~ 60	63.1	63	5.46		
1445				11.7	5.57	62.2	61	5.52		~~49~~ 39.95
1450				11.7	5.64	~~62.6~~ 62.6	64	5.85		
1455				11.4	5.68	62.6	60	6.04		
1500				11.3	5.62	62.6	61	6.05		46.95
1505				11.2	5.77	62.4	~~9~~65	5.80		
1510				11.3	5.81	62.4	65	6.10		47.13
1515				11.3	5.81	62.5	63	5.80		
1520				11.3	5.82	62.4	60	6.10		47.29
1525				11.2	5.76	63.0	65	6.40		
1530				11.2	5.70	63.2	69	6.40		47.29
1535				11.3	5.64	63.4	71	6.40	3.4	

Collected Sample Condition Color COLORLESS Odor NONE Appearance CLEAR

Parameter	Container	No.	Preservative

PID Reading _____

Comments _____

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Page _____ of _____

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001467.0408.00002

Site Location BETHPAGE Date 12-18-08

Well No. BPOW 4-1 Replicate No. _____ Weather _____

Sampling Personnel GWSR Sampling Time: Begin _____ End _____

Purge Data

Measuring Point (describe) _____

Sounded Well Depth (ft bmp) _____

Depth to Water (ft bmp) _____

Depth to Packer (ft bmp) _____

Water Column in Well (ft) _____

Casing Diameter _____

Gallons in Well _____

Gallons Purged

Prior to Sampling _____

Pump Intake

Setting (ft bmp) _____

Packer Pressure (psi) _____

Pumping Rate (gpm) _____

Evacuation Method _____

Sampling Method _____

Purge Time Begin _____ End _____

Field Parameters

Color COLORLESS

Odor NONE

Appearance CLEAR

	1	1V	2V	3V
pH (s.u.)	6.83	5.10	5.50	5.40
Conductivity (mS/cm) or	—			
(µmhos/cm) [1]	45.0	94.5	59.4	50.8
Temperature (°C)		10.6	11.1	11.1
DO (mg/L)	—			
ORP (mV)				
Turbidity (NTU)				
Time	10:32	10:47		
DTW (ft bmp)				

Remarks: _____

Parameter	Container	No.	Preservative

PID Reading _____

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project Northrop Grumman Project No. N4001464.0408.00002

Site Location Beth Page Date 12-18-08

Well No. BPOW 4-2 Replicate No. _____ Weather _____

Sampling Personnel GWVR Sampling Time: Begin _____ End _____

Purge Data

Measuring Point (describe) _____

Sounded Well Depth (ft bmp) _____

Depth to Water (ft bmp) _____

Depth to Packer (ft bmp) _____

Water Column in Well (ft) _____

Casing Diameter _____

Gallons in Well _____

Gallons Purged

Prior to Sampling _____

Pump Intake

Setting (ft bmp) _____

Packer Pressure (psi) _____

Pumping Rate (gpm) _____

Evacuation Method _____

Sampling Method _____

Purge Time Begin _____ End _____

Field Parameters

Color COLORLESS

Odor NONE

Appearance CLEAR

	I	1V	2V	3V
pH (s.u.)	5.22	4.09	4.26	4.17
Conductivity (mS/cm) or (µmhos/cm) [1]	66.4	92.5	86.1	71.9
Temperature (°C)	12.1	12.11	11.8	11.3
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				<20
Time				
DTW (ft bmp)				

Remarks: _____

Parameter	Container	No.	Preservative

PID Reading _____

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP GRUMMAN Project No. NY 001464.0408.00002

Site Location BETHPAGE NY Date 12-19-08

Well No. OW-1-1 Replicate No. _____ Weather _____

Sampling Personnel GW VR Sampling Time: Begin 7:15 End 9:00

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	240'
Depth to Water (ft bmp)	
Depth to Packer (ft bmp)	169
Water Column in Well (ft)	72
Casing Diameter	4 (0.65)
Gallons in Well	46.8
Gallons Purged	x 3
Prior to Sampling	140
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	120 psi
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin _____ End _____	

Field Parameters

Color: COLORLESS

Odor: NONE

Appearance: CLEAR

	I	1V	2V	3V
pH (s.u.)	5.21	5.19	5.11	4.85
Conductivity (mS/cm) or (µmhos/cm) [1]	68.8	90.4	96.4	97.1
Temperature (°C)	8.3	10.8	10.5	10.2
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				<20
Time				
DTW (ft bmp)				

Remarks: _____

Parameter	Container	No.	Preservative

PID Reading _____

Well Casing Volumes

Gal./Ft.				
	1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN OU-2 Project No. NY001464.0408 A0002

Site Location BETHPAGE NY Date 12/19/08

Well No. BPOW1-2 Replicate No. ____ Weather ____

Sampling Personnel GW VR Sampling Time: Begin ____ End ____

Purge Data

Measuring Point (describe) ____

Sounded Well Depth (ft bmp) ____

Depth to Water (ft bmp) ____

Depth to Packer (ft bmp) ____

Water Column in Well (ft) ____

Casing Diameter ____

Gallons in Well 26.65 27

Gallons Purged 27×3

Prior to Sampling 80

Pump Intake

Setting (ft bmp) ____

Packer Pressure (psi) 170 psi

Pumping Rate (gpm) ____

Evacuation Method ____

Sampling Method ____

Purge Time Begin ____ End ____

Field Parameters

Color ____

Odor ____

Appearance ____

	I	1V	2V	3V
pH (s.u.)	5.65	5.67	5.60	5.31
Conductivity (mS/cm) or (µmhos/cm) [1]	38.2	38.4	53.3	55.4
Temperature (°C)	11.1	11.3	11.1	10.3
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				<20
Time				
DTW (ft bmp)				

Remarks: ____

Parameter	Container	No.	Preservative

PID Reading ____

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. N4801464.0408.00002

Site Location _____ Date 12-19-08

Well No. BPDW-1-3 Replicate No. _____ Weather _____

Sampling Personnel _____ Sampling Time: Begin _____ End _____

Purge Data

Measuring Point (describe) _____

Sounded Well Depth (ft bmp) _____

Depth to Water (ft bmp) _____

Depth to Packer (ft bmp) _____

Water Column in Well (ft) _____

Casing Diameter _____

Gallons in Well _____

Gallons Purged

Prior to Sampling 146

Pump Intake

Setting (ft bmp) _____

Packer Pressure (psi) 185 psi

Pumping Rate (gpm) _____

Evacuation Method _____

Sampling Method _____

Purge Time Begin _____ End _____

Field Parameters

Color COLORLESS

Odor NONE

Appearance CLEAR

	I	1V	2V	3V
pH (s.u.)	4.66	4.70	4.64	4.56
Conductivity (mS/cm) or (µmhos/cm) [1]	102.7	102.9	93.7	90
Temperature (°C)	12.3	10.4	10.1	9.5
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				<20
Time				<20
DTW (ft bmp)				

Remarks: _____

Parameter	Container	No.	Preservative

PID Reading _____

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: Northrop Grumman   Project No.: NY001464 04080002
Site Location: BETHPAGE   Date: 12-23-08
Well No.: BPOW-3-1   Replicate No.: Rep-122308   Weather: Clear 40s

Sampling Personnel: VR GW   Sampling Time: Begin ____ End ____

Purge Data

Measuring Point (describe)	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	
Depth to Packer (ft bmp)	
Water Column in Well (ft)	
Casing Diameter	
Gallons in Well	66.3
Gallons Purged Prior to Sampling	199
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	220
Pumping Rate (gpm)	
Evacuation Method	Dedicated submersible pump/Packer
Sampling Method	
Purge Time	Begin 1136 End

Field Parameters

Color: Colorless
Odor: None
Appearance: Clear

	I	1V	2V	3V
pH (s.u.)	5.65	4.08	4.04	4.00
Conductivity (mS/cm) or (µmhos/cm)[1]	95.0	89.9	86.4	86.8
Temperature (°C)	8°	10.3	10.3	10.6
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time	1140	1146	1152	1204
DTW (ft bmp)				

Remarks:

Parameter	Container	No.	Preservative

PID Reading ____

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project Northrop Grumman Project No. NY001464.0408.00002

Site Location Bethpage NY Date 12-23-08

Well No. PB BPOW-3-2 Replicate No. ____ (MS/MSD) Weather ____

Sampling Personnel GW VR Sampling Time: Begin ____ End ____

Purge Data

Measuring Point (describe) ____

Sounded Well Depth (ft bmp) ____

Depth to Water (ft bmp) ____

Depth to Packer (ft bmp) ____

Water Column in Well (ft) ____

Casing Diameter ____

Gallons in Well ____

Gallons Purged Prior to Sampling 280

Pump Intake Setting (ft bmp) ____

Packer Pressure (psi) 255 psi

Pumping Rate (gpm) ____

Evacuation Method ____

Sampling Method ____

Purge Time Begin ____ End ____

Field Parameters

Color COLORLESS

Odor SLIGHT

Appearance CLEAN

	1	1V	2V	3V
pH (s.u.)	4.31	4.62	4.89	4.88
Conductivity (mS/cm) or (µmhos/cm) [1]	63.2	92.6	68.2	72
Temperature (°C)	10.7	11	10.3	10.5
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: ____

Parameter	Container	No.	Preservative

PID Reading ____

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: Northrop Grumman
Project Number: ~~NJ~~ NY000464.0408.2 Site Location: _____ Well ID: GM 34 D
Date: 12/29/08 Sampled By: VR GW
Sampling Time: _____ Recorded By: VR GW
Weather: Sunny 40's Coded Replicate No.: none

Instrument Identification
Water Quality Meter(s): _____ Serial #: _____

Casing Material: _____ Purge Method: _____
Casing Diameter: _____ Screen Interval (ft bmp) Top: _____ Bottom: _____
Sounded Depth (ft bmp): _____ Pump Intake Depth (ft bmp): _____
Depth to Water (ft bmp): _____ Purge Time Start: 1027 Finish: _____

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
1030				11.5	7.43	148.7	15	0.82		12.18
1035				11.3	6.98	145.1	6	0.75		
1040				11.0	6.67	142.0	1	.67		
1045				11.0	6.70	139.6	-2	0.57		12.62
1050				11.0	6.78	137.0	-4	0.53		
1055				11.1	7.22	136.6	-45	0.54		12.15
1100				11.1	7.93	145.0	-48	0.52		
1105				11.2	8.16	145.8	-44	0.48		12.15
1110				11.1	8.30	145.7	-32	0.50		
1115				11.4	8.30	143.9	-22	0.51		
1120				11.5	8.22	142.6	-19	0.50		12.15
1125				11.8	8.21	140.5	-16	0.47		
1130				11.8	8.10	138.4	-10	0.47	<20	

Collected Sample Condition: Color COLORLESS Odor NONE Appearance CLEAR

Parameter	Container	No.	Preservative

PID Reading: _____

Comments: _____

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: Northrop Grumman
Project Number: NY000464.0488.0002
Site Location:
Well ID: GM 34 D-2
Date: 12/29/08
Sampled By: VR GW
Sampling Time:
Recorded By: VR GW
Weather:
Coded Replicate No.: none

Instrument Identification
Water Quality Meter(s):
Serial #:

Casing Material:
Purge Method:
Casing Diameter:
Screen Interval (ft bmp): Top: Bottom:
Sounded Depth (ft bmp):
Pump Intake Depth (ft bmp):
Depth to Water (ft bmp):
Purge Time: Start 11:47 Finish:

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)
1150				11.8	7.98	~~127.8~~ 85.1	9	1.09		13.53
1155				12.2	8.04	80.5	-1	.60		
1200				12.2	8.02	79.7	-9	.50		13.39
1205				12.4	8.02	78.2	-14	.46		
1210				12.4	8.05	77.7	-17	.45		13.56
1215				12.5	8.03	77.2	-21	.41		
1220				12.9	8.00	76.1	-22	0.37		
1225				13.6	7.93	78.6	-24	0.31		
1230				13.7	7.82	82.1	-29	0.26		13.58
1235				13.9	7.66	86.6	-34	0.33		
1240				13.9	7.50	85.4	-26	0.60		
1245				13.5	7.38	83.0	-8	1.6		
1250				13.3	7.32	81.1	-2	1.90	6	

Collected Sample Condition: Color GREY ~~BRWT~~ Odor NONE Appearance ~~TURBID~~

Parameter	Container	No.	Preservative

PID Reading:

Comments:

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Page _____ of _____

Water Sampling Log

Project: Northrop Grumman | Project No.: N700464.0408.0002
Site Location: BETHPAGE NY | Date: 12/29/08
Well No.: MW-11b | Replicate No.: _____ | Weather: Sunny 40's
Sampling Personnel: GW VR | Sampling Time: Begin _____ End _____

Purge Data

Measuring Point (describe)	
Sounded Well Depth (ft bmp)	590
Depth to Water (ft bmp)	
Depth to Packer (ft bmp)	503
Water Column in Well (ft)	87
Casing Diameter	
Gallons in Well	53.35
Gallons Purged Prior to Sampling	160.00
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	255PSI
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time	Begin _____ End _____

Field Parameters

Color: COLORLESS
Odor: SLIGHT
Appearance: CLEAR

	I	1V	2V	3V
pH (s.u.)	7.26	7.07	6.87	6.35
Conductivity (mS/cm) or (µmhos/cm) [1]	57.3	58.4	61.5	69.2
Temperature (°C)	11.9	12.1	11.2	11.1
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: _____

Parameter	Container	No.	Preservative

PID Reading: _____

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NY000 1464. 0408. 00002 Project No. NY 001464. 0408. 00002

Site Location BETAPACE Date 12.30.08

Well No. GM-350-2 Replicate No. _____ Weather _____

Sampling Personnel GW Sampling Time: Begin 12:30 End 2:20

Purge Data

Measuring Point (describe)	
Sounded Well Depth (ft bmp)	530
Depth to Water (ft bmp)	
Depth to Packer (ft bmp)	508
Water Column in Well (ft)	22
Casing Diameter	4 (0.65)
Gallons in Well	14.3
Gallons Purged Prior to Sampling	43
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	250 PSI
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin _____ End _____	

Field Parameters

Color: COLORLESS

Odor: NONE

Appearance: CLEAR

	1	1V	2V	3V
pH (s.u.)	7.88	7.38	6.91	6.88
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]	78.6	79.0	76.8	77.2
Temperature (°C)	13.1	12.8	13.3	13.1
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				<20
Time				
DTW (ft bmp)				

Remarks: 530 − 37 = 493 x .43 = 221 + 25 = 250 PSI

5 GAL PAILS IIII

Parameter	Container	No.	Preservative

PID Reading _____

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464.0408.00002

Site Location Date 12-30-08

Well No. GM-8 20D Replicate No. ____ Weather ____

Sampling Personnel GW Sampling Time: Begin 11:25 End 12:20

Purge Data

Measuring Point (describe)	
Sounded Well Depth (ft bmp)	226
Depth to Water (ft bmp)	36.08
Depth to Packer (ft bmp)	214
Water Column in Well (ft)	12
Casing Diameter	4 (0.65)
Gallons in Well	7.8 x3
Gallons Purged Prior to Sampling	24
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	132.
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time	Begin ____ End ____

Field Parameters

Color: COLORLESS

Odor: NONE

Appearance: CLEAR

	1	1V	2V	3V
pH (s.u.)	8.26	8.33	8.31	8.10
Conductivity (mS/cm) or (µmhos/cm) [1]	77.4	73.4	72.1	69.9
Temperature (°C)	14.1	13.3	12.9	12.6
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				<20
Time				
DTW (ft bmp)				

Remarks: 226-36x.43+50 = 132 PSI

56 GAL PAILS 1111 ½

Parameter	Container	No.	Preservative

PID Reading ____

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP-GRUMMAN Project No. NY001464.0408.00002

Site Location BETHPAGE Date 12-30-08

Well No. GM-20I Replicate No. _____ Weather _____

Sampling Personnel GW Sampling Time: Begin 9:30 End 11:30

Purge Data

Measuring Point (describe)	
Sounded Well Depth (ft bmp)	105
Depth to Water (ft bmp)	
Depth to Packer (ft bmp)	93
Water Column in Well (ft)	12
Casing Diameter	4 (0.65)
Gallons in Well	7.8 x3
Gallons Purged Prior to Sampling	24
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	100
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin _____ End _____	

Field Parameters

Color: COLORLESS

Odor: NONE

Appearance: CLEAR

	I	1V	2V	3V
pH (s.u.)	8.21	8.10	8.37	8.35
Conductivity (~~mS/cm~~) or (µmhos/cm) [1]	84.1	196.1	101.3	105.3
Temperature (°C)	14.3	15.1	14.7	14.6
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				420
Time				
DTW (ft bmp)				

Remarks: 105-33 x.43 + 50 = ~100 PSI

5 GAL PAILS 1 1/2

Parameter	Container	No.	Preservative

PID Reading _____

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project NORTHROP- GRUMMAN Project No. NY001464.0408.00002

Site Location BETHPAGE NY Date 12-30-08

Well No. GM-21S Replicate No. _____ Weather _____

Sampling Personnel GW Sampling Time: Begin 2:30 End _____

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	140
Depth to Water (ft bmp)	37.3
Depth to Packer (ft bmp)	129
Water Column in Well (ft)	11
Casing Diameter	4 (0.65)
Gallons in Well	7.15
Gallons Purged	x3
Prior to Sampling	21.45
Pump Intake Setting (ft bmp)	
Packer Pressure (psi)	
Pumping Rate (gpm)	
Evacuation Method	
Sampling Method	
Purge Time Begin _____ End _____	

Field Parameters

Color: COLORLESS

Odor: NONE

Appearance: CLEAR

	I	1V	2V	3V
pH (s.u.)	6.96	6.78	7.28	7.41
Conductivity ~~(mS/cm)~~ or (µmhos/cm) [1]	767	737	762	769
Temperature (°C)	13.1	12.5	12.3	12.0
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: 129-37 = 92 x .43 =

Parameter	Container	No.	Preservative

PID Reading _____

Well Casing Volumes

Gal./Ft.				
	$1^{1/4}$" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	$1^{1/2}$" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) **Circle one unit type**

ARCADIS

Laboratory Task Order No./P.O. No. NGC 002

CHAIN-OF-CUSTODY RECORD

Pa

Project Number/Name NY001164.0407.00002

Project Location NGC OU2 BETHPAGE NY.

Laboratory COLUMBIA

Project Manager MELISSA REENDL

Sampler(s)/Affiliation D. MCLAFFERTY / ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml VOAS	ASP 2000	STD TAT	GRAB			Remarks	Total
WELL - 19	L	2/26/08 0805		3	↓	↓	↓				
WELL - 18	↓	0820		3							
WELL - 17		0830		3							
102 TOWER INF.		0750		3							
102 TOWER EFF.		0755		3							
WELL - 1		0835		3							
WELL - 3		0900		3							
96 TOWER INF.		0845		3							
96 TOWER EFF.		0850		3							
WELL 19 MS		0805		3							
WELL 19 MSD		0805		3							
REP 260208				3						REP OFF WELL 18	
TRIP BLANK				3						TEMP. BOTTLE	
										ENCLOSED.	

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 39

Relinquished by: [signature]	Organization: ARCADIS	Date 2/26/08	Time 1435	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks:
ATTN: MIKE PERRY

Delivery Method: ☐ In Person ☒ Common Carrier FED EX. (SPECIFY) ☐ Lab Courier ☐ Other ________ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. NGC 002

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY001464.0407.00002

Project Location NGC BETHPAGE NY.

Laboratory COLUMBIA

Project Manager MELISSA REINDL

Sampler(s)/Affiliation D. MCCLAFFERTY/ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 6 LITER SUMMAS	TO-15	6 LAB	STANDARD T.A.T.	CANISTER #'S	Remarks	Total
96 INFLUENT	A	2/26/08 1513		↓	↓	↓	↓	K731	VAC START -29.6 END -1.0	1
96 EFFLUENT	↓	↓ 1516		↓	↓	↓	↓	K697	VAC START -29.5 END -1.8	1
96 TOTAL EFFLUENT	↓	↓ 1518		↓	↓	↓	↓	K694	VAC START -29.4 END -1.9	1
102 INFLUENT	↓	↓ 1244		↓	↓	↓	↓	K642	VAC START -29.6 END -0.9	1
102 EFFLUENT	↓	↓ 1242		↓	↓	↓	↓	K725	VAC START -29.6 END -0.13	1
									SENDING BACK 1 EXTRA	1
									CAN. LOW VAC, DID NOT	
									USE. SEE BELOW	

Sample Matrix: L = Liquid; S = Solid; A = Air (circled)

Total No. of Bottles/Containers: 6

Relinquished by: D. McClafferty	Organization: ARCADIS	Date 2/26/08	Time 1550	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: ATTN: MIKE PERRY: CAN K647 ONLY HAD -12.2" OF VACUUM ON IT. DID NOT USE.

Delivery Method: ☐ In Person ☒ Common Carrier FED. EX. (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY00464.0408.0000L
Project Location BETHPAGE NY
Laboratory COLUMBIA ANALYTICAL SERV
Project Manager MIKE WOLFERT
Sampler(s)/Affiliation G.W OGW

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	VOA: USEPA VOC 200.8 HCl 40 mL						Remarks	Total
GM-20I	L	3-3-08		3							3
GM-20D	↓	3-3-08		3							3
GM-21D	↓	↓		3							3
GM-21I	↓	↓		3							3
TB 3-3-08	↓			3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 15

Relinquished by: [signature]	Organization: ARCADIS	Date 3/3/08	Time 600	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: REPORT TO MELISSA REIND

Delivery Method: ☐ In Person ☒ Common Carrier FED-EX (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page ____ of ____

Project Number/Name NORTHROP GRUMMAN/BETHPAGE H2O

Project Location BETHPAGE

Laboratory H2M

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation G.W DGW

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOC (HCl)						Remarks	Total
GM-71D-2	L	3-5-08		2							2
GM-36D-2	↓	3-5-08		2							2
GM-36D	↓	"		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 6

					Seal Intact?
Relinquished by: [signature]	Organization: ARCADIS	Date 3/6/08	Time 9:40		
Received by: [signature]	Organization: H2M LABS	Date 3/6/08	Time [illegible]		Yes No N/A
Relinquished by: _____	Organization: _____	Date / /	Time _____		Seal Intact?
Received by: _____	Organization: _____	Date / /	Time _____		Yes No N/A

Special Instructions/Remarks: _____

Delivery Method: ☐ In Person ☐ Common Carrier _____ SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY001464.0408.00002

Project Location BETHPAGE NY.

Laboratory COLUMBIA ANALYTICAL SERV

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation G.W. OGW

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC 2008 8260 (HCL)						Remarks	Total
GM-36D-2	L	3-5-08		3							3
GM-36D	↓	↓		3							3
GM-71D-2	↓	↓		3							3
TB3-5-08	↓	↓		3							3
GM-37D	L	3-6-08		3							3
GM-37D2	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 18

Relinquished by: D. Hill	Organization: ARCADIS	Date 3/6/08	Time 5:00pm	Seal Intact?	Yes No N/A
Received by:	Organization:	Date / /	Time		
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	Yes No N/A
Received by:	Organization:	Date / /	Time		

Special Instructions/Remarks: REPORT TO MELISSA KEINDL

Delivery Method: ☐ In Person ☒ Common Carrier FED-EX ☐ Lab Courier ☐ Other _____

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page _____ of _____

9

Project Number/Name NORTHROP-GRUMMAN/BETHPAGE H2O

Project Location BETHPAGE

Laboratory H2M

Project Manager ?

Sampler(s)/Affiliation G.W. DGW ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA (HCl)						Remarks	Total
GM-37D	L	3-6-08		2							2
GM-37D-2	V	V		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 4

Relinquished by: [signature]	Organization: ARCADIS	Date 3/6/08	Time _____	Seal Intact?	
Received by: Jillian Hentz	Organization: H2M LABS, INC.	Date 3/6/08	Time 16:35	Yes No N/A	
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	

Special Instructions/Remarks: _____

Delivery Method: ☐ In Person ☐ Common Carrier _____ ☐ Lab Courier ☐ Other _____

SPECIFY

ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY001464.0408.00002
Project Location BETHPAGE NY
Laboratory COLUMBIA ANALYTICAL SERV
Project Manager MIKE WOLFERT
Sampler(s)/Affiliation G.W.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 4/40ml VIAL VOC 2000 ASP OLM 4.2 (HCl)						Remarks	Total
GM-17D	L	3-7-08		3							3
GM-17I	↓	↓		3							3
TB3-7-08	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 9

Relinquished by: G.W. Organization: ARCADIS Date 3/7/08 Time 4:00 Seal Intact? Yes No N/A
Received by: ______ Organization: ______ Date __/__/__ Time ______

Relinquished by: ______ Organization: ______ Date __/__/__ Time ______ Seal Intact? Yes No N/A
Received by: ______ Organization: ______ Date __/__/__ Time ______

Special Instructions/Remarks: REPORT TO MELISSA REIWOL

Delivery Method: ☒ In Person ☑ Common Carrier FED-EX (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

NORTHROP-GRUMMAN Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page _____ of _____

Project Number/Name ~~[illegible]~~ BETHPAGE-HQ

Project Location BETHPAGE NY

Laboratory H2M

Project Manager _____

Sampler(s)/Affiliation GW, DGW

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA (HCl)						Remarks	Total
6M-38D	L	3-10-08		2							2
6M-38D-2	L	3-10-08		2							2
6M-35D-2	L	3-10-08		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 6

Relinquished by: [signature]	Organization: ARCADIS	Date 3/12/08	Time 2:30	Seal Intact?	
Received by: [signature]	Organization: H2M (HLS)	Date 3/13/08	Time [illegible]	Yes	No N/A
Relinquished by: _____	Organization: _____	Date __/__/__	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date __/__/__	Time _____	Yes	No N/A

Special Instructions/Remarks: _____

Delivery Method: ☒ In Person ☐ Common Carrier _____ ☐ Lab Courier ☐ Other _____
SPECIFY SPECIFY

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page ____ of ____

Project Number/Name ~~NEE~~ N400464.0408.00002

Project Location BETHPAGE NY.

Laboratory ~~P~~ COLUMBIA ANALYTICAL SERV

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation G.W. D.G.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml VOA VOC 2000 ASP (HCl)	125ml PLASTIC Cl (HNO3)	125ml PLAST COD/Cl (H2SO4)				Remarks	Total
GM-38D	L	3-10-08		3							3
GM-38D-2				3							3
GM-35D-2				3							3
TB-3-10,11,12-08		3-10-08		3							3
GM-15D		3-11-08		3							3
GM-15D-2				3							3
GM-15I				3							3
GM-15S		3-12-08		3	1						4
PTI MW-04					1						1
PTI MW-05					1						1
PTI MW-06					1						1
GM-78S				3		1					4
GM-78I				3		1					4
HN-42I				3							3
HN-42S				3							3
FB-3-12-08				3		1					4

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 46

					Seal Intact?
Relinquished by: [signature]	Organization: ARCADIS	Date 3/12/08	Time 6:30		
Received by:	Organization:	Date / /	Time		Yes No N/A
Relinquished by:	Organization:	Date / /	Time		Seal Intact?
Received by:	Organization:	Date / /	Time		Yes No N/A

Special Instructions/Remarks: REPORT TO MELISSA REINDL

Delivery Method: ☐ In Person ☒ Common Carrier FED-EX ☐ Lab Courier ☐ Other _____

ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Page ___ of ___

Project Number/Name NY001464.0408 00002
Project Location BETHPAGE NY.
Laboratory COLUMBIA ANALYTICAL SERV
Project Manager MIKE WOLFERT
Sampler(s)/Affiliation G.W. DG

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC 2000 ASP (HCl)	125ml PLASTIC Cd/Cr (HNO3)	125ml PLASTIC DISSOLVED Cd/Cr (HNO3)			Remarks	Total
HW-42S	L	3-13-08		3						3
HW-42I	↓			3						3
GM-34D	↓			3						3
GM-34D2	↓			3						3
HW-03	↓			3						3
HW-24I	↓			9*						9*
N-10631	↓			3	1	1				5
FB 3-13-08	↓			3	1					4
TB 3-13-08	↓			3						3
REP 3-13-08	↓			3						3

Total No. of Bottles/Containers: 39

Sample Matrix: L = Liquid; S = Solid; A = Air

Relinquished by: [signature]	Organization: ARCADIS	Date 3/13/08	Time 7:??	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: REPORT TO MELISSA KERNOL

Delivery Method: ☐ In Person ☑ Common Carrier FED-EX ☐ Lab Courier ☐ Other ______ SPECIFY

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page ____ of ____

Project Number/Name NY001461.0408.00002

Project Location BETHPAGE NY

Laboratory COLUMBIA ANALYTICAL SERV

Project Manager MIKE WAFER

Sampler(s)/Affiliation G.W

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA 2 HCl (HCl)						Remarks	Total
N-10627	L	3-14-08		3							3
GM-75D-2				3							3
GM-33D-2				3							3
FB3-14-08				3							3
TB3-14-08				3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 15

Relinquished by: G. HW	Organization: ARCADIS	Date 3/14/08	Time 4:00	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A

Special Instructions/Remarks: REPORT TO MELISSA RENDA

Delivery Method: ☐ In Person ☐ Common Carrier _____ ☐ Lab Courier ☐ Other _____ SPECIFY

ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY001464.0408.00002

Project Location BETHPAGE NY

Laboratory COLUMBIA ANALYTICAL SERVICES

Project Manager MIKE WOLFERT.

Sampler(s)/Affiliation G.W.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VIAL VOC 8260 ASP OLM4.2 (HCl)					Remarks	Total
GM-74I	L	3-17-08		3						3
GM-74D	↓	↓		3						3
GM-74D2				3						3
GM-73D2				9*						9*
REP-3-17-08				3						3
TB-3-17-08				3						3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 24

Relinquished by: GW	Organization: ARCADIS	Date 3/17/08	Time 7:00	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:
* PLEASE USE THIS SAMPLE FOR AN MS/MSD QA/QC SAMPLE
REPORT TO MELISSA REINOL

Delivery Method: ☐ In Person ☒ Common Carrier FED-EX (SPECIFY) ☐ Lab Courier ☐ Other ______

ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Page ___ of ___

Project Number/Name NY001464.0408.00002

Project Location BETHPAGE NY.

Laboratory COLUMBIA ANALYTICAL SERVICES

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation G.W.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml VIAL VOC 2000A SP 8LM4.2 (HCl)	125ml PLASTIC TOTAL CALC (HNO3)	125ml PLASTIC DISSOLVED CALC (HNO3)				Remarks	Total
GM-73D	L	3-18-08		3							3
GM-39D-2	↓	↓		3							3
GM-39D	↓	↓		3							3
GM-21S	↓	↓		3							3
MW-16F	↓	↓			1	1					2
MW-26F	↓	↓			1	1					2
TB 3-18-08	↓	↓		3							3
FB 3-18-08	↓	↓		3	1						4

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 23

Relinquished by: D. H/W	Organization: ARCADIS	Date 3/18/08	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: REPORT TO MELISSA REDWOL

Delivery Method: ☐ In Person ☑ Common Carrier FED-EX (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page _____ of _____

Project Number/Name NYOD1464.0408.00001

Project Location BETHPAGE NY.

Laboratory COLUMBIA ANALYTICAL SERV

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation G.W.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 4 OZ VOA VOC 8260B COLUMBIA (HCl)						Remarks	Total
GM-79I	L	3-21-08		3							3
GM-79D				3							3
GM-18D				3							3
TB3-21-08				3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 12

Relinquished by: D. Tittle	Organization: ARCADIS	Date 3/21/08	Time 6:00	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A

Special Instructions/Remarks: REPORT TO MELISSA REDDOL

Delivery Method: ☐ In Person ☐ Common Carrier _____ SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name: NY001164.0408.00002
Project Location: BETHPAGE
Laboratory: COLUMBIA ANALYTICAL SVCS
Project Manager: MIKE WOLFERT
Sampler(s)/Affiliation: G.W

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml VOA VOC 8260 (SP) (HCl)						Remarks	Total
GM-130	L	3-21-08		3							3
TB 3-25-08	✓	✓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 6

Relinquished by: [signature]	Organization: ARCADIS	Date 3/25/08	Time 4:00	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: REPORT TO MERESS & RETNAL

Delivery Method: ☐ In Person ☑ Common Carrier FED EX (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page _____ of _____

Project Number/Name 40014614.0408.00002

Project Location BETHPAGE NY

Laboratory COLUMBIA ANALYTICAL SERV

Project Manager MIKE LOUGHNANE

Sampler(s)/Affiliation S.W CB

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: VOC 8260B (HCl)						Remarks	Total
BPOW 1-1				3							3
BPOW 1-2				3							3
BPOW 1-3				3							3
DB 3 3-08				3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 12

Relinquished by: [signature]	Organization: ARCADIS	Date 3/31/08	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes	No N/A
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes	No N/A

Special Instructions/Remarks: REPORT TO MARISA RONAN

Delivery Method: ☐ In Person ☑ Common Carrier FEDEX ☐ Lab Courier ☐ Other _____

ARCADIS

Laboratory Task Order No./P.O. No.

CHAIN-OF-CUSTODY RECORD

Page ___ of ___

Project Number/Name NY001464.0408.0000
Project Location BETHPAGE NY
Laboratory COLUMBIA ANALYTICAL SERV
Project Manager MIKE WOLFERT
Sampler(s)/Affiliation G.W. CA

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VIAL VOC 2000 ASP(HCl) OLM4.2						Remarks	Total
DISCHARGE	L	4-1-08		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 3

Relinquished by: [signature] GW	Organization: ARCADIS	Date 4/1/08	Time 6:30	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:
REPORT TO MONTESCA REMOVAL

Delivery Method: ☐ In Person ☑ Common Carrier FEDEX ☐ Lab Courier ☐ Other ___

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page _____ of _____

Project Number/Name NY001464.0408.00002

Project Location BETHPAGE

Laboratory COLUMBIA ANALYTICAL SERVICES

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation G.W., CB

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC 502.2 (HCl)						Remarks	Total
BPOW3-1	L	4-1-08		3							3
BPOW3-2				3							3
BP-OW4-1				3							3
BPOW 4-2				9*							9*
REP 4-1-08				3							3
TB-4-1-08				3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 24

Relinquished by: [signature]	Organization: ARCADIS	Date 4/1/08	Time _____	Seal Intact?	Yes No N/A
Received by: _____	Organization: _____	Date / /	Time _____		
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?	Yes No N/A
Received by: _____	Organization: _____	Date / /	Time _____		

Special Instructions/Remarks: * PLEASE USE THIS SAMPLE FOR ANY MS/MSD QA/QC SAMPLE

REPORT TO MELISSA KEDNOL

Delivery Method: ☐ In Person ☑ Common Carrier FEDEX (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page _____ of _____

Project Number/Name NW NORTHROP GRUMMAN/BETHPAGE H2O

Project Location BETHPAGE N.Y.

Laboratory H2M

Project Manager Molloy?

Sampler(s)/Affiliation G. W ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC (HCl)						Remarks	Total
GM-350-2	L	4-9-08		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 2

					Seal Intact?
Relinquished by: G. W	Organization: ARCADIS	Date 4/10/08	Time 9:00		
Received by: [illegible]	Organization: H2M labs	Date 4/10/08	Time 9:00		Yes No N/A
Relinquished by: _____	Organization: _____	Date / /	Time _____		Seal Intact?
Received by: _____	Organization: _____	Date / /	Time _____		Yes No N/A

Special Instructions/Remarks: _____

Delivery Method: ☑ In Person ☐ Common Carrier _____ ☐ Lab Courier ☐ Other _____

ARCADIS

Laboratory Task Order No./P.O. No. Grumman 002

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name NY001464.0408.00002

Project Location Bethpage, NY

Laboratory Columbia Analytical Service - Rochester

Project Manager Dave Stern

Sampler(s)/Affiliation Williams

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial VOC 2000 ASP (HCL)						Remarks	Total
GM-35D2	L	4/9/08		3							3
TB040908	L	4/9/08		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 6

Relinquished by: [signature]	Organization: Arcadis	Date 4/10/08	Time 5:45pm	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: Report to Melissa Reindl

Delivery Method: ☐ In Person ☑ Common Carrier Fed Ex ☐ Lab Courier ☐ Other

ARCADIS

96+102 OU2
Laboratory Task Order No./P.O. No. NGC

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY001464.0408.00002
Project Location BETHPAGE, NY.
Laboratory COLUMBIA ANALYTICAL
Project Manager CARLO SANGIOVANNI
Sampler(s)/Affiliation D. McCLAFFERTY/ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 6 LITER SUMMAS	TO-15 + TICS	GRAB	STD. TAT	TIMED	CAN #	Remarks	Total
102 INFLUENT	A	6/11/08 1547		↓	↓	↓	↓	14 SEC	SLC00418	START VAC -29.5 END -6.0	1
102 EFFLUENT	↓	1545		↓	↓	↓	↓	13 SEC	SLC00338	START VAC -30.0 END -2.4	1
96 INFLUENT	↓	1326		↓	↓	↓	↓	13 SEC	SLC00043	START VAC -29.2 END -7.3	1
96 EFFLUENT	↓	1328		↓	↓	↓	↓	14 SEC	SLC00037	START VAC -29.3 END -2.3	1
96 TOTAL EFFLUENT	↓	1330		↓	↓	↓	↓	13 SEC	SLC00012	START VAC -29.5 END -3.0	1
										RETURNING 1	
										UNUSED TANK	

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 6

Relinquished by: [signature]	Organization: ARCADIS	Date 6/11/08	Time 1600	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:
ATTN: MIKE PERRY. NGC OU2 96 + 102 AIR SAMPLES.

Delivery Method: ☐ In Person ☒ Common Carrier FED. EX (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

96+102-002

ARCADIS

Laboratory Task Order No./P.O. No. AT N6C

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name: AYOU1464.0408.00002

Project Location: BETHPAGE, N.Y.

Laboratory: COLUMBIA ANALYTICAL SRVCS.

Project Manager: CARLO SAN GIOVANNI

Sampler(s)/Affiliation: D. MCCAFFERTY / ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ML VOA'S	ASP 2000	GRAB	T.A.T. STANDARD	PRES. HCL	Remarks	Total
TOWER 102 EFF.	L	6/11/08 0824								3
TOWER 102 INF		0820								3
102 CLEAR WELL		0828								3
WELL 19		0811								3
WELL 18		0847								3
WELL 17		0852								3
WELL 1		0859								3
TOWER 96 INF.		0905								3
TOWER 96 EFF.		0908								3
WELL 3		0918								3
TRIP BLANK										3
TEMP. BOTTLE										1

Total No. of Bottles/Containers: 34

Sample Matrix: L = Liquid; S = Solid; A = Air

				Seal Intact?
Relinquished by: [signature]	Organization: ARCADIS	Date 6/11/08	Time 1500	
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:

ATTN: MIKE PERRY. 96+102-002 SYSTEMS AT N6C

SAMPLES TAKE DURING REGEN OF BOTH SYSTEMS

Delivery Method: ☐ In Person ☒ Common Carrier FED. EX. (SPECIFY) ☐ Lab Courier ☐ Other (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ____

CHAIN-OF-CUSTODY RECORD

Page 1 of ____

Project Number/Name NYDD1464.0408.00002

Project Location BETHPAGE NY

Laboratory COLUMBIA ANALYTICAL SERVICES

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation G.W

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VIAL VOC OLM 4.2 (HCl)						Remarks	Total
GM-79I	L	6-18-08		3							3
GM-79D	↓	↓		3							3
GM-21D	↓	↓		3							3
TB6-18-08	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 12

Relinquished by: [signature]	Organization: ARCADIS	Date 6/18/08	Time 4:00	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: REPORT TO MELISSA REIWOL

Delivery Method: ☐ In Person ☒ Common Carrier FEDEX (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. Grumman OU2

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name NY001464.0408.0000-2
Project Location Bethpage, NY
Laboratory Columbia Analytical Services
Project Manager Dave Stern
Sampler(s)/Affiliation Prezorski

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial VOC OLM 4.2 (HCL)						Remarks	Total
TB062308	L	6/23/08		3							3
GM-21I	↓	↓		3							3
GM-35D2	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 9

Relinquished by: [signature]	Organization: Arcadis	Date 6/23/08	Time 1830	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: Report to Melissa Reindl
2 week TAT

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name: Grumman

Project Location: Bethpage, NY

Laboratory: H2M

Project Manager: _____

Sampler(s)/Affiliation: Prezorski

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial VOC (HCl)						Remarks	Total
GM-25D2	L	6-23-09		2						sample time: 1715	2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 2

Relinquished by: Ed Prezorski	Organization: Arcadis	Date 6/24/09	Time 9:17 AM	Seal Intact?		
Received by: [illegible]	Organization: H2M LRS	Date 6/24/09	Time 9:17	Yes	No	N/A
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?		
Received by: _____	Organization: _____	Date / /	Time _____	Yes	No	N/A

Special Instructions/Remarks: _____

Delivery Method: ☒ In Person ☐ Common Carrier _____ (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. Grumman 002

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name NY001467.0408.0002

Project Location Bethpage, NY

Laboratory Columbia Analytical Services

Project Manager Dave Stern

Sampler(s)/Affiliation Prizanski, Williams

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial VOC 8260 w/ HCl						Remarks	Total
TB062109	L	6/24/08		3							3
GM-20I				3							3
GM-20D				3							3
GM-18I				3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 12

						Seal Intact?
Relinquished by: [signature]	Organization: Arcadis	Date 6/24/08	Time 1830	Yes	No	N/A
Received by:	Organization:	Date / /	Time			
Relinquished by:	Organization:	Date / /	Time	Seal Intact?		
Received by:	Organization:	Date / /	Time	Yes	No	N/A

Special Instructions/Remarks: Report to Melissa Reindl

2-Week TAT

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex SPECIFY ☐ Lab Courier ☐ Other SPECIFY

AG-DS-12/01

ARCADIS

Laboratory Task Order No./P.O. No. Grumman 002

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY001464.4109.0002

Project Location Bethpage, NY

Laboratory Columbia Analytical Services

Project Manager Dave Stern

Sampler(s)/Affiliation Prezorski, Williams

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial VOC OLM 4.2 (HCL)						Remarks	Total
TB062508	L	6/25/08		3							3
FB062508	↓	↓		3							3
Rep062508	↓	↓		3							3
GM-75D2	↓	↓		3							3
GM-33D2	↓	↓		3							3
GM-34D	↓	↓		3							3
GM-34D2	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 21

Relinquished by: Cd Gndjonk	Organization: Arcadis	Date 6/25/08	Time 1830	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: Report to: Melissa Reindl
2 Week TAT

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page ____ of ____

Project Number/Name NYDOT464.0408.00002

Project Location BETHPAGE NY.

Laboratory ~~STL~~ COLUMBIA ANALYTICAL SERV

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation G.W. DK

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC SO4 (NO3)						Remarks	Total
BPOW-3-2	L	6-26-08		3							3
BPOW-4-2		6-26-08		3							3
TB-6-26-08		6 26 08		3							3
										Total No. of Bottles/ Containers	9

Sample Matrix: L = Liquid; S = Solid; A = Air

Relinquished by: [signature]	Organization: ARCADIS	Date 6/26/08	Time 5:00	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	

Special Instructions/Remarks: REPORT TO MELISSA REINOL

Delivery Method: ☐ In Person ☑ Common Carrier FEDEX ☐ Lab Courier ☐ Other _____

SPECIFY SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. Grumman outpat wells **CHAIN-OF-CUSTODY RECORD** Page 1 of 1

Project Number/Name NY001464.0408.0002

Project Location Bethpage NY

Laboratory Columbia Analytical Services

Project Manager Dave Stern

Sampler(s)/Affiliation Przorski, Kirschner

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial VOC 524.2 (HCL)						Remarks	Total
BPOW 1-2	L	6/27/09		3							3
BPOW 1-1	↓	↓		+9							9
BPOW 1-3	↓	↓		3							3
TBO627090	↓	↓		3							3

Total No. of Bottles/Containers 18

Sample Matrix: L = Liquid; S = Solid; A = Air

					Seal Intact?
Relinquished by: [signature]	Organization: Arcadis	Date 6/27/09	Time 1800		
Received by:	Organization:	Date / /	Time		Yes No N/A
Relinquished by:	Organization:	Date / /	Time		Seal Intact?
Received by:	Organization:	Date / /	Time		Yes No N/A

Special Instructions/Remarks:

* Please use this sample as QA/QC MS/MSD sample

2 week TAT

Report to Melissa Reindl

Delivery Method: ☐ In Person ☑ Common Carrier Fed Ex SPECIFY ☐ Lab Courier ☐ Other SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page ____ of ____

Project Number/Name NY000464.0408.00002

Project Location BETHPAGE NY

Laboratory TEST AMERICA

Project Manager MIKE LOUIFORT

Sampler(s)/Affiliation G.W. JC

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA 8260						Remarks	Total
BPOW-4.1	L	6/30		3							3
BPOW 3-1	"	"		3							3
REP 630.08	"	"		3							3
TB 6-30-08	"	"		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 12

Relinquished by: D. Hale	Organization: ARCADIS	Date 6/30/08	Time 5:30	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A

Special Instructions/Remarks:

REPORT TO MOTECSA REGION

Delivery Method: ☐ In Person ☑ Common Carrier FED EX SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ____

CHAIN-OF-CUSTODY RECORD

Project Number/Name NGC/NY001464.0408.00002

Project Location Bethpage, NY

Laboratory Columbia Analytical Services

Project Manager David Stern

Sampler(s)/Affiliation G. Williams / J. Cherlin

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml VOA vials (Chris) VOC 524 method						Remarks	Total
TB080508	L	05/08/08		3							3
BPOW 1-1	↓	↓		3		2 Week TAT					3
BPOW 1-2	↓	↓		3							3
BPOW 1-3	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 12

Relinquished by: J. Cherlin	Organization: Arcadis	Date 05/08/08	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: Please send results to Melissa Reindl, 2 week TAT

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No.

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY001464.0108.0002/NGC

Project Location Bethpage, NY

Laboratory Columbia Analytical Labs

Project Manager Dave Stern

Sampler(s)/Affiliation G. Williams, J. Cherlin / Arcadis

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA vials (HCl) VOC same method						Remarks	Total
TB080608	L	08/06/08		3							3
BPOW4-1	↓	↓		9	– MS/MSD						9
BPOW4-2	↓	↓		3							3
REP080608	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 18

Relinquished by: J. Cherlin	Organization: Arcadis	Date 08/06/08	Time 18:00	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: 2 week TAT. Send results to Melissa Reindl

Delivery Method: ☐ In Person ☒ Common Carrier Fed-Ex (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page ____ of ____

Project Number/Name NY001464.0408.00002

Project Location BETHPAGE N.Y.

Laboratory COLUMBIA ANALYTICAL SERV.

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation G.W

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml Vials VOC OLM 4.2 (HCl)						Remarks	Total
GM-17D	L	8-11-08		3							3
GM-17I	↓	↓		3							3
TB 8-11-08	↓	↓		3							3

Total No. of Bottles/ Containers 9

Sample Matrix: L = Liquid; S = Solid; A = Air

					Seal Intact?
Relinquished by: [signature]	Organization: ARCADIS	Date 8/11/08	Time 5:50		
Received by:	Organization:	Date / /	Time		Yes No N/A
Relinquished by:	Organization:	Date / /	Time		Seal Intact?
Received by:	Organization:	Date / /	Time		Yes No N/A

Special Instructions/Remarks: REPORT TO MELISSA REDNOR

Delivery Method: ☐ In Person ☑ Common Carrier FED EX SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page ____ of ____

Project Number/Name NY001464.0408.00002

Project Location BETHPAGE N.Y.

Laboratory COLUMBIA ANALYTICAL SERV

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation G.W. J.C.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC OLM 4.2 (HCL)						Remarks	Total
HN-40S	L	8-12-08		3							3
HN-40I				3							3
HN-42S				3							3
HN-42I				3							3
FB 8-12-08				3							3
TB 8-12-08				3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 18

Relinquished by: D. NW	Organization: ARCADIS	Date 8/12/08	Time 6:15	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	

Special Instructions/Remarks: REPORT TO MELISSA REINDL

Delivery Method: ☐ In Person ☒ Common Carrier FEDEX (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. Grumman 002

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name NM001464.0408.00002

Project Location Bethpage, NY

Laboratory Columbia Analytical Services

Project Manager Dave Stern

Sampler(s)/Affiliation Prezorski, Cherlin

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml VOA TCL VOCs NYSDEC ASP 2000	250 ml plastic Total Cr Method 6010 (HNO3)	250 ml Dissolved Cr Method 6010 (HNO3)				Remarks	Total
TB081308	L	8/13/08		3							3
FB091308				3							3
GM-15D2				3							3
GM-15D				3							3
GM-15S				3	1	1					4
PLT1 MW-04					1	1					2
PLT1 MW-05					1	1					2
PLT1 MW-06					1	1					2

Total No. of Bottles/ Containers 22

Sample Matrix: L = Liquid; S = Solid; A = Air

					Seal Intact?
Relinquished by: Cat Prezorski	Organization: Arcadis	Date 8/13/08	Time 1900		Yes No N/A
Received by:	Organization:	Date / /	Time		
Relinquished by:	Organization:	Date / /	Time		Seal Intact?
Received by:	Organization:	Date / /	Time		Yes No N/A

Special Instructions/Remarks: Report to Melissa Reindl

2-week TAT

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex SPECIFY ☐ Lab Courier ☐ Other SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. Grumman OU2

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY001464.1408.00002

Project Location Bethpage, NY

Laboratory Columbia Analytical Services

Project Manager Dave Stern

Sampler(s)/Affiliation Przezorski, Cherlin

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml vial TCL VOCs ASP2000	250ml plastic (HNO3) Total Cr Method 6010	250ml plastic (HNO3) Dissolved Cr Method 6010				Remarks	Total
TB091408	L	8-14-08		3							3
FB091408	↓	↓		3							3
Rep091408	↓	↓		3	1						4
GM-78 I	↓	↓		3	1	1					5
GM-78S	↓	↓		9	1	1					11
MW-2GF	↓	↓			1	1					2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 28

Relinquished by: [signature]	Organization: Arcadis	Date 9/14/08	Time 1900	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: 2 week TAT

Report to Melissa Rendl

Delivery Method: ☐ In Person ☒ Common Carrier FedEx (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. Grumman

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY001464.0409.0002
Project Location Bethpage, NY
Laboratory Columbia Analytical Services
Project Manager Dave Stern
Sampler(s)/Affiliation Przorski, Chirlin

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml vial TCL VOC Agr2000 (HCl)	250 ml plastic Total calcs Method 6010 (HNO3)	250 ml plastic Dissolved calc Method 6010 (HNO3)				Remarks	Total
TB091508	L	8-15-08		3							3
FB091508	↓	↓		3							3
GM-215	↓	↓		3							3
MW-1GF	↓	↓			1	1					2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 11

Relinquished by: [signature]	Organization: Arcadis	Date 8/15/08	Time 17:30	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: Report to Melissa Reidel
2-week TAT

Delivery Method: ☐ In Person ☒ Common Carrier FedEx (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page _____ of _____

Project Number/Name NY001464.0408.00002

Project Location BETHPAGE NY

Laboratory ~~STL~~ COLUMBIA ANALYTICAL SERV

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation GW,

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC 8260 (HCL)						Remarks	Total
GM-74I	L	8-18-08		3							3
GM-74D				3							3
GM-74D-2				3							3
TB 8-18-08				3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 12

Relinquished by: [signature]	Organization: ARCADIS	Date 8/18/08	Time 6:15	Seal Intact?		
Received by:	Organization:	Date / /	Time	Yes	No	N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?		
Received by:	Organization:	Date / /	Time	Yes	No	N/A

Special Instructions/Remarks: REPORT TO MELISSA REINOL

Delivery Method: ☐ In Person ☑ Common Carrier FED EX SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

AG 05-12/01

ARCADIS

CHAIN-OF-CUSTODY RECORD Page 1 of 1

Laboratory Task Order No./P.O. No. NGC 96 + 102 GRABS

Project Number/Name NY001464.0408.00002

Project Location NGC Bethpage NY.

Laboratory Columbia Analytical

Project Manager Carlo San Giovanni

Sampler(s)/Affiliation D. McCafferty/Arcadis

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 6 Liter Summas	TO-15	GRAB	Standard TAT		Canister #	Remarks	Total
96 INFLUENT	A	8/18/08 1205		↓		↓	↓		SC00027	VAC START -29.2 END -4.1	1
96 EFFLUENT	↓	1207		↓		↓	↓		SC00035	VAC START -29.5 END -5.2	1
OXYI EFFLUENT (TOTAL)	↓	1209		↓		↓	↓		K756	VAC START -29.6 END -4.1	1
102 INFLUENT	↓	1407		↓		↓	↓		SC00023	VAC START -29.4 END -5.7	1
102 EFFLUENT	↓	1410		↓		↓	↓		SC00029	VAC START -29.6 END -4.4	1

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers

Relinquished by: D. McCafferty	Organization: ARCADIS	Date 8/18/08	Time 1500	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: ATTN: MIKE PERRY. SAMPLES TAKEN AS GRABS. SPOKE WITH TOM WALKER, NO FILTERS USED. RETURNING UNUSED CANISTER + 24 HR FLOW CONTROLLERS. DID NOT USE THEM.

Delivery Method: ☐ In Person ☒ Common Carrier FED. EX. (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. NFC 96+102 SYSTEMS **CHAIN-OF-CUSTODY RECORD** Page 1 of 1

Project Number/Name NY000964.0466.00002

Project Location NFC BETHPAGE, N.Y.

Laboratory COLUMBIA ANALYTICAL

Project Manager _____

Sampler(s)/Affiliation 1) MCLAFFERTY/ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ML VOAS	OLM 4.2	6 AMB	HCL PRES.	STANDARD T.A.T.		Remarks	Total
WELL - 17	L	8/15/08 0807								NEP OFF WELL 17	3
WELL - 18		0755									3
WELL - 19		0745									3
WELL - 1		0816									3
WELL - 3		0835									3
REP 180808											3
102 TOWER INFLUENT		0740									3
102 TOWER EFFLUENT		0749									3
96 TOWER INFLUENT		0827									3
96 TOWER EFFLUENT		0838									3
[redacted] DUP											
TRIP BLANK											3
TEMP. BOTTLE											1

ANALYSIS / METHOD / SIZE

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 34

					Seal Intact?
Relinquished by: [signature]	Organization: ARCADIS	Date 8/18/08	Time 1510		
Received by:	Organization:	Date / /	Time		Yes No N/A
Relinquished by:	Organization:	Date / /	Time		Seal Intact?
Received by:	Organization:	Date / /	Time		Yes No N/A

Special Instructions/Remarks:
ATTN: MIKE PERRY.

Delivery Method: ☐ In Person ☒ Common Carrier FED EX (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page _____ of _____

Project Number/Name: N4001464.0408.00002
Project Location: BETHPAGE NY
Laboratory: COLUMBIA ANALYTICAL SERV
Project Manager: MIKE WOLFERT
Sampler(s)/Affiliation: G.W. SX.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA OLM 4.2 VOC	250ml Plastic Total Calcium (HNO3)	250ml Plastic Dissolved Calcium (HNO3)				Remarks	Total
GM-75D-2	L	8-19-08		3							3
N-10627				3							3
N-10631				3	1	1					5
GM-33D-2				3							3
FB 8-19-08				3	1						4
TB 8-19-08				3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 21

Relinquished by: S. HW	Organization: ARCADIS	Date 8/19/08	Time 6:30	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	

Special Instructions/Remarks: REPORT TO MELISSA REINDL

Delivery Method: ☐ In Person ☒ Common Carrier FED EX SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

AC 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Page ___ of ___

Project Number/Name: NY001461.0408.00002
Project Location: BETHPAGE NY.
Laboratory: COLUMBIA ANALYTICAL SERV
Project Manager: MIKE WOLFERT
Sampler(s)/Affiliation: GW SY.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: VOA VOC 8260 40ml (HCl)						Remarks	Total
GM-39A	L	8 20 08		3							3
GM-39D-2	↓	↓		3							3
GM-13D	↓	↓		9*							9*
TB 8-20-08	↓	↓		3							3
REP 8-20-08	↓			3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: ~~15~~ 21

Relinquished by: [signature]	Organization: ARCADIS	Date 8/20/08	Time 6:00	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks:
REPORT TO MELISSA KOZWOL
* PLEASE USE THIS SAMPLE for AN MS/MSD QA/QC SAMPLE

Delivery Method: ☐ In Person ☒ Common Carrier FED EX (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. Grumman OU2

CHAIN-OF-CUSTODY RECORD

Project Number/Name NY001464.0408.00002
Project Location Bethpage, NY
Laboratory Columbia Analytical Services
Project Manager Dave Stern
Sampler(s)/Affiliation Prezorst, Xu

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial TCL VOC ASP 2000 (HCL)						Remarks	Total
FB082108	L	8/21/08		3							3
TB082108	↓	↓		3							3
GM-34D2	↓	↓		3							3
GM-34D	↓	↓		3							3
GM-73D2	↓	↓		3							3
GM-73D	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 18

Relinquished by: [signature]	Organization: Arcadis	Date 8/21/08	Time 6:30pm	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: Report to Melissa Reindl
2-week TAT

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other ________ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. ______

CHAIN-OF-CUSTODY RECORD

Project Number/Name NGC / NY001464.0A08.00002

Project Location Bethpage, NY

Laboratory Columbia Analytical Services

Project Manager David Stern

Sampler(s)/Affiliation Gary Williams / Sunny Xu

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40ml Vial TCL VOCs ASP2000 (HCl)	ANALYSIS / METHOD / SIZE					Remarks	Total
TB082208	L	08/22/08		3							3
GM-79 I	↓			3	>	2	week	TAT			3
GM-79 D	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 9

Relinquished by: Sunny Xu	Organization: Arcadis	Date 08/22/08	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: ~~Please send results to Melissa Rand~~

2 weeks TAT

Delivery Method: ☐ In Person ☒ Common Carrier FedEx (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. Grumman 002

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name NY001464.0408.00002

Project Location Bethpage, NY

Laboratory Columbia Analytical Services

Project Manager Dave Stern

Sampler(s)/Affiliation Prezorski, Xu

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA TCL VOC App IX (HCL)						Remarks	Total
TB082508	L	8/25/08		3							3
GM-38D	↓	↓		3							3
GM-38D2	↓	↓		3							3
GM-35D2	↓	↓		* 9							9

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 18

Relinquished by: Ed Prezorski	Organization: Arcadis	Date 8/25/08	Time 1830	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A

Special Instructions/Remarks: Report to Melissa Arendt

2 week TAT

*Please use this sample as a QA/QC MS/MSD sample

Delivery Method: ☐ In Person ☒ Common Carrier FedEx (SPECIFY) ☐ Lab Courier ☐ Other (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. Gourmet **CHAIN-OF-CUSTODY RECORD** Page 1 of 1

Project Number/Name Bathgate Water District

Project Location Bathgate, ND

Laboratory H_2M

Project Manager

Sampler(s)/Affiliation Prezorski, Xu

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 4mL VOA	VOC (HCL)					Remarks	Total
GM-39D	L	9/25/08		2						Sample time: 1352	2
GM-39D2	↓	↓		2						Sample time: 1567	2
GM-35D2	↓	↓		2						Sample time: 1650	2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 6

Relinquished by:	Organization: Arcadis	Date 9/25/08	Time 17:15	Seal Intact?	
Received by:	Organization: H2M LABS	Date 9/25/08	Time 17:15	Yes No N/A	
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	

Special Instructions/Remarks:

Delivery Method: ☒ In Person ☐ Common Carrier ☐ Lab Courier ☐ Other

SPECIFY SPECIFY

AG 05 12/01

ARCADIS

Laboratory Task Order No./P.O. No. Grumman **CHAIN-OF-CUSTODY RECORD** Page 1 of 1

Project Number/Name Bethpage Water District

Project Location Bethpage, NY

Laboratory H2M

Project Manager

Sampler(s)/Affiliation Prezorski, Xu

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml vial VOC (HCl)						Remarks	Total
GM-38D	L	8/25/08		2						Sample time: 1352	2
GM-38D2	↓	↓		2						Sample time: 1507	2
GM-35D2	↓	↓		2						Sample time: 1650	2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 6

Relinquished by:	Organization: Arcadis	Date 8/25/08	Time 17:15	Seal Intact?	
Received by:	Organization: H2M LABS	Date 8/25/08	Time 17:15	Yes No N/A	
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	

Special Instructions/Remarks:

Delivery Method: ☒ In Person ☐ Common Carrier _____ (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY001461.0408.00002

Project Location BETHPAGE NY

Laboratory COLUMBIA ANALYTICAL SVRS

Project Manager MIKE WORTHEN

Sampler(s)/Affiliation G.W.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA w/ HCl (MeOH)						Remarks	Total
GM-1SI	L	8.26.08		3							3
GM-1BI	↓	↓		3							3
GM-1BD	↓	↓		3							3
TB 8-26-08	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 12

Relinquished by: G. WW	Organization: ARCADIS	Date 8/26/08	Time 6:15	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A

Special Instructions/Remarks: REPORT TO MELISSA RENICK

Delivery Method: ☐ In Person ☐ Common Carrier _____ SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

ARCADIS

Laboratory Task Order No./P.O. No. Gannett 002

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name: NY001468.0408.00002

Project Location: Bethpage NY

Laboratory: Columbia Analytical Services

Project Manager: Dave Stern

Sampler(s)/Affiliation: Prezorski

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	40 ml VOC 2000 ASP (HCl)						Remarks	Total
TB082808	L	8/28/08		3							3
GM-21D				3							3
GM-21I				3							3
GM-20I				3							3
GM-20D				3							3
DC-03				3							3

ANALYSIS / METHOD / SIZE

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 18

					Seal Intact?
Relinquished by: [signature]	Organization: Arcadis	Date 8/29/08	Time 1930		
Received by:	Organization:	Date / /	Time		Yes No N/A
Relinquished by:	Organization:	Date / /	Time		Seal Intact?
Received by:	Organization:	Date / /	Time		Yes No N/A

Special Instructions/Remarks: 2 week TAT

Report to Melissa Reinhardt

Delivery Method: ☐ In Person ☑ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page _____ of _____

Project Number/Name NY001464.0408.00002

Project Location ~~109~~ BETHPAGE NY

Laboratory COLUMBIA ANALYTICAL SERV

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation G.W. BJH

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC OLM 4.2 (HCl)						Remarks	Total
FW-03	L	9-5-08		3							3
HW-24I	↓	↓		3							3
FB9-5-08	↓	↓		3							3
TB9-5-08	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 12

Relinquished by: G.W.	Organization: ARCADIS	Date 9/5/08	Time 6:00	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A

Special Instructions/Remarks: REPORT TO MELISSA REINOL

Delivery Method: ☐ In Person ☒ Common Carrier FEDEX (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. NBC 96 + 102

CHAIN-OF-CUSTODY RECORD

Project Number/Name N400/464.0408.00002

Project Location Bethpage N.Y.

Laboratory Columbia Analytical

Project Manager Mike Wolfert

Sampler(s)/Affiliation D. McCafferty / Arcadis

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 6 Liter Summas	TO-15	Grab	Std. TAT		Can. #	Remarks	Total
96 Influent	A	12/17/08 1003		↓	↓	↓	↓		K674	Start vac -29.5 End -5	1
96 Tank A Eff.	↓	1008		↓	↓	↓	↓		K662	Start vac -29.5 End -5	1
96 Total Eff.	↓	1013		↓	↓	↓	↓		K744	Start vac -29.5 End -5	1
102 Influent	↓	2162		↓	↓	↓	↓		K679	Start vac -29.5 End -5	1
102 Effluent	↓	216		↓	↓	↓	↓		K713	Start vac -29.5 End -5	1
										Do not sample	
										K762 Leak on system	+1
										Pipe summa n/b	
										Bad Gauge	

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 6

Relinquished by: D McCafferty	Organization: Arcadis	Date 12/17/08	Time 1430	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks:
Attn: Mike Pratt - (Analysis K762 is not to be sampled).

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY001461.0408.00002

Project Location BETHPAGE NY.

Laboratory COLUMBIA ANALYTICAL SERV

Project Manager _____

Sampler(s)/Affiliation _____

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA Voc OLM 4.1 (HCl)						Remarks	Total
GM-79I	L	12-15-08		3							3
GM-79D	↓	↓		3							3
GM-21D	↓	↓		3							3
TB 12-15-08	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 12

Relinquished by: [signature]	Organization: ARCADIS	Date 12/15/08	Time 6:00	Seal Intact? Yes No N/A
Received by: _____	Organization: _____	Date / /	Time _____	
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact? Yes No N/A
Received by: _____	Organization: _____	Date / /	Time _____	

Special Instructions/Remarks: REPORT TO MEDIUM LEVEL

Delivery Method: ☐ In Person ☒ Common Carrier FED EX (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. [illegible]

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name [illegible]
Project Location [illegible]
Laboratory COLUMBIA ANALYTICAL
Project Manager MIKE WOLFERT
Sampler(s)/Affiliation D. M[illegible] / ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: VOMC [illegible]/HCL	APP 2000 [illegible]	Gr+B	ST. T.A.T.			Remarks	Total
96 TOWER INF	L	[illegible] 1125		3							3
96 TOWER EFF	↓	1130		3							3
WELL 1		[illegible]		3							3
WELL 17		1217		3							3
WELL 17 MS		1217		3							3
WELL [illegible] MSD		[illegible]		3							3
WELL 1[illegible]		12[illegible]		3							3
WELL 3		1342		3							3
WELL 19		1458		3							3
REP 171202				3						REP OFF WELL 19	3
102 TOWER INF.		1505		3							3
102 TOWER EFF		1510		3							3
GM-75D-2		1400		3							3
GM-33D-2		1100		3							3
TB 12-17-02	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 45

Relinquished by: [signature]	Organization: ARCADIS	Date 12/17/02	Time 6:00	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks:
ATTN: MIKE PERRY PLEASE USE WELL 17 FOR AW MS/MSD QA/QC SAMPLE
REPORT TO MELISSA [illegible]

Delivery Method: ☐ In Person ☒ Common Carrier [illegible] (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page _____ of _____

Project Number/Name NY 001464.0408.00002

Project Location BATH PAGE NY

Laboratory COLUMBIA ANALYTICAL SDG

Project Manager MIKE WOLFORD

Sampler(s)/Affiliation G.W. V.R

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40 ml VOA Vial 524.2 (HCL)						Remarks	Total
BPOW-4-1	W	12.18.08		3							3
BPOW-4-2	W	"		3							3
TB 12-18-08	W	"		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 9

Relinquished by: [signature]	Organization: ARCADIS	Date 12/18/08	Time 6:05	Seal Intact? Yes No N/A
Received by: _____	Organization: _____	Date / /	Time _____	
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact? Yes No N/A
Received by: _____	Organization: _____	Date / /	Time _____	

Special Instructions/Remarks: REPORT TO MELISSA RIBAUDO

Delivery Method: ☐ In Person ☑ Common Carrier FED EX ☐ Lab Courier ☐ Other _____

SPECIFY SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No.

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY001464.0408.00002
Project Location BETHPAGE NY
Laboratory COLUMBIA ANALYTICAL SERV
Project Manager MIKE WOLFERT
Sampler(s)/Affiliation G.W. VR

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC 8260 (HCl)						Remarks	Total
BPOW1-1	L	12 19 08		3							3
BPOW1-2	↓	↓		3							3
BPOW1-3				3							3
TB 12 19 08				3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 12

Relinquished by: [signature]	Organization: ARCADIS	Date 12/19/08	Time 17:30	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: REPORT TO MELISSA REINOL

Delivery Method: ☐ In Person ☑ Common Carrier FED EX (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page _____ of _____

Project Number/Name NYDQW1.0108.00002

Project Location BETHPAGE NY

Laboratory COLUMBIA ANALYTICAL SRV

Project Manager MIKE WOLFORT

Sampler(s)/Affiliation GW V/C

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC 524.2 (MS)						Remarks	Total
RPOW 3-1	L	12-23-08		3							3
RPOW-3-2				9*							9*
KCP-12-23-08				3							3
TB 12-23-08				3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 18

Relinquished by: [signature]	Organization: ARCADIS	Date 12/23/08	Time 4:00	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	

Special Instructions/Remarks: REPORT TO METHOD REPORT

* PLEASE USE THIS SAMPLE FOR THE MS/MSD AND QC SAMPLE

Delivery Method: ☐ In Person ☒ Common Carrier FED EX (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. ____

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name NY001464.0408.00002
Project Location BETHPAGE NY
Laboratory COLOMBIA ANALYTICAL SERV
Project Manager MIKE WOLFERT
Sampler(s)/Affiliation G.W., VR

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC OLM 4.1 (HCl)						Remarks	Total
GM-34D	L	12-29-08		3							3
GM-34D-2	↓	↓		3							3
MW-116	↓	↓		3							3
TB12-29-08	↓	↓		3							3
FB 12-29-08	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 15

Relinquished by: [signature]	Organization: ARCADIS	Date 12/29/08	Time 3:15	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: REPORT TO MELISSA KEINOL

Delivery Method: ☐ In Person ☒ Common Carrier FED EX (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

ARCADIS

CHAIN-OF-CUSTODY RECORD

Laboratory Task Order No./P.O. No. ______ Page ____ of ____

Project Number/Name: ~~NY001464.0408 C0002~~ NORTHROP-GRUMMAN BETHPAGE WATER

Project Location: BETHPAGE NY

Laboratory: H2M

Project Manager: DUDLEY ?

Sampler(s)/Affiliation: G. WILLIAMS ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: 40ml VOA VOC HCl						Remarks	Total
GM-35D2	L	12-30-08		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 2

Relinquished by: [signature]	Organization: ARCADIS	Date 12/30/08	Time 5:00	Seal Intact?
Received by: [signature]	Organization:	Date / /	Time [illegible]	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks:

Delivery Method: ☐ In Person ☐ Common Carrier ______ (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page ____ of ____

Project Number/Name NY001464.0408.00002

Project Location BETHPAGE NY

Laboratory COLUMBIA ANALYTICAL SERV

Project Manager MIKE WOLFERT

Sampler(s)/Affiliation G.W.

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: HOMI VOA VOC 8260 4.1 (HCl)						Remarks	Total
GM-20D	L	12-30-08		3							3
GM-20I				3							3
GM-350-2				9*							9*
GM-21I				3							3
REP123008				3							3
TB-12-30-08				3							3
DUPOSAL	↓	↓		3							3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 27

Relinquished by: [signature]	Organization: ARCADIS	Date 12/30/08	Time 5:30	Seal Intact?	Yes No N/A
Received by: _____	Organization: _____	Date / /	Time _____		
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?	Yes No N/A
Received by: _____	Organization: _____	Date / /	Time _____		

Special Instructions/Remarks: * PLEASE USE THIS SAMPLE FOR ANY MS/MSD QA/QC SAMPLE

REPORT TO MELISSA REDICK

Delivery Method: ☐ In Person ☐ Common Carrier _____ SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY