ATTACHMENT 4

IMPOUNDMENT 2 BASELINE GROUNDWATER MONITORING PROGRAM

FINAL REPORT

American Cyanamid Superfund Site

Bridgewater, New Jersey

540484

August 2014

Project No. 103-86245

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Table of Contents

1.0 INTRODUCTION 1

2.0 BASELINE GROUNDWATER MONITORING PROGRAM 2

3.0 ESTABLISHMENT OF THE MONITORING NETWORK 3
3.1 Overburden Monitoring Well Installation 3

4.0 GROUNDWATER QUALITY MONITORING 5
4.1 PID Monitoring/Groundwater Elevation Measurements 5
4.2 Data Loggers/Water Quality Indicator Measurements 5
4.3 Groundwater Monitoring 6
4.3.1 Field Sampling Procedures 6
4.4 Groundwater Monitoring Results 7

5.0 CONCLUSIONS 12

6.0 REFERENCES 13

List of Tables

Table 4-1 Monitoring Program Summary
Table 4-2 Summary of Monitoring Well Construction Information
Table 4-3 Summary of Groundwater Elevations
Table 4-4 Summary of PID and Water Quality Indicator Measurements
Table 4-5 Summary of Groundwater Field Parameter Measurements
Table 4-6 Summary of Validated Groundwater Analytical Results

List of Figures

Figure 4-1 Site Location Map
Figure 4-2 Monitoring Location Map

List of Appendices

Appendix 4-1 Impoundment 2 Piezometer Well Construction Information
Appendix 4-2 Groundwater Quality Trends
Appendix 4-3 Groundwater Sampling Field Forms
Appendix 4-4 Groundwater Analytical Result Trends
Appendix 4-5 Data Usability Summary Report

1.0 INTRODUCTION

This Impoundment 2 Baseline Groundwater Monitoring Program (Impoundment 2 BGMP) Final Report has been prepared in support of the Statement of Work for developing a Focused Feasibility Study (FFS) for Operable Unit 8 (OU8) at the American Cyanamid Superfund Site (Site) under the March 18, 2013, Administrative Settlement Agreement and Order of Consent for Remedial Design, OU4 and Focused Feasibility Study, OU8. The Site is owned by Wyeth Holdings LLC (WH), formerly known as Wyeth Holdings Corporation. WH is a subsidiary of Pfizer Inc. (Pfizer). Golder Associates Inc. (Golder Associates) has been retained by Pfizer, on behalf of WH, to perform the Impoundment 2 BGMP at the Site located in Bridgewater, New Jersey as shown on Figure 4-1.

This Impoundment 2 BGMP Report presents the results of field activities from initiation through completion which was performed in accordance with the Impoundment 2 Baseline Groundwater Monitoring Work Plan (BGMWP; Golder, 2013a)[1]. The objective of the Impoundment 2 BGMWP was to install a new piezometer network proximate to Impoundment 2 and implement a monitoring program designed to provide information to identify any potential groundwater impacts attributable to the OU8 Pilot Study. The following sections of this Final Report summarize the Impoundment 2 BGMP field activities, field investigation procedures, and field measurement results

[1] The Impoundment 2 BGMWP dated October 2013 incorporates USEPA comments provided in emails dated August 1, 2013, and September 16, 2013.

2.0 BASELINE GROUNDWATER MONITORING PROGRAM

The Impoundment 2 BGMP supports the OU8 Pilot Study by monitoring overburden wells located proximate to Impoundment 2 for parameters that would indicate changes in groundwater quality related to OU8 Pilot Study activities. Table 4-1 details the groundwater purge and sampling methods employed for each monitoring location along with the analytical parameters and Table 4-2 presents the monitoring point construction information. As detailed in Table 4-1, the Impoundment 2 BGMP included measurement of groundwater elevation levels, photo-ionization detector (PID) measurements, water quality indicator parameter measurements, and collection of analytical samples for site-specific volatile organic compounds (VOCs), site-specific semi-volatile organic compounds (SVOCs), and site-specific total metals (including mercury) at each monitoring location[2].

The OU8 Pilot Study *in situ* Thermal Treatment (ISTT) heaters were energized for the first time on February 28, 2014 and the thermal portion of the pilot study was completed on May 9, 2014. The data presented in this Final Progress Report evaluate the potential effects of the active ISTT system on the proximate groundwater. The *in situ* solidification and stabilization treatment of the acid tar materials in caissons #3 and #1 was completed on May 29 and May 30, 2014, respectively.

[2] Only PZ-12-7, PZ-12-8, PZ-12-9, PZ-12-10, and PZ-12-11 were sampled for analytical parameters in accordance with the approved BGMWP.

3.0 ESTABLISHMENT OF THE MONITORING NETWORK

Seven piezometers[3] were installed to the North, South, East, and West of Impoundment 2, at locations shown on Figure 4-1, which effectively monitored the perimeter of Impoundment 2[4]. Furthermore, several existing monitoring locations near Impoundment 2, currently included in the semiannual groundwater monitoring program (SGMP; Golder, 2012), were selected to provide a more extensive monitoring network. This collective group of piezometers provided data used in the evaluation of overburden groundwater quality related to the OU8 Pilot Study.

3.1 Overburden Monitoring Well Installation

PZ-12-7; PZ-12-8; PZ-12-9; PZ-12-10; PZ-12-11; OTBW-14; and OTBW-15 were installed in September 2013 proximate to Impoundment 2 to establish the monitoring network. These piezometers were installed by hollow stem auger (HSA) methods. All piezometers were screened in the Sand and Gravel unit, beginning approximately 10 ft-bgs, which is the most significant flow zone of overburden groundwater in the South Area (Golder, 2014a). The screen interval was determined in the field by a Golder geologist based on the logged soil samples. Attempts were made so the screen interval would be constructed such that five feet of screen is set in the unsaturated zone and five feet of screen is saturated. NJDEP well construction requirements precluded construction of five feet of unsaturated screen in the following piezometers[5]: PZ-12-7, PZ-12-8, and PZ-12-11. The piezometers were constructed using 2-inch diameter PVC with a 10-foot long, 0.010-slot PVC screen. Construction information is presented in Table 4-2 and well construction logs are provided in Appendix 4-1.

Following the NJDEP required 48-hour grout curing period, the piezometers were developed by a New Jersey licensed driller using surging and pumping techniques. Development logs are provided in Appendix 4-1. The following issues were encountered at wells PZ-12-9 and PZ-12-11:

- PZ-12-9 and PZ-12-11 were not developed at the same time as the other piezometers, due to the presence of light non-aqueous phase liquid (LNAPL) during installation. LNAPL was confirmed by positive dye tests in the field during drilling. These piezometers were allowed to equilibrate to adequately gauge the LNAPL accumulation in the piezometers prior to development.

The as-built location was surveyed by a New Jersey licensed land surveyor. The NJDEP Forms A and B are included in Appendix 4-1. As presented in Table 4-2, the horizontal survey coordinates are in the

[3] Two piezometers (OTBW-14 and OTBW-15) were installed as geotechnical borings for the Site Wide Pre-design Investigation (PDI). The borings were completed as piezometers to provide further monitoring coverage.

[4] As discussed in the Work Plan, the locations were evaluated against the New Jersey Flood Hazard Area Control Act (N.J.A.C 7:13) and the New Jersey Regulated activities in Freshwater Wetlands and State Open Waters (N.J.A.C. 7:7A-2.2). The locations of PZ-12-9 and PZ-12-10 are within a wetland transitional area.

[5] PZ-12-8 and PZ-12-11 piezometer construction contains unsaturated portions of screen, but less than five feet as specified in the Impoundment 2 BGMWP.

New Jersey State Plane North American Datum of 1983 (NAD83), and the vertical survey datum are in the National Geodetic Vertical Datum of 1988 (NGVD88).

4.0 GROUNDWATER QUALITY MONITORING

Groundwater quality monitoring in support of the OU8 Pilot Study is comprised of three components: 1) PID/groundwater elevation measurements; 2) water quality indicator measurements; and, 3) groundwater monitoring. The frequency and schedule of the field activities are shown in Table 4-1. Round 5 groundwater analytical data were collected on May 21 and 22, 2014. The Round 5 data represent groundwater conditions after completion of the ISTT phase of pilot study. All field activities were performed in accordance with the procedures outlined in the Impoundment 2 BGMWP.

4.1 PID Monitoring/Groundwater Elevation Measurements

A synoptic round of groundwater elevation measurements and PID measurements were obtained from PZ-12-3, PZ-12-4, PZ-12-5, PZ-12-6, PZ-12-7, PZ-12-8, PZ-12-9, PZ-12-10, PZ-12-11, OBTW-14, OBTW-15, 01-MW-01, 01-MW-02, and 01-MW-03 weekly as a screening tool to assess any changes associated with volatilization of compounds from groundwater as a result of the OU8 Pilot Study. A summary of the groundwater elevations and PID measurements are provided in Tables 4-3 and 4-4, respectively.

4.2 Data Loggers/Water Quality Indicator Measurements

In-well data loggers deployed in PZ-12-7, PZ-12-8, and PZ-12-10 monitored temperature, pH, specific conductivity, dissolved oxygen, turbidity[6], oxidation reduction potential (ORP), and fluctuations in groundwater elevation at regular time intervals. Data loggers that recorded temperature, pH, and fluctuations in groundwater pressure were deployed in PZ-12-11 and PZ-12-9. Trend graphs for all of the aforementioned data loggers are included in Appendix 4-2.

Water quality indicators were obtained biweekly from the monitoring locations that did not have data loggers deployed. These locations, PZ-12-3, PZ-12-4, PZ-12-5, PZ-12-6, OTBW-14, OTBW-15, 01-MW-01, 01-MW-02, and 01-MW-03[7], provided a more extensive monitoring network to assess any changes associated with the OU8 Pilot Study. A field decontaminated water quality meter was lowered to the midpoint of the screen interval and the meter was allowed to equilibrate prior to recording readings. Table 4-4 shows these biweekly measurements and Appendix 4-2 shows fluctuations over time.

The above parameters were monitored and logged through completion of the associated ISTT phase of the OU8 Pilot Study, coinciding with the final (Round 5 – Post ISTT) groundwater monitoring event. This

[6] Manufacturer specifications indicate that turbidity measurements may be falsely elevated as the sensor configuration causes light emitted from the turbidity sensor to reflect off of the RDO cable.

[7] Water quality indicators for piezometers with in-well data loggers (PZ-12-7, PZ-12-8, PZ-12-9, PZ-12-10, and PZ-12-11) were recorded from the data logger. Additional water quality indicators were recorded from these piezometers.

continuous data collection monitored any effects of the pilot study activities on the proximate groundwater.

4.3 Groundwater Monitoring

Groundwater samples were collected from PZ-12-7, PZ-12-8, PZ-12-9, PZ-12-10, and PZ-12-11 in accordance with the Impoundment 2 BGMWP. As detailed in the Impoundment 2 BGMWP, samples were collected for analytical parameters consistent with the Semi-Annual Groundwater Monitoring Program (SGMP) and Baseline Groundwater Monitoring Work Plan (BGMP; Golder, 2013c)[8]. Groundwater samples were collected at OU8 Pilot study milestones to monitor any effects caused by the various phases of the Pilot activities. The following groundwater monitoring events were conducted:

- Round 1A/1B Baseline (October 2013)
- Round 2 Post-Clay Investigation (October 2013)
- Round 3 Post-Caisson Installation (November 2013)
- Round 4 Mid-ISTT Phase (April 2014)
- Round 5 Post-ISTT Phase (May 2014)

The groundwater analytical results predominately discussed as part of this report were collected to represent the post-ISTT phase of the OU8 Pilot Study activities and are referred to as Round 5. These Round 5 data were used to compare data collected during the Impoundment 2 BGMP to evaluate any potential effects of the OU8 Pilot study on the overburden groundwater proximate to Impoundment 2.

4.3.1 Field Sampling Procedures

All groundwater samples were collected in accordance with the Impoundment 2 BGMWP and the NJDEP Field Sampling Procedures Manual (NJDEP, 2005). Table 4-1 presents the monitoring plan for the Site as detailed in the Impoundment 2 BGMWP and Figure 4-1 details the well locations. The primary purge and sampling method employed at PZ-12-7, PZ-12-8, and PZ-12-10 was the low flow purge and sampling method. As discussed in previous progress reports, PZ-12-9 and PZ-12-11 samples were obtained for all monitoring events as grab samples via dedicated Teflon bailers due to the presence of LNAPL. The grab samples were obtained by lowering a dedicated bailer into the screened interval of the piezometers.

Field forms detailing monitoring well purge and sampling activities are included in Appendix 4-3. Table 4-5 presents the final stabilized field parameter measurements [pH, dissolved oxygen (DO), specific conductivity, temperature, oxidation reduction potential (ORP), and turbidity] recorded by Golder

[8] Semi-annual groundwater sampling of monitoring wells in the area surrounding Impoundment 2 has indicated groundwater impacts in the Sand and Gravel unit that are consistent with Impoundment 2 Constituents of Concern (COCs; Golder 2013a), which are primarily VOCs, SVOCs and select inorganics (Blasland, Bouck & Lee 1990).

Associates (NJ Laboratory Certification Number 03027) for groundwater monitoring across all five monitoring events.

In total, 25 primary groundwater samples were collected as part of Impoundment 2 BGMP monitoring activities; and the following Quality Assurance/Quality Control (QA/QC) samples[9]:

- Seven (7) trip blanks were sent along with VOC samples;
- Five (5) rinsate blanks were collected from decontaminated, non-dedicated submersible pumps;
- Four (4) field duplicates; and,
- Four (4) matrix spike/matrix spike duplicates were collected.

All samples were collected in laboratory supplied pre-preserved bottles that were labeled prior to sample collection. The samples were placed in sample coolers with ice, chilled to approximately 4 °C, and transferred under chain-of-custody procedures to laboratory personnel. All data were evaluated in accordance with the Impoundment 2 BGMWP. The results of the data evaluations are provided in the data usability summary report, provided as Appendix 4-5. In addition, the Electronic Data Deliverables will be provided in the NJDEP Hazsite File Format (NJDEP copies only) and the USEPA Region II File Format (USEPA copies only).

4.4 Groundwater Monitoring Results

The following section includes a discussion of the Round 5 groundwater analytical results which represent groundwater conditions post-ISTT, a discussion of the groundwater concentrations over the duration of the monitoring program, and a discussion of the water quality indicators at each monitoring location. For reference, data logger water quality indicator trends are included in Appendix 4-2, manual measurement water quality indicator data are included in Table 4-4, and water quality indicator data at the time of sampling are included in Table 4-5. All groundwater analytical data collected as part of the Impoundment 2 BGMP are included in Table 4-6 and concentration vs. time trends of all compounds which exceed the NJDEP GWQS are included in Appendix 4-4.

Round 5 groundwater results generally contain the following characteristics:

- Round 5 groundwater analytical data exceedances of the NJDEP GWQS are consistent with groundwater analytical data exceedances of the NJDEP GWQS of Rounds 1 through 4.
- With the exception of a low-concentration exceedance of the NJDEP GWQS of benzene at PZ-12-8, VOC and SVOC exceedances of the NJDEP GWQS are not present to the north of Impoundment 2 (i.e., PZ-12-7 and PZ-12-8). This correlates with the understanding that groundwater flow in this area is southerly, towards the Raritan River.

[999] Additional Impoundment 2 BGMP specific QA/QC were not collected for Round 2 as these samples were collected as part of a integrated field program which included SGMP, BGMP, and Impoundment 2 BGMP groundwater monitoring.

Aluminum, iron, manganese, and sodium exceed NJGWQS in these upgradient piezometers. These constituents have been historically and consistently detected in monitoring wells in the area of Impoundment 2 during SGMP sampling events.

- VOC, SVOC, and metals exceedances of the NJDEP GWQS in PZ-12-9, PZ-12-10, and PZ-12-11 are similar to adjacent monitoring wells included in the SGMP. 1,2-dichlorobenzene, 1,4-dichlorobenzene, benzene, chlorobenzene, toluene, xylenes (total), 2-methylnaphthalene, aniline, naphthalene, nitrobenzene, aluminum, arsenic, beryllium, cadmium, copper, iron, lead, manganese, mercury, nickel, and sodium exceed NJGWQS for at least one of these three locations during the Round 5 monitoring event.

The Round 5 groundwater analytical data were compared to the analytical data obtained from the previous Impoundment 2 BGMP groundwater monitoring events to determine if increases/decreases in concentrations occurred as a result of the Pilot Study. The groundwater analytical concentration versus time trends of all compounds which exceed the NJDEP GWQS in any of the monitoring locations, included as Appendix 4-4, demonstrate the following characteristics:

- As shown in Table 4-6 and Appendix 4-4, at all locations, no increases in constituent concentrations were observed as a result of the pilot study activities, with few exceptions. Increases in concentration observed at monitoring locations which cannot be solely attributed to the pilot study include:
  - Acetone concentrations at PZ-12-7 increased slightly. Acetone was not detected during Rounds 1 through 4, but was detected during Round 5 monitoring (20.4 µg/L). Acetone in PZ-12-7 is below NJDEP GWQS (6,000 µg/L).
  - Sodium concentrations at PZ-12-7 and PZ-12-8 increased since the beginning of monitoring. Sodium did not exceed NJDEP GWQS (5,000 µg/L) in PZ-12-7 or PZ-12-8 during any round of monitoring, with the exception of an anomalously high result in PZ-12-7 (97,700 µg/L) during Round 5.
  - pH has increased at all locations since the beginning of monitoring, most notably PZ-12-9.
- As shown in Table 4-6, VOC and SVOC exceedances of the NJDEP GWQS are not present in upgradient monitoring wells (PZ-12-7 and PZ-12-8). Low concentration benzene exceedances of the NJDEP GWQS were present during the Round 3 monitoring event in both piezometers (PZ-12-7 and PZ-12-8) and Round 5 (PZ-12-8), but exceedances of the NJDEP GWQS were not present during any other monitoring events.
- As shown in Table 4-5, Table 4-6, and Appendix 4-4, metals concentrations in upgradient monitoring wells remain stable, with the exception of sodium which has displayed an increase in concentration over time. pH, at the time of sampling, has increased slightly in these piezometers. It is unclear if these fluctuations are attributable to the pilot study or to temporal fluctuations; however the anticipated change due to pilot study activities would have been a decrease in pH.
- As shown in Table 4-5, pH, at the time of sampling, in downgradient piezometers PZ-12-9 and PZ-12-11 has increased since the beginning of monitoring. The pH in PZ-12-10 has remained stable since the beginning of monitoring. It is unclear if fluctuations PZ-12-9 and PZ-12-11 are attributable to the pilot study or to temporal fluctuations since upgradient piezometers also displayed a slight pH increase: however the anticipated change due to pilot study activities would have been a decrease in pH. It should be noted that pH in PZ-12-9 increased by more than 2 standard units (SUs). The pH increase in PZ-12-9 is confirmed by the data logger measurements provided in Appendix 4-2. The pH recorded via the in-well data loggers measured an initial pH of 2.72 SU and

4.78 SU final pH, an increase of 2.06 SU. This pH change is consistent with decreases in VOC, SVOC, and metals concentrations and is likely attributed presence/absence of LNAPL.

- As shown in Table 4-6 and Appendix 4-4, it is observed that VOC, SVOC, and metal concentrations decreased in downgradient monitoring wells (PZ-12-9, PZ-12-10, and PZ-12-11). To illustrate the changes in concentrations, select prevalent constituents which exceed the NJDEP GWQS are discussed below[10]. It should be noted that groundwater elevations were higher during Round 5 monitoring when compared to pre-ISTT (Round 3) groundwater conditions, by approximately 2.66 feet when averaged.
  - Benzene concentrations in PZ-12-9, PZ-12-10, and PZ-12-11 decreased 99.4%, 74.8%, and 89.1%, respectively.
  - 1,2-Dichlorobenzene concentrations in PZ-12-9, PZ-12-10, and PZ-12-11 decreased 98.3%, 64.9%, and 88.5%, respectively.
  - Toluene concentrations in PZ-12-9, PZ-12-10, and PZ-12-11 decreased 95.6%, 68.4%, and 92.5%, respectively.
  - Naphthalene concentrations in PZ-12-9, PZ-12-10, and PZ-12-11 decreased 88.7%, 77.2%, and 98.3%, respectively.
  - Acetophenone concentrations in PZ-12-9, PZ-12-10, and PZ-12-11 decreased 95.2%, 83.7% and 98.8%, respectively.
  - Aluminum concentrations in PZ-12-9, PZ-12-10, and PZ-12-11 decreased 76.3%, 71.9% and 70.0%, respectively.
  - Arsenic concentrations in PZ-12-9 and PZ-12-11 decreased 41.2% and 86.9%, respectively.
  - Iron concentrations in PZ-12-9 and PZ-12-11 decreased 54.8% and 67.0%, respectively.

Water quality indicator parameter data are intended to support the OU8 Pilot Study for evaluation of potential groundwater impacts during the Pilot Study actions. Data logger water quality indicator trends are included in Appendix 4-2, manual measurement water quality indicator data are included in Table 4-4, and water quality indicator data at the time of sampling are included in Table 4-5. Twenty (20) weeks of water quality indicator data (recorded via in-well data loggers and water quality meters) were collected prior to the initiation of the ISTT phase (baseline) and thirteen (13) weeks of water quality indicator data were collected after the initiation of the ISTT phase (post-startup). As noted in the June 15, 2014 Progress Report, there was noticeable variability in the water quality indicator parameters over the course of the baseline monitoring period (prior to the initiation of the ISTT phase). Groundwater temperature appears to be driven largely by changes in ambient air temperature, and there is a strong correlation between precipitation events and inflections in the majority of parameter trends, e.g., dissolved oxygen. These inflections often return rapidly to baseline values after a short lag period.

[10] Round 1A/1B, Round 2, and Round 3 represent pre-ISTT phase conditions. Concentrations were generally consistent prior to ISTT startup at all monitoring locations. Since all three monitoring rounds represent pre-ISTT, the highest concentrations observed during Rounds 1 through 3 were used for calculation purposes.

Notable inflections that were recorded via in-well data loggers at the end of the program and did not return to baseline due to the end of the program include specific conductivity in PZ-12-7, ORP in PZ-12-8, and ORP in 01-MW-01. These fluctuations are likely attributable to precipitation events and fluctuations in groundwater elevation, which are discussed in further detail below:

- Specific conductivity in PZ-12-7 over the course of the study displayed inflections immediately following precipitation events. PZ-12-7 is positioned in a low-lying area, pooling of storm water was observed and common during the duration of the monitoring program. The large specific conductivity inflection observed in PZ-12-7 occurred following several rain events within a short time period. The specific conductivity increase is likely attributed to infiltration of precipitation or storm water run-off, consistent with previous observations in this well.
- ORP inflections in PZ-12-8 are likely attributed to precipitation events. ORP measured by data loggers in all monitoring locations displayed significant variability over the duration of the program, marked by rapid decreases as a result of precipitation events. ORP in PZ-12-8 gradually decreases over a two week period which coincides with a period of significant precipitation. Other upgradient monitoring locations (i.e., PZ-12-3 and PZ-12-5) displayed a similar decrease in ORP, as recorded by manual measurement. The groundwater elevation in PZ-12-8 displays a similar inflection when compared to ORP, marked by a rapid increase and gradual decrease over the same time period.
- ORP inflections in 01-MW-01 are likely attributed to fluctuations in groundwater elevation. ORP gradually begins to increase in 01-MW-01 at the same time that groundwater elevation begins to increase. The groundwater elevation increase is during a period of significant precipitation events. This more gradual increase in ORP is not consistent with other down-gradient monitoring locations; however, 01-MW-01 is located near the Removal Action Area Groundwater Collection System (RAA GWCS) in an area with strong hydraulic gradients toward Sump 1A and potentially more influenced by precipitation and recharge.

The ISTT activities associated with the Pilot Study likely have not influenced the surrounding groundwater quality indicator parameters. No inflections in the water quality parameters are interpreted to correlate with the operation of the ISTT system. Similar to the baseline period (prior to system startup), precipitation events appear to have the greatest impact on the groundwater quality indicator parameters. During the operation of the ISTT system, there were no appreciable increases in groundwater temperature at any piezometers in the monitoring program. As noted during the baseline monitoring period, the groundwater temperature is influenced primarily by the ambient air temperature. The colder ambient air temperatures during the winter season resulted in lower groundwater temperatures in the overburden surrounding Impoundments 1 and 2. As ambient air temperatures increased, groundwater temperatures exhibited a similar increasing trend. pH remained stable in upgradient and downgradient monitoring locations. It is believed that increased temperature and depressed pH would be the strongest indicators of impacts related to the pilot-scale study. Conductivity remained stable in upgradient and downgradient monitoring locations. Conductivity inflections prior to and post startup quickly return to baseline conditions and are attributable to precipitation events. Turbidity, dissolved oxygen, and oxidation reduction potential (ORP) show the most variability during baseline monitoring and post startup

monitoring. Similar to temperature, pH, and conductivity, these inflections quickly return to baseline conditions and are a result of precipitation events. PID readings remained stable in all monitoring locations, most notably the piezometers closest to the ISTT zone. As expected with seasonal fluctuations, groundwater elevations increased over time since monitoring began in October 2013.

5.0 CONCLUSIONS

The OU8 Pilot Study has not impacted water quality indicator parameters proximate to Impoundments 1 and 2. Consistent with the monitoring program provided in the approved BGMWP (Golder, 2013a), all field activities in support of the ISTT phase of the OU8 Pilot Study were completed with the collection of the Round 5 groundwater samples and retrieval of the in-well data loggers. The water quality indicator parameters were monitored and logged through completion of the OU8 Pilot Study to monitor potential effects on the groundwater proximate to Impoundment 2. Similar to the baseline monitoring period, natural influences (such as ambient air temperature and precipitation events) appear to have had the greatest impact on the water quality indicator parameters. The groundwater analytical results indicate that there were no negative impacts to groundwater quality from the OU8 Pilot Test activities proximate to Impoundment 2. Post-ISTT groundwater analytical results demonstrate that, except for limited instances discussed above (e.g. acetone in PZ-12-7, sodium in PZ-12-7, etc.), no increases in concentrations were observed when compared to baseline concentrations. Post-ISTT groundwater analytical results also demonstrate reduced concentrations of VOCs, SVOCs, and metals in downgradient wells when compared to previous monitoring events and baseline data. Upgradient monitoring wells did not demonstrate increases or decreases in concentration. The pH, at the time of sampling and as measured via in-well data loggers, in PZ-12-10 increased 2.0 SUs. Consistent with the South Area, groundwater elevation has increased over time in all piezometers, upgradient and downgradient of Impoundment 2.

6.0 REFERENCES

Golder, 2012. Revised Site Wide Groundwater Monitoring Work Plan, American Cyanamid Superfund Site, Bridgewater, New Jersey.

Golder, 2013a. Impoundment 2 Baseline Groundwater Monitoring Work Plan, American Cyanamid Superfund Site, Bridgewater, New Jersey.

Golder, 2013c. Baseline Groundwater Monitoring Work Plan, American Cyanamid Superfund Site, Bridgewater, New Jersey.

Golder, 2014a. First Half 2014 Semiannual Groundwater Monitoring Report, American Cyanamid Superfund Site, Bridgewater, New Jersey.

New Jersey Department of Environmental Protection, 2005. Field Sampling Procedures Manual

United States Environmental Protection Agency, 2011. Administrative Settlement Agreement and Order on Consent (EPA Docket No, CERCLA-02-2011-2015) dated July 19, 2011

Table 4-1
Monitoring Program Summary
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Well Type	Location	Purge Method	Water Level	Water Quality Indicator Readings	PID	Volatile Organic Compounds	Semivolatile Organic Compounds	Total Metals
OTBW-14	Overburden	Impoundment 2	N/A	X	X	X			
OTBW-15	Overburden	Impoundment 2	N/A	X	X	X			
01-MW-01	Overburden	Impoundment 2	N/A	X	X	X			
01-MW-02	Overburden	Impoundment 2	N/A	X	X	X			
01-MW-03	Overburden	Impoundments 1 & 2	N/A	X	X	X			
PZ-12-3	Overburden	Impoundments 1 & 2	N/A	X	X	X			
PZ-12-4	Overburden	Impoundments 1 & 2	N/A	X	X	X			
PZ-12-5	Overburden	Impoundment 1	N/A	X	X	X			
PZ-12-6	Overburden	Impoundment 1	N/A	X	X	X			
PZ-12-7	Overburden	Impoundment 2	Low flow submersible pump	X	X	X	X	X	X
PZ-12-8	Overburden	Impoundment 2	Low flow submersible pump	X	X	X	X	X	X
PZ-12-9	Overburden	Impoundment 2	Bailer/Grab	X	X	X	X	X	X
PZ-12-10	Overburden	Impoundment 2	Low flow submersible pump	X	X	X	X	X	X
PZ-12-11	Overburden	Impoundment 2	Bailer/Grab	X	X	X	X	X	X

Notes

1) PZ-12-7, PZ-12-8, PZ-12-9, PZ-12-10, and PZ-12-11 were completed as part of the Impoundment 2 Baseline Groundwater Monitoring Work Plan for the OU-8 Pilot study. PZ-12-5 will be sampled on a contingency basis pending changes in PID or groundwater elevation measurments.

2) OTBW-14 and OTBW-15 are geotechnical borings completed as part of the Site Wide Predesign Investigation (PDI). The geotechnical borings were completed as piezometers for monitoring.

3) PZ-12-7, PZ-12-8, and PZ-12-10 had down-hole data loggers that continuously record fluctuations in temperature, pH, specific conductivity, dissolved oxygen, turbidity , oxidation reduction potential (ORP), and changes in groundwater elevation. PZ-12-9 and PZ-12-11 had data loggers that continuously record fluctuations in temperature, pH, and changes in groundwater elevation. PID measurements were collected weekly.

4) OTBW-14, OTBW-15, 01-MW-01, 01-MW-02, 01-MW-03, PZ-12-3, PZ-12-4, PZ-12-5, and PZ-12-6 received biweekly water quality indicator readings; PID measurements and depth to water/NAPL measurements were recorded weekly.

Table 4-2
Summary of Monitoring Point Construction Information
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Survey Information			Construction Details			Screened Interval Depth and Elevation			
Well I.D.	Permit Number	Northing[1]	Easting[1]	Top of Inner Casing Elevation (ft)[2]	Total Well Depth (ft btoc)	Screen Length (ft)	Bottom of Well Elevation (ft)[2]	Top (ft btoc)	Bottom (ft btoc)	Top (ft)[2]	Bottom (ft)[2]
Overburden Monitoring Wells											
01-MW-01[3]	25-35176	626229.5246	478205.6868	26.56	15.60	8.30	10.96	7.30	15.60	19.26	10.96
01-MW-02[3]	25-35177	626312.9039	478332.0417	27.27	18.10	10.10	9.17	8.00	18.10	19.27	9.17
01-MW-03[3]	25-35178	626501.3641	478560.2287	26.23	17.90	10.40	8.33	7.50	17.90	18.73	8.33
PZ-12-3	25-56207	626983.6528	478334.3732	29.12	14.81	10.0	14.31	4.81	14.81	24.31	14.31
PZ-12-4	25-56208	626543.1206	478461.9716	27.71	15.70	10.0	12.01	5.70	15.70	22.01	12.01
PZ-12-5	25-56209	626896.9368	478727.8407	26.80	14.68	10.0	12.12	4.68	14.68	22.12	12.12
PZ-12-6	25-56210	626721.7911	478790.1501	26.69	15.17	10.0	11.52	5.17	15.17	21.52	11.52
PZ-12-7	E201313489	626847.62	478088.24	27.56	14.46	10.0	13.10	4.46	14.46	23.10	13.10
PZ-12-8	E201313490	626896.99	478238.59	32.08	15.29	10.0	16.79	5.29	15.29	26.79	16.79
PZ-12-9	E201313491	626443.46	478213.88	26.38	14.58	10.0	11.80	4.58	14.58	21.80	11.80
PZ-12-10	E201313492	626520.04	478361.43	29.84	18.34	10.0	11.50	8.34	18.34	21.50	11.50
PZ-12-11	E201313814	626550.26	478098.40	35.07	17.57	10.0	17.50	7.57	17.57	27.50	17.50

Abbreviations:
ft btoc - feet below top of casing
ft msl - feet mean sea level
NA - Not available
NM - Not measured

Checked: LC 12/13/2013

Notes:
1) The horizontal datum references the New Jersey State Plane System (feet), North American Datum of 1983 (NAD 83)
2) The vertical datum references the North American Vertical Datum of 1988 (NAVD 88).
3) 01-MW-01, 01-MW-02, and 01-MW-03 well construction information was confirmed by Golder Associates via down-hole camera survey in February and March 2013.
4) PZ-12-7 = PZ-12-07, PZ-12-8 = PZ-12-08, and PZ-12-9 = PZ-12-09

Table 4-3
Summary of Groundwater Elevations
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	LNAPL (ft bmp)	DTW (ft bmp)	"Tarry"-like substance (ft bmp)	Depth to Bottom (ft bmp)	Monitoring Point Elevation (ft msl)[1]	Groundwater Elevation (ft msl)[1]
01-MW-01	10/11/2013	12:00	--	10.16	--	--	26.56	16.40
01-MW-02	10/11/2013	12:00	--	10.35	--	--	27.27	16.92
01-MW-03	10/11/2013	12:00	--	6.14	--	--	26.23	20.09
OBTW-14	10/11/2013	12:00	--	6.95	--	--	27.14	20.19
OBTW-15	10/11/2013	12:00	--	5.59	--	--	27.22	21.63
PZ-12-3	10/11/2013	12:00	--	7.09	--	--	29.12	22.03
PZ-12-4	10/11/2013	12:00	Visual	7.57	15.01	16.61	27.71	20.14
PZ-12-5	10/11/2013	12:00	--	6.00	--	--	26.80	20.80
PZ-12-6	10/11/2013	12:00	--	6.69	--	--	26.69	20.00
PZ-12-7	10/11/2013	12:00	--	5.19	--	--	27.56	22.37
PZ-12-8	10/11/2013	12:00	--	9.82	--	--	32.08	22.26
PZ-12-9	10/11/2013	12:00	Visual	6.60	Visual	--	26.38	19.78
PZ-12-10	10/11/2013	12:00	Visual	9.80	Visual	18.46	29.84	20.04
PZ-12-11	10/11/2013	12:00	Visual	14.82	Visual	--	35.07	20.25
01-MW-01	10/18/2013	12:09	--	10.07	--	--	26.56	16.49
01-MW-02	10/18/2013	12:14	--	10.39	--	--	27.27	16.88
01-MW-03	10/18/2013	11:07	--	6.33	--	--	26.23	19.90
OBTW-14	10/18/2013	11:03	--	7.11	--	--	27.14	20.03
OBTW-15	10/18/2013	10:53	--	5.67	--	--	27.22	21.55
PZ-12-3	10/18/2013	10:35	--	7.22	--	--	29.12	21.90
PZ-12-4	10/18/2013	12:18	--	7.71	--	--	27.71	20.00
PZ-12-5	10/18/2013	10:56	--	6.18	--	--	26.80	20.62
PZ-12-6	10/18/2013	10:59	--	6.86	--	--	26.69	19.83
PZ-12-7	10/18/2013	12:38	--	5.38	--	--	27.56	22.18
PZ-12-8	10/18/2013	12:32	--	9.97	--	--	32.08	22.11
PZ-12-9	10/18/2013	12:45	Visual	6.72	Visual	14.24	26.38	19.66
PZ-12-10	10/18/2013	11:12	--	10.01	--	--	29.84	19.83
PZ-12-11	10/18/2013	11:59	Visual	14.96	Visual	18.27	35.07	20.11
01-MW-01	10/24/2013	13:30	--	10.03	--	--	26.56	16.53
01-MW-02	10/24/2013	13:20	--	10.36	--	--	27.27	16.91
01-MW-03	10/24/2013	13:04	--	6.37	--	--	26.23	19.86
OBTW-14	10/24/2013	13:00	--	7.19	--	--	27.14	19.95
OBTW-15	10/24/2013	12:53	--	6.02	--	--	27.22	21.20
PZ-12-3	10/24/2013	13:40	--	7.41	--	--	29.12	21.71
PZ-12-4	10/24/2013	13:07	Visual	7.77	14.11	16.61	27.71	19.94
PZ-12-5	10/24/2013	12:56	--	6.29	--	--	26.80	20.51
PZ-12-6	10/24/2013	12:58	--	6.99	--	--	26.69	19.70
PZ-12-7	10/24/2013	13:52	--	5.52	--	--	27.56	22.04
PZ-12-8	10/24/2013	13:47	--	10.14	--	--	32.08	21.94
PZ-12-9	10/24/2013	13:25	Visual	6.76	Visual	14.25	26.38	19.62
PZ-12-10	10/24/2013	13:13	--	10.12	--	--	29.84	19.72
PZ-12-11	10/24/2013	14:02	Visual	15.02	Visual	18.30	35.07	20.05
01-MW-01	10/31/2013	11:30	--	10.14	--	--	26.56	16.42
01-MW-02	10/31/2013	11:35	--	10.42	--	--	27.27	16.85
01-MW-03	10/31/2013	11:06	--	6.42	--	--	26.23	19.81
OBTW-14	10/31/2013	11:09	--	7.21	--	--	27.14	19.93
OBTW-15	10/31/2013	11:15	--	5.44	--	--	27.22	21.78
PZ-12-3	10/31/2013	11:18	--	6.22	--	--	29.12	22.90
PZ-12-4	10/31/2013	11:39	--	7.87	--	--	27.71	19.84
PZ-12-5	10/31/2013	11:13	--	6.20	--	--	26.80	20.60
PZ-12-6	10/31/2013	11:11	--	7.00	--	--	26.69	19.69
PZ-12-7	10/31/2013	11:25	--	5.24	--	--	27.56	22.32
PZ-12-8	10/31/2013	11:21	--	9.41	--	--	32.08	22.67
PZ-12-9	10/31/2013	11:43	Visual	6.87	11.73	14.22	26.38	19.51
PZ-12-10	10/31/2013	11:02	--	10.14	--	--	29.84	19.70
PZ-12-11	10/31/2013	11:50	Visual	15.11	Visual	--	35.07	19.96
01-MW-01	11/7/2013	12:13	--	10.09	--	--	26.56	16.47
01-MW-02	11/7/2013	12:05	--	10.38	--	--	27.27	16.89
01-MW-03	11/7/2013	11:50	--	6.47	--	--	26.23	19.76
OBTW-14	11/7/2013	11:40	--	7.18	--	--	27.14	19.96
OBTW-15	11/7/2013	11:07	--	5.63	--	--	27.22	21.59
PZ-12-3	11/7/2013	10:35	--	6.98	--	--	29.12	22.14
PZ-12-4	11/7/2013	12:20	Visual	7.83	14.11	16.75	27.71	19.88
PZ-12-5	11/7/2013	11:13	--	6.22	--	--	26.80	20.58
PZ-12-6	11/7/2013	11:30	--	7.18	--	--	26.69	19.51
PZ-12-7	11/7/2013	11:30	--	5.55	--	--	27.56	22.01
PZ-12-8	11/7/2013	10:31	Visual	9.95	--	--	32.08	22.13
PZ-12-9	11/7/2013	10:31	Visual	6.82	Visual	14.22	26.38	19.56
PZ-12-10	11/7/2013	9:36	Visual	10.14	Visual	18.49	29.84	19.70
PZ-12-11	11/7/2013	10:08	Visual	15.06	Visual	18.21	35.07	20.01

Table 4-3
Summary of Groundwater Elevations
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	LNAPL (ft bmp)	DTW (ft bmp)	"Tarry"-like substance (ft bmp)	Depth to Bottom (ft bmp)	Monitoring Point Elevation (ft msl)[1]	Groundwater Elevation (ft msl)[1]
01-MW-01	11/14/2013	13:19	--	10.21	--	--	26.56	16.35
01-MW-02	11/14/2013	13:49	--	10.47	--	--	27.27	16.80
01-MW-03	11/14/2013	12:49	--	6.59	--	--	26.23	19.64
OBTW-14	11/14/2013	11:25	--	7.42	--	--	27.14	19.72
OBTW-15	11/14/2013	11:32	--	6.02	--	--	27.22	21.20
PZ-12-3	11/14/2013	13:08	--	7.42	--	--	29.12	21.70
PZ-12-4	11/14/2013	12:30	--	8.01	14.40	16.65	27.71	19.70
PZ-12-5	11/14/2013	13:01	--	6.44	--	--	26.80	20.36
PZ-12-6	11/14/2013	12:58	--	7.27	--	--	26.69	19.42
PZ-12-7	11/14/2013	11:44	--	5.78	--	--	27.56	21.78
PZ-12-8	11/14/2013	11:52	--	10.28	--	--	32.08	21.80
PZ-12-9	11/14/2013	12:13	Visual	7.02	Visual	14.22	26.38	19.36
PZ-12-10	11/14/2013	11:10	--	10.36	--	--	29.84	19.48
PZ-12-11	11/14/2013	12:00	Visual	15.31	Visual	18.25	35.07	< 21.67
01-MW-01	11/21/2013	10:42	--	10.26	--	--	26.56	16.30
01-MW-02	11/21/2013	10:32	--	10.59	--	--	27.27	16.68
01-MW-03	11/21/2013	10:23	--	6.73	--	--	26.23	19.50
OBTW-14	11/21/2013	10:15	--	7.59	--	--	27.14	19.55
OBTW-15	11/21/2013	9:32	--	6.28	--	--	27.22	20.94
PZ-12-3	11/21/2013	9:17	--	7.63	--	--	29.12	21.49
PZ-12-4	11/21/2013	13:42	Visual	8.12	14.32	16.65	27.71	19.59
PZ-12-5	11/21/2013	9:57	--	6.88	--	--	26.80	19.92
PZ-12-6	11/21/2013	10:05	--	7.69	--	--	26.69	19.00
PZ-12-7	11/21/2013	12:00	--	--	--	--	27.56	No WL
PZ-12-8	11/21/2013	12:00	--	--	--	--	32.08	No WL
PZ-12-9	11/21/2013	13:30	Visual	7.17	--	--	26.38	19.21
PZ-12-10	11/21/2013	12:00	--	--	--	--	29.84	No WL
PZ-12-11	11/21/2013	13:10	Visual	15.42	--	--	35.07	19.65
01-MW-01	11/26/2013	12:04	--	10.19	--	--	26.56	16.37
01-MW-02	11/26/2013	12:00	--	10.50	--	--	27.27	16.77
01-MW-03	11/26/2013	11:55	--	6.77	--	--	26.23	19.46
OBTW-14	11/26/2013	11:52	--	7.59	--	--	27.14	19.55
OBTW-15	11/26/2013	10:32	--	6.22	--	--	27.22	21.00
PZ-12-3	11/26/2013	10:28	--	7.73	--	--	29.12	21.39
PZ-12-4	11/26/2013	12:08	Visual	8.14	--	--	27.71	19.57
PZ-12-5	11/26/2013	10:33	--	6.59	--	--	26.80	20.21
PZ-12-6	11/26/2013	10:34	--	7.41	--	--	26.69	19.28
PZ-12-7	11/26/2013	9:16	--	6.08	--	--	27.56	21.48
PZ-12-8	11/26/2013	10:16	--	10.56	--	--	32.08	21.52
PZ-12-9	11/26/2013	12:18	Visual	7.12	--	--	26.38	19.26
PZ-12-10	11/26/2013	11:38	--	10.45	--	--	29.84	19.39
PZ-12-11	11/26/2013	12:32	Visual	15.37	--	--	35.07	19.70
01-MW-01	12/6/2013	10:39	--	9.49	--	--	26.56	17.07
01-MW-02	12/6/2013	10:30	--	10.09	--	--	27.27	17.18
01-MW-03	12/6/2013	10:18	--	6.08	--	--	26.23	20.15
OBTW-14	12/6/2013	10:00	--	6.89	--	--	27.14	20.25
OBTW-15	12/6/2013	9:30	--	5.00	--	--	27.22	22.22
PZ-12-3	12/6/2013	9:13	--	6.63	--	--	29.12	22.49
PZ-12-4	12/6/2013	11:28	--	7.51	15.08	16.65	27.71	20.20
PZ-12-5	12/6/2013	9:41	--	5.51	--	--	26.80	21.29
PZ-12-6	12/6/2013	9:49	--	6.49	--	--	26.69	20.20
PZ-12-7	12/4/2013	10:30	--	5.08	--	--	27.56	22.48
PZ-12-8	12/4/2013	11:55	--	9.51	--	--	32.08	22.57
PZ-12-9	12/6/2013	11:14	Visual	6.51	--	--	26.38	19.87
PZ-12-10	12/4/2013	12:30	--	9.83	--	--	29.84	20.01
PZ-12-11	12/6/2013	11:00	Visual	14.82	--	--	35.07	20.25
01-MW-01	12/11/2013	10:00	--	9.59	--	--	26.56	16.97
01-MW-02	12/11/2013	10:00	--	9.94	--	--	27.27	17.33
01-MW-03	12/11/2013	10:00	--	5.61	--	--	26.23	20.62
OBTW-14	12/11/2013	10:00	--	6.52	--	--	27.14	20.62
OBTW-15	12/11/2013	10:00	--	4.54	--	--	27.22	22.68
PZ-12-3	12/11/2013	10:00	--	5.78	--	--	29.12	23.34
PZ-12-4	12/11/2013	10:00	--	--	--	--	27.71	No WL
PZ-12-5	12/11/2013	10:00	--	4.59	--	--	26.80	22.21
PZ-12-6	12/11/2013	10:00	--	5.83	--	--	26.69	20.86
PZ-12-7	12/11/2013	10:00	--	--	--	--	27.56	No WL
PZ-12-8	12/11/2013	10:00	--	--	--	--	32.08	No WL
PZ-12-9	12/11/2013	10:00	--	--	--	--	26.38	No WL
PZ-12-10	12/11/2013	10:00	--	--	--	--	29.84	No WL
PZ-12-11	12/11/2013	10:00	--	--	--	--	35.07	No WL

Table 4-3
Summary of Groundwater Elevations
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	LNAPL (ft bmp)	DTW (ft bmp)	"Tarry"-like substance (ft bmp)	Depth to Bottom (ft bmp)	Monitoring Point Elevation (ft msl)[1]	Groundwater Elevation (ft msl)[1]
01-MW-01	12/16/2013	10:08	--	9.64	--	--	26.56	16.92
01-MW-02	12/16/2013	10:25	--	9.96	--	--	27.27	17.31
01-MW-03	12/16/2013	10:40	--	5.42	--	--	26.23	20.81
OBTW-14	12/16/2013	10:31	--	6.36	--	--	27.14	20.78
OBTW-15	12/16/2013	11:00	--	4.40	--	--	27.22	22.82
PZ-12-3	12/16/2013	11:11	--	5.57	--	--	29.12	23.55
PZ-12-4	12/16/2013	12:20	--	6.86	15.19	16.65	27.71	20.85
PZ-12-5	12/16/2013	10:54	--	4.34	--	--	26.80	22.46
PZ-12-6	12/16/2013	10:46	--	5.62	--	--	26.69	21.07
PZ-12-7	12/16/2013	12:45	--	4.25	--	--	27.56	23.31
PZ-12-8	12/16/2013	12:45	--	8.67	--	--	32.08	23.41
PZ-12-9	12/16/2013	12:26	Visual	5.98	--	--	26.38	20.40
PZ-12-10	12/16/2013	12:45	--	9.27	--	--	29.84	20.57
PZ-12-11	12/16/2013	12:45	14.22	14.23	--	--	35.07	20.84
01-MW-01	12/23/2013	13:00	--	9.45	--	--	26.56	17.11
01-MW-02	12/23/2013	12:55	--	9.81	--	--	27.27	17.46
01-MW-03	12/23/2013	11:53	--	4.98	--	--	26.23	21.25
OBTW-14	12/23/2013	11:50	--	6.03	--	--	27.14	21.11
OBTW-15	12/23/2013	11:42	--	4.12	--	--	27.22	23.10
PZ-12-3	12/23/2013	11:36	--	5.17	--	--	29.12	23.95
PZ-12-4	12/23/2013	12:50	--	6.43	--	--	27.71	21.28
PZ-12-5	12/23/2013	11:45	--	3.86	--	--	26.80	22.94
PZ-12-6	12/23/2013	11:47	--	5.21	--	--	26.69	21.48
PZ-12-7	12/23/2013	11:23	--	3.46	--	--	27.56	24.10
PZ-12-8	12/23/2013	10:31	--	8.20	--	--	32.08	23.88
PZ-12-9	12/23/2013	12:28	--	5.60	--	--	26.38	20.78
PZ-12-10	12/23/2013	12:35	--	8.94	--	--	29.84	20.90
PZ-12-11	12/23/2013	12:10	--	> 13.40	--	--	35.07	#VALUE!
01-MW-01	1/2/2014	13:20	--	9.04	--	--	26.56	17.52
01-MW-02	1/2/2014	11:25	--	9.36	--	--	27.27	17.91
01-MW-03	1/2/2014	11:15	--	4.60	--	--	26.23	21.63
OBTW-14	1/2/2014	11:05	--	5.56	--	--	27.14	21.58
OBTW-15	1/2/2014	10:15	--	3.84	--	--	27.22	23.38
PZ-12-3	1/2/2014	10:05	--	4.66	--	--	29.12	24.46
PZ-12-4	1/2/2014	13:48	--	5.89	--	--	27.71	21.82
PZ-12-5	1/2/2014	10:30	--	4.28	--	--	26.80	22.52
PZ-12-6	1/2/2014	10:55	--	5.08	--	--	26.69	21.61
PZ-12-7	1/2/2014	11:43	--	3.00	--	--	27.56	24.56
PZ-12-8	1/2/2014	12:20	--	7.47	--	--	32.08	24.61
PZ-12-9	1/2/2014	13:00	--	4.89	--	--	26.38	21.49
PZ-12-10	1/2/2014	13:26	--	8.22	--	--	29.84	21.62
PZ-12-11	1/2/2014	12:35	--	13.01	--	--	35.07	22.06
01-MW-01	1/10/2014	12:26	--	8.93	--	--	26.56	17.63
01-MW-02	1/10/2014	12:45	--	9.26	--	--	27.27	18.01
01-MW-03	1/10/2014	11:55	--	4.52	--	--	26.23	21.71
OBTW-14	1/10/2014	11:51	--	5.45	--	--	27.14	21.69
OBTW-15	1/10/2014	11:45	--	4.83	--	--	27.22	22.39
PZ-12-3	1/10/2014	11:40	--	4.51	--	--	29.12	24.61
PZ-12-4	1/10/2014	12:53	--	5.82	--	--	27.71	21.89
PZ-12-5	1/10/2014	11:47	--	4.40	--	--	26.80	22.40
PZ-12-6	1/10/2014	11:49	--	5.13	--	--	26.69	21.56
PZ-12-7	1/10/2014	11:07	--	2.78	--	--	27.56	24.78
PZ-12-8	1/10/2014	11:25	--	7.28	--	--	32.08	24.80
PZ-12-9	1/10/2014	12:25	--	4.81	--	--	26.38	21.57
PZ-12-10	1/10/2014	12:35	--	8.16	--	--	29.84	21.68
PZ-12-11	1/10/2014	12:03	--	12.96	--	--	35.07	22.11
01-MW-01	1/15/2014	13:50	--	8.71	--	--	26.56	17.85
01-MW-02	1/15/2014	13:40	--	9.12	--	--	27.27	18.15
01-MW-03	1/15/2014	13:32	--	4.04	--	--	26.23	22.19
OBTW-14	1/15/2014	13:25	--	5.10	--	--	27.14	22.04
OBTW-15	1/15/2014	12:32	--	3.71	--	--	27.22	23.51
PZ-12-3	1/15/2014	12:15	--	4.09	--	--	29.12	25.03
PZ-12-4	1/15/2014	14:00	--	5.38	--	--	27.71	22.33
PZ-12-5	1/15/2014	13:07	--	3.58	--	--	26.80	23.22
PZ-12-6	1/15/2014	13:17	--	4.62	--	--	26.69	22.07
PZ-12-7	1/15/2014	10:15	--	2.34	--	--	27.56	25.22
PZ-12-8	1/15/2014	11:15	--	6.84	--	--	32.08	25.24
PZ-12-9	1/15/2014	15:00	--	4.32	--	--	26.38	22.06
PZ-12-10	1/15/2014	15:17	--	7.71	--	--	29.84	22.13
PZ-12-11	1/15/2014	14:30	--	12.53	--	--	35.07	22.54

Table 4-3
Summary of Groundwater Elevations
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	LNAPL (ft bmp)	DTW (ft bmp)	"Tarry"-like substance (ft bmp)	Depth to Bottom (ft bmp)	Monitoring Point Elevation (ft msl)[1]	Groundwater Elevation (ft msl)[1]
01-MW-01	1/23/2014	11:40	--	9.05	--	--	26.56	17.51
01-MW-02	1/23/2014	11:30	--	9.39	--	--	27.27	17.88
01-MW-03	1/23/2014	11:25	--	4.52	--	--	26.23	21.71
OBTW-14	1/23/2014	11:20	--	5.49	--	--	27.14	21.65
OBTW-15	1/23/2014	11:05	--	4.03	--	--	27.22	23.19
PZ-12-3	1/23/2014	10:55	--	4.65	--	--	29.12	24.47
PZ-12-4	1/23/2014	14:10	--	5.89	15.50	--	27.71	21.82
PZ-12-5	1/23/2014	11:10	--	4.33	--	--	26.80	22.47
PZ-12-6	1/23/2014	11:15	--	5.04	--	--	26.69	21.65
PZ-12-7	1/23/2014	9:55	--	2.89	--	--	27.56	24.67
PZ-12-8	1/23/2014	14:00	--	7.44	--	--	32.08	24.64
PZ-12-9	1/23/2014	12:10	Visual	4.85	--	--	26.38	21.53
PZ-12-10	1/23/2014	12:40	--	8.21	--	--	29.84	21.63
PZ-12-11	1/23/2014	10:05	Visual	13.02	--	--	35.07	22.05
01-MW-01	1/29/2014	13:35	--	9.28	--	--	26.56	17.28
01-MW-02	1/29/2014	13:45	--	9.68	--	--	27.27	17.59
01-MW-03	1/29/2014	12:05	--	4.73	--	--	26.23	21.50
OBTW-14	1/29/2014	11:56	--	5.66	--	--	27.14	21.48
OBTW-15	1/29/2014	11:16	--	4.15	--	--	27.22	23.07
PZ-12-3	1/29/2014	11:00	--	4.94	--	--	29.12	24.18
PZ-12-4	1/29/2014	13:59	--	6.11	15.14	16.57	27.71	21.60
PZ-12-5	1/29/2014	11:31	--	4.49	--	--	26.80	22.31
PZ-12-6	1/29/2014	11:42	--	5.31	--	--	26.69	21.38
PZ-12-7	1/29/2014	10:15	--	3.17	--	--	27.56	24.39
PZ-12-8	1/29/2014	10:41	--	7.74	--	--	32.08	24.34
PZ-12-9	1/29/2014	12:57	--	5.12	--	--	26.38	21.26
PZ-12-10	1/29/2014	13:13	--	8.42	--	--	29.84	21.42
PZ-12-11	1/29/2014	12:33	--	10.60	--	--	35.07	24.47
01-MW-01	2/5/2014	2/5/2014	--	9.20	--	--	26.56	17.36
01-MW-02	2/5/2014	2/5/2014	--	9.47	--	--	27.27	17.80
01-MW-03	2/5/2014	2/5/2014	--	4.09	--	--	26.23	22.14
OBTW-14	2/5/2014	2/5/2014	--	5.12	--	--	27.14	22.02
OBTW-15	2/5/2014	2/5/2014	--	3.72	--	--	27.22	23.50
PZ-12-3	2/5/2014	2/5/2014	--	4.21	--	--	29.12	24.91
PZ-12-4	2/5/2014	2/5/2014	--	5.38	15.14	--	27.71	22.33
PZ-12-5	2/5/2014	2/5/2014	--	2.98	--	--	26.80	23.82
PZ-12-6	2/5/2014	2/5/2014	--	4.23	--	--	26.69	22.46
PZ-12-7	--	--	--	--	--	--	27.56	--
PZ-12-8	2/5/2014	2/5/2014	--	7.36	--	--	32.08	24.72
PZ-12-9	2/5/2014	2/5/2014	--	4.54	--	--	26.38	21.84
PZ-12-10	2/5/2014	2/5/2014	--	7.86	--	--	29.84	21.98
PZ-12-11	2/5/2014	2/5/2014	--	> 12.63	--	--	35.07	--
01-MW-01	2/12/2014	12:28	--	9.09	--	--	26.56	17.47
01-MW-02	2/12/2014	12:15	--	9.45	--	--	27.27	17.82
01-MW-03	2/12/2014	12:00	--	4.49	--	--	26.23	21.74
OBTW-14	2/12/2014	11:52	--	9.38	--	--	27.14	17.76
OBTW-15	2/12/2014	11:10	--	4.04	--	--	27.22	23.18
PZ-12-3	2/12/2014	15:40	--	4.80	--	--	29.12	24.32
PZ-12-4	2/12/2014	15:00	--	5.89	15.41	--	27.71	21.82
PZ-12-5	2/12/2014	11:25	--	4.15	--	--	26.80	22.65
PZ-12-6	2/12/2014	11:38	--	5.12	--	--	26.69	21.57
PZ-12-7	2/12/2014	10:00	--	3.00	--	--	27.56	24.56
PZ-12-8	2/12/2014	10:25	--	7.54	--	--	32.08	24.54
PZ-12-9	2/12/2014	13:00	--	4.96	--	--	26.38	21.42
PZ-12-10	2/12/2014	12:46	--	8.19	--	--	29.84	21.65
PZ-12-11	2/12/2014	13:15	--	> 12.70	--	--	35.07	--
01-MW-01	2/26/2014	14:20	--	8.05	--	--	26.56	18.51
01-MW-02	2/26/2014	12:50	--	8.52	--	--	27.27	18.75
01-MW-03	2/26/2014	12:34	--	3.84	--	--	26.23	22.39
OBTW-14	2/26/2014	12:18	--	4.61	--	--	27.14	22.53
OBTW-15	2/26/2014	11:28	--	4.61	--	--	27.22	22.61
PZ-12-3	2/26/2014	11:12	--	3.73	--	--	29.12	25.39
PZ-12-4	2/26/2014	15:29	--	4.93	15.03	16.61	27.71	22.78
PZ-12-5	2/26/2014	11:50	--	7.26	--	--	26.80	19.54
PZ-12-6	2/26/2014	12:04	--	4.43	--	--	26.69	22.26
PZ-12-7	2/26/2014	10:12	--	1.69	--	--	27.56	25.87
PZ-12-8	2/26/2014	10:47	--	6.18	--	--	32.08	25.90
PZ-12-9	2/26/2014	15:00	--	3.72	--	--	26.38	22.66
PZ-12-10	2/26/2014	15:16	--	7.14	--	--	29.84	22.70
PZ-12-11	2/26/2014	14:32	--	11.78	--	--	35.07	23.29

Table 4-3
Summary of Groundwater Elevations
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	LNAPL (ft bmp)	DTW (ft bmp)	"Tarry"-like substance (ft bmp)	Depth to Bottom (ft bmp)	Monitoring Point Elevation (ft msl)[1]	Groundwater Elevation (ft msl)[1]
01-MW-01	3/5/2014	13:11	--	8.75	--	--	26.56	17.81
01-MW-02	3/5/2014	13:05	--	9.16	--	--	27.27	18.11
01-MW-03	3/5/2014	12:54	--	4.08	--	--	26.23	22.15
OBTW-14	3/5/2014	12:49	--	4.97	--	--	27.14	22.17
OBTW-15	3/5/2014	12:34	--	3.74	--	--	27.22	23.48
PZ-12-3	3/5/2014	12:27	--	4.27	--	--	29.12	24.85
PZ-12-4	3/5/2014	15:14	--	5.41	15.03	16.69	27.71	22.30
PZ-12-5	3/5/2014	12:40	--	3.18	--	--	26.80	23.62
PZ-12-6	3/5/2014	12:45	--	4.78	--	--	26.69	21.91
PZ-12-7	3/5/2014	11:52	--	2.33	--	--	27.56	25.23
PZ-12-8	3/5/2014	12:10	--	6.93	--	--	32.08	25.15
PZ-12-9	3/5/2014	14:48	--	4.29	--	--	26.38	22.09
PZ-12-10	3/5/2014	15:01	--	7.66	--	--	29.84	22.18
PZ-12-11	3/5/2014	13:18	--	12.28	--	--	35.07	22.79
01-MW-01	3/12/2014	12:05	--	7.96	--	--	26.56	18.60
01-MW-02	3/12/2014	11:45	--	8.31	--	--	27.27	18.96
01-MW-03	3/12/2014	11:35	--	3.45	--	--	26.23	22.78
OBTW-14	3/12/2014	11:21	--	4.39	--	--	27.14	22.75
OBTW-15	3/12/2014	10:03	--	3.42	--	--	27.22	23.80
PZ-12-3	3/12/2014	9:53	--	3.62	--	--	29.12	25.50
PZ-12-4	3/12/2014	12:40	--	4.67	15.77	16.68	27.71	23.04
PZ-12-5	3/12/2014	10:15	--	3.31	--	--	26.80	23.49
PZ-12-6	3/12/2014	10:24	--	4.26	--	--	26.69	22.43
PZ-12-7	3/12/2014	9:07	--	1.71	--	--	27.56	25.85
PZ-12-8	3/12/2014	9:33	--	6.29	--	--	32.08	25.79
PZ-12-9	3/12/2014	12:20	--	3.34	--	--	26.38	23.04
PZ-12-10	3/12/2014	12:30	--	6.80	--	--	29.84	23.04
PZ-12-11	3/12/2014	12:12	--	11.41	--	--	35.07	23.66
01-MW-01	3/19/2014	12:50	--	8.28	--	--	26.56	18.28
01-MW-02	3/19/2014	12:45	--	8.75	--	18.10	27.27	18.52
01-MW-03	3/19/2014	12:25	--	4.00	--	16.80	26.23	22.23
OBTW-14	3/19/2014	12:15	--	4.98	--	--	27.14	22.16
OBTW-15	3/19/2014	11:50	--	3.81	--	--	27.22	23.41
PZ-12-3	3/19/2014	11:40	--	4.35	--	--	29.12	24.77
PZ-12-4	3/19/2014	13:00	--	5.31	15.40	16.80	27.71	22.40
PZ-12-5	3/19/2014	11:58	--	4.13	--	--	26.80	22.67
PZ-12-6	3/19/2014	12:05	--	7.75	--	--	26.69	18.94
PZ-12-7	3/19/2014	8:40	--	2.37	--	--	27.56	25.19
PZ-12-8	3/19/2014	9:40	--	7.03	--	--	32.08	25.05
PZ-12-9	3/19/2014	10:47	--	4.21	--	--	26.38	22.17
PZ-12-10	3/19/2014	11:05	--	7.60	--	--	29.84	22.24
PZ-12-11	3/19/2014	10:24	--	12.27	--	--	35.07	22.80
01-MW-01	3/26/2014	13:40	--	8.39	--	--	26.56	18.17
01-MW-02	3/26/2014	13:47	--	8.87	--	--	27.27	18.40
01-MW-03	3/26/2014	13:12	--	4.00	--	--	26.23	22.23
OBTW-14	3/26/2014	12:54	--	4.96	--	--	27.14	22.18
OBTW-15	3/26/2014	12:07	--	3.82	--	--	27.22	23.40
PZ-12-3	3/26/2014	11:55	--	4.29	--	--	29.12	24.83
PZ-12-4	3/26/2014	14:03	--	5.28	15.14	16.56	27.71	22.43
PZ-12-5	3/26/2014	12:29	--	4.41	--	--	26.80	22.39
PZ-12-6	3/26/2014	12:40	--	5.09	--	--	26.69	21.60
PZ-12-7	3/26/2014	10:45	--	2.32	--	--	27.56	25.24
PZ-12-8	3/26/2014	10:59	--	6.95	--	--	32.08	25.13
PZ-12-9	3/26/2014	11:23	--	4.07	--	--	26.38	22.31
PZ-12-10	3/26/2014	11:31	--	7.50	--	--	29.84	22.34
PZ-12-11	3/26/2014	11:12	--	12.11	--	--	35.07	22.96
01-MW-01	4/2/2014	10:00	--	3.25	--	--	26.56	23.31
01-MW-02	4/2/2014	9:57	--	4.02	--	--	27.27	23.25
01-MW-03	4/2/2014	9:52	--	3.21	--	--	26.23	23.02
OBTW-14	4/2/2014	9:44	--	3.64	--	--	27.14	23.50
OBTW-15	4/2/2014	9:33	--	3.41	--	--	27.22	23.81
PZ-12-3	4/2/2014	9:30	--	3.43	--	--	29.12	25.69
PZ-12-4	4/2/2014	10:04	--	4.37	12.00	16.48	27.71	23.34
PZ-12-5	4/2/2014	9:36	--	3.28	--	--	26.80	23.52
PZ-12-6	4/2/2014	9:41	--	3.97	--	--	26.69	22.72
PZ-12-7	4/2/2014	8:34	--	1.29	--	--	27.56	26.27
PZ-12-8	4/2/2014	8:43	--	5.96	--	--	32.08	26.12
PZ-12-9	4/2/2014	9:08	--	2.60	--	--	26.38	23.78
PZ-12-10	4/2/2014	9:17	--	6.29	--	--	29.84	23.55

Table 4-3
Summary of Groundwater Elevations
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	LNAPL (ft bmp)	DTW (ft bmp)	"Tarry"-like substance (ft bmp)	Depth to Bottom (ft bmp)	Monitoring Point Elevation (ft msl)[1]	Groundwater Elevation (ft msl)[1]
PZ-12-11	4/2/2014	8:57	--	10.83	--	--	35.07	24.24
01-MW-01	4/9/2014	14:42	--	5.14	--	--	26.56	21.42
01-MW-02	4/9/2014	14:30	--	5.57	--	--	27.27	21.70
01-MW-03	4/9/2014	14:21	--	3.35	Visual	--	26.23	22.88
OBTW-14	4/9/2014	14:11	--	3.88	--	--	27.14	23.26
OBTW-15	4/9/2014	13:20	--	3.52	--	--	27.22	23.70
PZ-12-3	4/9/2014	13:00	--	4.61	--	--	29.12	24.51
PZ-12-4	4/9/2014	14:50	--	4.56	12.20	16.22	27.71	23.15
PZ-12-5	4/9/2014	13:40	--	3.35	--	--	26.80	23.45
PZ-12-6	4/9/2014	13:55	--	4.20	--	--	26.69	22.49
PZ-12-7	4/9/2014	10:20	--	1.46	--	--	27.56	26.10
PZ-12-8	4/9/2014	10:35	--	6.13	--	--	32.08	25.95
PZ-12-9	4/9/2014	11:08	--	3.02	--	--	26.38	23.36
PZ-12-10	4/9/2014	11:18	--	6.56	--	--	29.84	23.28
PZ-12-11	4/9/2014	10:55	--	11.14	--	--	35.07	23.93
01-MW-01	4/16/2014	14:42	--	6.19	--	--	26.56	20.37
01-MW-02	4/16/2014	14:30	--	6.79	--	--	27.27	20.48
01-MW-03	4/16/2014	14:21	--	2.45	Visual	--	26.23	23.78
OBTW-14	4/16/2014	14:11	--	4.13	--	--	27.14	23.01
OBTW-15	4/16/2014	13:20	--	3.78	--	--	27.22	23.44
PZ-12-3	4/16/2014	13:00	--	3.65	--	--	29.12	25.47
PZ-12-4	4/16/2014	14:50	--	4.82	12.95	16.20	27.71	22.89
PZ-12-5	4/16/2014	13:40	--	3.16	--	--	26.80	23.64
PZ-12-6	4/16/2014	13:55	--	4.11	--	--	26.69	22.58
PZ-12-7	4/16/2014	10:20	--	1.66	--	--	27.56	25.90
PZ-12-8	4/16/2014	10:35	--	6.22	--	--	32.08	25.86
PZ-12-9	4/16/2014	11:08	--	3.48	--	--	26.38	22.90
PZ-12-10	4/16/2014	11:18	--	6.96	--	--	29.84	22.88
PZ-12-11	4/16/2014	10:55	--	11.75	--	--	35.07	23.32
01-MW-01	4/23/2014	13:50	--	7.41	--	--	26.56	19.15
01-MW-02	4/23/2014	14:02	--	7.94	--	--	27.27	19.33
01-MW-03	4/23/2014	14:11	--	3.37	--	--	26.23	22.86
OBTW-14	4/23/2014	13:25	--	--	--	--	27.14	--
OBTW-15	4/23/2014	12:12	--	3.77	--	--	27.22	23.45
PZ-12-3	4/23/2014	11:51	--	4.22	--	--	29.12	24.90
PZ-12-4	4/23/2014	15:00	--	7.02	13.74	16.32	27.71	20.69
PZ-12-5	4/23/2014	13:05	--	4.36	--	--	26.80	22.44
PZ-12-6	4/23/2014	12:44	--	4.69	--	--	26.69	22.00
PZ-12-7	4/23/2014	10:56	--	2.13	--	--	27.56	25.43
PZ-12-8	4/23/2014	11:27	--	6.84	--	--	32.08	25.24
PZ-12-9	4/23/2014	14:32	--	--	--	--	26.38	--
PZ-12-10	4/23/2014	13:37	--	7.09	--	--	29.84	22.75
PZ-12-11	4/23/2014	14:44	--	--	--	--	35.07	--
01-MW-01	4/30/2014	12:15	--	8.28	--	--	26.56	18.28
01-MW-02	4/30/2014	12:10	--	8.82	--	--	27.27	18.45
01-MW-03	4/30/2014	13:02	--	3.51	Visual	--	26.23	22.72
OBTW-14	4/30/2014	12:58	--	4.64	--	--	27.14	22.50
OBTW-15	4/30/2014	12:38	--	3.76	--	--	27.22	23.46
PZ-12-3	4/30/2014	12:30	--	3.48	--	--	29.12	25.64
PZ-12-4	4/30/2014	13:10	--	4.90	14.83	16.21	27.71	22.81
PZ-12-5	4/30/2014	12:45	--	2.82	--	--	26.80	23.98
PZ-12-6	4/30/2014	12:52	--	3.75	--	--	26.69	22.94
PZ-12-7	4/30/2014	10:50	--	--	--	--	27.56	--
PZ-12-8	4/30/2014	11:15	--	6.52	--	--	32.08	25.56
PZ-12-9	4/30/2014	11:55	--	3.75	--	--	26.38	22.63
PZ-12-10	4/30/2014	12:00	--	7.30	--	--	29.84	22.54
PZ-12-11	4/30/2014	11:35	--	12.26	--	--	35.07	22.81
01-MW-01	5/7/2014	12:50	--	4.83	--	--	26.56	21.73
01-MW-02	5/7/2014	13:05	--	5.29	--	--	27.27	21.98
01-MW-03	5/7/2014	13:25	--	3.38	Visual	--	26.23	22.85
OBTW-14	5/7/2014	12:25	--	3.73	--	--	27.14	23.41
OBTW-15	5/7/2014	11:40	--	3.41	--	--	27.22	23.81
PZ-12-3	5/7/2014	12:35	--	3.45	--	--	29.12	25.67

Table 4-3
Summary of Groundwater Elevations
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	LNAPL (ft bmp)	DTW (ft bmp)	"Tarry"-like substance (ft bmp)	Depth to Bottom (ft bmp)	Monitoring Point Elevation (ft msl)[1]	Groundwater Elevation (ft msl)[1]
PZ-12-4	5/7/2014	13:35	--	5.94	9.84	16.32	27.71	21.77
PZ-12-5	5/7/2014	12:00	--	2.86	--	--	26.80	23.94
PZ-12-6	5/7/2014	12:15	--	4.37	--	--	26.69	22.32
PZ-12-7	5/7/2014	9:55	--	0.60	--	--	27.56	26.96
PZ-12-8	5/7/2014	9:39	--	5.83	--	--	32.08	26.25
PZ-12-9	5/7/2014	10:45	--	2.78	--	--	26.38	23.60
PZ-12-10	5/7/2014	10:55	--	6.34	--	--	29.84	23.50
PZ-12-11	5/7/2014	10:35	--	10.47	--	--	35.07	24.60
01-MW-01	5/14/2014	11:20	--	6.25	--	--	26.56	20.31
01-MW-02	5/14/2014	11:30	--	6.85	--	--	27.27	20.42
01-MW-03	5/14/2014	11:10	--	3.53	Visual	--	26.23	22.70
OBTW-14	5/14/2014	11:05	--	4.20	--	--	27.14	22.94
OBTW-15	5/14/2014	10:52	--	3.65	--	--	27.22	23.57
PZ-12-3	5/14/2014	10:30	--	3.85	--	--	29.12	25.27
PZ-12-4	5/14/2014	11:55	--	4.75	12.30	16.65	27.71	22.96
PZ-12-5	5/14/2014	10:58	--	3.20	--	--	26.80	23.60
PZ-12-6	5/14/2014	11:00	--	4.55	--	--	26.69	22.14
PZ-12-7	5/14/2014	10:00	--	1.58	--	--	27.56	25.98
PZ-12-8	5/14/2014	10:15	--	6.40	--	--	32.08	25.68
PZ-12-9	5/14/2014	9:30	--	3.39	--	--	26.38	22.99
PZ-12-10	5/14/2014	9:20	--	6.85	--	--	29.84	22.99
PZ-12-11	5/14/2014	9:00	--	11.22	--	--	35.07	23.85
01-MW-01	5/21/2014	14:35	--	7.78	--	--	26.56	18.78
01-MW-02	5/21/2014	14:42	--	8.34	--	--	27.27	18.93
01-MW-03	5/21/2014	13:55	--	3.80	Visual	--	26.23	22.43
OBTW-14	5/21/2014	13:00	--	3.70	--	--	27.14	23.44
OBTW-15	5/21/2014	13:44	--	4.58	--	--	27.22	22.64
PZ-12-3	5/21/2014	12:50	--	4.19	--	--	29.12	24.93
PZ-12-4	5/21/2014	14:53	--	5.11	12.25	--	27.71	22.60
PZ-12-5	5/21/2014	13:12	--	3.89	--	--	26.80	22.91
PZ-12-6	5/21/2014	13:26	--	4.90	--	--	26.69	21.79
PZ-12-7	5/21/2014	10:35	--	1.97	--	--	27.56	25.59
PZ-12-8	5/21/2014	11:01	--	6.71	--	--	32.08	25.37
PZ-12-9	5/21/2014	11:40	--	3.91	--	--	26.38	22.47
PZ-12-10	5/21/2014	9:45	--	7.26	--	--	29.84	22.58
PZ-12-11	5/21/2014	11:15	--	12.07	--	--	35.07	23.00

Notes:

1) The vertical datum references the North American Vertical Datum of 1988 (NAVD 88).
ft bmp - feet below monitoring point
ft msl - feet mean sea level
2) "Visual" indicates that visual observation (e.g., sheen, streaking on probe) of tarry-like substance was reported but not detected by oil-water interface probe.
3) PDI-1 = GT-1 = OBTW-14; PDI-2 = GT-2 = OBTW-15

Entered by: CMD, EG, LMC
Checked by: CDL, LMC, JTC, JWL, RMW

Table 4-4
Summary of PID and Water Quality Indicator Measurements
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	PID (ppm)	Temperature (°C)	pH (S.U.)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
01-MW-01	10/11/2013	12:00	0.0	--	--	--	--	--	--
01-MW-02	10/11/2013	12:00	66.2	--	--	--	--	--	--
01-MW-03	10/11/2013	12:00	1021	--	--	--	--	--	--
OBTW-14	10/11/2013	12:00	75.2	--	--	--	--	--	--
OBTW-15	10/11/2013	12:00	0.2	--	--	--	--	--	--
PZ-12-3	10/11/2013	12:00	0.0	--	--	--	--	--	--
PZ-12-4	10/11/2013	12:00	439.3	--	--	--	--	--	--
PZ-12-5	10/11/2013	12:00	0.7	--	--	--	--	--	--
PZ-12-6	10/11/2013	12:00	0.0	--	--	--	--	--	--
PZ-12-7	10/11/2013	12:00	0.0	19.26	5.57	0.37	30.3	0.53	-36
PZ-12-8	10/11/2013	12:00	0.0	19.42	5.21	0.20	14	0.00	125
PZ-12-9	10/11/2013	12:00	150.8	--	--	--	--	--	--
PZ-12-10	10/11/2013	12:00	555.8	16.81	2.96	3.77	196	0.50	344
PZ-12-11	10/11/2013	12:00	1851	--	--	--	--	--	--
01-MW-01	10/18/2013	12:09	0.1	--	--	--	--	--	--
01-MW-02	10/18/2013	12:14	48.9	--	--	--	--	--	--
01-MW-03	10/18/2013	11:07	1066	--	--	--	--	--	--
OBTW-14	10/18/2013	11:03	34	--	--	--	--	--	--
OBTW-15	10/18/2013	10:53	3.2	--	--	--	--	--	--
PZ-12-3	10/18/2013	10:35	0.0	--	--	--	--	--	--
PZ-12-4	10/18/2013	12:18	286.0	--	--	--	--	--	--
PZ-12-5	10/18/2013	10:56	0.0	--	--	--	--	--	--
PZ-12-6	10/18/2013	10:59	0.0	--	--	--	--	--	--
PZ-12-7	10/18/2013	12:38	1.6	--	--	--	--	--	--
PZ-12-8	10/18/2013	12:32	3.6	--	--	--	--	--	--
PZ-12-9	10/18/2013	12:45	104.0	16.05	2.63	5.26	1.1	0.00	307
PZ-12-10	10/18/2013	11:12	55.8	--	--	--	--	--	--
PZ-12-11	10/18/2013	11:59	649.0	17.18	2.92	3.23	694	2.27	296
01-MW-01	10/24/2013	13:30	0.0	14.65	3.95	4.82	2.35	2.93	61.9
01-MW-02	10/24/2013	13:20	265	13.90	2.34	6.35	0.98	2.64	307.4
01-MW-03	10/24/2013	13:04	1269	14.63	2.13	3.77	NM	3.38	411.9
OBTW-14	10/24/2013	13:00	252	16.82	4.04	0.92	27.60	3.88	218
OBTW-15	10/24/2013	12:53	71.4	16.30	6.22	0.34	65.00	5.95	62
PZ-12-3	10/24/2013	13:40	0.0	15.82	5.27	0.12	73.30	2.10	169
PZ-12-4	10/24/2013	13:07	259	13.78	3.30	1.26	17.50	11.43	300.00
PZ-12-5	10/24/2013	12:56	0.0	15.63	4.83	0.37	24.00	3.43	199
PZ-12-6	10/24/2013	12:58	0.0	15.35	4.01	0.73	210.00	3.19	238
PZ-12-7	10/24/2013	13:52	0.7	18.13	6.37	0.26	2.9	0.00	-66
PZ-12-8	10/24/2013	13:47	2.2	19.20	4.56	0.15	8.3	0.00	117
PZ-12-9	10/24/2013	13:25	58.2	15.22	3.00	2.44	50.1	1.72	306.00
PZ-12-10	10/24/2013	13:13	105	17.43	2.57	2.46	51.7	0.00	313
PZ-12-11	10/24/2013	14:02	1014	15.92	3.46	1.02	29.6	1.78	275.00
01-MW-01	10/31/2013	11:30	0.0	--	--	--	--	--	--
01-MW-02	10/31/2013	11:35	168.0	--	--	--	--	--	--
01-MW-03	10/31/2013	11:06	2894	--	--	--	--	--	--
OBTW-14	10/31/2013	11:09	446	--	--	--	--	--	--
OBTW-15	10/31/2013	11:15	0.8	--	--	--	--	--	--
PZ-12-3	10/31/2013	11:18	0.0	--	--	--	--	--	--
PZ-12-4	10/31/2013	11:39	380	--	--	--	--	--	--
PZ-12-5	10/31/2013	11:13	0.1	--	--	--	--	--	--
PZ-12-6	10/31/2013	11:11	0.1	--	--	--	--	--	--
PZ-12-7	10/31/2013	11:25	0.0	--	--	--	--	--	--
PZ-12-8	10/31/2013	11:21	0.1	--	--	--	--	--	--
PZ-12-9	10/31/2013	11:43	233.0	--	--	--	--	--	--
PZ-12-10	10/31/2013	11:02	2.0	--	--	--	--	--	--
PZ-12-11	10/31/2013	11:50	283.0	--	--	--	--	--	--
01-MW-01	11/7/2013	12:13	0.0	14.43	3.83	9.04	5.42	0.54	134.4
01-MW-02	11/7/2013	12:05	174.8	13.73	2.20	8.73	4.63	0.60	342.5

Table 4-4
Summary of PID and Water Quality Indicator Measurements
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	PID (ppm)	Temperature (°C)	pH (S.U.)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
01-MW-03	11/7/2013	11:50	1975	14.82	2.08	5.26	3.45	0.54	418.5
OBTW-14	11/7/2013	11:40	318.8	16.80	3.70	1.31	13.50	0.11	225.6
OBTW-15	11/7/2013	11:07	0.0	16.15	6.12	0.93	72.00	0.00	-51.4
PZ-12-3	11/7/2013	10:35	0.0	14.79	5.23	0.31	10.52	0.18	165
PZ-12-4	11/7/2013	12:20	121.2	15.70	3.02	1.63	143.00	1.21	303.3
PZ-12-5	11/7/2013	11:13	1.4	15.92	3.84	6.27	110.70	0.39	130.7
PZ-12-6	11/7/2013	11:30	0.0	16.02	5.75	2.23	978.00	0.57	56.7
PZ-12-7	11/7/2013	11:30	0.0	16.97	6.26	0.556	21.3	0.42	-82
PZ-12-8	11/7/2013	10:31	0.0	18.02	5.17	0.366	21.9	0.78	159
PZ-12-9	11/7/2013	10:31	270.2	13.99	2.78	5.91	9999	7.06	309
PZ-12-10	11/7/2013	9:36	4.5	17.45	2.42	5.82	54.3	0.41	319
PZ-12-11	11/7/2013	10:08	390.8	15.34	3.09	3.53	*999*	7.43	289
01-MW-01	11/14/2013	13:19	0.1	--	--	--	--	--	--
01-MW-02	11/14/2013	13:49	6.74	--	--	--	--	--	--
01-MW-03	11/14/2013	12:49	437.9	--	--	--	--	--	--
OBTW-14	11/14/2013	11:25	193.6	--	--	--	--	--	--
OBTW-15	11/14/2013	11:32	0.9	--	--	--	--	--	--
PZ-12-3	11/14/2013	13:08	0.0	--	--	--	--	--	--
PZ-12-4	11/14/2013	12:30	430.9	--	--	--	--	--	--
PZ-12-5	11/14/2013	13:01	0.6	--	--	--	--	--	--
PZ-12-6	11/14/2013	12:58	0.7	--	--	--	--	--	--
PZ-12-7	11/14/2013	11:44	0.0	--	--	--	--	--	--
PZ-12-8	11/14/2013	11:52	0.1	--	--	--	--	--	--
PZ-12-9	11/14/2013	12:13	80.4	--	--	--	--	--	--
PZ-12-10	11/14/2013	11:10	0.5	--	--	--	--	--	--
PZ-12-11	11/14/2013	12:00	259.5	--	--	--	--	--	--
01-MW-01	11/21/2013	10:42	7.6	14.11	4.00	7.52	6.80	0.20	150.1
01-MW-02	11/21/2013	10:32	957	13.55	2.43	8.43	1.25	0.32	325.1
01-MW-03	11/21/2013	10:23	9999	13.91	2.16	5.09	6.29	0.16	414.7
OBTW-14	11/21/2013	10:15	779	15.14	3.77	1.34	4.35	0.03	251.7
OBTW-15	11/21/2013	9:32	0.2	13.67	6.38	0.81	55.50	0.16	108.4
PZ-12-3	11/21/2013	9:17	9.2	12.61	5.65	0.65	42.20	0.00	30.1
PZ-12-4	11/21/2013	13:42	1063	14.59	3.23	1.77	22.40	0.71	317.9
PZ-12-5	11/21/2013	9:57	0.0	14.50	4.31	3.47	26.70	0.03	99.3
PZ-12-6	11/21/2013	10:05	0.1	13.63	3.74	7.07	65.50	0.09	305.9
PZ-12-7	11/21/2013	12:00	--	--	--	--	--	--	--
PZ-12-8	11/21/2013	12:00	--	--	--	--	--	--	--
PZ-12-9	11/21/2013	13:30	112	14.47	2.93	5.47	95	0.14	302.5
PZ-12-10	11/21/2013	12:00	--	--	--	--	--	--	--
PZ-12-11	11/21/2013	13:10	567	15.77	3.50	7.59	47.4	0.08	275.5
01-MW-01	11/26/2013	12:04	3.8	--	--	--	--	--	--
01-MW-02	11/26/2013	12:00	416.5	--	--	--	--	--	--
01-MW-03	11/26/2013	11:55	3993.0	--	--	--	--	--	--
OBTW-14	11/26/2013	11:52	827.4	--	--	--	--	--	--
OBTW-15	11/26/2013	10:32	0.8	--	--	--	--	--	--
PZ-12-3	11/26/2013	10:28	0.4	--	--	--	--	--	--
PZ-12-4	11/26/2013	12:08	--	--	--	--	--	--	--
PZ-12-5	11/26/2013	10:33	0.7	--	--	--	--	--	--
PZ-12-6	11/26/2013	10:34	0.1	--	--	--	--	--	--
PZ-12-7	11/26/2013	9:16	8.2	--	--	--	--	--	--
PZ-12-8	11/26/2013	10:16	0.4	--	--	--	--	--	--
PZ-12-9	11/26/2013	12:18	156.2	--	--	--	--	--	--
PZ-12-10	11/26/2013	11:38	5.5	--	--	--	--	--	--
PZ-12-11	11/26/2013	12:32	462.8	--	--	--	--	--	--
01-MW-01	12/6/2013	10:39	0.0	13.53	4.04	11.41	4.74	2.15	10.6
01-MW-02	12/6/2013	10:30	440	13.33	2.45	11.32	24.6	3.06	323.8
01-MW-03	12/6/2013	10:18	9999	13.35	2.18	0.813	2.25	1.48	412.2
OBTW-14	12/6/2013	10:00	550	14.72	3.80	1.741	6.88	2.32	206.7

Table 4-4
Summary of PID and Water Quality Indicator Measurements
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	PID (ppm)	Temperature (°C)	pH (S.U.)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
OBTW-15	12/6/2013	9:30	0.0	11.89	6.30	1.121	33.0	1.13	-2.7
PZ-12-3	12/6/2013	9:13	0.0	12.38	5.02	0.354	89.4	1.71	155.6
PZ-12-4	12/6/2013	11:28	333	11.94	3.73	2.005	19.3	2.89	295
PZ-12-5	12/6/2013	9:41	0.0	11.94	5.02	0.576	25.5	1.59	107.2
PZ-12-6	12/6/2013	9:49	0.0	10.35	3.96	0.824	17.0	1.65	289.9
PZ-12-7	12/4/2013	10:30	--	--	--	--	--	--	--
PZ-12-8	12/4/2013	11:55	--	--	--	--	--	--	--
PZ-12-9	12/6/2013	11:14	79.4	11.65	4.56	0.600	62.6	2.99	235.4
PZ-12-10	12/4/2013	12:30	--	--	--	--	--	--	--
PZ-12-11	12/6/2013	11:00	307	14.83	3.22	4.588	3.54	1.62	266.9
01-MW-01	12/11/2013	10:00	6.1	--	--	--	--	--	--
01-MW-02	12/11/2013	10:00	1500	--	--	--	--	--	--
01-MW-03	12/11/2013	10:00	1500	--	--	--	--	--	--
OBTW-14	12/11/2013	10:00	1500	--	--	--	--	--	--
OBTW-15	12/11/2013	10:00	4.2	--	--	--	--	--	--
PZ-12-3	12/11/2013	10:00	3.2	--	--	--	--	--	--
PZ-12-4	12/11/2013	10:00	1500	--	--	--	--	--	--
PZ-12-5	12/11/2013	10:00	4.1	--	--	--	--	--	--
PZ-12-6	12/11/2013	10:00	3.9	--	--	--	--	--	--
PZ-12-7	12/11/2013	10:00	--	--	--	--	--	--	--
PZ-12-8	12/11/2013	10:00	--	--	--	--	--	--	--
PZ-12-9	12/11/2013	10:00	--	--	--	--	--	--	--
PZ-12-10	12/11/2013	10:00	--	--	--	--	--	--	--
PZ-12-11	12/11/2013	10:00	--	--	--	--	--	--	--
01-MW-01	12/16/2013	10:08	0.0	11.96	3.89	7.018	17.6	0.75	167.2
01-MW-02	12/16/2013	10:25	385.7	11.97	2.50	7.858	1.53	0.15	329.9
01-MW-03	12/16/2013	10:40	1891	11.56	2.20	4.914	0.14	0.14	417.8
OBTW-14	12/16/2013	10:31	290.1	11.07	3.67	1.455	2.79	0.03	271.9
OBTW-15	12/16/2013	11:00	0.3	9.29	6.20	0.975	108	0.02	55.1
PZ-12-3	12/16/2013	11:11	0.0	9.81	5.25	0.432	9.81	0.17	103.9
PZ-12-4	12/16/2013	12:20	336	7.22	3.48	0.818	11.1	0.18	365.2
PZ-12-5	12/16/2013	10:54	0.2	8.52	5.36	0.254	15.1	0.80	255.4
PZ-12-6	12/16/2013	10:46	0.2	5.82	3.80	0.548	14.3	0.75	340.4
PZ-12-7	12/16/2013	12:45	0.2	--	--	--	--	--	--
PZ-12-8	12/16/2013	12:45	0.2	--	--	--	--	--	--
PZ-12-9	12/16/2013	12:26	18.1	10.00	4.24	0.316	14.2	0.37	340.5
PZ-12-10	12/16/2013	12:45	0.4	--	--	--	--	--	--
PZ-12-11	12/16/2013	12:45	283.4	13.28	3.60	1.582	3.84	0.15	301.4
01-MW-01	12/23/2013	13:00	0.0	--	--	--	--	--	--
01-MW-02	12/23/2013	12:55	74.3	--	--	--	--	--	--
01-MW-03	12/23/2013	11:53	2393	--	--	--	--	--	--
OBTW-14	12/23/2013	11:50	344	--	--	--	--	--	--
OBTW-15	12/23/2013	11:42	0.0	--	--	--	--	--	--
PZ-12-3	12/23/2013	11:36	0.0	--	--	--	--	--	--
PZ-12-4	12/23/2013	12:50	109	--	--	--	--	--	--
PZ-12-5	12/23/2013	11:45	0.0	--	--	--	--	--	--
PZ-12-6	12/23/2013	11:47	0.0	--	--	--	--	--	--
PZ-12-7	12/23/2013	11:23	0.0	--	--	--	--	--	--
PZ-12-8	12/23/2013	10:31	0.0	--	--	--	--	--	--
PZ-12-9	12/23/2013	12:28	0.0	--	--	--	--	--	--
PZ-12-10	12/23/2013	12:35	0.0	--	--	--	--	--	--
PZ-12-11	12/23/2013	12:10	1.5	--	--	--	--	--	--
01-MW-01	1/2/2014	13:20	0.0	12.35	4.08	8.396	--	3.76	-114.2
01-MW-02	1/2/2014	11:25	165.0	12.73	2.41	7.465	--	2.80	-14.3
01-MW-03	1/2/2014	11:15	1486.0	11.95	2.17	4.220	--	1.41	208.9
OBTW-14	1/2/2014	11:05	170.0	11.70	3.76	1.221	--	0.50	-122.2
OBTW-15	1/2/2014	10:15	0.0	11.42	6.32	0.743	--	0.70	-131.2
PZ-12-3	1/2/2014	10:05	0.0	9.43	5.36	0.177	--	3.07	-122.8

Table 4-4
Summary of PID and Water Quality Indicator Measurements
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	PID (ppm)	Temperature (°C)	pH (S.U.)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
PZ-12-4	1/2/2014	13:48	31.8	8.80	3.58	0.556	--	3.12	-86.3
PZ-12-5	1/2/2014	10:30	0.0	11.33	4.89	0.287	--	7.56	-114.4
PZ-12-6	1/2/2014	10:55	0.0	7.37	4.12	0.538	--	4.78	110.3
PZ-12-7	1/2/2014	11:43	0.0	--	--	--	--	--	--
PZ-12-8	1/2/2014	12:20	0.0	--	--	--	--	--	--
PZ-12-9	1/2/2014	13:00	0.0	--	--	--	--	--	--
PZ-12-10	1/2/2014	13:26	0.0	--	--	--	--	--	--
PZ-12-11	1/2/2014	12:35	0.0	--	--	--	--	--	--
01-MW-01	1/10/2014	12:26	0.0	--	--	--	--	--	--
01-MW-02	1/10/2014	12:45	9999.0	--	--	--	--	--	--
01-MW-03	1/10/2014	11:55	9999.0	--	--	--	--	--	--
OBTW-14	1/10/2014	11:51	965.0	--	--	--	--	--	--
OBTW-15	1/10/2014	11:45	0.0	--	--	--	--	--	--
PZ-12-3	1/10/2014	11:40	0.0	--	--	--	--	--	--
PZ-12-4	1/10/2014	12:53	99.8	--	--	--	--	--	--
PZ-12-5	1/10/2014	11:47	0.0	--	--	--	--	--	--
PZ-12-6	1/10/2014	11:49	0.0	--	--	--	--	--	--
PZ-12-7	1/10/2014	11:07	0.0	--	--	--	--	--	--
PZ-12-8	1/10/2014	11:25	0.0	--	--	--	--	--	--
PZ-12-9	1/10/2014	12:25	17.0	--	--	--	--	--	--
PZ-12-10	1/10/2014	12:35	0.0	--	--	--	--	--	--
PZ-12-11	1/10/2014	12:03	6.0	--	--	--	--	--	--
01-MW-01	1/15/2014	13:50	0.0	10.53	3.54	3.504	1.300	1.83	281.0
01-MW-02	1/15/2014	13:40	934.0	12.72	2.32	7.396	2.320	1.70	320.5
01-MW-03	1/15/2014	13:32	13549.0	10.15	2.11	4.059	1.590	2.02	401.9
OBTW-14	1/15/2014	13:25	397.8	10.54	3.60	1.271	8.410	1.16	248.1
OBTW-15	1/15/2014	12:32	0.0	10.69	6.11	0.713	118.000	0.90	-33.5
PZ-12-3	1/15/2014	12:15	0.0	7.88	5.19	0.128	23.700	4.34	197.1
PZ-12-4	1/15/2014	14:00	218.7	9.41	3.80	0.387	2.860	4.37	307.2
PZ-12-5	1/15/2014	13:07	0.0	10.73	4.64	0.109	23.900	9.55	201.7
PZ-12-6	1/15/2014	13:17	0.0	7.81	4.33	0.262	47.800	3.81	284.0
PZ-12-7	1/15/2014	10:15	0.0	--	--	--	--	--	--
PZ-12-8	1/15/2014	11:15	0.0	--	--	--	--	--	--
PZ-12-9	1/15/2014	15:00	3.0	--	--	--	--	--	--
PZ-12-10	1/15/2014	15:17	10.1	--	--	--	--	--	--
PZ-12-11	1/15/2014	14:30	5.1	--	--	--	--	--	--
01-MW-01	1/23/2014	11:40	0.0	--	--	--	--	--	--
01-MW-02	1/23/2014	11:30	2146.0	--	--	--	--	--	--
01-MW-03	1/23/2014	11:25	4122.0	--	--	--	--	--	--
OBTW-14	1/23/2014	11:20	112.0	--	--	--	--	--	--
OBTW-15	1/23/2014	11:05	0.0	--	--	--	--	--	--
PZ-12-3	1/23/2014	10:55	4.7	--	--	--	--	--	--
PZ-12-4	1/23/2014	14:10	11.6	--	--	--	--	--	--
PZ-12-5	1/23/2014	11:10	0.0	--	--	--	--	--	--
PZ-12-6	1/23/2014	11:15	0.0	--	--	--	--	--	--
PZ-12-7	1/23/2014	9:55	0.0	--	--	--	--	--	--
PZ-12-8	1/23/2014	14:00	0.0	--	--	--	--	--	--
PZ-12-9	1/23/2014	12:10	1.3	--	--	--	--	--	--
PZ-12-10	1/23/2014	12:40	0.0	--	--	--	--	--	--
PZ-12-11	1/23/2014	10:05	1.8	--	--	--	--	--	--
01-MW-01	1/29/2014	13:35	0.0	10.89	3.76	3.808	6.860	1.28	232.2
01-MW-02	1/29/2014	13:45	1322.0	11.37	2.20	7.303	1.770	1.60	327.0
01-MW-03	1/29/2014	12:05	1692.0	9.63	1.97	3.962	36.000	1.64	409.9
OBTW-14	1/29/2014	11:56	105.0	10.09	3.54	1.212	33.000	0.66	255.4
OBTW-15	1/29/2014	11:16	0.0	8.97	6.01	0.698	209.000	0.71	-39.8
PZ-12-3	1/29/2014	11:00	0.0	8.06	4.76	0.218	32.800	1.75	211.0
PZ-12-4	1/29/2014	13:59	130.0	7.53	3.19	0.690	35.000	2.20	328.0
PZ-12-5	1/29/2014	11:31	0.0	9.27	5.51	0.128	26.800	5.80	130.2

Table 4-4
Summary of PID and Water Quality Indicator Measurements
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	PID (ppm)	Temperature (°C)	pH (S.U.)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
PZ-12-6	1/29/2014	11:42	0.0	5.74	3.49	0.460	21.400	4.91	305.4
PZ-12-7	1/29/2014	10:15	0.0	--	--	--	--	--	--
PZ-12-8	1/29/2014	10:41	0.0	--	--	--	--	--	--
PZ-12-9	1/29/2014	12:57	3.3	--	--	--	--	--	--
PZ-12-10	1/29/2014	13:13	0.0	--	--	--	--	--	--
PZ-12-11	1/29/2014	12:33	2.1	--	--	--	--	--	--
01-MW-01	2/5/2014	14:31	0.0	--	--	--	--	--	--
01-MW-02	2/5/2014	14:38	495.0	--	--	--	--	--	--
01-MW-03	2/5/2014	11:51	9999.0	--	--	--	--	--	--
OBTW-14	2/5/2014	11:47	389.1	--	--	--	--	--	--
OBTW-15	2/5/2014	11:36	0.0	--	--	--	--	--	--
PZ-12-3	2/5/2014	11:28	0.0	--	--	--	--	--	--
PZ-12-4	2/5/2014	14:42	331.4	--	--	--	--	--	--
PZ-12-5	2/5/2014	11:40	0.0	--	--	--	--	--	--
PZ-12-6	2/5/2014	11:45	0.0	--	--	--	--	--	--
PZ-12-7	--	--	--	--	--	--	--	--	--
PZ-12-8	2/5/2014	10:39	0.0	--	--	--	--	--	--
PZ-12-9	2/5/2014	14:10	3.6	--	--	--	--	--	--
PZ-12-10	2/5/2014	14:25	0.4	--	--	--	--	--	--
PZ-12-11	2/5/2014	13:49	10.6	--	--	--	--	--	--
01-MW-01	2/12/2014	12:28	0.8	9.27	3.29	3.516	2.190	0.97	273.8
01-MW-02	2/12/2014	12:15	1336.0	11.22	2.10	8.195	1.650	2.39	322.7
01-MW-03	2/12/2014	12:00	6478.0	8.07	1.87	4.153	1.460	2.71	406.4
OBTW-14	2/12/2014	11:52	989.9	7.02	3.49	1.358	3.760	1.14	227.6
OBTW-15	2/12/2014	11:10	0.0	5.74	6.19	0.806	46.900	0.54	-11.1
PZ-12-3	2/12/2014	15:40	0.0	3.64	4.90	0.198	118.000	2.14	257.8
PZ-12-4	2/12/2014	15:00	189.7	5.61	3.63	0.799	2.790	4.40	347.7
PZ-12-5	2/12/2014	11:25	0.0	8.53	5.80	0.120	20.600	8.41	112.3
PZ-12-6	2/12/2014	11:38	0.0	4.49	5.37	0.239	47.200	4.92	92.5
PZ-12-7	2/12/2014	10:00	0.0	--	--	--	--	--	--
PZ-12-8	2/12/2014	10:25	0.2	--	--	--	--	--	--
PZ-12-9	2/12/2014	13:00	3.8	--	--	--	--	--	--
PZ-12-10	2/12/2014	12:46	0.8	--	--	--	--	--	--
PZ-12-11	2/12/2014	13:15	2.7	--	--	--	--	--	--
01-MW-01	2/26/2014	14:20	0.0	10.43	3.90	24.150	2.380	0.26	135.4
01-MW-02	2/26/2014	12:50	4244.0	10.99	2.19	21.580	1.690	0.25	326.2
01-MW-03	2/26/2014	12:34	15000.0	9.45	2.54	10.530	2.090	1.68	402.4
OBTW-14	2/26/2014	12:18	241.3	9.12	3.57	4.657	4.030	1.12	209.2
OBTW-15	2/26/2014	11:28	0.0	5.34	6.08	2.726	69.160	1.16	-14.7
PZ-12-3	2/26/2014	11:12	0.0	5.01	5.49	1.047	113.000	5.44	114.8
PZ-12-4	2/26/2014	15:29	56.7	4.76	3.46	4.040	2.050	4.93	264.3
PZ-12-5	2/26/2014	11:50	0.0	9.10	4.83	2.760	4.230	6.88	97.1
PZ-12-6	2/26/2014	12:04	0.0	6.48	5.38	1.301	20.020	5.05	108.3
PZ-12-7	2/26/2014	10:12	0.0	--	--	--	--	--	--
PZ-12-8	2/26/2014	10:47	0.1	--	--	--	--	--	--
PZ-12-9	2/26/2014	15:00	1.7	--	--	--	--	--	--
PZ-12-10	2/26/2014	15:16	1.3	--	--	--	--	--	--
PZ-12-11	2/26/2014	14:32	0.7	--	--	--	--	--	--
01-MW-01	3/5/2014	13:11	0.2	--	--	--	--	--	--
01-MW-02	3/5/2014	13:05	1034.0	--	--	--	--	--	--
01-MW-03	3/5/2014	12:54	4731.0	--	--	--	--	--	--
OBTW-14	3/5/2014	12:49	443.6	--	--	--	--	--	--
OBTW-15	3/5/2014	12:34	0.0	--	--	--	--	--	--
PZ-12-3	3/5/2014	12:27	0.0	--	--	--	--	--	--
PZ-12-4	3/5/2014	15:14	124.9	--	--	--	--	--	--
PZ-12-5	3/5/2014	12:40	0.0	--	--	--	--	--	--
PZ-12-6	3/5/2014	12:45	0.0	--	--	--	--	--	--
PZ-12-7	3/5/2014	11:52	0.1	--	--	--	--	--	--

Table 4-4
Summary of PID and Water Quality Indicator Measurements
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	PID (ppm)	Temperature (°C)	pH (S.U.)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
PZ-12-8	3/5/2014	12:10	0.0	--	--	--	--	--	--
PZ-12-9	3/5/2014	14:48	1.5	--	--	--	--	--	--
PZ-12-10	3/5/2014	15:01	0.9	--	--	--	--	--	--
PZ-12-11	3/5/2014	13:18	7.8	--	--	--	--	--	--
01-MW-01	3/12/2014	12:05	0.0	10.30	4.01	11.420	4.730	0.43	46.5
01-MW-02	3/12/2014	11:45	4231.0	11.31	2.25	10.600	8.850	0.44	341.0
01-MW-03	3/12/2014	11:35	9999.0	9.47	2.14	4.765	1.710	1.90	414.1
OBTW-14	3/12/2014	11:21	1088.0	9.55	3.67	1.752	11.900	0.88	307.8
OBTW-15	3/12/2014	10:03	0.0	5.18	6.25	0.961	106.400	1.53	33.8
PZ-12-3	3/12/2014	9:53	0.0	4.63	5.25	0.200	30.400	1.79	287.6
PZ-12-4	3/12/2014	12:40	1356.0	11.30	3.26	1.595	1.140	4.29	326.1
PZ-12-5	3/12/2014	10:15	0.0	6.93	5.45	0.279	24.400	5.28	183.5
PZ-12-6	3/12/2014	10:24	0.0	5.57	5.36	0.143	40.100	6.86	232.8
PZ-12-7	3/12/2014	9:07	0.0	--	--	--	--	--	--
PZ-12-8	3/12/2014	9:33	0.0	--	--	--	--	--	--
PZ-12-9	3/12/2014	12:20	1.5	--	--	--	--	--	--
PZ-12-10	3/12/2014	12:30	0.0	--	--	--	--	--	--
PZ-12-11	3/12/2014	12:12	0.5	--	--	--	--	--	--
01-MW-01	3/19/2014	12:05	0.0	--	--	--	--	--	--
01-MW-02	3/19/2014	11:45	2371.0	--	--	--	--	--	--
01-MW-03	3/19/2014	11:35	3723.0	--	--	--	--	--	--
OBTW-14	3/19/2014	11:21	388.0	--	--	--	--	--	--
OBTW-15	3/19/2014	10:03	0.0	--	--	--	--	--	--
PZ-12-3	3/19/2014	9:53	0.0	--	--	--	--	--	--
PZ-12-4	3/19/2014	12:40	727.0	--	--	--	--	--	--
PZ-12-5	3/19/2014	10:15	0.0	--	--	--	--	--	--
PZ-12-6	3/19/2014	10:24	0.0	--	--	--	--	--	--
PZ-12-7	3/19/2014	9:07	0.1	--	--	--	--	--	--
PZ-12-8	3/19/2014	9:33	0.0	--	--	--	--	--	--
PZ-12-9	3/19/2014	12:20	0.0	--	--	--	--	--	--
PZ-12-10	3/19/2014	12:30	0.0	--	--	--	--	--	--
PZ-12-11	3/19/2014	12:12	0.1	--	--	--	--	--	--
01-MW-01	3/26/2014	12:05	0.0	9.50	4.08	8.261	1.530	1.29	67.8
01-MW-02	3/26/2014	11:45	1260.8	10.48	2.38	8.618	0.780	1.47	319.1
01-MW-03	3/26/2014	11:35	2034.0	8.97	2.23	3.992	1.310	2.17	400.0
OBTW-14	3/26/2014	11:21	370.0	9.35	3.85	1.415	35.100	0.33	210.5
OBTW-15	3/26/2014	10:03	0.0	7.12	6.24	0.842	134.000	0.32	-38.0
PZ-12-3	3/26/2014	9:53	0.0	6.29	5.63	0.178	79.700	1.73	110.0
PZ-12-4	3/26/2014	12:40	636.4	7.80	3.96	0.372	1.360	2.51	285.5
PZ-12-5	3/26/2014	10:15	0.2	6.88	5.72	0.226	21.700	5.53	141.4
PZ-12-6	3/26/2014	10:24	0.0	6.07	4.83	0.179	15.300	2.77	282.0
PZ-12-7	3/26/2014	9:07	0.0	6.50	7.14	0.145	--	2.43	96.1
PZ-12-8	3/26/2014	9:33	0.0	--	--	--	--	--	--
PZ-12-9	3/26/2014	12:20	0.9	--	--	--	--	--	--
PZ-12-10	3/26/2014	12:30	0.2	--	--	--	--	--	--
PZ-12-11	3/26/2014	12:12	0.8	--	--	--	--	--	--
01-MW-01	4/2/2014	12:05	0.0	--	--	--	--	--	--
01-MW-02	4/2/2014	11:45	823.0	--	--	--	--	--	--
01-MW-03	4/2/2014	11:35	1586.0	--	--	--	--	--	--
OBTW-14	4/2/2014	11:21	277.0	--	--	--	--	--	--
OBTW-15	4/2/2014	10:03	0.0	--	--	--	--	--	--
PZ-12-3	4/2/2014	9:53	0.0	--	--	--	--	--	--
PZ-12-4	4/2/2014	12:40	440.0	--	--	--	--	--	--
PZ-12-5	4/2/2014	10:15	0.4	--	--	--	--	--	--
PZ-12-6	4/2/2014	10:24	0.0	--	--	--	--	--	--
PZ-12-7	4/2/2014	9:07	0.0	--	--	--	--	--	--
PZ-12-8	4/2/2014	9:33	0.0	--	--	--	--	--	--
PZ-12-9	4/2/2014	12:20	2.0	--	--	--	--	--	--

Table 4-4
Summary of PID and Water Quality Indicator Measurements
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	PID (ppm)	Temperature (°C)	pH (S.U.)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
PZ-12-10	4/2/2014	12:30	4.1	--	--	--	--	--	--
PZ-12-11	4/2/2014	12:12	2.1	--	--	--	--	--	--
01-MW-01	4/9/2014	12:05	0.0	8.88	3.98	3.806	2.080	6.68	212.9
01-MW-02	4/9/2014	11:45	256.8	9.84	2.32	7.206	1.760	4.00	333.7
01-MW-03	4/9/2014	11:35	1490.0	8.90	2.27	3.047	3.750	6.84	399.6
OBTW-14	4/9/2014	11:21	361.8	9.41	3.81	1.147	8.180	2.73	257.8
OBTW-15	4/9/2014	10:03	1.4	7.38	6.26	0.711	93.000	1.65	-38.4
PZ-12-3	4/9/2014	9:53	0.0	7.19	5.66	0.137	26.200	0.62	216.3
PZ-12-4	4/9/2014	12:40	1671.0	10.17	3.11	0.595	12.000	4.24	365.6
PZ-12-5	4/9/2014	10:15	0.0	7.51	5.63	0.186	28.200	2.22	203.7
PZ-12-6	4/9/2014	10:24	0.0	7.06	4.53	0.331	25.900	1.47	283.6
PZ-12-7	4/9/2014	9:07	0.0	--	--	--	--	--	--
PZ-12-8	4/9/2014	9:33	0.0	--	--	--	--	--	--
PZ-12-9	4/9/2014	12:20	1.2	--	--	--	--	--	--
PZ-12-10	4/9/2014	12:30	0.6	--	--	--	--	--	--
PZ-12-11	4/9/2014	12:12	2.3	--	--	--	--	--	--
01-MW-01	4/16/2014	10:24	0.0	--	--	--	--	--	--
01-MW-02	4/16/2014	10:20	130.4	--	--	--	--	--	--
01-MW-03	4/16/2014	10:10	1309.0	--	--	--	--	--	--
OBTW-14	4/16/2014	10:05	184.4	--	--	--	--	--	--
OBTW-15	4/16/2014	9:45	0.0	--	--	--	--	--	--
PZ-12-3	4/16/2014	9:39	0.0	--	--	--	--	--	--
PZ-12-4	4/16/2014	10:25	607.8	--	--	--	--	--	--
PZ-12-5	4/16/2014	9:50	0.0	--	--	--	--	--	--
PZ-12-6	4/16/2014	9:59	0.0	--	--	--	--	--	--
PZ-12-7	4/16/2014	7:58	0.0	--	--	--	--	--	--
PZ-12-8	4/16/2014	8:14	0.0	--	--	--	--	--	--
PZ-12-9	4/16/2014	9:15	0.2	--	--	--	--	--	--
PZ-12-10	4/16/2014	9:22	0.3	--	--	--	--	--	--
PZ-12-11	4/16/2014	9:04	0.7	--	--	--	--	--	--
01-MW-01	4/23/2014	13:50	0.1	19.05	3.54	1.640	2.260	1.16	344.6
01-MW-02	4/23/2014	14:02	176.0	9.99	2.21	8.368	2.500	0.83	336.9
01-MW-03	4/23/2014	14:11	4.2	9.64	2.10	3.625	3.220	1.22	412.0
OBTW-14	4/23/2014	13:25	24.8	9.91	3.71	1.379	20.800	1.11	229.0
OBTW-15	4/23/2014	12:12	1.0	7.79	6.27	0.826	95.600	2.37	7.9
PZ-12-3	4/23/2014	11:51	0.3	10.20	5.22	0.155	40.000	2.18	210.1
PZ-12-4	4/23/2014	15:00	1035.0	12.30	2.62	1.454	7.300	3.56	397.9
PZ-12-5	4/23/2014	13:05	4.0	8.45	5.61	0.196	27.300	1.27	186.5
PZ-12-6	4/23/2014	12:44	0.0	8.60	4.62	1.417	39.300	1.32	73.4
PZ-12-7	4/23/2014	10:56	0.5	--	--	--	--	--	--
PZ-12-8	4/23/2014	11:27	0.4	--	--	--	--	--	--
PZ-12-9	4/23/2014	14:32	0.0	--	--	--	--	--	--
PZ-12-10	4/23/2014	13:37	0.2	--	--	--	--	--	--
PZ-12-11	4/23/2014	14:44	1.3	--	--	--	--	--	--
01-MW-01	4/30/2014	12:15	0.0	--	--	--	--	--	--
01-MW-02	4/30/2014	12:10	1620.0	--	--	--	--	--	--
01-MW-03	4/30/2014	13:02	561.0	--	--	--	--	--	--
OBTW-14	4/30/2014	12:58	92.5	--	--	--	--	--	--
OBTW-15	4/30/2014	12:38	0.0	--	--	--	--	--	--
PZ-12-3	4/30/2014	12:30	0.0	--	--	--	--	--	--
PZ-12-4	4/30/2014	13:10	443.0	--	--	--	--	--	--
PZ-12-5	4/30/2014	12:45	0.0	--	--	--	--	--	--
PZ-12-6	4/30/2014	12:52	0.0	--	--	--	--	--	--
PZ-12-7	4/30/2014	10:50	--	--	--	--	--	--	--
PZ-12-8	4/30/2014	11:15	0.0	--	--	--	--	--	--
PZ-12-9	4/30/2014	11:55	0.2	--	--	--	--	--	--
PZ-12-10	4/30/2014	12:00	0.0	--	--	--	--	--	--
PZ-12-11	4/30/2014	11:35	0.0	--	--	--	--	--	--

Table 4-4
Summary of PID and Water Quality Indicator Measurements
American Cyanamid Superfund Site
Bridgewater, New Jersey

Well I.D.	Date	Time	PID (ppm)	Temperature (°C)	pH (S.U.)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
01-MW-01	5/7/2014	12:50	0.0	9.04	3.92	0.372	61.8	5.75	485.0
01-MW-02	5/7/2014	13:05	280.0	9.22	2.83	1.034	40.9	3.22	384.0
01-MW-03	5/7/2014	13:25	391.1	9.98	3.06	0.503	45.2	8.29	384.0
OBTW-14	5/7/2014	12:25	10.2	11.09	6.02	0.141	204.0	2.54	165.0
OBTW-15	5/7/2014	11:40	0.3	10.73	5.99	0.674	196.0	0.59	1.9
PZ-12-3	5/7/2014	12:35	0.7	11.49	5.73	0.184	57.1	1.57	145.5
PZ-12-4	5/7/2014	13:35	885.0	--	2.59	1.395	10.4	3.21	381.0
PZ-12-5	5/7/2014	12:00	0.0	10.55	5.93	0.182	45.2	0.76	157.0
PZ-12-6	5/7/2014	12:15	0.0	9.68	4.49	0.699	185.0	1.24	177.8
PZ-12-7	5/7/2014	9:55	0.0	--	--	--	--	--	--
PZ-12-8	5/7/2014	9:39	0.0	--	--	--	--	--	--
PZ-12-9	5/7/2014	10:45	1.0	--	--	--	--	--	--
PZ-12-10	5/7/2014	10:55	0.3	--	--	--	--	--	--
PZ-12-11	5/7/2014	10:35	0.7	--	--	--	--	--	--
01-MW-01	5/14/2014	11:20	9.8	--	--	--	--	--	--
01-MW-02	5/14/2014	11:30	145.0	--	--	--	--	--	--
01-MW-03	5/14/2014	11:10	239.0	--	--	--	--	--	--
OBTW-14	5/14/2014	11:05	19.0	--	--	--	--	--	--
OBTW-15	5/14/2014	10:52	21.7	--	--	--	--	--	--
PZ-12-3	5/14/2014	10:30	5.4	--	--	--	--	--	--
PZ-12-4	5/14/2014	11:55	635.0	--	--	--	--	--	--
PZ-12-5	5/14/2014	10:58	12.2	--	--	--	--	--	--
PZ-12-6	5/14/2014	11:00	0.4	--	--	--	--	--	--
PZ-12-7	5/14/2014	10:00	9.5	--	--	--	--	--	--
PZ-12-8	5/14/2014	10:15	11.0	--	--	--	--	--	--
PZ-12-9	5/14/2014	9:30	10.8	--	--	--	--	--	--
PZ-12-10	5/14/2014	9:20	10.7	--	--	--	--	--	--
PZ-12-11	5/14/2014	9:00	12.2	--	--	--	--	--	--
01-MW-01	5/21/2014	14:35	0.0	10.25	3.41	0.310	45.900	5.01	402.4
01-MW-02	5/21/2014	14:42	95.8	10.11	1.91	6.003	39.600	0.39	362.0
01-MW-03	5/21/2014	13:55	--	10.65	2.00	1.871	37.800	3.51	417.6
OBTW-14	5/21/2014	13:00	0.0	11.67	6.15	0.608	153.000	4.35	27.8
OBTW-15	5/21/2014	13:44	5.7	13.26	5.63	0.147	25.300	5.85	84.7
PZ-12-3	5/21/2014	12:50	0.0	12.63	6.93	0.174	1.950	0.16	73.8
PZ-12-4	5/21/2014	14:53	603.0	14.90	3.31	0.712	6.400	3.85	331.9
PZ-12-5	5/21/2014	13:12	0.0	11.23	6.04	0.160	8.930	6.58	70.0
PZ-12-6	5/21/2014	13:26	0.0	11.56	4.43	0.546	26.500	3.35	147.7
PZ-12-7	5/21/2014	10:35	0.0	--	--	--	--	--	--
PZ-12-8	5/21/2014	11:01	0.0	--	--	--	--	--	--
PZ-12-9	5/21/2014	11:40	0.2	--	--	--	--	--	--
PZ-12-10	5/21/2014	9:45	0.0	--	--	--	--	--	--
PZ-12-11	5/21/2014	11:15	0.1	--	--	--	--	--	--

Notes:

1) PDI-1 = GT-1 = OBTW-14; PDI-2 = GT-2 = OBTW-15

Abbreviations:

°C - degrees Celsius
S.U. - standard unit
mS/cm - milliSiemens per centimeter
mg/L - milligrams per liter
mV - millivolts
NTU - nephelometric turbidity unit

Entered by: CMD, EG, LMC, RMW
Checked by: CDL, EG, JTC, JWL, LMC, RMW

Table 4-5
Summary of Groundwater Field Parameter Measurements
American Cyanamid Superfund Site
Bridgewater, New Jersey

Sample ID	Date Sampled	Purge and Sample Method	Purge and Sample Equipment	Temperature °C	pH S.U.	Specific Conductivity mS/cm	Turbidity NTU	Dissolved Oxygen mg/L	Oxidation-Reduction Potential mV
Round 1A/1B									
PZ-12-7	10/11/2013	Low Flow	Submersible pump	19.26	5.57	0.366	30.3	0.53	-36
PZ-12-8	10/11/2013	Low Flow	Submersible pump	19.42	5.21	0.201	14	0.00	125
PZ-12-9	10/18/2013	Grab	Bailer	16.05	2.63	5.26	1.1	0.00	307
PZ-12-10	10/11/2013	Low Flow	Submersible pump	16.81	2.96	3.77	196	0.5	344
PZ-12-11	10/18/2013	Grab	Bailer	17.18	2.92	3.23	694	2.27	296
Round 2									
PZ-12-7	10/24/2013	Low Flow	Submersible pump	18.13	6.37	0.262	2.9	0.00	-66
PZ-12-8	10/24/2013	Low Flow	Submersible pump	19.20	4.56	0.146	8.3	0.00	117
PZ-12-9	10/25/2013	Grab	Bailer	15.22	3.00	2.44	50.1	1.72	306
PZ-12-10	10/24/2013	Low Flow	Submersible pump	17.43	2.57	2.46	51.7	0.00	313
PZ-12-11	10/25/2013	Grab	Bailer	15.92	3.46	1.02	29.6	1.78	275
Round 3									
PZ-12-7	11/7/2013	Low Flow	Submersible pump	16.97	6.26	0.556	21.3	0.42	-82
PZ-12-8	11/7/2013	Low Flow	Submersible pump	18.02	5.17	0.366	21.9	0.78	159
PZ-12-9	11/7/2013	Grab	Bailer	13.99	2.78	5.91	>999	7.06	309
PZ-12-10	11/7/2013	Low Flow	Submersible pump	17.45	2.42	5.82	54.3	0.41	319
PZ-12-11	11/7/2013	Grab	Bailer	15.38	3.09	3.53	>999	7.43	289
Round 4									
PZ-12-7	4/16/2014	Low Flow	Submersible pump	7.71	7.07	0.105	137	4.55	124
PZ-12-8	4/16/2014	Low Flow	Submersible pump	10.71	5.71	0.342	7.8	0.34	232
PZ-12-9	4/16/2014	Grab	Bailer	10.82	5.48	0.226	>999	3.65	81
PZ-12-10	4/16/2014	Low Flow	Submersible pump	13.25	2.46	3.94	31.9	0.00	322
PZ-12-11	4/16/2014	Grab	Bailer	13.08	4.51	1.06	550	3.99	151
Round 5									
PZ-12-7	5/21/2014	Low Flow	Submersible pump	21.24	6.90	1.15	58.9	3.12	96
PZ-12-8	5/21/2014	Low Flow	Submersible pump	13.24	5.26	0.251	8.2	0.00	164
PZ-12-9	5/22/2014	Grab	Bailer	15.49	4.60	0.175	8.7	0.71	222
PZ-12-10	5/22/2014	Low Flow	Submersible pump	17.49	3.32	1.52	158	0.08	301
PZ-12-11	5/22/2014	Grab	Bailer	17.57	4.00	0.688	31.0	0.00	219

Abbreviations:
°C - degrees Celsius
S.U. - standard unit
mS/cm - milliSiemens per centimeter
NTU - Nephelometric Turbidity Unit
mg/L - milligram per liter
mV - millivolts

Notes:
1) All field parameter readings are at the final measurement.
2) Golder NJDEP certification #: 03027
3) PZ-12-9 and PZ-12-11 field parameter measurements via sleeve.
4) Turbidity value of >999 indicates maximum detector reading.

Entered by: EG, JTC, LMC
Checked by: CDL, LMC

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-7			PZ-12-7			PZ-12-7			PZ-12-7			PZ-12-7		
		Sample Date	10/11/2013			10/24/2013			11/7/2013			4/16/2014			4/16/2014		
		N=Normal; FD=Field Duplicate	N			N			N			FD			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Acetone	ug/L	6000	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
Acetonitrile	ug/L	100	< 100	U	100	< 100	U	100	< 100	U	100	< 100	U	100	< 100	U	100
Acrolein	ug/L	5	< 50	U	50	< 50	U	50	< 50	U	50	< 50	U	50	< 50	U	50
Acrylonitrile	ug/L	2	< 50	U	50	< 50	U	50	< 50	U	50	< 50	U	50	< 50	U	50
Benzene	ug/L	1	< 1	U	1	< 1	U	1	**3.4**		1	< 0.5	U	0.5	< 0.5	U	0.5
Bromochloromethane	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Bromodichloromethane	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Bromoform	ug/L	4	< 4	U	4	< 4	U	4	< 4	U	4	< 2	U	2	< 2	U	2
Bromomethane	ug/L	10	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
2-Butanone	ug/L	300	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
Carbon Disulfide	ug/L	700	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Carbon Tetrachloride	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Chlorobenzene	ug/L	50	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Chloroethane	ug/L	5	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Chloroform	ug/L	70	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Chloromethane	ug/L	NS	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
2-Chlorotoluene	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
4-Chlorotoluene	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
cis-1,2-Dichloroethene	ug/L	70	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
cis-1,3-Dichloropropene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Cyclohexane	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Dibromochloromethane	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,2-Dibromo-3-chloropropane	ug/L	0.02	< 10	U	10	< 10	U	10	< 10	U	10	< 5	U	5	< 5	U	5
1,2-Dibromoethane	ug/L	0.03	< 2	U	2	< 2	U	2	< 2	U	2	< 1	U	1	< 1	U	1
1,2-Dichlorobenzene	ug/L	600	< 1	U	1	< 1	U	1	0.62	J	1	< 1	U	1	< 1	U	1
1,3-Dichlorobenzene	ug/L	600	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,4-Dichlorobenzene	ug/L	75	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Dichlorodifluoromethane	ug/L	1000	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
1,1-Dichloroethane	ug/L	50	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,2-Dichloroethane	ug/L	2	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,1-Dichloroethene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,2-Dichloroethene, Total	ug/L	NS	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,2-Dichloropropane	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Diethyl Ether	ug/L	1000	< 5	U	5	< 5	U	5	< 5	U	5	< 2	U	2	< 2	U	2
1,4-Dioxane	ug/L	10	< 130	U	130	< 130	U	130	< 130	U	130	< 130	U	130	< 130	U	130
Ethyl Acetate	ug/L	6000	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Ethyl Acrylate	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Ethylbenzene	ug/L	700	< 1	U	1	< 1	U	1	< 1	U	1	< 0.5	U	0.5	< 0.5	U	0.5
Freon 113	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-7			PZ-12-7			PZ-12-7			PZ-12-7			PZ-12-7		
		Sample Date	10/11/2013			10/24/2013			11/7/2013			4/16/2014			4/16/2014		
N=Normal; FD=Field Duplicate			N			N			N			FD			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
2-Hexanone	ug/L	300	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Isopropyl Ether	ug/L	20000	< 5	U	5	< 5	U	5	< 5	U	5	< 2	U	2	< 2	U	2
Isopropylbenzene	ug/L	700	< 2	U	2	< 2	U	2	< 2	U	2	< 1	U	1	< 1	U	1
m,p-Xylenes	ug/L	1000	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Methyl Acetate	ug/L	7000	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Methyl Cyclohexane	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Methyl tert-Butyl Ether	ug/L	70	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Methylacrylonitrile	ug/L	NS	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
Methylene Chloride	ug/L	3	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
4-Methyl-2-pentanone	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
2-Nitropropane	ug/L	NS	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
o-Xylene	ug/L	1000	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Styrene	ug/L	100	< 5	U	5	< 5	U	5	< 5	U	5	< 2	U	2	< 2	U	2
1,1,2,2-Tetrachloroethane	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Tetrachloroethene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Toluene	ug/L	600	< 1	U	1	< 1	U	1	0.55	J	1	< 1	U	1	< 1	U	1
trans-1,2-Dichloroethene	ug/L	100	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
trans-1,3-Dichloropropene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,2,4-Trichlorobenzene	ug/L	9	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
1,1,1-Trichloroethane	ug/L	30	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,1,2-Trichloroethane	ug/L	3	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Trichloroethene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Trichlorofluoromethane	ug/L	2000	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
1,2,3-Trichloropropane	ug/L	0.03	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
1,3,5-Trimethylbenzene	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Vinyl Chloride	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Xylenes, Total	ug/L	1000	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Acenaphthene	ug/L	400	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Acenaphthylene	ug/L	100	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Acetophenone	ug/L	700	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
4-Aminodiphenyl	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
Aniline	ug/L	6	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Anthracene	ug/L	2000	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Atrazine	ug/L	3	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 2	U	2	< 2	U	2
Benzaldehyde	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
1,4-Benzenediol	ug/L	NS	< 10	R	10	< 10	R	10	< 10	UJ	10	< 10	R	10	< 10	R	10
Benzidine	ug/L	20	< 20	U	20	< 21	U	21	< 20	U	20	< 20	U	20	< 20	U	20
Benzo[a]anthracene	ug/L	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1
Benzo[a]pyrene	ug/L	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-7			PZ-12-7			PZ-12-7			PZ-12-7			PZ-12-7		
		Sample Date	10/11/2013			10/24/2013			11/7/2013			4/16/2014			4/16/2014		
N=Normal; FD=Field Duplicate			N			N			N			FD			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Benzo[b]fluoranthene	ug/L	0.2	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1
Benzo[g,h,i]perylene	ug/L	100	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Benzo[k]fluoranthene	ug/L	0.5	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1
Benzoic Acid	ug/L	30000	< 20	U	20	< 21	U	21	< 20	U	20	< 20	U	20	< 20	U	20
Benzyl Alcohol	ug/L	2000	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Biphenyl	ug/L	400	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Bis(2-chloroethoxy)methane	ug/L	NS	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Bis(2-chloroethyl) Ether	ug/L	7	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Bis(2-chloroisopropyl) Ether	ug/L	300	< 2	U	2	< 2.1	UJ	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Bis(2-ethylhexyl) Phthalate	ug/L	3	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
4-Bromophenyl Phenyl Ether	ug/L	NS	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Butylbenzyl Phthalate	ug/L	100	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Caprolactum	ug/L	5000	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Carbazole	ug/L	NS	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Catechol	ug/L	NS	< 10	R	10	< 10	R	10	< 10	UJ	10	< 10	R	10	< 10	R	10
1-Chloro-2-nitrobenzene	ug/L	NS	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
4-Chloro-3-methylphenol	ug/L	100	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
4-Chloroaniline	ug/L	30	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
2-Chloroaniline	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
2-Chloronaphthalene	ug/L	600	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
2-Chlorophenol	ug/L	40	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
4-Chlorophenyl-phenylether	ug/L	NS	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Chrysene	ug/L	5	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Dibenzo[a,h]anthracene	ug/L	0.3	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1
Dibenzofuran	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
3,3'-Dichlorobenzidine	ug/L	30	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 2	U	2	< 2	U	2
2,4-Dichlorophenol	ug/L	20	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 2	U	2	< 2	U	2
Diethyl Phthalate	ug/L	6000	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Dimethyl Phthalate	ug/L	100	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
2,4-Dimethylphenol	ug/L	100	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
Di-n-Butyl Phthalate	ug/L	700	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
4,6-Dinitro-2-methylphenol	ug/L	1	< 20	U	20	< 21	U	21	< 20	U	20	< 20	U	20	< 20	U	20
2,4-Dinitrophenol	ug/L	40	< 20	U	20	< 21	U	21	< 20	U	20	< 20	U	20	< 20	U	20
2,4-Dinitrotoluene	ug/L	10	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 1	U	1	< 1	U	1
2,6-Dinitrotoluene	ug/L	10	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 1	U	1	< 1	U	1
Di-n-octyl Phthalate	ug/L	100	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Diphenylamine	ug/L	200	< 5	UJ	5	< 5.2	UJ	5.2	< 5	UJ	5	< 5.1	UJ	5.1	< 5.1	UJ	5.1
1,2-Diphenylhydrazine	ug/L	20	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Fluoranthene	ug/L	300	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Fluorene	ug/L	300	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-7			PZ-12-7			PZ-12-7			PZ-12-7			PZ-12-7		
		Sample Date	10/11/2013			10/24/2013			11/7/2013			4/16/2014			4/16/2014		
N=Normal; FD=Field Duplicate			N			N			N			FD			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Hexachlorobenzene	ug/L	0.02	< 0.02	U	0.02	< 0.021	U	0.021	< 0.02	U	0.02	< 0.02	U	0.02	< 0.02	U	0.02
Hexachlorobutadiene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Hexachlorocyclopentadiene	ug/L	40	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
Hexachloroethane	ug/L	7	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Indeno[1,2,3-cd]pyrene	ug/L	0.2	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1
Isophorone	ug/L	40	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
m,p-Cresol	ug/L	NS	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
2-Methylnaphthalene	ug/L	30	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
2-Methylphenol	ug/L	NS	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Naphthalene	ug/L	300	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,4-Naphthoquinone	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
4-Nitroaniline	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
2-Nitroaniline	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
3-Nitroaniline	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
Nitrobenzene	ug/L	6	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
4-Nitrophenol	ug/L	NS	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
2-Nitrophenol	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
Nitrosomethylethylamine	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
N-Nitrosodiethylamine	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
N-Nitrosodimethylamine	ug/L	0.8	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
N-Nitroso-di-n-butylamine	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
N-Nitroso-di-n-propylamine	ug/L	10	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
N-Nitrosodiphenylamine	ug/L	10	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
N-Nitrosomorpholine	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
N-Nitrosopiperidine	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
N-Nitrosopyrrolidine	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
o-Toluidine	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
Pentachlorobenzene	ug/L	NS	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
Pentachlorophenol	ug/L	0.3	< 0.3	U	0.3	< 0.31	U	0.31	< 0.3	U	0.3	< 0.31	U	0.31	< 0.31	U	0.31
Phenanthrene	ug/L	100	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Phenol	ug/L	2000	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
Pyrene	ug/L	200	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Pyridine	ug/L	NS	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
1,2,4,5-Tetrachlorobenzene	ug/L	NS	< 2	U	2	< 2.1	U	2.1	< 2	U	2	< 2	U	2	< 2	U	2
2,3,4,6-Tetrachlorophenol	ug/L	200	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
2,4,6-Trichlorophenol	ug/L	20	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
2,4,5-Trichlorophenol	ug/L	700	< 5	U	5	< 5.2	U	5.2	< 5	U	5	< 5.1	U	5.1	< 5.1	U	5.1
Aluminum	ug/L	200	**3830**		200	**505**	J	200	**263**	J	200	**1220**		200	**1320**		200
Antimony	ug/L	6	< 6	U	6	< 6	U	6	< 6	U	6	< 6	U	6	< 6	U	6

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-7			PZ-12-7			PZ-12-7			PZ-12-7			PZ-12-7		
		Sample Date	10/11/2013			10/24/2013			11/7/2013			4/16/2014			4/16/2014		
		N=Normal; FD=Field Duplicate	N			N			N			FD			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Arsenic	ug/L	3	**12.7**		3	**9.8**		3	< 3	U	3	**3.1**		3	2.8	J	3
Barium	ug/L	6000	55.2	J	200	25.5	J	200	37	J	50	33.6	J	200	33.4	J	200
Beryllium	ug/L	1	< 1	U	1	< 1	U	1	< 4	U	4	< 1	U	1	< 1	U	1
Cadmium	ug/L	4	1.1	J	3	0.6	J	3	< 4	U	4	0.7	J	3	0.8	J	3
Calcium	ug/L	NS	35900		5000	34900	J	5000	41600		5000	10200		5000	10200		5000
Chromium	ug/L	70	17.7		10	2.3	J	10	2.3	J	10	3.5	J	10	4	J	10
Cobalt	ug/L	100	2.7	J	50	1.3	J	50	2.1	J	50	< 50	U	50	< 50	U	50
Copper	ug/L	1300	14.6		10	< 10	U	10	< 25	U	25	13		10	13.7		10
Iron	ug/L	300	**27700**		100	**20000**		100	**24700**		100	**2020**		100	**2120**		100
Lead	ug/L	5	**11.2**		3	3.8		3	1.8	J	5	**5.2**		3	4.1		3
Magnesium	ug/L	NS	11100		5000	10300	J	5000	12700		5000	1770	J	5000	1770	J	5000
Manganese	ug/L	50	**4100**		15	**3590**	J	15	**4260**		15	27.1		15	26.3		15
Mercury	ug/L	2	< 0.2	U	0.2	< 0.2	U	0.2	< 0.2	U	0.2	0.14	J	0.2	0.15	J	0.2
Nickel	ug/L	100	10.2		10	4.1	J	10	3.1	J	40	4.1	J	10	3.8	J	10
Potassium	ug/L	NS	6060	J	10000	4300	J	10000	5300		5000	1940	J	10000	1970	J	10000
Selenium	ug/L	40	3.4	J	10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
Silver	ug/L	40	3.8	J	10	2.4	J	10	< 5	U	5	< 10	U	10	< 10	U	10
Sodium	ug/L	50000	11000		10000	9360	J	10000	11300		5000	5230	J	10000	5280	J	10000
Thallium	ug/L	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Vanadium	ug/L	NS	16	J	50	3	J	50	< 10	U	10	4	J	50	4.1	J	50
Zinc	ug/L	2000	33.9		20	9.7	J	20	3.8	J	20	24.1		20	21.2		20

Notes:

1.) NJ GWQS: Higher of the Practical Quantitation Limit and New Jersey Ground Water Quality Criterion (N.J.A.C. 7:9C) 07/2010, as well as Interim Groundwater Quality Critieria.

2.) Detected results greater than the NJ GWQS are shown in **bold.**

Qualifiers:

J = estimated result
R = rejected result
U = not detected above RL
UJ = not detected above RL, RL is estimated

Abbreviations:

NS = standard not available
Qual = interpreted qualifier
RL = reporting limit
ug/L = micrograms per liter

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-7			PZ-12-8			PZ-12-8			PZ-12-8			PZ-12-8		
		Sample Date	5/21/2014			10/11/2013			10/11/2013			10/24/2013			11/7/2013		
		N=Normal; FD=Field Duplicate	N			N			FD			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Acetone	ug/L	6000	20.4		10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
Acetonitrile	ug/L	100	< 100	U	100	< 100	U	100	< 100	U	100	< 100	U	100	< 100	U	100
Acrolein	ug/L	5	< 50	U	50	< 50	U	50	< 50	U	50	< 50	U	50	< 50	U	50
Acrylonitrile	ug/L	2	< 50	U	50	< 50	U	50	< 50	U	50	< 50	U	50	< 50	U	50
Benzene	ug/L	1	0.24	J	0.5	< 1	U	1	< 1	U	1	< 1	U	1	**3**		1
Bromochloromethane	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Bromodichloromethane	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Bromoform	ug/L	4	< 2	U	2	< 4	U	4	< 4	U	4	< 4	U	4	< 4	U	4
Bromomethane	ug/L	10	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
2-Butanone	ug/L	300	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
Carbon Disulfide	ug/L	700	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Carbon Tetrachloride	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Chlorobenzene	ug/L	50	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	0.56	J	1
Chloroethane	ug/L	5	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Chloroform	ug/L	70	0.38	J	1	< 1	U	1	< 1	U	1	< 1	U	1	1.2		1
Chloromethane	ug/L	NS	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
2-Chlorotoluene	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
4-Chlorotoluene	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
cis-1,2-Dichloroethene	ug/L	70	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
cis-1,3-Dichloropropene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Cyclohexane	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Dibromochloromethane	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,2-Dibromo-3-chloropropane	ug/L	0.02	< 5	U	5	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
1,2-Dibromoethane	ug/L	0.03	< 1	U	1	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
1,2-Dichlorobenzene	ug/L	600	< 1	U	1	0.43	J	1	0.46	J	1	< 1	U	1	9.1		1
1,3-Dichlorobenzene	ug/L	600	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,4-Dichlorobenzene	ug/L	75	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	0.61	J	1
Dichlorodifluoromethane	ug/L	1000	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
1,1-Dichloroethane	ug/L	50	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,2-Dichloroethane	ug/L	2	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,1-Dichloroethene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,2-Dichloroethene, Total	ug/L	NS	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,2-Dichloropropane	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Diethyl Ether	ug/L	1000	< 2	U	2	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
1,4-Dioxane	ug/L	10	< 130	U	130	< 130	U	130	< 130	U	130	< 130	U	130	< 130	U	130
Ethyl Acetate	ug/L	6000	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Ethyl Acrylate	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Ethylbenzene	ug/L	700	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Freon 113	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-7			PZ-12-8			PZ-12-8			PZ-12-8			PZ-12-8		
		Sample Date	5/21/2014			10/11/2013			10/11/2013			10/24/2013			11/7/2013		
		N=Normal; FD=Field Duplicate	N			N			FD			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
2-Hexanone	ug/L	300	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Isopropyl Ether	ug/L	20000	< 2	U	2	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Isopropylbenzene	ug/L	700	< 1	U	1	< 2	U	2	< 2	U	2	< 2	U	2	2.2		2
m,p-Xylenes	ug/L	1000	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Methyl Acetate	ug/L	7000	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Methyl Cyclohexane	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Methyl tert-Butyl Ether	ug/L	70	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Methylacrylonitrile	ug/L	NS	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
Methylene Chloride	ug/L	3	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
4-Methyl-2-pentanone	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
2-Nitropropane	ug/L	NS	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
o-Xylene	ug/L	1000	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Styrene	ug/L	100	< 2	U	2	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
1,1,2,2-Tetrachloroethane	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Tetrachloroethene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Toluene	ug/L	600	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
trans-1,2-Dichloroethene	ug/L	100	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
trans-1,3-Dichloropropene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,2,4-Trichlorobenzene	ug/L	9	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
1,1,1-Trichloroethane	ug/L	30	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
1,1,2-Trichloroethane	ug/L	3	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Trichloroethene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Trichlorofluoromethane	ug/L	2000	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
1,2,3-Trichloropropane	ug/L	0.03	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
1,3,5-Trimethylbenzene	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Vinyl Chloride	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Xylenes, Total	ug/L	1000	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Acenaphthene	ug/L	400	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
Acenaphthylene	ug/L	100	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
Acetophenone	ug/L	700	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
4-Aminodiphenyl	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
Aniline	ug/L	6	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Anthracene	ug/L	2000	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
Atrazine	ug/L	3	< 2	U	2	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
Benzaldehyde	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
1,4-Benzenediol	ug/L	NS	< 10	UJ	10	< 10	R	10	< 10	R	10	< 11	R	11	< 10	UJ	10
Benzidine	ug/L	20	< 20	U	20	< 20	U	20	< 20	U	20	< 22	U	22	< 20	U	20
Benzo[a]anthracene	ug/L	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.11	U	0.11	< 0.1	U	0.1
Benzo[a]pyrene	ug/L	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.11	U	0.11	< 0.1	U	0.1

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-7			PZ-12-8			PZ-12-8			PZ-12-8			PZ-12-8		
		Sample Date	5/21/2014			10/11/2013			10/11/2013			10/24/2013			11/7/2013		
N=Normal; FD=Field Duplicate			N			N			FD			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Benzo[b]fluoranthene	ug/L	0.2	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.11	U	0.11	< 0.1	U	0.1
Benzo[g,h,i]perylene	ug/L	100	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
Benzo[k]fluoranthene	ug/L	0.5	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.11	U	0.11	< 0.1	U	0.1
Benzoic Acid	ug/L	30000	< 20	U	20	< 20	U	20	< 20	U	20	< 22	U	22	< 20	U	20
Benzyl Alcohol	ug/L	2000	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Biphenyl	ug/L	400	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
Bis(2-chloroethoxy)methane	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Bis(2-chloroethyl) Ether	ug/L	7	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Bis(2-chloroisopropyl) Ether	ug/L	300	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	UJ	2.2	< 2	U	2
Bis(2-ethylhexyl) Phthalate	ug/L	3	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
4-Bromophenyl Phenyl Ether	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Butylbenzyl Phthalate	ug/L	100	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Caprolactum	ug/L	5000	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Carbazole	ug/L	NS	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
Catechol	ug/L	NS	< 10	R	10	< 10	R	10	< 10	R	10	< 11	R	11	< 10	UJ	10
1-Chloro-2-nitrobenzene	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
4-Chloro-3-methylphenol	ug/L	100	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
4-Chloroaniline	ug/L	30	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
2-Chloroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
2-Chloronaphthalene	ug/L	600	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
2-Chlorophenol	ug/L	40	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
4-Chlorophenyl-phenylether	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Chrysene	ug/L	5	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
Dibenzo[a,h]anthracene	ug/L	0.3	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.11	U	0.11	< 0.1	U	0.1
Dibenzofuran	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
3,3'-Dichlorobenzidine	ug/L	30	< 2	U	2	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
2,4-Dichlorophenol	ug/L	20	< 2	U	2	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
Diethyl Phthalate	ug/L	6000	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Dimethyl Phthalate	ug/L	100	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
2,4-Dimethylphenol	ug/L	100	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
Di-n-Butyl Phthalate	ug/L	700	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
4,6-Dinitro-2-methylphenol	ug/L	1	< 20	U	20	< 20	U	20	< 20	U	20	< 22	U	22	< 20	U	20
2,4-Dinitrophenol	ug/L	40	< 20	U	20	< 20	U	20	< 20	U	20	< 22	U	22	< 20	U	20
2,4-Dinitrotoluene	ug/L	10	< 1	U	1	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
2,6-Dinitrotoluene	ug/L	10	< 1	U	1	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Di-n-octyl Phthalate	ug/L	100	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Diphenylamine	ug/L	200	< 5	UJ	5	< 5	UJ	5	< 5	UJ	5	< 5.6	UJ	5.6	< 5	UJ	5
1,2-Diphenylhydrazine	ug/L	20	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
Fluoranthene	ug/L	300	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
Fluorene	ug/L	300	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-7			PZ-12-8			PZ-12-8			PZ-12-8			PZ-12-8		
		Sample Date	5/21/2014			10/11/2013			10/11/2013			10/24/2013			11/7/2013		
N=Normal; FD=Field Duplicate			N			N			FD			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Hexachlorobenzene	ug/L	0.02	< 0.02	U	0.02	< 0.02	U	0.02	< 0.02	U	0.02	< 0.022	U	0.022	< 0.02	U	0.02
Hexachlorobutadiene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
Hexachlorocyclopentadiene	ug/L	40	< 10	U	10	< 10	U	10	< 10	U	10	< 11	U	11	< 10	U	10
Hexachloroethane	ug/L	7	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Indeno[1,2,3-cd]pyrene	ug/L	0.2	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.11	U	0.11	< 0.1	U	0.1
Isophorone	ug/L	40	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
m,p-Cresol	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
2-Methylnaphthalene	ug/L	30	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
2-Methylphenol	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Naphthalene	ug/L	300	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
1,4-Naphthoquinone	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
4-Nitroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
2-Nitroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
3-Nitroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
Nitrobenzene	ug/L	6	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
4-Nitrophenol	ug/L	NS	< 10	U	10	< 10	U	10	< 10	U	10	< 11	U	11	< 10	U	10
2-Nitrophenol	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
Nitrosomethylethylamine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
N-Nitrosodiethylamine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
N-Nitrosodimethylamine	ug/L	0.8	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
N-Nitroso-di-n-butylamine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
N-Nitroso-di-n-propylamine	ug/L	10	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
N-Nitrosodiphenylamine	ug/L	10	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
N-Nitrosomorpholine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
N-Nitrosopiperidine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
N-Nitrosopyrrolidine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
o-Toluidine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
Pentachlorobenzene	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
Pentachlorophenol	ug/L	0.3	< 0.3	U	0.3	< 0.3	U	0.3	< 0.3	U	0.3	< 0.34	U	0.34	< 0.3	U	0.3
Phenanthrene	ug/L	100	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
Phenol	ug/L	2000	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
Pyrene	ug/L	200	< 1	U	1	< 1	U	1	< 1	U	1	< 1.1	U	1.1	< 1	U	1
Pyridine	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
1,2,4,5-Tetrachlorobenzene	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2.2	U	2.2	< 2	U	2
2,3,4,6-Tetrachlorophenol	ug/L	200	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
2,4,6-Trichlorophenol	ug/L	20	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
2,4,5-Trichlorophenol	ug/L	700	< 5	U	5	< 5	U	5	< 5	U	5	< 5.6	U	5.6	< 5	U	5
Aluminum	ug/L	200	**638**		200	**803**		200	**622**		200	**409**	J	200	**2560**	J	200
Antimony	ug/L	6	< 6	U	6	< 6	U	6	< 6	U	6	< 6	U	6	< 6	U	6

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-7			PZ-12-8			PZ-12-8			PZ-12-8			PZ-12-8		
		Sample Date	5/21/2014			10/11/2013			10/11/2013			10/24/2013			11/7/2013		
		N=Normal; FD=Field Duplicate	N			N			FD			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Arsenic	ug/L	3	< 3	U	3	**5.2**		3	< 3	U	3	**3.2**		3	< 3	U	3
Barium	ug/L	6000	103	J	200	16.6	J	200	13.3	J	200	16.9	J	200	38.8	J	50
Beryllium	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	0.5	J	4
Cadmium	ug/L	4	3.4		3	0.9	J	3	< 3	U	3	0.8	J	3	< 4	U	4
Calcium	ug/L	NS	64700		5000	17300		5000	15700		5000	15900	J	5000	20900		5000
Chromium	ug/L	70	2.7	J	10	3.4	J	10	2.8	J	10	2.6	J	10	33.6		10
Cobalt	ug/L	100	2.1	J	50	4	J	50	3.7	J	50	3.3	J	50	8	J	50
Copper	ug/L	1300	11.5		10	18.9		10	16.1		10	4.9	J	10	29.4		25
Iron	ug/L	300	**1150**		100	**4520**		100	**3930**		100	**3370**		100	**8680**		100
Lead	ug/L	5	2.9	J	3	4.2		3	< 3	U	3	3.5		3	**5.3**		5
Magnesium	ug/L	NS	11000		5000	5690		5000	5270		5000	5450	J	5000	8270		5000
Manganese	ug/L	50	**415**		15	**1140**		15	**992**		15	**1040**	J	15	**1570**		15
Mercury	ug/L	2	0.073	J	0.2	0.13	J	0.2	0.12	J	0.2	0.09	J	0.2	0.078	J	0.2
Nickel	ug/L	100	8.5	J	10	32.9		10	31.6		10	32.5		10	65.5		40
Potassium	ug/L	NS	3800	J	10000	1710	J	10000	1550	J	10000	1410	J	10000	2130	J	5000
Selenium	ug/L	40	< 10	U	10	< 10	U	10	9.8	J	10	2.6	J	10	< 10	U	10
Silver	ug/L	40	< 10	U	10	1.5	J	10	< 10	U	10	< 10	U	10	< 5	U	5
Sodium	ug/L	50000	**97700**		10000	11600		10000	10200		10000	10900	J	10000	18300		5000
Thallium	ug/L	2	< 2	U	2	< 2	U	2	< 2	U	2	1.6	J	2	< 2	U	2
Vanadium	ug/L	NS	3.2	J	50	3.7	J	50	2.1	J	50	2.4	J	50	10.8		10
Zinc	ug/L	2000	26		20	55.3		20	52.1		20	28.7		20	59.7	J	20

Notes: **Notes:**
1.) NJ GWQ 1.) NJ GWQS: Higher of the Practical Quantitation Limit and New Jersey Ground Water Quality
Criterion (N Criterion (N.J.A.C. 7:9C) 07/2010, as well as Interim Groundwater Quality Critieria.
2.) Detecte 2.) Detected results greater than the NJ GWQS are shown in **bold.**

Qualifiers: Qualifiers:
J = estimat J = estimated result
R = rejecte R = rejected result
U = not det U = not detected above RL
UJ = not de UJ = not detected above RL, RL is estimated

Abbreviations:
NS = standard not available
Qual = interpreted qualifier
RL = reporting limit
ug/L = micrograms per liter

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-8			PZ-12-8			PZ-12-9			PZ-12-9			PZ-12-9		
		Sample Date	4/16/2014			5/21/2014			10/18/2013			10/25/2013			11/7/2013		
		N=Normal; FD=Field Duplicate	N			N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Acetone	ug/L	6000	< 10	U	10	< 10	U	10	**6950**		1000	**6030**		2500	3790		2000
Acetonitrile	ug/L	100	< 100	U	100	< 100	U	100	< 10000	U	10000	< 25000	U	25000	< 20000	U	20000
Acrolein	ug/L	5	< 50	U	50	< 50	U	50	< 5000	U	5000	< 13000	U	13000	< 10000	U	10000
Acrylonitrile	ug/L	2	< 50	U	50	< 50	U	50	< 5000	U	5000	< 13000	U	13000	< 10000	U	10000
Benzene	ug/L	1	0.7		0.5	**1.2**		0.5	**76100**		2000	**77700**		2000	**93000**		2000
Bromochloromethane	ug/L	NS	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
Bromodichloromethane	ug/L	1	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
Bromoform	ug/L	4	< 2	U	2	< 2	U	2	< 400	U	400	< 1000	U	1000	< 800	U	800
Bromomethane	ug/L	10	< 2	U	2	< 2	U	2	< 200	U	200	< 500	U	500	< 400	U	400
2-Butanone	ug/L	300	< 10	U	10	< 10	U	10	< 1000	U	1000	< 2500	U	2500	< 2000	U	2000
Carbon Disulfide	ug/L	700	< 2	U	2	< 2	U	2	73.5	J	200	104	J	500	< 400	U	400
Carbon Tetrachloride	ug/L	1	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
Chlorobenzene	ug/L	50	< 1	U	1	< 1	U	1	**1180**		100	**1240**		250	**1420**		200
Chloroethane	ug/L	5	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
Chloroform	ug/L	70	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
Chloromethane	ug/L	NS	< 1	U	1	< 1	U	1	207		100	235	J	250	266		200
2-Chlorotoluene	ug/L	NS	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
4-Chlorotoluene	ug/L	NS	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
cis-1,2-Dichloroethene	ug/L	70	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
cis-1,3-Dichloropropene	ug/L	1	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
Cyclohexane	ug/L	NS	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
Dibromochloromethane	ug/L	1	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
1,2-Dibromo-3-chloropropane	ug/L	0.02	< 5	U	5	< 5	U	5	< 1000	U	1000	< 2500	U	2500	< 2000	U	2000
1,2-Dibromoethane	ug/L	0.03	< 1	U	1	< 1	U	1	< 200	U	200	< 500	U	500	< 400	U	400
1,2-Dichlorobenzene	ug/L	600	< 1	U	1	< 1	U	1	**25900**		2000	**29200**		250	**34500**		200
1,3-Dichlorobenzene	ug/L	600	< 1	U	1	< 1	U	1	139		100	155	J	250	168	J	200
1,4-Dichlorobenzene	ug/L	75	< 1	U	1	< 1	U	1	**1830**		100	**2000**		250	**2280**		200
Dichlorodifluoromethane	ug/L	1000	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
1,1-Dichloroethane	ug/L	50	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
1,2-Dichloroethane	ug/L	2	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
1,1-Dichloroethene	ug/L	1	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
1,2-Dichloroethene, Total	ug/L	NS	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
1,2-Dichloropropane	ug/L	1	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
Diethyl Ether	ug/L	1000	< 2	U	2	< 2	U	2	< 500	U	500	< 1300	U	1300	< 1000	U	1000
1,4-Dioxane	ug/L	10	< 130	U	130	< 130	U	130	< 13000	U	13000	< 31000	U	31000	< 25000	U	25000
Ethyl Acetate	ug/L	6000	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
Ethyl Acrylate	ug/L	NS	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
Ethylbenzene	ug/L	700	< 0.5	U	0.5	< 1	U	1	54.2	J	100	72	J	250	70	J	200
Freon 113	ug/L	NS	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-8			PZ-12-8			PZ-12-9			PZ-12-9			PZ-12-9		
		Sample Date	4/16/2014			5/21/2014			10/18/2013			10/25/2013			11/7/2013		
N=Normal; FD=Field Duplicate			N			N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
2-Hexanone	ug/L	300	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
Isopropyl Ether	ug/L	20000	< 2	U	2	< 2	U	2	< 500	U	500	< 1300	U	1300	< 1000	U	1000
Isopropylbenzene	ug/L	700	< 1	U	1	< 1	U	1	37.4	J	200	< 500	U	500	50.5	J	400
m,p-Xylenes	ug/L	1000	< 1	U	1	< 1	U	1	606		100	752		250	750		200
Methyl Acetate	ug/L	7000	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
Methyl Cyclohexane	ug/L	NS	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
Methyl tert-Butyl Ether	ug/L	70	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
Methylacrylonitrile	ug/L	NS	< 10	U	10	< 10	U	10	< 1000	U	1000	< 2500	U	2500	< 2000	U	2000
Methylene Chloride	ug/L	3	< 2	U	2	< 2	U	2	< 200	U	200	< 500	U	500	< 400	U	400
4-Methyl-2-pentanone	ug/L	NS	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
2-Nitropropane	ug/L	NS	< 10	U	10	< 10	U	10	< 1000	U	1000	< 2500	U	2500	< 2000	U	2000
o-Xylene	ug/L	1000	< 1	U	1	< 1	U	1	214		100	258		250	257		200
Styrene	ug/L	100	< 2	U	2	< 2	U	2	< 500	U	500	< 1300	U	1300	< 1000	U	1000
1,1,2,2-Tetrachloroethane	ug/L	1	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
Tetrachloroethene	ug/L	1	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
Toluene	ug/L	600	< 1	U	1	< 1	U	1	**5650**		100	**7230**		250	**7300**		200
trans-1,2-Dichloroethene	ug/L	100	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
trans-1,3-Dichloropropene	ug/L	1	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
1,2,4-Trichlorobenzene	ug/L	9	< 5	U	5	< 5	U	5	**282**	J	500	**330**	J	1300	**411**	J	1000
1,1,1-Trichloroethane	ug/L	30	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
1,1,2-Trichloroethane	ug/L	3	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
Trichloroethene	ug/L	1	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
Trichlorofluoromethane	ug/L	2000	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
1,2,3-Trichloropropane	ug/L	0.03	< 5	U	5	< 5	U	5	< 500	U	500	< 1300	U	1300	< 1000	U	1000
1,3,5-Trimethylbenzene	ug/L	NS	< 2	U	2	< 2	U	2	71.7	J	200	< 500	U	500	85.1	J	400
Vinyl Chloride	ug/L	1	< 1	U	1	< 1	U	1	< 100	U	100	< 250	U	250	< 200	U	200
Xylenes, Total	ug/L	1000	< 1	U	1	< 1	U	1	820		100	**1010**		250	**1010**		200
Acenaphthene	ug/L	400	< 1	U	1	< 1	U	1	< 1	UJ	1	< 1	U	1	< 1	U	1
Acenaphthylene	ug/L	100	< 1	U	1	< 1	U	1	< 1	UJ	1	< 1	U	1	< 1	U	1
Acetophenone	ug/L	700	< 2	U	2	< 2	U	2	574	J	41	687		20	**998**		20
4-Aminodiphenyl	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
Aniline	ug/L	6	< 2	U	2	< 2	U	2	**353**	J	41	**266**		20	**140**		20
Anthracene	ug/L	2000	< 1	U	1	< 1	U	1	< 1	UJ	1	< 1	U	1	< 1	U	1
Atrazine	ug/L	3	< 2	U	2	< 2	U	2	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
Benzaldehyde	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
1,4-Benzenediol	ug/L	NS	< 10	R	10	< 10	UJ	10	< 10	R	10	< 10	R	10	< 10	UJ	10
Benzidine	ug/L	20	< 20	U	20	< 20	U	20	< 20	UJ	20	< 20	U	20	< 20	U	20
Benzo[a]anthracene	ug/L	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.5	U	0.5	< 0.1	U	0.1
Benzo[a]pyrene	ug/L	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.5	U	0.5	< 0.1	U	0.1

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-8			PZ-12-8			PZ-12-9			PZ-12-9			PZ-12-9		
		Sample Date	4/16/2014			5/21/2014			10/18/2013			10/25/2013			11/7/2013		
N=Normal; FD=Field Duplicate			N			N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Benzo[b]fluoranthene	ug/L	0.2	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.5	U	0.5	< 0.1	U	0.1
Benzo[g,h,i]perylene	ug/L	100	< 1	U	1	< 1	U	1	< 1	UJ	1	< 1	U	1	< 1	U	1
Benzo[k]fluoranthene	ug/L	0.5	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.5	U	0.5	< 0.1	U	0.1
Benzoic Acid	ug/L	30000	< 20	U	20	< 20	U	20	386	J	200	591		200	839		200
Benzyl Alcohol	ug/L	2000	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
Biphenyl	ug/L	400	< 1	U	1	< 1	U	1	4.6	J	1	< 1	U	1	< 1	U	1
Bis(2-chloroethoxy)methane	ug/L	NS	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
Bis(2-chloroethyl) Ether	ug/L	7	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
Bis(2-chloroisopropyl) Ether	ug/L	300	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	UJ	2	< 2	U	2
Bis(2-ethylhexyl) Phthalate	ug/L	3	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
4-Bromophenyl Phenyl Ether	ug/L	NS	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
Butylbenzyl Phthalate	ug/L	100	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
Caprolactum	ug/L	5000	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
Carbazole	ug/L	NS	< 1	U	1	< 1	U	1	< 1	UJ	1	< 1	U	1	< 1	U	1
Catechol	ug/L	NS	< 10	R	10	< 10	R	10	< 10	R	10	< 10	R	10	< 10	UJ	10
1-Chloro-2-nitrobenzene	ug/L	NS	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
4-Chloro-3-methylphenol	ug/L	100	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
4-Chloroaniline	ug/L	30	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
2-Chloroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
2-Chloronaphthalene	ug/L	600	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
2-Chlorophenol	ug/L	40	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
4-Chlorophenyl-phenylether	ug/L	NS	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
Chrysene	ug/L	5	< 1	U	1	< 1	U	1	< 1	UJ	1	< 1	U	1	< 1	U	1
Dibenzo[a,h]anthracene	ug/L	0.3	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.5	U	0.5	< 0.1	U	0.1
Dibenzofuran	ug/L	NS	< 5	U	5	< 5	U	5	2.5	J	5.1	< 5	U	5	< 5	U	5
3,3'-Dichlorobenzidine	ug/L	30	< 2	U	2	< 2	U	2	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
2,4-Dichlorophenol	ug/L	20	< 2	U	2	< 2	U	2	< 5.1	UJ	5.1	**23.9**		5	< 5	U	5
Diethyl Phthalate	ug/L	6000	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
Dimethyl Phthalate	ug/L	100	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
2,4-Dimethylphenol	ug/L	100	< 5	U	5	< 5	U	5	6.4	J	5.1	6.1		5	10		5
Di-n-Butyl Phthalate	ug/L	700	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
4,6-Dinitro-2-methylphenol	ug/L	1	< 20	U	20	< 20	U	20	< 20	UJ	20	< 20	U	20	< 20	U	20
2,4-Dinitrophenol	ug/L	40	< 20	U	20	< 20	U	20	< 20	UJ	20	< 20	U	20	< 20	U	20
2,4-Dinitrotoluene	ug/L	10	< 1	U	1	< 1	U	1	< 2	UJ	2	< 2	U	2	< 2	U	2
2,6-Dinitrotoluene	ug/L	10	< 1	U	1	< 1	U	1	< 2	UJ	2	< 2	U	2	< 2	U	2
Di-n-octyl Phthalate	ug/L	100	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
Diphenylamine	ug/L	200	< 5	UJ	5	< 5	UJ	5	< 5.1	UJ	5.1	< 5	UJ	5	< 5	UJ	5
1,2-Diphenylhydrazine	ug/L	20	< 1	U	1	< 1	U	1	< 1	UJ	1	< 1	U	1	< 1	U	1
Fluoranthene	ug/L	300	< 1	U	1	< 1	U	1	< 1	UJ	1	< 1	U	1	< 1	U	1
Fluorene	ug/L	300	< 1	U	1	< 1	U	1	< 1	UJ	1	< 1	U	1	< 1	U	1

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-8			PZ-12-8			PZ-12-9			PZ-12-9			PZ-12-9		
		Sample Date	4/16/2014			5/21/2014			10/18/2013			10/25/2013			11/7/2013		
N=Normal; FD=Field Duplicate			N			N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Hexachlorobenzene	ug/L	0.02	< 0.02	U	0.02	< 0.02	U	0.02	< 0.02	U	0.02	< 0.1	U	0.1	< 0.02	U	0.02
Hexachlorobutadiene	ug/L	1	< 1	U	1	< 1	U	1	< 1	UJ	1	< 1	U	1	< 1	U	1
Hexachlorocyclopentadiene	ug/L	40	< 10	U	10	< 10	U	10	< 10	UJ	10	< 10	U	10	< 10	U	10
Hexachloroethane	ug/L	7	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
Indeno[1,2,3-cd]pyrene	ug/L	0.2	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.5	U	0.5	< 0.1	U	0.1
Isophorone	ug/L	40	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
m,p-Cresol	ug/L	NS	< 2	U	2	< 2	U	2	13	J	2	12.3		2	24.8		2
2-Methylnaphthalene	ug/L	30	< 1	U	1	< 1	U	1	**51.7**	J	1	**54.9**		1	**44.5**		1
2-Methylphenol	ug/L	NS	< 2	U	2	< 2	U	2	6.6	J	2	5.8		2	< 2	U	2
Naphthalene	ug/L	300	< 1	U	1	< 1	U	1	**1870**	J	20	**1940**		40	**2420**		100
1,4-Naphthoquinone	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
4-Nitroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
2-Nitroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
3-Nitroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
Nitrobenzene	ug/L	6	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	**29.1**		2
4-Nitrophenol	ug/L	NS	< 10	U	10	< 10	U	10	< 10	UJ	10	< 10	U	10	< 10	U	10
2-Nitrophenol	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
Nitrosomethylethylamine	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
N-Nitrosodiethylamine	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
N-Nitrosodimethylamine	ug/L	0.8	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
N-Nitroso-di-n-butylamine	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
N-Nitroso-di-n-propylamine	ug/L	10	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
N-Nitrosodiphenylamine	ug/L	10	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
N-Nitrosomorpholine	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
N-Nitrosopiperidine	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
N-Nitrosopyrrolidine	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
o-Toluidine	ug/L	NS	< 5	U	5	< 5	U	5	12	J	5.1	< 5	U	5	< 5	U	5
Pentachlorobenzene	ug/L	NS	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
Pentachlorophenol	ug/L	0.3	< 0.3	U	0.3	< 0.3	U	0.3	< 0.3	R	0.3	< 1.5	U	1.5	< 0.3	R	0.3
Phenanthrene	ug/L	100	< 1	U	1	< 1	U	1	2	J	1	< 1	U	1	1.4		1
Phenol	ug/L	2000	< 2	U	2	< 2	U	2	64.4	J	2	45.6		2	35.3		2
Pyrene	ug/L	200	< 1	U	1	< 1	U	1	< 1	UJ	1	< 1	U	1	< 1	U	1
Pyridine	ug/L	NS	< 2	U	2	< 2	U	2	2590	J	160	950		20	183		20
1,2,4,5-Tetrachlorobenzene	ug/L	NS	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2	< 2	U	2
2,3,4,6-Tetrachlorophenol	ug/L	200	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
2,4,6-Trichlorophenol	ug/L	20	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
2,4,5-Trichlorophenol	ug/L	700	< 5	U	5	< 5	U	5	< 5.1	UJ	5.1	< 5	U	5	< 5	U	5
Aluminum	ug/L	200	175	J	200	< 200	U	200	**112000**		200	**104000**	J	200	**106000**	J	200
Antimony	ug/L	6	< 6	U	6	< 6	U	6	< 60	UJ	60	< 6	U	6	< 6	U	6

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-8			PZ-12-8			PZ-12-9			PZ-12-9			PZ-12-9		
		Sample Date	4/16/2014			5/21/2014			10/18/2013			10/25/2013			11/7/2013		
		N=Normal; FD=Field Duplicate	N			N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Arsenic	ug/L	3	**4.2**		3	< 3	U	3	**57.5**	J	30	**40.9**		3	**34**		3
Barium	ug/L	6000	21.2	J	200	15.9	J	200	99.7	J	200	45.4	J	200	29	J	50
Beryllium	ug/L	1	< 1	U	1	< 1	U	1	**11.1**	J	10	**8.8**		1	**9.5**		4
Cadmium	ug/L	4	< 3	U	3	< 3	U	3	**5.9**		3	**8**		3	< 4	U	4
Calcium	ug/L	NS	22800		5000	18800		5000	358000		5000	353000	J	5000	345000		5000
Chromium	ug/L	70	2.5	J	10	2.1	J	10	**132**		10	**128**		10	**103**		10
Cobalt	ug/L	100	5.5	J	50	4.1	J	50	**126**		50	**120**		50	**110**		50
Copper	ug/L	1300	8.7	J	10	< 10	U	10	**1400**		10	1270		10	1210		25
Iron	ug/L	300	**407**		100	**505**		100	**349000**		100	**381000**		100	**366000**		200
Lead	ug/L	5	< 3	U	3	2.4	J	3	**84.1**	J	30	**65.1**	J	6	**37.6**		5
Magnesium	ug/L	NS	7830		5000	6210		5000	108000		5000	103000	J	5000	108000		5000
Manganese	ug/L	50	**1680**		15	**1170**		15	**17100**	J	150	**13900**	J	30	**12100**		15
Mercury	ug/L	2	0.055	J	0.2	0.096	J	0.2	0.57		0.2	0.76		0.2	0.49		0.2
Nickel	ug/L	100	49.9		10	37.4		10	**1090**		10	**1010**		10	**844**		40
Potassium	ug/L	NS	1390	J	10000	1020	J	10000	65200		10000	59200		10000	59800		5000
Selenium	ug/L	40	< 10	U	10	4.2	J	10	10.8		10	15	J	20	< 10	U	10
Silver	ug/L	40	< 10	U	10	< 10	U	10	16.7		10	10.3		10	< 5	U	5
Sodium	ug/L	50000	23300		10000	13500		10000	**223000**		10000	**205000**	J	10000	**199000**		5000
Thallium	ug/L	2	< 2	U	2	< 2	U	2	< 40	UJ	40	**31.8**	J	40	< 10	UJ	10
Vanadium	ug/L	NS	< 50	U	50	< 50	U	50	186		50	183		50	150		10
Zinc	ug/L	2000	48		20	29		20	716		20	670		20	585	J	20

Notes: **Notes:**
1.) NJ GWQ 1.) NJ GWQS: Higher of the Practical Quantitation Limit and New Jersey Ground Water Quality
Criterion (N Criterion (N.J.A.C. 7:9C) 07/2010, as well as Interim Groundwater Quality Critieria.
2.) Detecte 2.) Detected results greater than the NJ GWQS are shown in **bold.**

Qualifiers: Qualifiers:
J = estimat J = estimated result
R = rejecte R = rejected result
U = not det U = not detected above RL
UJ = not de UJ = not detected above RL, RL is estimated

Abbreviations:
NS = standard not available
Qual = interpreted qualifier
RL = reporting limit
ug/L = micrograms per liter

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-9			PZ-12-9			PZ-12-10			PZ-12-10			PZ-12-10		
		Sample Date	4/16/2014			5/22/2014			10/11/2013			10/24/2013			11/7/2013		
		N=Normal; FD=Field Duplicate	N			N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Acetone	ug/L	6000	< 10	U	10	< 20	U	20	< 25000	U	25000	< 25000	U	25000	< 20000	U	20000
Acetonitrile	ug/L	100	< 100	U	100	< 200	U	200	< 250000	U	250000	< 250000	U	250000	< 200000	U	200000
Acrolein	ug/L	5	< 50	U	50	< 100	U	100	< 130000	U	130000	< 130000	U	130000	< 100000	U	100000
Acrylonitrile	ug/L	2	< 50	U	50	< 100	U	100	< 130000	U	130000	< 130000	U	130000	< 100000	U	100000
Benzene	ug/L	1	**90.7**		0.5	**553**		10	**310000**		2500	**277000**		2500	**287000**		2000
Bromochloromethane	ug/L	NS	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
Bromodichloromethane	ug/L	1	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
Bromoform	ug/L	4	< 2	U	2	< 4	U	4	< 10000	U	10000	< 10000	U	10000	< 8000	U	8000
Bromomethane	ug/L	10	< 2	U	2	< 4	U	4	< 5000	U	5000	< 5000	U	5000	< 4000	U	4000
2-Butanone	ug/L	300	< 10	U	10	< 20	U	20	< 25000	U	25000	< 25000	U	25000	< 20000	U	20000
Carbon Disulfide	ug/L	700	< 2	U	2	< 4	U	4	< 5000	U	5000	< 5000	U	5000	< 4000	U	4000
Carbon Tetrachloride	ug/L	1	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
Chlorobenzene	ug/L	50	**89.9**		1	**254**		2	< 2500	U	2500	**983**	J	2500	< 2000	U	2000
Chloroethane	ug/L	5	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
Chloroform	ug/L	70	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
Chloromethane	ug/L	NS	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
2-Chlorotoluene	ug/L	NS	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
4-Chlorotoluene	ug/L	NS	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
cis-1,2-Dichloroethene	ug/L	70	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
cis-1,3-Dichloropropene	ug/L	1	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
Cyclohexane	ug/L	NS	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
Dibromochloromethane	ug/L	1	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
1,2-Dibromo-3-chloropropane	ug/L	0.02	< 5	U	5	< 10	U	10	< 25000	U	25000	< 25000	U	25000	< 20000	U	20000
1,2-Dibromoethane	ug/L	0.03	< 1	U	1	< 2	U	2	< 5000	U	5000	< 5000	U	5000	< 4000	U	4000
1,2-Dichlorobenzene	ug/L	600	227		10	570		20	**9980**		2500	**8790**		2500	**9360**		2000
1,3-Dichlorobenzene	ug/L	600	8.7		1	13.7		2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
1,4-Dichlorobenzene	ug/L	75	61.2		1	**100**		2	**789**	J	2500	**1050**	J	2500	**849**	J	2000
Dichlorodifluoromethane	ug/L	1000	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
1,1-Dichloroethane	ug/L	50	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
1,2-Dichloroethane	ug/L	2	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
1,1-Dichloroethene	ug/L	1	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
1,2-Dichloroethene, Total	ug/L	NS	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
1,2-Dichloropropane	ug/L	1	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
Diethyl Ether	ug/L	1000	< 2	U	2	< 4	U	4	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
1,4-Dioxane	ug/L	10	< 130	U	130	< 250	U	250	< 310000	U	310000	< 310000	U	310000	< 250000	U	250000
Ethyl Acetate	ug/L	6000	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
Ethyl Acrylate	ug/L	NS	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
Ethylbenzene	ug/L	700	1.8		0.5	4.9		2	< 2500	U	2500	548	J	2500	< 2000	U	2000
Freon 113	ug/L	NS	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-9			PZ-12-9			PZ-12-10			PZ-12-10			PZ-12-10		
		Sample Date	4/16/2014			5/22/2014			10/11/2013			10/24/2013			11/7/2013		
N=Normal; FD=Field Duplicate			N			N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
2-Hexanone	ug/L	300	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
Isopropyl Ether	ug/L	20000	< 2	U	2	< 4	U	4	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
Isopropylbenzene	ug/L	700	10.2		1	24.7		2	< 5000	U	5000	< 5000	U	5000	< 4000	U	4000
m,p-Xylenes	ug/L	1000	4.2		1	7.5		2	**1510**	J	2500	**2330**	J	2500	**1390**	J	2000
Methyl Acetate	ug/L	7000	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
Methyl Cyclohexane	ug/L	NS	0.49	J	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
Methyl tert-Butyl Ether	ug/L	70	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
Methylacrylonitrile	ug/L	NS	< 10	U	10	< 20	U	20	< 25000	U	25000	< 25000	U	25000	< 20000	U	20000
Methylene Chloride	ug/L	3	< 2	U	2	< 4	U	4	< 5000	U	5000	< 5000	U	5000	< 4000	U	4000
4-Methyl-2-pentanone	ug/L	NS	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
2-Nitropropane	ug/L	NS	< 10	U	10	< 20	U	20	< 25000	U	25000	< 25000	U	25000	< 20000	U	20000
o-Xylene	ug/L	1000	3.9		1	8.9		2	< 2500	U	2500	834	J	2500	495	J	2000
Styrene	ug/L	100	< 2	U	2	< 4	U	4	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
1,1,2,2-Tetrachloroethane	ug/L	1	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
Tetrachloroethene	ug/L	1	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
Toluene	ug/L	600	9.5		1	61.9		2	**27100**		2500	**23600**		2500	**25100**		2000
trans-1,2-Dichloroethene	ug/L	100	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
trans-1,3-Dichloropropene	ug/L	1	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
1,2,4-Trichlorobenzene	ug/L	9	**10.1**		5	2.6	J	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
1,1,1-Trichloroethane	ug/L	30	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
1,1,2-Trichloroethane	ug/L	3	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
Trichloroethene	ug/L	1	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
Trichlorofluoromethane	ug/L	2000	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
1,2,3-Trichloropropane	ug/L	0.03	< 5	U	5	< 10	U	10	< 13000	U	13000	< 13000	U	13000	< 10000	U	10000
1,3,5-Trimethylbenzene	ug/L	NS	8.4		2	13.2		4	< 5000	U	5000	< 5000	U	5000	< 4000	U	4000
Vinyl Chloride	ug/L	1	< 1	U	1	< 2	U	2	< 2500	U	2500	< 2500	U	2500	< 2000	U	2000
Xylenes, Total	ug/L	1000	8.1		1	16.4		2	**1510**	J	2500	**3160**		2500	**1880**	J	2000
Acenaphthene	ug/L	400	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Acenaphthylene	ug/L	100	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Acetophenone	ug/L	700	< 2	U	2	48.2		2	**2480**		200	**1370**		200	**1390**		40
4-Aminodiphenyl	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Aniline	ug/L	6	< 2	U	2	**35.2**		2	**611**		40	**21.4**		2	**335**		40
Anthracene	ug/L	2000	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Atrazine	ug/L	3	< 2	U	2	< 2	U	2	< 5	U	5	< 5	U	5	< 5	U	5
Benzaldehyde	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
1,4-Benzenediol	ug/L	NS	< 10	R	10	< 10	UJ	10	< 10	R	10	< 10	R	10	< 10	UJ	10
Benzidine	ug/L	20	< 20	U	20	< 20	U	20	< 20	U	20	< 20	U	20	< 20	U	20
Benzo[a]anthracene	ug/L	0.1	**0.308**		0.1	< 0.1	U	0.1	< 0.5	U	0.5	< 0.1	U	0.1	< 0.1	U	0.1
Benzo[a]pyrene	ug/L	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.5	U	0.5	< 0.1	U	0.1	< 0.1	U	0.1

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-9			PZ-12-9			PZ-12-10			PZ-12-10			PZ-12-10		
		Sample Date	4/16/2014			5/22/2014			10/11/2013			10/24/2013			11/7/2013		
N=Normal; FD=Field Duplicate			N			N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Benzo[b]fluoranthene	ug/L	0.2	< 0.1	U	0.1	< 0.1	U	0.1	< 0.5	U	0.5	< 0.1	U	0.1	< 0.1	U	0.1
Benzo[g,h,i]perylene	ug/L	100	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Benzo[k]fluoranthene	ug/L	0.5	< 0.1	U	0.1	< 0.1	U	0.1	< 0.5	U	0.5	< 0.1	U	0.1	< 0.1	U	0.1
Benzoic Acid	ug/L	30000	< 20	U	20	51.8		20	886		400	473		200	518		400
Benzyl Alcohol	ug/L	2000	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Biphenyl	ug/L	400	< 1	U	1	2.4		1	4.6		1	4		1	< 1	U	1
Bis(2-chloroethoxy)methane	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Bis(2-chloroethyl) Ether	ug/L	7	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Bis(2-chloroisopropyl) Ether	ug/L	300	< 2	U	2	< 2	U	2	< 2	U	2	< 2	UJ	2	< 2	U	2
Bis(2-ethylhexyl) Phthalate	ug/L	3	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
4-Bromophenyl Phenyl Ether	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Butylbenzyl Phthalate	ug/L	100	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Caprolactum	ug/L	5000	< 2	U	2	3.6		2	< 2	U	2	< 2	U	2	< 2	U	2
Carbazole	ug/L	NS	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Catechol	ug/L	NS	< 10	R	10	< 10	R	10	< 10	R	10	< 10	R	10	< 10	UJ	10
1-Chloro-2-nitrobenzene	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
4-Chloro-3-methylphenol	ug/L	100	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
4-Chloroaniline	ug/L	30	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
2-Chloroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
2-Chloronaphthalene	ug/L	600	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
2-Chlorophenol	ug/L	40	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
4-Chlorophenyl-phenylether	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Chrysene	ug/L	5	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Dibenzo[a,h]anthracene	ug/L	0.3	< 0.1	U	0.1	< 0.1	U	0.1	< 0.5	U	0.5	< 0.1	U	0.1	< 0.1	U	0.1
Dibenzofuran	ug/L	NS	1.3	J	5	2	J	5	2.5	J	5	2.2	J	5	2.3	J	5
3,3'-Dichlorobenzidine	ug/L	30	< 2	U	2	< 2	U	2	< 5	U	5	< 5	U	5	< 5	U	5
2,4-Dichlorophenol	ug/L	20	< 2	U	2	< 2	U	2	< 5	U	5	< 5	U	5	< 5	U	5
Diethyl Phthalate	ug/L	6000	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Dimethyl Phthalate	ug/L	100	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
2,4-Dimethylphenol	ug/L	100	< 5	U	5	1.9	J	5	19.3		5	17		5	31.4		5
Di-n-Butyl Phthalate	ug/L	700	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
4,6-Dinitro-2-methylphenol	ug/L	1	< 20	U	20	< 20	U	20	< 20	U	20	< 20	U	20	< 20	U	20
2,4-Dinitrophenol	ug/L	40	< 20	U	20	< 20	U	20	< 20	U	20	< 20	U	20	< 20	U	20
2,4-Dinitrotoluene	ug/L	10	< 1	U	1	< 1	U	1	< 2	U	2	< 2	U	2	< 2	U	2
2,6-Dinitrotoluene	ug/L	10	< 1	U	1	< 1	U	1	< 2	U	2	< 2	U	2	< 2	U	2
Di-n-octyl Phthalate	ug/L	100	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Diphenylamine	ug/L	200	< 5	UJ	5	< 5	UJ	5	< 5	UJ	5	< 5	UJ	5	< 5	UJ	5
1,2-Diphenylhydrazine	ug/L	20	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Fluoranthene	ug/L	300	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Fluorene	ug/L	300	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-9			PZ-12-9			PZ-12-10			PZ-12-10			PZ-12-10		
		Sample Date	4/16/2014			5/22/2014			10/11/2013			10/24/2013			11/7/2013		
N=Normal; FD=Field Duplicate			N			N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Hexachlorobenzene	ug/L	0.02	< 0.02	U	0.02	< 0.02	U	0.02	< 0.1	U	0.1	< 0.02	U	0.02	< 0.02	U	0.02
Hexachlorobutadiene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Hexachlorocyclopentadiene	ug/L	40	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
Hexachloroethane	ug/L	7	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
Indeno[1,2,3-cd]pyrene	ug/L	0.2	< 0.1	U	0.1	< 0.1	U	0.1	< 0.5	U	0.5	< 0.1	U	0.1	< 0.1	U	0.1
Isophorone	ug/L	40	< 2	U	2	< 2	U	2	5.1		2	3.6		2	< 2	U	2
m,p-Cresol	ug/L	NS	< 2	U	2	4.7		2	43.3		2	38.3		2	< 2	U	2
2-Methylnaphthalene	ug/L	30	11.7		1	22.3		1	**54.5**		1	**48.9**		1	**63.4**		1
2-Methylphenol	ug/L	NS	< 2	U	2	3.5		2	< 2	U	2	14.3		2	< 2	U	2
Naphthalene	ug/L	300	117		2	273		5	**7220**		100	**4380**		100	**3020**		40
1,4-Naphthoquinone	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
4-Nitroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
2-Nitroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
3-Nitroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Nitrobenzene	ug/L	6	< 2	U	2	3.3		2	**1750**		40	**1150**		200	**1180**		40
4-Nitrophenol	ug/L	NS	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10
2-Nitrophenol	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Nitrosomethylethylamine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
N-Nitrosodiethylamine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
N-Nitrosodimethylamine	ug/L	0.8	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
N-Nitroso-di-n-butylamine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
N-Nitroso-di-n-propylamine	ug/L	10	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
N-Nitrosodiphenylamine	ug/L	10	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
N-Nitrosomorpholine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
N-Nitrosopiperidine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
N-Nitrosopyrrolidine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
o-Toluidine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Pentachlorobenzene	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Pentachlorophenol	ug/L	0.3	< 0.3	U	0.3	< 0.3	U	0.3	< 1.5	U	1.5	< 0.3	U	0.3	< 0.3	R	0.3
Phenanthrene	ug/L	100	1.5		1	0.96	J	1	< 1	U	1	< 1	U	1	< 1	U	1
Phenol	ug/L	2000	< 2	U	2	40.1		2	18.9		2	50.6		2	32.1		2
Pyrene	ug/L	200	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1
Pyridine	ug/L	NS	< 2	U	2	225		10	2540		200	142		20	488		40
1,2,4,5-Tetrachlorobenzene	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2
2,3,4,6-Tetrachlorophenol	ug/L	200	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
2,4,6-Trichlorophenol	ug/L	20	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
2,4,5-Trichlorophenol	ug/L	700	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5
Aluminum	ug/L	200	**18200**	J	400	**26500**		200	**117000**		200	**120000**	J	200	**131000**	J	200
Antimony	ug/L	6	< 12	UJ	12	< 6	U	6	< 6	U	6	< 6	U	6	< 6	U	6

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-9			PZ-12-9			PZ-12-10			PZ-12-10			PZ-12-10		
		Sample Date	4/16/2014			5/22/2014			10/11/2013			10/24/2013			11/7/2013		
		N=Normal; FD=Field Duplicate	N			N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Arsenic	ug/L	3	**29.4**	J	6	**33.8**	J	30	**73.4**		3	**73.8**		3	**68.1**		3
Barium	ug/L	6000	331	J	400	180	J	200	42.3	J	200	39.4	J	200	33.3	J	50
Beryllium	ug/L	1	< 2	UJ	2	**3.2**		1	**8.3**		1	**8.2**		1	**8.8**		4
Cadmium	ug/L	4	2	J	6	**4.9**		3	**5.7**		3	1.6	J	3	< 4	U	4
Calcium	ug/L	NS	10800	J	10000	244000		5000	347000		5000	325000	J	5000	330000		5000
Chromium	ug/L	70	**80**	J	20	52.9		10	**145**		10	**146**		10	**149**		10
Cobalt	ug/L	100	24.6	J	100	62.1		50	93.9		50	88.9		50	87.8		50
Copper	ug/L	1300	246	J	20	342		10	60.3		10	103		10	37.5		25
Iron	ug/L	300	**85100**	J	200	**172000**		100	**228000**		100	**231000**		100	**265000**		200
Lead	ug/L	5	**82.8**	J	6	**43.9**	J	30	< 30	UJ	30	**193**	J	30	**148**		5
Magnesium	ug/L	NS	7220	J	10000	39200		5000	44000		5000	42000	J	5000	47300		5000
Manganese	ug/L	50	**822**	J	30	**6410**		15	**6360**		15	**5930**	J	15	**6330**		15
Mercury	ug/L	2	0.34	J	0.6	0.24		0.2	**3.5**		0.2	**3.6**		0.2	**3**		0.2
Nickel	ug/L	100	84.4	J	20	**505**		10	**324**		10	**318**		10	**298**		40
Potassium	ug/L	NS	8730	J	20000	18800		10000	23500		10000	21400		10000	22400		5000
Selenium	ug/L	40	< 20	UJ	20	4.4	J	10	27	J	100	< 100	UJ	100	< 10	U	10
Silver	ug/L	40	4.2	J	20	7.5	J	10	3	J	10	8.5	J	10	< 5	U	5
Sodium	ug/L	50000	12300	J	20000	**74900**		10000	**125000**		10000	**123000**	J	10000	**125000**		5000
Thallium	ug/L	2	< 4	UJ	4	< 20	UJ	20	< 20	UJ	20	< 20	UJ	20	< 20	UJ	20
Vanadium	ug/L	NS	114	J	100	65.1		50	183		50	170		50	182		10
Zinc	ug/L	2000	704	J	40	891		20	455		20	536		20	410	J	20

Notes: **Notes:**
1.) NJ GWQ 1.) NJ GWQS: Higher of the Practical Quantitation Limit and New Jersey Ground Water Quality
Criterion (N Criterion (N.J.A.C. 7:9C) 07/2010, as well as Interim Groundwater Quality Critieria.
2.) Detecte 2.) Detected results greater than the NJ GWQS are shown in **bold.**

Qualifiers: Qualifiers:
J = estimat J = estimated result
R = rejecte R = rejected result
U = not det U = not detected above RL
UJ = not de UJ = not detected above RL, RL is estimated

Abbreviations:
NS = standard not available
Qual = interpreted qualifier
RL = reporting limit
ug/L = micrograms per liter

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-10			PZ-12-10			PZ-12-10			PZ-12-10			PZ-12-11		
		Sample Date	11/7/2013			4/16/2014			5/22/2014			5/22/2014			10/18/2013		
		N=Normal; FD=Field Duplicate	FD			N			N			FD			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Acetone	ug/L	6000	< 20000	U	20000	< 10000	U	10000	< 2000	U	2000	877	J	1000	959	J	1000
Acetonitrile	ug/L	100	< 200000	U	200000	< 100000	U	100000	< 20000	U	20000	< 10000	U	10000	< 100	UJ	100
Acrolein	ug/L	5	< 100000	U	100000	< 50000	U	50000	< 10000	U	10000	< 5000	U	5000	< 50	UJ	50
Acrylonitrile	ug/L	2	< 100000	U	100000	< 50000	U	50000	< 10000	U	10000	< 5000	U	5000	< 50	UJ	50
Benzene	ug/L	1	**284000**		2000	**138000**		500	**78000**		500	**76400**		500	**96800**		2000
Bromochloromethane	ug/L	NS	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	< 5	UJ	5
Bromodichloromethane	ug/L	1	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
Bromoform	ug/L	4	< 8000	U	8000	< 2000	U	2000	< 400	U	400	< 200	U	200	< 4	UJ	4
Bromomethane	ug/L	10	< 4000	U	4000	< 2000	U	2000	< 400	U	400	< 200	U	200	< 2	UJ	2
2-Butanone	ug/L	300	< 20000	U	20000	< 10000	U	10000	< 2000	U	2000	< 1000	U	1000	92.1	J	10
Carbon Disulfide	ug/L	700	< 4000	U	4000	< 2000	U	2000	150	J	400	169	J	200	37.9	J	2
Carbon Tetrachloride	ug/L	1	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	0.88	J	1
Chlorobenzene	ug/L	50	< 2000	U	2000	**398**	J	1000	**228**		200	**248**		100	**432**		100
Chloroethane	ug/L	5	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	**9.3**	J	1
Chloroform	ug/L	70	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	14.7	J	1
Chloromethane	ug/L	NS	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	6.4	J	1
2-Chlorotoluene	ug/L	NS	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	< 5	UJ	5
4-Chlorotoluene	ug/L	NS	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	1.7	J	5
cis-1,2-Dichloroethene	ug/L	70	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
cis-1,3-Dichloropropene	ug/L	1	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
Cyclohexane	ug/L	NS	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	6	J	5
Dibromochloromethane	ug/L	1	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
1,2-Dibromo-3-chloropropane	ug/L	0.02	< 20000	U	20000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	< 10	UJ	10
1,2-Dibromoethane	ug/L	0.03	< 4000	U	4000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 2	UJ	2
1,2-Dichlorobenzene	ug/L	600	**9100**		2000	**5650**		1000	**3570**		200	**3910**		100	**14500**		100
1,3-Dichlorobenzene	ug/L	600	< 2000	U	2000	< 1000	U	1000	65.2	J	200	71.8	J	100	116	J	1
1,4-Dichlorobenzene	ug/L	75	**760**	J	2000	**495**	J	1000	**331**		200	**358**		100	**917**		100
Dichlorodifluoromethane	ug/L	1000	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	< 5	UJ	5
1,1-Dichloroethane	ug/L	50	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
1,2-Dichloroethane	ug/L	2	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
1,1-Dichloroethene	ug/L	1	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
1,2-Dichloroethene, Total	ug/L	NS	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
1,2-Dichloropropane	ug/L	1	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
Diethyl Ether	ug/L	1000	< 10000	U	10000	< 2000	U	2000	< 400	U	400	< 200	U	200	19.8	J	5
1,4-Dioxane	ug/L	10	< 250000	U	250000	< 130000	U	130000	< 25000	U	25000	< 13000	U	13000	< 130	UJ	130
Ethyl Acetate	ug/L	6000	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	< 5	UJ	5
Ethyl Acrylate	ug/L	NS	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	< 5	UJ	5
Ethylbenzene	ug/L	700	< 2000	U	2000	< 500	U	500	< 200	U	200	74.4	J	100	53.1	J	1
Freon 113	ug/L	NS	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	< 5	UJ	5

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-10			PZ-12-10			PZ-12-10			PZ-12-10			PZ-12-11		
		Sample Date	11/7/2013			4/16/2014			5/22/2014			5/22/2014			10/18/2013		
		N=Normal; FD=Field Duplicate	FD			N			N			FD			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
2-Hexanone	ug/L	300	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	2.3	J	5
Isopropyl Ether	ug/L	20000	< 10000	U	10000	< 2000	U	2000	< 400	U	400	< 200	U	200	< 5	UJ	5
Isopropylbenzene	ug/L	700	< 4000	U	4000	< 1000	U	1000	< 200	U	200	32.7	J	100	58.9	J	2
m,p-Xylenes	ug/L	1000	**1450**	J	2000	**1070**		1000	657		200	756		100	531		100
Methyl Acetate	ug/L	7000	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	28.1	J	5
Methyl Cyclohexane	ug/L	NS	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	12.3	J	5
Methyl tert-Butyl Ether	ug/L	70	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	0.41	J	1
Methylacrylonitrile	ug/L	NS	< 20000	U	20000	< 10000	U	10000	< 2000	U	2000	< 1000	U	1000	< 10	UJ	10
Methylene Chloride	ug/L	3	< 4000	U	4000	< 2000	U	2000	< 400	U	400	< 200	U	200	< 2	UJ	2
4-Methyl-2-pentanone	ug/L	NS	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	3.5	J	5
2-Nitropropane	ug/L	NS	< 20000	U	20000	< 10000	U	10000	< 2000	U	2000	< 1000	U	1000	< 10	UJ	10
o-Xylene	ug/L	1000	521	J	2000	396	J	1000	227		200	254		100	213		100
Styrene	ug/L	100	< 10000	U	10000	< 2000	U	2000	< 400	U	400	< 200	U	200	< 5	UJ	5
1,1,2,2-Tetrachloroethane	ug/L	1	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
Tetrachloroethene	ug/L	1	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	0.81	J	1
Toluene	ug/L	600	**24000**		2000	**16200**		1000	**9520**		200	**10500**		100	**8760**		100
trans-1,2-Dichloroethene	ug/L	100	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
trans-1,3-Dichloropropene	ug/L	1	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
1,2,4-Trichlorobenzene	ug/L	9	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	**65.9**	J	5
1,1,1-Trichloroethane	ug/L	30	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
1,1,2-Trichloroethane	ug/L	3	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
Trichloroethene	ug/L	1	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
Trichlorofluoromethane	ug/L	2000	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	< 5	UJ	5
1,2,3-Trichloropropane	ug/L	0.03	< 10000	U	10000	< 5000	U	5000	< 1000	U	1000	< 500	U	500	< 5	UJ	5
1,3,5-Trimethylbenzene	ug/L	NS	< 4000	U	4000	< 2000	U	2000	129	J	400	146	J	200	82.5	J	2
Vinyl Chloride	ug/L	1	< 2000	U	2000	< 1000	U	1000	< 200	U	200	< 100	U	100	< 1	UJ	1
Xylenes, Total	ug/L	1000	**1970**	J	2000	**1460**		1000	884		200	**1010**		100	744		100
Acenaphthene	ug/L	400	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 10	UJ	10
Acenaphthylene	ug/L	100	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 10	UJ	10
Acetophenone	ug/L	700	**1320**		80	**1040**		100	404		20	403		20	679	J	20
4-Aminodiphenyl	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
Aniline	ug/L	6	**331**		20	**446**		20	**217**		20	**220**		20	**188**	J	20
Anthracene	ug/L	2000	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 10	UJ	10
Atrazine	ug/L	3	< 5	U	5	< 2	U	2	< 2	U	2	< 2	U	2	< 50	UJ	50
Benzaldehyde	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
1,4-Benzenediol	ug/L	NS	< 10	UJ	10	< 10	R	10	< 10	UJ	10	< 10	UJ	10	< 100	R	100
Benzidine	ug/L	20	< 20	U	20	< 20	U	20	< 20	U	20	< 20	U	20	< 200	UJ	200
Benzo[a]anthracene	ug/L	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	UJ	0.1
Benzo[a]pyrene	ug/L	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	UJ	0.1

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-10			PZ-12-10			PZ-12-10			PZ-12-10			PZ-12-11		
		Sample Date	11/7/2013			4/16/2014			5/22/2014			5/22/2014			10/18/2013		
N=Normal; FD=Field Duplicate			FD			N			N			FD			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Benzo[b]fluoranthene	ug/L	0.2	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	UJ	0.1
Benzo[g,h,i]perylene	ug/L	100	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 10	UJ	10
Benzo[k]fluoranthene	ug/L	0.5	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	UJ	0.1
Benzoic Acid	ug/L	30000	579		200	< 20	U	20	119	J	200	130	J	200	< 200	UJ	200
Benzyl Alcohol	ug/L	2000	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
Biphenyl	ug/L	400	< 1	U	1	< 1	U	1	2.6		1	2.7		1	35.8	J	10
Bis(2-chloroethoxy)methane	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
Bis(2-chloroethyl) Ether	ug/L	7	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
Bis(2-chloroisopropyl) Ether	ug/L	300	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
Bis(2-ethylhexyl) Phthalate	ug/L	3	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
4-Bromophenyl Phenyl Ether	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
Butylbenzyl Phthalate	ug/L	100	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
Caprolactum	ug/L	5000	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
Carbazole	ug/L	NS	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 10	UJ	10
Catechol	ug/L	NS	< 10	UJ	10	< 10	R	10	< 10	R	10	< 10	R	10	< 100	R	100
1-Chloro-2-nitrobenzene	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
4-Chloro-3-methylphenol	ug/L	100	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
4-Chloroaniline	ug/L	30	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
2-Chloroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
2-Chloronaphthalene	ug/L	600	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
2-Chlorophenol	ug/L	40	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
4-Chlorophenyl-phenylether	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
Chrysene	ug/L	5	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 10	UJ	10
Dibenzo[a,h]anthracene	ug/L	0.3	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	UJ	0.1
Dibenzofuran	ug/L	NS	2.1	J	5	1.9	J	5	1.7	J	5	1.8	J	5	< 50	UJ	50
3,3'-Dichlorobenzidine	ug/L	30	< 5	U	5	< 2	U	2	< 2	U	2	< 2	U	2	< 50	UJ	50
2,4-Dichlorophenol	ug/L	20	< 5	U	5	< 2	U	2	< 2	U	2	< 2	U	2	< 50	UJ	50
Diethyl Phthalate	ug/L	6000	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
Dimethyl Phthalate	ug/L	100	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
2,4-Dimethylphenol	ug/L	100	29.4		5	10.7		5	11.8		5	11.8		5	< 50	UJ	50
Di-n-Butyl Phthalate	ug/L	700	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
4,6-Dinitro-2-methylphenol	ug/L	1	< 20	U	20	< 20	U	20	< 20	U	20	< 20	U	20	< 200	UJ	200
2,4-Dinitrophenol	ug/L	40	< 20	U	20	< 20	U	20	< 20	U	20	< 20	U	20	< 200	UJ	200
2,4-Dinitrotoluene	ug/L	10	< 2	U	2	< 1	U	1	< 1	U	1	< 1	U	1	< 20	UJ	20
2,6-Dinitrotoluene	ug/L	10	< 2	U	2	< 1	U	1	< 1	U	1	< 1	U	1	< 20	UJ	20
Di-n-octyl Phthalate	ug/L	100	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
Diphenylamine	ug/L	200	< 5	UJ	5	< 5	UJ	5	< 5	UJ	5	< 5	UJ	5	< 50	UJ	50
1,2-Diphenylhydrazine	ug/L	20	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 10	UJ	10
Fluoranthene	ug/L	300	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 10	UJ	10
Fluorene	ug/L	300	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 10	UJ	10

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-10			PZ-12-10			PZ-12-10			PZ-12-10			PZ-12-11		
		Sample Date	11/7/2013			4/16/2014			5/22/2014			5/22/2014			10/18/2013		
N=Normal; FD=Field Duplicate			FD			N			N			FD			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Hexachlorobenzene	ug/L	0.02	< 0.02	U	0.02	< 0.02	U	0.02	< 0.02	U	0.02	< 0.02	U	0.02	< 0.02	UJ	0.02
Hexachlorobutadiene	ug/L	1	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 10	UJ	10
Hexachlorocyclopentadiene	ug/L	40	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 100	UJ	100
Hexachloroethane	ug/L	7	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
Indeno[1,2,3-cd]pyrene	ug/L	0.2	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	UJ	0.1
Isophorone	ug/L	40	< 2	U	2	< 2	U	2	3.6		2	3.6		2	< 20	UJ	20
m,p-Cresol	ug/L	NS	< 2	U	2	22.4		2	23		2	23		2	< 20	UJ	20
2-Methylnaphthalene	ug/L	30	**62.6**		1	**33.2**		1	**44.7**		1	**44.3**		1	**279**	J	10
2-Methylphenol	ug/L	NS	< 2	U	2	3.2		2	11.6		2	11.3		2	17.6	J	20
Naphthalene	ug/L	300	**2800**		40	**3770**		50	**1640**		20	**1590**		20	**5360**	J	100
1,4-Naphthoquinone	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
4-Nitroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
2-Nitroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
3-Nitroaniline	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
Nitrobenzene	ug/L	6	**1100**		80	**1160**		100	**507**		20	**507**		20	< 20	UJ	20
4-Nitrophenol	ug/L	NS	< 10	U	10	< 10	U	10	< 10	U	10	< 10	U	10	< 100	UJ	100
2-Nitrophenol	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
Nitrosomethylethylamine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
N-Nitrosodiethylamine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
N-Nitrosodimethylamine	ug/L	0.8	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
N-Nitroso-di-n-butylamine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
N-Nitroso-di-n-propylamine	ug/L	10	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
N-Nitrosodiphenylamine	ug/L	10	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
N-Nitrosomorpholine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
N-Nitrosopiperidine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
N-Nitrosopyrrolidine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
o-Toluidine	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	22.8	J	50
Pentachlorobenzene	ug/L	NS	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
Pentachlorophenol	ug/L	0.3	< 0.3	R	0.3	< 0.3	U	0.3	< 0.3	U	0.3	< 0.3	U	0.3	< 0.3	R	0.3
Phenanthrene	ug/L	100	< 1	U	1	0.71	J	1	0.43	J	1	0.43	J	1	59.3	J	10
Phenol	ug/L	2000	32.6		2	32.6		2	142		20	141		20	128	J	20
Pyrene	ug/L	200	< 1	U	1	< 1	U	1	< 1	U	1	< 1	U	1	< 10	UJ	10
Pyridine	ug/L	NS	384		20	917		20	725		20	759		20	2350	J	200
1,2,4,5-Tetrachlorobenzene	ug/L	NS	< 2	U	2	< 2	U	2	< 2	U	2	< 2	U	2	< 20	UJ	20
2,3,4,6-Tetrachlorophenol	ug/L	200	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
2,4,6-Trichlorophenol	ug/L	20	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
2,4,5-Trichlorophenol	ug/L	700	< 5	U	5	< 5	U	5	< 5	U	5	< 5	U	5	< 50	UJ	50
Aluminum	ug/L	200	**131000**	J	200	**85100**		200	**36800**		200	**37600**		200	**69000**	J	1000
Antimony	ug/L	6	< 6	U	6	4.2	J	6	< 6	U	6	< 6	U	6	**15.5**		6

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-10			PZ-12-10			PZ-12-10			PZ-12-10			PZ-12-11		
		Sample Date	11/7/2013			4/16/2014			5/22/2014			5/22/2014			10/18/2013		
		N=Normal; FD=Field Duplicate	FD			N			N			FD			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Arsenic	ug/L	3	**70.5**		3	**84**	J	30	**31.9**	J	15	**30.8**	J	15	**112**	J	30
Barium	ug/L	6000	34.2	J	50	45.7	J	200	85.4	J	200	85.9	J	200	2970		200
Beryllium	ug/L	1	**8.7**		4	**5.9**		1	**2.9**		1	**3**		1	**3.1**	J	5
Cadmium	ug/L	4	< 4	U	4	3		3	2.2	J	3	2.3	J	3	**9.2**		3
Calcium	ug/L	NS	315000		5000	261000		5000	172000		5000	169000		5000	82700		5000
Chromium	ug/L	70	**151**		10	**106**		10	53.3		10	60.8		10	**329**		10
Cobalt	ug/L	100	91.1		50	76		50	46.3	J	50	46.6	J	50	90.2		50
Copper	ug/L	1300	39		25	66.7		10	25.7		10	24.9		10	**4980**		10
Iron	ug/L	300	**280000**		200	**220000**		100	**135000**		100	**136000**		100	**526000**		500
Lead	ug/L	5	**155**		5	**141**	J	30	**47.8**	J	15	**45.8**	J	15	**645**	J	15
Magnesium	ug/L	NS	43100		5000	35000		5000	19700		5000	19700		5000	56400		5000
Manganese	ug/L	50	**6500**		15	**5740**		15	**4210**		15	**4180**		15	**14400**		75
Mercury	ug/L	2	**2.9**		0.2	**2**	J	0.6	0.92		0.2	0.95		0.2	**9.5**		0.6
Nickel	ug/L	100	**311**		40	**286**		10	**168**		10	**174**		10	**1570**		10
Potassium	ug/L	NS	20900		5000	15600		10000	13100		10000	12900		10000	47800		10000
Selenium	ug/L	40	< 10	U	10	< 100	UJ	100	5.9	J	10	6.8	J	10	**45.3**	J	50
Silver	ug/L	40	< 5	U	5	< 10	U	10	8.9	J	10	8.4	J	10	13.2		10
Sodium	ug/L	50000	**128000**		5000	**93500**		10000	**59700**		10000	**60000**		10000	**129000**		10000
Thallium	ug/L	2	< 20	UJ	20	< 20	UJ	20	< 10	UJ	10	< 10	UJ	10	< 20	UJ	20
Vanadium	ug/L	NS	185		10	125		50	61.4		50	62.5		50	165		50
Zinc	ug/L	2000	425	J	20	375		20	222		20	223		20	880		20

Notes: **Notes:**
1.) NJ GWQ 1.) NJ GWQS: Higher of the Practical Quantitation Limit and New Jersey Ground Water Quality
Criterion (N Criterion (N.J.A.C. 7:9C) 07/2010, as well as Interim Groundwater Quality Critieria.
2.) Detecte 2.) Detected results greater than the NJ GWQS are shown in **bold.**

Qualifiers: Qualifiers:
J = estimat J = estimated result
R = rejecte R = rejected result
U = not det U = not detected above RL
UJ = not de UJ = not detected above RL, RL is estimated

Abbreviations:
NS = standard not available
Qual = interpreted qualifier
RL = reporting limit
ug/L = micrograms per liter

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-11			PZ-12-11			PZ-12-11			PZ-12-11		
		Sample Date	10/25/2013			11/7/2013			4/16/2014			5/22/2014		
		N=Normal; FD=Field Duplicate	N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Acetone	ug/L	6000	< 5000	U	5000	< 10000	U	10000	< 500	U	500	< 500	U	500
Acetonitrile	ug/L	100	< 50000	U	50000	< 100000	U	100000	< 5000	U	5000	< 5000	U	5000
Acrolein	ug/L	5	< 25000	U	25000	< 50000	U	50000	< 2500	U	2500	< 2500	U	2500
Acrylonitrile	ug/L	2	< 25000	U	25000	< 50000	U	50000	< 2500	U	2500	< 2500	U	2500
Benzene	ug/L	1	**109000**		2000	**125000**		1000	**8440**		25	**13600**		250
Bromochloromethane	ug/L	NS	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
Bromodichloromethane	ug/L	1	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
Bromoform	ug/L	4	< 2000	U	2000	< 4000	U	4000	< 100	U	100	< 100	U	100
Bromomethane	ug/L	10	< 1000	U	1000	< 2000	U	2000	< 100	U	100	< 100	U	100
2-Butanone	ug/L	300	< 5000	U	5000	< 10000	U	10000	< 500	U	500	< 500	U	500
Carbon Disulfide	ug/L	700	< 1000	U	1000	< 2000	U	2000	< 100	U	100	< 100	U	100
Carbon Tetrachloride	ug/L	1	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
Chlorobenzene	ug/L	50	**565**		500	**489**	J	1000	**89.2**		50	**67.7**		50
Chloroethane	ug/L	5	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
Chloroform	ug/L	70	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
Chloromethane	ug/L	NS	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
2-Chlorotoluene	ug/L	NS	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
4-Chlorotoluene	ug/L	NS	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
cis-1,2-Dichloroethene	ug/L	70	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
cis-1,3-Dichloropropene	ug/L	1	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
Cyclohexane	ug/L	NS	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
Dibromochloromethane	ug/L	1	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
1,2-Dibromo-3-chloropropane	ug/L	0.02	< 5000	U	5000	< 10000	U	10000	< 250	U	250	< 250	U	250
1,2-Dibromoethane	ug/L	0.03	< 1000	U	1000	< 2000	U	2000	< 50	U	50	< 50	U	50
1,2-Dichlorobenzene	ug/L	600	**19200**		500	**18900**		1000	**3050**		50	**2200**		50
1,3-Dichlorobenzene	ug/L	600	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
1,4-Dichlorobenzene	ug/L	75	**1250**		500	**1160**		1000	**138**		50	**93.5**		50
Dichlorodifluoromethane	ug/L	1000	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
1,1-Dichloroethane	ug/L	50	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
1,2-Dichloroethane	ug/L	2	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
1,1-Dichloroethene	ug/L	1	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
1,2-Dichloroethene, Total	ug/L	NS	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
1,2-Dichloropropane	ug/L	1	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
Diethyl Ether	ug/L	1000	< 2500	U	2500	< 5000	U	5000	< 100	U	100	< 100	U	100
1,4-Dioxane	ug/L	10	< 63000	U	63000	< 130000	U	130000	< 6300	U	6300	< 6300	U	6300
Ethyl Acetate	ug/L	6000	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
Ethyl Acrylate	ug/L	NS	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
Ethylbenzene	ug/L	700	< 500	U	500	< 1000	U	1000	11.1	J	25	< 50	U	50
Freon 113	ug/L	NS	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-11			PZ-12-11			PZ-12-11			PZ-12-11		
		Sample Date	10/25/2013			11/7/2013			4/16/2014			5/22/2014		
		N=Normal; FD=Field Duplicate	N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
2-Hexanone	ug/L	300	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
Isopropyl Ether	ug/L	20000	< 2500	U	2500	< 5000	U	5000	< 100	U	100	< 100	U	100
Isopropylbenzene	ug/L	700	< 1000	U	1000	< 2000	U	2000	< 50	U	50	< 50	U	50
m,p-Xylenes	ug/L	1000	680		500	632	J	1000	41.2	J	50	26.9	J	50
Methyl Acetate	ug/L	7000	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
Methyl Cyclohexane	ug/L	NS	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
Methyl tert-Butyl Ether	ug/L	70	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
Methylacrylonitrile	ug/L	NS	< 5000	U	5000	< 10000	U	10000	< 500	U	500	< 500	U	500
Methylene Chloride	ug/L	3	< 1000	U	1000	< 2000	U	2000	< 100	U	100	< 100	U	100
4-Methyl-2-pentanone	ug/L	NS	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
2-Nitropropane	ug/L	NS	< 5000	U	5000	< 10000	U	10000	< 500	U	500	< 500	U	500
o-Xylene	ug/L	1000	267	J	500	233	J	1000	23.3	J	50	15.4	J	50
Styrene	ug/L	100	< 2500	U	2500	< 5000	U	5000	< 100	U	100	< 100	U	100
1,1,2,2-Tetrachloroethane	ug/L	1	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
Tetrachloroethene	ug/L	1	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
Toluene	ug/L	600	**10600**		500	**11300**		1000	483		50	261		50
trans-1,2-Dichloroethene	ug/L	100	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
trans-1,3-Dichloropropene	ug/L	1	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
1,2,4-Trichlorobenzene	ug/L	9	**381**	J	2500	**423**	J	5000	**25.5**	J	250	< 250	U	250
1,1,1-Trichloroethane	ug/L	30	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
1,1,2-Trichloroethane	ug/L	3	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
Trichloroethene	ug/L	1	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
Trichlorofluoromethane	ug/L	2000	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
1,2,3-Trichloropropane	ug/L	0.03	< 2500	U	2500	< 5000	U	5000	< 250	U	250	< 250	U	250
1,3,5-Trimethylbenzene	ug/L	NS	< 1000	U	1000	< 2000	U	2000	< 100	U	100	12.2	J	100
Vinyl Chloride	ug/L	1	< 500	U	500	< 1000	U	1000	< 50	U	50	< 50	U	50
Xylenes, Total	ug/L	1000	947		500	865	J	1000	64.4		50	42.3	J	50
Acenaphthene	ug/L	400	< 10	UJ	10	< 1	U	1	< 1	U	1	< 1	U	1
Acenaphthylene	ug/L	100	< 10	UJ	10	< 1	U	1	< 1	U	1	< 1	U	1
Acetophenone	ug/L	700	462	J	20	**846**		20	18.8		2.1	10		2
4-Aminodiphenyl	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
Aniline	ug/L	6	**80.7**	J	20	**124**		20	5.6		2.1	**7.4**		2
Anthracene	ug/L	2000	< 10	UJ	10	< 1	U	1	< 1	U	1	< 1	U	1
Atrazine	ug/L	3	< 50	UJ	50	< 5	U	5	< 2.1	U	2.1	< 2	U	2
Benzaldehyde	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
1,4-Benzenediol	ug/L	NS	< 100	R	100	< 10	UJ	10	< 10	R	10	< 10	UJ	10
Benzidine	ug/L	20	< 200	UJ	200	< 20	U	20	< 21	U	21	< 20	U	20
Benzo[a]anthracene	ug/L	0.1	< 1	UJ	1	**0.487**		0.1	**0.38**		0.1	< 0.1	U	0.1
Benzo[a]pyrene	ug/L	0.1	< 1	UJ	1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-11			PZ-12-11			PZ-12-11			PZ-12-11		
		Sample Date	10/25/2013			11/7/2013			4/16/2014			5/22/2014		
		N=Normal; FD=Field Duplicate	N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Benzo[b]fluoranthene	ug/L	0.2	< 1	UJ	1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1
Benzo[g,h,i]perylene	ug/L	100	< 10	UJ	10	< 1	U	1	< 1	U	1	< 1	U	1
Benzo[k]fluoranthene	ug/L	0.5	< 1	UJ	1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1
Benzoic Acid	ug/L	30000	< 200	UJ	200	679		200	< 21	U	21	6.9	J	20
Benzyl Alcohol	ug/L	2000	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
Biphenyl	ug/L	400	< 10	UJ	10	< 1	U	1	< 1	U	1	< 1	U	1
Bis(2-chloroethoxy)methane	ug/L	NS	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
Bis(2-chloroethyl) Ether	ug/L	7	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
Bis(2-chloroisopropyl) Ether	ug/L	300	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
Bis(2-ethylhexyl) Phthalate	ug/L	3	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
4-Bromophenyl Phenyl Ether	ug/L	NS	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
Butylbenzyl Phthalate	ug/L	100	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
Caprolactum	ug/L	5000	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
Carbazole	ug/L	NS	< 10	UJ	10	< 1	U	1	< 1	U	1	< 1	U	1
Catechol	ug/L	NS	< 100	R	100	< 10	UJ	10	< 10	R	10	< 10	R	10
1-Chloro-2-nitrobenzene	ug/L	NS	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
4-Chloro-3-methylphenol	ug/L	100	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
4-Chloroaniline	ug/L	30	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
2-Chloroaniline	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
2-Chloronaphthalene	ug/L	600	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
2-Chlorophenol	ug/L	40	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
4-Chlorophenyl-phenylether	ug/L	NS	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
Chrysene	ug/L	5	< 10	UJ	10	0.203		0.1	< 1	U	1	< 1	U	1
Dibenzo[a,h]anthracene	ug/L	0.3	< 1	UJ	1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1
Dibenzofuran	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
3,3'-Dichlorobenzidine	ug/L	30	< 50	UJ	50	< 5	U	5	< 2.1	U	2.1	< 2	U	2
2,4-Dichlorophenol	ug/L	20	< 50	UJ	50	< 5	U	5	< 2.1	U	2.1	< 2	U	2
Diethyl Phthalate	ug/L	6000	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
Dimethyl Phthalate	ug/L	100	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
2,4-Dimethylphenol	ug/L	100	< 50	UJ	50	14.5		5	< 5.2	U	5.2	2.6	J	5
Di-n-Butyl Phthalate	ug/L	700	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
4,6-Dinitro-2-methylphenol	ug/L	1	< 200	UJ	200	< 20	U	20	< 21	U	21	< 20	U	20
2,4-Dinitrophenol	ug/L	40	< 200	UJ	200	< 20	U	20	< 21	U	21	< 20	U	20
2,4-Dinitrotoluene	ug/L	10	< 20	UJ	20	< 2	U	2	< 1	U	1	< 1	U	1
2,6-Dinitrotoluene	ug/L	10	< 20	UJ	20	< 2	U	2	< 1	U	1	< 1	U	1
Di-n-octyl Phthalate	ug/L	100	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
Diphenylamine	ug/L	200	< 50	UJ	50	< 5	UJ	5	< 5.2	UJ	5.2	< 5	UJ	5
1,2-Diphenylhydrazine	ug/L	20	< 10	UJ	10	< 1	U	1	< 1	U	1	< 1	U	1
Fluoranthene	ug/L	300	< 10	UJ	10	0.822		0.1	< 1	U	1	< 1	U	1
Fluorene	ug/L	300	< 10	UJ	10	< 1	U	1	< 1	U	1	< 1	U	1

Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-11			PZ-12-11			PZ-12-11			PZ-12-11		
		Sample Date	10/25/2013			11/7/2013			4/16/2014			5/22/2014		
N=Normal; FD=Field Duplicate			N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Hexachlorobenzene	ug/L	0.02	< 0.2	UJ	0.2	< 0.02	U	0.02	< 0.021	U	0.021	< 0.02	U	0.02
Hexachlorobutadiene	ug/L	1	< 10	UJ	10	< 1	U	1	< 1	U	1	< 1	U	1
Hexachlorocyclopentadiene	ug/L	40	< 100	UJ	100	< 10	U	10	< 10	U	10	< 10	U	10
Hexachloroethane	ug/L	7	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
Indeno[1,2,3-cd]pyrene	ug/L	0.2	< 1	UJ	1	< 0.1	U	0.1	< 0.1	U	0.1	< 0.1	U	0.1
Isophorone	ug/L	40	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
m,p-Cresol	ug/L	NS	< 20	UJ	20	35.9		2	< 2.1	U	2.1	3.3		2
2-Methylnaphthalene	ug/L	30	**176**	J	10	**49.5**		1	18.9		1	10.4		1
2-Methylphenol	ug/L	NS	< 20	UJ	20	26		2	< 2.1	U	2.1	2.5		2
Naphthalene	ug/L	300	**3950**		100	**2170**		100	**522**		10	87.6		1
1,4-Naphthoquinone	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
4-Nitroaniline	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
2-Nitroaniline	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
3-Nitroaniline	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
Nitrobenzene	ug/L	6	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
4-Nitrophenol	ug/L	NS	< 100	UJ	100	< 10	U	10	< 10	U	10	< 10	U	10
2-Nitrophenol	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
Nitrosomethylethylamine	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
N-Nitrosodiethylamine	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
N-Nitrosodimethylamine	ug/L	0.8	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
N-Nitroso-di-n-butylamine	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
N-Nitroso-di-n-propylamine	ug/L	10	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
N-Nitrosodiphenylamine	ug/L	10	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
N-Nitrosomorpholine	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
N-Nitrosopiperidine	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
N-Nitrosopyrrolidine	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
o-Toluidine	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
Pentachlorobenzene	ug/L	NS	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
Pentachlorophenol	ug/L	0.3	< 3	UJ	3	< 0.3	U	0.3	< 0.31	U	0.31	< 0.3	U	0.3
Phenanthrene	ug/L	100	< 10	UJ	10	3.7		0.1	2.3		1	1.2		1
Phenol	ug/L	2000	67.9	J	20	226		20	6.8		2.1	25.4		2
Pyrene	ug/L	200	< 10	UJ	10	0.43		0.1	< 1	U	1	< 1	U	1
Pyridine	ug/L	NS	351	J	20	2760		200	42.4		2.1	58.9		2
1,2,4,5-Tetrachlorobenzene	ug/L	NS	< 20	UJ	20	< 2	U	2	< 2.1	U	2.1	< 2	U	2
2,3,4,6-Tetrachlorophenol	ug/L	200	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
2,4,6-Trichlorophenol	ug/L	20	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
2,4,5-Trichlorophenol	ug/L	700	< 50	UJ	50	< 5	U	5	< 5.2	U	5.2	< 5	U	5
Aluminum	ug/L	200	**41100**	J	200	**77900**	J	200	**25100**	J	1000	**23400**		200
Antimony	ug/L	6	< 6	U	6	< 6	U	6	< 30	UJ	30	< 6	U	6

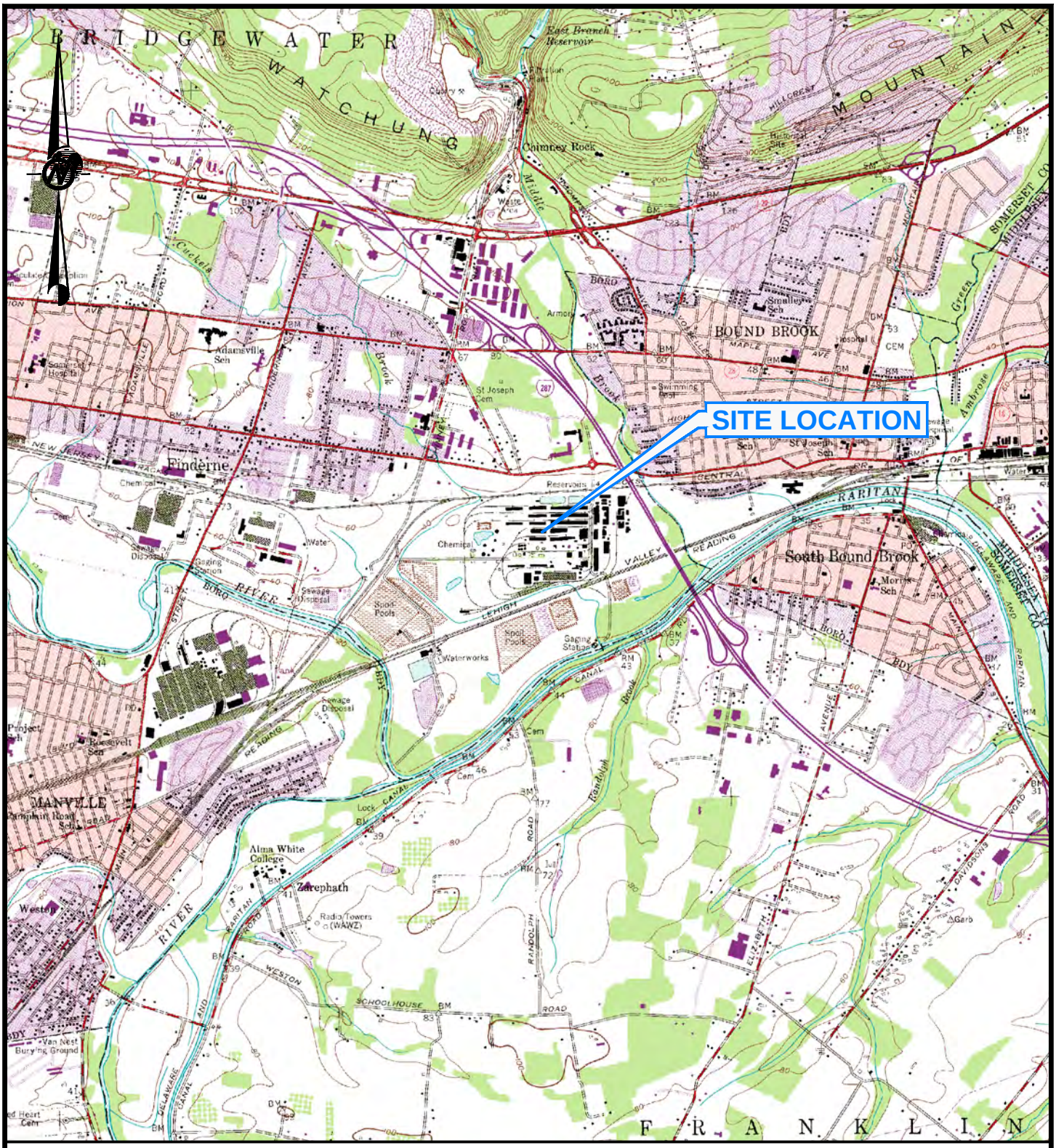
Table 4-6
Summary of Validated Groundwater Analytical Results
American Cyanamid Superfund Site
Bridgewater, New Jersey

		Sample ID	PZ-12-11			PZ-12-11			PZ-12-11			PZ-12-11		
		Sample Date	10/25/2013			11/7/2013			4/16/2014			5/22/2014		
		N=Normal; FD=Field Duplicate	N			N			N			N		
Parameter	Units	NJGWQS	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Arsenic	ug/L	3	**61.5**		3	**94**		3	**41.5**	J	15	**14.6**	J	15
Barium	ug/L	6000	978	J	200	2650		50	613	J	1000	176	J	200
Beryllium	ug/L	1	**4.7**		1	**5.7**		4	< 5	UJ	5	**3.7**		1
Cadmium	ug/L	4	**5.7**		3	1.1	J	4	< 15	UJ	15	3.6		3
Calcium	ug/L	NS	61900	J	5000	104000		5000	47100	J	25000	56600		5000
Chromium	ug/L	70	**167**		10	**364**		10	52.5	J	50	39.7	J	20
Cobalt	ug/L	100	62.3		50	**120**		50	45.5	J	250	46.1	J	50
Copper	ug/L	1300	**2180**		10	**6220**		25	**2780**	J	50	**4690**		10
Iron	ug/L	300	**477000**	J	1000	**561000**		500	**152000**	J	500	**185000**		100
Lead	ug/L	5	**359**	J	15	**467**		5	**222**	J	15	**99.8**	J	6
Magnesium	ug/L	NS	39600	J	5000	74600		5000	24100	J	25000	27300		5000
Manganese	ug/L	50	**11900**	J	75	**17000**		30	**10300**	J	75	**11300**	J	30
Mercury	ug/L	2	**12.9**		1.2	**5.7**		0.2	**2.9**	J	0.6	**2.4**		0.2
Nickel	ug/L	100	**1040**		10	**1880**		40	**548**	J	50	**646**		10
Potassium	ug/L	NS	29800		10000	47200		5000	12700	J	50000	11100		10000
Selenium	ug/L	40	< 50	UJ	50	< 10	U	10	< 50	UJ	50	6.2	J	10
Silver	ug/L	40	21	J	100	< 5	U	5	7	J	50	7.6	J	10
Sodium	ug/L	50000	**91100**	J	10000	**144000**		5000	**67000**	J	50000	**90100**		10000
Thallium	ug/L	2	< 10	UJ	10	< 10	UJ	10	< 10	UJ	10	< 10	UJ	10
Vanadium	ug/L	NS	112		50	166		10	34	J	250	18	J	50
Zinc	ug/L	2000	624		20	959	J	20	484	J	100	524		20

Notes: **Notes:**
1.) NJ GWQ 1.) NJ GWQS: Higher of the Practical Quantitation Limit and New Jersey Ground Water Quality Criterion (N Criterion (N.J.A.C. 7:9C) 07/2010, as well as Interim Groundwater Quality Critieria.
2.) Detecte 2.) Detected results greater than the NJ GWQS are shown in **bold.**

Qualifiers: Qualifiers:
J = estimat J = estimated result
R = rejecte R = rejected result
U = not det U = not detected above RL
UJ = not de UJ = not detected above RL, RL is estimated

Abbreviations:
NS = standard not available
Qual = interpreted qualifier
RL = reporting limit
ug/L = micrograms per liter



REFERENCE

1.) MAP FROM 7.5 MINUTE U.S.G.S. QUADRANGLE OF BOUND BROOK, NEW JERSEY, DATED 1955 (PHOTOREVISED 1970).

3000 0 3000

SCALE FEET

NJ Authorization #24GA28029100

Golder Associates

Mt. Laurel, New Jersey

SCALE	AS SHOWN
DATE	12/13/13
DESIGN	CDL
CADD	RG
CHECK	CDL
REVIEW	MJB

FILE No.	10386245I001
PROJECT No.	103-86245
REV.	0

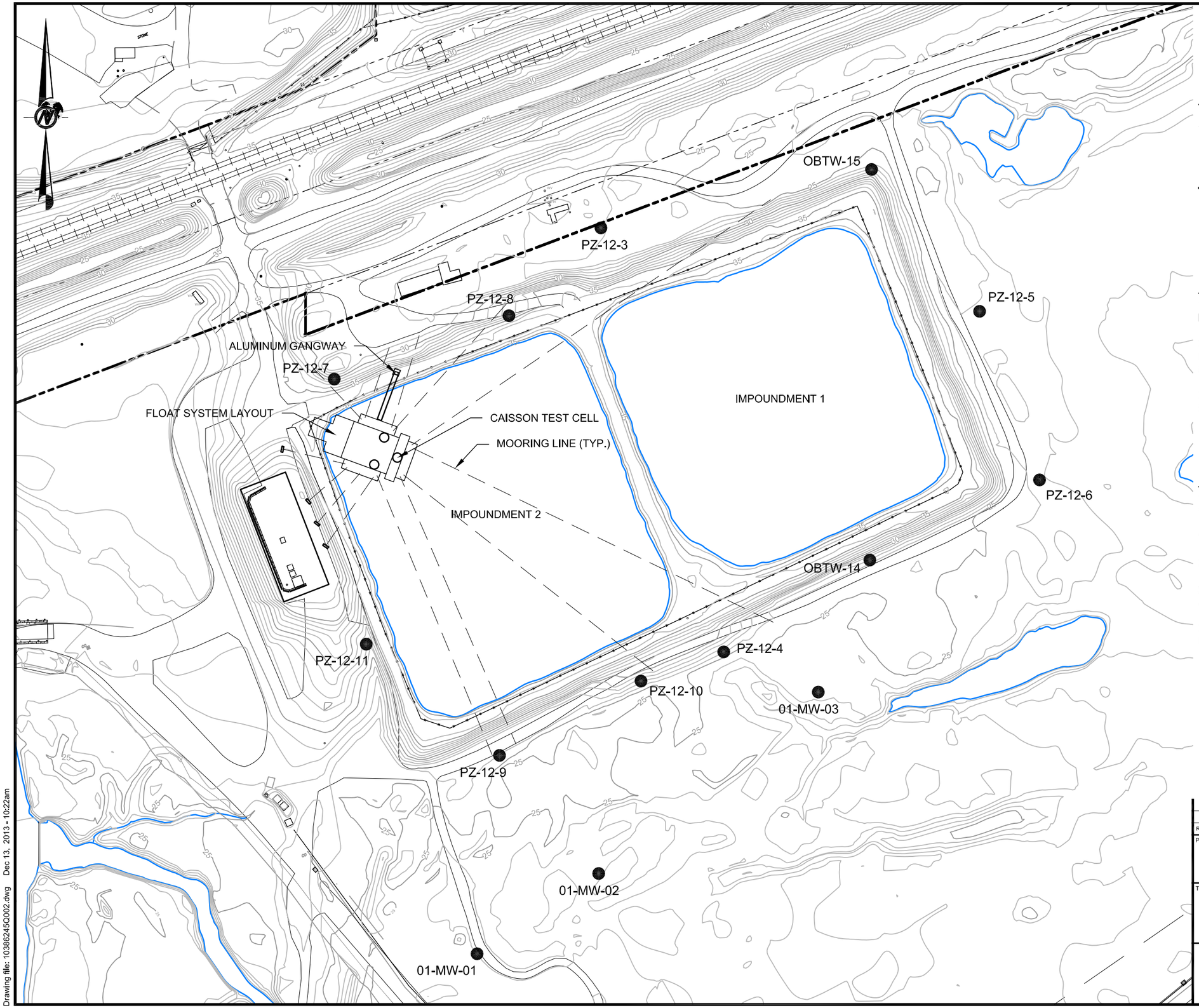
TITLE

SITE LOCATION MAP

AMERICAN CYANAMID SUPERFUND SITE

FIGURE 4-1

Drawing file: 10386245Q001.dwg Dec 13, 2013 - 10:20am



LEGEND

- TOPOGRAPHIC CONTOUR
- RAILROAD
- PROPERTY LINE
- OVERBURDEN MONITORING LOCATION

NOTES

1.) DATA LOGGERS/PRESSURE TRANSDUCERS ARE DEPLOYED IN PZ-12-7, PZ-12-8, PZ-12-9, PZ-12-10, AND PZ-12-11.

2.) ALL LOCATIONS HAVE WEEKLY GROUNDWATER ELEVATION MEASUREMENTS AND PID READINGS. BIWEEKLY WATER QUALITY MEASUREMENTS ARE ALSO COLLECTED.

3.) GEOTECHNICAL BORINGS (OBTW-14 AND OBTW-15) FOR THE SITE WIDE PREDESIGN INVESTIGATION WERE COMPLETED AS PIEZOMETERS TO PROVIDE FURTHER MONITORING COVERAGE.

REFERENCES

1.) BASE MAP FROM DIGITAL CAD FILE 13089-051713.DWG, SHEET 1 OF 36, ENTITLED "GENERAL LOCATION MAP AND SHEET KEY," DATED APRIL 12, 2011 (REVISED MAY 17, 2013), PREPARED BY VARGO ASSOCIATES.

2.) HORIZONTAL DATUM REFERENCES THE NEW JERSEY STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83). THE VERTICAL DATUM REFERENCES THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

3.) FLOAT SYSTEM LAYOUT DIGITIZED FROM DRAWING C-2002, ENTITLED "MOORING LINE LAYOUT," PREPARED BY CH2MHILL, DATED APRIL 10, 2013.

100 0 100
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
AMERICAN CYANAMID SUPERFUND SITE
BRIDGEWATER, NEW JERSEY

TITLE
MONITORING LOCATIONS

NJ Authorization #24GA28029100
Golder Associates

PROJECT No.		103-86245	FILE No.	10386245Q002
DESIGN	CDL	12/13/13	SCALE AS SHOWN	REV. 0
CADD	RG	12/13/13		
CHECK	CDL	12/13/13	**FIGURE 4-2**	
REVIEW	MJB	12/13/13		

Drawing file: 10386245Q002.dwg Dec 13, 2013 - 10:22am

APPENDIX 4-1

IMPOUNDMENT 2 PIEZOMETER WELL CONSTRUCTION INFORMATION

RECORD OF BOREHOLE PZ-12-07

PROJECT: Pfizer Boundbrook
PROJECT NUMBER: 103-86245
DRILLED DEPTH: 15.8 ft
AZIMUTH: N/A
LOCATION: Boundbrook, NJ

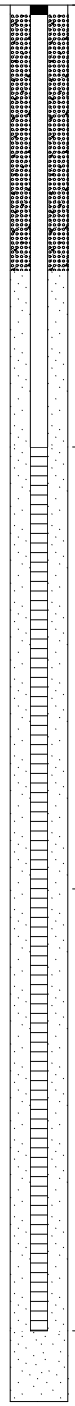
DRILL METHOD: Hollow-stem auger
DRILL RIG: CME 75
DATE STARTED: 9/17/13
DATE COMPLETED: 9/17/13
WEATHER: Sunny

DATUM:
COORDS: N: 626,847.6 E: 478,088.2
GS ELEVATION: 28.1 ft
TOC ELEVATION: 27.6 ft
TEMPERATURE: 70s

INCLINATION: -90
DEPTH W.L.:
ELEVATION W.L.:
DATE W.L.:
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT
0		0.0 - 5.0 Soft Dig to 5-ft (No Sample)			23.1					
5		5.0 - 7.0 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; red-brown, slightly cohesive, wet, loose to compact.	SM-GP		5.0 21.1	1	SS	4-4-6-12	10	1.0 / 2.0
		7.0 - 8.0 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; red-brown, slightly cohesive, wet, compact.	SM-GP		7.0 20.1	2	SS	10-10-16-16	26	2.0 / 2.0
20		8.0 - 9.0 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to medium; gray to light brown, slightly cohesive, wet, very dense.	SM-GP		8.0 19.1					
10		9.0 - 11.0 (SM) SILTY SAND, fine to medium, and (GP) GRAVEL, fine to medium; red-brown, slightly cohesive, wet, very dense.	SM-GP		9.0 17.1	3	SS	46-36-30-32	>50	0.1 / 2.0
		11.0 - 12.5 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; light brown slightly cohesive, wet, very dense.	SM-GP		11.0 15.6	4	SS	12-28-29-33	>50	1.7 / 2.0
15		12.5 - 13.0 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; red-brown to dark brown, slightly cohesive, wet, very dense.	SM-GP		12.5 15.1					
		13.0 - 13.8 (SM) SILTY SAND, fine to coarse and (GP) GRAVEL, fine to coarse; red-brown, slightly cohesive, wet, very dense.	SM-GP		13.0 14.3	5	SS	32-50	50	0.8 / 0.8
		13.8 - 15.0 No Recovery, spoon refusal auger down to 15-ft.			13.8 13.1					
15		15.0 - 15.8 (SP) SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; light brown, non-cohesive, wet, very dense, Bottom 2" BEDROCK spoon refusal.	SP-GP		15.0 12.4	6	SS	37-50	50	0.7 / 0.8
		Boring completed at 15.8 ft			15.8					

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-5 ft bgs
Material: PVC
Diameter: 2-inch
Joint Type: Threaded

WELL SCREEN
Interval: 5-15 ft bgs
Material: PVC
Diameter: 2-inch
Slot Size: 0.01-inch
End Cap: Threaded

FILTER PACK
Interval: 3-15.8 ft bgs
Type: #1 Sand
Quantity: 12-feet

FILTER PACK SEAL
Interval:
Type:
Quantity:

ANNULUS SEAL
Interval: 0-3 ft bgs
Type: Cement Grout
Quantity: 3-feet

LOG SCALE: 1 in = 2 ft
DRILLING COMPANY: Summit Drilling
DRILLER: M.Walsh

GA INSPECTOR:
CHECKED BY: BD/NM
DATE: 12/11/13

Golder Associates

RECORD OF BOREHOLE PZ-12-08

SHEET 1 of 1

PROJECT: Pfizer Boundbrook
PROJECT NUMBER: 103-86245
DRILLED DEPTH: 17.0 ft
AZIMUTH: N/A
LOCATION: Boundbrook, NJ

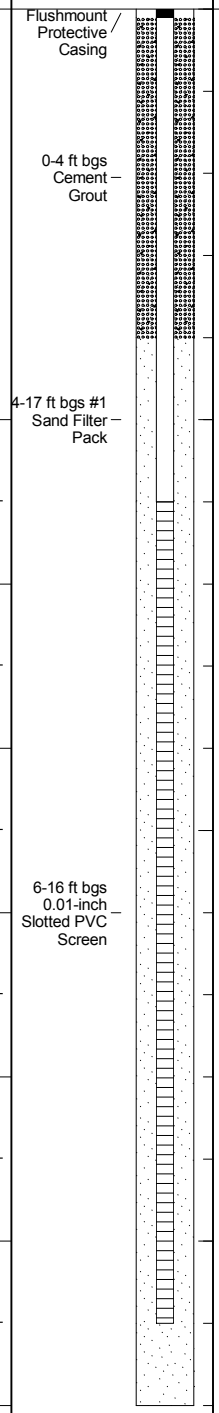
DRILL METHOD: Hollow-stem auger
DRILL RIG: CME 75
DATE STARTED: 9/18/13
DATE COMPLETED: 9/18/13
WEATHER: Sunny

DATUM:
COORDS: N: 626,897.0 E: 478,238.6
GS ELEVATION: 32.8 ft
TOC ELEVATION: 32.1 ft
TEMPERATURE: 70s

INCLINATION: -90
DEPTH W.L.:
ELEVATION W.L.:
DATE W.L.:
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT
0		0.0 - 5.0 Soft dig to 5-ft (No Sample)			27.8					
5		5.0 - 7.0 (SP) SAND, very fine to coarse, and (GP) GRAVEL, fine to coarse; red-brown to dark brown, non-cohesive, dry, dense.	SP-GP		5.0 25.8	1	SS	12-30-20-10	50	1.2/2.0
	25	7.0 - 9.0 (CL) SILTY CLAY, and (GP) GRAVEL, medium to coarse; red-brown, medium plasticity, cohesive, loose gravel, moist, firm.	CL-GP		7.0 23.8	2	SS	8-3-5-5	8	1.3/2.0
10		9.0 - 11.0 (SM) SILTY SAND, fine to medium, and (GP) GRAVEL, fine to coarse; red-brown, slightly cohesive, moist, dense.	SM-GP		9.0 21.8	3	SS	9-18-22-24	40	0.4/2.0
	20	11.0 - 13.0 (SM) SILTY SAND, fine to coarse, and GRAVEL, fine to coarse; red-brown, slightly cohesive, moist, dense.	SM-GP		11.0 19.8	4	SS	5-22-28-18	50	1.8/2.0
15		13.0 - 15.0 No Recovery			13.0 17.8	5	SS	8-19-18-5	37	0.0/2.0
	15	15.0 - 17.0 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; red-brown, slighty cohesive, wet, compact.	SM-GP		15.0 15.8	6	SS	4-14-12-10	26	1.3/2.0
		Boring completed at 17.0 ft								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-6 ft bgs
Material: PVC
Diameter: 2-inch
Joint Type: Threaded

WELL SCREEN
Interval: 6-16 ft bgs
Material: PVC
Diameter: 2-inch
Slot Size: 0.01-inch
End Cap: PVC

FILTER PACK
Interval: 4-17 ft bgs
Type: #1 Sand
Quantity: 12-feet

FILTER PACK SEAL
Interval:
Type:
Quantity:

ANNULUS SEAL
Interval: 0-4 ft
Type: Cement Grout
Quantity: 4-feet

LOG SCALE: 1 in = 2.5 ft
DRILLING COMPANY: Summit Drilling
DRILLER: M.Walsh

GA INSPECTOR:
CHECKED BY: BD/NM
DATE: 12/11/13

Golder Associates

RECORD OF BOREHOLE PZ-12-09

PROJECT: Pfizer Boundbrook
PROJECT NUMBER: 103-86245
DRILLED DEPTH: 15.0 ft
AZIMUTH: N/A
LOCATION: Boundbrook, NJ

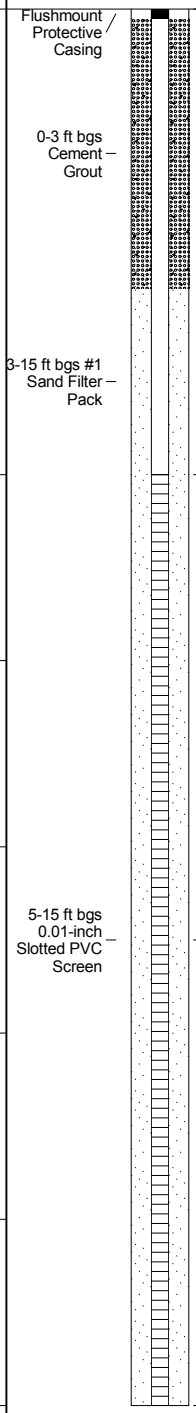
DRILL METHOD: Hollow-stem auger
DRILL RIG: CME 75
DATE STARTED: 9/18/13
DATE COMPLETED: 9/18/13
WEATHER: Sunny

DATUM:
COORDS: N: 626,443.5 E: 478,213.9
GS ELEVATION: 26.8 ft
TOC ELEVATION: 26.4 ft
TEMPERATURE: 50s

INCLINATION: -90
DEPTH W.L.:
ELEVATION W.L.:
DATE W.L.:
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT
0		0.0 - 5.0 Soft Dig to 5-ft (No Sample)			21.8					
5		5.0 - 7.0 (ML) SANDY SILT, fine sand, some fine to coarse gravel, red-brown, cohesive, dry, stiff, slight odor.	ML		5.0 19.8	1	SS	3-3-7-10	10	1.7/2.0
	20	7.0 - 9.0 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; dark brown, slightly cohesive, dry, dense, odor, positive dye test at 8.5-9 ft.	SM-GP		7.0 17.8	2	SS	7-24-29-27	>50	1.7/2.0
10		9.0 - 11.0 (SM) SILTY SAND, fine to coarse and (GP) GRAVEL, fine to coarse; light brown, slightly cohesive, wet, compact, odor.	SM-GP		9.0 15.8	3	SS	6-10-12-6	22	1.0/2.0
	15	11.0 - 13.0 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; light brown, slightly cohesive, compact, wet, odor, black liquid staining globules, dye test negative.	SM-GP		11.0 13.8	4	SS	7-11-15-16	26	0.9/2.0
15		13.0 - 15.0 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; light brown, slightly cohesive, compact, wet, odor, dye test negative, bottom 0.1-ft BEDROCK.	SM-GP		13.0 11.8	5	SS	7-7-5-11	12	1.0/2.0
		Boring completed at 15.0 ft								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-5 ft bgs
Material: PVC
Diameter: 2-inch
Joint Type: Threaded

WELL SCREEN
Interval: 5-15 ft bgs
Material: PVC
Diameter: 2-inch
Slot Size: 0.01-inch
End Cap: Threaded

FILTER PACK
Interval: 3-15 ft
Type: #1 Sand
Quantity: 12-feet

FILTER PACK SEAL
Interval:
Type:
Quantity:

ANNULUS SEAL
Interval: 0-3 ft bgs
Type: Cement Grout
Quantity: 3-feet

LOG SCALE: 1 in = 2 ft
DRILLING COMPANY: Summit Drilling
DRILLER: M.Walsh

GA INSPECTOR:
CHECKED BY: BD/NM
DATE: 12/11/13

Golder Associates

RECORD OF BOREHOLE PZ-12-10

PROJECT: Pfizer Boundbrook
PROJECT NUMBER: 103-86245
DRILLED DEPTH: 19.0 ft
AZIMUTH: N/A
LOCATION: Boundbrook, NJ

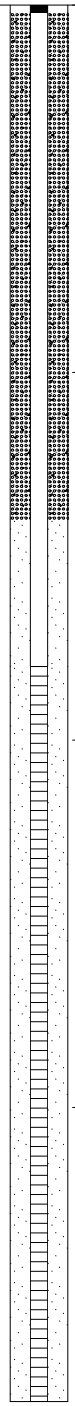
DRILL METHOD: Hollow-stem auger
DRILL RIG: CME 75
DATE STARTED: 9/18/13
DATE COMPLETED: 9/18/13
WEATHER: Sunny

DATUM:
COORDS: N: 626,520.0 E: 478,361.4
GS ELEVATION: 30.5 ft
TOC ELEVATION: 29.8 ft
TEMPERATURE: 60s

INCLINATION: -90
DEPTH W.L.:
ELEVATION W.L.:
DATE W.L.:
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT
0	30	0.0 - 5.0 Soft dig to 5-ft (No Sample)			25.5					
5	25	5.0 - 5.9 (SP) SAND, very fine to coarse, and (GP) GRAVEL, fine to coarse; medium brown, non-cohesive, dry, very dense, likely refusal on a piece of gravel.	SP-GP		5.0 24.6	1	SS	37-50	50	0.3 / 0.9
		5.9 - 7.0 No Recovery, spoon refusal auger down to 7-ft.			5.9 23.5					
		7.0 - 9.0 (CL) SILTY CLAY, dark brown, cohesive, low plasticity, dry, firm.	CL		7.0 21.5	2	SS	6-2-3-4	5	1.6 / 2.0
10	20	9.0 - 11.0 (CL) SILTY CLAY, medium brown, cohesive, low plasticity, dry, stiff, odor.	CL		9.0 19.5	3	SS	2-5-7-9	12	1.3 / 2.0
		11.0 - 13.0 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; light brown, slightly cohesive, moist, compact, odor.	SM-GP		11.0 17.5	4	SS	7-11-14-19	25	1.3 / 2.0
		13.0 - 15.0 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; light brown, slighty cohesive, wet, compact, odor.	SM-GP		13.0 15.5	5	SS	7-11-12-15	23	1.3 / 2.0
15	15	15.0 - 16.0 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; light brown, slightly cohesive, wet, dense, odor.	SM-GP		15.0 14.5	6	SS	16-29-15-5	44	1.9 / 2.0
		16.0 - 17.0 (SM) SILTY SAND, fine to medium; light brown, slightly cohesive, wet, dense, odor.	SM		16.0 13.5					
		17.0 - 19.0 (SP) SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; some silt, light brown, non-cohesive, wet, compact, odor, dye test negative at 18-ft.	SP-GP		17.0 11.5	7	SS	7-10-16-17	26	1.8 / 2.0
		Boring completed at 19.0 ft								
20	10									

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-9 ft bgs
Material: PVC
Diameter: 2-inch
Joint Type: Threaded

WELL SCREEN
Interval: 9-19 ft bgs
Material: PVC
Diameter: 2-inch
Slot Size: 0.01-inch
End Cap: Threaded

FILTER PACK
Interval: 7-19 ft bgs
Type: #1 Sand
Quantity: 12-feet

FILTER PACK SEAL
Interval:
Type:
Quantity:

ANNULUS SEAL
Interval: 0-7 ft bgs
Type: Cement Grout
Quantity: 7 feet

LOG SCALE: 1 in = 2.5 ft
DRILLING COMPANY: Summit Drilling
DRILLER: M.Walsh

GA INSPECTOR:
CHECKED BY: BD/NM
DATE: 12/11/13

Golder Associates

RECORD OF BOREHOLE PZ-12-11

SHEET 1 of 1

PROJECT: Pfizer Boundbrook
PROJECT NUMBER: 103-86245
DRILLED DEPTH: 19.0 ft
AZIMUTH: N/A
LOCATION: Boundbrook, NJ

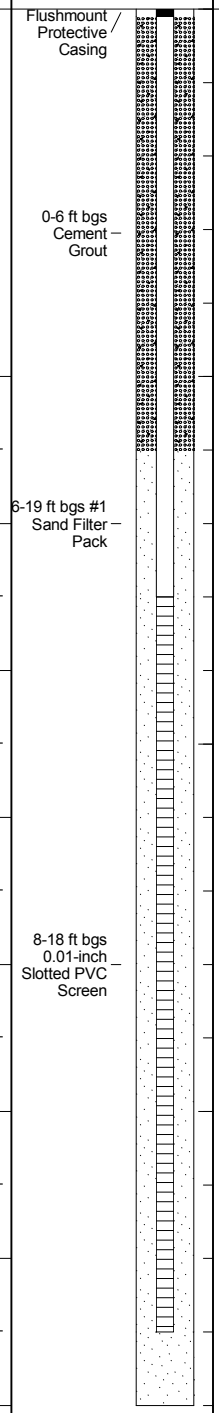
DRILL METHOD: Hollow-stem auger
DRILL RIG: CME 75
DATE STARTED: 9/23/13
DATE COMPLETED: 9/23/13
WEATHER: Sunny

DATUM:
COORDS: N: 626,550.3 E: 478,098.4
GS ELEVATION: 35.5 ft
TOC ELEVATION: 35.1 ft
TEMPERATURE: 50s

INCLINATION: -90
DEPTH W.L.:
ELEVATION W.L.:
DATE W.L.:
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT
0	35	0.0 - 5.0 Soft dig to 5-ft (No Sample)			30.5					
5	30	5.0 - 7.0 (CL) SILTY CLAY, some fine to coarse sand, red-brown to dark brown, low plasticity, cohesive, dry, soft.	CL		5.0 28.5	1	SS	2-2-4-5	6	1.3 / 2.0
		7.0 - 9.0 (CL) SILTY CLAY, red-brown, low plasticity, cohesive, dry, stiff.	CL		7.0 26.5	2	SS	6-8-8-10	16	1.7 / 2.0
10	25	9.0 - 11.0 (CL) SILTY CLAY, some fine to medium sand and gravel, red-brown to dark brown, medium plasticity, cohesive, moist, stiff.	CL		9.0 24.5	3	SS	5-4-5-7	9	2.0 / 2.0
		11.0 - 13.0 (CL) SILTY CLAY, little fine to coarse sand and gravel, dark brown, medium plasticity, cohesive, moist to wet, stiff.	CL		11.0 22.5	4	SS	6-6-6-6	12	1.9 / 2.0
15	20	13.0 - 13.5 (CL) SILTY CLAY, dark brown, medium plasticity, cohesive, wet, stiff, odor.	CL		13.0 22.0					
		13.5 - 15.0 (SP) SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; light brown, non-cohesive, wet, compact, odor, dye test positive.	SP-GP		13.5 20.5	5	SS	2-5-10-10	15	1.5 / 2.0
		15.0 - 17.0 (SM) SILTY SAND, fine to coarse, and (GP) GRAVEL, fine to coarse; light brown, slightly cohesive, wet, compact, odor, dye test positive.	SM-GP		15.0 18.5	6	SS	12-11-10-11	21	1.0 / 2.0
		17.0 - 19.0 (SP) SAND, fine to coarse, and GRAVEL, fine to coarse; some silt, light brown, non-cohesive, wet, compact, odor, dye test positive.	SP-GP		17.0 16.5	7	SS	10-11-12-15	23	1.5 / 2.0
20	15	Boring completed at 19.0 ft								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-8 ft bgs
Material: PVC
Diameter: 2-inch
Joint Type: Threaded

WELL SCREEN
Interval: 8-18 ft bgs
Material: PVC
Diameter: 2-inch
Slot Size: 0.01-inch
End Cap: Threaded

FILTER PACK
Interval: 6-19 ft bgs
Type: #1 Sand
Quantity: 12-feet

FILTER PACK SEAL
Interval:
Type:
Quantity:

ANNULUS SEAL
Interval: 0-6 ft bgs
Type: Cement Grout
Quantity: 6-feet

LOG SCALE: 1 in = 2.5 ft
DRILLING COMPANY: Summit Drilling
DRILLER: M.Walsh

GA INSPECTOR:
CHECKED BY: BD/NM
DATE: 12/11/13

Golder Associates

WELL DEVELOPMENT FIELD RECORD

JOB NAME	Pfizer Boundbrook	JOB NO.	103-86245 WELL NO. P2-12-8
DEVELOPED BY	Summit / JWR	DATE OF INSTALL.	9/18/13 SHEET 1 of 1
STARTED DEVEL.	9/19/13 / 1032 (DATE / TIME)	COMPLETED DEVEL.	9/18/13 / ~~10~~ 1105 (DATE / TIME)
W.L. BEFORE DEVEL.	9.33 / 9/19/13 / 1030 (DEPTH / DATE / TIME)	W.L. AFTER DEVEL.	9.50 / 9/19/13 / 1106 (DEPTH / DATE / TIME)
WELL DEPTH: BEFORE DEVEL.	16.00	AFTER DEVEL.	16.03 WELL DIA. (In) 2
STANDING WATER COLUMN (FT.)	6.67	STANDING WELL VOLUME	1.06 gal.
SCREEN LENGTH	6 - 16'	DRILLING WATER LOSS	N/A gal.

DATE/TIME		VOLUME REMOVED (GALS)	FIELD PARAMETERS SPEC COND. (ms/cm)	TEMP. (C)	pH (s.u.)	TURBIDITY (NTU)	REMARKS (DTW, Pumping Rate, etc.)
9/19/13	1045	30.0	0.382	20.75	5.56	549.0	~~Brown~~ Brown, turbid
	1055	40.0	0.370	20.81	5.45	83.7	
	~~1100~~ 1105	~~45.0~~ 50.0	0.372	19.27	5.49	14.6	
			50.0 = TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: overpumping

NOTES: 6.67 × 0.163 = 1.08 gal (1 well volume)

G:\FORMS\WELLDEV.XLS

WELL DEVELOPMENT FIELD RECORD

JOB NAME	Pfizer Boundbrook	JOB NO.	103-86245 WELL NO. PZ-12-7
DEVELOPED BY	Summit / JWC	DATE OF INSTALL.	9/17/13 SHEET 1 of 1
STARTED DEVEL.	9/19/13 / 0950 (DATE / TIME)	COMPLETED DEVEL.	9/19/13 / 1020 (DATE / TIME)
W.L. BEFORE DEVEL.	4.64 / 9/19/13 / 0945 (DEPTH / DATE / TIME)	W.L. AFTER DEVEL.	4.75 / 9/19/13 / 1020 (DEPTH / DATE / TIME)
WELL DEPTH: BEFORE DEVEL.	14.75	AFTER DEVEL.	14.78 WELL DIA. (In) 2
STANDING WATER COLUMN (FT.)	10.11	STANDING WELL VOLUME	1.63 gal.
SCREEN LENGTH	5-15'	DRILLING WATER LOSS	N/A gal.

DATE/TIME		VOLUME REMOVED (GALS)	FIELD PARAMETERS SPEC COND. (ms/cm)	TEMP. (C)	pH (s.u.)	TURBIDITY (NTU)	REMARKS (DTW, Pumping Rate, etc.)
9/19/13	0955	20.0	0.659	18.20	6.09	1000.0	Brown, turbid.
	1005	35.0	0.573	19.32	6.27	1000.0	Brown, turbid
	1010	40.0	0.554	19.45	6.33	950.0	
	1015	50.0	0.548	19.29	6.36	363.0	
			50	= TOTAL VOLUME REMOVED (gal.)			

DEVELOPMENT METHOD: Over pumping

NOTES: 1.64 gallons (1 well volume)

G:\FORMS\WELLDEV.XLS

WELL DEVELOPMENT FIELD RECORD

PZ-12-10

JOB NAME	Pfizer Boundbrook	JOB NO.	103-86245
DEVELOPED BY	Summit / JWL	DATE OF INSTALL.	9/18/13
STARTED DEVEL.	9/19/13 / 1200 (DATE / TIME)	COMPLETED DEVEL.	9/19/13 / 1238 (DATE / TIME)
W.L. BEFORE DEVEL.	9.44 / 9/19/13 / 1157 (DEPTH / DATE / TIME)	W.L. AFTER DEVEL.	9.82 / 9/19/13 / 1236 (DEPTH / DATE / TIME)
WELL DEPTH: BEFORE DEVEL.	16.92	AFTER DEVEL.	18.46
STANDING WATER COLUMN (FT.)	7.48	STANDING WELL VOLUME	1.40 gal.
SCREEN LENGTH	9 - 19'	DRILLING WATER LOSS	N/A gal.

WELL NO. ~~PZ-12-9~~ KFM

SHEET 1 of 1

WELL DIA. (In) 2

DATE/TIME		VOLUME REMOVED (GALS)	FIELD PARAMETERS SPEC COND. (ms/cm)	TEMP. (C)	pH (s.u.)	TURBIDITY (NTU)	REMARKS (DTW, Pumping Rate, etc.)
9/19/13	1215	25.0	4.72	19.37	3.03	1000.0	Brown, turbid, odor
	1220	35.0	2.82	19.09	2.81	1000.0	
	1225	~~40~~ 45.0	~~5.31~~ ~~2.84~~	19.26	2.87	1000.0	
	1230	47.5	5.35	18.00	2.87	815.0	
	1235	50.0	5.40	17.51	2.87	834.0	
			50.0	= TOTAL VOLUME REMOVED (gal.)			

DEVELOPMENT METHOD: over pumping

NOTES: 7.48 × .163 = 1.22 gal (1 well volume)

G:\FORMS\WELLDEV.XLS

Form A
Monitoring Well Certification – As-Built Certification

Name of Permittee: Summit Drilling Co., Inc.

Name of Facility: American Cyanamid Superfund Site

Location: Easton Turnpike, Bridgewater, NJ 08807

CERTIFICATION

Well permit number (as assigned by NJDEP's Bureau of Water Allocation):	E201313489
Owner's well number (As shown on the application):	PZ-12-7
Well completion date:	9/17/2013
Distance from top of casing (cap off) to ground surface (one-hundredth of a foot):	0'
Total depth of well to the nearest ½ foot:	15'
Depth to top of screen from top of casing (one-hundredth of a foot):	5'
Screen length (or length of open hole in feet:	10'
Screen or slot size:	.010
Screen or slot material:	PVC
Casing material (PVC, Steel or other-specify):	PVC
Casing diameter (inches):	2"
Static water level from top of casing at the time of installation (one-hundredth of a foot):	6'
Yield (gallons per minute):	0
Development technique (specify):	Submersible Pump
Length of time well was developed/pumped or bailed:	.5 hours

Authentication

I certify under penalty of law that I have personally examined and familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Michael S. Wilson
Driller's Name (type or print)

Michael S Wilson
Driller's Signature

MW510603
Certification or License No.

Corporate Seal

Certification by Executive Officer or Duly Authorized Representative

T Donnelly
Name (type or print)

Signature

COO
Title

3-12-14
Date

Form A
Monitoring Well Certification – As-Built Certification

Name of Permittee: Summit Drilling Co., Inc.

Name of Facility: American Cyanamid Superfund Site

Location: Easton Turnpike, Bridgewater, NJ 08807

CERTIFICATION

Well permit number (as assigned by NJDEP's Bureau of Water Allocation):	E201313490
Owner's well number (As shown on the application):	PZ-12-8
Well completion date:	9/18/2013
Distance from top of casing (cap off) to ground surface (one-hundredth of a foot):	0'
Total depth of well to the nearest ½ foot:	16'
Depth to top of screen from top of casing (one-hundredth of a foot):	6'
Screen length (or length of open hole in feet:	10'
Screen or slot size:	.010
Screen or slot material:	PVC
Casing material (PVC, Steel or other-specify):	PVC
Casing diameter (inches):	2"
Static water level from top of casing at the time of installation (one-hundredth of a foot):	7'
Yield (gallons per minute):	0
Development technique (specify):	Submersible Pump
Length of time well was developed/pumped or bailed:	.5 hours

Authentication

I certify under penalty of law that I have personally examined and familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Michael S. Wilson
Driller's Name (type or print)

Michael S Wilson
Driller's Signature

MW510603
Certification or License No.

Corporate Seal

Certification by Executive Officer or Duly Authorized Representative

Thomas T Donnelly
Name (type or print)

Thomas
Signature

COO
Title

3-12-14
Date

Form A
Monitoring Well Certification – As-Built Certification

Name of Permittee: Summit Drilling Co., Inc.

Name of Facility: American Cyanamid Superfund Site

Location: Easton Turnpike, Bridgewater, NJ 08807

CERTIFICATION

Well permit number (as assigned by NJDEP's Bureau of Water Allocation):	E201313491
Owner's well number (As shown on the application):	PZ-12-9
Well completion date:	9/18/2013
Distance from top of casing (cap off) to ground surface (one-hundredth of a foot):	0'
Total depth of well to the nearest ½ foot:	15'
Depth to top of screen from top of casing (one-hundredth of a foot):	5'
Screen length (or length of open hole in feet:	10'
Screen or slot size:	.010
Screen or slot material:	PVC
Casing material (PVC, Steel or other-specify):	PVC
Casing diameter (inches):	2"
Static water level from top of casing at the time of installation (one-hundredth of a foot):	6'
Yield (gallons per minute):	0
Development technique (specify):	Submersible Pump
Length of time well was developed/pumped or bailed:	.5 hours

Authentication

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Driller's Name (type or print)

Michael S Wilson
Driller's Signature

MW510603
Certification or License No.

Corporate Seal

Certification by Executive Officer or Duly Authorized Representative

T. Donnelly
Name (type or print)

Donnelly
Signature

CEO
Title

3/12/14
Date

Form A
Monitoring Well Certification – As-Built Certification

Name of Permittee: Summit Drilling Co., Inc.

Name of Facility: American Cyanamid Superfund Site

Location: Easton Turnpike, Bridgewater, NJ 08807

CERTIFICATION

Well permit number (as assigned by NJDEP's Bureau of Water Allocation):	E201313492
Owner's well number (As shown on the application):	PZ-12-10
Well completion date:	9/18/2013
Distance from top of casing (cap off) to ground surface (one-hundredth of a foot):	0'
Total depth of well to the nearest ½ foot:	19'
Depth to top of screen from top of casing (one-hundredth of a foot):	9'
Screen length (or length of open hole in feet:	10'
Screen or slot size:	.010
Screen or slot material:	PVC
Casing material (PVC, Steel or other-specify):	PVC
Casing diameter (inches):	2"
Static water level from top of casing at the time of installation (one-hundredth of a foot):	10'
Yield (gallons per minute):	0
Development technique (specify):	Submersible Pump
Length of time well was developed/pumped or bailed:	.5 hours

Authentication

I certify under penalty of law that I have personally examined and familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Michael S. Wilson
Driller's Name (type or print)

Michael S Wilson
Driller's Signature

MW510603
Certification or License No.

Corporate Seal

Certification by Executive Officer or Duly Authorized Representative

T Donnelly
Name (type or print)

Signature

COO
Title

3-12-14
Date

Form A
Monitoring Well Certification – As-Built Certification

Name of Permittee: Summit Drilling Co., Inc.

Name of Facility: American Cyanamid Superfund Site

Location: Easton Turnpike, Bridgewater, NJ 08807

CERTIFICATION

Well permit number (as assigned by NJDEP's Bureau of Water Allocation):	E201313814
Owner's well number (As shown on the application):	PZ-12-11
Well completion date:	9/23/2013
Distance from top of casing (cap off) to ground surface (one-hundredth of a foot):	0'
Total depth of well to the nearest ½ foot:	18'
Depth to top of screen from top of casing (one-hundredth of a foot):	8'
Screen length (or length of open hole in feet:	10'
Screen or slot size:	.010
Screen or slot material:	PVC
Casing material (PVC, Steel or other-specify):	PVC
Casing diameter (inches):	2"
Static water level from top of casing at the time of installation (one-hundredth of a foot):	9'
Yield (gallons per minute):	0
Development technique (specify):	Submersible Pump
Length of time well was developed/pumped or bailed:	.5 hours

Authentication

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Michael S. Wilson
Driller's Name (type or print)

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Driller's Signature

MW510603
Certification or License No.

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Certification by Executive Officer or Duly Authorized Representative

T Donnelly
Name (type or print)

Donnelly
Signature

COO
Title

3-12-14
Date

New Jersey Department of Environmental Protection
Site Remediation Program

Monitoring Well Certification Form B - Location Certification

Date Stamp
(For Department use only)

SECTION A. SITE NAME AND LOCATION

Site Name: American Cyanamid Superfund Site
List all AKAs:
Street Address: West of Route 287, South of Main Street
Municipality: Bridgewater Township (Township, Borough or City)
County: Somerset County Zip Code: 08807
Program Interest (PI) Number(s): Case Tracking Number(s):

SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner Wyeth Holdings Corp., C/O Pfizer Inc.
2. Well Location (Street Address) Easton Turnpike
3. Well Location (Municipal Block and Lot) Block# 342 Lot # 2

SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E201313489
2. Site Well Number (As shown on application or plans): PZ-12-7
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40° 33' 15.63" Longitude: West 74° 33' 01.86"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 626,848 feet East 478,088 feet
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 27.56
   Elevation Top of Outer casing: 28.06 Elevation of ground: 28.1
   Check One: ☒ NAVD 88 ☐ NGVD 29 ☐ On Site Datum ☐ Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   Elevations are referenced to N.A.V.D. 1988, Horizontal datum is referenced to N.J.S.P.C.S.–N.A.D. 1983 based on NGS OPUS Solution: 65672290.10o 000064814, dated 08/19/2010. Base Stations used: NJMT (PID DH3768), NJTP (PID DI3830), and NJDY (PID DH3766).
7. Significant observations and notes:

SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 10-04-2013
Surveyor's Name: Robert E. Vargo License Number: GS43261
Firm Name: Vargo Associates Certificate Authorization #: 24GA28021200
Mailing Address: 2771 Delsea Drive
City/Town: Franklinville State: NJ Zip Code: 08322
Phone Number: 856-694-1716 Ext.: 110 Fax: 856-694-3102

New Jersey Department of Environmental Protection
Site Remediation Program

Monitoring Well Certification Form B - Location Certification

Date Stamp
(For Department use only)

SECTION A. SITE NAME AND LOCATION

Site Name: American Cyanamid Superfund Site
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3. Well Location (Municipal Block and Lot) Block# 342 Lot # 2

SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E201313490
2. Site Well Number (As shown on application or plans): PZ-12-8
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40° 33' 16.12" Longitude: West 74° 32' 59.92"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 626,897 feet East 478,239 feet
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 32.08
   Elevation Top of Outer casing: 32.80 Elevation of ground: 32.8
   Check One: ☒ NAVD 88 ☐ NGVD 29 ☐ On Site Datum ☐ Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   Elevations are referenced to N.A.V.D. 1988, Horizontal datum is referenced to N.J.S.P.C.S.–N.A.D. 1983 based on NGS OPUS Solution: 65672290.10o 000064814, dated 08/19/2010. Base Stations used: NJMT (PID DH3768), NJTP (PID DI3830), and NJDY (PID DH3766).
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New Jersey Department of Environmental Protection
Site Remediation Program

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SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E201313491
2. Site Well Number (As shown on application or plans): PZ-12-9
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40° 33' 11.64" Longitude: West 74° 33' 00.23"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 626,443 feet East 478,214 feet
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 26.38
   Elevation Top of Outer casing: 26.77 Elevation of ground: 26.8
   Check One: ☒ NAVD 88 ☐ NGVD 29 ☐ On Site Datum ☐ Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   Elevations are referenced to N.A.V.D. 1988, Horizontal datum is referenced to N.J.S.P.C.S.–N.A.D. 1983 based on NGS OPUS Solution: 65672290.10o 000064814, dated 08/19/2010. Base Stations used: NJMT (PID DH3768), NJTP (PID DI3830), and NJDY (PID DH3766).
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New Jersey Department of Environmental Protection
Site Remediation Program

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Program Interest (PI) Number(s): Case Tracking Number(s):

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3. Well Location (Municipal Block and Lot) Block# 342 Lot # 2

SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E201313492
2. Site Well Number (As shown on application or plans): PZ-12-10
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40° 33' 12.39" Longitude: West 74° 32' 58.32"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 626,520 feet East 478,361 feet
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 29.84
   Elevation Top of Outer casing: 30.51 Elevation of ground: 30.5
   Check One: ☒ NAVD 88 ☐ NGVD 29 ☐ On Site Datum ☐ Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   Elevations are referenced to N.A.V.D. 1988, Horizontal datum is referenced to N.J.S.P.C.S.–N.A.D. 1983 based on NGS OPUS Solution: 65672290.10o 000064814, dated 08/19/2010. Base Stations used: NJMT (PID DH3768), NJTP (PID DI3830), and NJDY (PID DH3766).
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New Jersey Department of Environmental Protection
Site Remediation Program

Monitoring Well Certification Form B - Location Certification

Date Stamp
(For Department use only)

SECTION A. SITE NAME AND LOCATION

Site Name: American Cyanamid Superfund Site
List all AKAs:
Street Address: West of Route 287, South of Main Street
Municipality: Bridgewater Township (Township, Borough or City)
County: Somerset County Zip Code: 08807
Program Interest (PI) Number(s): Case Tracking Number(s):

SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner Wyeth Holdings Corp., C/O Pfizer Inc.
2. Well Location (Street Address) Easton Turnpike
3. Well Location (Municipal Block and Lot) Block# 342 Lot # 2

SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E201313814
2. Site Well Number (As shown on application or plans): PZ-12-11
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40° 33' 12.69" Longitude: West 74° 33' 01.73"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 626,550 feet East 478,098 feet
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 35.07
   Elevation Top of Outer casing: 35.49 Elevation of ground: 35.5
   Check One: ☒ NAVD 88 ☐ NGVD 29 ☐ On Site Datum ☐ Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   Elevations are referenced to N.A.V.D. 1988, Horizontal datum is referenced to N.J.S.P.C.S.–N.A.D. 1983 based on NGS OPUS Solution: 65672290.10o 000064814, dated 08/19/2010. Base Stations used: NJMT (PID DH3768), NJTP (PID DI3830), and NJDY (PID DH3766).
7. Significant observations and notes:

SECTION D. LAND SURVEYOR'S CERTIFICATION

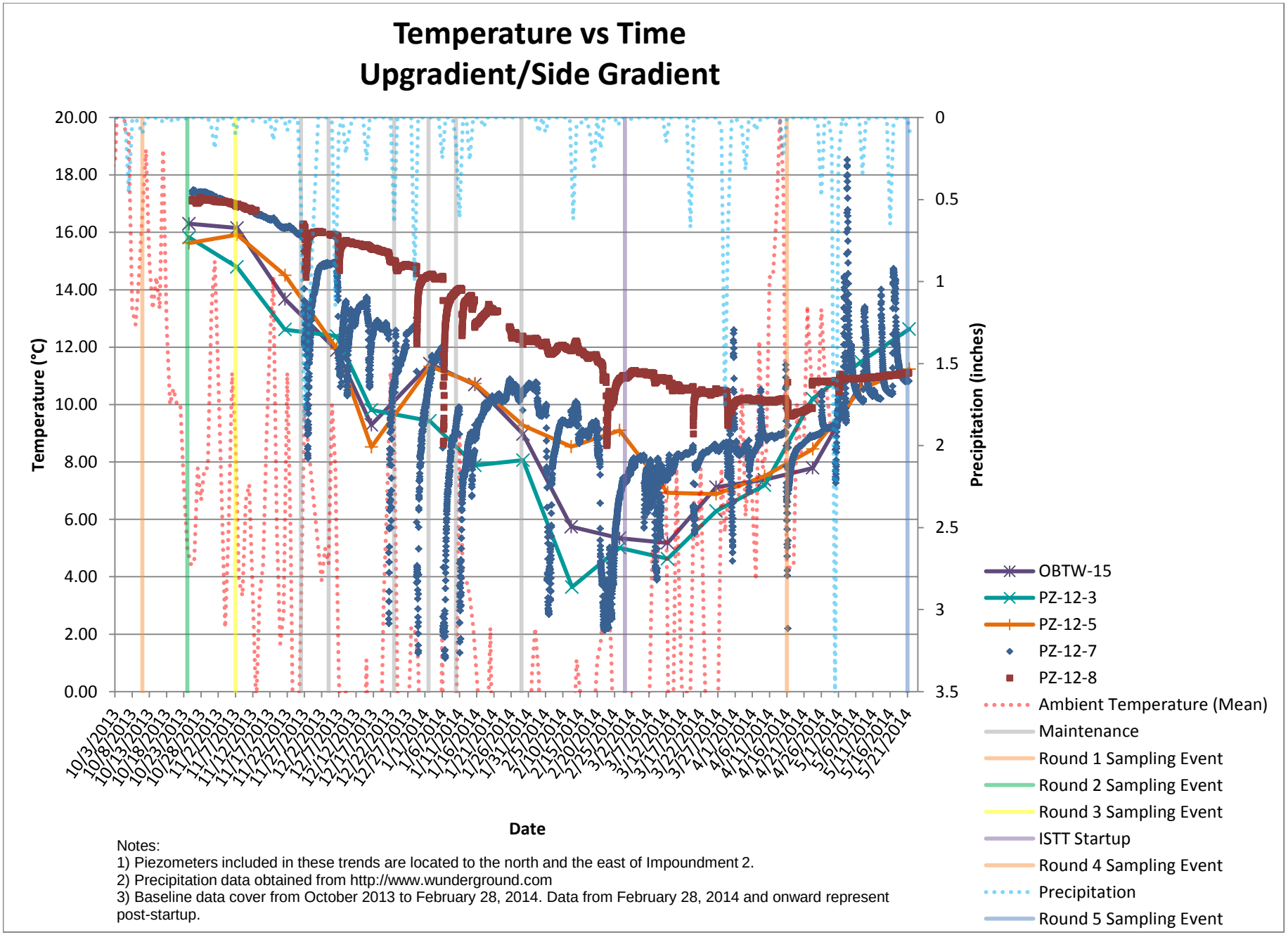
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

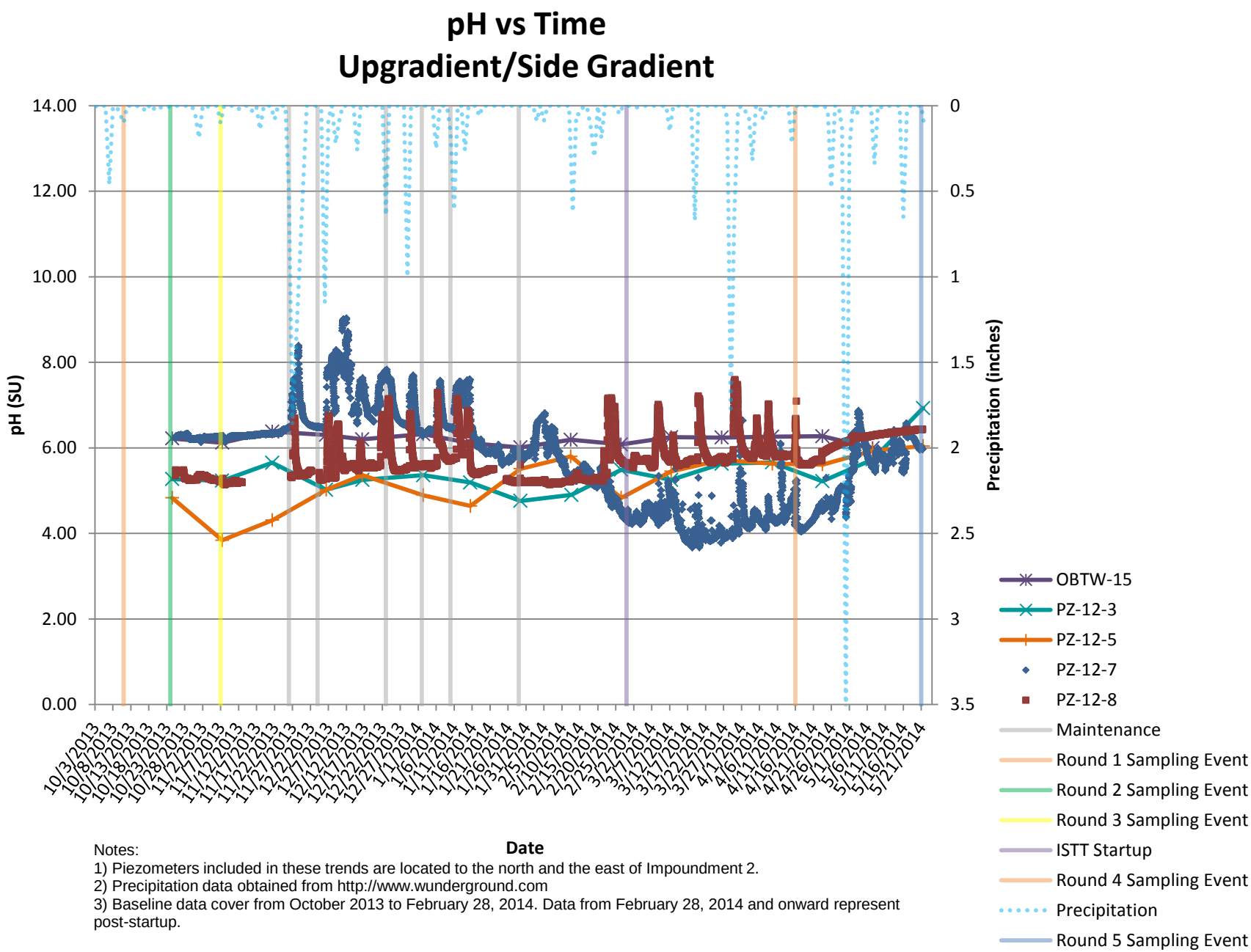
Professional Land Surveyor's Signature: Date: 10-04-2013
Surveyor's Name: Robert E. Vargo License Number: GS43261
Firm Name: Vargo Associates Certificate Authorization #: 24GA28021200
Mailing Address: 2771 Delsea Drive
City/Town: Franklinville State: NJ Zip Code: 08322
Phone Number: 856-694-1716 Ext.: 110 Fax: 856-694-3102

APPENDIX 4-2

GROUNDWATER QUALITY TRENDS



Notes:
1) Piezometers included in these trends are located to the north and the east of Impoundment 2.
2) Precipitation data obtained from http://www.wunderground.com
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.



Notes:
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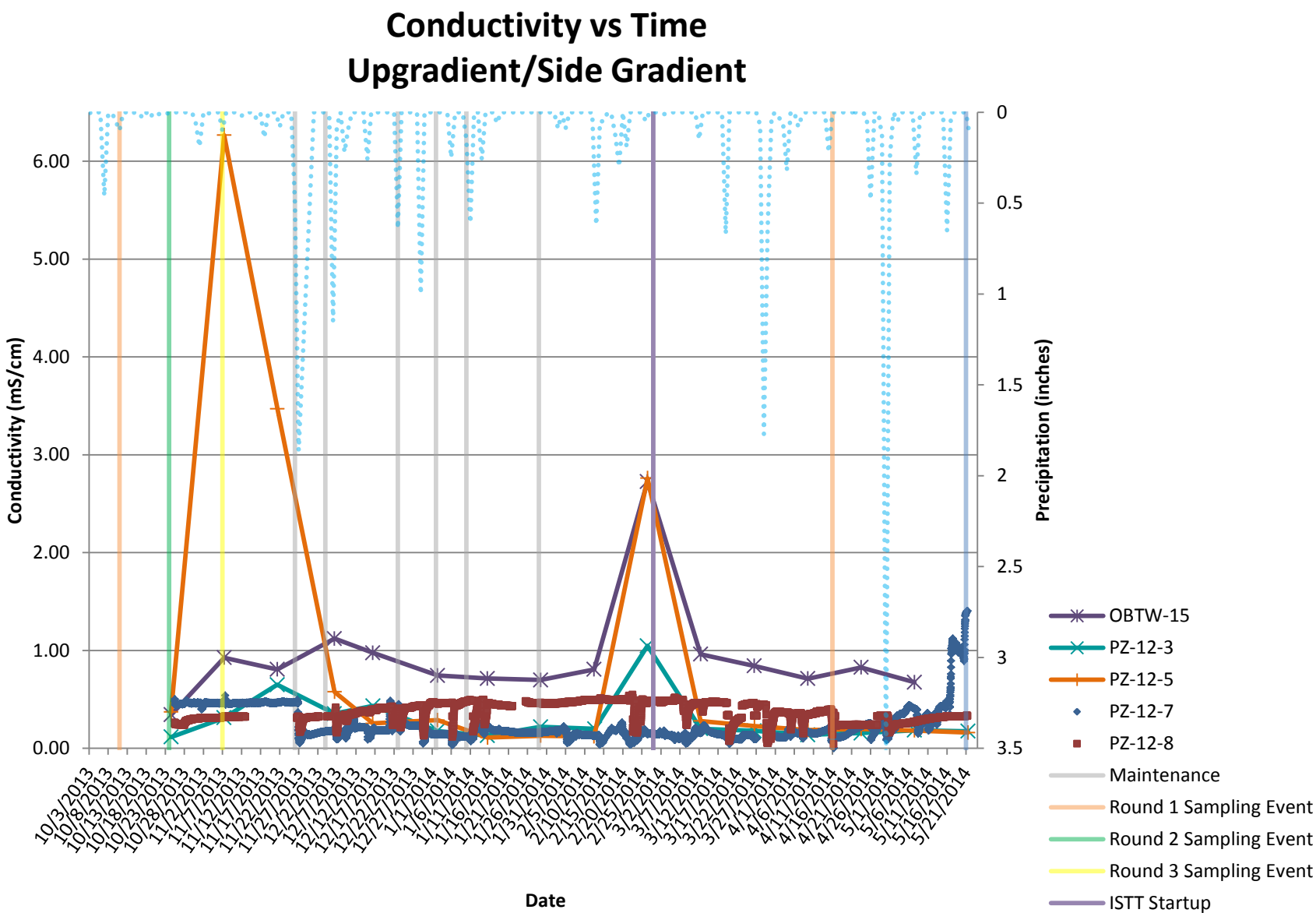
2) Precipitation data obtained from http://www.wunderground.com
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.



Notes:
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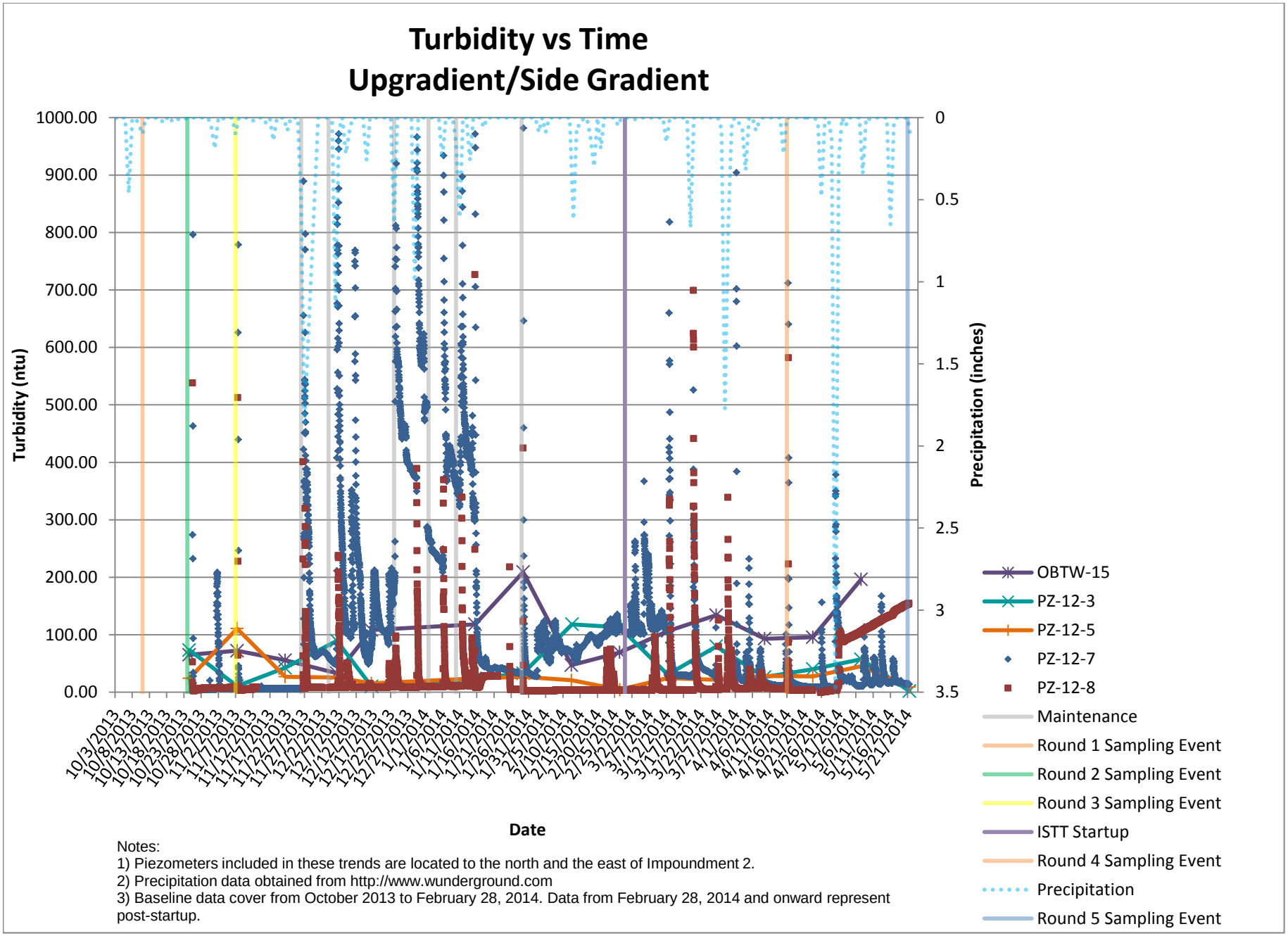
2) Precipitation data obtained from http://www.wunderground.com
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.



Notes:
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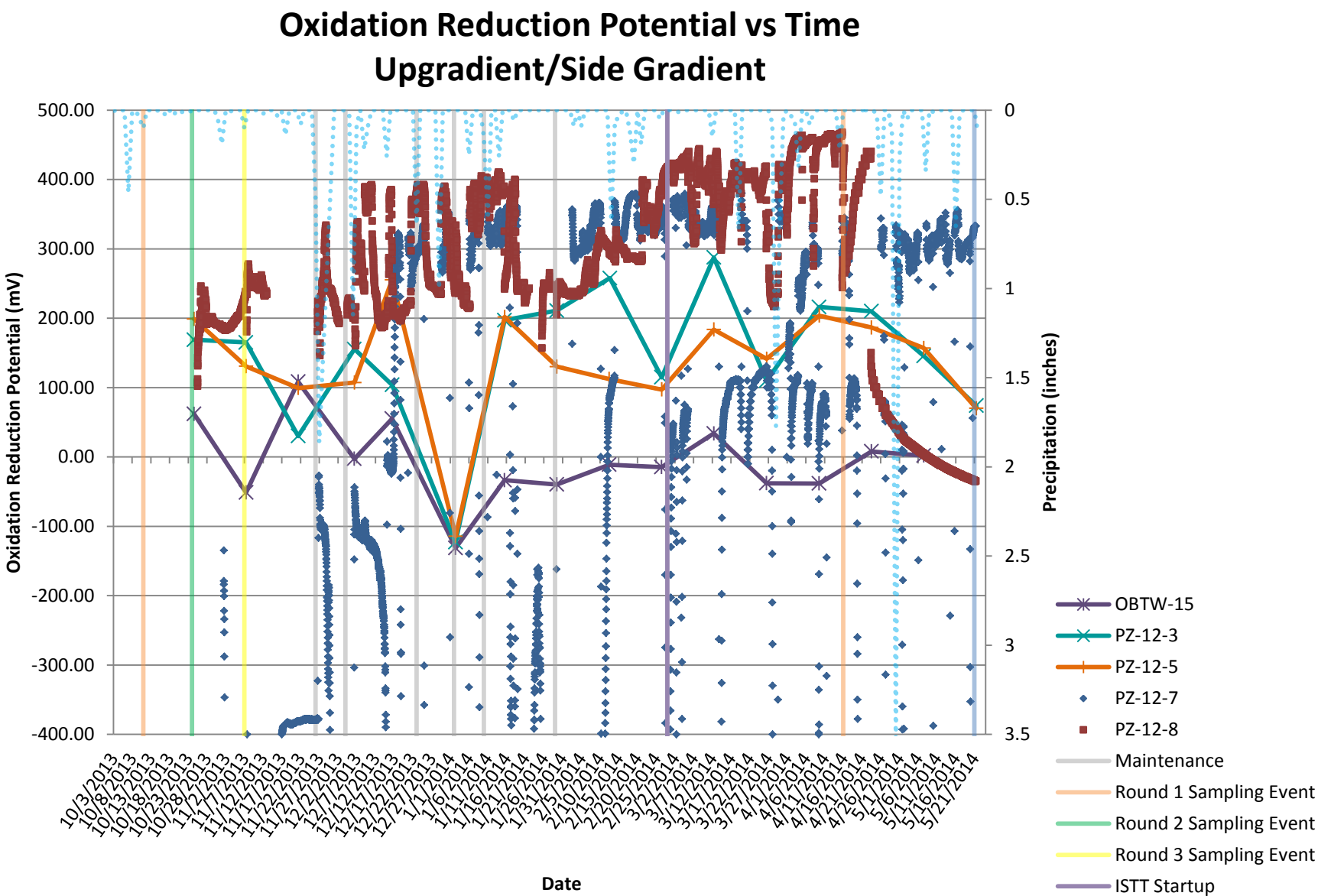
2) Precipitation data obtained from http://www.wunderground.com
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.



Notes:
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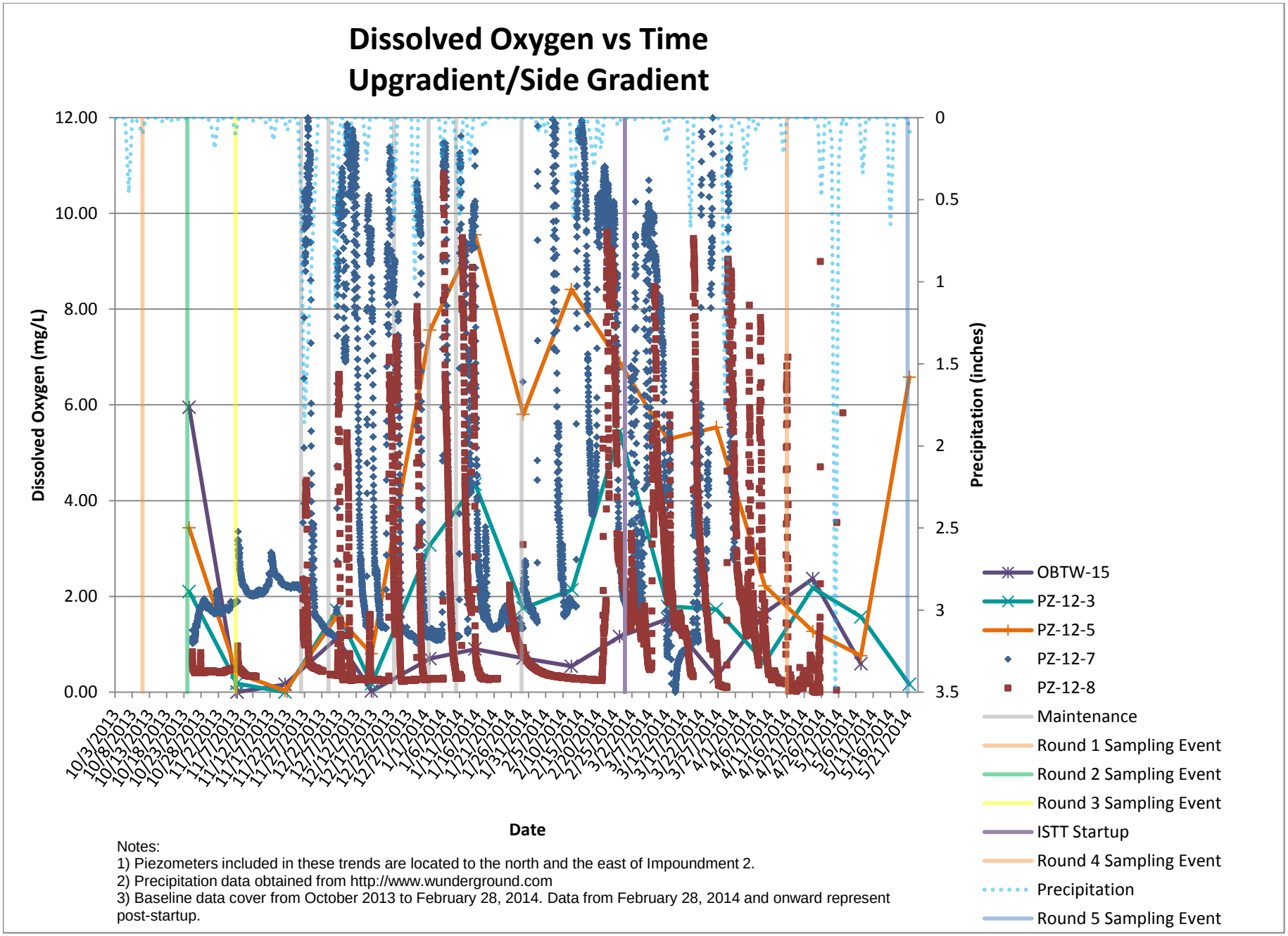
2) Precipitation data obtained from http://www.wunderground.com
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.



Notes:
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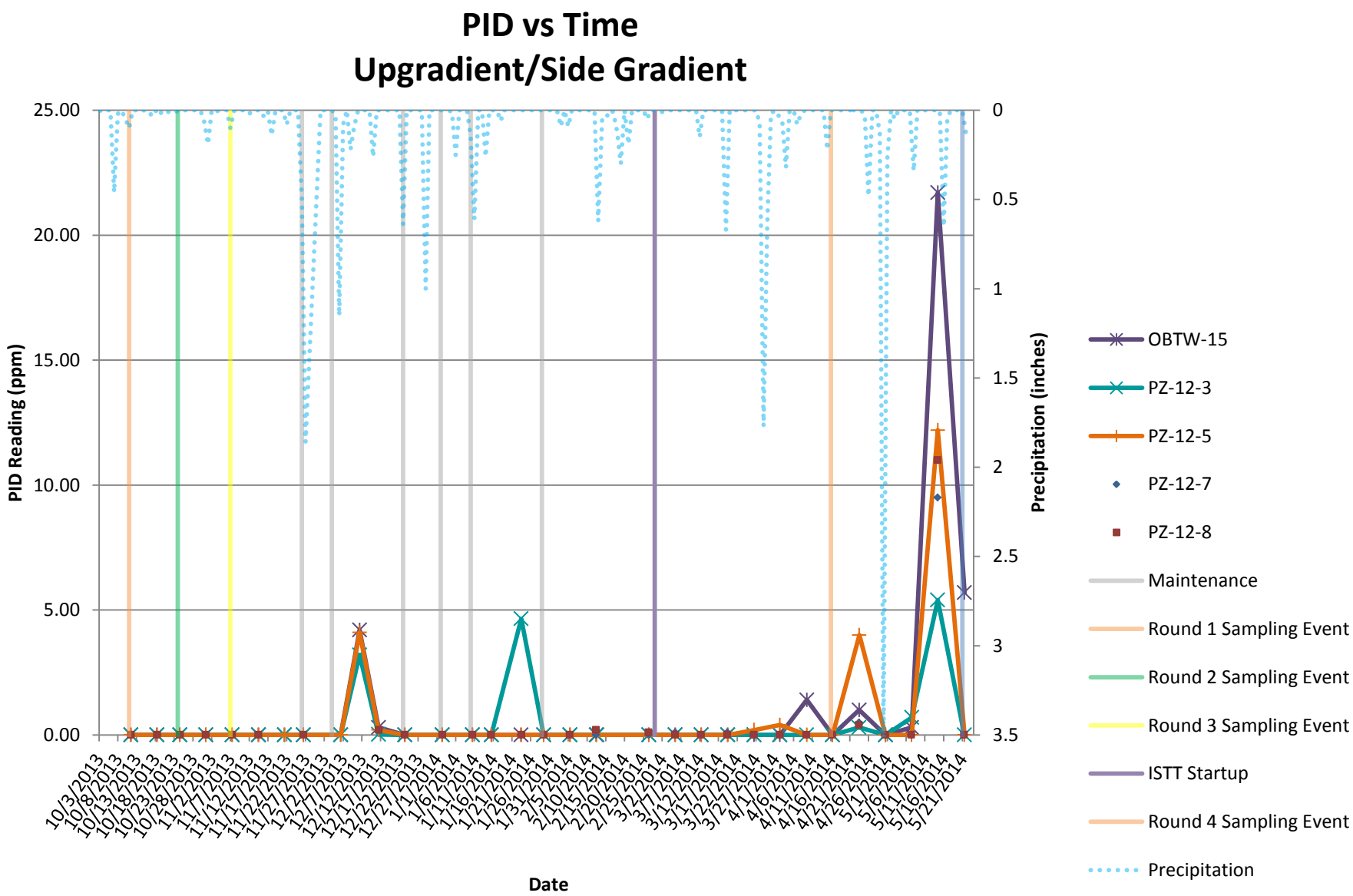
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.



Notes:
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2) Precipitation data obtained from http://www.wunderground.com
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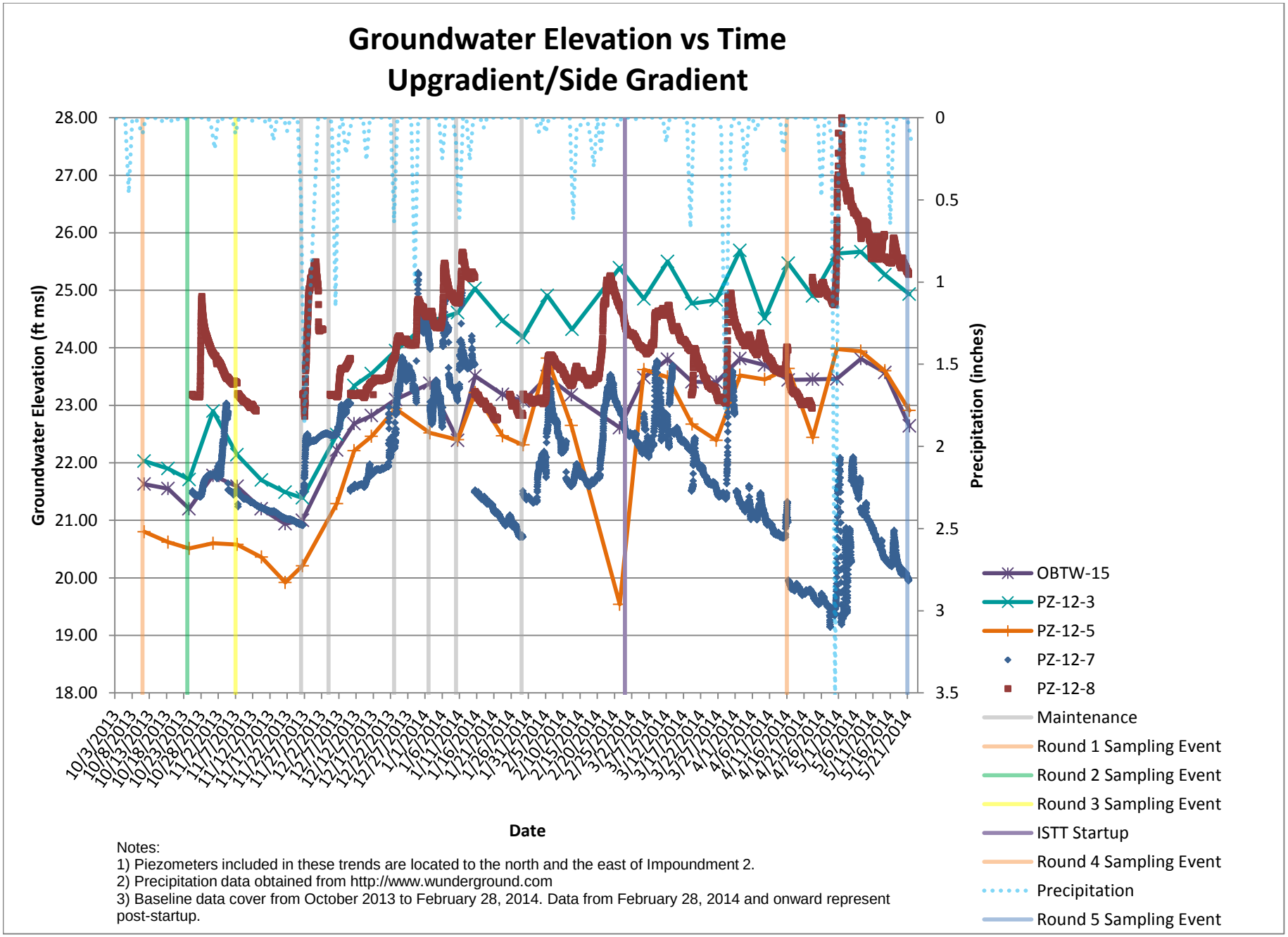

Notes:
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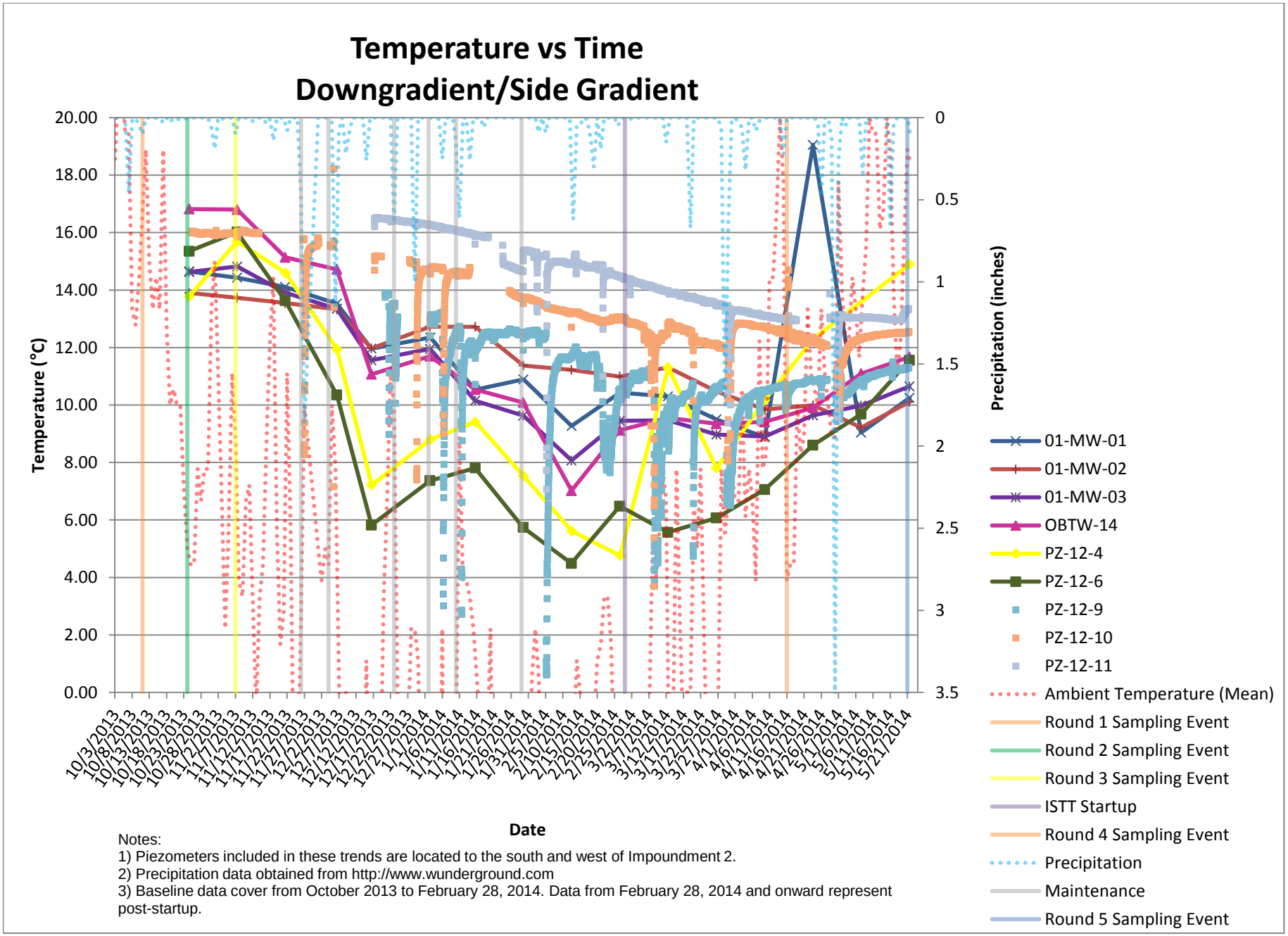

Notes:
1) Piezometers included in these trends are located to the south and west of Impoundment 2.
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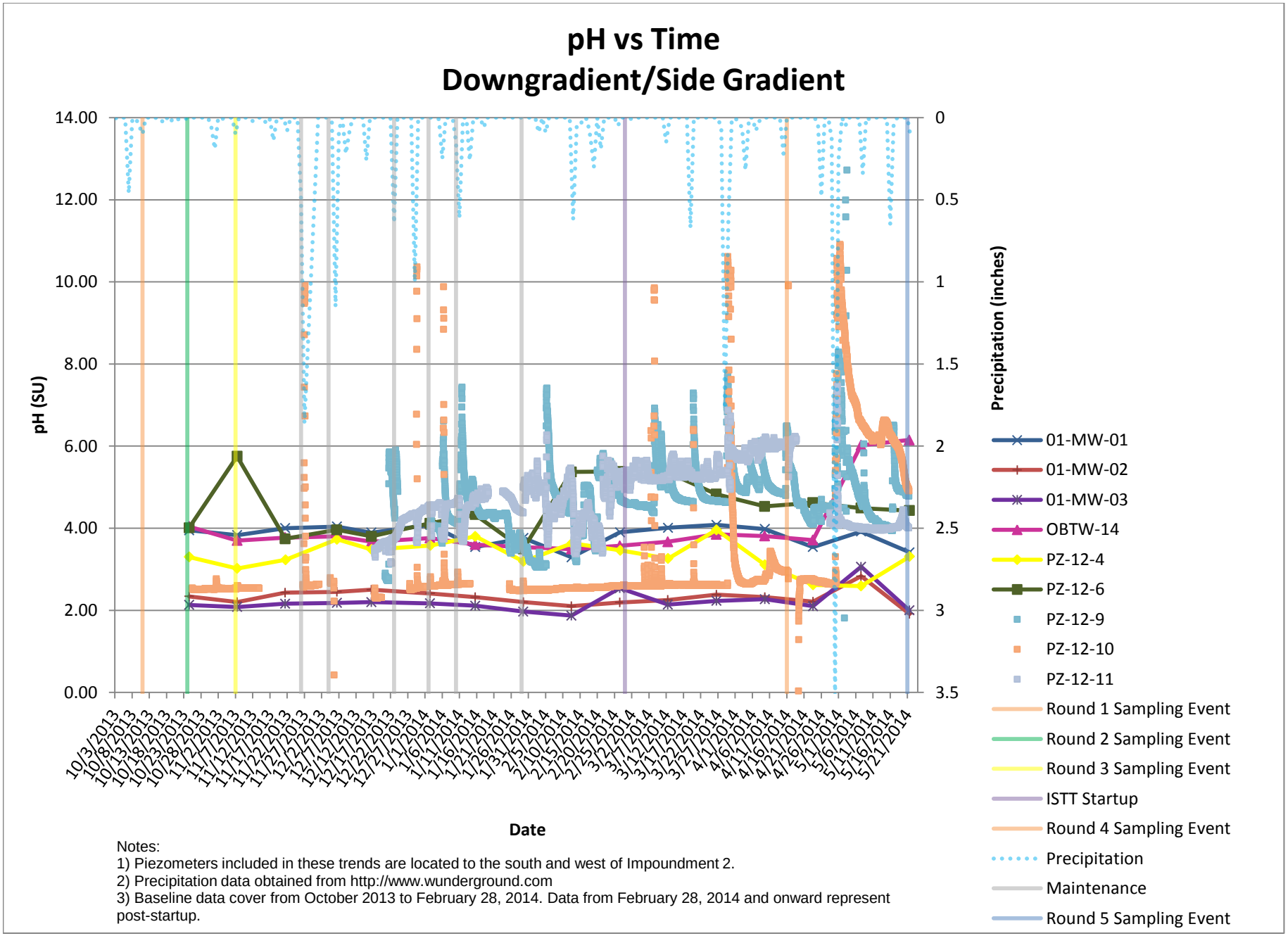
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.



Notes:
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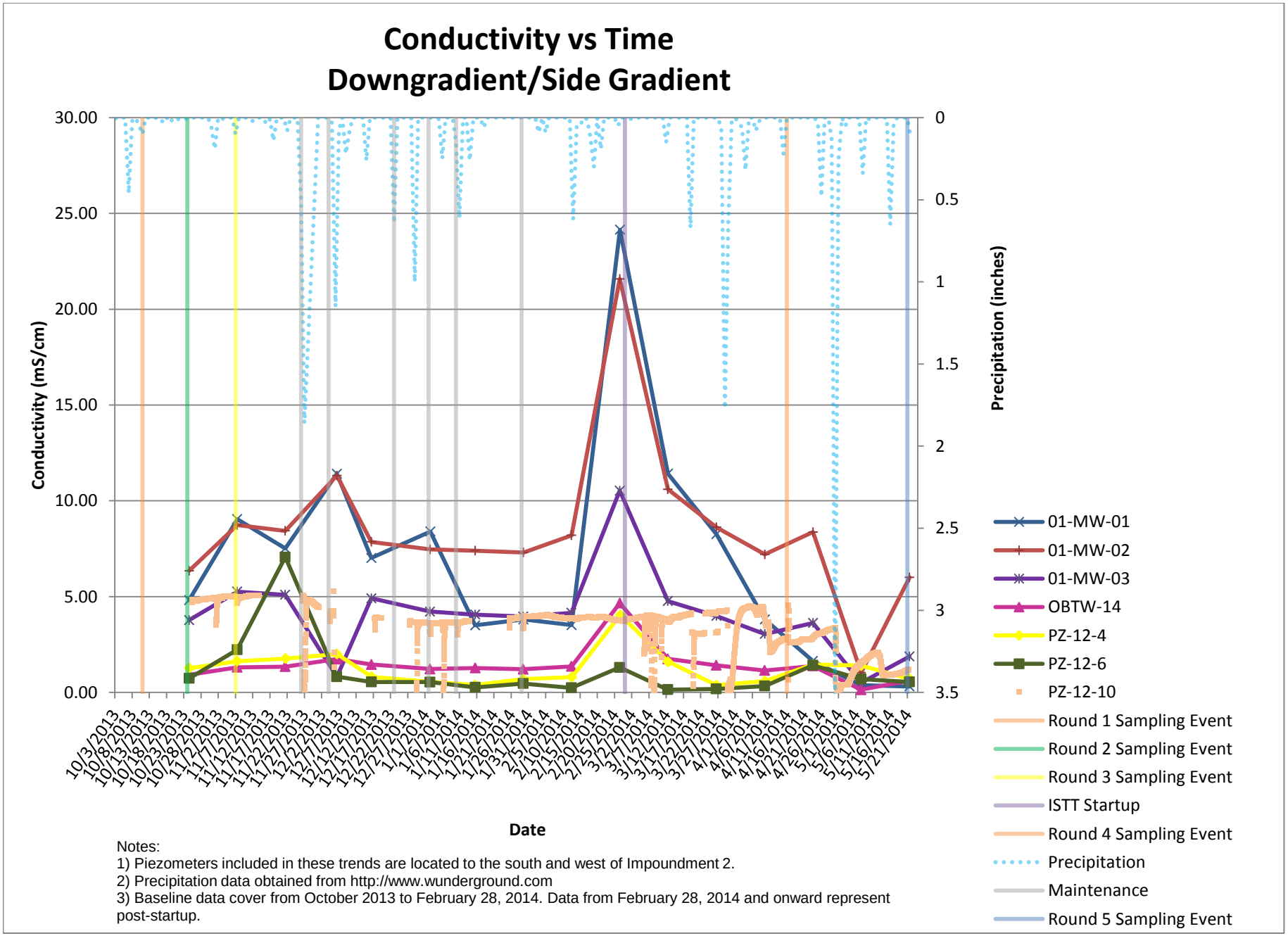
2) Precipitation data obtained from http://www.wunderground.com
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.



Notes:
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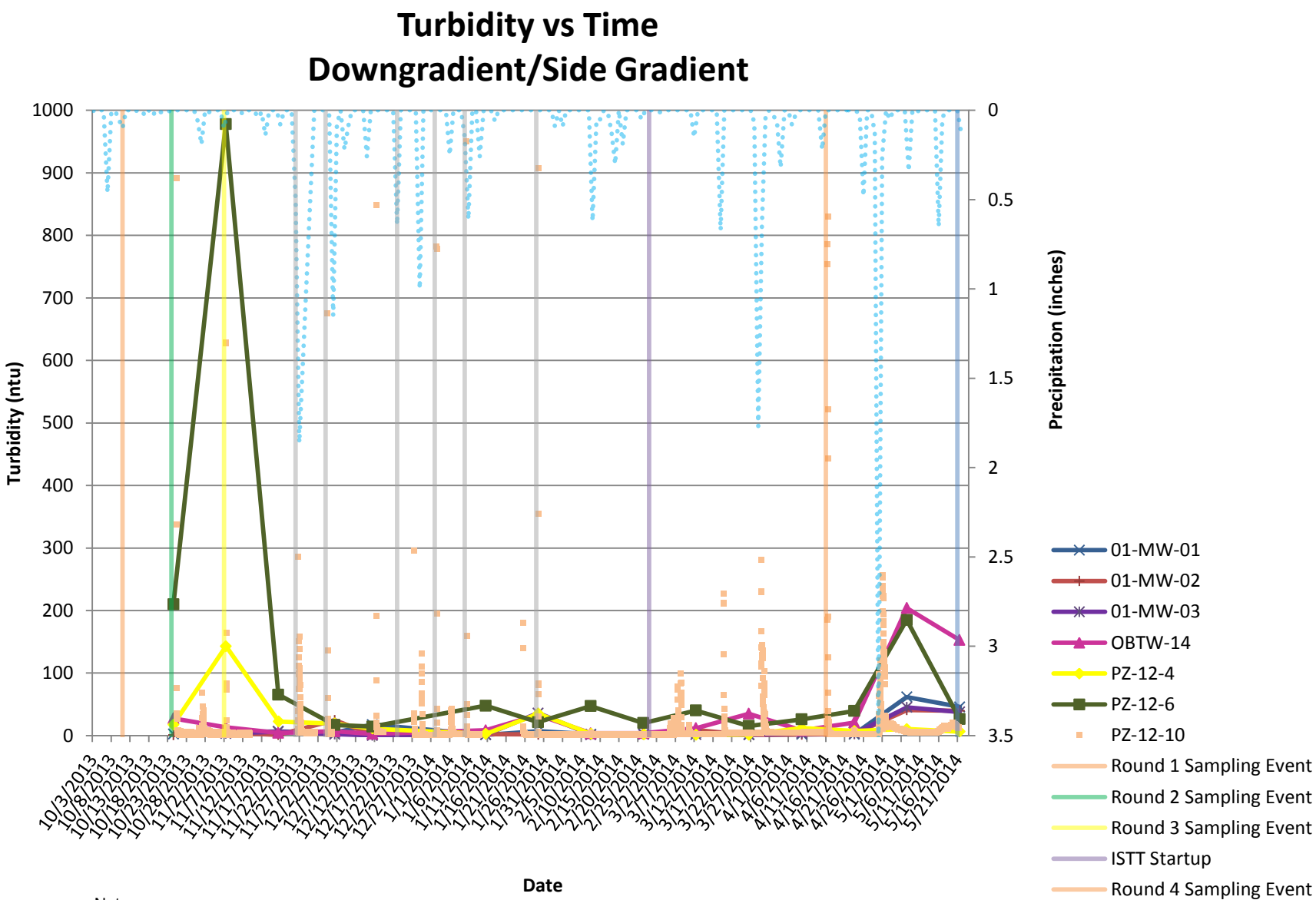
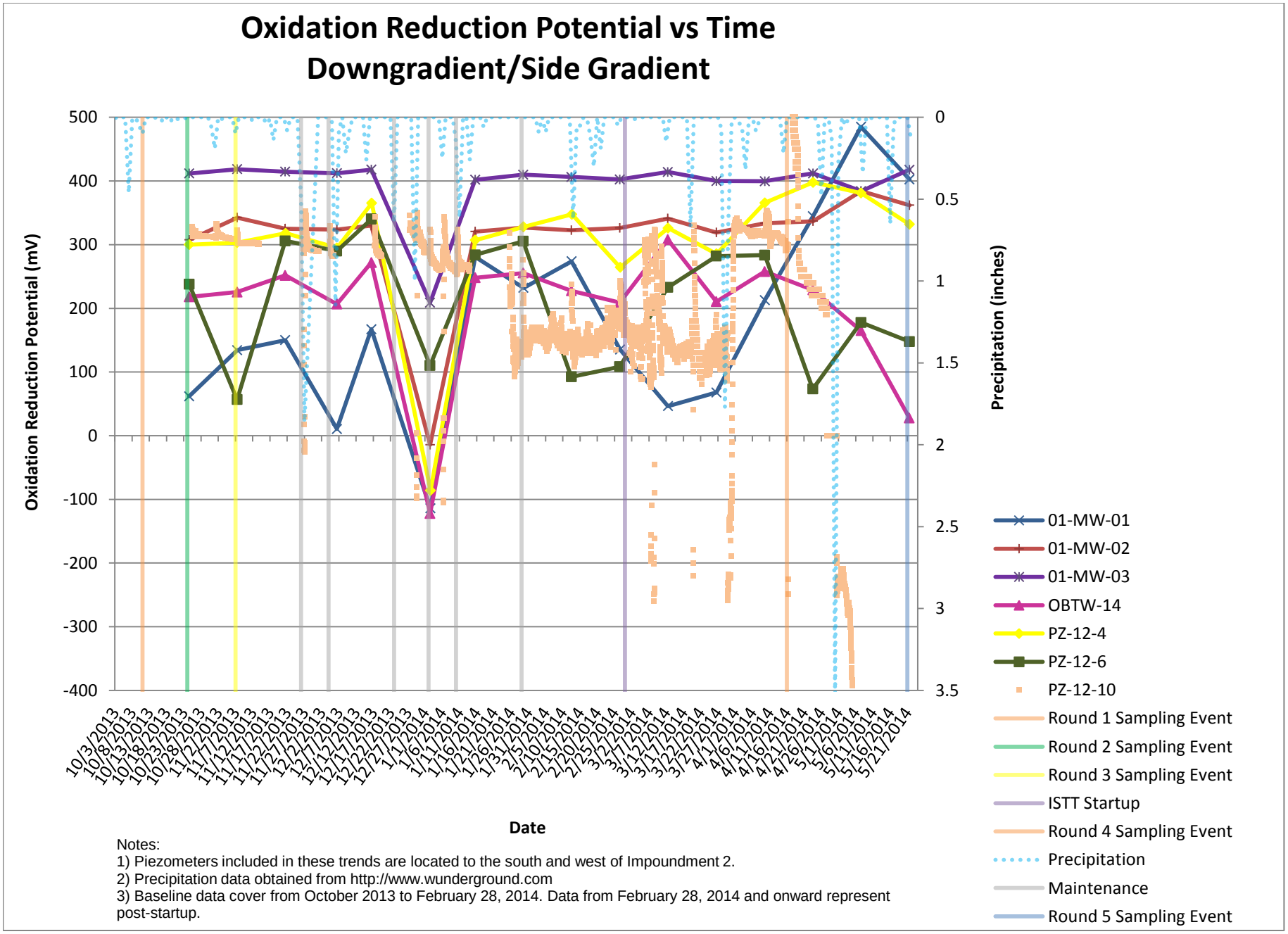
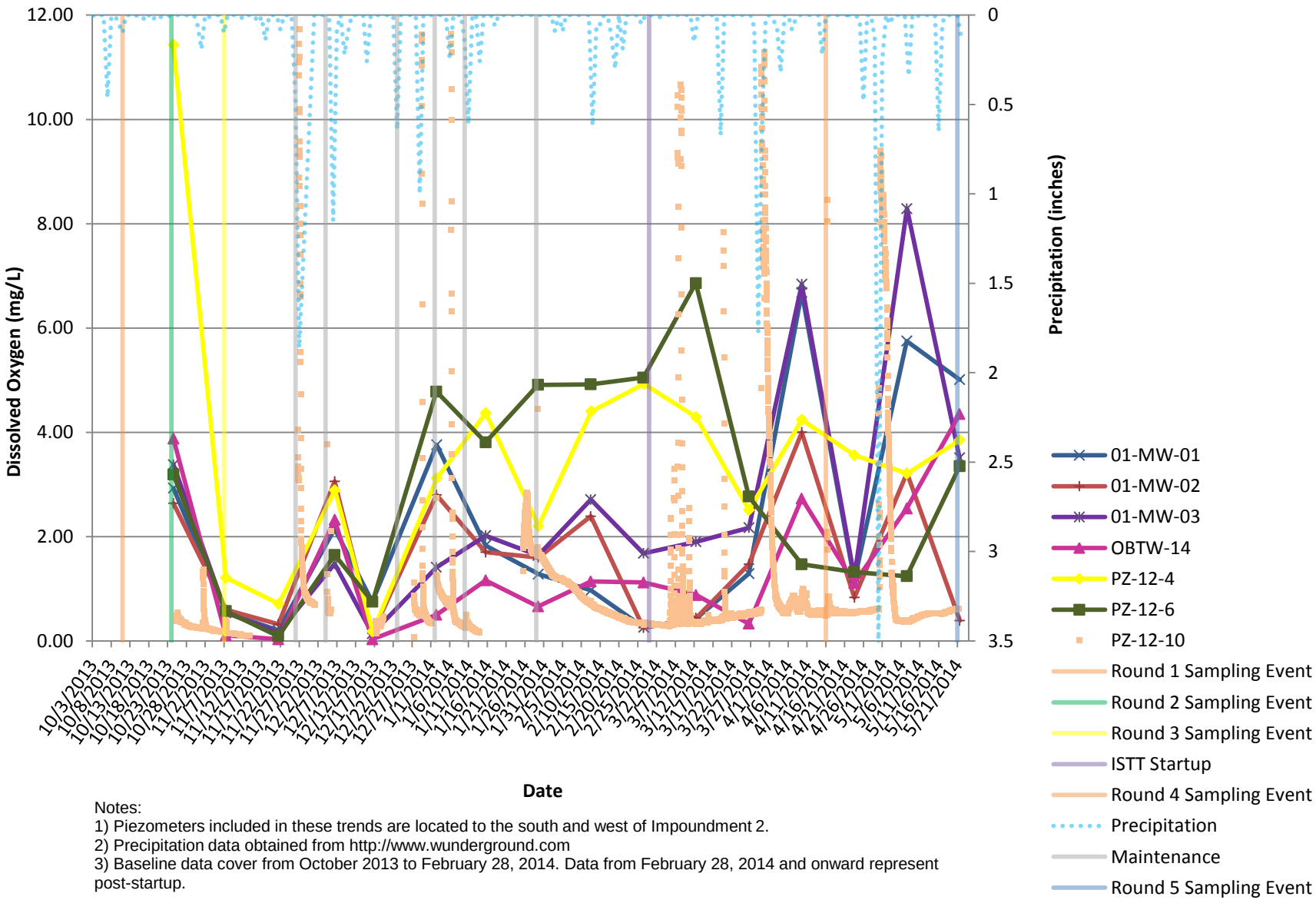
2) Precipitation data obtained from http://www.wunderground.com
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.



Notes:
1) Piezometers included in these trends are located to the south and west of Impoundment 2.
2) Precipitation data obtained from http://www.wunderground.com
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.



Notes:
1) Piezometers included in these trends are located to the south and west of Impoundment 2.
2) Precipitation data obtained from http://www.wunderground.com
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.



Notes:
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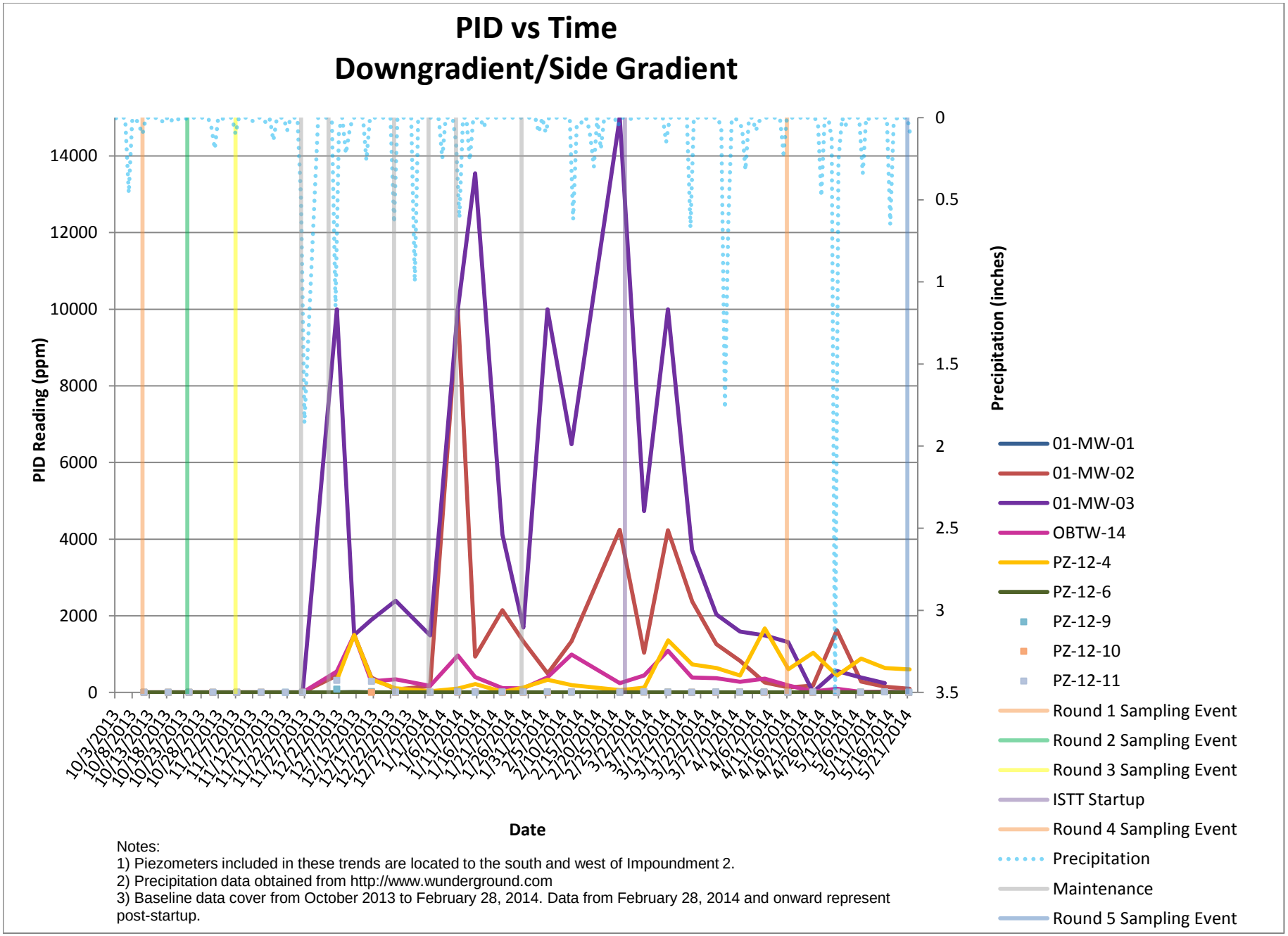
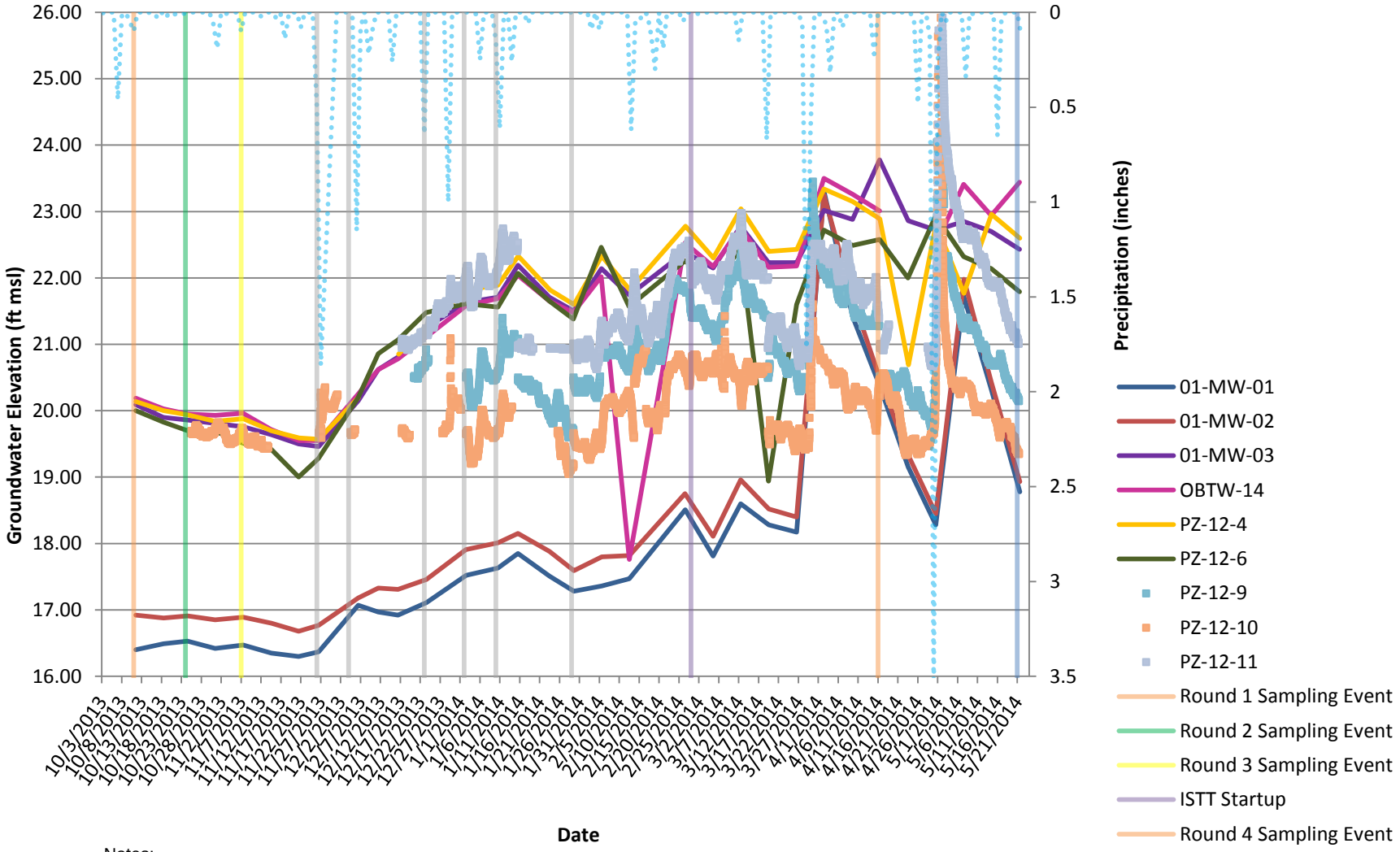
2) Precipitation data obtained from http://www.wunderground.com
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.



Notes:
1) Piezometers included in these trends are located to the south and west of Impoundment 2.
2) Precipitation data obtained from http://www.wunderground.com
3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.

Groundwater Elevation vs Time
Downgradient/Side Gradient



Notes:
1) Piezometers included in these trends are located to the south and west of Impoundment 2.
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3) Baseline data cover from October 2013 to February 28, 2014. Data from February 28, 2014 and onward represent post-startup.

APPENDIX 4-3

GROUNDWATER SAMPLING FIELD FORMS

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid/Bound Brook
Location: Bridgewater NJ
Project Number: 105 86245
MONITORING WELL ID: DZ-12-7
Depth to Water Prior to Purging [ft-bmp]: 5.15
Well Casing Diameter [in]: 2"
Start Time (purging): 1109
Purging Device: grundfos/teflon
Pump intake setting: ≈10 ft bgs
Well Screen Interval: 5-15 ft bgs
As-Built Construction Well Depth [ft-bmp]: 15 ftbgs
Sounded Well Depth [ft-bmp]: 14.80 ftbgs
Weather Conditions: overcast, breezy, 50's rain

Meter/Type/Serial #: Horiba U-52 # 21106
Meter Calibrated @: 10/11/13
Sampling Date/Time: 10/11/13 1225
Sampler(s): chris hawkes
Sampling Device: grundfos/teflon
Sampling Purge Rate: 200 ml/min
Sample Characteristics: cloudy, tan, odor
PID Measurement of Well Headspace (ppm): 0.0 ppm
Analytical Parameters: VOCs, SVOCs, T-metals

Fe+2 result (field measurement): NM PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1115	18.02	6.27	0.468	1000+	5.29	+99	5.20	0.5	200	
1120	18.30	5.79	0.378	1000+	1.66	+47	5.21	1.5	200	
1125	18.47	5.76	0.356	1000+	1.15	+27	5.21	2.5	200	
1130	18.44	5.74	0.366	1000+	0.87	+6	5.21	4.0	300	emptied flow cell after reading
1135	19.28	5.69	0.370	546	1.02	-6	5.21	5.5	300	
1140	19.44	5.65	0.369	410	0.81	-11	5.21	7.0	300	
1145	19.50	5.63	0.369	230	0.78	-18	5.21	8.5	300	
1150	19.50	5.61	0.370	128	0.66	-22	5.21	10.0	300	
1155	19.42	5.61	0.372	80.6	0.61	-27	5.21	11.5	300	
1200	19.46	5.60	0.371	58.1	0.59	-30	5.21	13.0	300	
1205	19.25	5.60	0.372	43.6	0.56	-32	5.21	14.5	300	
1210	19.26	5.59	0.371	30.1	0.55	-35	5.21	16.5	300	
1215	19.25	5.58	0.369	28.9	0.57	-36	5.21	18.0	300	
1220	19.26	5.57	0.366	30.3	0.53	-36	5.21	19.5	300	

Comments: Collect MS/MSD

Signature: [illegible]

NJDEP Certification #03027

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: Former American Cyanamid Site
Location: Bridgewater, NJ
Project Number: 10386245
MONITORING WELL ID: PZ-12-8
Depth to Water Prior to Purging [ft-bmp]: 9.82
Well Casing Diameter [in]: 2"
Start Time (purging): 1115
Purging Device: grundfos pump & teflon lined tubing
Pump intake setting: 11'
Well Screen Interval: 6'-16'
As-Built Construction Well Depth [ft-bmp]: 16'
Sounded Well Depth [ft-bmp]: 16.03
Weather Conditions: overcast 50's

Meter/Type/Serial #: Horiba U-52 #021375
Meter Calibrated @: 1210 on 10/11/13
Sampling Date/Time: 10/11/13 @ 1210
Sampler(s): Chris Dawson
Sampling Device: Grundfos pump & teflon lined tubing
Sampling Purge Rate: 400 ml/min
Sample Characteristics: clear, no odor
PID Measurement of Well Headspace (ppm): 0.0
Analytical Parameters: VOC, SVOC, T-Metals
Fe+2 result (field measurement): NM PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1120	18.23	5.26	0.203	501	2.92	+117	9.89	2.0	400	
1125	19.11	5.26	0.206	273	0.00	+112	9.89	4.0	400	
1130	19.33	5.25	0.204	181	0.00	+114	9.89	6.0	400	
1135	19.47	5.23	0.202	110	0.00	+117	9.89	8.0	400	
1140	19.46	5.22	0.202	59.6	0.00	+119	9.89	10.0	400	
1145	19.60	5.22	0.201	26.2	0.00	+121	9.89	12.0	400	
1150	19.28	5.22	0.201	19.7	0.00	+123	9.89	14.0	400	
1155	19.60	5.21	0.201	14.4	0.00	+124	9.89	16.0	400	
1200	19.60	5.21	0.201	14.3	0.00	+125	9.89	18.0	400	
1205	19.42	5.21	0.201	14.0	0.00	+125	9.89	20.0	400	
1210										sample

Comments: collected FDGW-101113

Signature: [signature]

NJDEP Certification #03027

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid / Boundbrook
Location: Bridgewater NJ
Project Number: 10386245
MONITORING WELL ID: PZ-12-10
Depth to Water Prior to Purging [ft-bmp]: 9.87
Well Casing Diameter [in]: 2"
Start Time (purging): 1410
Purging Device: grundfos / teflon
Pump intake setting: ≈14 ft bgs
Well Screen Interval: 9-19 ft bgs
As-Built Construction Well Depth [ft-bmp]: 19 ft bgs
Sounded Well Depth [ft-bmp]: 18.46
Weather Conditions: overcast, breezy, 50's, rainy

Meter/Type/Serial #: Horiba U-52 # 021106
Meter Calibrated @: 10/11/13
Sampling Date/Time: 10/11/13 1555
Sampler(s): Chris Hawes / Chris Dawson
Sampling Device: grundfos / teflon
Sampling Purge Rate: 200/400
Sample Characteristics: cloudy, tan, odor
PID Measurement of Well Headspace (ppm): 555-K
Analytical Parameters: VOCs, SVOCs, T-metals
Fe+2 result (field measurement): NM PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1412	17.09	2.36	2.94	1000+	3.82	+258	10.09	0.5	400	
1417	17.68	1.80	3.17	1000+	1.14	307	10.09	2.5	400	
1422	17.85	1.67	3.47	1000+	0.94	322	10.09	4.5	400	
1427	17.80	1.56	~~3.35~~	1000+	0.76	335	10.09	6.5	400	cond = 3.61
1433	17.72	1.52	3.66	1000+	0.65	340	10.09	8.5	400	
1437	17.68	1.50	3.68	1000+	0.65	343	10.09	10.5	400	emptied flow cell following reading
1442	17.54	2.88	3.69	1000+	0.80	345	10.09	12.5	400	
1447	17.56	2.91	3.69	1000+	0.60	345	10.09	14.5	400	
1452	17.54	2.91	3.69	1000+	0.59	346	10.09	16.5	400	emptied flow cell following reading
1457	17.05	2.95	3.70	805	0.77	346	10.09	18.5	400	
1502	17.11	2.95	3.70	1000+	0.53	345	10.09	20.5	400	
1507	17.06	2.95	3.72	703	0.51	345	10.09	22.5	400	
1512	17.05	2.95	3.73	569	0.44	345	10.09	24.5	400	
1517	17.05	2.95	3.73	439	0.43	345	10.09	26.5	400	
1522	17.03	2.95	3.73	326	0.43	345	10.09	28.5	400	

Comments: (18.46 - 9.87) x 0.163 = 1.4 gal

Signature: [illegible]

NJDEP Certification #03027

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid / Bound Brook
Location: Bridgewater, NJ
Project Number: 1035 6245
MONITORING WELL ID: PZ-12-10
Depth to Water Prior to Purging [ft-bmp]: 9.82
Well Casing Diameter [in]: 2"
Start Time (purging): 1410
Purging Device: Grundfos / Teflon
Pump intake setting: ~14 ft bgs
Well Screen Interval: 9-19 ft bgs
As-Built Construction Well Depth [ft-bmp]: 19 ft bgs
Sounded Well Depth [ft-bmp]: 18.46 ft bgs
Weather Conditions: overcast, rainy, 50s

Meter/Type/Serial #: Horiba U-52 # 021106
Meter Calibrated @: 10/11/13
Sampling Date/Time: 10/11/13 1555
Sampler(s): Chris Harden / Chris Dawson
Sampling Device: grundfos / teflon
Sampling Purge Rate: 200/400 ml/min
Sample Characteristics: cloudy, tan, odor
PID Measurement of Well Headspace (ppm): 555.8
Analytical Parameters: VOC, SVOC, T-metals

Fe+2 result (field measurement): NM PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1527	17.04	2.96	3.74	293	0.42	+345	10.09	30.5	400	emptied flow cell following reading
1532	17.00	2.98	3.75	229	0.49	345	10.09	32.5	400	emptied flow cell following reading
1537	16.96	2.91	3.76	278	0.63	345	10.09	34.5	400	
1542	16.99	2.94	3.76	214	0.50	344	10.09	36.5	400	
1547	16.53	2.96	3.77	204	0.50	344	10.09	38.5	400	
1552	16.51	2.96	3.77	196	0.50	344	10.09	40.5	400	

Comments:

Signature: [illegible]

NJDEP Certification #03027

WATER SAMPLE FIELD INFORMATION FORM

Site: Former American Cyanamid Site

Location: Bridgewater, NJ

Project Number: 103-86245.16

Sampling Team: Chris Dawson

Golder Associates

Sample Point ID: PZ-12-9 Date: 10/18/13

Time Start: 1405 Time Finish: 1430

Depth to water before purging (ft-bmp) 6.72'

Casing diameter (in) 2" Meter/Type/Serial #: Horiba U-52 # 21575

Purging device: bailer Meter Calibrated @: 0735

Pump intake setting: NA

Well screen interval: 5'-15'

As-built construction Well Depth (ft-bpm): 15'

Sounded well depth (ft-bmp): 14.24'

Casing volume (gal) 1.23 gal

Volume purged (gal) ~.8 gal

Depth to water after purging (ft-bmp) 6.74'

Casing Volume Calculation

2"	4"	6"	8"
0.163 gal/ft	0.653 gal/ft	1.47 gal/ft	2.61 gal/ft

Well Volume = ((well depth) - (water level)) * (casing volume/ft)

(14.24 - 6.72)(0.163) = 1.225 gal = 1 well vol

Remarks: Volume-averaging (conventional) - purge 3 to 5 well volumes

PID Measurement of Well Headspace (ppm): 104.0 Fe+2 result (field measurement in ppm): NM

FIELD MEASUREMENTS

	1)	2)	3)	4)	5)	Units	Calibration Notes
Time	1410	NA	NA	NA	NA		
Temp.	16.05					°C	
pH	2.63					std. units	
Sp. Cond	5.26					mS/cm	
Turbidity	1.1					ntu	
DO	0.00					mg/L	
ORP	+307					mV	
Water Level	6.72					ft-bmp	
Volume	.8 gal					gal	

Sample Collection Notes: reading via sleeve, approx 0.75' of product measured in bottom of well so performed grab sample with bailer as per CDL

Weather conditions at time of sampling: sunny, 60's

Analytical Parameters: VOC, SVOC, T. Metals

Sample characteristics: cloudy, yellow tint, sheen, odor

Sample date / time: 10/18/13 @ 1410 Sampling Device: bailer (teflon, disposable)

Sample sequence: VOC, SVOC, T. Metals

Signature: [signature] Company: Golder Associates Inc. Date: 10/18/13

WATER SAMPLE FIELD INFORMATION FORM

Site: Former American Cyanamid Site

Location: Bridgewater, NJ

Project Number: 103-86245.16

Sampling Team: Chris Dawson

Golder Associates

Sample Point ID: PZ-12-11 Date: 10/18/13

Time Start: 1445 Time Finish: 1500

Depth to water before purging (ft-bmp) 14.96'

Casing diameter (in) 2" Meter/Type/Serial #: Horiba U-52 # 21575

Purging device: bailer Meter Calibrated @: 0735

Pump intake setting: NA

Well screen interval: 8'-18'

As-built construction Well Depth (ft-bpm): 18'

Sounded well depth (ft-bmp): 18.27'

Casing volume (gal) 0.54

Volume purged (gal) 0.80

Depth to water after purging (ft-bmp) 14.96'

Casing Volume Calculation

2"	4"	6"	8"
0.163 gal/ft	0.653 gal/ft	1.47 gal/ft	2.61 gal/ft

Well Volume = ((well depth) - (water level)) * (casing volume/ft)

(18.27 - 14.96)(0.163) = 0.54 gal = 1 well vol

Remarks: Volume-averaging (conventional) - purge 3 to 5 well volumes

PID Measurement of Well Headspace (ppm): 649.0 Fe+2 result (field measurement in ppm): NM

FIELD MEASUREMENTS						Units	Calibration Notes
Time	1) 1450	2) NA	3) NA	4) NA	5) NA		
Temp.	1) 17.18	2)	3)	4)	5)	°C	
pH	1) 2.92	2)	3)	4)	5)	std. units	
Sp. Cond	1) 3.23	2)	3)	4)	5)	mS/cm	
Turbidity	1) 694	2)	3)	4)	5)	ntu	
DO	1) 2.27	2)	3)	4)	5)	mg/L	
ORP	1) +296	2)	3)	4)	5)	mV	
Water Level	1) 17.96'	2)	3)	4)	5)	ft-bmp	
Volume	1) 0.80 gal	2)	3)	4)	5)	gal	

Sample Collection Notes: readings via sleeve, approx 0.5' of product measured in bottom of well so performed a grab sample with a bailer as per CDL

Weather conditions at time of sampling: sunny, 60's

Analytical Parameters: VOC, SVOC, T-Metals

Sample characteristics: cloudy, odor, visible product in samples

Sample date / time: 10/18/13 @ 1450 Sampling Device: bailer (teflon, disposable)

Sample sequence: VOC, SVOC, T-Metals

Signature: [signature] Company: Golder Associates Inc. Date: 10/18/13

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: Former American Cyanamid Superfund Site
Location: Bridgewater, NJ
Project Number: 103-86245.15
MONITORING WELL ID: PZ-12-7
Depth to Water Prior to Purging [ft-bmp]: 5.49
Well Casing Diameter [in]: 2"
Start Time (purging): 1425
Purging Device: Grundfos pump + teflon tubing
Pump intake setting: ~13
Well Screen Interval: 4.5 - 14.5
As-Built Construction Well Depth [ft-bmp]: 14.5 bgs
Sounded Well Depth [ft-bmp]: 14.95
Weather Conditions: Cloudy, windy, 40's

Meter/Type/Serial #: Horiba U-52 # 21184
Meter Calibrated @: 1105 on 102413
Sampling Date/Time: 102413 @ 1545
Sampler(s): Derek Pinheiro
Sampling Device: Grundfos pump + teflon tubing
Sampling Purge Rate: 300 ml/min
Sample Characteristics: Clear, no odor
PID Measurement of Well Headspace (ppm): ~~NM~~ 0.7
Analytical Parameters: VOC, SVOC, TOC, T. metals
Fe+2 result (field measurement): NM PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate If (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1430	15.66	6.46	0.277	+1000	0.00	-75	5.51	1.5	300	
1435	16.07	6.40	0.274	+1000	0.00	-72	5.51	3.0	300	
1440	17.19	6.32	0.255	+1000	0.00	-57	5.52	4.5	300	
1445	17.35	6.33	0.255	+1000	0.00	-55	5.55	6.0	300	
1450	17.93	6.36	0.261	+800	0.00	-61	5.55	7.5	300	*temptied flow cell after reading
1455	17.53	6.39	0.263	615	0.00	-48	5.55	9.0	300	
1500	17.73	6.38	0.262	487	0.00	-53	5.55	10.5	300	
1505	17.97	6.37	0.261	316	0.00	-58	5.55	12.0	300	
1510	17.93	6.37	0.261	99.7	0.00	-61	5.56	13.5	300	
1515	17.88	6.37	0.260	42.9	0.00	-63	5.56	15.0	300	
1520	17.91	6.37	0.261	26.0	0.00	-64	5.56	16.5	300	
1525	18.05	6.36	0.261	14.7	0.00	-65	5.56	18.0	300	
1530	18.07	6.36	0.261	9.6	0.00	-65	5.56	19.5	300	
1535	18.11	6.37	0.262	5.3	0.00	-65	5.56	21.0	300	
1540	18.13	6.37	0.262	2.9	0.00	-66	5.56	22.5	300	

Comments:
1545 * very turbid to start SAMPLE

Signature: [signature]

NJDEP Certification # 03027

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: Former American Cyanamid Superfund Site
Location: Bridgewater, NJ
Project Number: 103-86245.15
MONITORING WELL ID: PZ-12-8
Depth to Water Prior to Purging [ft-bmp]: 10.14
Well Casing Diameter [in]: 2"
Start Time (purging): 1420
Purging Device: Grundfos pump
Pump intake setting:
Well Screen Interval: 4.5 - 14.5
As-Built Construction Well Depth [ft-bmp]: 14.5
Sounded Well Depth [ft-bmp]: 15.98
Weather Conditions: cloudy, windy, 40's

Meter/Type/Serial #: #21240, Horiba U-52
Meter Calibrated @: 1105 on 10/24/13
Sampling Date/Time: 10/24/13 @ 1525
Sampler(s): JBc-c
Sampling Device: Grundfos Pump
Sampling Purge Rate: 200 ml/min
Sample Characteristics: clear, no odor
PID Measurement of Well Headspace (ppm): 2.2
Analytical Parameters: VOC, SVOC, Total metals, TOC

Fe+2 result (field measurement): NM PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate If (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1425	17.37	5.24	0.153	547	1.93	+62	10.19	~~200~~ 1.0	200	
1430	16.69	5.15	0.155	500	1.61	+84	10.2	2.0	200	
1435	16.84	4.95	0.154	803	0.75	+93	10.2	3.0	200	
1440	17.00	4.91	0.155	661	0.28	+96	10.2	4.0	200	Cleaned out Flow cell
1445	17.52	4.95	0.151	139	0.91	+99	10.2	5.0	200	
1450	17.90	4.89	0.151	124	0.00	+106	10.2	6.0	200	
1455	18.13	4.89	0.151	69.8	0.00	+109	10.2	7.0	200	
1500	18.45	4.88	0.150	26.5	0.00	+112	10.2	8.0	200	
1505	18.67	4.87	0.148	24.2	0.00	+113	10.2	9.0	200	
1510	18.90	4.87	0.149	8.6	0.00	+114	10.2	10.0	200	
1515	19.13	4.86	0.147	8.1	0.00	+116	10.2	11.0	200	
1520	19.20	4.86	0.146	8.3	0.00	+117	10.2	12.0	200	

Comments:

Signature:

NJDEP Certification # 03027

WATER SAMPLE FIELD INFORMATION FORM

Site: Former American Cyanamid Site

Location: Bridgewater, NJ

Project Number: 103-86245.16

Sampling Team: Chris Dawson, Ryan Walker

Golder Associates

Sample Point ID: PZ-12-9 Date: 10/25/13

Time Start: 1450 Time Finish: 1500

Depth to water before purging (ft-bmp) 6.90'

Casing diameter (in) 2" Meter/Type/Serial #: Horiba U-52 # 021375

Purging device: bailer Meter Calibrated @: on 10/25/13

Pump intake setting: NA

Well screen interval: 5-15'

As-built construction Well Depth (ft-bpm): 15'

Sounded well depth (ft-bmp): 14.24'

Casing volume (gal) 1.32 gal

Volume purged (gal) ~1 gal

Depth to water after purging (ft-bmp) 6.92'

Remarks: Volume-averaging (conventional) - purge 3 to 5 well volumes

Casing Volume Calculation

2"	4"	6"	8"
0.163 gal/ft	0.653 gal/ft	1.47 gal/ft	2.61 gal/ft

Well Volume = ((well depth) - (water level)) * (casing volume/ft)

(15-6.90)(0.163) = 1.32 gal = 1 well vol

PID Measurement of Well Headspace (ppm): 58.2 Fe+2 result (field measurement in ppm): NM

FIELD MEASUREMENTS						Units	Calibration Notes
Time	1) 1452	2) NA	3) NA	4) NA	5) NA		
Temp.	1) 15.22	2)	3)	4)	5)	°C	
pH	1) 5.00	2)	3)	4)	5)	std. units	
Sp. Cond	1) 2.44	2)	3)	4)	5)	mS/cm	
Turbidity	1) 50.1	2)	3)	4)	5)	ntu	
DO	1) 1.72	2)	3)	4)	5)	mg/L	
ORP	1) +306	2)	3)	4)	5)	mV	
Water Level	1) 6.90	2)	3)	4)	5)	ft-bmp	
Volume	1) .25 g	2) ✓	3) ✓	4) ✓	5) ✓	gal	

Sample Collection Notes: readings via sleeve, NAPL suspected in well so collected grab sample as per CDL

Weather conditions at time of sampling: clear, windy 40's

Analytical Parameters: VOC, SVOC, TOC, T. Metals

Sample characteristics: cloudy, yellow tint, odor

Sample date / time: 10/25/13 @ 1455 Sampling Device: bailer

Sample sequence: VOC, SVOC, TOC, T. Metals

Signature: [signature] Company: Golder Associates Inc. Date: 10/25/13

GROUNDWATER LOW FLOW PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: Former American Cyanamid Site

Location: Bridgewater, NJ

Project Number: 1038624516

MONITORING WELL ID: PZ-12-10

Depth to Water Prior to Purging [ft-bmp]: 10.11

Well Casing Diameter [in]: 2"

Start Time (purging): 14:25

Purging Device: grundfos pump & teflon lined tubing

As-Built Construction Well Depth [ft-bmp]: 15'

As-Built Construction Screen Interval [ft-bmp]: 5'-15'

Pump Intake Setting [ft-bmp]: 12'

Weather Conditions: clear, 50's, windy ENE 10-15 mph

Meter/Type/Serial #: Horiba U-52 # 21375

Meter Calibrated @: 0708 on 10/24/13

Sampling Date/Time: 10/24/13 @ 1605

Sampler(s): Chris Dawson

Sampling Device: grundfos pump & teflon lined tubing

Sample Characteristics: cloudy, odor

PID Measurement of Well Headspace (ppm): 105

Analytical Parameters: VOC, SVOC, T-Metals, TOC

Fe+2 result (field measurement): NM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1430	16.72	2.59	2.30	+999	4.66	+326	10.30	2.0	400	
1435	17.35	2.58	2.33	+999	2.49	+324	10.32	4.0	400	
1440	17.70	2.58	2.36	+999	1.91	+322	10.32	6.0	400	
1445	17.78	2.58	2.39	+999	1.39	+321	10.32	8.0	400	
1450	17.71	2.58	2.44	+999	0.00	+319	10.32	10.0	400	
1455	17.80	2.57	2.44	514	0.00	+317	10.32	12.0	400	
1500	17.78	2.57	2.44	492	0.00	+317	10.32	14.0	400	
1505	17.78	2.57	2.44	309	0.00	+316	10.32	16.0	400	
1510	17.72	2.57	2.44	234	0.00	+316	10.32	18.0	400	
1515	17.73	2.57	2.44	183	0.00	+316	10.32	20.0	400	
1520	17.64	2.57	2.44	169	0.00	+315	10.32	22.0	400	
1525	17.57	2.57	2.44	126	0.00	+315	10.32	24.0	400	
1530	17.64	2.57	2.44	107	0.00	+315	10.32	26.0	400	
1535	17.68	2.57	2.45	86.0	0.00	+314	10.32	28.0	400	
1540	17.57	2.57	2.45	74.5	0.00	+314	10.32	30.0	400	

Comments:

GROUNDWATER LOW FLOW PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: Former American Cyanamid Site

Location: Bridgewater, NJ

Project Number: 1038624516

MONITORING WELL ID: PZ-12-10

Depth to Water Prior to Purging [ft-bmp]: 10.11

Well Casing Diameter [in]: 2"

Start Time (purging): 1425

Purging Device: grundfos pump & teflon lined tubing

As-Built Construction Well Depth [ft-bmp]: 15'

As-Built Construction Screen Interval [ft-bmp]: 5'-15'

Pump Intake Setting [ft-bmp]: 12'

Weather Conditions: clear, windy 10-15 mph ENE, 40's

Meter/Type/Serial #: Horiba U-52 # 21375

Meter Calibrated @: 0708 on 10/24/13

Sampling Date/Time: 10/24/13 @ 1605

Sampler(s): Chris Dennison

Sampling Device: grundfos pump & teflon lined tubing

Sample Characteristics: cloudy, cold

PID Measurement of Well Headspace (ppm): 105

Analytical Parameters: VOC, SVOC, T-Metals, TOC

Fe+2 result (field measurement): NM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1545	17.50	2.57	2.45	64.0	0.00	+313	10.32	32.0	400	
1550	17.44	2.57	2.46	52.7	0.00	+313	10.32	34.0	400	
1555	17.45	2.57	2.46	49.6	0.00	+313	10.32	36.0	400	
1600	17.43	2.57	2.46	51.7	0.00	+313	10.32	38.0	400	
1605										Sample

Comments:

WATER SAMPLE FIELD INFORMATION FORM

Site: Former American Cyanamid Site

Location: Bridgewater, NJ

Project Number: 103-86245.16

Sampling Team: Chris Dawson, Ryan Walker

Golder Associates

Sample Point ID: PZ-12-11 Date: 10/25/13

Time Start: 1505 Time Finish: 1515

Depth to water before purging (ft-bmp) 15.13'

Casing diameter (in) 2" Meter/Type/Serial #: Horiba U-52 # 21375

Purging device: bailer Meter Calibrated @: 0745 on 10/25/13

Pump intake setting: NA

Well screen interval: 8'-18'

As-built construction Well Depth (ft-bpm): 18'

Sounded well depth (ft-bmp): 18.27'

Casing volume (gal) 0.51 gal

Volume purged (gal) ~1 gal

Depth to water after purging (ft-bmp) 15.13

Remarks: Volume-averaging (conventional) - purge 3 to 5 well volumes

Casing Volume Calculation

2"	4"	6"	8"
0.163 gal/ft	0.653 gal/ft	1.47 gal/ft	2.61 gal/ft

Well Volume = ((well depth) - (water level)) * (casing volume/ft)

(18.27-15.13)(0.163) = 0.51 gal = 1 well vol

PID Measurement of Well Headspace (ppm): 1014 Fe+2 result (field measurement in ppm): NA

FIELD MEASUREMENTS	1)	2)	3)	4)	5)	Units	Calibration Notes
Time	1507	NA	NA	NA	NA		
Temp.	15.92					°C	
pH	3.46					std. units	
Sp. Cond	1.02					mS/cm	
Turbidity	29.6					ntu	
DO	1.78					mg/L	
ORP	+275					mV	
Water Level	15.15'					ft-bmp	
Volume	.25 gal					gal	

Sample Collection Notes: readings via sleeve, NAPL observed in well so collected grab sample as per CDL

Weather conditions at time of sampling: clear, 40's, windy

Analytical Parameters: VOC, SVOC, TOC, T. Metals

Sample characteristics: cloudy, odor, some visible product in purge water

Sample date / time: 10/25/13 @ 1510 Sampling Device: bailer

Sample sequence: VOC, SVOC, TOC, T. Metals

Signature: Company: Golder Associates Inc. Date: 10/25/13

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site
Location: Bridgewater, NJ
Project Number: 103-86245.23
MONITORING WELL ID: PZ-12-7
Depth to Water Prior to Purging [ft-bmp]: 5.56
Well Casing Diameter [in]: 2"
Start Time (purging): 1425
Purging Device: Grundfos Pump / Teflon tubing
Pump intake setting: ~10'
Well Screen Interval: 5 - 15'
As-Built Construction Well Depth [ft-bmp]: 15'
Sounded Well Depth [ft-bmp]: 14.84
Weather Conditions: Overcast, 50s, Rain

Meter/Type/Serial #: Horiba U52 # 21088
Meter Calibrated @: 11/7/13 @ 0758
Sampling Date/Time: 11/7/13 1545
Sampler(s): J. Lomas
Sampling Device: Grundfos Pump / teflon tubing
Sampling Purge Rate: 280ml/min
Sample Characteristics: clear, no odor
PID Measurement of Well Headspace (ppm):
Analytical Parameters: VOCs, SVOCs, Metals
Fe+2 result (field measurement): NA

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1430	15.97	6.10	0.569	1000.0	0.92	-9	5.61	2.0	240	
1435	16.27	6.18	0.562	1000.0	0.73	-31	5.61	3.2	240	
1440	16.50	6.21	0.562	1000.0	0.67	-46	5.61	4.4	240	
1445	16.97	6.23	0.566	1000.0	0.61	-55	5.61	5.6	240	empty flow cell
1450	17.20	6.24	0.564	448.0	0.56	-60	5.61	6.8	240	
1455	17.13	6.26	0.565	179.0	0.51	-69	5.61	8.2	280	increased purge rate
1500	17.08	6.26	0.565	141.0	0.50	-71	5.61	9.4	280	empty flow cell
1505	17.08	6.26	0.563	70.7	0.51	-69	5.61	10.8	280	
1510	16.92	6.26	0.561	53.1	0.47	-74	5.61	12.2	280	
1515	16.91	6.26	0.561	63.2	0.47	-75	5.61	13.6	280	
1520	16.91	6.26	0.560	46.5	0.45	-77	5.61	15.0	280	
1525	16.87	6.26	0.559	39.8	0.45	-79	5.61	16.4	280	
1530	16.83	6.26	0.558	22.1	0.43	-80	5.61	17.8	280	
1535	16.81	6.26	0.558	20.6	0.42	-81	5.61	19.2	280	
1540	16.97	6.26	0.556	21.3	0.42	-82	5.61	20.6	280	

Comments:

Signature: [signature]

EP Certification # 03027

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site
Location: Bridgewater, NJ
Project Number: 103-86245.23
MONITORING WELL ID: P2-12-8
Depth to Water Prior to Purging [ft-bmp]: 9.38
Well Casing Diameter [in]: 2"
Start Time (purging): 1420
Purging Device: grundfos/teflon
Pump intake setting: ≈ 14 ft bmp
Well Screen Interval: 4.5-14.5
As-Built Construction Well Depth [ft-bmp]: 14.5
Sounded Well Depth [ft-bmp]: NM
Weather Conditions: rain, 50s, breezy

Meter/Type/Serial #: Horiba U-52 # 21407
Meter Calibrated @: 11/7/13 0750
Sampling Date/Time: 11/7/13 1515
Sampler(s): Chris Howley
Sampling Device: grundfos/teflon
Sampling Purge Rate: 400
Sample Characteristics: clear, no odor, tan
PID Measurement of Well Headspace (ppm): 0-0 ppm
Analytical Parameters: VOC/SVOC/T-metals
Fe+2 result (field measurement): NA

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1422	16.70	5.67	0.481	1000+	9.41	+132	10.09	0.5	400	
1427	17.21	5.19	0.376	697	1.99	+168	10.09	2.5	400	
1432	18.14	5.18	0.372	250	1.25	+166	10.09	4.5	400	
1437	18.17	5.18	0.371	87.8	1.13	+165	10.09	6.5	400	
1442	18.12	5.18	0.370	46.8	1.02	+163	10.09	8.5	400	
1447	18.07	5.17	0.369	33.5	0.91	+162	10.09	10.5	400	
1452	18.06	5.17	0.368	25.1	0.86	+161	10.09	12.5	400	
1457										no reading, horiba powered off
1502	18.04	5.17	0.367	23.6	0.86	+160	10.09	14.5	400	
1507	18.05	5.16	0.366	22.3	0.81	+159	10.09	16.5	400	
1512	18.02	5.17	0.366	21.9	0.78	+159	10.09	20.5	400	

Comments: collected MS/MSD

Signature: [illegible]

NJDEP Certification # 03027

WATER SAMPLE FIELD INFORMATION FORM

Site: American Cyanamid Site

Location: Bridgewater, NJ

Project Number: 103-86245.23

Sampling Team:

Golder Associates

Sample Point ID: P2-12-9 Date: 11/7/13

Time Start: 1640 Time Finish: 1650

Depth to water before purging (ft-bmp) 6.82

Casing diameter (in) 2" Meter/Type/Serial #: Horiba U-52 # 21407

Purging device: bailer Meter Calibrated @: 11/7/13 07:58

Pump intake setting: N/A

Well screen interval: 5-15

As-built construction Well Depth (ft-bpm): 15

Sounded well depth (ft-bmp): ~~[illegible]~~ 14.22

Casing volume (gal) 1.20

Volume purged (gal) ≈1 gal

Depth to water after purging (ft-bmp) 6.82

Remarks: Volume-averaging (conventional) - purge 3 to 5 well volumes

Casing Volume Calculation

2"	4"	6"	8"
0.163 gal/ft	0.653 gal/ft	1.47 gal/ft	2.61 gal/ft

Well Volume = ((well depth) - (water level)) * (casing volume/ft)

(14.22-6.82)(0.163) = 1.20

PID Measurement of Well Headspace (ppm): 270.2 Fe+2 result (field measurement in ppm): N/A

FIELD MEASUREMENTS						Units	Calibration Notes
Time	1) 1645	2) N/A	3) N/A	4) N/A	5) N/A		
Temp.	1) 13.99	2)	3)	4)	5)	°C	
pH	1) 2.78	2)	3)	4)	5)	std. units	
Sp. Cond	1) 5.91	2)	3)	4)	5)	mS/cm	
Turbidity	1) 999+	2)	3)	4)	5)	ntu	
DO	1) 7.06	2)	3)	4)	5)	mg/L	
ORP	1) +309	2)	3)	4)	5)	mV	
Water Level	1) 6.82	2)	3)	4)	5)	ft-bmp	
Volume	1) ≈1 gal	2)	3)	4)	5)	gal	

Sample Collection Notes: Readings via sieve, LNAPL observed in well; grab sample as per MW

Weather conditions at time of sampling: Overcast, breezy, 60s

Analytical Parameters: VOC/SVOC/Fmetals

Sample characteristics: VOCs & metals → clear, odor SVOCs tan, turbid, odor

Sample date / time: 11/7/13 1645 Sampling Device: bailer

Sample sequence: VOC, Fmetals, SVOCs

Signature: [signature] Company: **Golder Associates Inc.** Date: 11/7/13

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site
Location: Bridgewater, NJ
Project Number: 103-86245.23
MONITORING WELL ID: PZ-12-10
Depth to Water Prior to Purging [ft-bmp]: 10.18
Well Casing Diameter [in]: 2"
Start Time (purging): 1025
Purging Device: Grundfos Pump / Teflon tubing
Pump intake setting: ~14
Well Screen Interval: 8 - 18'
As-Built Construction Well Depth [ft-bmp]: 19' ~~18'~~ ~~@18'~~
Sounded Well Depth [ft-bmp]: @ ~~18.49~~ 18.49
Weather Conditions: Overcast, 50s, Rain

Meter/Type/Serial #: Horiba U52 21088
Meter Calibrated @: 11/7/13
Sampling Date/Time: 11/7/13 1230
Sampler(s): J. Lowis
Sampling Device: Grundfos Pump / teflon tubing
Sampling Purge Rate: ~~Grundfos Pump~~ @ 200ml/min
Sample Characteristics: ~~200~~ yellow tint, clear, odor
PID Measurement of Well Headspace (ppm): 4.5 ppm
Analytical Parameters: VOCs, SVOCs, Metals
Fe+2 result (field measurement): NA

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [µS/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1029	16.63	2.36	5.48	1000.0	5.00	+335	10.28	0.5	240	
1034	17.18	2.36	5.55	1000.0	4.36	+339	10.28	1.7	240	
1039	17.60	2.37	5.58	1000.0	3.90	+339	10.28	2.9	240	
1044	17.74	2.37	5.64	1000.0	3.38	+336	10.28	3.1	240	
1049	17.60	2.36	5.67	1000.0	3.22	+333	10.32	5.1	400	increased purge rate.
1054	17.44	2.37	5.80	1000.0	2.63	+330	10.32	7.1	400	
1059	17.37	2.37	5.89	1000.0	0.76	+328	10.32	9.1	400	empty flow cell
1104	17.58	2.38	5.91	968.0	0.64	+327	10.32	11.1	400	
1109	17.58	2.38	5.79	757.0	0.63	+327	10.32	13.1	400	
1114	17.53	2.39	5.79	448.0	0.57	+325	10.32	15.1	400	
1119	17.52	2.39	5.79	351.0	0.53	+324	10.32	17.1	400	
1124	17.54	2.40	5.80	263.0	0.54	+324	10.32	19.1	400	
1129	17.44	2.40	5.81	183.0	0.84	+322	10.32	21.1	400	
1134	17.34	2.41	5.83	151.0	0.64	+322	10.32	23.1	400	
1139	17.39	2.41	5.82	143.0	0.51	+322	10.32	25.1	400	

Comments: Field Duplicate Collected

Signature:

NJDEP Certification # 03027

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site

Location: Bridgewater, NJ

Project Number: 103-86245.23

MONITORING WELL ID: PZ-12-10

Depth to Water Prior to Purging [ft-bmp]: 10.18

Well Casing Diameter [in]: 2"

Start Time (purging): 1025

Purging Device: Grundfos Pump / teflon tubing

Pump intake setting: ~14

Well Screen Interval: 8-18'

As-Built Construction Well Depth [ft-bmp]: 18'

Sounded Well Depth [ft-bmp]: 18.49

Weather Conditions: Overcast, 50s, rain

Meter/Type/Serial #: Horiba U52 21688

Meter Calibrated @: 11/7/13

Sampling Date/Time: 11/7/13 1230

Sampler(s): T. Coms

Sampling Device: Grundfos Pump / teflon tubing

Sampling Purge Rate: 200ml/min

Sample Characteristics: yellow tint, clear, odor

PID Measurement of Well Headspace (ppm):

Analytical Parameters: VOCs, SVOCs, Metals

Fe+2 result (field measurement): NA

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1144	17.42	2.41	5.82	121.0	0.49	+321	10.32	27.1	400	
1149	17.43	2.41	5.82	107.0	0.45	+321	10.32	29.1	400	
1154	17.43	2.42	5.82	85.2	0.45	+321	10.32	31.1	400	
1159	17.46	2.42	5.82	77.8	0.44	+321	10.32	33.1	400	
1204	17.48	2.42	5.83	71.2	0.42	+320	10.32	35.1	400	
1209	17.47	2.42	5.84	65.9	0.41	+320	10.32	37.1	400	
1214	17.44	2.42	5.82	57.7	0.41	+320	10.32	39.1	400	
1219	17.44	2.42	5.82	53.2	0.41	+320	10.32	41.1	400	
1224	17.45	2.42	5.82	54.3	0.41	+319	10.32	43.1	400	

Comments: Field Duplicate Collected

Signature: [illegible]

NJDEP Certification # 03027

WATER SAMPLE FIELD INFORMATION FORM

Site: American Cyanamid Site

Location: Bridgewater, NJ

Project Number: 103-86245.23

Sampling Team: Chris Hawkes

Golder Associates

Sample Point ID: PZ-12-11 Date: 11/7/13

Time Start: 1540 Time Finish: 1550

Depth to water before purging (ft-bmp) 15.06

Casing diameter (in) 2" Meter/Type/Serial #: Horiba U-52 # 21407

Purging device: bailer Meter Calibrated @: 11/7/13 0758

Pump intake setting: N/A

Well screen interval: 8-18

As-built construction Well Depth (ft-bpm): 18

Sounded well depth (ft-bmp): 18.21

Casing volume (gal) 0.50

Volume purged (gal) ≈1 gal

Depth to water after purging (ft-bmp) 15.06

Remarks: Volume-averaging (conventional) - purge 3 to 5 well volumes

Casing Volume Calculation

2"	4"	6"	8"
0.163 gal/ft	0.653 gal/ft	1.47 gal/ft	2.61 gal/ft

Well Volume = ((well depth) - (water level)) * (casing volume/ft)

(18.21 - 15.13)(0.163) = 0.50 gal

PID Measurement of Well Headspace (ppm): 390.6 Fe+2 result (field measurement in ppm): N/A

FIELD MEASUREMENTS	1)	2)	3)	4)	5)	Units	Calibration Notes
Time	1545	N/A	N/A	N/A	N/A		
Temp.	15.34					°C	
pH	3.09					std. units	
Sp. Cond	3.53					mS/cm	
Turbidity	1000+					ntu	
DO	7.43					mg/L	
ORP	+289					mV	
Water Level	15.06					ft-bmp	
Volume	≈1 gal					gal	

Sample Collection Notes: readings via sleeve, LNAPL observed in well; grab sample as per MLL

Weather conditions at time of sampling: overcast, 50s, breezy

Analytical Parameters: VOC, SVOC, T-metals

Sample characteristics: VOCs - clear, odor SVOC/metals - brown, turbid, odor

Sample date / time: 11/7/13 1545 Sampling Device: bailer

Sample sequence: VOC, SVOC, T metals

Signature: [signature] Company: **Golder Associates Inc.** Date: 11/7/13

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site
Location: Bridgewater, NJ
Project Number: 103-86245
MONITORING WELL ID: PZ-12-7
Depth to Water Prior to Purging [ft-bmp]: 1.68
Well Casing Diameter [in]: 2 in
Start Time (purging): 0920
Purging Device: Grundfos Pump & Teflon Tubing
Pump intake setting: ~~≈13 TE~~ ≈10'
Well Screen Interval: 4.5 - 14.5
As-Built Construction Well Depth [ft-bmp]: 14.5
Sounded Well Depth [ft-bmp]: ~~12.87~~ 13.87
Weather Conditions: Chilly, Windy, Sunny ≈30°F

Meter/Type/Serial #: Horiba U-52 # 21431
Meter Calibrated @: 4/16/14 0720
Sampling Date/Time: 4/16/14 1210
Sampler(s): Chris Dawson, Ryan Walker, Justin Locus, Eva Gladwin
Sampling Device: Grundfos Pump & Teflon Tubing
Sampling Purge Rate: ~300 ml/min
Sample Characteristics: Cloudy-Clear, No odor
PID Measurement of Well Headspace (ppm): 0.0
Analytical Parameters: VOC, SVOC, Metals
Fe+2 result (field measurement): NM PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
0925								1.5	300	- initial turbidity very high
0930								3.0	300	Removed Horiba unit
0935							1.71	4.5	300	turbidity decreased
0940							1.72	6.0	300	-
0945	7.93	7.35	0.094	364	8.00	+150	1.72	7.5	300	- turbidity went down
0950	7.77	7.20	0.096	475	8.77	+161	1.72	9.0	300	
0955	6.30	7.14	0.102	632	9.37	+168	1.72	10.5	300	
1000							1.72	12.0	300	Cleaned Horiba
1005	6.41	7.22	0.102	640	10.27	+142	1.72	13.5	300	
1010	6.77	7.20	0.102	568	9.88	+152	1.72	15.0	300	
1015	6.88	7.21	0.103	657	9.95	+159	1.72	16.5		
1020	7.04	7.22	0.103	703	9.84	+158	1.72	18.0		
1025										Fixed Horiba flow cell O-ring
1030	6.61	7.27	0.097	114	7.28	+146	1.72	21.0		
1035	6.85	7.20	0.098		6.92	+147	1.72	22.5		

Comments: DTW 1.67 before removed transducer at 0848
- Water level meter has 2 lots, Field dupe

Signature:

NJDEP Certification # 03027

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site
Location: Bridgewater, NJ
Project Number: 103-86245
MONITORING WELL ID: P2-12-7
Depth to Water Prior to Purging [ft-bmp]: 1.68
Well Casing Diameter [in]: 2 in
Start Time (purging): 0920
Purging Device: Grundfos Pump & Teflon Tubing
Pump intake setting: ~ 10'
Well Screen Interval: 4.5 - 14.5
As-Built Construction Well Depth [ft-bmp]: 14.5
Sounded Well Depth [ft-bmp]: 13.87
Weather Conditions: Chilly, windy, Sunny

Meter/Type/Serial #: Horiba U-52 # 21431
Meter Calibrated @: ~~0~~ 4/16/14 @ 0720
Sampling Date/Time: 4/16/14 1210
Sampler(s): Chris Dawson, Ryan Walker, ~~Justin Locus~~ EVA GLADISH
Sampling Device: Grundfos Pump & Teflon Tubing
Sampling Purge Rate: ~300 ml/min
Sample Characteristics: Cloudy-Clear, No odor
PID Measurement of Well Headspace (ppm): 0-0
Analytical Parameters: VOC SVOC Metals
Fe+2 result (field measurement): NM PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1040	6.99	7.22	0.099	110	6.97	+146		24.0	300	
1045	7.04	7.21	0.099	102	6.97	+146		25.5	300	
1050	7.24	7.26	0.099	111	6.71	+143	1.72	27.0	300	
1055	6.81	7.34	0.102	104	6.65	+142	1.72	28.5	300	
1100										missed Reading, Switched
1105	7.28	7.19	0.103	104	5.39	+136	1.72	30.0	300	horiba 21134
1110	7.35	7.13	0.104	100	5.10	+132	1.72	31.5	300	
1115	7.42	7.08	0.104	97.6	5.08	+130	1.72	33.0	300	
1120	7.44	7.04	0.104	118	5.00	+130	1.72	34.5	300	
1125	7.41	7.03	0.104	93.1	4.94	+129	1.72	36.0	300	
1130	7.43	7.01	0.104	78.3	4.89	+129	1.72	37.5	300	
1135	7.55	6.98	0.103	81.2	4.97	+130	1.72	39.0	300	
1140	7.75	6.94	0.106	136	4.80	+132	1.73	41.5	300	
1145	7.73	6.97	0.105	150	4.77	+132	1.74	43.0	300	
1150			Cleaned flow cell					44.5		missed Reading

Comments: (0.163) · (13.87 - 1.68) = 1.98 gallons ~
6 gallons ~ 3.78 liters/gallon

Signature:

NJDEP Certification # 03027

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site

Location: Bridgewater, NJ

Project Number: 103-86245

MONITORING WELL ID: R2-12-7

Depth to Water Prior to Purging [ft-bmp]: 1.68

Well Casing Diameter [in]: 2 in

Start Time (purging): 0920

Purging Device: Grundfos Pump & Teflon Tubing

Pump intake setting: ~10'

Well Screen Interval: 4.5-14.5

As-Built Construction Well Depth [ft-bmp]: 14.5

Sounded Well Depth [ft-bmp]: 13.87

Weather Conditions: Chilly, Windy, Cloudy

Meter/Type/Serial #: Horiba U-52 # 21134 (changed horiba @ 1100)

Meter Calibrated @: 4/16/14 @ 720

Sampling Date/Time: 4/16/14 @ 1210

Sampler(s): Chris Dawson, Ryan Walker, Justin Locus

Sampling Device: Grundfos Pump & Teflon Tubing

Sampling Purge Rate: ~300 mL/min

Sample Characteristics: Cloudy-clear, No odor

PID Measurement of Well Headspace (ppm): 0.0

Analytical Parameters: VOC'S, SVOC'S Metals

Fe+2 result (field measurement): NM PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1155	8.29	7.01	0.103	130	4.81	+127	1.78	46.0	300	
1200	7.70	7.04	0.105	149	4.72	+126	1.78	47.5	300	Turbidity rapidly change
1205	7.71	7.07	0.105	137	4.55	+124	1.78	49.0	300	rapidly between 160-136
1210				SAMPLE						Turbidity up to 190

Comments:

Signature:

NJDEP Certification # 03027

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site
Location: Bridgewater, NJ
Project Number: 103-86245
MONITORING WELL ID: P2-12-X
Depth to Water Prior to Purging [ft-bmp]: 6.44
Well Casing Diameter [in]: 2"
Start Time (purging): 0925
Purging Device: Grundfos Pump & Teflon Tubing
Pump intake setting: ≈12'
Well Screen Interval: 4.5'-14.5'
As-Built Construction Well Depth [ft-bmp]: 14.5'
Sounded Well Depth [ft-bmp]: 15.96
Weather Conditions: Sunny, 40's windy

Meter/Type/Serial #: Horiba U-52 # 21134
Meter Calibrated @: 0720
Sampling Date/Time: 4/16/14 @ 1025
Sampler(s): Chris Dawson, Ryan Walker, ~~Justin Locus~~ Eva Gladish
Sampling Device: Grundfos Pump & Teflon Tubing
Sampling Purge Rate: 200 ml/min
Sample Characteristics: Clear, No odor
PID Measurement of Well Headspace (ppm): 0-0
Analytical Parameters: VOC, SVOC, TOT Metals
Fe+2 result (field measurement): NM PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
0930	9.93	6.00	0.335	182	1.25	+210	6.34	2.5 gal	0.5 gal/min	Turbidity initially very high
0935	9.76	6.00	0.337	180	1.03	+215	6.31	10.5	200	Purged till lowered enough for
0940	9.97	5.95	0.338	180	1.28	+223	6.30	11.5	200	readings .. WL monitored
0945	10.00	5.83	0.337	77.3	1.04	+230	6.31	12.5	200	
0950	9.97	5.76	0.342	53.8	0.52	+235	6.30	13.5	200	
0955	10.08	5.70	0.342	22.7	0.37	+234	6.30	14.5	200	
1000	10.10	5.69	0.342	19.1	0.30	+237	6.30	15.5	200	
1005	10.15	5.67	0.343	17.3	0.31	+237	6.30	16.5	200	
1010	10.11	5.67	0.343	8.6	0.33	+235	6.30	17.5	200	
1015	10.16	5.69	0.343	9.7	0.34	+237	6.30	18.5	200	
1020	10.17	5.71	0.342	7.8	0.34	+232	6.30	19.5	200	
1025	SAMPLED									

Comments:

MS/MSD

Signature: Ryan Walker

NJDEP Certification # 03027

WATER SAMPLE FIELD INFORMATION FORM

Site: American Cyanamid Site

Location: Bridgewater, NJ

Project Number: 103-86245

Sampling Team: CDAWSON, RWalker, E Gladish

Golder Associates

Sample Point ID: PZ-12-9 Date: 4/16/14

Time Start: 1240 Time Finish: 1250

Depth to water before purging (ft-bmp) 3.48'

Casing diameter (in) 2" Meter/Type/Serial #: Horiba U-52 # 21407

Purging device: Bailer Meter Calibrated @: 1115

Pump intake setting:

Well screen interval: 5-15'

As-built construction Well Depth (ft-bpm): 15

Sounded well depth (ft-bmp): NM

Casing volume (gal) 1.57 gal

Volume purged (gal) ~1 gal

Depth to water after purging (ft-bmp) NM

Remarks: Volume-averaging (conventional) - purge 3 to 5 well volumes

Casing Volume Calculation

2"	4"	6"	8"
0.163 gal/ft	0.653 gal/ft	1.47 gal/ft	2.61 gal/ft

Well Volume = ((well depth) - (water level)) * (casing volume/ft)

15 - 3.48

PID Measurement of Well Headspace (ppm): 0.2 Fe+2 result (field measurement in ppm): NM

FIELD MEASUREMENTS

	1)	2)	3)	4)	5)	Units	Calibration Notes
Time	1245	NA	NA	NA	NA		
Temp.	10.52					°C	
pH	5.48					std. units	
Sp. Cond	0.226					mS/cm	
Turbidity	999+					ntu	
DO	3.65					mg/L	
ORP	131					mV	
Water Level	NM					ft-bmp	
Volume	.25					gal	

Sample Collection Notes: Collected w/ Bailer - product noticed on probe. Parameter reading via Horiba cup. Grab sample as per CDW

Weather conditions at time of sampling: Clear, windy, 50's

Analytical Parameters: VOC, SVOC, Tot. Metals

Sample characteristics: Highly turbid, slight odor

Sample date / time: 4/16/14 @ 1245 Sampling Device: Bailer (Teflon + Disposable)

Sample sequence: VOC, SVOC, Tot. Metals

Signature: Ry-Walk Company: Golder Associates Inc. Date: 4/16/14

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site

Location: Bridgewater, NJ

Project Number: 103-86245

MONITORING WELL ID: PZ-12-10

Depth to Water Prior to Purging [ft-bmp]: 7.09

Well Casing Diameter [in]: 2"

Start Time (purging): 1215

Purging Device: Grundfos Pump & Teflon Tubing

Pump intake setting: ≈ 11.5'

Well Screen Interval: 5'-15'

As-Built Construction Well Depth [ft-bmp]: 15'

Sounded Well Depth [ft-bmp]: 17.78'

Weather Conditions: Clear, 50 windy

Meter/Type/Serial #: Horiba U-52 # 21431

Meter Calibrated @: 0720

Sampling Date/Time: 4/16/14 @ 1435

Sampler(s): Chris Dawson, Ryan Walker, ~~Justin Locus~~ EMA English

Sampling Device: Grundfos Pump & Teflon Tubing

Sampling Purge Rate: 300 ml/m

Sample Characteristics: Clear, Slight odor

PID Measurement of Well Headspace (ppm): 0.3

Analytical Parameters: VOC, SVOC, Metals

Fe+2 result (field measurement): NM PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1230	12.37	2.61	3.38	999+	7.12	+330	7.12	7.5gal	0.5gpm	* Purged @ faster rate initially to lower especially high turbidity.
1235	12.89	2.54	3.44	579	4.16	+325	7.14	21.5	300 ml/m	
1240	12.97	2.54	3.44	465	3.24	+323	7.14	31.0	300	
1245	13.03	2.54	3.45	374	2.59	+323	7.14	32.5	300	
1250	13.06	2.54	3.46	315	2.18	+322	7.14	34.0	300	
1255	13.04	2.54	3.47	252	1.70	+322	7.14	35.5	300	
1300	13.05	2.54	3.49	210	1.44	+322	7.14	36.0	300	
1305	12.67	2.58	3.44	810	0.00	+320	7.14	37.5	300	* Cleaned flow cell.
1310	12.61	2.56	3.47	740	0.00	+320	7.14	39.0	300	
1315	12.57	2.52	3.55	556	0.00	+320	7.14	40.5	300	
1320	12.57	2.52	3.61	516	0.00	+320	7.14	41.5	300	
1325	12.59	2.51	3.69	474	0.00	+320	7.14	43.0	300	
1330	12.63	2.51	3.72	316	0.00	+320	7.14	44.5	300	
1335	12.66	2.50	3.78	271	0.00	+320	7.14	46.0	300	
1340	12.68	2.48	3.83	197	0.00	+320	7.14	47.5	300	

Comments:

Signature: Ry Walk

NJDEP Certification # 03027

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site

Location: Bridgewater, NJ

Project Number: 103-86245

MONITORING WELL ID: PZ-12-10

Depth to Water Prior to Purging [ft-bmp]: 7.09

Well Casing Diameter [in]: 2"

Start Time (purging): 1215

Purging Device: Grundfos Pump & Teflon Tubing

Pump intake setting: ≈11.5'

Well Screen Interval: 5'-15'

As-Built Construction Well Depth [ft-bmp]: 15'

Sounded Well Depth [ft-bmp]: 17.78'

Weather Conditions: Clear, 50 windy

Meter/Type/Serial #: Horiba U-52 # 21431

Meter Calibrated @: 0725

Sampling Date/Time: 4/16/14 @ 1435

Sampler(s): Chris Dawson, Ryan Walker, Justin Locus

Sampling Device: Grundfos Pump & Teflon Tubing

Sampling Purge Rate: 300 ml/min

Sample Characteristics: Clear, Slight odor

PID Measurement of Well Headspace (ppm): 0.3

Analytical Parameters: VOC, SVOC, Tot Metals

Fe+2 result (field measurement): NM PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1245	12.69	2.48	3.85	123	0.00	+322	7.14	44	300	
1250	12.73	2.48	3.88	89.1	0.00	+322	7.14	50.5	300	
1255	12.73	2.48	3.91	77.2	0.00	+322	7.14	52	300	
1300	12.75	2.47	3.91	65.7	0.00	+322	7.14	53.5	300	
1405	12.94	2.47	3.91	54.8	0.00	+322	7.14	55.0	300	
1410	13.05	2.47	3.91	45.3	0.00	+322	7.14	56.5	300	
1415	13.13	2.46	3.92	38.3	0.00	+322	7.14	58.0	300	
1420	13.20	2.46	3.93	33.6	0.00	+322	7.14	59.5	300	
1425	13.20	2.46	3.94	33.6	0.00	+322	7.14	61.0	300	
1430	13.25	2.46	3.94	51.9	0.00	+322	7.14	62.5	300	
1435					SAMPLED					

Comments:

Signature: Ryan Walker

NJDEP Certification # 03027

WATER SAMPLE FIELD INFORMATION FORM

Site: American Cyanamid Site

Location: Bridgewater, NJ

Project Number: 103-86245

Sampling Team: CDAWSON RWALKER EGHADIL

Golder Associates

Sample Point ID: PZ-12-11 Date: 4/16/14

Time Start: 1325 Time Finish: 1340

Depth to water before purging (ft-bmp) 11.75'

Casing diameter (in) 2"

Purging device: bailer

Pump intake setting: NA

Well screen interval: 5'-18'

As-built construction Well Depth (ft-bpm): 18'

Sounded well depth (ft-bmp): NM

Casing volume (gal) 1.02

Volume purged (gal) <1 gal

Depth to water after purging (ft-bmp) NM

Remarks: Volume-averaging (conventional) - purge 3 to 5 well volumes

Meter/Type/Serial #: Horiba U-52 #

Meter Calibrated @: 1115 on 4/16/14

Casing Volume Calculation

2"	4"	6"	8"
0.163 gal/ft	0.653 gal/ft	1.47 gal/ft	2.61 gal/ft

Well Volume = ((well depth) - (water level)) * (casing volume/ft)

(18 - 11.75)(0.163) = 1.02

PID Measurement of Well Headspace (ppm): 0.7 Fe+2 result (field measurement in ppm): NM

FIELD MEASUREMENTS

	1)	2)	3)	4)	5)	Units	Calibration Notes
Time	1330	NA	NA	NA	NA		
Temp.	13.08					°C	
pH	4.51					std. units	
Sp. Cond	1.06					mS/cm	
Turbidity	550					ntu	
DO	3.89					mg/L	
ORP	+151					mV	
Water Level	NM					ft-bmp	
Volume	<1 gal					gal	

Sample Collection Notes: reading via sheen, product noted on data loggers upon removal from well, so collected grab sample as per CDL

Weather conditions at time of sampling: clear, 40's, breezy

Analytical Parameters: VOCs, SVOCs, T. Metals

Sample characteristics: cloudy, odor

Sample date / time: 4/16/14 @ 1330 Sampling Device: bailer (teflon, disposable)

Sample sequence: VOCs, SVOCs, T. Metals

Signature: [signature] Company: Golder Associates Inc. Date: 4/16/14

320.7 (IMP 2 BGMP)

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site

Location: Bridgewater, NJ

Project Number: 103-86245.23

MONITORING WELL ID: PZ-12-7

Depth to Water Prior to Purging [ft-bmp]: 1.95 (w/pump)

Well Casing Diameter [in]: 2

Start Time (purging): 1515

Purging Device: Grundfos pump & teflon-lined tubing

Pump intake setting: ~~@5.95' bmp~~ 5.00' bmp

Well Screen Interval: 4.5 – 14.5' ~~bgs~~ bmp

As-Built Construction Well Depth [ft-bmp]: 14.5

Sounded Well Depth [ft-bmp]:

Weather Conditions: 70s°F, cloudy, humid, light breeze

Meter/Type/Serial #: HORIBA U-52 # RYRGJNB2

Meter Calibrated @: 0820

Sampling Date/Time: 5/21/14 @ 1630

Sampler(s): Lisa Congiu & Justin Locus

Sampling Device: Grundfos pump & teflon-lined tubing

Sampling Purge Rate: ~200 mL/min

Sample Characteristics: clear, odor

PID Measurement of Well Headspace (ppm): See field book

Analytical Parameters: VOCs, SVOCs, metals

Fe+2 result (field measurement): NA

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1520	15.99	6.68	1.17	274	0.89	+93	2.15	0.5	400	↓ flow rate/pump speed
1530	17.48	6.70	1.15	150	2.19	+81	2.05	4.5	300	↓ pump speed
1535	19.18	6.77	1.06	261	2.34	+79	2.05	6.0	200	
1540	19.94	6.87	1.26	260	2.79	+83	2.03	7.0	200	move pump to pit to 5.00' bmp
1545	20.81	7.00	1.33	215	3.79	+86	2.03	8.0	200	
1550	21.29	7.07	1.36	226	4.52	+87	2.03	9.0	200	
1555	21.52	7.00	1.29	138	3.76	+90	2.03	10.0	200	
1600	21.48	6.97	1.25	90.8	3.70	+92	2.02	11.0	200	
1605	21.38	6.95	1.22	89.9	3.36	+94	2.02	12.0	200	
1610	21.37	6.94	1.20	68.0	3.18	+94	2.02	13.0	200	
1615	21.28	6.93	1.18	62.9	3.09	+95	2.02	14.0	200	
1620	21.23	6.91	1.17	~~55.3~~	3.09	+95	2.02	15.0	200	turbidity = 60.2
1625	21.24	6.90	1.15	58.9	3.12	+96	2.02	16.0	200	
1630	→							17.0	→	collect samples

Comments:

Signature: Lisa Congiu

NJDEP Certification # 03027

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site

Location: Bridgewater, NJ

Project Number: 103-86245.23

MONITORING WELL ID: PZ-12-8

Depth to Water Prior to Purging [ft-bmp]: 6.73 (w/pump)

Well Casing Diameter [in]: 2

Start Time (purging): ~~1225~~ 1230

Purging Device: Grundfos pump + teflon-lined tubing

Pump intake setting: 12.50 ~~bgs~~ bmp

Well Screen Interval: 4.5 - 14.5' bmp

As-Built Construction Well Depth [ft-bmp]: 14.5'

Sounded Well Depth [ft-bmp]: 15.95

Weather Conditions: Cloudy, 70°F

Meter/Type/Serial #: RYRGJNB2, HORIBA U-52

Meter Calibrated @: 0820

Sampling Date/Time: 5/21/14 @ 1340

Sampler(s): Lisa Congiu

Sampling Device: Grundfos pump & teflon-lined tubing

Sampling Purge Rate: ~200 mL/min

Sample Characteristics: clear, odor

PID Measurement of Well Headspace (ppm): see field notes

Analytical Parameters: VOCs, SVOCs, metals

Fe+2 result (field measurement): NA

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1235	13.26	5.27	0.257	218	0.00	+170	6.81	0.5	400	
1240	13.89	5.29	0.260	154	0.00	+169	6.79	2.5	300	
1245	14.10	5.27	0.260	137	0.00	+170	6.78	4.0	300	↑ pumpspeed slightly
1250	13.43	5.28	0.258	84.0	0.00	+170	6.78	5.5	400	
1255	13.32	5.28	0.255	47.4	0.00	+168	6.81	7.5	400	
1300	13.21	5.27	0.253	30.1	0.00	+168	6.81	9.5	400	
1305	13.20	5.25	0.253	21.2	0.00	+169	6.81	11.5	400	
1310	13.20	5.26	0.253	17.1	0.00	+167	6.81	13.5	400	
1315	13.31	5.26	0.252	12.6	0.00	+166	6.81	15.5	400	
1320	13.28	5.23	0.252	10.6	0.00	+167	6.81	17.5	400	
1325	13.26	5.23	0.251	9.9	0.00	+167	6.81	19.5	400	
1330	13.33	5.26	0.252	9.7	0.00	+165	6.81	21.5	400	
1335	13.24	5.26	0.251	8.2	0.00	+164	6.81	23.5	400	
1340	→						→	25.5	→	Collect samples

Comments: CH2MHill performing decon activities nearby (near PZ-12-7). Left tubing in well.
MS/MSD collected (PZ-12-8-MS, PZ-12-8-MSD)

Signature: Lisa Congiu

NJDEP Certification # 03027

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM

Golder Associates

Site: American Cyanamid Superfund Site
Location: Bridgewater, NJ
Project Number: 103-86245.23
MONITORING WELL ID: PZ-12-10
Depth to Water Prior to Purging [ft-bmp]: 7.35 (w/pump)
Well Casing Diameter [in]: 2
Start Time (purging): 1000
Purging Device: Grundfos pump; teflon-lined tubing
Pump intake setting: ~~11.0' bmp~~ 13.0' bmp
Well Screen Interval: 5-15' bgs
As-Built Construction Well Depth ~~[ft-bmp]~~: 15' bgs
Sounded Well Depth [ft-bmp]: ~~[illegible]~~ 17.70
Weather Conditions: Cloudy, humid, 70s°F

Meter/Type/Serial #: HORIBA U-52 # WG-93EKH
Meter Calibrated @: 0815
Sampling Date/Time: 5/22/14 @
Sampler(s): Lisa Congiu
Sampling Device: Grundfos pump; teflon-lined tubing
Sampling Purge Rate: ~200 mL/min
Sample Characteristics: gray tint, strong odor
PID Measurement of Well Headspace (ppm): See field book
Analytical Parameters: VOCs, SVOCs, metals

Fe+2 result (field measurement): NA

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential Note - Indicate if (+) or (-) [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
1010	15.75	3.89	1.15	>999 ~~0.0~~	0.90	+263	7.92	~5.0	>500	↓ pump speed
1015	15.92	3.52	1.27	567	0.38	+290	7.55	7.5	400	
1020	16.15	3.43	1.32	447	0.33	+296	7.56	9.5	400	↓ pump speed
1025	16.21	3.37	1.41	413	0.25	+301	7.53	11.5	320	
1030	16.57	3.38	1.41	345	0.19	+303	7.53	13.2	400	
1035	16.86	3.38	1.42	271	0.14	+302	7.52	15.2	400	
1040	17.02	3.37	1.43	243	0.13	+300	7.52	17.2	400	move top of pump to 13' bmp
1045	17.09	3.35	1.45	194	0.13	+300	7.51	19.2	400	
1050	17.00	3.22	1.51	182	0.15	+308	7.51	21.2	400	
1055	17.25	3.29	1.52	157	0.08	+305	7.51	23.2	400	
1100	17.41	3.29	1.52	166	0.09	+301	7.48	25.2	400	
1105	17.49	3.32	1.52	158	0.08	+301	7.46	27.2	400	
1110	→						→	29.2	→	Collect samples

Comments:

FD collected = (PZ-12-10-FD)

Signature: L Congiu

NJDEP Certification # 03027

WATER SAMPLE FIELD INFORMATION FORM

Site: American Cyanamid Site

Location: Bridgewater, NJ

Project Number: 103-86245.23

Sampling Team: J. Loms, L. Congui

Golder Associates

Sample Point ID: P7-12-9

Date: 5/22/14

Time Start: 1110 Time Finish: 1130

Depth to water before purging (ft-bmp) 4.01

Casing diameter (in) 2"

Meter/Type/Serial #: Horiba U-52 # RYRGJNB2

Purging device: Bailer

Meter Calibrated @: 0815

Pump intake setting: NA

Well screen interval: 5-15'

As-built construction Well Depth (ft-bpm): 15'

Sounded well depth (ft-bmp): NM

Casing volume (gal) 1.79 gal

Volume purged (gal) ~0.75 gal

Depth to water after purging (ft-bmp) 4.18

Casing Volume Calculation

2"	4"	6"	8"
0.163 gal/ft	0.653 gal/ft	1.47 gal/ft	2.61 gal/ft

Well Volume = ((well depth) - (water level)) * (casing volume/ft)

15 - 4.01 = ~~10.99~~ 10.99 = 1.79 gal

Remarks: Volume-averaging (conventional) - purge 3 to 5 well volumes

PID Measurement of Well Headspace (ppm):

Fe+2 result (field measurement in ppm):

FIELD MEASUREMENTS

	1)	2)	3)	4)	5)	Units	Calibration Notes
Time	1110	—	—	—	—		
Temp.	15.49	—	—	—	—	°C	
pH	4.60	—	—	—	—	std. units	
Sp. Cond	0.175	—	—	—	—	mS/cm	
Turbidity	8.7	—	—	—	—	ntu	
DO	0.71	—	—	—	—	mg/L	
ORP	+222	—	—	—	—	mV	
Water Level	4.15	—	—	—	—	ft-bmp	
Volume	~0.5 gal	—	—	—	—	gal	

Sample Collection Notes: product on datalogger removed from well 5/21/14, grab sample collected per CDL

Weather conditions at time of sampling: Overcast, 60s

Analytical Parameters: VOCs, SVOCs, Metals

Sample characteristics: cloudy odor

Sample date / time: 5/22/14 1115

Sampling Device: B teflon bailer

Sample sequence: VOCs, SVOCs, Metals

Signature: [signature]

Company: Golder Associates Inc.

Date: 5/22/14

WATER SAMPLE FIELD INFORMATION FORM

Site: American Cyanamid Site

Location: Bridgewater, NJ

Project Number: 103-86245.23

Sampling Team: J. Locus, L. Corgin

Golder Associates

Sample Point ID: PZ-12-11

Date: 5/22/14

Time Start: 1020 Time Finish: 1045

Depth to water before purging (ft-bmp) 12.06

Casing diameter (in) 2'

Meter/Type/Serial #: Horiba U-52 # PYAGJNB2

Purging device: Bailer

Meter Calibrated @: 0815

Pump intake setting: NA

Well screen interval: 8-18'

As-built construction Well Depth (ft-bpm): ~~8-18'~~ @ 18'

Sounded well depth (ft-bmp): NM

Casing volume (gal) 0.968 gal

Volume purged (gal) ~1.04 gal

Depth to water after purging (ft-bmp) 12.17

Casing Volume Calculation

2"	4"	6"	8"
0.163 gal/ft	0.653 gal/ft	1.47 gal/ft	2.61 gal/ft

Well Volume = ((well depth) - (water level)) * (casing volume/ft)

18 - 12.06 = 5.94 x 0.163 = 0.968 gal

Remarks: Volume-averaging (conventional) - purge 3 to 5 well volumes

PID Measurement of Well Headspace (ppm): 0.1

Fe+2 result (field measurement in ppm): NM

FIELD MEASUREMENTS

	1)	2)	3)	4)	5)	Units	Calibration Notes
Time	1025	—	—	—	—		
Temp.	17.57	—	—	—	—	°C	
pH	4.00	—	—	—	—	std. units	
Sp. Cond	0.688	—	—	—	—	mS/cm	
Turbidity	31.0	—	—	—	—	ntu	
DO	0.00	—	—	—	—	mg/L	
ORP	+219	—	—	—	—	mV	
Water Level	12.18	—	—	—	—	ft-bmp	
Volume	~1 gal	—	—	—	—	gal	

Sample Collection Notes: product globules on data logger upon removal from well 5/21/14, grab sample collected per COL

Weather conditions at time of sampling: Overcast, 60s

Analytical Parameters: VOCs, SVOCs, Metals

Sample characteristics: cloudy, odor

Sample date / time: 4/16/14 1030 Sampling Device: teflon bailer

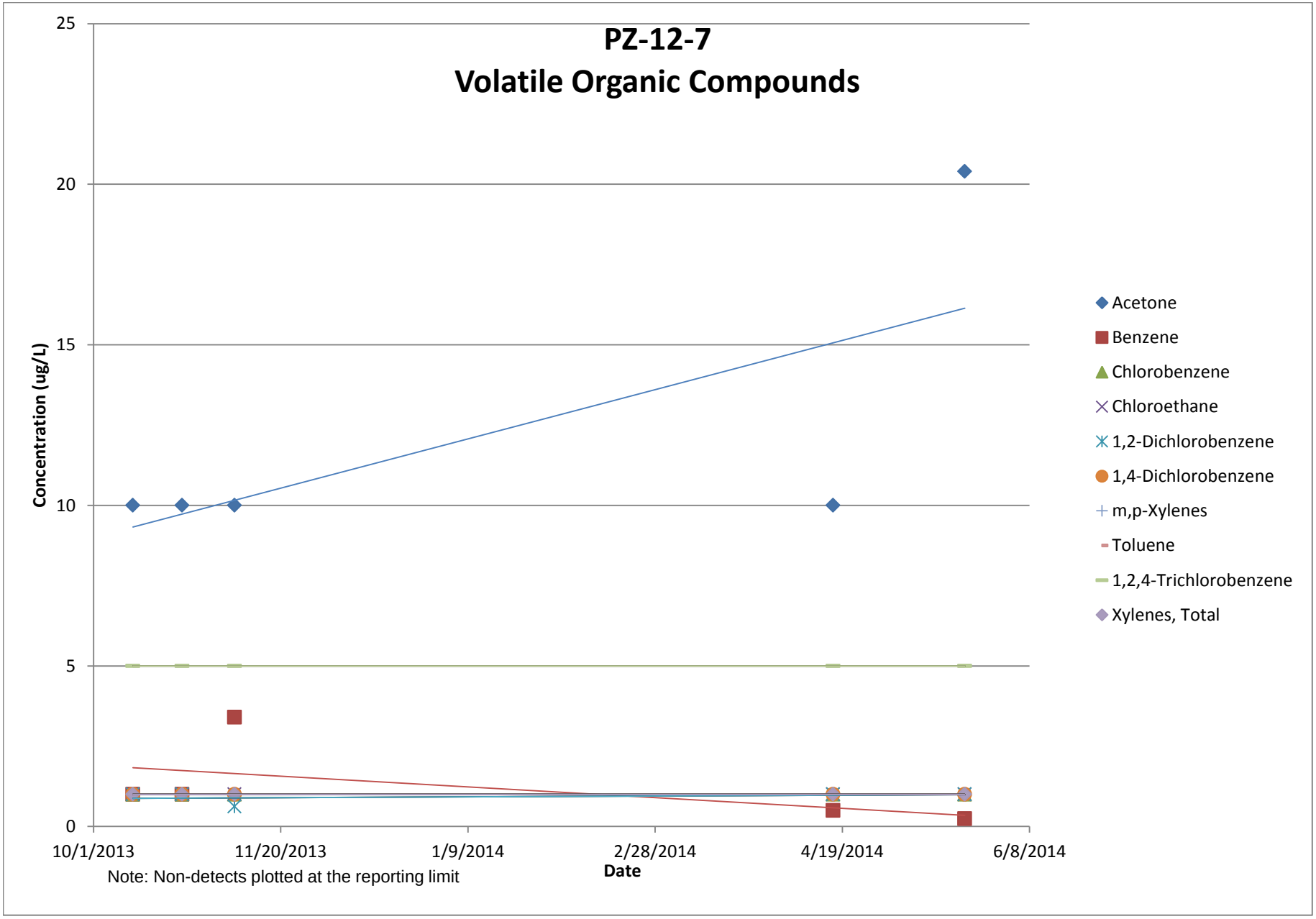
Sample sequence: VOCs, SVOCs, Metals

Signature: [signature] Company: **Golder Associates Inc.** Date: 5/22/14

APPENDIX 4-4

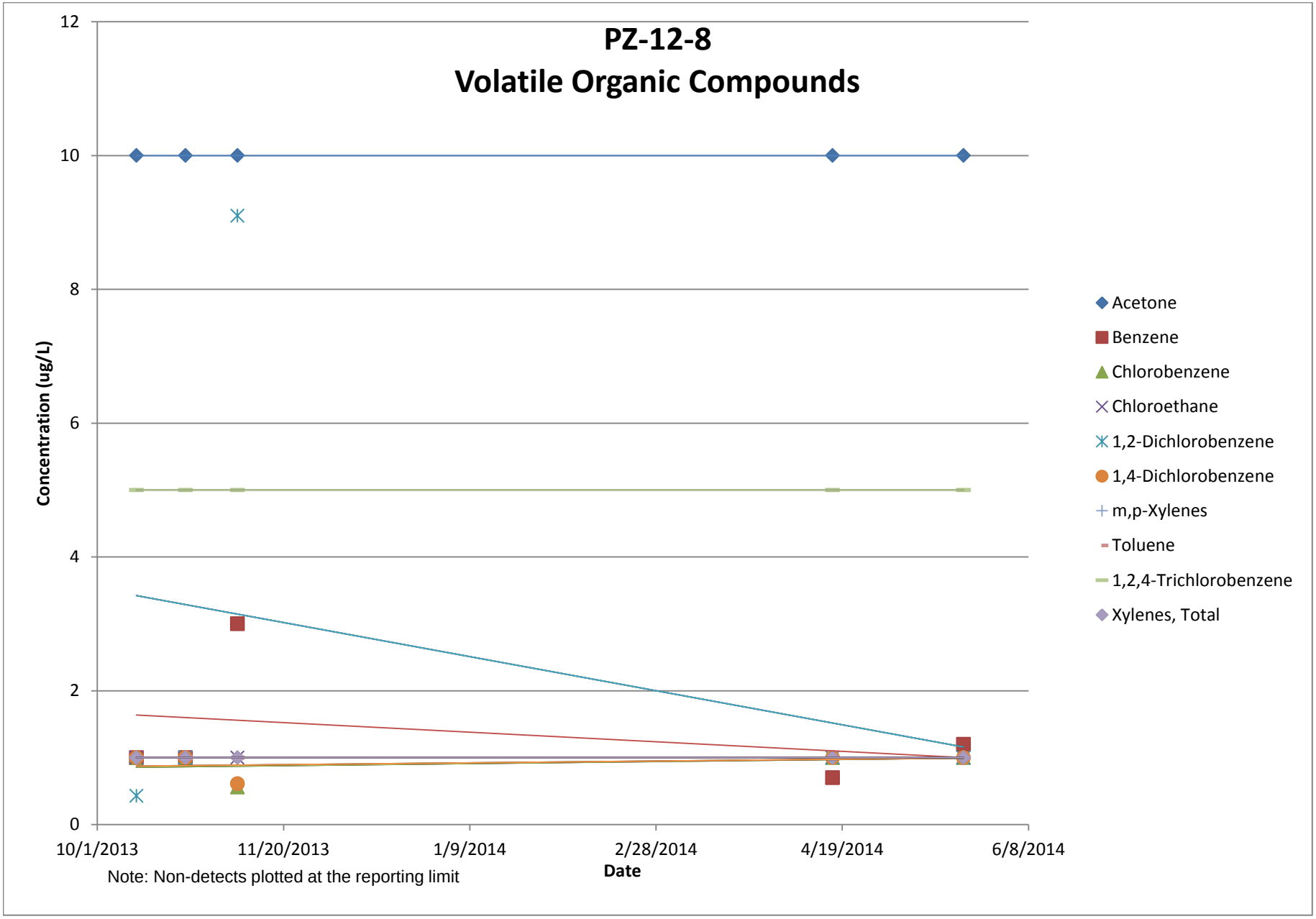
GROUNDWATER ANALYTICAL RESULT TRENDS

Concentration vs. Time
Impoundment 2 Groundwater Analytical Trends
American Cyanamid Superfund Site
Bridgewater, New Jersey



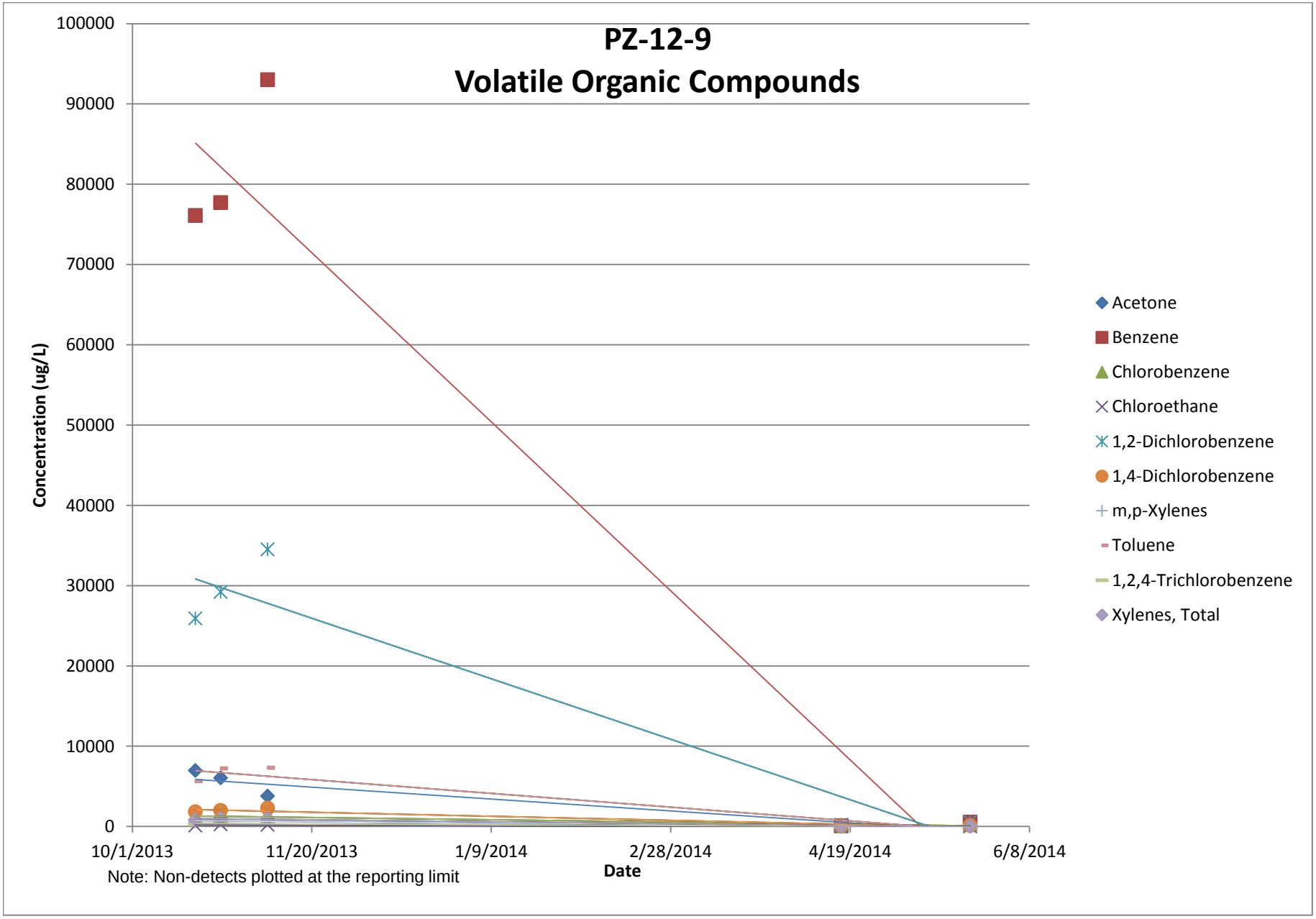
Note: Non-detects plotted at the reporting limit

Concentration vs. Time
Impoundment 2 Groundwater Analytical Trends
American Cyanamid Superfund Site
Bridgewater, New Jersey



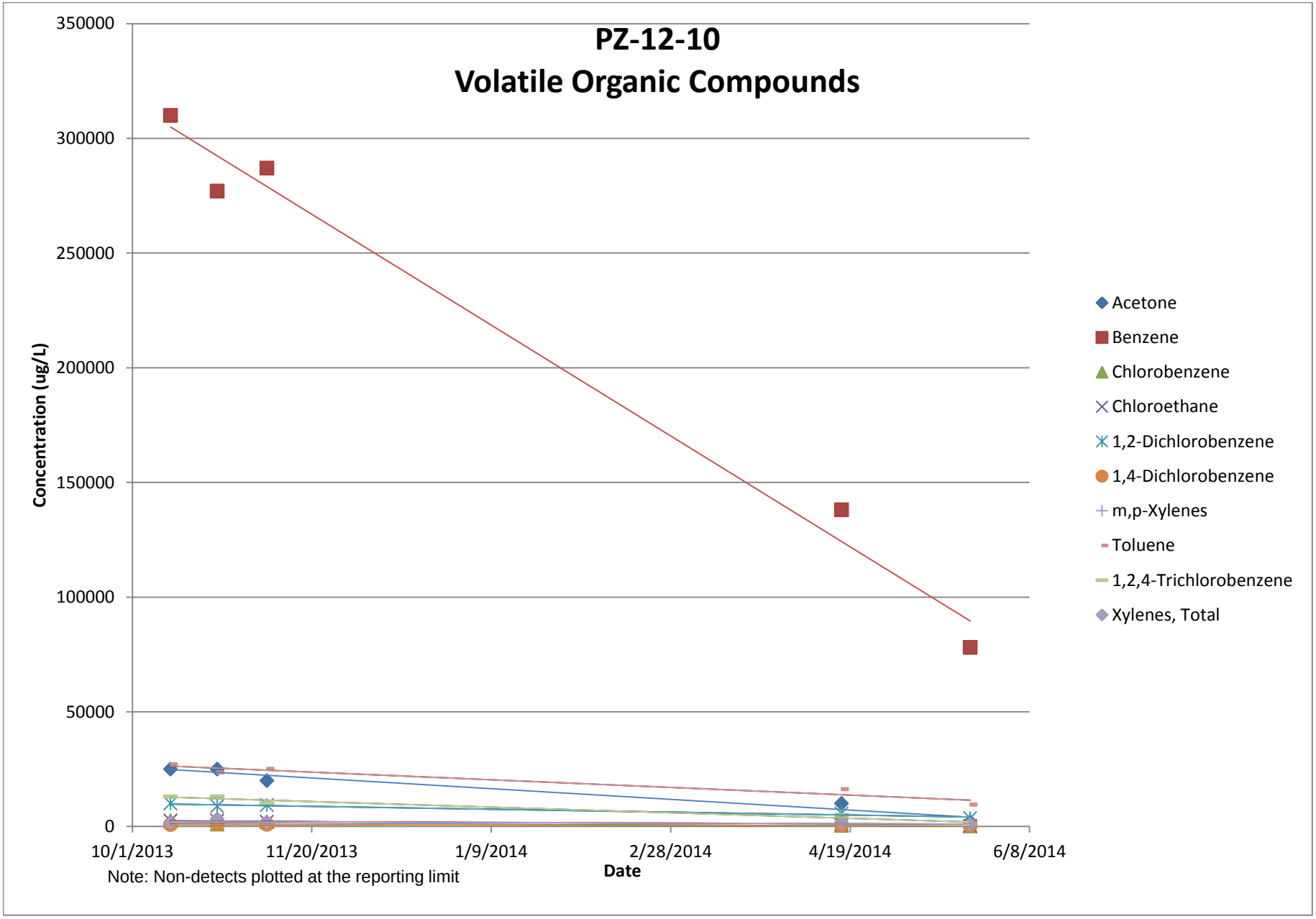
Note: Non-detects plotted at the reporting limit

Concentration vs. Time
Impoundment 2 Groundwater Analytical Trends
American Cyanamid Superfund Site
Bridgewater, New Jersey



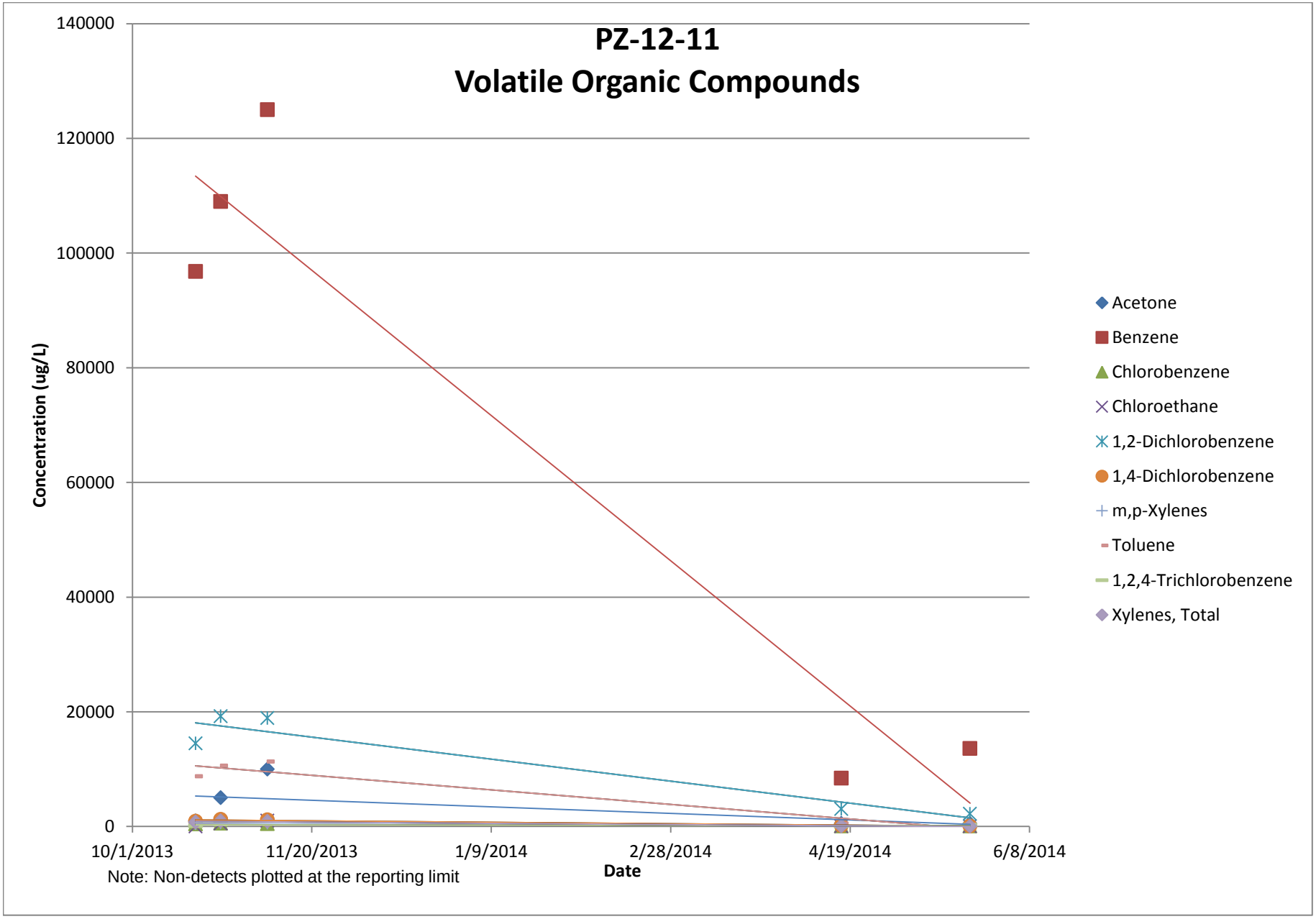
Note: Non-detects plotted at the reporting limit

Concentration vs. Time
Impoundment 2 Groundwater Analytical Trends
American Cyanamid Superfund Site
Bridgewater, New Jersey

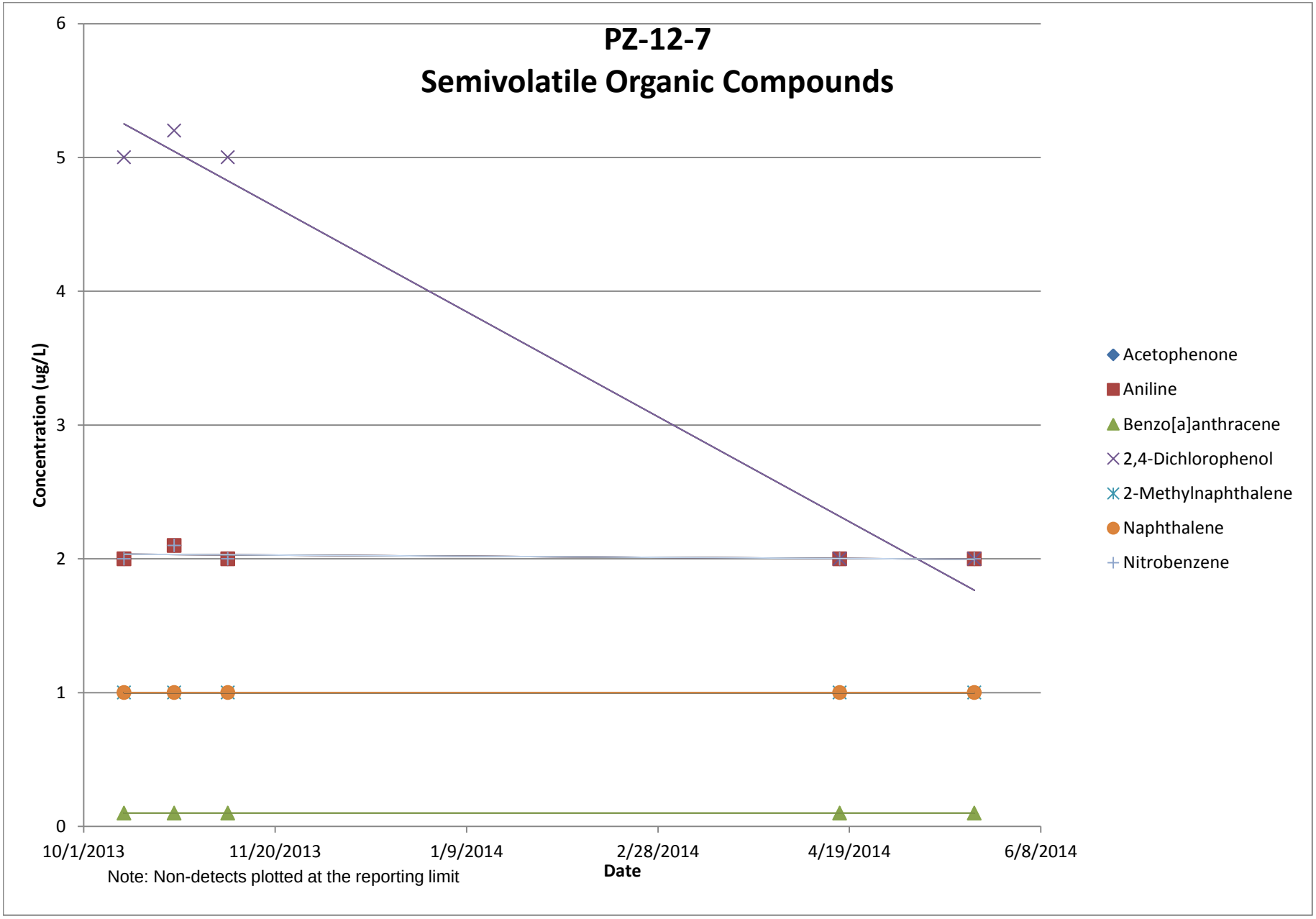


Note: Non-detects plotted at the reporting limit

Concentration vs. Time
Impoundment 2 Groundwater Analytical Trends
American Cyanamid Superfund Site
Bridgewater, New Jersey

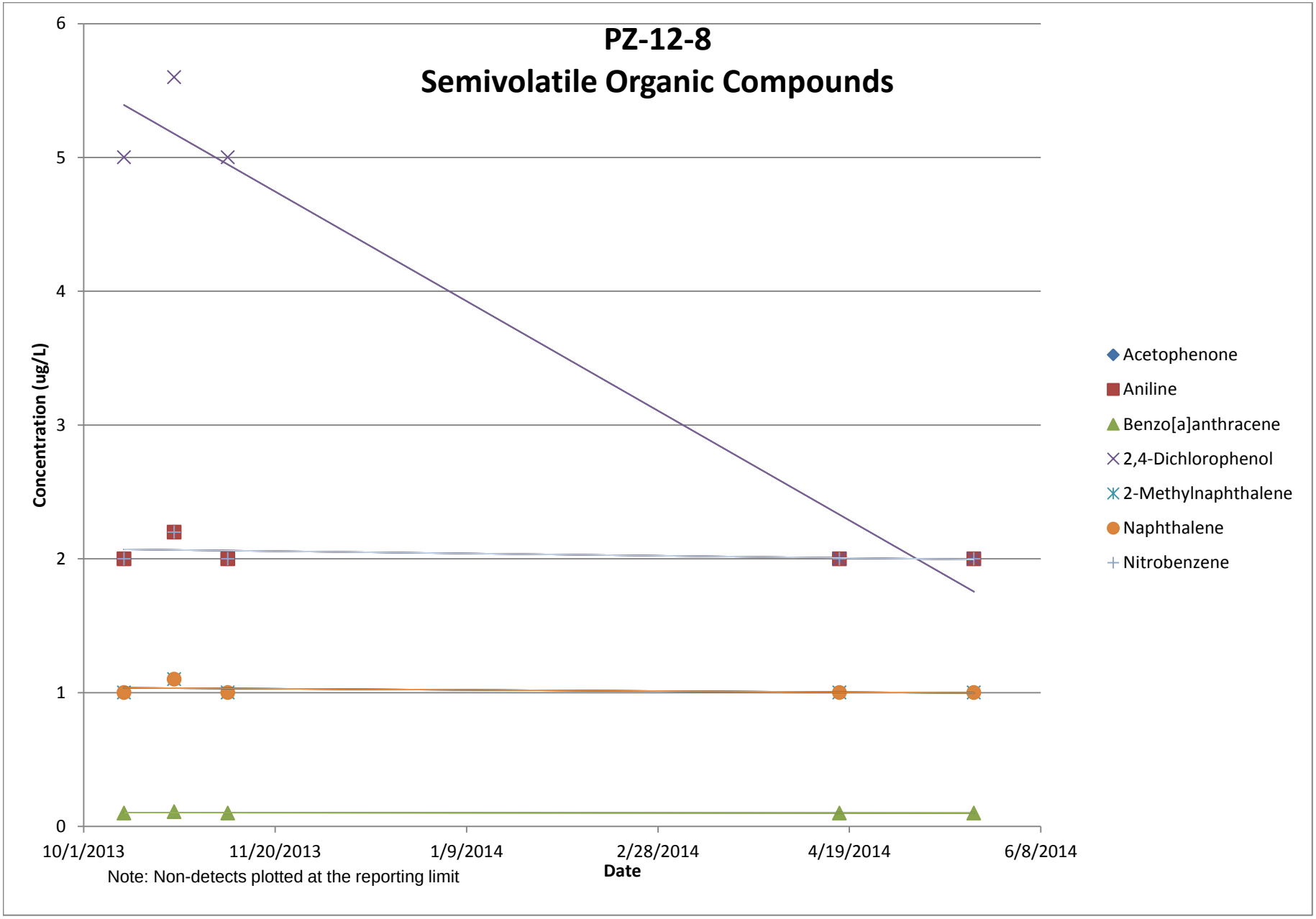


Note: Non-detects plotted at the reporting limit



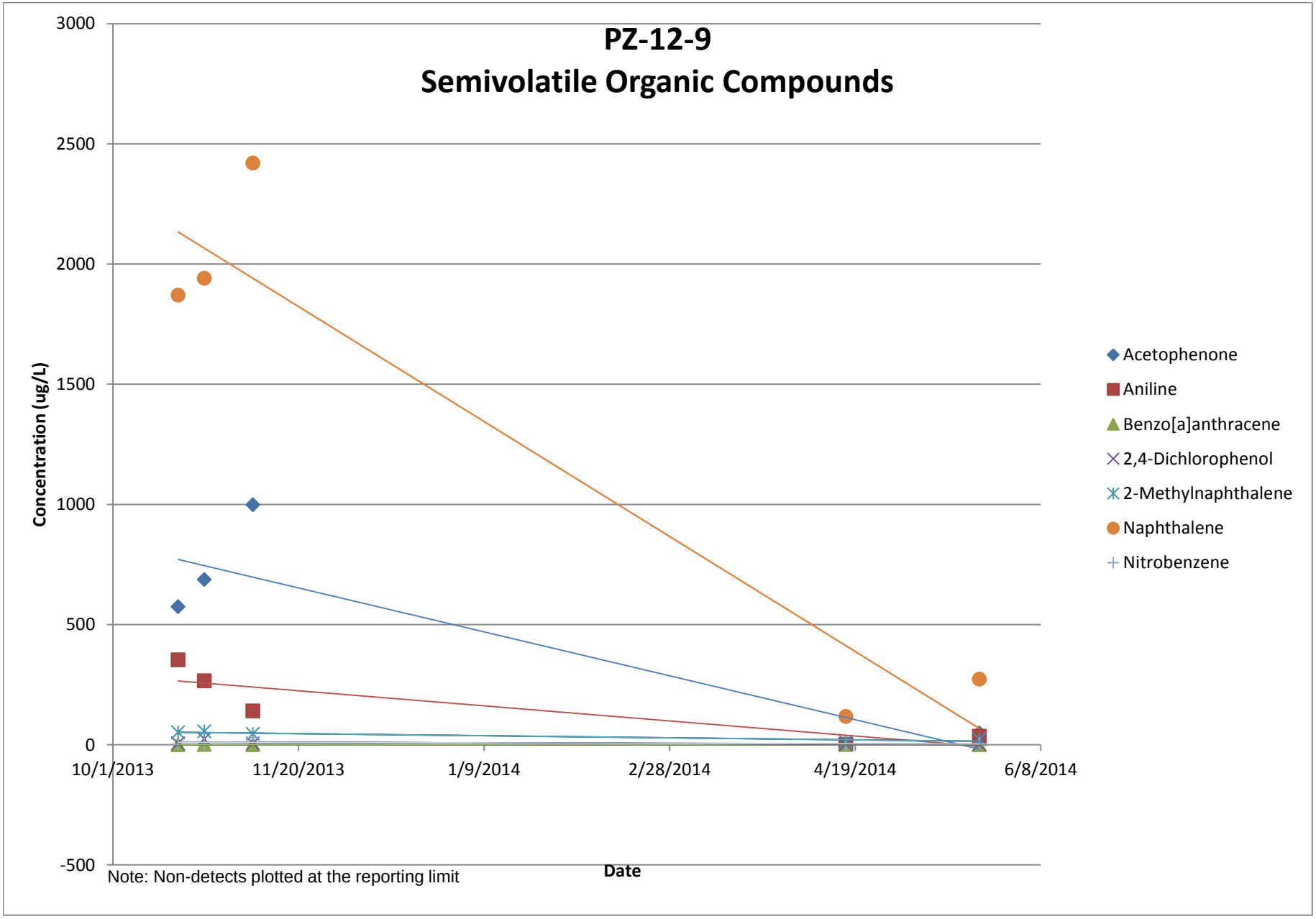
Note: Non-detects plotted at the reporting limit

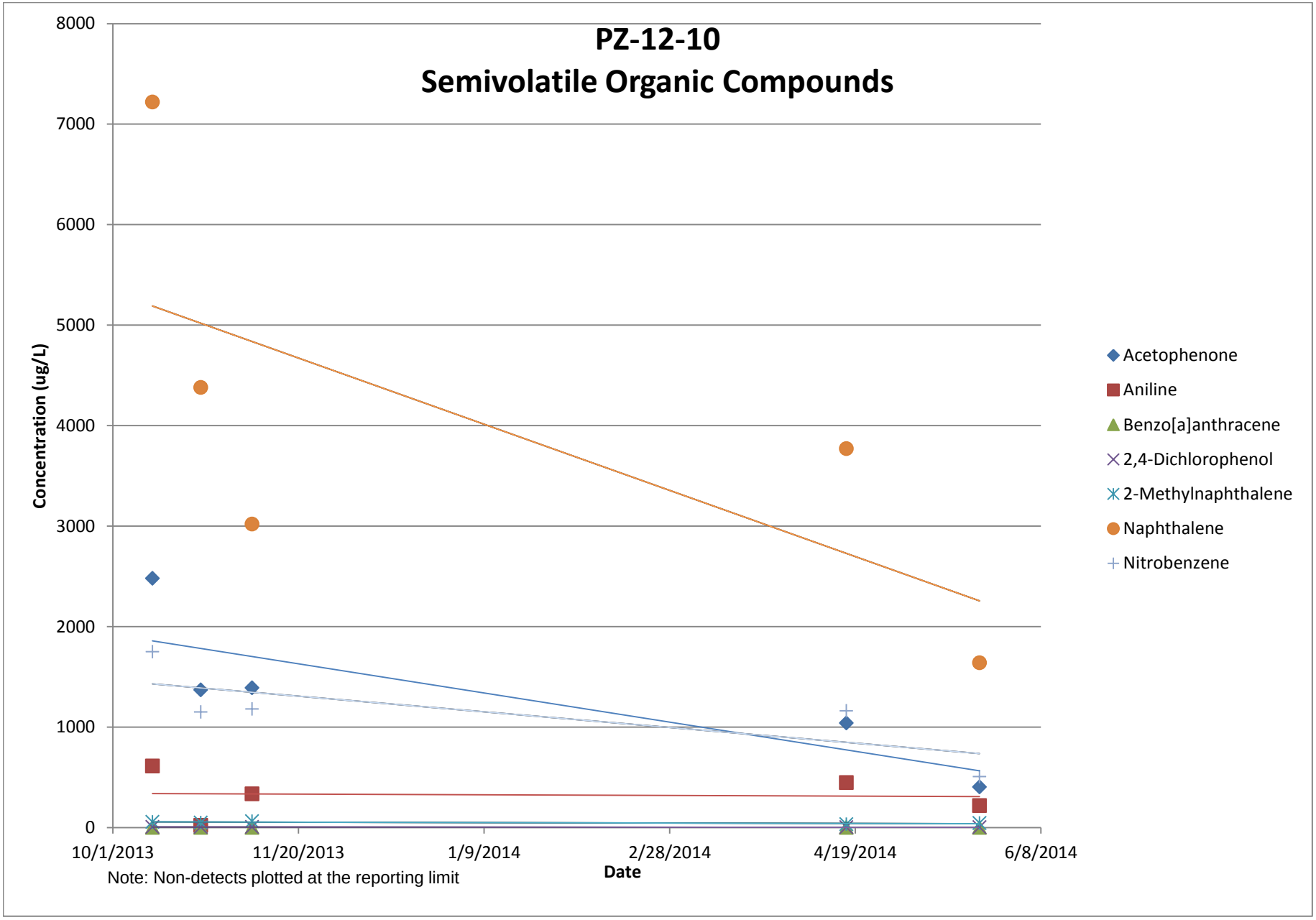
Concentration vs. Time
Impoundment 2 Groundwater Analytical Trends
American Cyanamid Superfund Site
Bridgewater, New Jersey



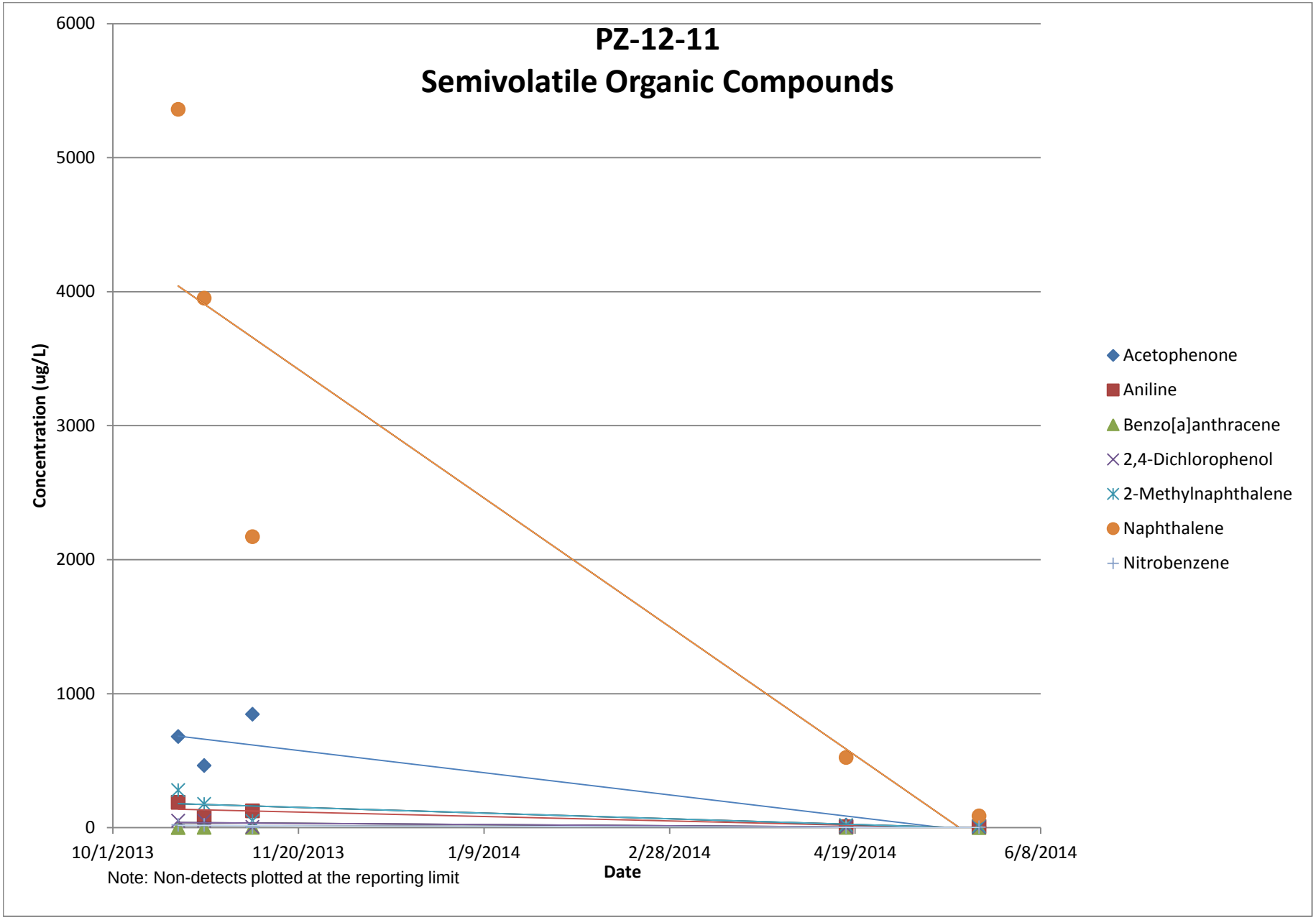
Note: Non-detects plotted at the reporting limit

Concentration vs. Time
Impoundment 2 Groundwater Analytical Trends
American Cyanamid Superfund Site
Bridgewater, New Jersey



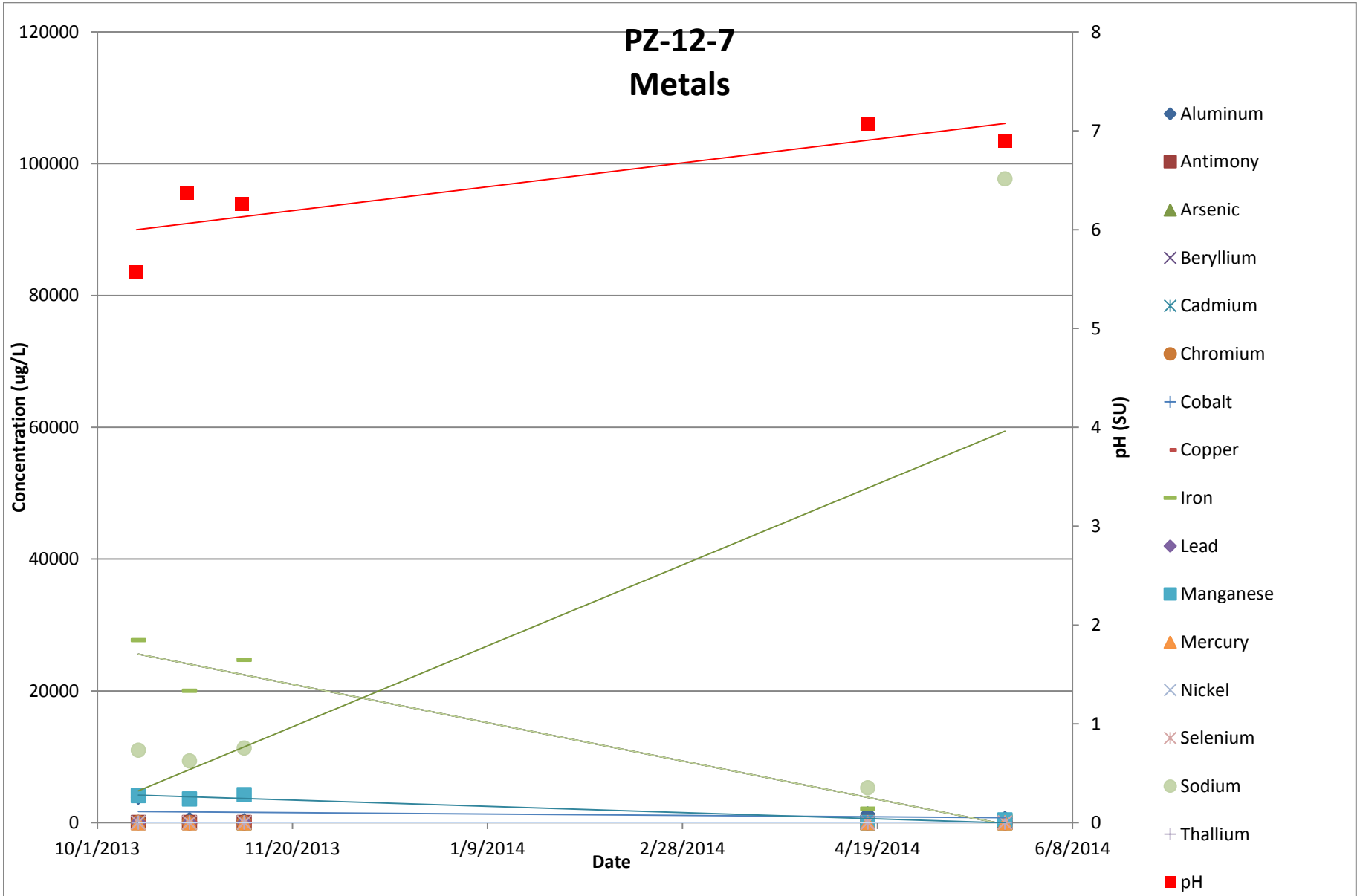


Note: Non-detects plotted at the reporting limit



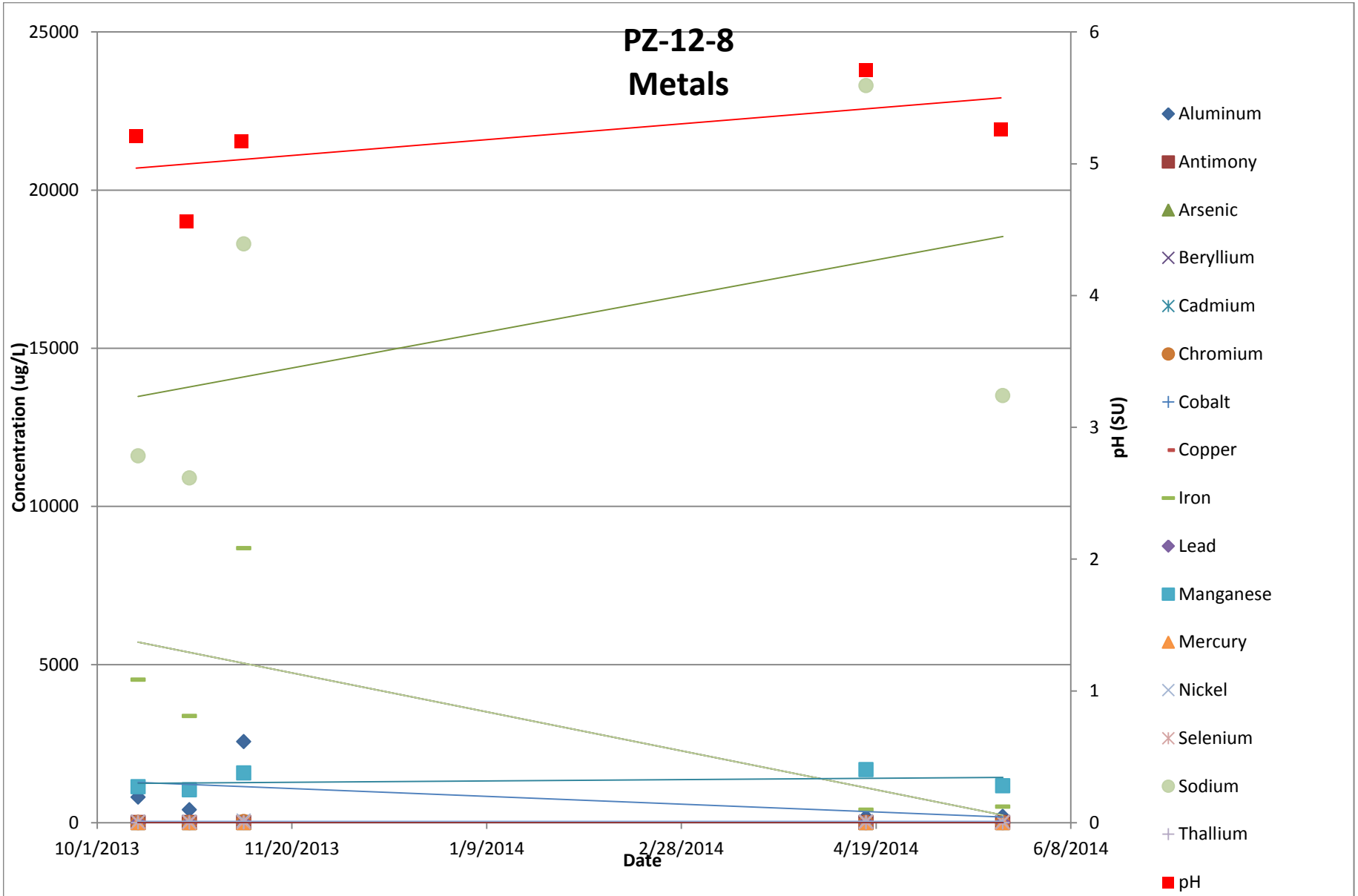
Note: Non-detects plotted at the reporting limit

Concentration vs. Time
Impoundment 2 Groundwater Analytical Trends
American Cyanamid Superfund Site
Bridgewater, New Jersey



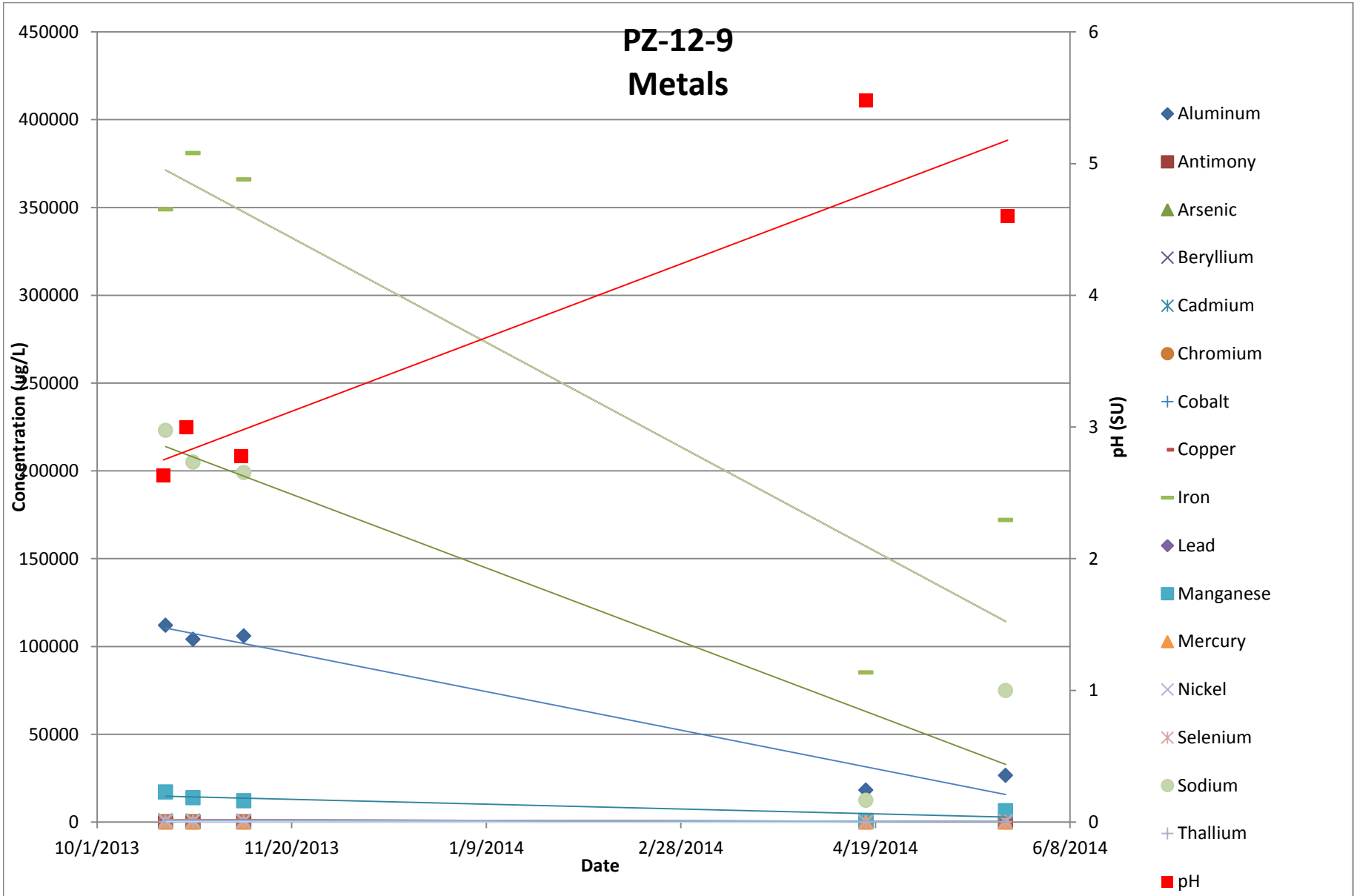
Note: Non-detects plotted at the reporting limit; pH values are at the time of sampling

Concentration vs. Time
Impoundment 2 Groundwater Analytical Trends
American Cyanamid Superfund Site
Bridgewater, New Jersey



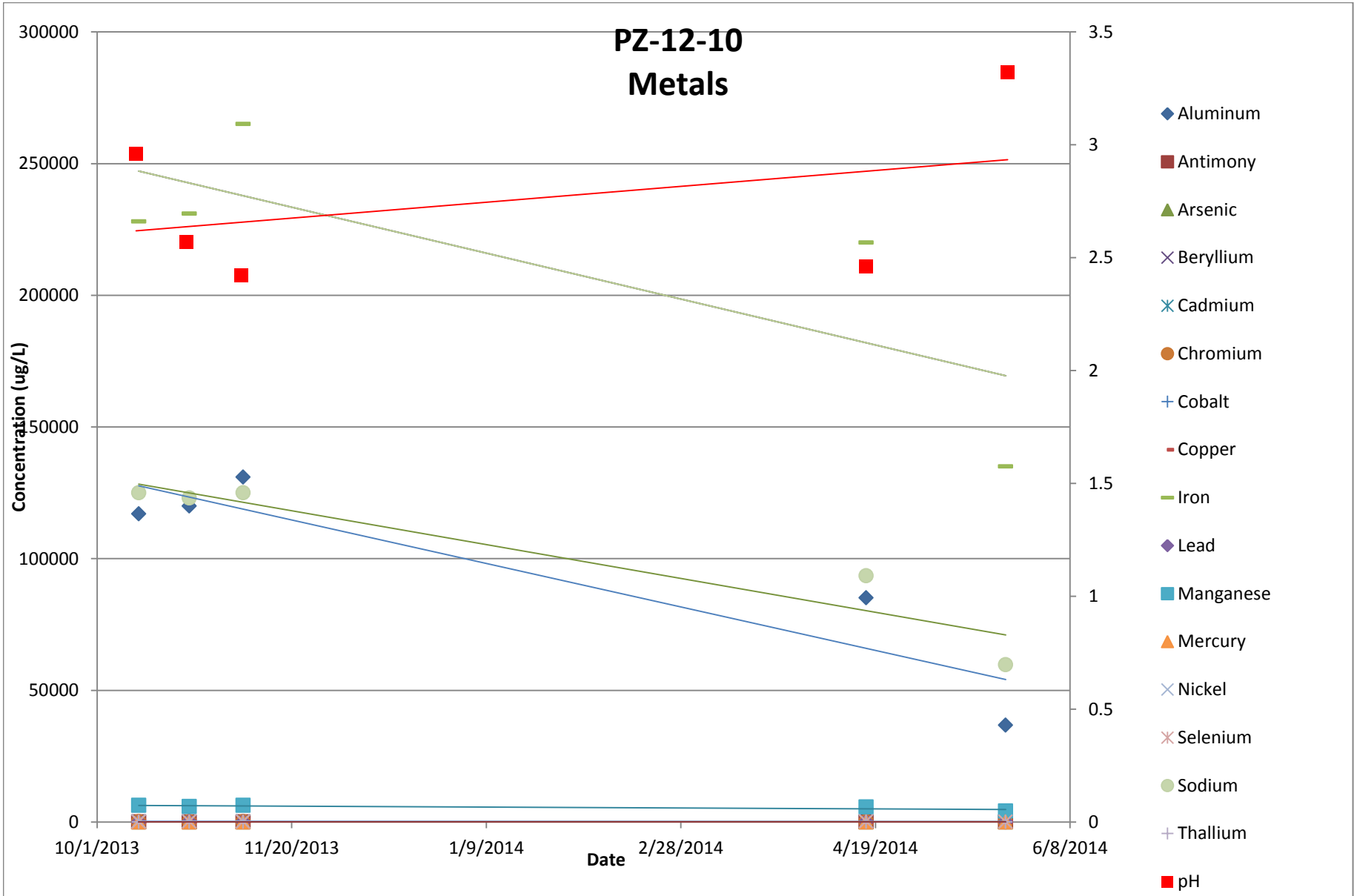
Note: Non-detects plotted at the reporting limit; pH values are at the time of sampling

Concentration vs. Time
Impoundment 2 Groundwater Analytical Trends
American Cyanamid Superfund Site
Bridgewater, New Jersey



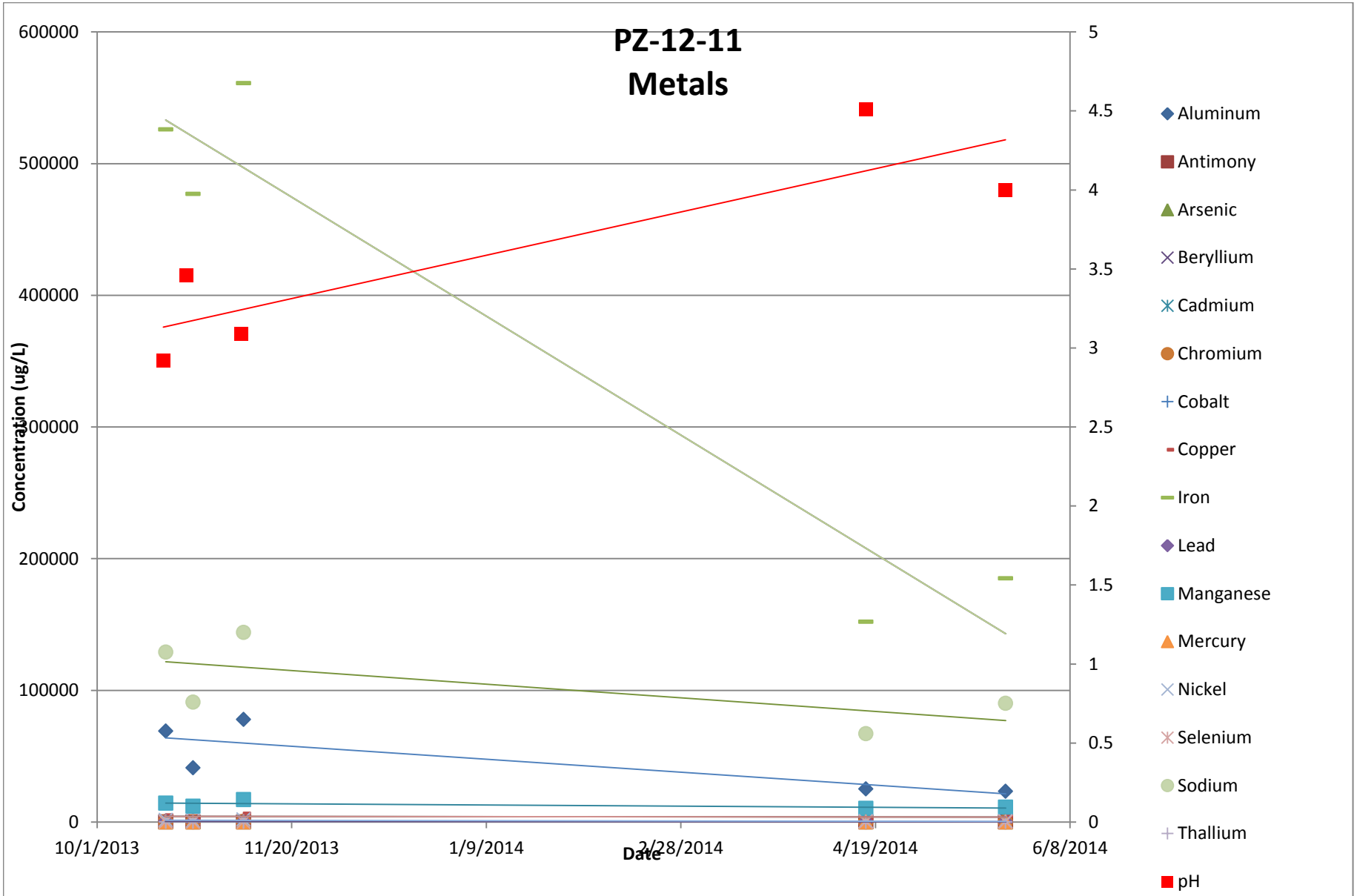
Note: Non-detects plotted at the reporting limit; pH values are at the time of sampling

Concentration vs. Time
Impoundment 2 Groundwater Analytical Trends
American Cyanamid Superfund Site
Bridgewater, New Jersey



Note: Non-detects plotted at the reporting limit; pH values are at the time of sampling

Concentration vs. Time
Impoundment 2 Groundwater Analytical Trends
American Cyanamid Superfund Site
Bridgewater, New Jersey



Note: Non-detects plotted at the reporting limit; pH values are at the time of sampling

APPENDIX 4-5

DATA USABILITY SUMMARY REPORT

Appendix 4-5
Data Quality Assessment
Impoundment 2 Groundwater Monitoring Report
American Cyanamid Superfund Site
Bridgewater, New Jersey

This report presents the findings of the data quality assessment performed on the analyses of environmental samples collected for the Impoundment 2 Groundwater Monitoring Report. Impoundment 2 groundwater monitoring was conducted at the American Cyanamid Superfund Site (Site), located in Bridgewater, New Jersey. Groundwater samples were collected during five different monitoring events; Round 1A/1B Baseline (October 2013), Round 2 Post-Clay Investigation (October 2013), Round 3 Post-Caisson Installation (November 2013), Round 4 Mid-ISTT Phase (April 2014), and Round 5 Post-ISTT Phase (May 2014). The chemical data for samples collected at the Site were validated to identify data quality issues which could affect the use of the data for decision making purposes. A total of 25 primary samples and the following Quality Assurance/Quality Control (QA/QC) samples were collected:

- Seven trip blanks;
- Five rinsate blanks;
- Four matrix spike / matrix spike duplicate (MS/MSD) samples; and
- Four field duplicate parameter sets.

Samples were analyzed by Accutest Laboratories (Accutest) of Dayton, New Jersey. Accutest completed all analyses utilizing the following guidelines:

- VOCs following United States Environmental Protection Agency (USEPA) SW846[1] Method 8260B Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (December 1996);
- SVOCs following USEPA SW846 Method 8270D and 8270D by SIM Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (February 2007);
- TAL Total Metals by USEPA SW846 Method 6010C Inductively Coupled Plasma – Atomic Emission Spectrometry (ICP-AES) (February 2007); and
- Total Mercury by USEPA SW846 Method 7470A Mercury in Liquid Waste (Manual Cold-Vapor Technique (September 1994).

Information regarding the sample point identifications, analytical methods, QC samples, sampling dates, and contract laboratory sample delivery group (SDG) designations are summarized in Table 4-5-1.

All data were evaluated for general method conformance, gross blank contamination and field precision. Monitoring well samples were reported in NJDEP "Reduced Laboratory Deliverables Format" suitable for data evaluation. Data evaluation was performed by Golder Associates Inc. following guidelines provided

[1] USEPA, 1996, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846): 3rd edition, Environmental Protection Agency, National Center for Environmental Publications, Cincinnati, Ohio, accessed at URL http://www.epa.gov/epaoswer/hazwaste/test/sw846.htm.

by USEPA Region 2 Standard Operating Procedures (SOP) No. HW-24, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B (August 2008), No. HW-22, Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D (August 2008), No. HW-2a, ICP-AES Data Validation (December 2012), and No. HW-2c Mercury and Cyanide Data Validation (December 2012), where applicable to the USEPA methods. When there was a conflict between the Region 2 guidelines and the analytical methodology, method-specific criteria and professional judgment was used. In general, chemical results for the samples collected at the Site were qualified on the basis of outlying precision or accuracy parameters, or on the basis of professional judgment. The following definitions provide a brief explanation of the qualifiers which may have been assigned to data during the data validation process.

J The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).

UJ The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

Table 4-5-2 summarizes all qualifications applied to the data, with applicable qualifier codes. A summary of the analytical results is presented in Table 4-6 of the Impoundment 2 Groundwater Monitoring Report. The data generated during the Impoundment 2 Groundwater Monitoring Events met the QC criteria established in the respective USEPA and Standard methods and Region 2 guidelines, except as noted below:

- Select metals results were qualified as estimated (J/UJ) when detection limits were elevated due to interference or matrix interferences.
- Select SVOC results were qualified estimated (J/UJ) when detection limits were elevated due to reduced sample extraction volume.
- Select SVOC results were qualified estimated (J/UJ) when the extraction was performed outside of the holding time.
- Select SVOC results were qualified as estimated (UJ) due to LCS recoveries below QC criteria.
- Select SVOC results were rejected (R) due to LCS recoveries grossly below QC criteria.
- Select ethyl ether and bis (2-chloroisopropyl) ether results were qualified estimated (J/UJ) due to LCS recoveries outside of QC criteria.
- Select metals results were negated (U) and reported at the reporting limit due to method blank contamination.
- Select aluminum results were qualified as estimated (J) due to MS/MSD recoveries above QC criteria.

- Select diphenylamine results were qualified as estimated (UJ) when this compound was not spiked in the LCS.
- Select benzoic acid results were qualified estimated (J) due to issues with the analytical instrument reporting limit.
- Select acetone and 1,2-dichlorobenzene results were negated (U) and reported at the reporting limit due to rinsate blank contamination.
- Select metals results were qualified as estimated (J) when serial dilution percent differences (%D) were above QC criteria.
- Select pentachlorophenol results were rejected (R) due to surrogate recoveries below 10%.
- Select VOC and SVOC results were qualified estimated (J/UJ) due to surrogate recoveries outside of QC criteria.
- For inorganics, all laboratory B qualifiers were changed to J qualifiers to remain consistent with organic qualifiers.

Based on the data validations and data quality assessment, the analytical data for samples collected at the Site were determined to be acceptable (including estimated data), except for rejected data (R), for their intended use. Generally, acceptable levels of accuracy and precision, based on LCS, MS/MSD, field duplicate and surrogate recoveries, were achieved for the data. In addition, the data completeness (i.e. the ratio of the amount of valid data obtained to the amount expected, including estimated data (J/UJ)) was 99.9 percent.

Table 4-5-1
Sample Point Identifications
Impoundment 2 Groundwater Monitoring Report
American Cyanamid Superfund Site
Bridgewater, New Jersey

Lab SDG	Well ID	Matrix	Date Sampled	TCL VOCs (modified)	TCL SVOCs (modified)	TAL Total Metals	Field Duplicate	MS/MSD
Round 1A/1B								
JB50036	FDGW-101113 (PZ-12-8)	GW	10/11/2013	x	x	x	x	
JB50036	PZ-12-10	GW	10/11/2013	x	x	x		
JB50668	PZ-12-11	GW	10/18/2013	x	x	x		
JB50036	PZ-12-7	GW	10/11/2013	x	x	x		x
JB50036	PZ-12-8	GW	10/11/2013	x	x	x		
JB50668	PZ-12-9	GW	10/18/2013	x	x	x		
JB50036	RBGW-101113	RB	10/11/2013	x	x	x		
JB50036	TBGW-101113	TB	10/11/2013	x				
Round 2								
JB51185	PZ-12-10	GW	10/24/2013	x	x	x		
JB51280	PZ-12-11	GW	10/25/2013	x	x	x		
JB51185	PZ-12-7	GW	10/24/2013	x	x	x		
JB51185	PZ-12-8	GW	10/24/2013	x	x	x		
JB51280	PZ-12-9	GW	10/25/2013	x	x	x		
JB51185	RBGW-102413	RB	10/24/2013	x	x	x		
JB51185	TBGW-102413	TB	10/24/2013	x				
JB51280	TBGW-102513	TB	10/25/2013	x				
Round 3								
JB52449	PZ-12-10	GW	11/7/2013	x	x	x		
JB52449	PZ-12-10-FD	GW	11/7/2013	x	x	x	x	
JB52449	PZ12-11	GW	11/7/2013	x	x	x		
JB52449	PZ-12-7	GW	11/7/2013	x	x	x		
JB52449	PZ-12-8	GW	11/7/2013	x	x	x		x
JB52449	PZ-12-9	GW	11/7/2013	x	x	x		
JB52449	RBGW-110713	RB	11/7/2013	x	x	x		
JB52449	TBGW-110713	TB	11/7/2013	x				
Round 4								
JB64880	FDGW_041614 (PZ-12-7)	GW	4/16/2014	x	x	x	x	
JB64880	PZ-12-10	GW	4/16/2014	x	x	x		
JB64880	PZ-12-11	GW	4/16/2014	x	x	x		
JB64880	PZ-12-7	GW	4/16/2014	x	x	x		
JB64880	PZ-12-8	GW	4/16/2014	x	x	x		x
JB64880	PZ-12-9	GW	4/16/2014	x	x	x		
JB64880	RBGW2_041614	RB	4/16/2014	x	x	x		
JB64880	TBGW_041614	TB	4/16/2014	x				
Round 5								
JB67527	PZ-12-10	GW	5/22/2014	x	x	x		
JB67527	PZ-12-10-FD	GW	5/22/2014	x	x	x	x	
JB67527	PZ-12-11	GW	5/22/2014	x	x	x		
JB67527	PZ-12-7	GW	5/21/2014	x	x	x		
JB67527	PZ-12-8	GW	5/21/2014	x	x	x		x
JB67527	PZ-12-9	GW	5/22/2014	x	x	x		
JB67527	RB-GW_052114	RB	5/21/2014	x	x	x		
JB67527	TB-GW_052114	TB	5/21/2014	x				
JB67527	TB-GW-052214	TB	5/22/2014	x				

Abbreviations:

GW = Groundwater
MS/MSD = Matrix Spike / Matrix Spike Duplicate
RB = Rinse Blank
SDG = Sample Delivery Group
SVOCs = Semivolatile Organic Compounds
TAL - Target Analyte List
TB = Trip Blank
TCL = Target Compound List
VOCs = Volatile Organic Compounds

Table 4-5-2
Data Qualifications
Impoundment 2 Groundwater Monitoring Report
American Cyanamid Superfund Site
Bridgewater, New Jersey

SDG	Sample Name	Constituent	New Result	New QL	Qualifier	Reason
JB67527	PZ-12-10-FD	Lead	-	-	J	Elevated detection limit due to high interfering element
JB67527	PZ-12-10-FD	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB67527	PZ-12-10-FD	Arsenic	-	-	J	Elevated detection limit due to high interfering element
JB67527	PZ-12-10	Lead	-	-	J	Elevated detection limit due to high interfering element
JB67527	PZ-12-10	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB67527	PZ-12-10	Arsenic	-	-	J	Elevated detection limit due to high interfering element
JB67527	PZ-12-11	Lead	-	-	J	Elevated detection limit due to high interfering element
JB67527	PZ-12-11	Manganese	-	-	J	Elevated detection limit due to high interfering element
JB67527	PZ-12-11	Chromium	-	-	J	Elevated detection limit due to high interfering element
JB67527	PZ-12-11	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB67527	PZ-12-11	Arsenic	-	-	J	Elevated detection limit due to high interfering element
JB67527	PZ-12-9	Lead	-	-	J	Elevated detection limit due to high interfering element
JB67527	PZ-12-9	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB67527	PZ-12-9	Arsenic	-	-	J	Elevated detection limit due to high interfering element
JB67527	PZ-12-8	Aluminum	200	-	U	Method blank contamination
JB67527	PZ-12-8	Copper	10	-	U	Method blank contamination
JB67527	PZ-12-8	Diphenylamine	-	-	UJ	Not spiked in LCS
JB67527	PZ-12-7	Diphenylamine	-	-	UJ	Not spiked in LCS
JB67527	PZ-12-11	Diphenylamine	-	-	UJ	Not spiked in LCS
JB67527	PZ-12-10-FD	Diphenylamine	-	-	UJ	Not spiked in LCS
JB67527	PZ-12-10	Diphenylamine	-	-	UJ	Not spiked in LCS
JB67527	PZ-12-9	Diphenylamine	-	-	UJ	Not spiked in LCS
JB67527	PZ-12-8	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB67527	PZ-12-7	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB67527	PZ-12-11	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB67527	PZ-12-10-FD	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB67527	PZ-12-10	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB67527	PZ-12-9	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB67527	PZ-12-8	1,4-Benzenediol	-	-	UJ	LCS recovery below QC criteria
JB67527	PZ-12-7	1,4-Benzenediol	-	-	UJ	LCS recovery below QC criteria
JB67527	PZ-12-11	1,4-Benzenediol	-	-	UJ	LCS recovery below QC criteria
JB67527	PZ-12-10-FD	1,4-Benzenediol	-	-	UJ	LCS recovery below QC criteria
JB67527	PZ-12-10	1,4-Benzenediol	-	-	UJ	LCS recovery below QC criteria
JB67527	PZ-12-9	1,4-Benzenediol	-	-	UJ	LCS recovery below QC criteria
JB64880	PZ-12-9	All Metals	-	-	J/UJ	Elevated detection limit due to matrix interference
JB64880	PZ-12-11	All Metals	-	-	J/UJ	Elevated detection limit due to matrix interference
JB64880	PZ-12-10	Arsenic	-	-	J	Elevated detection limit due to high interfering element
JB64880	PZ-12-10	Lead	-	-	J	Elevated detection limit due to high interfering element
JB64880	PZ-12-10	Mercury	-	-	J	Elevated detection limit due to matrix interference
JB64880	PZ-12-10	Selenium	-	-	UJ	Elevated detection limit due to high interfering element
JB64880	PZ-12-10	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB64880	PZ-12-9	Acetone	10	-	U	Rinsate blank contamination
JB64880	All samples	Diphenylamine	-	-	UJ	Not spiked in LCS
JB64880	All samples	Catechol	-	-	R	Analyte did not recover in LCS
JB64880	All samples	Hydroquinone	-	-	R	Analyte did not recover in LCS
JB50036	PZ-12-10	Lead	-	-	UJ	Elevated detection limit due to high interfering element
JB50036	PZ-12-10	Selenium	-	-	J	Elevated detection limit due to high interfering element
JB50036	PZ-12-10	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB50036	PZ-12-8	Diphenylamine	-	-	UJ	Not spiked in LCS
JB50036	FDGW_101113	Diphenylamine	-	-	UJ	Not spiked in LCS
JB50036	PZ-12-7	Diphenylamine	-	-	UJ	Not spiked in LCS
JB50036	PZ-12-10	Diphenylamine	-	-	UJ	Not spiked in LCS
JB50036	PZ-12-8	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB50036	FDGW_101113	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB50036	PZ-12-7	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB50036	PZ-12-10	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB50036	PZ-12-8	Hydroquinone	-	-	R	LCS recovery grossly below QC criteria
JB50036	FDGW_101113	Hydroquinone	-	-	R	LCS recovery grossly below QC criteria
JB50036	PZ-12-7	Hydroquinone	-	-	R	LCS recovery grossly below QC criteria
JB50036	PZ-12-10	Hydroquinone	-	-	R	LCS recovery grossly below QC criteria
JB50668	PZ-12-9	All SVOC analytes, excluding SVOC SIM analytes	-	-	J/UJ	Extracted outside of holding time
JB50668	PZ-12-11	All SVOC analytes, excluding SVOC SIM analytes	-	-	J/UJ	Extracted outside of holding time

Table 4-5-2
Data Qualifications
Impoundment 2 Groundwater Monitoring Report
American Cyanamid Superfund Site
Bridgewater, New Jersey

SDG	Sample Name	Constituent	New Result	New QL	Qualifier	Reason
JB50668	PZ-12-9	Antimony	-	-	UJ	Elevated detection limit due to high interfering element
JB50668	PZ-12-9	Arsenic	-	-	J	Elevated detection limit due to high interfering element
JB50668	PZ-12-9	Beryllium	-	-	J	Elevated detection limit due to high interfering element
JB50668	PZ-12-9	Lead	-	-	J	Elevated detection limit due to high interfering element
JB50668	PZ-12-9	Manganese	-	-	J	Elevated detection limit due to high interfering element
JB50668	PZ-12-9	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB50668	PZ-12-11	Aluminum	-	-	J	Elevated detection limit due to high interfering element
JB50668	PZ-12-11	Arsenic	-	-	J	Elevated detection limit due to high interfering element
JB50668	PZ-12-11	Beryllium	-	-	J	Elevated detection limit due to high interfering element
JB50668	PZ-12-11	Lead	-	-	J	Elevated detection limit due to high interfering element
JB50668	PZ-12-11	Selenium	-	-	J	Elevated detection limit due to high interfering element
JB50668	PZ-12-11	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB50668	PZ-12-11	All VOCs analyzed on 10/22/2013	-	-	J/UJ	Surrogate recovery outside QC criteria
JB50668	PZ-12-9	Pentachlorophenol	-	-	R	Surrogate recovery below 10%
JB50668	PZ-12-11	Pentachlorophenol	-	-	R	Surrogate recovery below 10%
JB50668	PZ-12-11	Benzo(a)anthracene	-	-	UJ	Surrogate recovery outside QC criteria
JB50668	PZ-12-11	Benzo(a)pyrene	-	-	UJ	Surrogate recovery outside QC criteria
JB50668	PZ-12-11	Benzo(b)fluoranthene	-	-	UJ	Surrogate recovery outside QC criteria
JB50668	PZ-12-11	Benzo(k)fluoranthene	-	-	UJ	Surrogate recovery outside QC criteria
JB50668	PZ-12-11	Dibenzo(a,h)anthracene	-	-	UJ	Surrogate recovery outside QC criteria
JB50668	PZ-12-11	Hexachlorobenzene	-	-	UJ	Surrogate recovery outside QC criteria
JB50668	PZ-12-11	Indeno(1,2,3-cd)pyrene	-	-	UJ	Surrogate recovery outside QC criteria
JB50668	PZ-12-9	Diphenylamine	-	-	UJ	Not spiked in LCS/LCSD
JB50668	PZ-12-9	Benzoic Acid	-	-	J	RDL from current instrument
JB50668	PZ-12-9	bis(2-Chloroisopropyl)ether	-	-	UJ	LCS recovery outside QC criteria
JB50668	PZ-12-9	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB50668	PZ-12-9	Hydroquinone	-	-	R	LCS recovery grossly below QC criteria
JB50668	PZ-12-11	Diphenylamine	-	-	UJ	Not spiked in LCS/LCSD
JB50668	PZ-12-11	Ethyl ether	-	-	J	LCS recovery outside QC criteria
JB50668	PZ-12-11	bis(2-Chloroisopropyl)ether			UJ	LCS recovery outside QC criteria
JB50668	PZ-12-11	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB50668	PZ-12-11	Hydroquinone	-	-	R	LCS recovery grossly below QC criteria
JB51185	PZ-12-10	Lead	-	-	J	Elevated detection limit due to high interfering element
JB51185	PZ-12-10	Selenium	-	-	UJ	Elevated detection limit due to high interfering element
JB51185	PZ-12-10	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB51185	PZ-12-8	1,2-Dichlorobenzene	1	-	U	Rinsate blank contamination
JB51185	PZ-12-8	Diphenylamine	-	-	UJ	Not spiked in LCS
JB51185	PZ-12-7	Diphenylamine	-	-	UJ	Not spiked in LCS
JB51185	PZ-12-10	Diphenylamine	-	-	UJ	Not spiked in LCS
JB51185	PZ-12-8	bis(2-Chloroisopropyl)ether	-	-	UJ	LCS recovery outside QC criteria
JB51185	PZ-12-7	bis(2-Chloroisopropyl)ether	-	-	UJ	LCS recovery outside QC criteria
JB51185	PZ-12-10	bis(2-Chloroisopropyl)ether	-	-	UJ	LCS recovery outside QC criteria
JB51185	PZ-12-8	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB51185	PZ-12-7	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB51185	PZ-12-10	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB51185	PZ-12-8	Hydroquinone	-	-	R	LCS recovery grossly below QC criteria
JB51185	PZ-12-7	Hydroquinone	-	-	R	LCS recovery grossly below QC criteria
JB51185	PZ-12-10	Hydroquinone	-	-	R	LCS recovery grossly below QC criteria
JB51185	PZ-12-8	Aluminum	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-8	Barium	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-8	Calcium	-	-	J	Serial dilution %D above QC criteria

Table 4-5-2
Data Qualifications
Impoundment 2 Groundwater Monitoring Report
American Cyanamid Superfund Site
Bridgewater, New Jersey

SDG	Sample Name	Constituent	New Result	New QL	Qualifier	Reason
JB51185	PZ-12-8	Magnesium	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-8	Manganese	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-8	Sodium	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-7	Aluminum	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-7	Barium	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-7	Calcium	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-7	Magnesium	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-7	Manganese	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-7	Sodium	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-10	Aluminum	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-10	Barium	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-10	Calcium	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-10	Magnesium	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-10	Manganese	-	-	J	Serial dilution %D above QC criteria
JB51185	PZ-12-10	Sodium	-	-	J	Serial dilution %D above QC criteria
JB51280	PZ-12-9	Lead	-	-	J	Elevated detection limit due to high interfering element
JB51280	PZ-12-9	Selenium	-	-	J	Elevated detection limit due to high interfering element
JB51280	PZ-12-9	Thallium	-	-	J	Elevated detection limit due to high interfering element
JB51280	PZ-12-11	Iron	-	-	J	Elevated detection limit due to high interfering element
JB51280	PZ-12-11	Lead	-	-	J	Elevated detection limit due to high interfering element
JB51280	PZ-12-11	Selenium	-	-	UJ	Elevated detection limit due to high interfering element
JB51280	PZ-12-11	Silver	-	-	J	Elevated detection limit due to high interfering element
JB51280	PZ-12-11	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB51280	PZ-12-11	All SVOCs, except Naphthalene	-	-	J/UJ	Elevated detection limit due to reduced sample extraction volume
JB51280	PZ-12-9	Diphenylamine	-	-	UJ	Not spiked in LCS
JB51280	PZ-12-11	Diphenylamine	-	-	UJ	Not spiked in LCS
JB51280	PZ-12-9	bis(2-Chloroisopropyl)ether	-	-	UJ	LCS recovery outside QC criteria
JB51280	PZ-12-11	bis(2-Chloroisopropyl)ether	-	-	UJ	LCS recovery outside QC criteria
JB51280	PZ-12-9	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB51280	PZ-12-11	Catechol	-	-	R	LCS recovery grossly below QC criteria
JB51280	PZ-12-9	Hydroquinone	-	-	R	LCS recovery grossly below QC criteria
JB51280	PZ-12-11	Hydroquinone	-	-	R	LCS recovery grossly below QC criteria
JB51280	PZ-12-9	Aluminum	-	-	J	Serial dilution %D above QC criteria
JB51280	PZ-12-9	Barium	-	-	J	Serial dilution %D above QC criteria
JB51280	PZ-12-9	Calcium	-	-	J	Serial dilution %D above QC criteria
JB51280	PZ-12-9	Magnesium	-	-	J	Serial dilution %D above QC criteria
JB51280	PZ-12-9	Manganese	-	-	J	Serial dilution %D above QC criteria
JB51280	PZ-12-9	Sodium	-	-	J	Serial dilution %D above QC criteria
JB51280	PZ-12-11	Aluminum	-	-	J	Serial dilution %D above QC criteria
JB51280	PZ-12-11	Barium	-	-	J	Serial dilution %D above QC criteria
JB51280	PZ-12-11	Calcium	-	-	J	Serial dilution %D above QC criteria
JB51280	PZ-12-11	Magnesium	-	-	J	Serial dilution %D above QC criteria
JB51280	PZ-12-11	Manganese	-	-	J	Serial dilution %D above QC criteria
JB51280	PZ-12-11	Sodium	-	-	J	Serial dilution %D above QC criteria
JB52449	PZ-12-10	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB52449	PZ-12-10-FD	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB52449	PZ-12-11	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB52449	PZ-12-9	Thallium	-	-	UJ	Elevated detection limit due to high interfering element
JB52449	PZ-12-10	Pentachlorophenol	-	-	R	Surrogate recovery below 10%
JB52449	PZ-12-10-FD	Pentachlorophenol	-	-	R	Surrogate recovery below 10%
JB52449	PZ-12-9	Pentachlorophenol	-	-	R	Surrogate recovery below 10%
JB52449	PZ-12-10	Diphenylamine	-	-	UJ	Not spiked in LCS
JB52449	PZ-12-10	Catechol	-	-	UJ	LCS recovery below QC criteria
JB52449	PZ-12-10	Hydroquinone	-	-	UJ	LCS recovery below QC criteria
JB52449	PZ-12-10-FD	Diphenylamine	-	-	UJ	Not spiked in LCS
JB52449	PZ-12-10-FD	Catechol	-	-	UJ	LCS recovery below QC criteria
JB52449	PZ-12-10-FD	Hydroquinone	-	-	UJ	LCS recovery below QC criteria
JB52449	PZ-12-8	Diphenylamine	-	-	UJ	Not spiked in LCS
JB52449	PZ-12-8	Catechol	-	-	UJ	LCS recovery below QC criteria
JB52449	PZ-12-8	Hydroquinone	-	-	UJ	LCS recovery below QC criteria
JB52449	PZ-12-7	Diphenylamine	-	-	UJ	Not spiked in LCS

Table 4-5-2
Data Qualifications
Impoundment 2 Groundwater Monitoring Report
American Cyanamid Superfund Site
Bridgewater, New Jersey

SDG	*Sample Name*	*Constituent*	*New Result*	*New QL*	*Qualifier*	*Reason*
JB52449	PZ-12-7	Catechol	-	-	UJ	LCS recovery below QC criteria
JB52449	PZ-12-7	Hydroquinone	-	-	UJ	LCS recovery below QC criteria
JB52449	PZ12-11	Diphenylamine	-	-	UJ	Not spiked in LCS
JB52449	PZ12-11	Catechol	-	-	UJ	LCS recovery below QC criteria
JB52449	PZ12-11	Hydroquinone	-	-	UJ	LCS recovery below QC criteria
JB52449	PZ-12-9	Diphenylamine	-	-	UJ	Not spiked in LCS
JB52449	PZ-12-9	Catechol	-	-	UJ	LCS recovery below QC criteria
JB52449	PZ-12-9	Hydroquinone	-	-	UJ	LCS recovery below QC criteria
JB52449	PZ-12-10	Aluminum	-	-	J	MS/MSD recoveries above QC criteria
JB52449	PZ-12-10-FD	Aluminum	-	-	J	MS/MSD recoveries above QC criteria
JB52449	PZ-12-8	Aluminum	-	-	J	MS/MSD recoveries above QC criteria
JB52449	PZ-12-7	Aluminum	-	-	J	MS/MSD recoveries above QC criteria
JB52449	PZ12-11	Aluminum	-	-	J	MS/MSD recoveries above QC criteria
JB52449	PZ-12-9	Aluminum	-	-	J	MS/MSD recoveries above QC criteria
JB52449	PZ-12-10	Zinc	-	-	J	Serial dilution %D above QC criteria
JB52449	PZ-12-10-FD	Zinc	-	-	J	Serial dilution %D above QC criteria
JB52449	PZ-12-8	Zinc	-	-	J	Serial dilution %D above QC criteria
JB52449	PZ-12-7	Zinc	-	-	J	Serial dilution %D above QC criteria
JB52449	PZ12-11	Zinc	-	-	J	Serial dilution %D above QC criteria
JB52449	PZ-12-9	Zinc	-	-	J	Serial dilution %D above QC criteria
All SDGs	All samples	All Inorganics	-	-	J	Laboratory B qualifier changed to J qualifier

Abbreviations:
%D = Percent Difference
LCS = Laboratory Control Sample
MS/MSD = Matrix Spike/Matrix Spike Duplicate
QC = Quality Control
QL = Quantitation Limit
SDG = Sample Delivery Group

Qualifiers:

J The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).

UJ The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.