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First Semester 2008
Compliance Monitoring Report
Lawrence Livermore National Laboratory
Site 300

September 30, 2008

Environmental Restoration Department

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1. Introduction

This Compliance Monitoring Report (CMR) summarizes the Lawrence Livermore National Laboratory (LLNL) Site 300 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial Action compliance monitoring activities performed during January through June 2008. The report is submitted in compliance with the Compliance Monitoring Plan (CMP)/Contingency Plan for Interim Remedies at Lawrence Livermore National Laboratory Site 300 (Ferry et al., 2002). As agreed to with the Regional Water Quality Control Board (RWQCB), the Central and Eastern General Services Area (GSA) monitoring data, which were collected in compliance with the GSA CMP (Rueth, 1998) and Eastern GSA post-shutdown monitoring requirements (Holtzapple, 2007) are also included in this report.

During the reporting period of January through June 2008, 4 million gallons of ground water and 32 million cubic feet of soil vapor were treated at Site 300, removing approximately 7 kilograms (kg) of volatile organic compounds (VOCs), 67 grams (g) of perchlorate, 560 kg of nitrate, 95 g of Research Department Explosive (RDX), and 2.5 g of a mixture of tetrabutyl orthosilicate (TBOS) and tetrakis (2-ethylbutyl) silane (TKEBS) (Table Summ-1).

Since remediation began in 1991, approximately 361 million gallons of ground water and over 352 million cubic feet of soil vapor have been treated, removing approximately 510 kg of VOCs, 730 g of perchlorate 5,800 kg of nitrate, 1 kg of RDX, and 9.4 kg of TBOS/TKEBs (Table Summ-2).

2. Extraction and Treatment System Monitoring and Ground and Surface Water Monitoring Programs

Section 2 presents the monitoring results for the Site 300 remediation systems, ground water monitoring network, and surface water sampling and analyses. These results are presented and discussed by operable unit (OU) as follows:

2.1. General Services Area OU 1

2.2. Building 834 OU 2

2.3. Pit 6 Landfill OU 3

2.4. High Explosive Process Area (HEPA) OU 4

2.5. Building 850 OU 5

2.6. Building 854 OU 6

2.7. Building 832 Canyon OU 7

2.8. Site-Wide OU 8 (Building 833, Building 801, Building 845, Building 851)

The locations of the Site 300 OUs are shown in Figure 2-1. The Pit 2, 8, and 9 Landfills (OU 8) are discussed in Section 3.

Total VOC isoconcentration contour maps were constructed by summing the results of the following VOCs: trichloroethene (TCE); tetrachloroethene (PCE); cis-1,2-dichloroethene (cis-1,2-DCE); trans-1,2-dichloroethene (trans-1,2-DCE); carbon tetrachloride; chloroform; 1,1-dichlorethane (1,1-DCA); 1,2-dichlorethane (1,2-DCA); 1,1-dichloroethene (1,1-DCE);

1,1,1-trichloroethane (1,1,1-TCA); trichlorofluoromethane (Freon 11); 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113); 1,1,2-trichloroethane (1,1,2-TCA); and vinyl chloride. The resultant sums were rounded to two significant figures before plotting on the maps.

Only primary contaminants of concern (COC) isoconcentration contour maps are presented in the semi-annual reports. Secondary COC data will be presented in the annual report.

Estimated hydraulic capture associated with extraction wells and estimated areas of hydraulic influence associated with injection of treated ground water are presented in the semi-annual CMRs. The capture zones are defined only for extraction and injection wells that were active at the time that the ground water elevations were measured. The capture zones presented in this report differ from those presented in the Site-Wide Remediation Evaluation Summary Report (Ferry et al., 2006), because the Site-Wide Remediation Evaluation Summary Report capture zones were estimated using computer models such as Winflow or FEFLOW, whereas the CMR capture zones are based primarily on the equipotentials of the ground water elevation contour maps. As a general rule the capture zones were extended to two upgradient ground water elevation contours. For cases where control is sparse, a Thiem solution for steady-state radial flow in the vicinity of a pumping well was used to control the ground water elevation contours. Hydraulic capture and injection zones are displayed on ground water elevation and primary COC maps for all OUs where active ground water remediation is occurring (i.e., OU 1, OU 2, OU 4, OU 6, and OU 7). Capture zones for secondary COC will be presented in the annual report.

To present a contemporaneous view of ground water elevations and COC plumes, the maps were constructed using the quarterly sampling data set available with the most complete geographic coverage for the 6-month reporting period. In some cases where multiple samples were collected during the selected quarter, the maximum concentration detected is presented on the COC plume map. In some rare cases, where additional samples were collected during the reporting period but not the selected quarter depicted on the COC plume map, the maximum detection for a particular well may not be shown on the COC plume map. Specific ground water monitoring data are discussed within each OU section of this report and all ground water analytical data are included in the data tables for the annual report.

Treatment facility operations and maintenance issues that occurred during the first semester of 2008 and influent and effluent analytical data collected during first semester 2008 are included in this report. Treatment facility pH data collected during the first semester of 2008 are presented in Appendix A. Ground and surface water monitoring analytical data and ground water elevations for the entire calendar year 2008 will be presented in the annual report. In addition, data collected during the installation of new wells or boreholes will be presented in the annual report.

2.1. General Services Area (GSA) OU 1

The GSA OU consists of the Eastern and Central GSA areas.

The source of contamination in the Eastern GSA is an abandoned debris burial trench that received craft shop debris. Leaching of solvents on the debris resulted in the release of contaminants to ground water.

A ground water extraction and treatment system (GWTS) operated in the Eastern GSA from 1991 to 2007 to remove VOCs from ground water. VOC-contaminated ground water was extracted from three wells (W-26R-03, W-25N01, and W-25N-24), located downgradient from the debris burial trenches, at a combined flow rate of 45 gallons per minute (gpm). The extracted ground water was treated in three 1,000-pound (lb) granular activated carbon units that removed VOCs through adsorption. The treated effluent water was discharged to nearby Corral Hollow Creek.

Remediation efforts in the Eastern GSA have successfully reduced concentrations of TCE and other VOCs in ground water to below their respective cleanup standards set in the GSA Record of Decision (ROD) (United States [U.S.] Department of Energy [DOE], 1997). The Eastern GSA ground water extraction and treatment system was shut off on February 15, 2007 with the U.S. Environmental Protection Agency (EPA), RWQCB, and California Department of Toxic Substances Control (DTSC) approval. As required by the GSA ROD, ground water monitoring will be conducted for 5 years after shutdown to determine if VOC concentrations rise or "rebound" above cleanup standards. VOC concentrations remain below their cleanup standards after 1 year and 8 months following shutdown of the treatment facility.

A map of the Eastern GSA, showing the locations of monitoring and extraction wells and the treatment facility is presented in Figure 2.1-1.

At the Central GSA, chlorinated solvents, mainly TCE, were used as degreasing agents in craft shops, such as Building 875. Rinse water from these degreasing operations was disposed of in dry wells. Typically, dry wells were gravel-filled holes about 3 to 4 feet (ft) deep and two ft in diameter. The Central GSA dry wells were used until 1982. In 1983 and 1984, these dry wells were decommissioned and excavated.

The Central GSA GWTS began operation since 1992 removing VOCs from ground water. Contaminated ground water is extracted from eight wells (W-7I, W-875-07, W-875-08, W-873-07, W-872-02, W-7O, W-7P, and W-7R) at an approximate combined flow rate of approximately 3.0 gpm. The Central GSA GWTS began receiving partially treated water from the Building 830-Distal South (830-DISS) facility at the end of the first semester 2007, increasing the flow rate to approximately 5.0 to 6.0 gpm. The current GWTS configuration includes particulate filtration, air stripping to remove VOCs from extracted water, and granular activated carbon (GAC) to treat vapor effluent from the air stripper. Treated ground water is discharged to the surrounding natural vegetation using misting towers. Treated vapors are discharged to the atmosphere under permit from the San Joaquin Valley Unified Air Pollution Control District.

The Central GSA soil vapor extraction and treatment system (SVTS) began operation in the GSA adjacent to the Building 875 dry well contaminant source area in 1994 removing VOCs from soil vapor. Four wells (W-875-07, W-875-08, W-7I, and W-875-10) were utilized to extract soil vapor at an approximate flow rate of 17.6 standard cubic feet per minute (scfm). Vapor extraction from W-7I was discontinued in November 2005 due to lack of vapor flow. Soil vapor extraction from the entire wellfield (W-7I, W-875-07, W-875-08, W-875-09, W-875-10, W-875-11, and W-875-15) was initiated in November 2007 after installation of individual vapor flow meters, increasing the total flow rate to approximately 32 scfm. Simultaneous ground water extraction in the vicinity lowers the elevation of the ground water surface and maximizes the volume of unsaturated soil influenced by vapor extraction. The current SVTS configuration includes a water knockout chamber, a rotary vane blower, and four 140-lb vapor-phase GAC columns arranged in series. Treated vapors are discharged to the atmosphere under permit from the San Joaquin Valley Unified Air Pollution Control District.

A map of the Central GSA, showing the locations of monitoring and extraction wells and treatment facilities is presented in Figure 2.1-2.

2.1.1. GSA Ground Water and Soil Vapor Extraction and Treatment System Operations and Monitoring

This section is organized into five subsections: facility performance assessment; operations and maintenance issues; receiving water monitoring; compliance summary; and sampling plan evaluation and modifications.

2.1.1.1. GSA Facility Performance Assessment

As discussed above, the Eastern GSA GWTS has been shut down since February 15, 2007. Subsequently, only the Central GSA treatment system data will be presented in this report. The monthly ground water and soil vapor discharge volumes and rates and operational hours are summarized in Table 2.1-1. The total volume of ground water and vapor extracted and treated and mass removed during the reporting period is presented in Table Summ-1. The cumulative volume of ground water and soil vapor treated and discharged and mass removed is summarized in Table Summ-2. Analytical results for influent and effluent samples are shown in Tables 2.1-2 and 2.1-3. The pH measurement results are presented in Appendix A.

2.1.1.2. GSA Operations and Maintenance Issues

There were no operations and maintenance issues at the Eastern GSA GWTS since it was shut down on February 15, 2007 because ground water cleanup standards have been achieved (see Section 2.1).

Continuous operations of the Central GSA GWTS and SVTS were interrupted by the following:

- Failed compressor on December 12, 2007. The compressor was repaired February 4. However, ground water was not extracted from wells W-7R and W-7P until February 11 while freeze damage to the pipeline to these wells was repaired.
- Site power outages from February 8 to 11 and February 13 to 20.

2.1.1.3. GSA Compliance Summary

The Central GSA GWTS operated in compliance with the Substantive Requirements for Wastewater Discharge during the first semester 2008. The Central GSA SVTS system operated in compliance with the San Joaquin Valley Unified Air Pollution Control District permit limitations.

2.1.1.4. GSA Facility Sampling Plan Evaluation and Modifications

The Central GSA treatment facility sampling and analysis plan complies with Substantive Requirements and the GSA CMP (Rueth, 1998) monitoring requirements. The treatment facility sampling and analysis plan is presented in Table 2.1-4. Effluent samples were collected twice in February due to the facility being off-line in January. The only other modification made to the plan during the reporting period was the addition of nitrate monitoring due to the piping of Building 830-Distal South (830-DISS) effluent to the Central GSA for VOC treatment. The existing Central GSA extraction wells have very low nitrate concentrations, while the 830-DISS effluent contains nitrates above 45 milligrams per liter (mg/L). However, the final effluent from Central GSA remains below the 45 mg/L effluent limitation.

2.1.1.5. GSA Treatment Facility and Extraction Wellfield Modifications

As discussed previously, the Central GSA treatment facility was modified during 2007. The 830-DISS effluent was connected to the Central GSA GWTS for VOC treatment and subsequent discharge by misting.

The Central GSA SVTS wellfield was modified during 2007 by increasing the number of soil vapor extraction (SVE) extraction wells from three (W-875-07, W-875-08, and W-875-10) to utilizing the entire SVTS wellfield (W-7I, W-875-07, W-875-08, W-875-09, W-875-10, W-875-11, and W-875-15). In addition, each well was outfitted with vapor flow meters so individual volumes and VOC mass removed could be calculated. Therefore, SVTS influent samples are no longer needed and VOC concentrations to the SVE system are no longer reported. The required SVTS sample ports are monitored using an organic vapor monitor (OVA) as per the San Joaquin Valley Unified Air Pollution Control District permit.

2.1.2. GSA Surface Water and Ground Water Monitoring

The sampling and analysis plans for ground water monitoring at the Central and Eastern GSA are presented in Tables 2.1-5 and 2.1-6, respectively. These tables also delineate and explain deviations from the sampling plan and indicate any additions made to the CMP.

During the reporting period, ground water monitoring was conducted in accordance with the Central GSA CMP and Eastern GSA post-shutdown monitoring requirements with the following exceptions; one required analysis was not performed due to a pump failure and three required analyses were not performed because there was insufficient water in the wells to collect the samples.

Ground water elevation contours and hydraulic capture zones for the extraction wells that were active during first semester for the Eastern and Central GSA are presented in Figures 2.1-3 and 2.1-4, respectively.

2.1.3. GSA Remediation Progress Analysis

This section is organized into four subsections: mass removal; analysis of contaminant distribution and concentration trends; remediation optimization evaluation; and performance issues.

2.1.3.1. GSA Mass Removal

The monthly ground water and soil vapor mass removal estimates are summarized in Table 2.1-7. The total mass removed during this reporting period and cumulative mass estimates are summarized in Table Summ-1 and Table Summ-2, respectively.

2.1.3.2. GSA Contaminant Concentrations and Distribution

VOCs are the primary COC in ground water at the GSA OU. VOCs are present at very low concentrations in ground water within Quaternary alluvial deposits (Qal) that directly overlie the $Tnbs_1$ bedrock in the Eastern GSA. A total VOC isoconcentration contour map based on data collected during the first semester 2008 for this shallow Qal-$Tnbs_1$ hydrostratigraphic unit (HSU) is presented in Figure 2.1.5.

Since extraction and treatment began at the Eastern GSA in 1991, TCE concentrations in ground water have decreased from a historic maximum of 74 micrograms per liter (µg/L) (W-26R-03, January 1992) to below analytical reporting limits (0.5 µg/L) in the majority of wells and to below the 5 µg/L cleanup standard for TCE in all wells. Within the Qal-$Tnbs_1$ HSU, total VOC concentrations detected in samples during the first semester 2008 ranged from 4.3 µg/L (W-26R-01, February 2008) to <0.5 µg/L. VOCs were not detected in ground water samples from wells in the deeper $Tnbs_1$ HSU during first semester 2008. First semester 2008 data indicate that TCE and other VOCs have not rebounded significantly and continue to remain below their cleanup standards in all wells since the Eastern GSA GWTS was shutdown in February 2007.

VOCs are the COCs in ground water and soil vapor at the Central GSA. There are three primary HSUs in the Central GSA:

- Qt-$Tnsc_1$ HSU, a shallow water-bearing zone in the western portion of the Central GSA. This HSU includes saturated Qt deposits, and the $Tnbs_2$ sandstone and $Tnsc_1$ siltstone/claystone bedrock units that subcrop beneath the Qt.
- $Tnbs_1$ HSU, a deeper regional aquifer within the western portion of the Central GSA which consists of $Tnbs_1$ sandstone bedrock.
- Qal-$Tnbs_1$ HSU, a shallow water-bearing zone within the eastern portion of the Central GSA. In the eastern portion of the Central GSA (near the sewage treatment pond), Qt deposits and the $Tnbs_2$ and $Tnsc_1$ bedrock units are not present. Qal deposits directly overlie the shallow $Tnbs_1$ bedrock that comprises the Qal-$Tnbs_1$ HSU in this area.

A VOC plume exists within the Qt-$Tnsc_1$ and Qal-$Tnbs_1$ HSUs in the Central GSA. A total VOC isoconcentration contour map based on data collected during the first semester 2008 for these HSUs is presented in Figure 2.1.6. The total VOC contour map depicts areas of hydraulic capture highlighted in blue that are based on ground water elevation data from June 2008.

Within the Qt-$Tnsc_1$ and Qal-$Tnbs_1$ HSUs, total VOC concentrations during first semester 2008 ranged from a maximum of 1,100 µg/L (W-875-07, April 2008) to <0.5 µg/L. The maximum total VOC ground water concentration continues to be located in the dry well pad area. Prior to remediation, the maximum total VOC concentration detected in Central GSA ground water was 272,000 µg/L (W-875-07) in 1992, compared to the first semester 2008 maximum of 1,100 µg/L. This decline in VOCs demonstrates the efficacy of ongoing cleanup operations. The fact that VOCs were not detected in ground water samples from any of the deeper $Tnbs_1$ HSU wells in the CGSA demonstrate that the VOC plume is being adequately captured by the extraction wellfield.

A TCE soil vapor concentration contour map is presented in Figure 2.1-7 and depicts the extent of TCE vapor on May 20, 2008. The extent and magnitude of the vapor plume is smaller than that depicted during the second semester 2007. The maximum VOC vapor concentration declined from 26 ppm_v in 2007 to 2.6 ppm_v during first semester 2008. The second semester 2007 plume represented rebound of TCE vapor during a prior three month SVE shutdown period.

2.1.3.3. GSA Remediation Optimization Evaluation

By 2007, ground water extraction and treatment had reduced VOC concentrations in all Eastern GSA wells to below the GSA ROD ground water cleanup standards and TCE concentrations to below analytical reporting limits (0.5 μg/L) in the majority of wells. In January of 2007, DOE/LLNL proposed to initiate the "Requirements for Closeout" described in the Remedial Design document for the GSA OU (Rueth et al., 1998). These requirements specify that, "when VOC concentrations in ground water have been reduced to cleanup standards, the ground water extraction and treatment system will be shut off and placed on standby." The U.S. EPA, RWQCB, and DTSC approved this proposal and the Eastern GSA ground water extraction and treatment system was turned off and effluent discharge to Corral Hollow Creek was discontinued on February 15, 2007, thereby meeting the Substantive Requirements. As required by the GSA ROD, ground water monitoring is being conducted to determine if VOC concentrations rebound above cleanup standards. As of the end of the first semester 2008, VOCs have not been detected in any Eastern GSA wells above cleanup standards. In the Eastern GSA Compliance Feasibility Report submitted to regulatory agencies on July 15, 2007, DOE/LLNL evaluated onsite discharge options that could be implemented if VOC concentrations rebound above cleanup standards requiring that the Eastern GSA extraction and treatment system be restarted.

At the Central GSA, ground water extraction continues to adequately capture the highest VOC concentrations in ground water, as shown by capture zones in Figure 2.1-4. During first semester 2008, extraction wells W-7O, W-7R, and W-7P removed the majority of the ground water while wells W-875-07, W-875-08, and W-7O removed most of the dissolved VOC mass.

Significantly more VOC mass is being removed by soil vapor extraction than by ground water extraction. During first semester 2008, 0.18 kg of VOCs were removed from ground water, whereas 1.53 kg of VOCs were removed from vapor. Based on individual well vapor flow monitoring for the first semester 2008, SVE wells W-875-07, W-875-09, W-875-10, W-875-11, and W-875-15 removed most of the vapor mass. The SVE wellfield configuration will continue to be monitored and evaluated. Changes to the SVE well configuration will be made as part of ongoing optimization activities.

2.1.3.4. GSA OU Remedy Performance Issues

There were no new issues that affect the performance of the cleanup remedy for the GSA OU during this reporting period. The remedy continues to be effective and protective of human health and the environment, and to make progress toward cleanup.

2.2. Building 834 OU 2

The Building 834 Complex has been used to test the stability of weapons and weapon components under various environmental conditions since the 1950s. Past spills, piping leaks, and septic system leachate at the Building 834 Complex have resulted in soil and ground water contamination with VOCs, TBOS/TKEBs, and nitrate. In addition, a former underground diesel storage tank released diesel to the subsurface. A map of Building 834 OU showing the locations of monitoring and extraction wells and treatment facilities is presented in Figure 2.2-1.

The Building 834 GWTS and SVTS began operation in 1995 and 1998, respectively. These systems are located in the main part of the Building 834 Complex, referred to as the Building 834 core area. The GWTS removes VOCs and TBOS/TKEBs from ground water within the Tpsg HSU and the SVTS removes VOCs from soil vapor. The area immediately to the southwest of the core area is the leachfield area and further to the south is the distal (T2) area.

Due to the very low ground water yield from individual ground water extraction wells (<0.1 gpm), the GWTS and SVTS have been operated simultaneously in batch mode. Although the GWTS can be operated alone, the SVTS is not operational without ground water extraction due to the upconing of the ground water in the well that covers the well screen and prevents soil vapor flow.

The current extraction wellfield consists of 13 extraction wells for both ground water and soil vapor extraction. Ten extraction wells (W-834-B2, -B3, -D4, -D5, -D6, -D7, -D12, -D13, -J1, and -2001) are located within the core area and three (W-834-S1, -S12A, and -S13) in the leachfield portion of the distal area. Extraction well W-834-D5 is connected to the facility but has not been used for extraction since the facility was restarted in October 2004 because the capture area is similar to the capture area of extraction well W-834-D13. Ground water and soil vapor extraction well W-834-2001 was added to the system in March 2007. Extracted ground water from this well contains dissolved-phase diesel related to the former underground diesel storage tank. The GWTS extracts ground water at an approximate combined flow rate of 0.25 gpm and the SVTS extracts soil vapor at a combined flow rate of 105 scfm. The current GWTS configuration includes floating hydrocarbon adsorption devices to remove the floating silicon oil, TBOS/TKEBs, and any floating diesel, followed by aqueous-phase GAC to remove VOCs, dissolved-phase TBOS/TKEBs, and diesel from ground water. Nitrate-bearing treated effluent is then discharged via a misting tower over the landscape for uptake and utilization of the nitrate by indigenous grasses. The current SVTS configuration includes vapor-phase GAC for VOC removal. Treated vapors are discharged to the atmosphere under an air permit from the San Joaquin Valley Unified Air Pollution Control District.

2.2.1. Building 834 OU Ground Water and Soil Vapor Extraction and Treatment System Operations and Monitoring

This section is organized into four subsections: facility performance assessment; operations and maintenance issues; compliance summary; and sampling plan evaluation and modification.

2.2.1.1. Building 834 OU Facility Performance Assessment

The monthly ground water and soil vapor discharge volumes and rates and operational hours are summarized in Table 2.2-1. The total volume of ground water and vapor extracted and treated and mass removed during the reporting period is presented in Table Summ-1. The cumulative volume of ground water and soil vapor treated and discharged and mass removed is summarized in Table Summ-2.

Analytical results for influent and effluent samples are shown in Tables 2.2-2 through 2.2-5. The pH measurement results are presented in Appendix A.

2.2.1.2. Building 834 OU Operations and Maintenance Issues

Continuous operations of the Building 834 GWTS and SVTS were interrupted by the following:

- Manual shut down on December 10 2007 to prevent damage caused by freezing temperatures. The GWTS and SVTS were restarted on January 14, extracting from wells W-834-D4, W-834-D6, W-834-D7, W-834-D12, and W-834-D13. Four additional extraction wells (W-834-B2, W-834-B3, W-834-J1, and W-834-2001) were brought back online on January 24. The three leachfield wells (W-834-S1, -S12A, and S13) were brought back online on February 11.

- Site power outages from February 8 to February 11 and February 13 to February 14, and a second set of power outages on April 10 (system re-started same day), and from April 19 to April 21.
- Leak of less than one gallon of treated water from the transfer line to the misting towers on April 22. The leak was repaired and the facility was restarted on April 30.
- Manual shut down on May 12 because the analytical laboratory reported that diesel range organics were detected in the effluent sample. The chromatogram was reviewed and found not to match the typical diesel fuel pattern. Two additional effluent samples were collected and the analytical results indicated that diesel range organics were below the reporting limit. The facility was restarted on May 20. While offline, the condensate from vacuum extraction lines was drained and two Venturi flow meters were replaced.
- High temperature interlock on SVE system caused shut down on June 20. The system was restarted on June 23.

2.2.1.3. Building 834 OU Compliance Summary

The Building 834 GWTS operated in compliance with the Substantive Requirements for Wastewater Discharge. A detection of diesel range organic compounds was reported for the effluent sample collected on May 5, 2008 at a concentration of 470 µg/L. The facility was shut down on May 12 following a re-sample of the effluent. The result of this re-sample was rejected due to analytical laboratory QA/QC problems. The effluent batch tank was again re-sampled, and no diesel range organic compounds were detected above the practical quantitation limit (PQL) of 200 µg/L. The system was re-started, and one additional effluent batch tank sample was submitted for analysis, in which no diesel range compounds were detected. In addition, all influent samples for the last three months of the reporting period were below the PQL of 200 µg/L. Upon inspection of the chromatogram for the May 5 effluent result, one single un-identifiable peak was visible. A similar peak was not observed on the chromatograms from the re-sampling events. The source of this peak is unknown, but is not believed it to be associated with known ground water contaminants. The Building 834 SVTS operated in compliance with the San Joaquin Valley Unified Air Pollution Control District permit limitations.

2.2.1.4. Building 834 OU Facility Sampling Plan Evaluation and Modifications

The Building 834 treatment facility sampling and analysis plan complies with CMP monitoring requirements. The sampling and analysis plan is presented in Table 2.2-6. There were no modifications made to the plan during the reporting period.

2.2.1.5. Building 834 OU Treatment Facility and Extraction Wellfield Modifications

No modifications to the treatment facility or to the extraction wellfield occurred during this reporting period.

2.2.2. Building 834 OU Ground Water Monitoring

The sampling and analysis plan for ground water monitoring is presented in Table 2.2-7. This table also delineates and explains deviations from the sampling plan and indicates any additions made to the CMP.

During this reporting period, ground water monitoring was conducted in accordance with the CMP monitoring requirements with the following exceptions; fifty-nine required analyses were not performed because there was insufficient water in the wells to collect the samples.

Ground water elevation contours and hydraulic capture zones for the extraction wells that were active during first semester for the Tpsg HSU are presented in Figure 2.2-2. Ground water elevations for the Tps-Tnsc$_2$ HSU are posted in Figure 2.2-3.

2.2.3. Building 834 OU Remediation Progress Analysis

This section is organized into four subsections: mass removal, analysis of contaminant distribution and concentration trends, remediation optimization evaluation, and performance issues.

2.2.3.1. Building 834 OU Mass Removal

The monthly ground water and soil vapor mass removal estimates are summarized in Table 2.2-8. The total mass removed during this reporting period and cumulative mass estimates are summarized in Table Summ-1 and Table Summ-2, respectively.

2.2.3.2. Building 834 OU Contaminant Concentrations and Distribution

At the Building 834 OU, VOCs are the primary COCs detected in ground water; TBOS/TKEBs and nitrate are the secondary COCs. These COCs have been identified in two shallow HSUs: 1) the Tpsg perched water-bearing gravel zone and 2) the underlying Tps-Tnsc$_2$ perching horizon.

Total VOC concentration data are contoured for the Tpsg HSU and posted for the Tps-Tnsc$_2$ HSU based on data collected during the first semester 2008 and are presented in Figures 2.2-4 and 2.2-5, respectively. Isoconcentration contour maps for the secondary COCs will be presented next semester in the 2008 annual CMR report.

2.2.3.2.1. Total VOCs Contaminant Concentrations and Distribution

While the overall extent of total VOCs in the Building 834 OU ground water and soil vapor has not changed significantly, the maximum concentrations have decreased by more than an order-of-magnitude since remediation began in the early 1990s. The highest VOC concentrations for both vapor and ground water continue to be detected in the Building 834 core area. Active remediation has reduced total VOC ground water concentrations in the more permeable Tpsg HSU from a pre-remediation maximum of 1,060,000 µg/L (W-834-D3) in 1993 to a first semester 2008 maximum concentration of 23,000 µg/L (W-834-D4, April 2008). The underlying Tps-Tnsc$_2$ HSU currently exhibits the highest total VOC ground water concentrations in OU 2 at 190,000 µg/L (W-834-A1, February 2008). Total VOC ground water concentration trends in this HSU have decreased or remained stable since monitoring of this HSU began in 1994. First semester 2008 TCE vapor concentrations from the core area SVE wells ranged from

0.03 to 2.2 ppm_v. These concentrations have decreased significantly from pre-remediation core area TCE vapor concentration of 3,200 ppm_v detected in 1989.

In the leachfield area, total VOC concentrations in the Tpsg HSU have decreased by an order-of-magnitude, from a pre-remediation maximum of 179,200 µg/L (W-834-S1) in 1988 to a first semester 2008 maximum concentration of 49,000 µg/L (W-834-2113, January 2008). This maximum total VOC concentration was detected during a period when the leachfield extraction wells were not operational. Later in the first semester 2008, the total VOC concentration in this well decreased significantly to 17,000 µg/L when the extraction wells were operating. The total VOC concentrations in the underlying Tps-$Tnsc_2$ HSU in the leachfield area are significantly lower than Tps-$Tnsc_2$ VOC concentrations in the Core Area. The first semester 2008 maximum total VOC concentration in the Tps-$Tnsc_2$ HSU ground water was 2,000 µg/L (W-834-S8, March 2008) in the leachfield area. This HSU has exhibited decreasing or stable trends since monitoring began in 1989. First semester 2008 TCE vapor concentrations from the Tpsg HSU in the leachfield area ranged from 0.34 to 9.9 ppm_v. These concentrations are significantly lower than the maximum pre-remediation leachfield area TCE vapor concentration of 710 ppm_v, measured in 2004.

In the distal area, total VOC concentrations in the Tpsg HSU have decreased from a historic maximum of 86,000 µg/L (W-834-T2A) in 1988 to a first semester 2008 maximum concentration of 14,000 µg/L (W-834-2117, January 2008). The underlying Tps-$Tnsc_2$ HSU is monitored by one well, W-834-2119. The total VOC concentration in this well was 12,000 µg/L measured during the first semester 2008. Historic total VOC concentrations in this well have decreased from a maximum of 15,000 µg/L in early 2007. This well continues to be closely monitored because it is located near an ongoing *in situ* bioremediation experiment. *In situ* bioremediation is being evaluated for this area as part of a long-term treatability test and the current status is described in Section 2.2.3.4. The total VOC concentrations in the area impacted by the bioremediation experiment have decreased significantly due to a combination of *in situ* biodegradation and dilution.

Total VOC concentrations and its extent in ground water are expected to continue to decrease over time as remediation progresses. The deep regional $Tnbs_1$ aquifer continues to be free of contaminants as demonstrated by no VOC detections above the reporting limit (0.5 µg/L) in $Tnbs_1$ guard wells, W-834-T1 and W-834-T3 that are monitored on a quarterly basis.

2.2.3.2.2. TBOS/TKEBS Contaminant Concentrations and Distribution

The maximum TBOS/TKEBS ground water concentration has decreased from a historic maximum of 7,300,000 µg/L (W-834-D3) in 1995 to 200 µg/L (W-834-D3, February 2008) during the first semester 2008. This compound is found exclusively in the core area. Historically, floating product has been measured intermittently in some core area wells; however, no floating product was observed during the first semester 2008. TBOS/TKEBS concentrations in Tpsg HSU wells in the leachfield and distal area continue to be below reporting limits during the first semester 2008.

Both the concentrations and extent of TBOS/TKEBS in ground water are greater in the Tpsg HSU than in the underlying Tps-$Tnsc_2$ HSU perching horizon. During the first semester 2008, TBOS/TKEBS was detected in only one Tps-$Tnsc_2$ HSU well at a concentration of 33 µg/L (W-834-1711, January 2008).

2.2.3.2.3. Nitrate Contaminant Concentrations and Distribution

During the first semester 2008, nitrate was detected in ground water at concentrations exceeding the 45 mg/L cleanup standard in the Building 834 core, leach field, and distal areas in the Tpsg and Tps-Tnsc$_2$ HSUs. Nitrate concentrations in Tpsg HSU ground water ranged from a maximum of 310 mg/L (W-834-S7, February 2008) to below the 0.5 mg/L reporting limit. In the core area, nitrate concentrations in the Tpsg HSU vary spatially and temporally related to denitrification associated with ongoing intrinsic *in situ* biodegradation. In the underlying Tps-Tnsc$_2$ HSU ground water nitrate ranged from a maximum of 99 mg/L (W-834-2119, January 2008) to below the 0.5 mg/L reporting limit.

A combination of both natural and anthropogenic (e.g., septic) sources contribute to the nitrate in Building 834 OU ground water. While nitrate concentrations have decreased from a historic maximum of 749 mg/L (W-834-K1A) in 2000, the continued elevated nitrate concentrations indicate an ongoing source of ground water nitrate. The main source of nitrate is most likely the septic system leachfield. Additional natural sources in the Tpsg and underlying Tps-Tnsc$_2$ may also contribute nitrate.

2.2.3.2.4. Other Contaminant Concentrations and Distribution

The extent of diesel in ground water is limited to the area near a former underground storage tank located beneath the paved portion of the core area. Diesel fuel was detected in only two wells during first semester 2008 at concentrations of 210 µg/L (W-834-A2, February 2008) and 180,000 µg/L (W-834-2001, January 2008), respectively.

Benzene, toluene, ethylbenzene, and xylenes (BTEX) monitoring was conducted in thirteen Building 834 OU wells during first semester 2008. No BTEX compounds were detected in these wells during first semester 2008. However, BTEX have been historically detected in several wells (up to ten), and these concentrations are likely related to the former underground storage tank. BTEX analytical data will continue to be evaluated to support a reduction in monitoring.

In the first semester 2008, chromium samples were collected from six core area wells that were affected by improperly wired pressure transducers that produced electrical short circuits in 2000. Chromium concentrations were significantly below the 0.05 mg/L Maximum Contaminant Level (MCL) in these wells. Since chromium has been below the MCL since 2005, chromium monitoring will be discontinued.

In the first semester 2008, ground water samples were collected from the two wells (W-834-S7 and W-834-2113) to monitor perchlorate. Perchlorate was detected at concentrations of 10 µg/L and 4.6 µg/L in W-834-S7 and W-834-2118, respectively. Perchlorate samples will continue to be collected semi-annually from these two wells. The origin of perchlorate in this area is unknown.

2.2.3.3. Building 834 OU Remediation Optimization Evaluation

The GWTS and SVTS were operational throughout the first semester 2008 with the exceptions discussed in Section 2.2.1.2. During the first semester 2008, no modifications were made to the extraction well fields for either the core or the leach field areas.

During the first semester 2008, all core area ground water extraction wells were operational. As shown in Figure 2.2-4, the capture zones from core area extraction wells adequately capture the highest total VOC concentrations in this area. Within the leachfield area, extraction well

W-834-S1 captures the largest extent of ground water compared to the other two leachfield extraction wells (W-834-S13 and W-834-S12A) which exhibit significantly less yield and produce much smaller capture zones. As shown in Figure 2.2-4, the leachfield extraction wells do not appear to be capturing the highest total VOC concentrations in this area. Performance monitoring well W-834-2113 contains total VOC concentrations significantly higher than the nearby leachfield extraction wells. As mentioned in Section 2.2.3.2.1, the total VOC concentration in W-834-2113 rebounded when the nearby extraction wells were shut down. The VOC trends in this well will continue to be monitored closely.

Significantly more VOC mass is being removed by soil vapor extraction than by ground water extraction. During first semester 2008, 0.73 kg of VOCs were removed from ground water in the Building 834 OU, whereas 2.78 kg of VOCs were removed from vapor. The preponderance of VOC ground water mass was removed from the core area (86% or 0.62 kg), whereas the majority of vapor mass was removed from the leachfield area (57% or 1.59 kg).

The total VOC trends in the underlying Tps-$Tnsc_2$ HSU will continue to be monitored closely to evaluate beneficial impacts from active remediation of the overlying Tpsg HSU and injection operations associated with enhanced *in situ* bioremediation activities. Conventional pump and treat operations in this low yield, fine-grained HSU are not expected to be effective in reducing VOC concentrations to meet cleanup standards. The use and feasibility of enhanced *in situ* remediation techniques, such as reagent injection and bio-augmentation, are still being considered, if needed, to remediate this HSU.

2.2.3.4. Treatability Studies

The T2 area bioremediation treatability study, which began in 2005, continued during the first semester 2008. Continuous injection of the isotopically distinct Hetch-Hetchy water into the Tpsg HSU well W-834-1824 continued, along with bi-weekly additions of sodium lactate to promote reducing conditions. Although the Hetch-Hetchy tracer water was detected in wells W-834-1825 and W-834-T2 in September 2007, the first signs of anaerobic biodegradation, the presence of cis-1,2-DCE, were not evident until the end of 2007. By January and February of 2008, the dissolved oxygen levels in W-834-T2 and W-834-1825, respectively, began to decline. By April 2008, reducing conditions developed in W-834-T2, but did not develop in the well to be bioaugmented, W-834-1825, until the end of May 2008. By this time, the total VOC composition in W-834-T2 consisted almost entirely of cis-1,2-DCE. The composition of total VOCs in W-834-1825 was nearly 50% TCE and 50% cis-1,2-DCE. In addition, measurable levels of light hydrocarbons (methane, ethane, and ethene) were detected in both these of wells, and in the downgradient performance monitoring well, W-834-1833. These observations indicated that subsurface conditions were ready for the bioaugmentation phase of the testing. Bi-weekly additions of lactate into the injection well will continue after the addition of the KB-1 culture and until the supply of lactate is depleted. The KB-1 addition is planned for early second semester 2008. Monitoring for indicators of complete biodegradation, the absence of VOCs, and corresponding concentrations of non-chlorinated light hydrocarbons, will be conducted during the second semester 2008.

2.2.3.5. Building 834 OU Remedy Performance Issues

There were no new issues that affect the performance of the cleanup remedy for the Building 834 OU during this reporting period. The remedy continues to be effective and protective of human health and the environment, and to make progress toward cleanup.

2.3. Pit 6 Landfill (Pit 6) OU 3

The Pit 6 Landfill covers an area of 2.6 acres near the southern boundary of Site 300. This landfill was used from 1964 to 1973 to bury waste in nine unlined debris trenches and animal pits. The buried waste, which includes laboratory equipment, craft shop debris, and biomedical waste is located on or adjacent to the Corral Hollow-Carnegie fault. Farther east, the fault trends to the south of two nearby water-supply wells CARNRW1 and CARNRW2. These active water-supply wells are located about 1,000 ft east of the Pit 6 Landfill. They provide water for the nearby Carnegie State Vehicular Recreation Area and are monitored on a monthly basis.

The Pit 6 Landfill was capped and closed in 1997 under CERCLA to prevent further leaching of contaminants resulting from percolation of rainwater through the buried waste. The engineered, multi-layer cap is intended to prevent rainwater infiltration into the landfill, mitigate potential damage by burrowing animals and vegetation, prevent potential hazards from the collapse of void spaces in the buried waste, and prevent the potential flux of VOC vapors through the soil. Surface water flow onto the landfill is minimized by a diversion channel on the north-side and drainage channels on the east, west, and south sides of the engineered cap. A map of Pit 6 Landfill OU showing the locations of monitoring and water-supply wells is presented in Figure 2.3-1.

2.3.1. Pit 6 Landfill OU Surface Water and Ground Water Monitoring

The sampling and analysis plan for ground water and surface water monitoring is presented in Table 2.3-1. This table also delineates and explains deviations from the sampling plan and indicates any additions made to the CMP.

During the reporting period, ground water monitoring was conducted in accordance with the CMP monitoring and post-closure requirements with the following exceptions; fourteen required analyses were not performed because there was insufficient water in the wells to collect the samples.

A ground water elevation contour map is presented in Figure 2.3-2.

2.3.2. Pit 6 Landfill OU Remediation Progress Analysis

This section is organized into three subsections: analysis of contaminant distribution and concentration trends; remediation optimization evaluation; and performance issues.

2.3.2.1. Pit 6 Landfill OU Analysis of Contaminant Distribution and Concentration

At the Pit 6 Landfill OU, VOCs and tritium are the primary COCs detected in ground water. Perchlorate and nitrate are secondary COCs. These constituents have been identified within the Qt-$Tnbs_1$ HSU. The distribution of total VOCs and tritium in the Qt-$Tnbs_1$ HSU based on data collected during the first semester 2008 are contoured on Figures 2.3-3 and 2.3-4, respectively. Isoconcentration contour maps for the secondary COCs will be presented next semester in the 2008 annual CMR report.

2.3.2.1.1. Total VOC Contaminant Concentrations and Distribution

TCE concentrations have decreased from the historic maximum of 250 μg/L at well K6-19 in 1988 to a maximum concentration of 7.5 μg/L during the first half of 2008 (EP6-09, April 2008). This was the only occurrence of a VOC exceeding its cleanup standard at the Pit 6 Landfill OU during the first semester 2008. During the first semester 2008, cis-1,2-DCE was detected in ground water samples from only one Pit 6 Landfill OU well at a maximum concentration of 2.2 μg/L (K6-01S, April 2008). The presence of cis-1,2-DCE, a degradation product of TCE, suggests that natural decomposition may be occurring. PCE was also detected during the first semester in ground water samples from one well at a maximum concentration of 1.2 μg/L (EP6-08, April 2008).

VOCs were not detected in ground water samples collected during the first semester from guard wells W-PIT6-1819 and K6-17.

2.3.2.1.2. Tritium Contaminant Concentrations and Distribution

Tritium was detected above the 100 picoCuries per liter (pCi/L) background activity in ground water samples from several wells completed in the $Qt\text{-}Tnbs_1$ HSU both north of the fault and within the fault zone. The maximum first semester 2008 tritium activity in ground water was 407 pCi/L (K6-24, January 2008). This is the only result that exceeded the 400 pCi/L State Public Health Goal (PHG). No tritium activities exceeded the cleanup standard (20,000 pCi/L).

Historically, the highest tritium activities in ground water in the Pit 6 Landfill OU were measured in K6-36 (3,420 pCi/L in 2003). This well has been dry since October 2006. However, because the $Qt\text{-}Tnbs_1$ HSU is likely saturated below the well screen, the August 2006 tritium activity of 1,200 pCi/L was used to conservatively create the isoconcentration contours presented on Figure 2.3-4, and thus the 1,000 pCi/L contour is shown.

Tritium was sporadically detected in ground water from well W-PIT6-1819 that is used to define the downgradient extent of the tritium plume. It is located approximately 100 ft west of the Site 300 boundary with the Carnegie State Vehicle Recreation Area residence area and about approximately 200 ft west of the CARNRW1 and CARNRW2 water-supply wells (Figure 2.3-4). The first semester maximum in this well was 146 ± 56.4 pCi/L (April 2008).

Tritium activities were below 100 pCi/L in all the monthly ground water samples obtained from the four off-site CARNRW wells during the first semester 2008.

The tritium plume appears to be relatively stable and tritium activities in ground water samples from monitoring wells within the plume are generally decreasing.

2.3.2.1.3. Perchlorate Contaminant Concentrations and Distribution

During the first semester 2008, perchlorate was detected above the 4 μg/L reporting limit in only one Pit 6 Landfill OU ground water sample. A January 2008 sample from well K6-18 (completed in the $Qt\text{-}Tnbs_1$ HSU within the fault zone) contained 5.5 μg/L of perchlorate. This concentration is below the 6 μg/L cleanup standard. However, a duplicate sample collected from this well on the same date did not contain perchlorate above the 4 μg/L reporting limit. The historic maximum perchlorate concentration in OU ground water was 65.2 μg/L in a ground water sample collected from well K6-19 in 1998. Perchlorate concentrations in samples from this well have steadily declined from the 1998 maximum and have remained below the reporting limit since 2001, presumably due to natural attenuation processes.

2.3.2.1.4. Nitrate Contaminant Concentrations and Distribution

During the first semester 2008, nitrate was detected in ground water samples collected from wells completed within the Qt-Tnbs$_1$ HSU within and north of the fault zone. Nitrate was only detected in ground water above the 45 mg/L cleanup standard in a sample from well K6-23 (160 mg/L, January 2008). Well K6-23 consistently yields ground water nitrate concentrations in excess of the cleanup standard and is located in close proximity to the Building 899 septic system, which may be a potential source of the nitrate at this location. The elevated nitrate appears to be localized near this building.

Nitrate was not detected above 0.5 mg/L reporting limit in any of the monthly ground water samples collected during the first semester 2008 from water-supply well CARNRW1.

2.3.2.2. Pit 6 Landfill OU Remediation Optimization Evaluation

The remedy for tritium and VOCs in ground water at the Pit 6 Landfill is Monitored Natural Attenuation (MNA). Ground water elevations and contaminants are monitored on a regular basis to: (1) evaluate the efficacy of the natural attenuation remedy in reducing contaminant concentrations, and (2) detect any new chemical releases from the landfill. In general, all primary and secondary ground water COCs at the Pit 6 Landfill OU exhibit stable to decreasing trends and ground water elevations beneath the landfill remain well below the buried waste. There has been a steep decline in perchlorate concentrations in Pit 6 area ground water from a maximum of 65.2 µg/L in 1998 to below the 6 µg/L cleanup standard in ground water samples from well K6-19. Perchlorate was only detected in ground water above the reporting limit (4 µg/L) in one Pit 6 well. Tritium activities in ground water continue to decrease toward background levels and remain far below the 20,000 pCi/L cleanup standard ; tritium activities exceeded the 400 pCi/L State PHG in only one well (K6-24). Maximum TCE concentrations in ground water remain above the 5 µg/L cleanup standard in samples from only one well (EP6-09) and the concentrations and extent of total VOCs in ground water are generally declining.

2.3.2.3. Pit 6 Landfill OU Performance Issues

There were no issues that affected the performance of the cleanup remedy for the Pit 6 Landfill OU during this reporting period. The remedy continues to be effective and protective of human health and the environment, and to make progress toward cleanup.

2.4. High Explosives Process Area (HEPA) OU 4

The HEPA has been used since the 1950s for the chemical formulation, mechanical pressing, and machining of high explosives (HE) compounds into shaped detonation charges. Surface spills from 1958 to 1986 resulted in the release of contaminants at the former Building 815 steam plant. Subsurface contamination is also attributed to HE waste water discharges into former unlined rinse water lagoons. Another minor source of contamination in ground water resulted from leaking contaminated waste stored at the former Building 829 Waste Accumulation Area located near Building 829.

Six GWTSs operate in the HEPA: Building 815-Source (815-SRC), Building 815-Proximal (815-PRX), Building 815-Distal Site Boundary (815-DSB), Building 817-Source (817-SRC), Building 817-Proximal (817-PRX), and Building 829-Source (829-SRC). A map of the HEPA OU showing the locations of monitoring and extraction wells and treatment facilities is presented in Figure 2.4-1.

The 815-SRC GWTS began operation in September 2000 removing TCE, RDX, and perchlorate from ground water. Initially, the system extracted from one extraction well, W-815-02 and consisted of aqueous-phase GAC, an ion-exchange system, and an anaerobic bioreactor for nitrate destruction. The treated effluent was discharged to a misting system. The anaerobic bioreactor was decommissioned in 2003. In 2005, the wellfield was expanded to include extraction well, W-815-04 for a combined flow rate of approximately 1.5 gpm. The current GWTS configuration includes a Cuno filter to remove particulates, three aqueous-phase GAC canisters connected in series for TCE and RDX removal, and two ion-exchange columns containing SR-7 resin (also connected in series) for perchlorate removal. In 2005, the discharge method of misting was replaced by injection of the treated effluent into well W-815-1918 for *in situ* denitrification in the $Tnbs_2$ HSU.

The 815-PRX GWTS began operation in October 2002 removing TCE and perchlorate from ground water. Ground water is extracted from wells W-818-08 and W-818-09 at a combined flow rate of approximately 2 gpm. The current GWTS configuration includes a Cuno filter to remove particulates, two ion-exchange columns with SR-7 resin that are connected in series for perchlorate removal, and three aqueous-phase GAC (also connected in series) for TCE removal. In 2005, the discharge method of misting was replaced by injection of the treated effluent into well W-815-2134 where an *in situ* natural denitrification process reduces the nitrate to nitrogen in the $Tnbs_2$ HSU.

The 815-DSB GWTS began operation in September 1999 removing low concentrations (less than 10 µg/L) of TCE from ground water extracted near the Site 300 boundary. Ground water is extracted from wells W-35C-04 and W-6ER at a combined flow rate of approximately 4 gpm. The GWTS originally operated intermittently on solar-power until site power was installed in 2005 when 24-hour operations began. The treated effluent is discharged to an infiltration trench.

The 817-SRC GWTS began operation in September 2003 removing RDX and perchlorate from ground water. Well W-817-01 extracts ground water from a very low yield portion of the $Tnbs_2$ aquifer. It pumps ground water using solar power intermittently at flow rates ranging from 400 to 900 gallons per month. The current GWTS configuration includes two ion-exchange columns with SR-7 resin that are connected in series for perchlorate removal, a Cuno filter to remove particulates, and three aqueous-phase GAC (also connected in series) for RDX removal. Treated ground water is injected into upgradient injection well W-817-06A where an *in situ* natural denitrification process reduces the nitrate to nitrogen in the $Tnbs_2$ HSU.

The 817-PRX GWTS began operation in September 2005 removing VOCs, RDX, and perchlorate from ground water. Initially, ground water was extracted from wells W-817-03 and W-817-04 at a combined flow rate of approximately 1.0 gpm, although the vast majority of ground water was extracted from W-817-03. In 2007, the extraction wellfield was expanded to include extraction well, W-817-2318. Due to the low yield from ground water extraction well W-817-04, extraction from this well was discontinued in December 2007. The current GWTS configuration includes a Cuno filter to remove particulates, two aqueous-phase GAC canisters connected in series for TCE and RDX removal, two ion-exchange columns containing SR-7 resin (also connected in series) for perchlorate removal, and a third aqueous-phase GAC canister completes the treatment chain. Treated ground water containing nitrate is injected into upgradient injection well W-817-2109 and W-817-02 that was added in 2007. The treated effluent is split between the two injection wells where an *in situ* denitrification process reduces the nitrate to nitrogen in the $Tnbs_2$ HSU.

The 829-SRC GWTS began operation in August 2005 removing VOCs, nitrate, and perchlorate from ground water. Solar power is used to extract ground water from well W-829-06 at a flow rate of approximately 0.2 gpm. The current GWTS configuration includes two ion-exchange columns containing SR-7 resin connected in series for perchlorate removal, three aqueous phase GAC canisters (also connected in series) for VOC removal, and a biotreatment unit to treat nitrate. However, the biotreatment unit has not been utilized because all the nitrate has to date been adsorbed by the SR-7 resin. The SR-7 resin will be utilized for nitrate removal during the colder periods of the year while the biotreatment unit will be utilized during the warm periods. Treated effluent is injected into upgradient well W-829-08.

2.4.1. HEPA OU Ground Water Extraction and Treatment System Operations and Monitoring

This section is organized into four subsections: facility performance assessment; operations and maintenance issues; compliance summary; and sampling plan evaluation and modifications.

2.4.1.1. HEPA OU Facility Performance Assessment

The monthly ground water discharge volumes, extraction flow rates, and operational hours are summarized in Tables 2.4-1 through 2.4-6. The total volume of ground water extracted and treated and the total contaminant mass removed during this reporting period is presented in Table Summ-1. The total volume of ground water treated and discharged and the total contaminant mass removed are summarized in Table Summ-2.

Analytical results for influent and effluent samples are presented in Tables 2.4-7 through 2.4-9. The pH measurement results are presented in Appendix A.

2.4.1.2. HEPA OU Operations and Maintenance Issues

Continuous operations of the 815-SRC, 815-PRX, 815-DSB, 817-SRC, 817-PRX, and 829-SRC GWTSs were interrupted by the following:

<u>815-SRC GWTS</u>

- Temporary shut down while the GAC canisters were replaced on February 6 and the GWTS was reconfigured so the ion-exchange treatment is the initial step prior to the influent water entering the GAC canister. A leak in the second GAC canister was identified on February 7, but the canister was bypassed to allow the system to continuing operating until the leaking canister can be repaired.
- Site power outages from February 8 to 11 and February 13 to 14.
- Ground water was only extracted from well W-815-02 from March 25 to April 7. The pump in extraction well W-815-04 was replaced and began operation on April 7.
- Temporary shut down on May 27 to repair a small leak in the filter union ball valve.

815-PRX GWTS

- Manual shut down from December 12, 2007 to January 28 to prevent damage caused by freezing temperatures.
- Site power outages from February 8 to 11 and February 13 to 14.
- Repairs to a broken pipe associated with extraction well W-818-08 from May 15 to 19.

815-DSB GWTS

- Site power outages from February 8 to 11 and February 13 to 14.
- Extraction pump in well W-6ER only ran intermittently from April through the end of the reporting period. The pump is scheduled to be replaced in early August 2008.

817-SRC GWTS

- Manual shut down from December 12, 2007 to January 14 to prevent damage caused by freezing temperatures.

817-PRX GWTS

- Manual shut down from December 4, 2007 to January 14 to prevent damage caused by freezing temperatures. The GWTS was restarted extracting only from well W-817-03. Extraction well W-817-04 remained offline due to low flow. Extraction well W-817-2318 remained off until the pump was replaced on May 20.
- Site power outages from February 8 to 11 and February 13 to 14.
- Issues with the transducer and injection well W-817-02 capacity on March 13 and March 19.
- A new pump and casing were installed in extraction well W-817-2318. The 817-PRX GWTS was shut down from April 29 to May 20 to perform electrical work necessary to connect extraction well W-817-2318.

829-SRC GWTS

- Manual shut down from December 11, 2007 to February 5 to prevent damage caused by freezing temperatures.
- Installation of a new compressor motor from April 8 to May 21.

2.4.1.3. HEPA OU Compliance Summary

The 815-SRC, 815-PRX, 815-DSB, 817-SRC, 817-PRX, and 829-SRC GWTSs operated in compliance with the Substantive Requirements for Wastewater Discharge.

2.4.1.4. HEPA OU Facility Sampling Plan Evaluation and Modifications

The HEPA OU facility sampling and analysis plan complies with CMP monitoring requirements. The sampling and analysis plan is presented in Table 2.4-10.

2.4.1.5. HEPA OU Treatment Facility and Extraction Wellfield Modifications

During first semester 2008, the additional 817-PRX extraction well, W-817-2318 was put on-line (May 20). For the remainder of the reporting period, ground water extraction was conducted using W-813-2318 and W-818-03. The treated effluent is injected into well W-817-02 and the original injection well, W-817-2109.

Due to the low yield from ground water extraction well W-817-04, extraction from this well was discontinued in December 2007. Well W-817-04 will serve as a VOC and perchlorate plume interior performance monitor well.

2.4.2. HEPA OU Ground Water and Surface Water Monitoring

The sampling and analysis plan for ground water and surface water monitoring is presented in Table 2.4-11. This table also explains deviations from the sampling plan and indicates any additions made to the CMP.

During the reporting period, ground water monitoring was conducted in accordance with the CMP monitoring requirements with the following exceptions; twenty required analyses were not performed because there was insufficient water in the wells to collect the samples.

Ground water elevation data are contoured for the $Tnbs_2$ HSU and are posted for the Tpsg and $Tnsc_{1b}$ (Building 829 area) HSUs as presented in Figures 2.4-2, 2.4-4 and 2.4-6. The ground water elevations contour maps also show hydraulic capture zones associated with active extraction wells and areas of hydraulic influence resulting from the injection of treated effluent into injection wells.

2.4.3. HEPA OU Remediation Progress Analysis

This section is organized into four subsections: mass removal; contaminant concentrations and distribution; remediation optimization evaluation; and performance issues.

2.4.3.1. HEPA OU Mass Removal

The monthly ground water mass removal estimates are summarized in Tables 2.4-12 through 2.4-17. The total mass removed during this reporting period and cumulative mass estimates are summarized in Table Summ-1 and Table Summ-2, respectively.

2.4.3.2. HEPA OU Contaminant Concentrations and Distribution

At the HEPA OU, VOCs (mainly TCE) are the primary COCs detected in ground water; RDX, perchlorate, and nitrate are secondary COCs. Most ground water contamination at the HEPA is present in the $Tnbs_2$ HSU. Minor amounts of VOCs, perchlorate, and nitrate contamination are present in perched ground water in the $Tnsc_{1b}$ HSU beneath the Waste Accumulation Area, located in the northwest portion of the HE Process Area. Some TCE, RDX, and perchlorate have been detected in ground water in the Tpsg sands and gravels of the Tpsg-Tps HSU in the vicinity of Building 815. No contamination has been detected in the Tps portion of the Tpsg-Tps HSU, or the upper and lower $Tnbs_1$ HSUs in the HEPA OU.

Total VOC concentration data are contoured for $Tnbs_2$ and posted for Tpsg and $Tnsc_{1b}$ based on data collected during the first semester 2008 and are presented in Figures 2.4-3, 2.4-5, and 2.4-7. Isoconcentration contour maps for the secondary COCs will be presented next semester in the 2008 annual CMR report. For collocated wells, the highest concentration was used for contouring.

2.4.3.2.1. Total VOC Contaminant Concentrations and Distribution

During the first semester 2008, the maximum total VOC concentration measured in ground water samples from $Tnbs_2$ wells was 45 µg/L measured in well W-818-11 (February 2008) located upgradient of the 815-PRX treatment facility and downgradient of the 815-SRC treatment facility. The $Tnbs_2$ total VOC plume is detached from its source at Building 815 and the 815-PRX extraction wellfield captures the highest concentrations in this plume. The VOC concentrations in ground water in the $Tnbs_2$ HSU in the HEPA have decreased from a maximum historic concentration of 110 µg/L (W-818-08, May 1992). The plume has much the same shape and extent as in previous years. VOCs continue to be detected in W-830-2216 located at the end of Building 832 Canyon. This contamination likely comes from Building 832 Canyon OU sources. This well was connected as an extraction well to 830-DISS in June 2007.

During the first semester 2008, trace VOC concentrations were detected above the 0.5 µg/L reporting limit in samples from $Tnbs_2$ guard wells W-815-2110 and W-815-2111, located near the site boundary. VOCs were not detected in samples taken from any of the other onsite or offsite HEPA $Tnbs_2$ guard wells. During first semester 2008, VOC concentrations were not detected in offsite water-supply well, GALLO1. The 817-PRX and 815-DSB facilities were installed to prevent extended migration of VOCs near the site boundary. Continuous operation of the 815-DSB facility appears to be mitigating extended migration of VOCs downgradient of this facility and offsite.

In the first semester 2008, total VOCs were detected in ground water samples from 829-SRC ($Tnsc_{1b}$) extraction well W-829-06 (16 µg/L both in February 2008 and June 2008). VOCs have never been detected in nearby monitoring well W-829-1940. Total VOC concentrations in well W-829-06 have decreased significantly from a historic maximum of 1,013 µg/L (August 1993).

VOCs, mainly TCE, have been detected in the Tpsg sands and gravels of the Tpsg-Tps HSU in the vicinity of Building 815. For the most part, total VOC concentrations in this HSU have been steadily decreasing over time. In addition, the limited recharge to this zone has resulted in declining water levels resulting in insufficient water for sampling. The maximum first semester 2008 VOC concentration detected in ground water samples from Tpsg-Tps wells was 50 µg/L in recently installed 817-PRX extraction well W-817-2318 (May 2008). VOCs in the Tpsg-Tps well W-35C-05, located near the site boundary, remain below the 0.5 µg/L reporting limit.

During the first semester 2008, total VOCs were detected in samples from Qal/WBR guard well W-880-02 (0.54 µg/L, January 2007). This well and well W-4AS have historically and intermittently had trace concentrations of total VOCs. Trace total VOC contamination in these wells is likely from 832 Canyon sources. Total VOC concentrations in Qal/WBR wells W-35C-06 and W-6ES, located near the site boundary, remain below the 0.5 µg/L reporting limit.

2.4.3.2.2. HE Compound Contaminant Concentrations and Distribution

During the first semester 2008, RDX concentrations detected in ground water samples from $Tnbs_2$ wells ranged from <1 µg/L to a maximum of 72 µg/L (January 2008) in 815-SRC extraction well, W-815-04. Overall, RDX concentrations in the $Tnbs_2$ HSU have decreased from a historic maximum of 204 µg/L (July 1992) in 817-SRC extraction well W-817-01. The RDX concentration in this well decreased to 48 µg/L by June 2008. RDX concentrations decrease rapidly in the downgradient direction to below the 1 µg/L reporting limit just upgradient (i.e., northwest) of 815-PRX extraction well W-818-08. Although the maximum RDX concentration continues to decrease, the extent of RDX contamination in the $Tnbs_2$ HSU remains essentially the same as documented in previous reports. RDX was not detected in any of the $Tnbs_2$ guard wells or in any of the Tpsg and $Tnsc_{1b}$ wells, in first semester 2008.

Generally, HMX detections in the $Tnbs_2$ HSU have occurred in the 817-SRC extraction well W-817-01. During the first semester 2008, maximum HMX concentrations of 19 µg/L were detected in a ground water sample from W-817-01 (January and April 2008). Historically, the highest reported HMX concentration of 57 µg/L, detected in the 817-SRC extraction well occurred in October 1995.

Additionally, nitrobenzene was detected in a ground water sample from the 817-SRC extraction well at a concentration of 6.2 µg/L. This is the only concentration of nitrobenzene detected above the reporting limit during the first semester 2008 as well as the first time nitrobenzene has been detected in groundwater in the HEPA.

During the first semester 2008, no ground water samples showed concentrations of 4-amino-2,6-dinitrotoluene above the detection limit. The historic high concentration of 4-amino-2,6-dinitrotoluene of 24 µg/L was measured in September 1997.

2.4.3.2.3. Perchlorate Contaminant Concentrations and Distribution

Perchlorate concentrations in the $Tnbs_2$ HSU have decreased from a historic maximum of 50 µg/L (February 1998) in W-817-01 to 29 µg/L (June 2008) in this same well. Perchlorate was not detected in any of the $Tnbs_2$ guard wells or in offsite water supply well GALLO1 in 2008.

Perchlorate was detected in ground water samples taken from $Tnsc_{1b}$ extraction well W-829-06 at concentrations of 9.6 µg/L (January 2008) and 9.5 µg/L (June 2008). Concentrations have decreased from a historic maximum of 29 µg/L (December 2000) in well W-829-06.

The first semester 2008 maximum perchlorate concentration detected in ground water samples from Tpsg wells was 17 µg/L in 817-PRX extraction well W-817-2318 (January 2008). Perchlorate was not detected in any Qal/WBR wells during the reporting period.

2.4.3.2.4. Nitrate Contaminant Concentrations and Distribution

During the first semester 2008, nitrate concentrations in samples from the $Tnbs_2$ HSU ranged from <0.1 mg/L in the vicinity of the Site 300 boundary to a maximum of 92 mg/L (January 2008, W-817-03). Nitrate was not detected above the 45 mg/L cleanup standard in any of the $Tnbs_2$ guard wells during this reporting period.

The maximum nitrate concentration detected in a sample during first semester 2008 from the $Tnsc_{1b}$ HSU was 82 mg/L in extraction well W-829-06 (January 2008).

The first semester 2008 maximum nitrate was detected in Tpsg-Tps HSU well W-6CS at 610 mg/L (January 2008). Because there are no known septic systems or other Site 300 operations-related nitrate sources near this well, the elevated nitrate may be attributable to a pre-Site 300 sheep corral that was discovered on a historic photo of the area. All other nearby wells screened in this HSU have significantly lower nitrate concentrations by one to two orders-of-magnitude. All Qal/WBR wells have nitrate concentrations below the 45 mg/L cleanup standard.

The nitrate concentrations detected in groundwater during the first semester of 2008 continue to support the interpretation that nitrate is being treated *in situ* by natural processes. Nitrate concentrations decrease significantly due to microbial denitrification near the Site 300 boundary where the $Tnbs_2$ is anoxic and under confined conditions. Nitrate concentrations are significantly lower than the 45 mg/L cleanup standard in all wells near the site boundary.

2.4.3.3. HEPA OU Remediation Optimization Evaluation

The key to remediation optimization at the HEPA OU is to manage extraction wellfield flow rates to balance the influence of site boundary pumping with upgradient pumping in the source area. Based on the $Tnbs_2$ ground water elevation map and the total VOC isoconcentration map shown in Figures 2.4-4 and 2.4-5, the existing extraction wellfield captures the highest concentrations in the VOC plume in the vicinity of wells W-818-08 and W-818-09 (815-PRX) and captures the leading edge of the plume near the site boundary (815-DSB). Some lateral migration of the plume appears to be occurring downgradient of the 817-PRX GWTS. A study is underway to determine the most effective way to mitigate extended migration of the leading edge of the VOC plume upgradient of water-supply well GALLO1. Additionally in first semester 2008, flow rates from 815-PRX ground water extraction well W-818-08 and W-818-09 were increased to expand capture of the high concentration portions of the VOC plume.

Although the overall extent of the primary and secondary COC plumes in the HEPA have not changed significantly, total VOC and RDX concentrations within the plumes continue to decline from their historic maximums. These trends are due to a combination of natural attenuation mechanisms and remediation efforts in the source and proximal areas of this OU. RDX concentrations continue to exhibit decreasing trends since monitoring for this COC began in 1985. The 815-SRC extraction wells, W-815-02 and W-815-04, have the highest RDX concentrations and increased pumping from these wells should improve RDX remediation in the Building 815 source area. Perchlorate concentrations in the $Tnbs_2$ HSU have steadily decreased since 1998 when monitoring for this COC began. The 817-SRC (W-817-01) and 817-PRX (W-817-03 and W-817-04) extraction wells have the highest perchlorate concentrations in this OU. Extraction from W-817-04 was terminated due to very low yield and pumping from W-817-03 was increased in early first semester of 2008. The increased extraction flow rate from W-817-03 was discontinued in February 2008, due to limited injection well flow control and capacity. Upgrades to the 817-PRX injection well manifold control system should allow for increased ground water extraction flow rates from W-817-03 in second semester 2008. The maximum perchlorate concentration should begin to decline in response to increased pumping in W-817-03 beginning in early 2008. Additionally, upgradient injection at 815-SRC, 817-SRC, 815-PRX, and 817-PRX will continue to enhance remediation by flushing contaminants toward the extraction wells.

Continued full-time operation of the 815-DSB facility, continued increased pumping from 815-DSB extraction wells and W-818-08, and increased pumping from W-817-03 in second semester 2008 and the increase in effluent injection control at 817-PRX, should improve long-term ground water yield and mass removal at this OU and further prevent contaminated ground water from reaching the Site 300 boundary. Close monitoring of VOC concentrations in the site boundary area will continue, especially in the vicinity of GALLO1.

2.4.3.4. HEPA OU Remedy Performance Issues

There were no new issues that affect the performance of the cleanup remedy for the HEPA OU during this reporting period. The remedy continues to be effective and protective of human health and the environment, and to make progress toward cleanup.

2.5. Building 850 OU 5

High explosives experiments have been conducted at the Building 850 Firing Table. Until 1989, gravels on the firing table surface were disposed of in several disposal pits in the northern portion of the site. In the past, infiltrating water mobilized chemicals from contaminated gravel and debris to underlying soil, bedrock, and ground water. However, since the practice of watering down the firing table following explosives tests was discontinued, the firing table no longer releases significant contamination to the subsurface. A map of the Building 850 OU showing the locations of monitoring wells is presented in Figure 2.5-1.

2.5.1. Building 850 OU Ground Water Monitoring

The sampling and analysis plan for ground water and surface water monitoring is presented in Table 2.5-1. This table also delineates and explains deviations from the sampling plan and indicates any additions made to the CMP.

During the reporting period, ground water monitoring was conducted in accordance with the CMP monitoring requirements with the following exceptions; eighteen required analyses were not performed because there was insufficient water in the wells to collect the samples and four required analyses were not performed because a bent casing prevented sample collection.

Ground water elevation contour maps for the Qal/WBR and $Tnbs_1/Tnbs_0$ HSUs within the OU are presented in Figures 2.5-2 and 2.5-3, respectively.

2.5.2. Building 850 OU Remediation Progress Analysis

This section is organized into three subsections: analysis of contaminant distribution and concentration trends; remediation optimization evaluation; and performance issues.

2.5.2.1. Building 850 OU Contaminant Concentrations and Distribution

At the Building 850 OU, tritium is the primary COC detected in ground water; nitrate and depleted uranium are the secondary COCs. Perchlorate has also been detected in ground water. These constituents have been identified within the Qal/WBR and $Tnbs_1/Tnbs_0$ HSUs. The distribution of tritium in each HSU, based on data collected during the first semester 2008 is contoured on Figures 2.5-4 and 2.5-5, respectively. Isoconcentration contour maps for the secondary COCs and perchlorate will be presented next semester in the 2008 annual CMR report.

2.5.2.1.1. Tritium Contaminant Concentrations and Distribution

The maximum first semester 2008 tritium activity in ground water within OU 5 was 56,100 ± 5,600 pCi/L (May 2008) in a sample collected from well NC7-70, screened in both the Qal/WBR and $Tnbs_1/Tnbs_0$ bedrock HSUs and located about 50 ft downgradient (east) of the Building 850 Firing Table. Last year the maximum tritium activity was 66,800 ± 6,700 pCi/L (June 2007) in a sample from the same well. The highest tritium activities in ground water in the

OU continue to be located immediately downgradient of the Building 850 Firing Table. The historic maximum of 566,000 pCi/L measured in 1985 from well NC7-28, has declined to 26,800 ± 2,700 pCi/L this semester. The extent of the 20,000 pCi/L cleanup standard ground water tritium activity contour in both the Qal/WBR and $Tnbs_1/Tnbs_0$ bedrock HSUs in Doall Ravine also continues to diminish.

Ground water tritium activities generally continue to decline or are below historic highs in most portions of the Building 850 plume. For example, in Elk Ravine and south of the Pit 2 Landfill, maximum tritium activities in ground water have been gradually decreasing since 2004. Tritium activities in ground water samples from wells located in the southern Elk Ravine have dropped slightly over the last few years and are well below the 20,000 pCi/L cleanup standard for tritium.

While the extent of tritium in ground water with activities above the 400 pCi/L PHG remains fairly stable, the extent of tritium with activities above the 100 pCi/L detection limit has decreased from last year, northeast of Pit 1. During the first semester 2008, tritium activities in excess of the 100 pCi/L reporting limit were observed in samples from Building 801 wells K8-01 and K8-02B (155 ± 71.1 pCi/L and 127 ± 56.1 pCi/L, respectively). When accounting for error ranges, these data fall within the 100 pCi/L background. Additionally, tritium was not detected above the reporting limit in an April 2008 sample from well K8-02B. Thus tritium activity continues to be within range of background in the Building 801 area.

2.5.2.1.2. Uranium Contaminant Concentrations and Distribution

Uranium was detected above the 20 pCi/L cleanup standard in one Building 850 OU ground water sample at 21 pCi/L (NC7-28, February 2008). This is the maximum historic uranium activity observed in Building 850 ground water. This well is completed in the Qal/WBR and $Tnbs_1/Tnbs_0$ HSUs and is immediately downgradient of Building 850. The subsequent sample collected from the well in April 2008 contained 15 pCi/L of uranium. Both these samples, and ground water samples collected from several other wells completed in the Qal/WBR and $Tnbs_1/Tnbs_0$ HSUs in the Building 850 area during the first semester 2008 yielded atom ratios indicative of added depleted uranium. The natural atom ratio of $^{235}U/^{238}U$ is about 0.0072 ± 0.001. Atom ratios below this range indicate some addition of depleted uranium to the naturally-occurring uranium activity in the ground water. The previous historic maximum uranium activity in the OU is 19 pCi/L in 2006 ground water samples from well NC7-28. The distribution of ground water within the Qal/WBR and $Tnbs_1/Tnbs_0$ HSUs containing some added depleted uranium extends downgradient about 1,200 ft and 700 ft, respectively, from the Building 850 source area and has not changed from recent years.

Depleted uranium has also been detected in $Tnbs_1/Tnbs_0$ HSU ground water collected from wells NC2-05 and NC2-06A, located immediately north of the Building 802 area. The $^{235}U/^{238}U$ atom ratios in samples from these wells indicate that the vast majority of the uranium is natural in origin. The maximum total uranium activity detected in this area during the first semester 2008 was 0.47 pCi/L (NC2-06A, April 2008). Other wells in the area will be sampled during the second semester 2008. The historic maximum total uranium activity in this area was 14.2 pCi/L in the May 2004 sample from well NC2-05. The distribution of uranium in this area has not changed in recent years.

Ground water uranium data from several wells immediately downgradient of the Pit 2 Landfill also indicated the presence of some depleted uranium. These data are discussed in Section 3.1.1 of this report.

2.5.2.1.3. Nitrate Contaminant Concentrations and Distribution

The maximum first semester 2008 nitrate concentration detected in ground water was 160 mg/L (NC7-29, April 2008). The historic maximum nitrate concentration was 180 mg/L, detected in 2007 at well NC7-29. Historic data indicate that ground water nitrate concentrations in the two HSUs are limited in extent and relatively stable. Overall, the distribution and concentrations of nitrate in ground water are generally similar to those observed in previous years.

2.5.2.1.4. Perchlorate Contaminant Concentrations and Distribution

Perchlorate was first detected in ground water at Building 850 in 2003. Recent monitoring indicates the presence of perchlorate in Building 850 ground water at concentrations exceeding the 6 µg/L cleanup standard. The maximum first semester 2008 perchlorate concentration detected in a ground water sample was 69 µg/L (W-850-2417, February 2008). This well is completed in the Qal/WBR and $Tnbs_1$/$Tnbs_0$ HSUs and is immediately downgradient of Building 850. The historic maximum perchlorate concentration in the OU was 75.2 µg/L (NC7-28, November 2005). Perchlorate has also been detected at concentrations above the 6 µg/L cleanup standard in ground water from wells east and south of Building 850, in western Doall Ravine, and east of Pit 1. Overall, the distribution and concentrations of perchlorate in ground water in both HSUs are nearly identical to those observed in previous years.

2.5.2.1.5. HE Compound Contaminant Concentrations and Distribution

The HE compounds HMX and RDX were detected at concentrations of 6 µg/L and 4.2 µg/L, respectively, in ground water samples collected from well W-850-2417 (February 2008), located about 150 ft east of Building 850. During the second semester 2008, samples will be collected from the wells in this area to better define the extent of these chemicals in local ground water. These HE compounds were not detected in any other Building 850 OU wells above the 1 µg/L reporting limit.

2.5.2.2. Building 850 OU Remediation Optimization Evaluation

MNA is the selected remedy for remediation of tritium in ground water emanating from the Building 850 area. Recent data indicate MNA continues to be effective in reducing tritium activities in ground water. The highest tritium activities in ground water in OU 5 continue to be located immediately downgradient of the tritium sources at the Building 850 Firing Table and continue to decline. The extent of the 20,000 pCi/L tritium activity contours in both HSUs continues to diminish. The significant decreases in activities and extent of the Building 850 tritium plume with activities exceeding the cleanup standard indicate that natural attenuation (radioactive decay and a decreasing source term activity) continues to be effective in reducing tritium activities in ground water. In general, ground water tritium activities continue to decline or are below historic highs throughout the Building 850 plume.

The distribution of depleted uranium is similar to previous years and total uranium in ground water continued to be below the 20 pCi/L cleanup standard in samples from all wells in the

Building 850 OU except for one sample collected from well NC7-28 in February 2008 (21 pCi/L). The subsequent April 2008 sample collected from this well contained 15 pCi/L of uranium. The extent of total uranium activities in ground water proximal to Building 850, as well as in the suite of wells that sample ground water containing some depleted uranium, are similar to past years. The remediation strategy for uranium at Building 850 continues to be protective because: (1) total uranium activities in Building 850 ground water generally remain below the 20 pCi/L cleanup standard; (2) the areal extent of depleted uranium has not changed during the period of monitoring; and (3) the temporal trends in $^{235}U/^{238}U$ atom ratios remain stable.

The extent and maximum concentrations of nitrate and perchlorate in ground water are also similar to those observed in previous years. An *in situ* perchlorate bioremediation treatability test is scheduled for 2009. The objective of this test will be to evaluate the efficacy of sodium lactate injection to reduce perchlorate ground water concentrations immediately downgradient of the Building 850 Firing Table. Recently installed well W-850-2417 will serve as the lactate injection well and nearby downgradient well NC7-28 will serve as a performance monitor well for this test.

2.5.2.3. Building 850 OU Remedy Performance Issues

There were no issues that affect the performance of the cleanup remedy for the Building 850 OU during this reporting period. The remedy continues to be effective and protective of human health and the environment, and to make progress toward cleanup.

2.6. Building 854 OU 6

The Building 854 Complex was used to test the stability of weapons and weapon components under various environmental conditions and mechanical and thermal stresses. A map of Building 854 OU showing the locations of monitoring and extraction wells and treatment facilities is presented in Figure 2.6-1.

Three GWTSs are currently operated in the Building 854 OU; Building 854-Source (854-SRC) Building 854-Proximal (854-PRX), and Building 854-Distal (854-DIS). One SVTS is also operated at 854-SRC.

The 854-SRC GWTS began operation in December 1999 removing VOCs and perchlorate from ground water. Ground water extraction was expanded in September 2006 from one well, W-854-02 extracting at a flow rate of approximately 1 gpm to include W-854-18A, W-854-17, and W-854-2218 extracting at an approximate combined flow rate of 2.5 to 3.0 gpm. The current GWTS configuration includes a particulate filtration system, two ion-exchange columns containing SR-7 resin connected in series for perchlorate removal, and three aqueous-phase GACs connected in series for VOC removal. Nitrate-bearing treated effluent is then discharged via a misting tower over the landscape for uptake and utilization of the nitrate by indigenous grasses.

A SVTS began operation at the 854-SRC in November 2005. Soil vapor is extracted from W-854-1834 at an approximate flow rate of 53 scfm. This system consists of vapor-phase GAC to remove VOCs from extracted soil vapor. Treated vapors are discharged to ambient air.

The 854-PRX GWTS began operation in November 2000 removing VOCs, nitrate, and perchlorate from ground water. Ground water is extracted at an approximate flow rate of 1 gpm from well W-854-03 located southeast of the Building 854 complex. The GWTS configuration includes two ion-exchange columns containing SR-7 resin connected in series for perchlorate removal, three aqueous-phase GACs connected in series for VOC removal, and above ground containerized wetland biotreatment for nitrate removal prior to being discharged into an infiltration trench. In 2007, the treatment system was modified to replace the solar power with site power to increase the volume of extracted ground water by operating the GWTS 24-hours a day.

The 854-DIS GWTS began operation in July 2006 removing VOCs and perchlorate from ground water. Ground water is extracted from well W-854-2139 at an instantaneous flow rate of 1.2 gpm, when the solar-powered facility operates intermittently. However, the operational flow rate averaged over time is approximately 0.025 gpm. The current GWTS configuration includes two SR-7 ion-exchange resin columns connected in series for perchlorate treatment followed by three aqueous-phase GACs connected in series for VOC removal prior to being discharged into an infiltration trench.

2.6.1. Building 854 OU Ground Water Treatment System Operations and Monitoring

This section is organized into five subsections: facility performance assessment; operations and maintenance issues; receiving water monitoring; compliance summary; and sampling plan evaluation and modifications.

2.6.1.1. Building 854 OU Facility Performance Assessment

The monthly ground water discharge volumes and rates and operational hours are summarized in Tables 2.6-1 through 2.6-3. The total volume of ground water treated and mass removed during the reporting period is presented in Table Summ-1. The cumulative volume of ground water treated and discharged and the mass removed are summarized in Table Summ-2.

Analytical results for influent and effluent samples are shown in Tables 2.6-4 and 2.6-5. The pH measurement results are presented in Appendix A.

2.6.1.2. Building 854 OU Operations and Maintenance Issues

Continuous operations of the 854-SRC, 854-PRX, and 854-DIS treatment systems were interrupted by the following:

<u>854-SRC GWTS</u>

- Replacement of the first GAC canister on January 23.
- Site power outage from February 13 to 14.
- Repairs including flow meter replacement, electronic wiring and software installation beginning February 25. The system is scheduled for restart at the start of third quarter.

<u>854-SRC SVTS</u>

- SVTS was offline for the rebound test from October 2007 to April 9, 2008. Vapor samples were collected to monitor rebound. The SVTS was shutdown on April 17 for more rebound testing.

<u>854-PRX GWTS</u>

- Manual shut down from December 11, 2007 to February 11 to prevent damage caused by freezing temperatures.
- Scheduled power outage and for replacement of acetate injection line from April 10 to 16.
- Replacement of the pump in extraction well W-854-03 from May 14 to 19.
- Replacement of a leaking carbon canister on May 21.
- Replacement of the acetic acid pump on June 26.

<u>854-DIS GWTS</u>

- Manual shut down from December 11, 2007 to February 4, 2008 to prevent damage caused by freezing temperatures.

2.6.1.3. Building 854 OU Compliance Summary

The 854-SRC, 854-PRX, and 854-DIS GWTSs all operated in compliance with the Substantive Requirements for Wastewater Discharge. The 854-SRC SVTS operated in compliance with the San Joaquin Valley Unified Air Pollution Control District permit limitations.

2.6.1.4. Building 854 OU Facility Sampling Plan Evaluation and Modifications

The Building 854 OU facility sampling and analysis plan complies with CMP monitoring requirements. The sampling and analysis plan is presented in Table 2.6-6. The only modifications made to the plans included additional monitoring conducted at 854-PRX to evaluate the nitrate and perchlorate concentrations.

2.6.1.5. Building 854 OU Treatment Facility and Extraction Wellfield Modifications

The only treatment system modification during this reporting period included the installation of a new type of acetate injection pump at 854-PRX, which will allow for better control of actetate injection into the bio-treatment units. There were no extraction wellfield modifications made in OU 6 during the reporting period.

2.6.2. Building 854 OU Ground Water Monitoring

The sampling and analysis plan for ground water and surface water monitoring is presented in Table 2.6-7. This table also delineates and explains deviations from the sampling plan and indicates any additions made to the CMP.

During the reporting period, ground water monitoring was conducted in accordance with the CMP monitoring requirements with the following exceptions: fifteen required analyses were not performed because there was insufficient water in the wells to collect the samples.

A ground water elevation contours for the $Tnbs_1/Tnsc_0$ HSU and hydraulic capture zones for the extraction wells that were active during first semester 2008 are presented in Figure 2.6-2.

2.6.3. Building 854 OU Remediation Progress Analysis

This section is organized into four subsections: mass removal; analysis of contaminant distribution and concentration trends; remediation optimization evaluation; and performance issues.

2.6.3.1. Building 854 OU Mass Removal

The monthly ground water mass removal estimates are summarized in Tables 2.6-8 through 2.6-10. The total mass removed during this reporting period and cumulative mass estimates are summarized in Table Summ-1 and Table Summ-2, respectively.

2.6.3.2. Building 854 OU Contaminant Concentrations and Distribution

At the Building 854 OU, VOCs are the primary COCs detected in ground water and perchlorate and nitrate are the secondary COCs. These constituents have been identified primarily in the $Tnbs_1/Tnsc_0$ HSU. Total VOC isoconcentration data for the $Tnbs_1/Tnsc_0$ HSU based on data collected during the first semester 2008 are contoured and presented in Figure 2.6-3. Isoconcentration contour maps for the secondary COCs will be presented next semester in the 2008 annual CMR report. Hydraulic capture zones are presented on the $Tnbs_1/Tnsc_0$ HSU ground water elevation and total VOC maps (Figures 2.6-2 and 2.6-3). The hydraulic capture zones shown on Figures 2.6-2 and 2.6-3 are based on pumping water levels from 854-PRX extraction well W-854-03, and 854-DIS extraction well W-854-2139, only.

2.6.3.2.1. Total VOC Contaminant Concentrations and Distribution

The maximum first semester 2008 concentration of total VOCs in $Tnbs_1/Tnsc_0$ HSU ground water was 40 µg/L (W-854-2139, November 2007). The 854-SRC extraction well W-854-02, which typically samples ground water containing the maximum total VOC concentrations in OU 6, was not sampled during the first semester because repairs were being made to the facility and the pump in the well could not be operated. Upon system restart in July 2008, ground water samples will be collected from the well to evaluate any rebound in total VOC concentrations that may have occurred during system shutdown. TCE comprises all of the total VOCs observed in ground water at Building 854, except for cis-1,2-DCE detected in samples from wells W-854-17 and W-854-2139. The maximum cis-1,2-DCE ground water concentration detected during the first semester of 2008 was 1.5 µg/L (W-854-17, January 2008). Overall, total VOC concentrations in Building 854 ground water have decreased from a historic pre-remediation maximum of 2,900 µg/L detected in 1997 in ground water from well W-854-02. The extent of the total VOC plume emanating from the Building 854 Complex is bounded to the south by a region where total VOC concentrations are below the 0.5 µg/L reporting limit. Downgradient and south of this region, a less extensive VOC plume occurs in ground water in the vicinity of former water-supply Well 13. While the extent of total VOCs in Building 854 ground water with concentrations above the 0.5 µg/L reporting limit has remained relatively stable over time, since remediation has started: (1) the portion of the northern VOC plume with concentrations greater than 50 µg/L has decreased and is limited to the immediate vicinity of the source area; (2) the extent of the northern total VOC plume with concentrations greater than 10 µg/L has decreased; and (3) the extent of the southern total VOC plume with concentrations greater than 5 µg/L has decreased significantly in size.

2.6.3.2.2. Perchlorate Contaminant Concentrations and Distribution

The maximum first semester 2008 perchlorate concentration detected in a ground water sample was 22 µg/L (W-854-1823, June 2008). The previous historic maximum concentration of 27 µg/L was detected in 2003. Overall, the distribution and concentrations of perchlorate in ground water in ground water are nearly identical to those observed last year.

2.6.3.2.3. Nitrate Contaminant Concentrations and Distribution

During the first semester of 2008, nitrate was detected above the 45 mg/L cleanup standard in ground water samples from wells completed in the $Tnbs_1/Tnsc_0$, $Tnbs_1$, and Qal-$Tnbs_1$ HSUs. The first semester 2008 maximum nitrate concentration of 230 mg/L was detected in ground water samples from W-854-14 in June 2008. The historic maximum of 260 mg/L was detected in a sample collected from this well in June 2006. While the extent of nitrate in ground water has not changed significantly during the period of remediation, the continued presence of nitrate could be the result of the ongoing contribution from septic systems (i.e., Building 858 near W-854-14) and natural sources in the Neroly Formation bedrock. Geochemical data (nitrogen and oxygen isotopes) collected in the Building 854 OU as part of the Site 300 nitrate MNA study indicate that denitrification is taking place in Neroly Formation ground water.

2.6.3.3. Building 854 OU Remediation Optimization Evaluation

The expansion of the 854-SRC GWTS wellfield in 2006 has increased the total volume of extracted water and mass removal. However, as discussed in Section 2.6.1.2, the facility was shut down for several months for repairs and a brief power outage during the first semester 2008. With restart planned for July 2008, the impacts of wellfield expansion on hydraulic capture and long term cleanup will subsequently be evaluated and reported in future CMRs.

As stated previously, all construction activities for full time operation of 854-PRX were completed in September 2007, increasing overall extraction capacity and the extraction flow rate from well W-854-03 to 1.4 gpm. Although full-time operations have resulted in larger volumes of extracted water from W-854-03, limited increased drawdown has been observed (~1 ft), and the stabilized pumping water level in this well remains more than 10 ft above the screen top. This indicates that W-854-03 can sustain even higher long-term flow rates. However, increasing the flow at this facility may exceed the capacity of the nitrate biotreatment unit and the injection trench. Different treatment options, including the *in situ* treatment of nitrate in an upgradient injection well or misting are being evaluated to increase hydraulic capture of the TCE plume in this area and enhance overall ground water cleanup efforts in OU 6.

The 854-SRC SVTS was taken offline when October 2007 analytical results indicated the influent TCE concentrations from SVE well W-854-1834 had fallen below the detection limit (<0.2 ppm_v TCE), and a soil vapor rebound test was initiated. Vapor extraction from the well was suspended until April 9 2008 when two vapor samples collected from W-854-1834 contained 0.38 and 0.68 ppm_v of TCE, respectively. Extraction and treatment continued until April 17 2008, when an influent vapor sample contained 0.32 ppm_v of TCE. The system will be left offline until mid-2008 to evaluate VOC rebound.

The single extraction well at the 854-DIS GWTS (W-854-2139) pumps at a low average rate of 0.02 gpm because of cyclic pumping from the well, which cannot sustain prolonged pumping without excessive drawdown. Techniques for optimizing ground water treatment in the distal VOC plume area are being evaluated.

2.6.3.4. Building 854 OU Remedy Performance Issues

There were no new issues that affect the performance of the cleanup remedy for the Building 854 OU during this reporting period. The remedy continues to be effective and protective of human health and the environment, and to make progress toward cleanup. Future CMRs will depict hydraulic capture in the 854 source area related to pumping from the two main 854-SRC extraction wells and, if implemented, increased pumping at 854-PRX should increase hydraulic capture in the proximal area of this OU.

2.7. Building 832 Canyon OU 7

Building 832 Canyon facilities were used to test the stability of weapons and associated components under various environmental conditions. Contaminants were released from Buildings 830 and 832 through piping leaks and surface spills during testing activities at these buildings.

Three GWTSs and two SVTS are operated in the Building 832 Canyon OU: Building 832-Source (832-SRC), Building 830-Source (830-SRC), and Building 830-Distal South (830-DISS). The 832-SRC and 830-SRC facilities extract and treat both ground water and soil vapor, while the 830-DISS facility extracts and treats ground water only.

A map of Building 832 OU showing the locations of monitoring and extraction wells and treatment facilities is presented in Figure 2.7-1.

The 832-SRC GWTS removes VOCs and perchlorate from ground water and the SVTS removes VOCs from soil vapor. The GWTS and SVTS began operation in September and October 1999, respectively. Initially, ground water was extracted from nine wells at a combined total flow rate that initially ranged from 30 to 300 gallons per day (gpd). The total flow eventually dropped to 5 to 50 gpd due to lowering of the water table by pumping. In early 2005, the source area extraction wellfield was reduced to two wells (W-832-12 and W-832-15) operating with vacuum enhancement and a combined flow rate ranging from 60 to 220 gpd. In late 2005, the extraction wellfield was expanded to include three additional downgradient wells (W-832-01, W-832-10, and W-832-11). As a result, the combined flow rate increased to about 1,300 gpd, and VOC concentrations in facility influent increased four-fold. Well W-832-25 was connected to the facility in July 2006. Currently, ground water is extracted from wells W-832-01, W-832-10, W-832-11, W-832-12, W-832-15 and W-832-25 at an approximate combined flow rate of 0.5 gpm. Soil vapor is extracted from wells W-832-12 and W-832-15 at an approximate combined flow rate of approximately 3.0 scfm. The current GWTS configuration includes a Cuno filter for particulate filtration, two ion-exchange columns with SR-7 resin connected in series to remove perchlorate, and three aqueous-phase GAC units (also connected in series) to remove VOCs. Nitrate-bearing treated effluent is then discharged via a misting tower over the landscape for uptake and utilization of the nitrate by indigenous grasses. A positive displacement rotary lobe blower is used to create a vacuum at selected wellheads through a system of manifolded piping. The contaminated vapors are treated using three vapor-phase GAC units connected in series. Treated soil vapors are then discharged to the atmosphere under a permit from the San Joaquin Valley Unified Air Pollution Control District.

The 830-SRC GWTS removes VOCs and perchlorate from ground water and the SVTS removes VOCs from soil vapor. The GWTS and SVTS began operation in February and May 2003, respectively. Ground water was extracted from four wells at a total flow rate ranging from 5 to 100 gpd. The 830-SRC extraction wellfield was expanded in 2006. Seven GWTS extraction wells (W-830-49, W-830-1829, W-830-2213, W-830-2214, W-830-57, W-830-60, and W-830-2215) were added to the original three (W-830-1807, W-830-19, and W-830-59). The expansion well testing began during 2006. The tests were completed and the expanded wellfield was in full operation during the first semester 2007. The current GWTS configuration includes a Cuno filter for particulate filtration, two ion-exchange columns with SR-7 resin connected in series to remove perchlorate, and three in series aqueous-phase GAC units to remove VOCs. Nitrate-bearing treated effluent is then discharged via a misting tower over the landscape for uptake and utilization of the nitrate by indigenous grasses. The 830-SRC soil vapor extraction wellfield was also expanded to include well W-830-49 in 2006. Soil vapor is extracted from wells W-830-1807 and W-830-49 using a liquid ring vacuum pump. The contaminated vapors are treated using three vapor-phase GAC units connected in series. Treated soil vapors are then discharged to the atmosphere under a permit from the San Joaquin Valley Unified Air Pollution Control District.

The 830-DISS GWTS began operation in July 2000 removing VOCs, perchlorate, and nitrate from ground water. Approximately 1 gpm of ground water was extracted from three wells (W-830-51, W-830-52, and W-830-53) using natural artesian pressure. The GWTS configuration consisted of a Cuno filter for particulate filtration, two aqueous-phase GAC units in series to remove VOCs, two in series ion-exchange columns with SR-7 resin to remove perchlorate, and three bioreactor units for nitrate reduction. These units were open-container wetland bioreactors containing microorganisms that use nitrate during cellular respiration. Acetic acid was added to the process stream as a carbon source. Treatment system effluent was discharged via a storm drain that discharges to the Corral Hollow alluvium. At the request of the Regional Water Quality Control Board, the facility was modified during the first semester 2007 to cease discharge of treated water to a surface water drainage way. The modification included the addition of a fourth well, W-830-2216, to the extraction well field. Currently, extracted ground water flows through ion-exchange canisters to remove perchlorate at the 830-DISS location. The water is then piped to the Central GSA GWTS for VOC removal. Nitrate-bearing treated effluent is then discharged via a misting tower over the landscape for uptake and utilization of the nitrate by indigenous grasses.

2.7.1. Building 832 Canyon OU Ground Water and Soil Vapor Extraction and Treatment System Operations and Monitoring

This section is organized into four subsections: facility performance assessment; operations and maintenance issues; compliance summary; and sampling plan evaluation and modifications.

2.7.1.1. Building 832 Canyon OU Facility Performance Assessment

The monthly ground water and soil vapor discharge volumes, rates, and operational hours are summarized in Tables 2.7-1 through 2.7-3. The total volume of ground water and vapor extracted and treated and mass removed during the reporting period are presented in Table Summ-1. The cumulative volume of ground water and soil vapor treated and discharged and mass removed are summarized in Table Summ-2.

Analytical results for influent and effluent samples are shown in Tables 2.7-4 and 2.7-5. The pH measurement results are presented in Appendix A.

2.7.1.2. Building 832 Canyon OU Operations and Maintenance Issues

Continuous operations of 832-SRC GWTS and SVTS, 830-SRC GWTS and SVTS, and 830-DISS GWTS were interrupted by the following:

<u>832-SRC GWTS and SVTS</u>

- Manual shut down of extraction wells W-832-01, W-832-10, W-832-11, and W-832-25 from December 10, 2007 to February 11 to prevent damage caused by freezing temperatures. The GWTS and SVTS operated using extraction wells W-832-12 and W-832-15.
- Site power outages from February 8 to 11 and February 13 to 14.
- Site power outages on April 10, and from April 19 to 21.

<u>830-SRC GWTS and SVTS</u>

- Manual shut down of extraction wells W-830-19, W-830-49, W-830-59, W-830-1829, W-830-2213, and W-830-2214 from December 10, 2007 to February 11, 2008 to prevent damage caused by freezing temperatures. The GWTS continued to operate using extraction wells W-830-1807, W-830-2215, W-830-57, and W-830-60. The SVTS continued to operate using extraction well W-830-1807 while W-830-49 was shutdown for freeze protection until March 5.
- Site power outages from February 8 to 11 and February 13 to 14.
- Site power outage on April 10.
- Replacement of ion-exchange columns from April 15 to17.
- Site power outage from April 19 to 21.
- Ground water and soil vapor extraction were discontinued from extraction well W-830-49 from May 12 to 28 until the pump was replaced.
- Issues with the misting tower transfer tank and interlock systems shut off the GWTS on May 14. The plugged misting heads were changed and pumping from the low flow wells W-830-1807, W-830-19, and W-830-59 resumed on May 15.
- Wells W-830-60 and W-830-2215 were being operated on a daily basis until the high-level switch problems in the misting tower batch tank were repaired. Wells W-830-57 and W-830-2214 remained offline for the remainder of the reporting system awaiting pump replacement.
- Repairs to the misting tower discharge line and installation of ball valve on vapor extraction line from W-830-49 from June 5 to 9.
- SVTS offline June 22 to 23 and on June 24 due to high condensate levels. Pump replaced in well W-830-1807 to address condensate problem.

<u>830-DISS GWTS</u>

- Compressor failure at Central GSA from December 12, 2007 until February 5, 2008.

- Site power outages from February 8 to 11 and February 13 to 25 that shut down the Central GSA.
- The GWTS was shut down over weekends until a valve was replaced on March 18.
- Replacement of SR-7 ion-exchange canisters due to leaks in canisters that developed upon attempted start-up after power outage on April 10. The system was offline from April 10 to May 8.

2.7.1.3. Building 832 Canyon OU Compliance Summary

The 830-SRC, 832-SRC, and 830-DISS GWTSs operated in compliance with Substantive Requirements during the reporting period. The 830-SRC and 832-SRC SVTSs operated in compliance with the San Joaquin Valley Unified Air Pollution Control District permit limitations.

2.7.1.4. Building 832 Canyon OU Facility Sampling Plan Evaluation and Modifications

The Building 832 Canyon OU treatment facility sampling and analysis plan complies with CMP monitoring requirements. The sampling and analysis plan is presented in Table 2.7-6. The only modifications made to the plan during the reporting period included additional samples collected at the 832-SRC and 830-SRC GWTSs for breakthrough evaluation and to remain within compliance due to the discharges at 832-SRC.

2.7.1.5. Building 832 Canyon OU Treatment Facility and Extraction Wellfield Modifications

There were no treatment facility or wellfield modifications in OU 7 during the first semester of 2008.

2.7.2. Building 832 Canyon OU Ground Water Monitoring

The sampling and analysis plan for ground water and surface water monitoring is presented in Table 2.7-7. This table explains deviations from the sampling plan and indicates any additions made to the CMP.

During the reporting period, ground water monitoring was conducted in accordance with the CMP monitoring requirements with the following exceptions; twenty-four required analyses were not performed because there was insufficient water in the wells to collect the samples.

Ground water elevation data are posted for the Qal/WBR and $Tnsc_{1a}$ and contoured for $Tnsc_{1b}$ and Upper $Tnbs_1$ HSUs as presented in Figures 2.7-2, 2.7-4, 2.7-3, and 2.7-5, respectively. The ground water elevation maps also show hydraulic capture zones for the extraction wells that were active during second semester.

2.7.3. Building 832 Canyon OU Remediation Progress Analysis

This section is organized into four subsections: mass removal; contaminant concentrations and distribution; remediation optimization evaluation; and performance issues.

2.7.3.1. Building 832 Canyon OU Mass Removal

The monthly ground water and soil vapor mass removal estimates are summarized in Tables 2.7-8 through 2.7-10. The total mass removed during this reporting period and cumulative mass estimates are summarized in Table Summ-1 and Table Summ-2, respectively.

2.7.3.2. Building 832 Canyon OU Contaminant Concentrations and Distribution

At the Building 832 Canyon OU, VOCs (mainly TCE) are the primary COCs detected in ground water. Perchlorate and nitrate are the secondary COCs. These constituents have been identified primarily in the $Tnsc_{1a}$, $Tnsc_{1b}$ and Qal/WBR HSUs. Total VOCs have also been detected at low concentrations in the $Tnbs_2$ and Upper $Tnbs_1$ HSUs. Total VOC isoconcentration data are posted for the Qal/WBR and $Tnsc_{1a}$ and contoured for the $Tnsc_{1b}$ and Upper $Tnbs_1$ HSUs as presented on Figures 2.7-6, 2.7-8, 2.7-7, and 2.7-9, respectively. Hydraulic capture zones are presented on the $Tnbsc_{1b}$ and Upper $Tnbs_1$ HSU ground water elevation and total VOC maps. Post-only maps and isoconcentration contour maps for the secondary COCs will be presented next semester in the 2008 annual CMR report. For collocated wells, the highest concentration was used for contouring.

2.7.3.2.1. Total VOC Contaminant Concentrations and Distribution

Total VOC concentrations in Qal/WBR HSU ground water have decreased from a historic maximum of 10,000 µg/L (SVI-830-035) in 2003 to a maximum of 1,200 µg/L (SVI-830-035, March 2008) in first semester 2008. Historically, ground water samples from wells located in the Building 830 source area have contained the highest total VOC concentrations in this HSU. During the first semester 2008 VOC samples were not collected from some Qal/WBR wells in the Building 832 source area because the water table has declined below the screen bottom in these wells. Total VOC concentrations in ground water samples from Qal/WBR HSU guard wells located near the Site 300 boundary south of Building 832 Canyon continue to be very low (<1 µg/L) to below reporting limits (<0.5 µg/L) and have decreased from a historic maximum of 2.0 µg/L (W-6BS) in 2001 to a maximum of 0.7 µg/L (W-6BS) in March of 2008.

A significant reduction in total VOC concentrations in both ground water and vapor have been achieved in the Building 832 source area since remediation began in 1999. Total VOC concentrations in wells screened across both the Qal/WBR and $Tnsc_{1b}$ HSUs in this source area have decreased from a historic maximum of 1,800 µg/L (W-832-18) in 1998 to a maximum total VOC concentration of 53 µg/L (W-832-12, February 2008) in first semester 2008. The Building 832 source area has been almost completely desaturated as a result of ongoing ground water extraction and limited rainfall during the last year. Many groundwater samples (for VOC analyses) were not collected from some $Tnsc_{1b}$ HSU wells because the water table has declined below the screen bottom in these wells. Specifically, W-832-15, whose screen was saturated during January sampling, was dry during the June water levels that were used to create the contour maps. Total VOC concentrations in soil vapor have declined significantly from a historic maximum of 1.8 ppm_v in September 2001 to a maximum of 0.43 ppm_v during first semester 2008. Analysis including rebound testing is ongoing to ensure that these vapor concentrations are representative of subsurface conditions and to determine whether the vapor extraction system in this source area meets shut off criteria.

A significant reduction in total VOC concentrations in ground water has also been achieved in the Building 830 source area since remediation began in 2000 although the overall extent of VOCs has not significantly changed over the past several years. Total VOC concentrations in $Tnsc_{1b}$ HSU ground water in and near the Building 830 source area have decreased by an order-of-magnitude from a historical maximum of 13,000 µg/L (W-830-49) in 2003 to a maximum of 3,600 µg/L (W-830-19, January 2008) in first semester 2008. Total VOC concentrations in $Tnsc_{1b}$ HSU artesian wells W-830-51, W-830-52, and W-830-53, located farther south along

Building 832 Canyon, have also decreased from a historic maximum of 170 µg/L in 2002 to a maximum of 67 µg/L (W-830-52, February 2008) in first semester 2008. The leading edge of the $Tnsc_{1b}$ VOC plume with concentrations above the 0.5 µg/L reporting limit remains within the Site 300 boundaries. Just downgradient of the leading edge of the VOC plume, concentrations in $Tnsc_{1b}$ HSU guard wells remain below the 0.5 µg/L reporting limit.

Total VOC concentrations in $Tnsc_{1a}$ HSU ground water have also decreased by one order of magnitude since remediation began from a historic maximum of 4,500 µg/L (W-830-25) in 1997 to a maximum of 460 µg/L (W-830-2214, April 2008) during first semester 2008. Remediation of this HSU began with the 830-SRC expansion in early 2007. First semester 2008 total VOC concentrations were 41 µg/L (February 2008) in $Tnsc_{1a}$ monitor well, W-830-2311, located near the southern end of the Building 832 Canyon. This is the farthest downgradient well that monitors this HSU. A guard well screened in this HSU located near the southern end of Building 832 Canyon is scheduled for installation in 2009.

Total VOC concentrations in Upper $Tnbs_1$ HSU ground water have decreased since remediation began from a historic maximum of 100 µg/L (W-830-28, June 1998) in 1998 to a maximum of 32 µg/L (W-830-2215, January 2008) during first semester 2008. VOCs were not detected above the 0.5 µg/L reporting limit in Upper $Tnbs_1$ guard wells W-830-20 and W-832-2112 during the first semester 2008. Well W-830-15, located farther downgradient near the southern end of the Building 832 Canyon also remains below the reporting limit for VOCs. The continued absence of VOCs in these downgradient monitoring wells indicates that the Upper $Tnbs_1$ extraction wellfield is adequately capturing the VOC plume in this HSU.

2.7.3.2.2. HE Compound Concentrations and Distribution

During the first semester of 2008, no concentrations of HE compounds (RDX, HMX, 2-amino-4,6-dinitrotoluene, and nitrobenzene) were detected above the reporting limits for each respective compound.

2.7.3.2.3. Perchlorate Concentrations and Distribution

The maximum perchlorate ground water concentration in the Qal/WBR HSU during first semester 2008 was 15 µg/L (February 2008) in 832-SRC extraction well W-832-13. This well is used to constrain plume concentrations in both the Qal/WBR and $Tnsc_{1b}$ HSUs due to the location of its screened interval across these two HSUs. The highest historic perchlorate concentration in this well was 22 µg/L (February 2007). During first semester 2008, perchlorate was not detected above the 4 µg/L reporting limit in Qal/WBR guard wells W-35B-01 and W-880-02.

During the first semester 2008, the maximum perchlorate ground water concentration in the $Tnsc_{1b}$ HSU was 15 µg/L (W-832-13, February 2008). Historically, 832-SRC extraction well W-832-11 has contained groundwater with the highest perchlorate concentration in this HSU (20 µg/L, September 2005). A sample collected in February 2008 had a measured concentration of 7.7 µg/L perchlorate. Perchlorate was not detected above the 4 µg/L reporting limit in $Tnsc_{1b}$ guard wells during first semester 2008.

The maximum perchlorate ground water concentration in the $Tnsc_{1a}$ HSU was 5.1 µg/L (W-830-2214, January 2008). The highest historic perchlorate concentration in this HSU was 13 µg/L (W-832-25, February 1999).

Perchlorate was not detected above the reporting limit of 4 µg/L from any ground water samples taken from the Upper $Tnbs_1$ HSU during first semester 2008.

2.7.3.2.4. Nitrate Concentrations and Distribution

In general, nitrate ground water concentrations continue to be high in the vicinity of the Building 832 and 830 source areas and remain low to below the reporting limit (<0.5 mg/L) in the downgradient, deeper parts of all HSUs in OU 7. Nitrate ground water concentrations detected in samples from the Qal/WBR HSU during first semester 2008 ranged from <1 mg/L (guard wells) to 240 mg/L (SVI-830-033, March 2008).

Nitrate ground water concentrations detected in samples from the $Tnsc_{1b}$ HSU ranged from <0.5 mg/L to 150 mg/L (W-832-13, February 2008). A sample from well W-830-49 contained the highest historical nitrate concentration in this HSU (501 mg/L, June 1998). Nitrate concentrations in the $Tnsc_{1b}$ guard wells ranged from <0.5 mg/L to 2.0 mg/L (W-830-1831, February 2008), well below the 45 mg/L cleanup standard.

During first semester 2008, the maximum nitrate ground water concentration detected in samples from the $Tnsc_{1a}$ HSU was 73 mg/L (W-832-25, February 2008). Nitrate ground water concentrations detected in samples from the Upper $Tnbs_1$ ranged from <0.5 mg/L to 22 mg/L (W-26R-01, April 2008). Nitrate ground water concentrations in guard wells in $Tnsc_{1a}$ HSU were not detected above the reporting limit. A trace concentration (0.64 mg/L) of nitrate was detected in guard well W-35B-01 in July 2007; however, in a first semester 2008 sample, nitrate was not detected above the reporting limit. The very low concentrations or, more typically, the absence of detectable nitrate in these site boundary guard wells is consistent with the interpretation that nitrate is naturally attenuating *in situ*.

2.7.3.3. Building 832 Canyon OU Remediation Optimization Evaluation

Ground water and soil vapor extraction well field modification and optimization were conducted during 2007 to prevent offsite plume migration, reduce source area concentrations, and increase mass removal. The expanded 832-SRC and 830-SRC extraction wellfields were designed to increase hydraulic capture, while preventing the downward migration of contaminants into deeper HSUs or laterally toward the site boundary and Site 300 water-supply Well 20. Influent flow and mass removal rates have increased due to both the 830-SRC and the 832-SRC facility expansions.

Ground water yield continues to be low from the 832-SRC extraction wells and hydraulic capture is difficult to assess because these wells cannot maintain continuous operation. The low yield is due to a combination of low hydraulic conductivity geologic materials, dewatering, and limited recharge.

COC concentrations in the Building 830 and Building 832 source areas generally exhibit decreasing trends. Maximum total VOC concentrations have decreased significantly in the $Tnsc_{1b}$ and Qal/WBR HSUs. COC concentrations in the distal area have remained relatively constant.

Due to declining water levels during the second semester 2007 and reduced yield, $Tnsc_{1b}$ HSU extraction wells W-830-19, W-830-1829, and W-830-2213 did not operate sufficiently to determine hydraulic capture zones on Figure 2.7-3. Water levels in these three extraction wells have increased in the first semester 2008. Ground water extraction from these wells may resume in late 2008. The extent of hydraulic capture associated with the $Tnsc_{1b}$ HSU extraction wells, although limited, targets the highest total VOC plume concentrations emanating from the two source areas (Figure 2.7-3). Steep terrain and unstable canyon bottom soil conditions have limited the installation of extraction wells in OU 7. Hydraulic capture associated with Upper $Tnbs_1$ extraction wells also targets the highest total VOC concentrations in this HSU. Continued decreases in COC concentrations downgradient from the 832-SRC and 830-SRC extraction wellfields and the continued absence of COCs in guard wells further supports the efficacy of this extraction wellfield.

Low concentrations of TCE and PCE have been detected in Upper $Tnbs_1$ in well W-830-1832. Monitor well W-830-1832, located on the leading edge of the VOC plume, displayed increasing total VOC concentrations, prior to activation of the 830-SRC GWTS. Following the activation of the GWTS, concentrations of total VOC in W-830-1832 have steadily declined. Upper $Tnbs_1$ guard wells, located downgradient of this well W-830-1832 and upgradient of water-supply Well 20, continue to be below the reporting limit for all Building 832 Canyon COCs. Therefore, it is evident that total VOC concentrations have continued to decline in response to increased pumping and improved hydraulic capture in the $Tnsc_{1b}$ and Upper $Tnbs_1$ HSUs afforded by the 830-SRC extraction wellfield expansion.

As extraction from the 832-SRC, 830-SRC and 830-DISS extraction wells continues, it is expected that concentrations in all HSUs will continue to decline and the extent of the highest total VOC contour will be further reduced. Although the shape and extent of the Upper $Tnbs_1$ total VOC plume remains stable, this plume is expected to decrease in extent with continued pumping. Total VOC concentration trends in the Upper $Tnbs_1$ continue to be carefully monitored due to the potential influence from pumping of water-supply Well 20 and backup water-supply Well 18.

2.7.3.4. Building 832 Canyon OU Remedy Performance Issues

There were no new issues that affect the performance of the cleanup remedy for the Building 832 Canyon OU during this reporting period. The remedy continues to be effective and protective of human health and the environment, and to make progress toward cleanup.

2.8. Site 300 Site-Wide OU 8

The Site 300 Site-Wide OU is comprised of release sites at which no significant ground water contamination and no unacceptable risk to human health or the environment are present. For this reason, a monitoring-only interim remedy was selected for the release sites in the Interim Site-Wide Record of Decision (U.S. DOE, 2001). The monitoring conducted during the reporting period for these release sites is discussed below.

2.8.1. Building 801 and Pit 8 Landfill

The Building 801 Firing Table was used for explosives testing until it was discontinued in 1998, and the firing table gravel and some underlying soil were removed. Waste fluid discharges to the Building 801 Dry Well from the late 1950s to 1984, resulted in contamination of the soil and ground water. Debris from the firing table was buried in the nearby Pit 8 Landfill until 1974. A map of the Building 801 and Pit 8 Landfill area showing the locations of the building, landfill, monitor wells, ground water elevations, and approximate ground water flow direction is presented in Figure 2.8-1.

2.8.1.1. Building 801 and Pit 8 Landfill Ground Water Monitoring

Wells K8-01 and K8-03B monitor Building 801 contaminant releases while wells K8-02B, K8-04, and K8-05 are detection monitoring wells for the Pit 8 Landfill. Detection monitoring of this landfill, which is discussed in Section 3.2, is conducted to determine if releases have occurred.

The sampling and analysis plan for ground water monitoring is presented in Table 2.8-1. This table delineates any additions made to the CMP.

During the reporting period, ground water monitoring was conducted in accordance with the CMP monitoring requirements with the following exceptions; ten required analyses were not performed because there was insufficient water in the wells to collect the samples.

2.8.1.2. Building 801 and Pit 8 Landfill Contaminant Concentrations and Distribution

At Building 801, VOCs are the primary COCs detected in ground water. Perchlorate and nitrate are the secondary COCs. There are no COCs in ground water at the Pit 8 Landfill. The results of the detection monitoring of the Pit 8 Landfill are discussed in Section 3.2. Total VOC data are posted for the $Tnbs_1$ HSU as presented on Figure 2.8-1. Secondary COCs will be posted next semester in the 2008 annual CMR report.

During the first semester 2008, the maximum total VOC concentration detected in ground water samples from wells in the Building 801/Pit 8 Landfill area was 5.5 µg/L (K8-01, April 2008). This total VOC concentration was composed of 3.4 µg/L of TCE and 2.1 µg/L of 1,2-DCA. Total VOC concentrations detected in ground water samples collected from wells downgradient of Building 801 have decreased from a historic maximum of 10 µg/L at K8-01 in 1990.

During the first semester 2008, perchlorate was only detected in the April 2008 duplicate sample from well K8-01 at 4.1 µg/L. The other sample from well K8-01 and all the first semester ground water samples from the other Building 801/Pit 8 monitor wells did not contain perchlorate above the 4 µg/L reporting limit.

Nitrate concentrations in ground water in the Building 801/Pit 8 Landfill area have been fairly stable over time. During first semester 2008, concentrations in samples from wells K8-01 and K8-04 were above the 45 mg/L cleanup standard. The first semester 2008 maximum nitrate concentration detected in ground water samples from wells in the Building 801/Pit 8 Landfill area was 51 mg/L (K8-01 and K8-04, April 2008). The historic nitrate concentration of 64 mg/L was detected in ground water samples collected from K8-01 in 2002. Overall, nitrate concentrations in ground water at the Building 801/Pit 8 Landfill generally are similar to previous years.

As discussed in Section 2.5.2.1.1, tritium activities in the April 2008 samples from wells K8-01 and K8-02B were 155 ± 71.1 pCi/L and 127 ± 56.1 pCi/L, respectively. When accounting for error ranges, these data are within the 100 pCi/L background activity. Additionally, tritium was not detected in the other April 2008 sample from well K8-02B above the reporting limit (<100 pCi/L). The current measurements suggest that the extent of tritium from Building 850 is not increasing in this area.

2.8.2. Building 833

TCE was used as a heat-exchange fluid at Building 833 from 1959 to 1982 and was released through spills and rinse water disposal, resulting in TCE-contamination of soil and shallow perched ground water. A map showing the locations of the building, monitoring wells, and ground water elevations is presented in Figure 2.8-2.

2.8.2.1. Building 833 Ground Water Monitoring

The sampling and analysis plan for ground water monitoring is presented in Table 2.8-2. This table delineates any additions made to the CMP.

During the reporting period, ground water monitoring was conducted in accordance with the CMP monitoring requirements with the following exceptions; eight required analyses were not performed because there was insufficient water in the wells to collect the samples.

2.8.2.2. Building 833 Contaminant Concentrations and Distribution

VOCs are the primary COC in ground water at Building 833. Total VOC concentrations in the Tpsg HSU are presented in Figure 2.8-2.

The Tpsg HSU is a shallow, highly ephemeral perched water-bearing zone. During heavy rainfall events, this HSU may become saturated, but quarterly monitoring of the wells from 1993 to 2004 has shown little evidence of saturation. When saturated, monitoring conducted from 1993 to the first semester 2008 has shown a decline in total VOC concentrations in Tpsg HSU ground water from an historic maximum concentration of 2,100 µg/L in 1992 (W-833-03). During the first semester 2008, three Tpsg wells (W-833-12, W-833-28, and W-833-33) contained water for a portion of the semester and were sampled. These wells yielded samples containing total VOC concentrations (all TCE) of 5.1 µg/L (March 2008), 180 µg/L (March 2008) and 170 µg/L (February 2008), respectively. The fact that these wells were dry in January 2008 and again in June 2008 attests to the ephemeral saturation of the Tpsg HSU. VOCs were not detected in the first semester 2008 sample from deep $Tnbs_1$ HSU monitoring well W-833-30, indicating that VOC contamination continues to be confined to the shallow Tpsg perched water-bearing zone.

2.8.3. Building 845 Firing Table and Pit 9 Landfill

The Building 845 Firing Table was used from 1958 until 1963 to conduct explosives experiments. Leaching from Building 845 Firing Table debris resulted in minor contamination of subsurface soil with depleted uranium and HMX detected in samples collected from boreholes drilled in 1989. A map showing the locations of the building, landfill, monitoring wells, ground water elevations, and approximate hydraulic gradient direction in the $Tnsc_0$ HSU are presented in Figure 2.8-3.

2.8.3.1. Building 845 and Pit 9 Landfill Ground Water Monitoring

Wells K9-01 through K9-04 are detection monitoring wells for the Building 845 and Pit 9 Landfill. Detection monitoring of this landfill, which is discussed in Section 3.3, is conducted to determine if releases have occurred.

The sampling and analysis plan for ground water monitoring is presented in Table 2.8-3. This table delineates any additions made to the CMP.

During the reporting period, ground water monitoring was conducted in accordance with the CMP monitoring requirements.

2.8.3.2. Building 845 and Pit 9 Landfill Contaminant Concentrations and Distribution

There are no COCs in ground water at Building 845 and the Pit 9 Landfill. The monitoring wells near the Pit 9 Landfill are screened in the lower Neroly Formation $Tnsc_0$ HSU. Detection monitoring of the Pit 9 landfill, which is discussed in Section 3.3, is conducted to determine any releases to ground water.

No COC concentrations maps are provided for the Building 845 and Pit 9 Landfill area as there continues to be no contamination detected in the ground water.

2.8.4. Building 851 Firing Table

The Building 851 Firing Table has been used since 1962 to conduct explosives experiments. A map showing the locations of the firing table, monitoring wells, and ground water elevations is presented in Figure 2.8-4.

2.8.4.1. Building 851 Ground Water Monitoring

The sampling and analysis plan for ground water monitoring is presented in Table 2.8-4. This table delineates any additions made to the CMP.

During the reporting period, ground water monitoring was conducted in accordance with the CMP monitoring requirements.

2.8.4.2. Building 851 Contaminant Concentrations and Distribution

At the Building 851 Firing Table, uranium and tritium are the primary and secondary COCs detected in ground water, respectively. Total uranium activities, and $^{235}U/^{238}U$ atom ratios are presented in Figure 2.8-4. Tritium, the secondary COC, will be posted next semester in the 2008 annual CMR report. Wells W-851-05, W-851-06, and W-851-07 are completed in the Tmss HSU. Well W-851-08 is completed in the overlying $Tnsc_0$ HSU.

The first semester 2008 maximum total uranium activity of 0.64 pCi/L detected in a ground water sample from W-851-05 (May 2008) is only a fraction of the 20 pCi/L cleanup standard, and represents a decrease from the historic maximum uranium activity of 1.5 pCi/L detected in the Building 851 area in 2005 (W-851-08). The atom ratio of $^{235}U/^{238}U$ in the first semester samples from wells W-851-06 and W-851-08 indicated the addition of some depleted uranium. The atom ratios for the samples from wells W-851-05 and W-851-07 could not be quantified due to low isotope concentrations but historically have indicated natural uranium. Overall, uranium activity in ground water is similar to previous years and remains well below the cleanup standard.

During the first semester 2008, tritium activities were not detected above the 100 pCi/L reporting limit in ground water samples from any Building 851 monitoring wells. The maximum tritium activity detected in Building 851 ground water was 3,790 pCi/L in late 1998 (W-851-08).

3. Detection Monitoring, Inspection, and Maintenance Program for the Pits 2, 8, and 9 Landfills

The Pit 2, 8, and 9 Landfills received firing table debris from the 1950s to the 1970s. At present, there is no evidence of contaminant releases to ground water from any of these three landfills, except for low activities of depleted uranium at the Pit 2 Landfill, and no unacceptable risk or hazard to human or ecological receptors has been identified. The Detection Monitoring Program is designed to detect any future releases of contaminants from these landfills. This section presents the results for the Pit 2, 8, and 9 Landfills ground water detection monitoring network, and any landfill inspections or maintenance that was conducted during the reporting period.

3.1. Pit 2 Landfill

3.1.1. Sampling and Analysis Plan Modifications

The sampling and analysis plan for the Pit 2 Landfill ground water Detection Monitoring Program are presented in Table 3.1-1. During the reporting period ground water monitoring was conducted in accordance with the CMP monitoring requirements, except that the three Qal/WBR wells located southeast of Pit 2 (W-PIT2-2301, W-PIT2-2302, and W-PIT2-2303) were not sampled as they were dry. There were no modifications made to the plan.

3.1.2. Contaminant Detection Monitoring Results

A map showing the locations of monitoring wells and the Pit 2 Landfill is presented in Figure 2.5-1.

The ground water elevation contour maps that include the Pit 2 Landfill are presented in Figures 2.5-2 and 2.5-3. Wells completed in the Qal/WBR HSU immediately southeast and northeast of Pit 2 continue to be dry. Depth to ground water within the $Tnbs_1/Tnbs_0$ HSU was measured at 50 ft to 55 ft beneath the Pit 2 Landfill.

A map of the first semester 2008 distribution of ground water tritium activity within the $Tnbs_1/Tnbs_0$ HSU and including the Pit 2 Landfill is presented in Figure 2.5-5. Tritium was detected below the 20,000 pCi/L cleanup standard during the first semester 2008 in samples from all the Pit 2 wells. The maximum first semester 2008 tritium activity within the $Tnbs_1/Tnbs_0$ HSU in the area immediately south of the Pit 2 Landfill was 7350 ± 750 pCi/L (NC2-08, April 2008). Tritium activities in this area continue to decline. The historic maximum activity was detected in the August 1986 sample from well K2-01C (49,100 pCi/L). The overall distribution of ground water tritium activities in the Pit 2 Landfill area appears to primarily be a result of transport of the Building 850 tritium plume into the Pit 2 Landfill area. Data indicate that tritium activities in ground water immediately downgradient of the landfill are decreasing and are currently a fraction of the historic maximum.

Uranium activities detected in $Tnbs_1/Tnbs_0$ HSU ground water samples from the Pit 2 Landfill monitor wells are all historically below the cleanup standard of 20 pCi/L. The maximum first semester 2008 uranium activity detected in a ground water sample from this area was 4.9 pCi/L (K2-01C, January 2008). The detection of depleted uranium in the ground water samples from wells K2-01C, W-PIT2-1934, and W-PIT2-1935 indicates that low activities of depleted uranium have been added to the naturally-occurring uranium in the ground water by the Pit 2 Landfill.

The release of uranium from Pit 2 may have been the result of the discharge of potable water that was used to maintain a wetland habitat for red-legged frogs (a Federally-listed endangered species) within a drainage channel that extends along the northern and eastern margin of the Pit 2 Landfill. This discharge was discontinued in 2005. Since the discharge was discontinued, total uranium activities detected in Pit 2 Landfill detection monitor wells have decreased from a historic maximum of 17.4 pCi/L in 2004 and are within background levels for total uranium.

During the reporting period, perchlorate was detected in the April 2008 sample from $Tnbs_1/Tnbs_0$ HSU well W-PIT2-2304 at a maximum Pit 2 Landfill area concentration of 5.8 µg/L. The January 2008 ground water sample from well K2-01C contained 4.1 µg/L of perchlorate. Perchlorate was not detected above the 4 µg/L reporting limit in samples from any of the other Pit 2 Landfill area wells.

No other constituents, including VOCs, nitrate, HE compounds, metals and fluoride that were monitored during the first semester 2008 at the Pit 2 landfill as part of the Detection Monitoring Program were detected in $Tnbs_1/Tnbs_0$ HSU ground water above regulatory limits.

3.1.3. Landfill Inspection Results

The Pit 2 Landfill was inspected quarterly during the first semester 2008. Animal burrows were observed.

3.1.4. Annual Subsidence Monitoring Results

Annual subsidence monitoring will be conducted during the second semester 2008.

3.1.5. Maintenance

Some maintenance of the pit cover, including filling of animal burrows, was conducted during the first semester 2008.

3.2. Pit 8 Landfill

3.2.1. Sampling and Analysis Plan Modifications

The sampling and analysis plan for the Pit 8 Landfill ground water Detection Monitoring Program are presented in Table 2.8-1. During the reporting period, ground water monitoring was conducted in accordance with the CMP monitoring requirements with the following exceptions; ten required analyses were not performed because there was insufficient water in the wells to collect the samples. There were no modifications made to the plan.

3.2.2. Contaminant Detection Monitoring Results

Ground water elevations, nitrate, perchlorate, and total VOC concentrations in $Tnbs_1/Tnbs_0$ HSU ground water are presented in Figure 2.8-1.

Historic and current data indicate that total VOCs detected in ground water in the Pit 8 Landfill area are the result of releases from the former Building 801 dry well, which have migrated downgradient from Building 801 to beneath the landfill. The highest concentration of total VOCs continues to be observed at upgradient well K8-01 (5.5 µg/L, April 2008). The presence of total VOCs in ground water samples from well K8-04, immediately downgradient of the Pit 8 Landfill, at a maximum concentration of 2.4 μg/L (April 2008) appears to be a continuation of the VOC plume originating at the Building 801D dry well and is not due to a release from the Pit 8 Landfill. During the first semester, 1,2-DCA was the only contaminant detected above cleanup standards (0.5 μg/L) at a maximum concentration of 2.1 μg/L at K8-01, upgradient of Pit 8.

Nitrate was elevated above the 45 mg/L cleanup standard in first semester 2008 samples from wells K8-01 and K8-04, collected in April 2008, both at concentrations of 51 mg/L.

Recent tritium activities measured in ground water samples from two of the four wells sampled in the Pit 8 Landfill area are slightly in excess of background (Figure 2.5-5). As discussed in Section 2.5.2.1.1, tritium activities in the April 2008 samples from wells K8-01 and K8-02B were 155 ± 71.1 pCi/L and 127 ± 56.1 pCi/L, respectively. When accounting for error these data are within the range of the 100 pCi/L background. Additionally, tritium was not detected in the other April 2008 sample from well K8-02B above the reporting limit (100 pCi/L). These wells are upgradient of the Pit 8 Landfill. In addition, tritium was not detected above the reporting limit (<100 pCi/L) in samples from wells downgradient of the Pit 8 Landfill. The current measurements suggest that tritium from Building 850 is not impacting this area.

Fluoride, metals, uranium isotopes, and thorium-232 concentrations/activities in samples collected during the first semester 2008 from wells upgradient and downgradient of the Pit 8 Landfill were at or below background concentrations and below regulatory limits. Uranium atom ratios were natural.

Thus, except for VOCs (1,2-DCA), no constituents that were monitored during the first semester 2008 as part of the Detection Monitoring Program were detected in $Tnbs_1/Tnbs_0$ HSU ground water from wells upgradient or downgradient of the Pit 8 Landfill in excess of cleanup standards.

3.2.3. Landfill Inspection Results

The Pit 8 Landfill was inspected quarterly during the first semester 2008. Animal burrows were observed.

3.2.4. Annual Subsidence Monitoring Results

Annual subsidence monitoring will be conducted during the second semester 2008.

3.2.5. Maintenance

Some maintenance of the pit cover, including filling of animal burrows, was conducted during the first semester 2008.

3.3. Pit 9 Landfill

3.3.1. Sampling and Analysis Plan Modifications

The sampling and analysis plan for the Pit 9 Landfill ground water Detection Monitoring Program is presented in Table 2.8-3. During the reporting period, ground water monitoring was conducted in accordance with the CMP monitoring requirements. There were no modifications made to the plan.

3.3.2. Contaminant Detection Monitoring Results

All detection monitoring constituents including tritium, HE compounds, VOCs, fluoride, metals, uranium isotopes, and thorium-232 concentrations/activities in samples collected in 2007 wells upgradient and downgradient of Pit 9 were at or below background concentrations and below regulatory limits. Uranium atom ratios were natural.

During the first semester 2008, depth to ground water was approximately 110 ft beneath the Pit 9 Landfill. There were no significant changes in ground water elevations from previous semesters. Pit 9 Landfill ground water elevations are presented in Figure 2.8-3.

3.3.3. Landfill Inspection Results

The Pit 9 Landfill was inspected quarterly during the first semester 2008. No problems were observed.

3.3.4. Annual Subsidence Monitoring Results

Annual subsidence monitoring will be conducted during the second semester 2008.

3.3.5. Maintenance

Maintenance and repairs were not required or implemented at Pit 9 during the first semester 2008.

4. Risk and Hazard Management Program

The goal of the Site 300 Risk and Hazard Management Program is to protect human health and the environment by controlling exposure to contaminants during remediation. Risk and hazard management is conducted in areas of Site 300 where the exposure point risk exceeded 1×10^{-6} or the hazard index exceeded 1 in the baseline risk assessment.

4.1. Human Health Risk and Hazard Management

The CMP requires that the risk and hazard associated with volatile contaminants in the subsurface migrating upward into indoor and outdoor ambient air and being inhaled by workers be re-evaluated annually using current data.

The on-site worker inhalation risk associated with vapor intrusion from the subsurface into indoor and outdoor air is discussed in Section 4.1.1. The onsite worker inhalation risk associated with Springs 3, 5, and 7 is discussed in Section 4.1.2.

4.1.1. Vapor Intrusion Inhalation Risk Evaluation

According to the CMP, risk and hazard management is complete when the estimated risk is below 10^{-6} and the hazard index is below 1 for two consecutive years. Risk and hazard has been completed for the following buildings/areas where an unacceptable risk and/or hazard were previously identified:

- Outdoor Ambient Air Near Building 834D (completed in 2004)
- Outdoor Ambient Air Near Building 815 (completed in 2004)

- Outdoor Ambient Air in Building 854F (completed in 2004)
- Outdoor Ambient Air Near Building 830 (completed in 2004)
- Indoor Ambient Air Near Building 832F (completed in 2004)
- Indoor Ambient Air in Building 854F (building demolished in 2005)
- Indoor Ambient Air in Building 854A (completed in 2006)

Risk and hazard will no longer be evaluated for these buildings/areas.

The following buildings continue to have unacceptable risk and/or hazard levels:

- Indoor Ambient Air in Building 834D
- Indoor Ambient Air in Building 830
- Indoor Ambient Air in Building 833

Risk evaluations for these buildings will be performed and reported in the annual report.

Institutional controls, such as restricting access to or activities in areas of elevated risk, remained in place during the reporting period to prevent unacceptable exposure to contaminants during remediation for those buildings that continue to show an unacceptable risk and/or hazard.

4.1.2. Spring Ambient Air Inhalation Risk Evaluation

The CMP requires annual sampling of outdoor air above contaminated surface water, when surface water is present to determine VOC concentrations. The following springs were evaluated during the first semester 2008:

- Ambient Air Near Spring 3 in the Building 832 Canyon OU
- Ambient Air Near Spring 5 in the HEPA OU
- Ambient Air Near Spring 7 in the Pit 6 Landfill OU

No surface water or green hydrophilic vegetation was present at Springs 5 and 7 during first semester 2008, therefore no ambient air VOC sampling was performed. Springs 5 and 7 have been devoid of surface water or green hydrophilic vegetation since monitoring began in 2003. These springs will be monitored for the presence of surface water or green hydrophilic vegetation in 2009 and air samples will be collected if present.

Ambient air samples were collected at Spring 3 during the first semester 2008. The results are presented in Table 4.1-1. Three collocated samples were collected, SPRING3-001, SPRING3-002, and SPRING3-003. Per the requirements of the CMP, the ambient air sample concentrations are supposed to be compared to ambient air PRGs. However, in May 2008, PRGs were replaced with Regional Screening Levels for Chemical Contaminants at Superfund Sites. Therefore, ambient air sampling results were compared to the Industrial Air Screening Levels (SLs) (Table 4.1). The SLs represent a target risk of 1 x 10^{-6} and a hazard of 1. Chloroform and PCE were detected in sample SPRING3-001 above the 0.02 ppb_v reporting limit, but below their respective SLs. 1,1-DCE was detected in sample SPRING3-002 above the 0.02 ppb_v reporting limit, but below the SL. Methylene chloride was detected in all three samples just above the 0.02 ppb_v reporting limit, but below the SL. Methylene chloride is a common laboratory contaminant.

Since no contaminants were detected above their respective SLs, no risk or hazard to onsite workers exists. However, to meet the requirements of the CMP, air monitoring will continue in 2009 until the estimated risk is below 10^{-6} and the hazard index is below 1 for two consecutive years. No workers currently inhabit the area around Spring 3 except during semiannual sampling.

4.2. Ecological Risk and Hazard Management

4.2.1. Polychlorinated biphenyl (PCBs), Dioxins, and Furans in Surface Soil at 850

Due to the presence of PCBs, dioxins, and furans in the surface soil at Building 850, ecological field surveys are conducted to determine the presence of important burrowing species. Figure 4.2.1 shows the ecological survey area for the Building 850 Firing Table. As reported on in the 2004, 2005 and 2006 Annual CMRs, wildlife surveys have revealed the presence of the Western burrowing owl in the area adjacent to the Building 850 Firing Table. Western burrowing owls are a Federal and State species of concern (California Department of Fish and Game, 2004), and therefore fit the description of important burrowing species as presented in the CMP. A preliminary exposure analysis for the Western burrowing owl to estimate hazard to cadmium and PCBs was completed and reported on in the First Semester 2004 CMR. Results suggest cadmium is unlikely to pose a hazard to burrowing owls nesting in the vicinity of Building 850. However, concentrations of Arochlor 1254 in the soil at Building 850 may pose a hazard to burrowing owls nesting in the area, as the hazard quotient (HQ) exceeds 1.

In 2008, surveys for Western burrowing owl were performed on the slopes behind (west of) the Building 850 Firing Table and in the valley north of the building on April 4 and April 8, 2008. No burrowing owl pairs were observed in the area immediately west of Building 850 during the surveys. Five breeding pairs of owls were found occupying dens in the large bowl north of the Building 850 area, and a total of eight breeding pairs of burrowing owls were observed throughout Site 300. The closest owl pair to the facility was roughly 250 meters to the north-northeast. Figure 4.2.2 shows the current and historic nesting locations of burrowing owls observed throughout Site 300.

On three separate nights in January and February of 2008, nocturnal surveys for California tiger salamanders were conducted on the slopes behind (west of) the Building 850 Firing Table. Survey efforts were focused in this area because the largest concentration of ground squirrel burrows within the study area are found to the west of Route 4 and the California tiger salamander breeding pools closest to Building 850 (i.e. Ambrosino pool) are located to the west and north of the building. During each of the three nocturnal surveys, there was light precipitation. These surveys included walking transects through the area and visually surveying the entrances of burrows for California tiger salamanders using hand held flashlights. No California tiger salamanders were observed in the Building 850 area during this survey, although California tiger salamanders were observed in burrows at other Site 300 locations during that night.

Surveys for California tiger salamanders at the nearest breeding pool (Mitigation Pond), approximately 1000 meters to the northwest, were conducted on the same nights as the 850 area surveys. California tiger salamanders were recorded near this pool on each survey night.

California tiger salamanders have been observed up to 2 km from breeding pools (U.S. Fish and Wildlife Service, 2004). The Building 850 study area is located with 1200 meters of Ambrosino pool, a known breeding site for California tiger salamanders, and within 700 meters of the Mitigation Pond, a seasonal pool constructed in 2005, which has also been used for successful breeding. Although California tiger salamanders are known to move up to 2 km from breeding ponds, research conducted by Trenham (2001) suggests that most (95%) California tiger salamanders use breeding habitat within 173 meters of breeding ponds. Our survey results support this research. Although California tiger salamanders can utilize the Building 850 area as upland habitat, the largest concentration of California tiger salamanders is likely to be closer to breeding ponds.

Various remedial options are currently under consideration for the Building 850 area. Surveys for Western burrowing owls and California tiger salamanders will continue during 2008 in the area surrounding Building 850. These will include driving surveys, as well as surveys of the burrow systems located in the Building 850 survey area.

5. Data Management Program

The management of data collected during first semester 2008 was subject to the Environmental Restoration Department (ERD) data management process and standard operating procedures (Goodrich and Wimborough, 2006). This data management process tracks sample and analytical information from the initial sampling plan through data storage in a relational database. As part of the standard operating procedures for data quality, this process includes sample planning, chain-of-custody tracking, electronic and hard copy analytical results receipt, strict data validation and verification, data quality control procedures, and data retrieval and presentation. The use of this system promotes and provides a consistent data set of known quality. Quality assurance and quality control are performed consistently on all data.

5.1. Modifications to Existing Procedures

During the first semester of 2008, there were no major changes to the relational database that is used to maintain the data for the CMR or the applications used to access the data. Due to reduced staffing during the reporting period, only general maintenance and minor refinements were implemented to improve chain of custodies, data entry, and querying abilities. Existing standard operating procedures are being modified to reflect the changes necessitated by the normalization to the Oracle database.

5.2. New Procedures

Due to reduced staffing during the reporting period, no new development was done for the database or applications used to manage the CMR data.

6. Quality Assurance/Quality Control Program

LLNL conducted all compliance monitoring in accordance with the approved Quality Assurance Project Plan (QAPP) (Dibley, 1999) requirements for planning, performing, documenting, and verifying the quality of activities and data. The QAPP was prepared for CERCLA compliance and ensures that the precision, accuracy, completeness, and representativeness of project data are known and are of acceptable quality. The QAPP is used in conjunction with the LLNL ERD Standard Operating Procedures (SOPs), Operations and Maintenance Manuals (O&Ms), workplans, Integrated Work Sheets (IWSs), and Site Safety Plans. Modifications to existing LLNL quality assurance/quality control (QA/QC) procedures, new QA/QC procedures that were implemented during this reporting period, self-assessments, quality issues and corrective actions, and analytical and field quality control are discussed in Sections 6.1 through 6.6.

6.1. Modifications to Existing Procedures

LLNL Livermore Site and Site 300 Environmental Restoration Project SOPs, Revision 13 is in process. Revision 13 is concentrated on Chapters 2 and 5 that cover ground water sampling procedures and data management procedures, respectively. To date, revisions have been made to SOP 2.1: Pre-sample Purging of Wells, SOP 2.2: Field Measurements on Surface and Ground Waters, SOP 2.3: Sampling Monitor Wells with Bladder and Electric Submersible Pumps, and Specific-Depth Grab Sampling Devices, SOP 2.4: Sampling Monitor Wells with a Bailer, SOP 2.5: Surface Water Sampling, SOP 2.6: Sampling for Volatile Organic Compounds, SOP 2.7: Pre-sample Purging and Sampling of Low-Yielding Monitor Wells, SOP 2.9: Sampling for Tritium in Ground Water, SOP 2.10: Well Disinfection and Coliform Bacteria Sampling, SOP 2.13: Barcad Sampling, SOP 5.1: Data Management Printed Analytical Result Receipt and Processing, SOP 5.3: Data Management Electronic Analytical Result Receipt and Processing for Sample and Analysis Data, SOP 5.4: Data Management Hand Entry of Analytical Results, SOP 5.8: Field Logbook Control, SOP 5.10: Data Management Receipt and Processing of Lithologic Data by Electronic Transfer, SOP 5.14: Issuing New Parameter Codes, and SOP 5.15: Livermore Site Routine Groundwater Sampling Plan Preparation. Two of the procedures in Chapter 4 are also in the revision process: SOP 4.1: General Instructions for Field Personnel and SOP 4.3: Sample Containers and Preservation. SOP 5.6: Ground Water Elevation Reports is being revised. When the revisions to this SOP are finalized, Revision 13 will be ready to begin the signature chain review process. Chapter 2 procedures including SOP 2.8: Installation of Dedicated Sampling Devices and SOP 2.12: Ground Water Monitor Well and Equipment Maintenance will not be included in Revision 13, but are scheduled to be included with the next release due to improvements being made to the well and equipment installation tracking process.

6.2. New Procedures

During this reporting period an activity level work planning and control process was initiated to comply with a best practice and guidance process developed by NNSA, based on 48 CFR 970.5223-1, the QA rule (10 CFR 830.120), and DOE O 414.1C. External assessments and other events at LLNL revealed work control deficiencies that also help spawn the work control process. In response to the mandate, "Standing Integrated Safety Management (ISM) Work Permits" were developed based on ERD's approved IWSs. Standing Work Permits are a type of work permit designed to cover work that is repetitive in nature and therefore is adequate for most of ERD's work activities. Approximately fourteen individual IWSs were used to develop a total of five Standing Work Permits. It was possible to combine the IWS contents, due to hazard and control information being repetitively pointed out throughout the safety documents and because performing work activities covered by multiple IWSs may be included in an overarching work activity and therefore included within the work scope. Other new procedures include the development of the Operations and Maintenance Manual, Volume XVI: O&M Manual for Treatment System at the Pit 7 Complex. The document is currently in the review process and is due to become finalized and distributed prior to the facility start-up.

6.3. Self-assessments

ERD performs formal and informal self-assessments on an annual or triennial frequency. These assessments are used to evaluate work activities to QA procedures; management practices, and the integration of Environmental Safety and Health (ES&H) programmatic requirements. External regulatory agencies also perform frequent walkabouts during ERD work activities. During this reporting period, there were approximately three assessments and walkabouts performed for the ERD Site 300 work activities. Issues and deficiencies observed during the assessments are tracked from inception to resolution using the institutional Issues Tracking System (ITS). To date, all ERD Site 300 work related issues and deficiencies have been successfully corrected and closed-out in the Issues Tracking System.

6.4. Quality Issues and Corrective Actions

Quality improvement, nonconformance, and corrective action reporting is documented using the Quality Improvement Form (QIF). There were no QIFs processed during this reporting period.

6.5. Analytical Quality Control

Data review, validation, and verification are conducted on 100% of the incoming analytical data. Contract analytical laboratories are contractually required to provide internal quality control (QC) checks in the form of method blanks, laboratory control samples, matrix spikes, and matrix spike or sample duplicate results with every analysis. During validation the analytical QC data and associated QC acceptance criteria (control limits) are reviewed. Data qualifier flags may be assigned to analytical data based on the results of this review. For example, data will be qualified as rejected when there was a serious deficiency in the ability to analyze the sample and meet QC criteria and the presence or absence of the analyte cannot be verified. Data qualifier flags and their definitions are listed in the Acronyms and Abbreviations in the Tables section of this report. The qualifier flags, when they exist, appear next to the analytical data presented in the treatment facility compliance tables of this report. Because rejected data are not used for decision-making, the rejected analytical data is not displayed in the tables, only the “R” flag is presented. During this reporting period a significant number of “R” flags were assigned to the Tetryl analytical results, a compound that is analyzed as part of the high-explosives suite using EPA Method 8330. During a recent audit performed by the DOE Consolidated Auditing Program (DOECAP), it was documented that the analytical lab performing the majority of the high-explosives analyses for ERD had not reported results for the analysis of Tetryl for the last two rounds of Performance Evaluation (PE) samples. Not reporting analytical results for this compound is equivalent to a failure according to DOE. Because the analytical lab could not demonstrate their proficiency in performing the Tetryl analysis, ERD designed a curtailed high-explosives suite from which this compound was omitted. The new requested analysis code developed is E8330LOW and will be used for future sample analysis. Data Qualifier Flags were assigned to reject (“R” flags) all Tetryl results received from the analytical lab during the February through June 2008 time frame. Approximately forty analytical results were flagged.

6.6. Field Quality Control

Quality control is implemented during the sample collection process in the field. Ten percent of samples are collocated (5% intralaboratory and 5% interlaboratory). Field blanks and trip blanks are used to identify contamination that may occur during sample collection, transportation, or handling of samples at the analytical laboratory. Equipment blanks are used to determine the effectiveness of decontamination processes of portable equipment used for purging and/or sample collection. There were no cross-contamination issues indicated by trip blank, field blank, or equipment blank analyses during this reporting period

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Figures

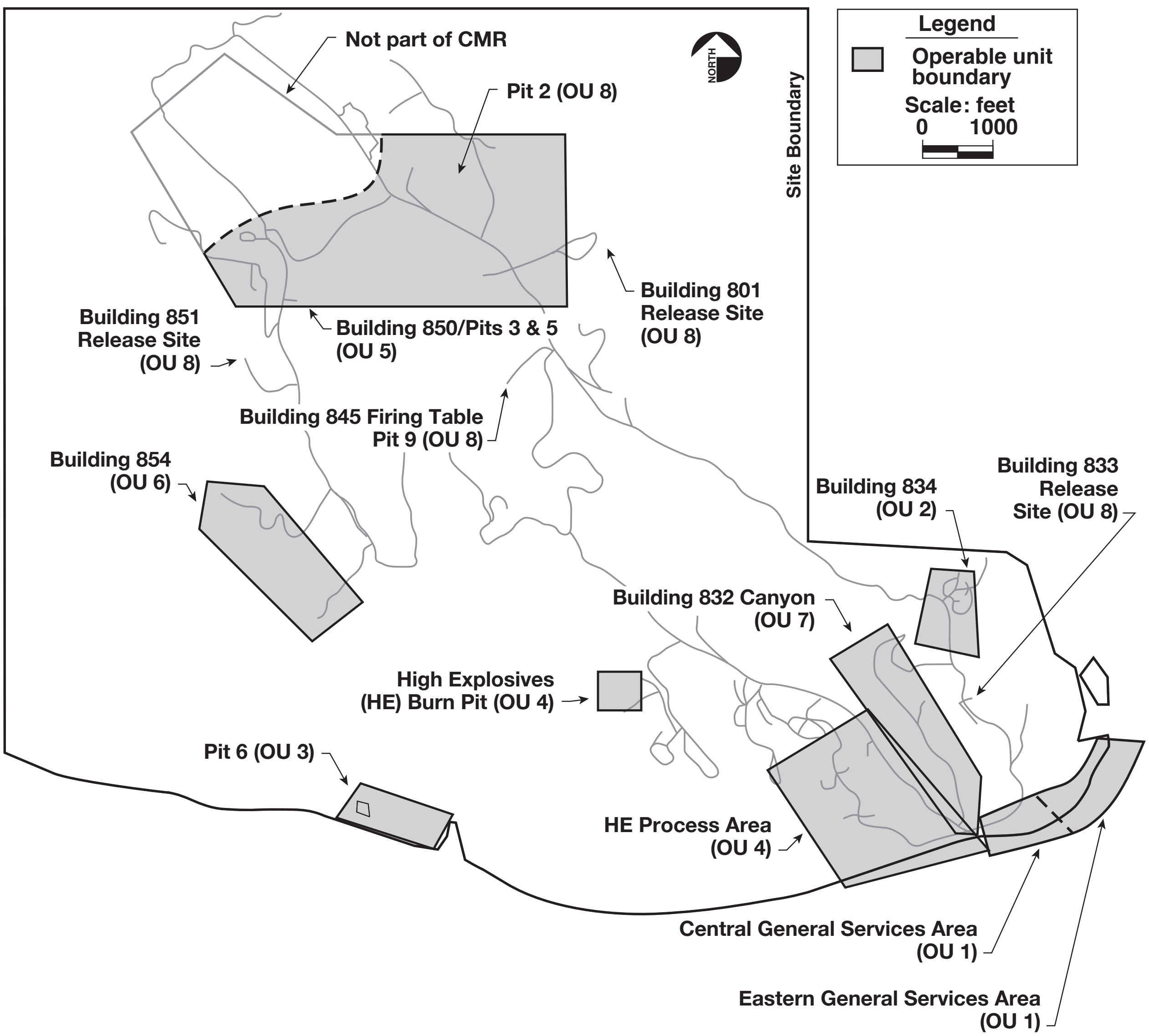

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Figure 2-1. Site 300 map showing OU locations.

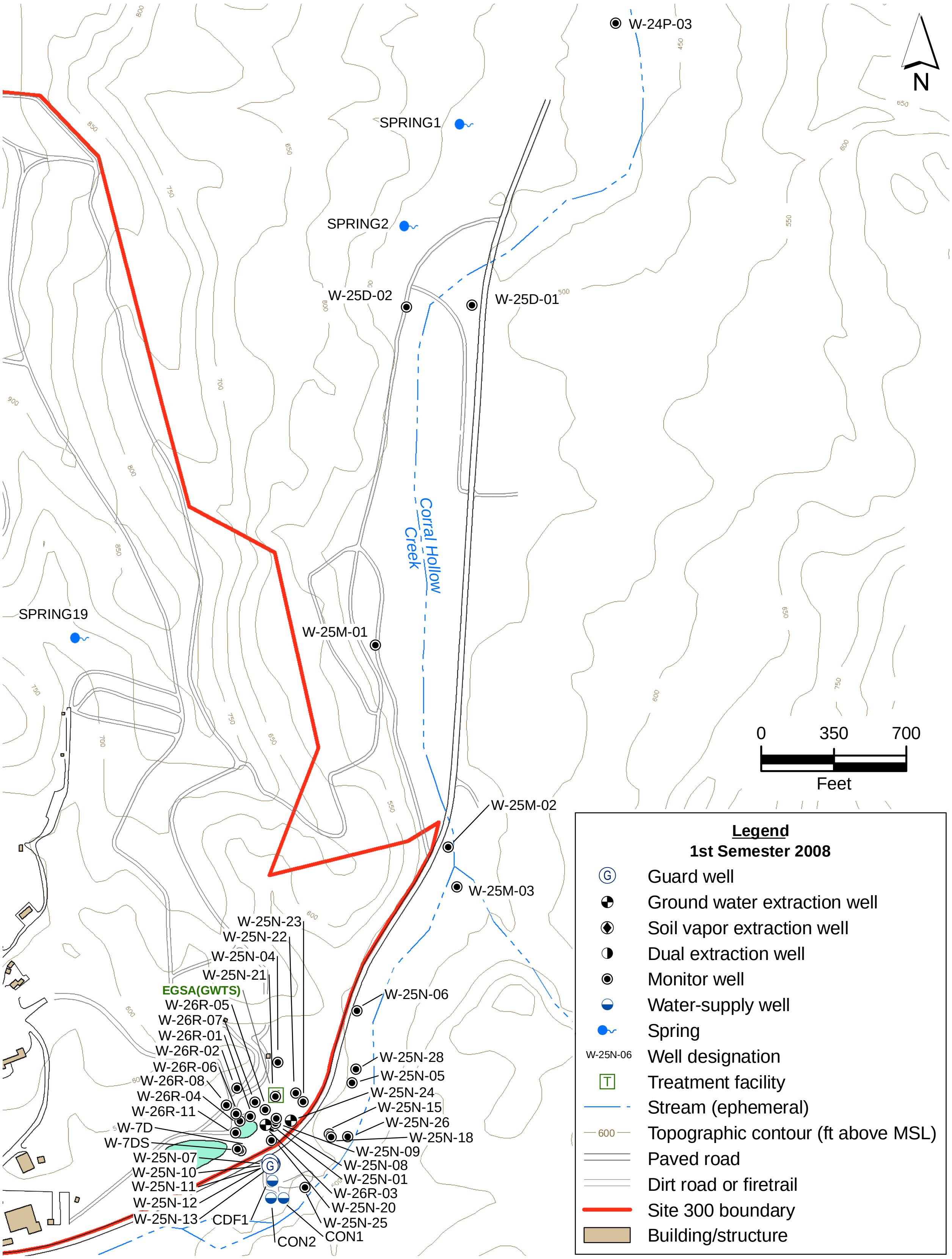


Figure 2.1-1. Eastern General Services Area OU site map showing monitor, extraction and water-supply wells, and treatment facilities.

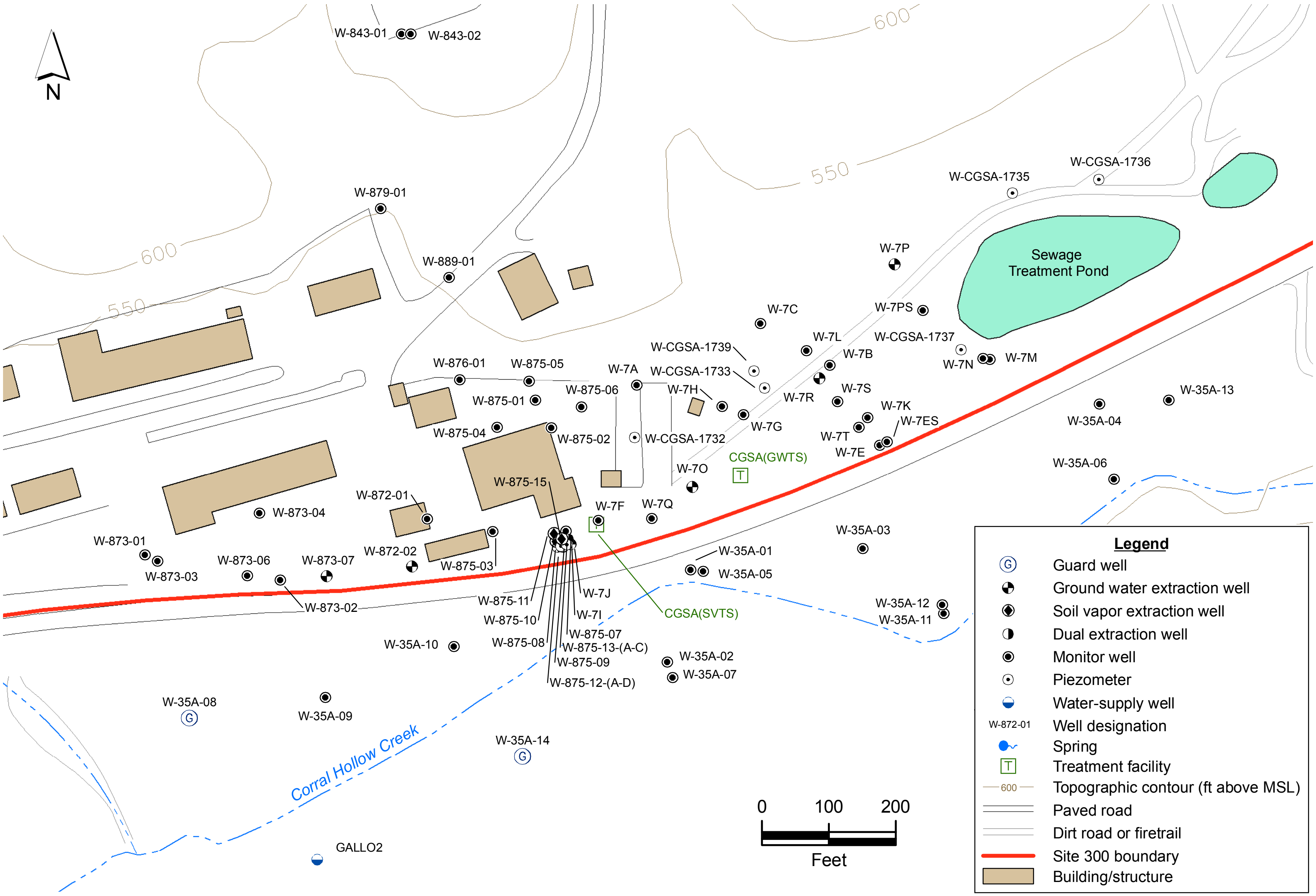


Figure 2.1-2. Central General Services Area OU site map showing monitor, extraction and water-supply wells, and treatment facilities.

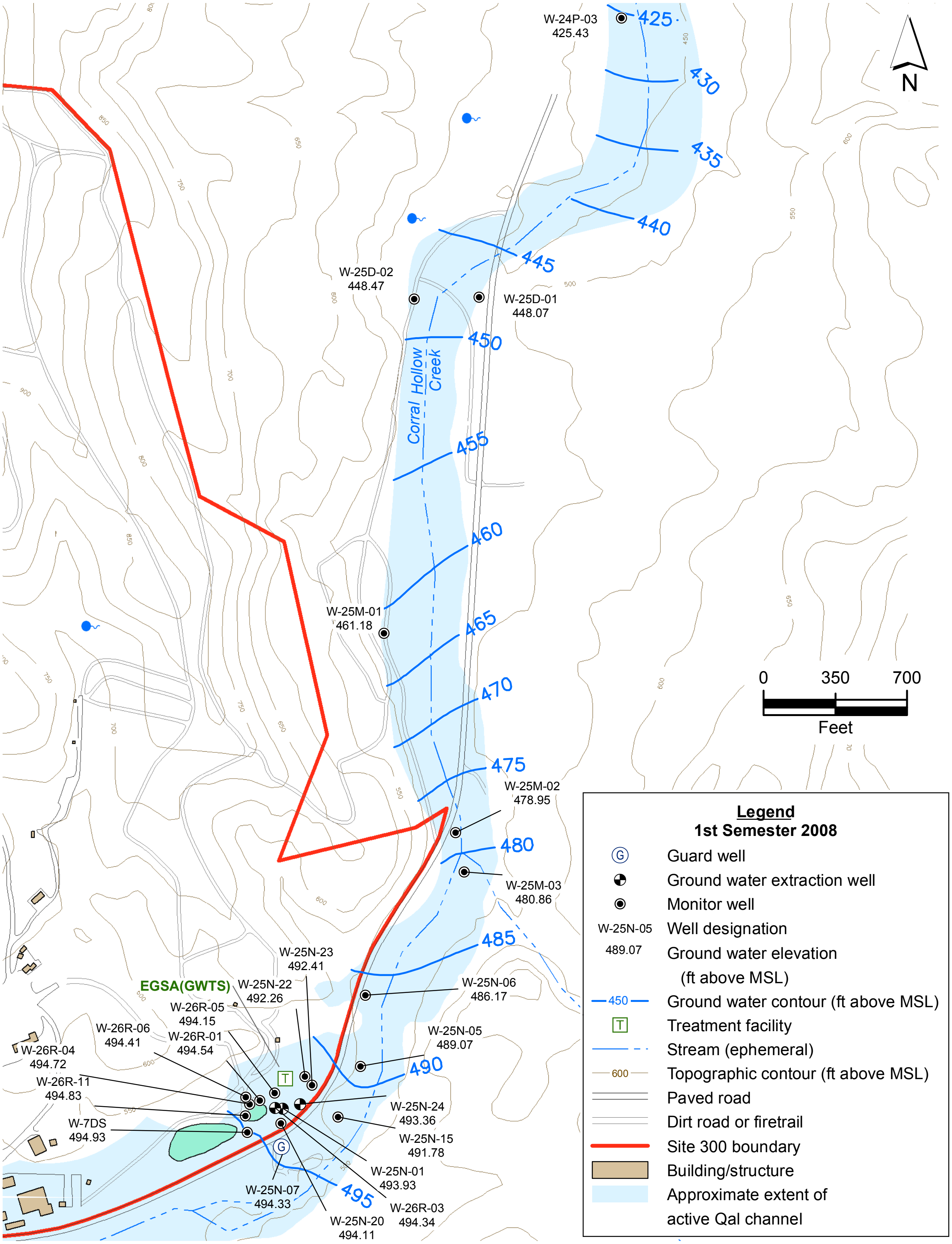


Figure 2.1-3. Eastern General Services Area OU ground water potentiometric surface map for the Qal-Tnbs$_1$ HSU.

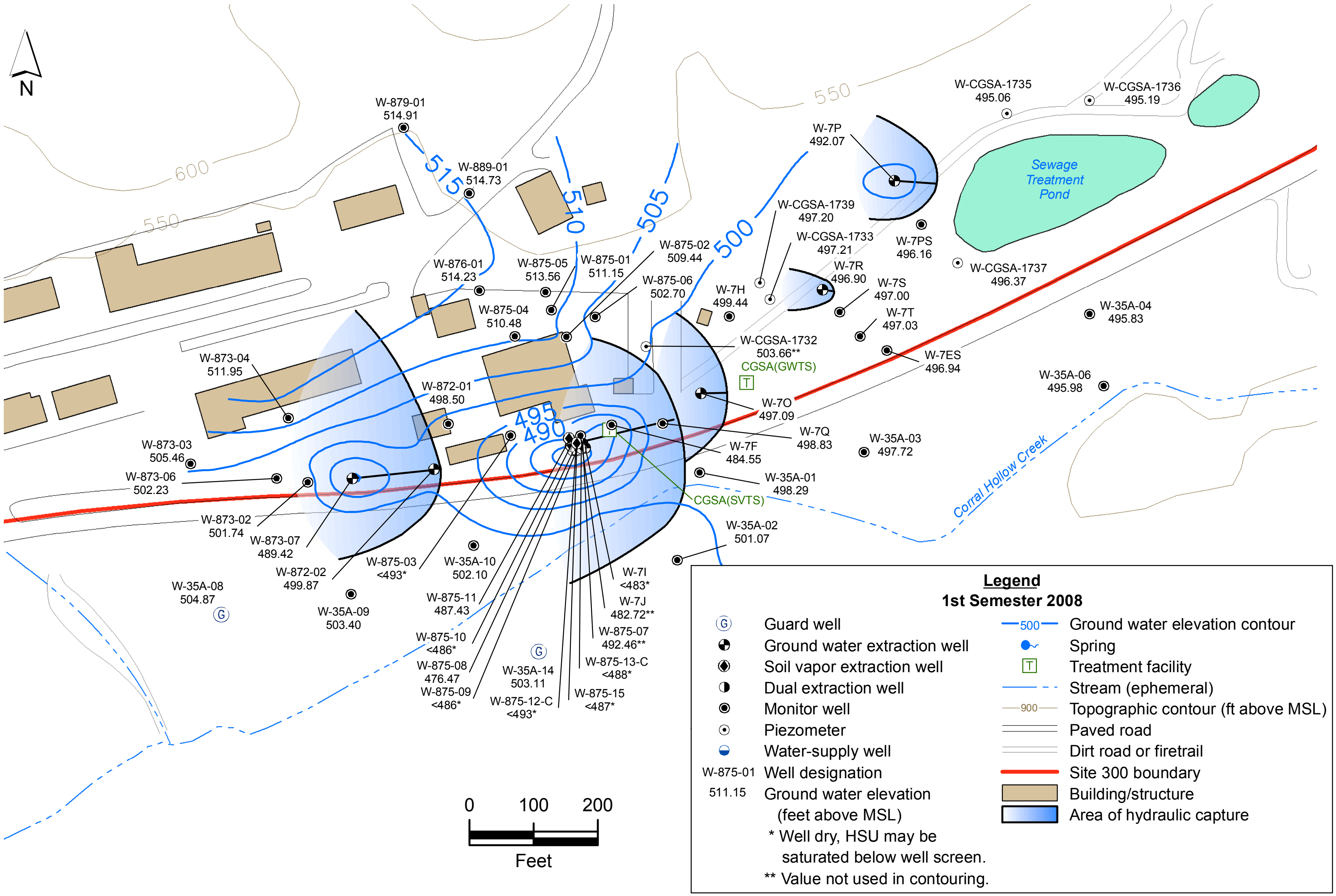


Figure 2.1-4. Central General Services Area OU ground water potentiometric surface map for the Qt-Tnsc$_1$ and Qal-Tnbs$_1$ HSUs.

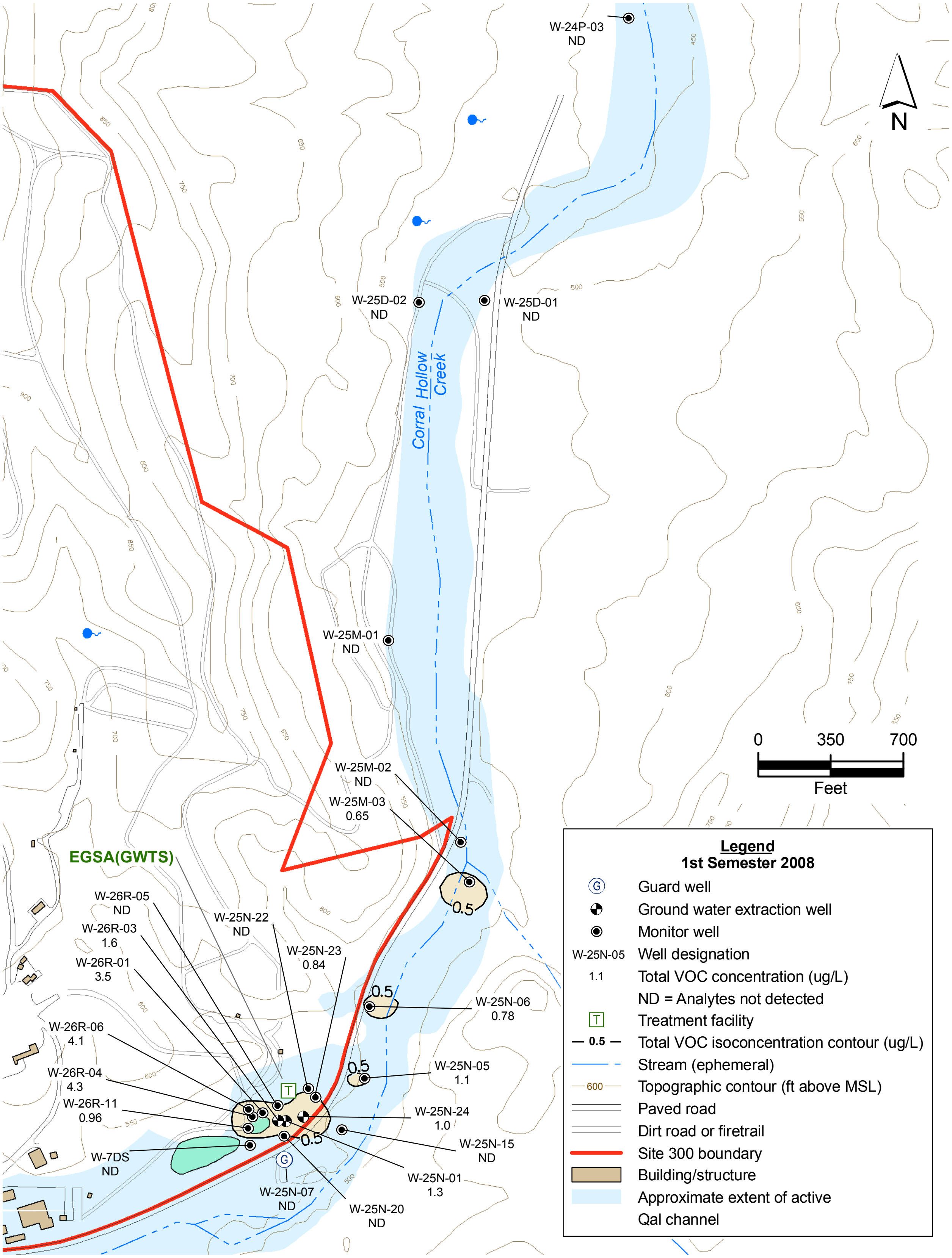


Figure 2.1-5. Eastern General Services Area OU total VOC isoconcentration contour map for the Qal-Tnbs$_1$ HSU.

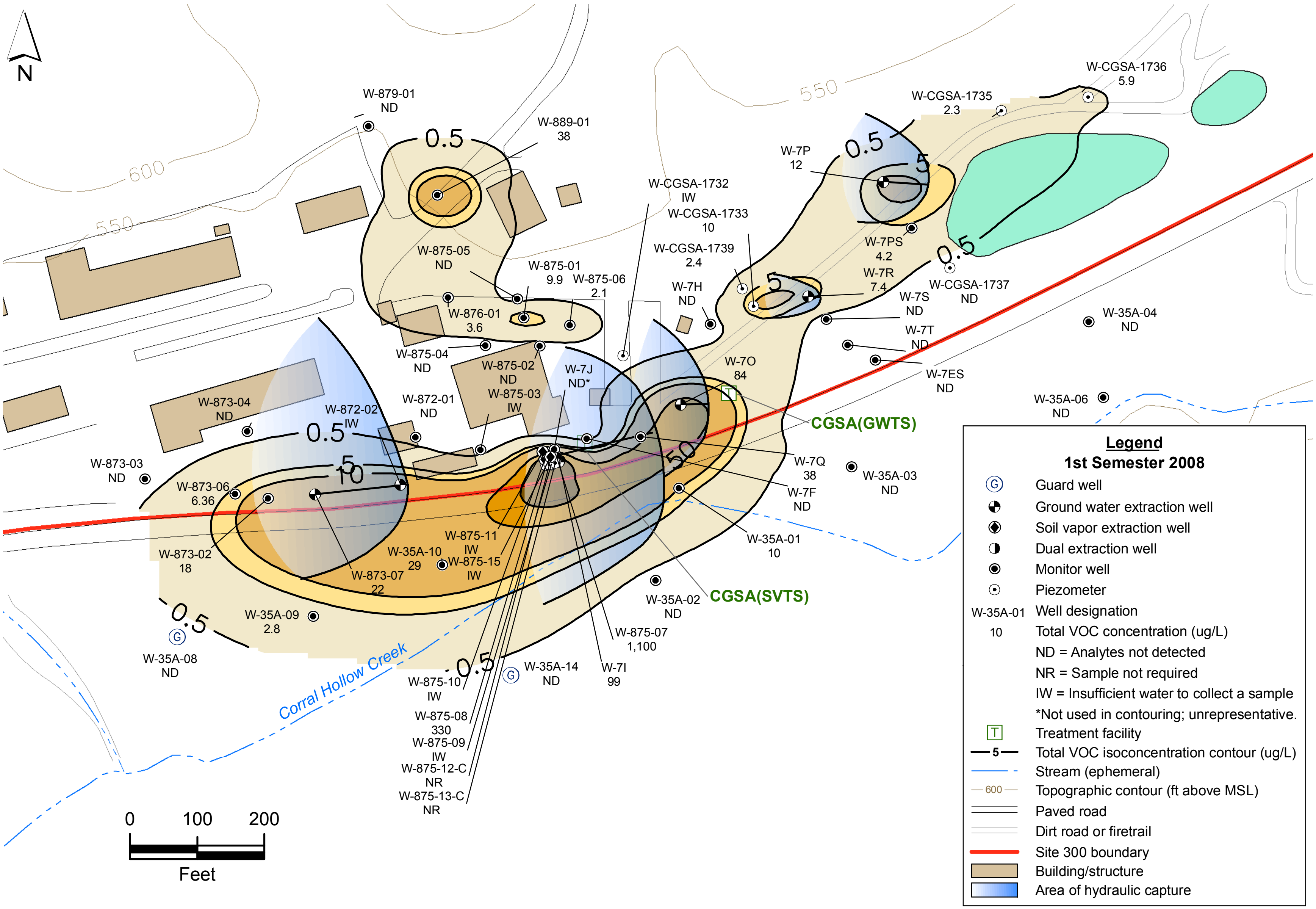


Figure 2.1-6. Central General Services Area OU total VOC isoconcentration contour map for the Qt-Tnsc$_1$ and Qal-Tnbs$_1$ HSUs.

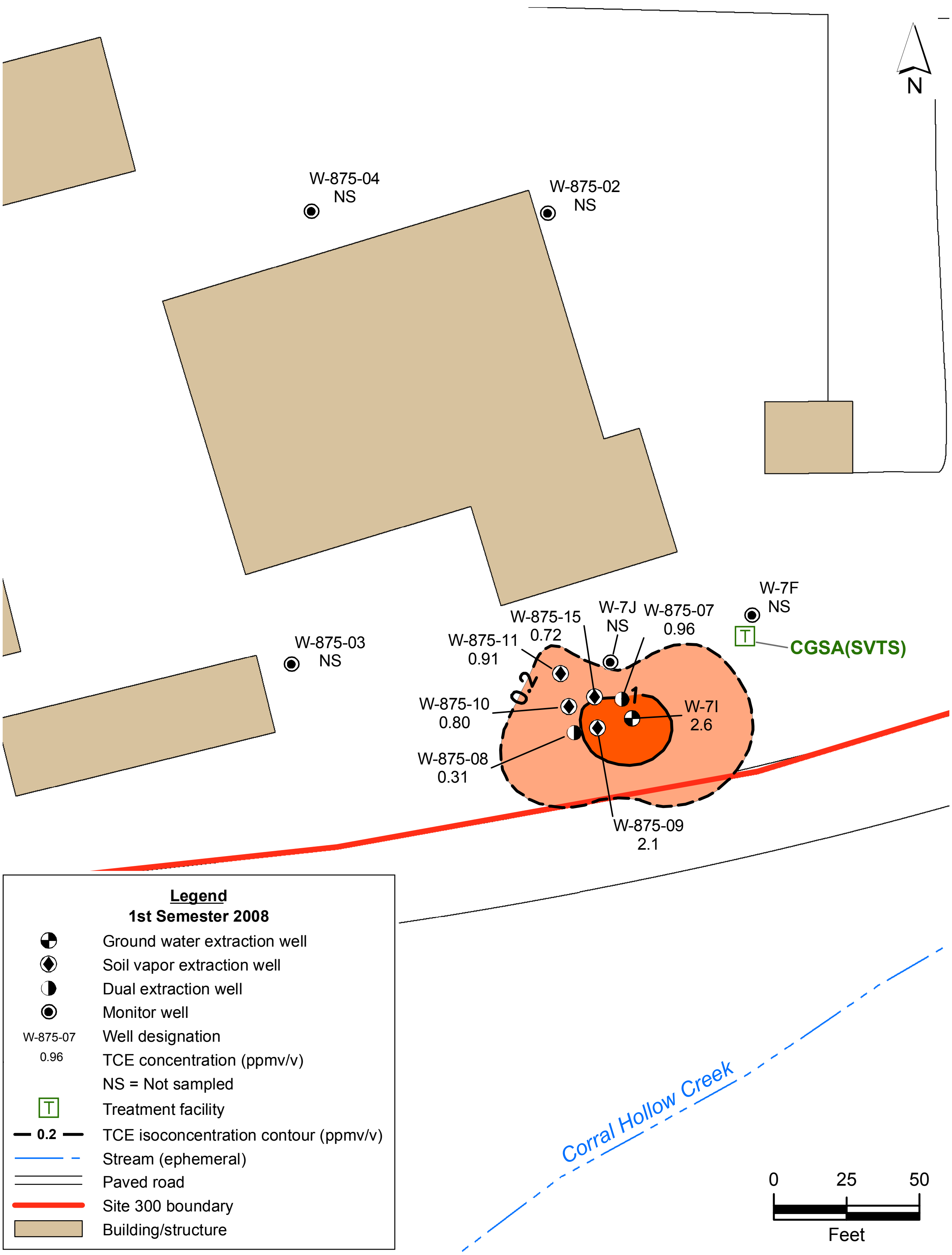


Figure 2.1-7. TCE concentration ($ppm_{v/v}$) in soil vapor near Building 875 of the Central GSA, May 20, 2008.

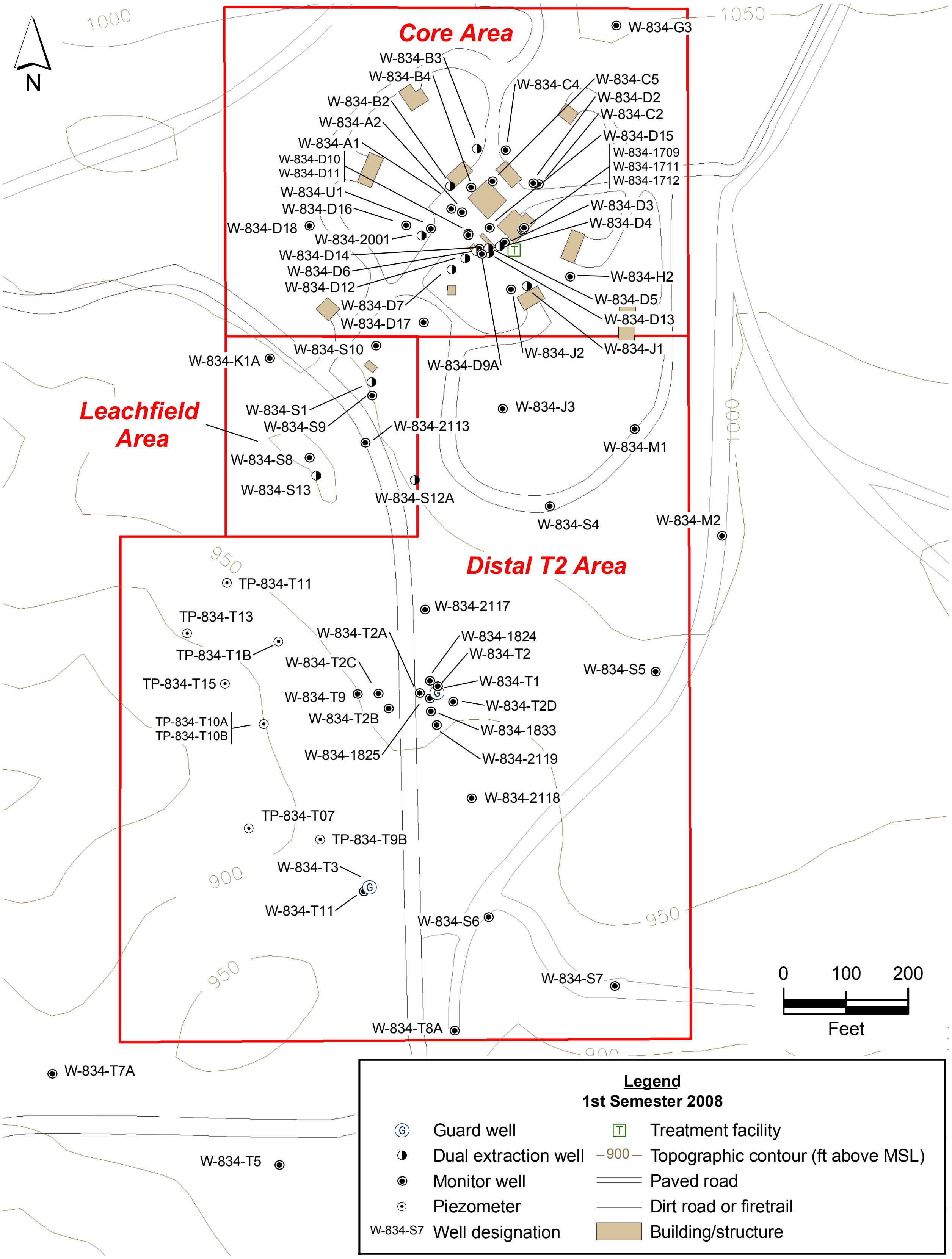


Figure 2.2-1. Building 834 OU site map showing monitor and extraction wells, and treatment facilities.

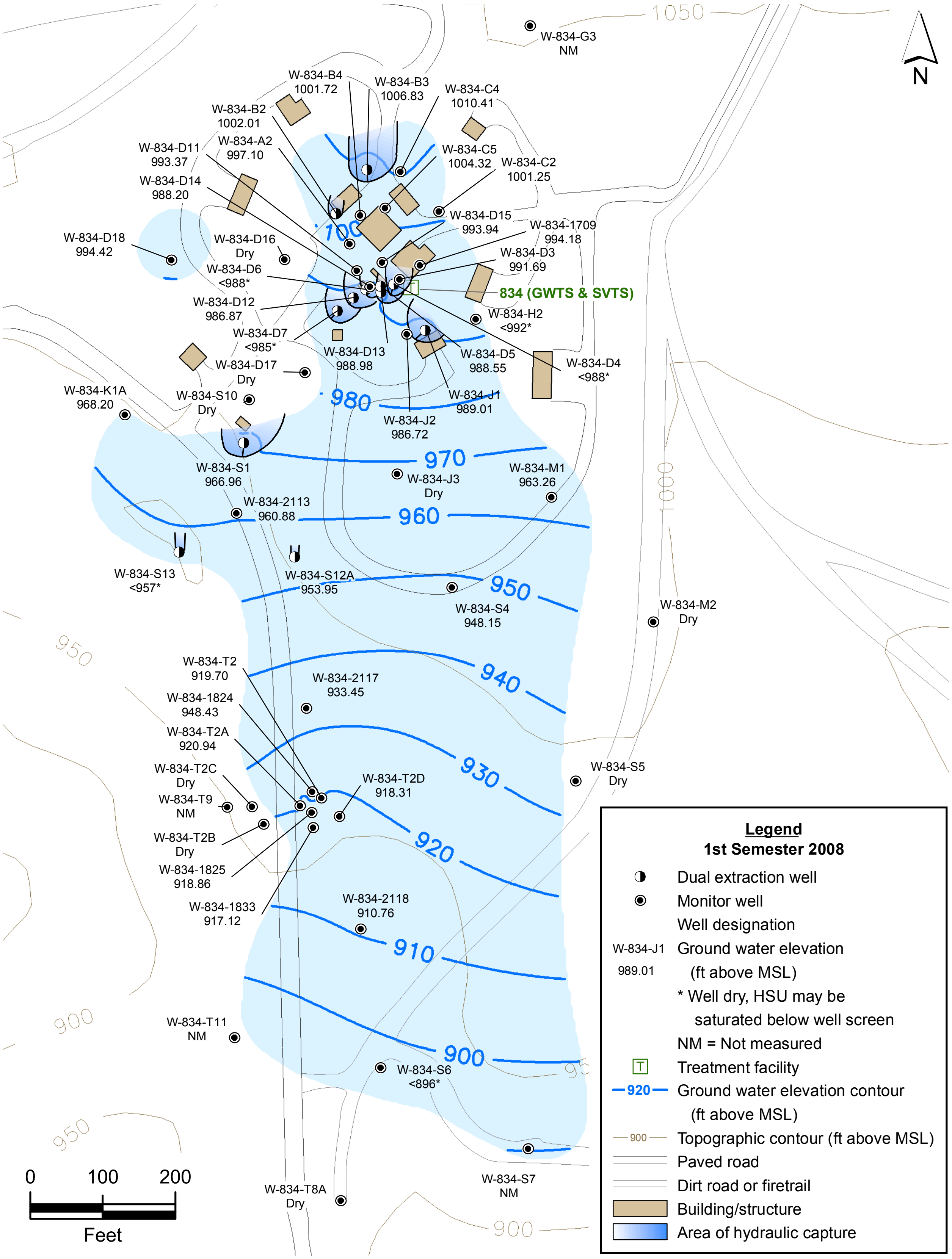


Figure 2.2-2. Building 834 OU ground water potentiometric surface map for the Tpsg perched water-bearing zone.

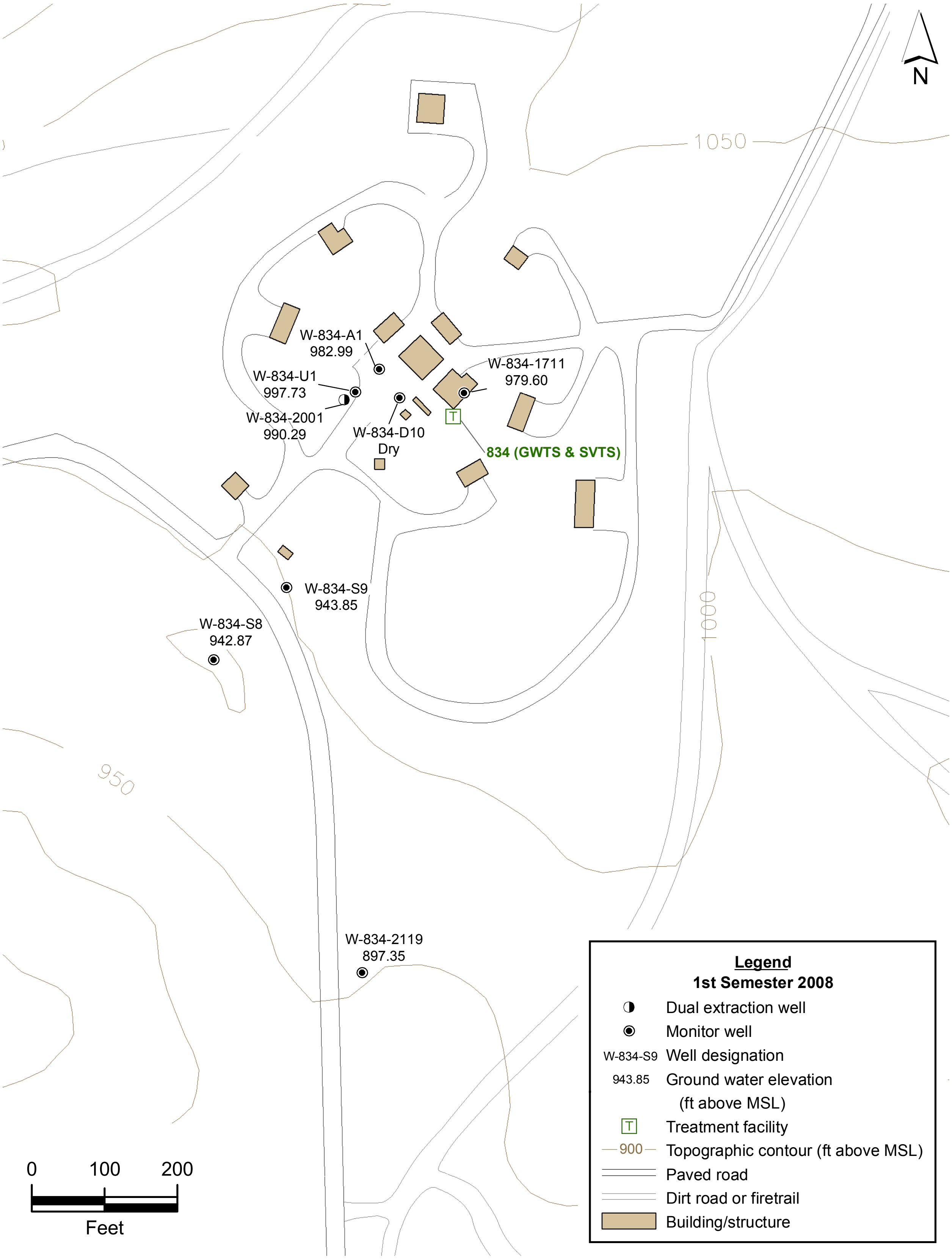
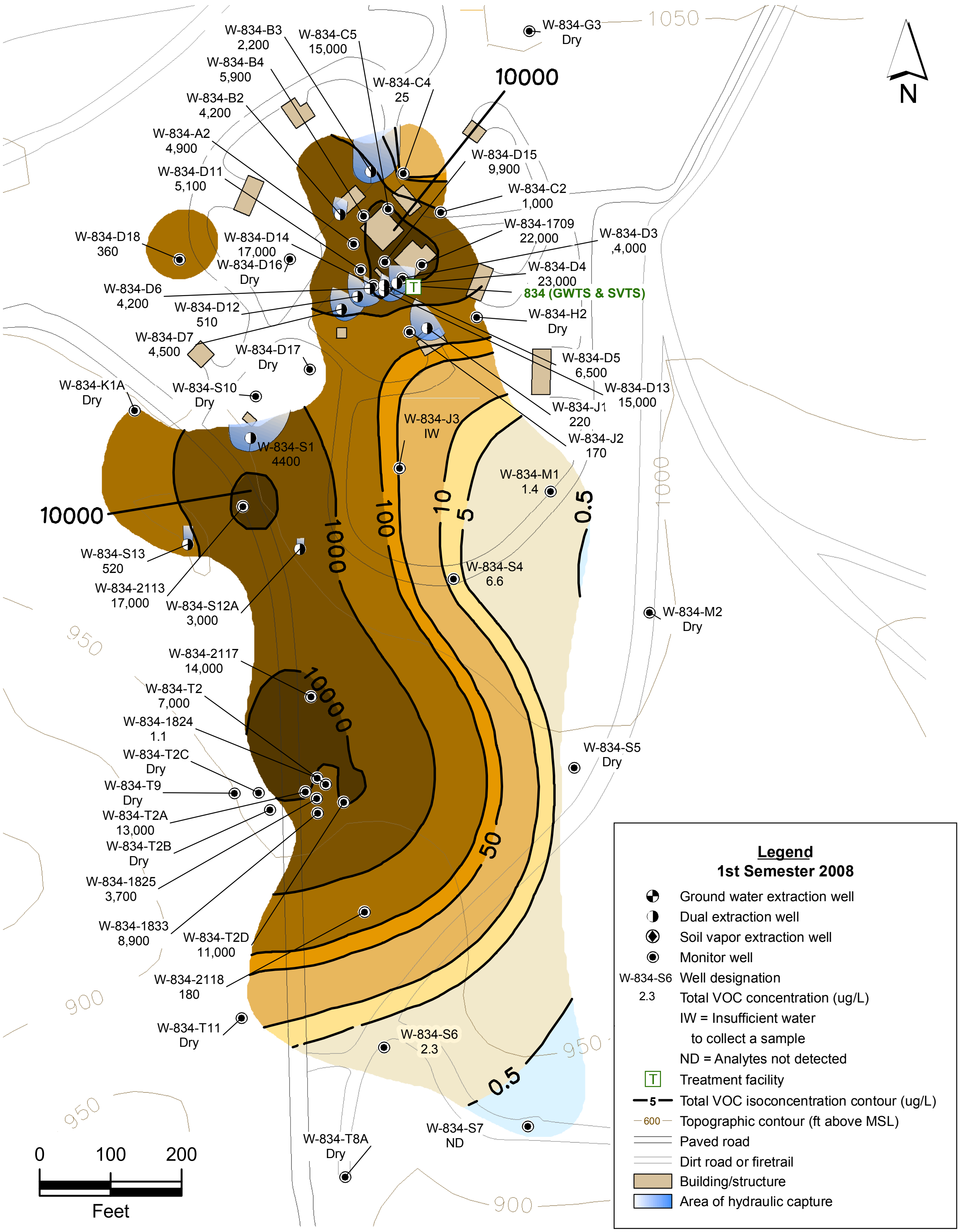


Figure 2.2-3. Building 834 OU map showing ground water elevations for the Tps-Tnsc$_2$ HSU.



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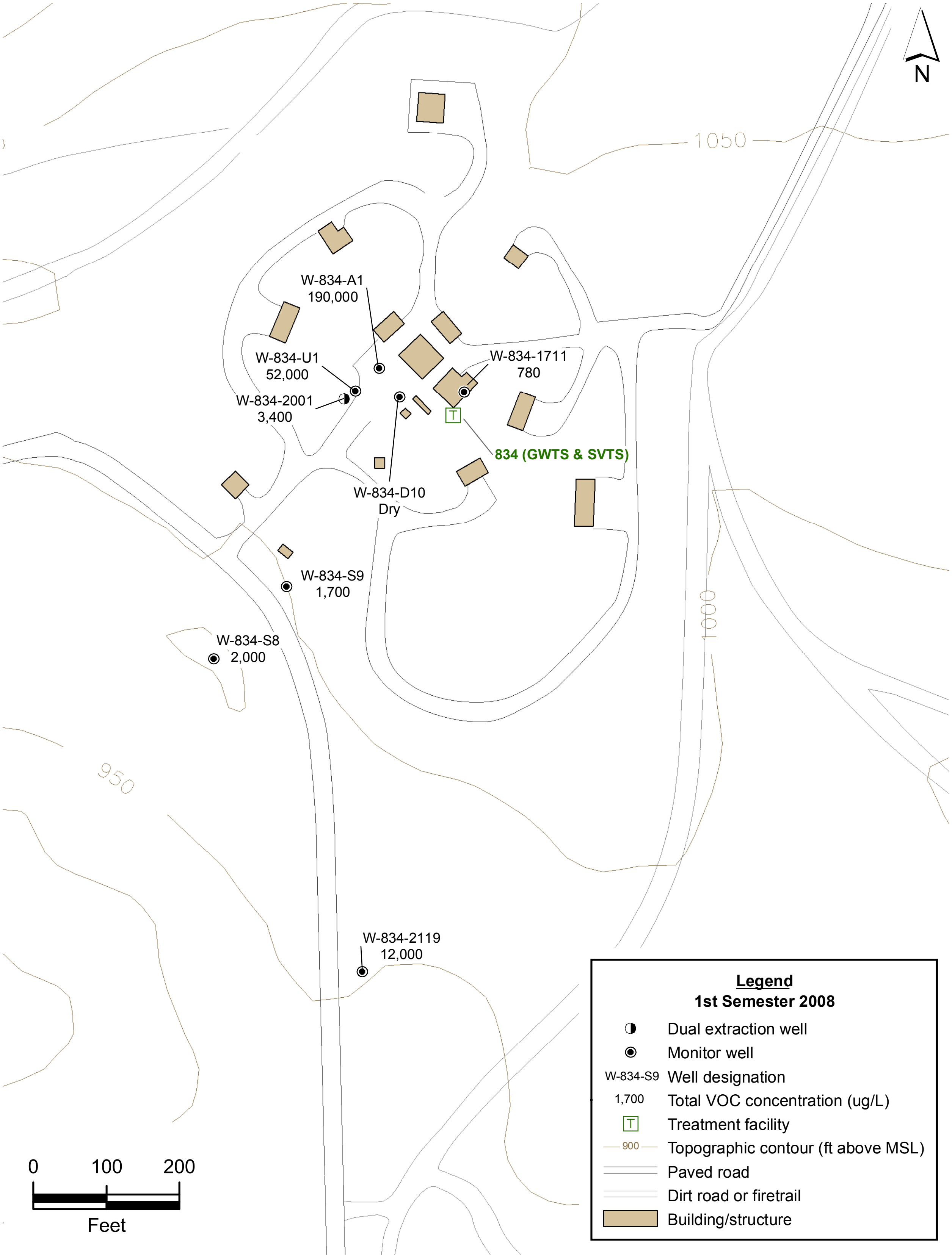

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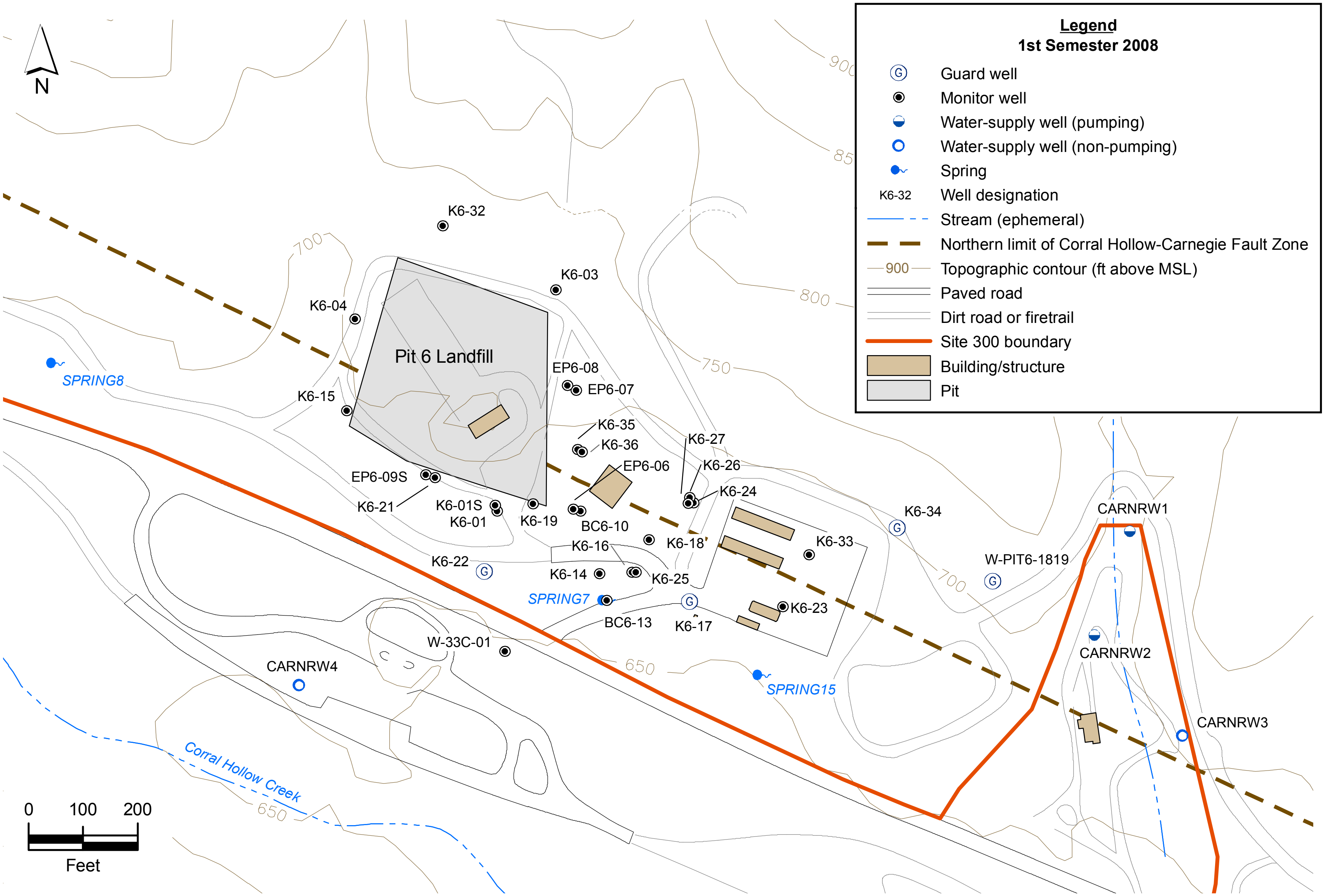

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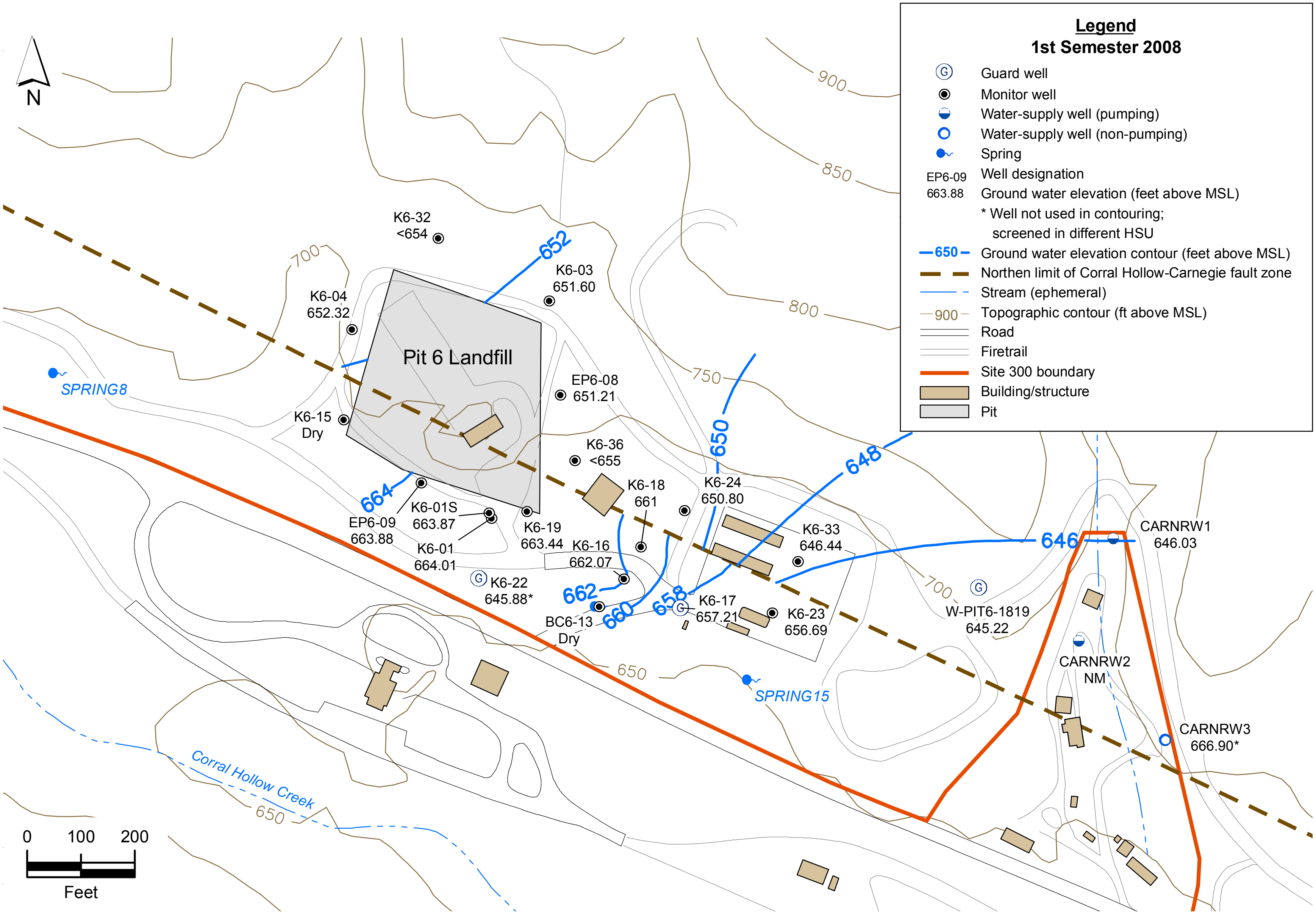

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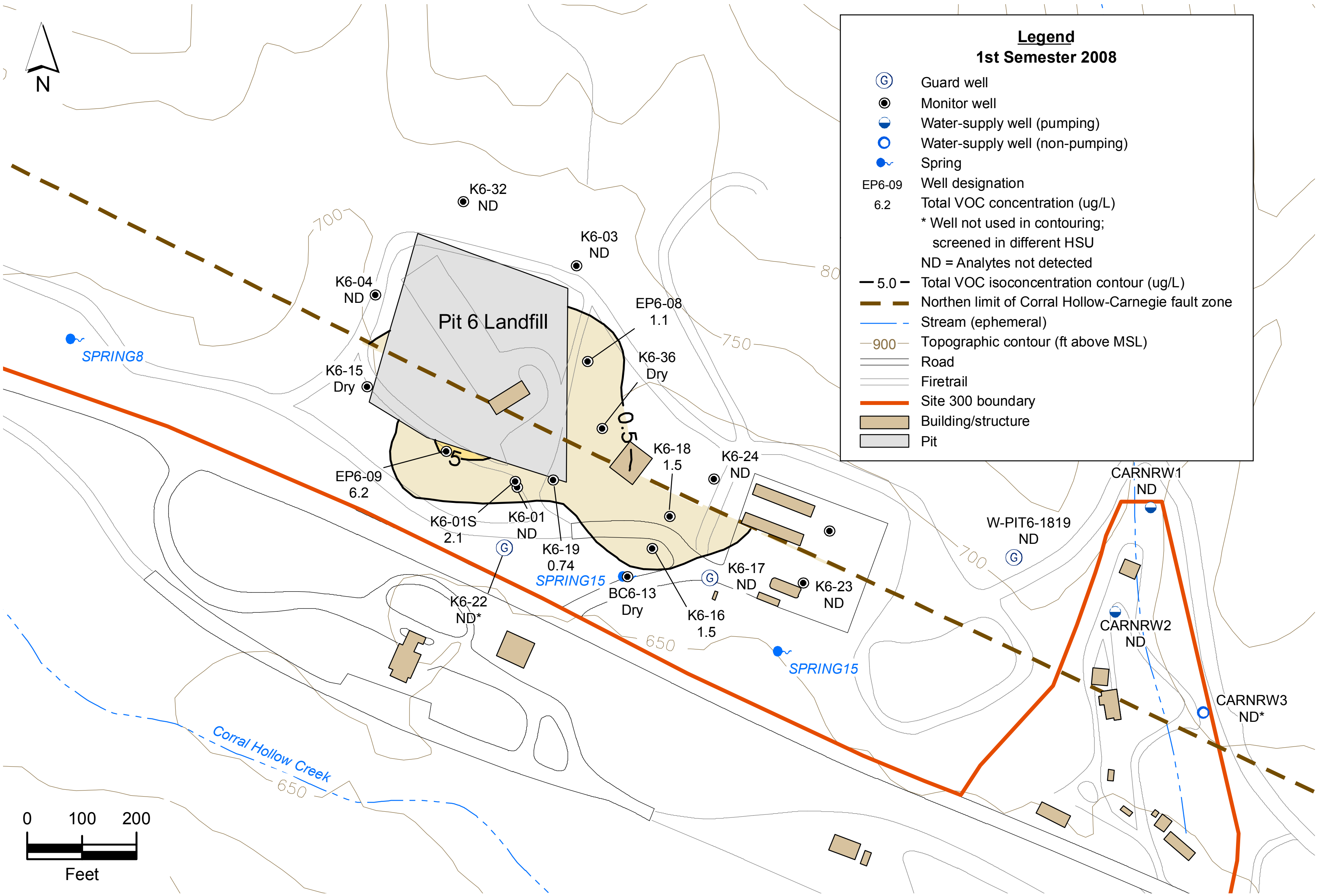

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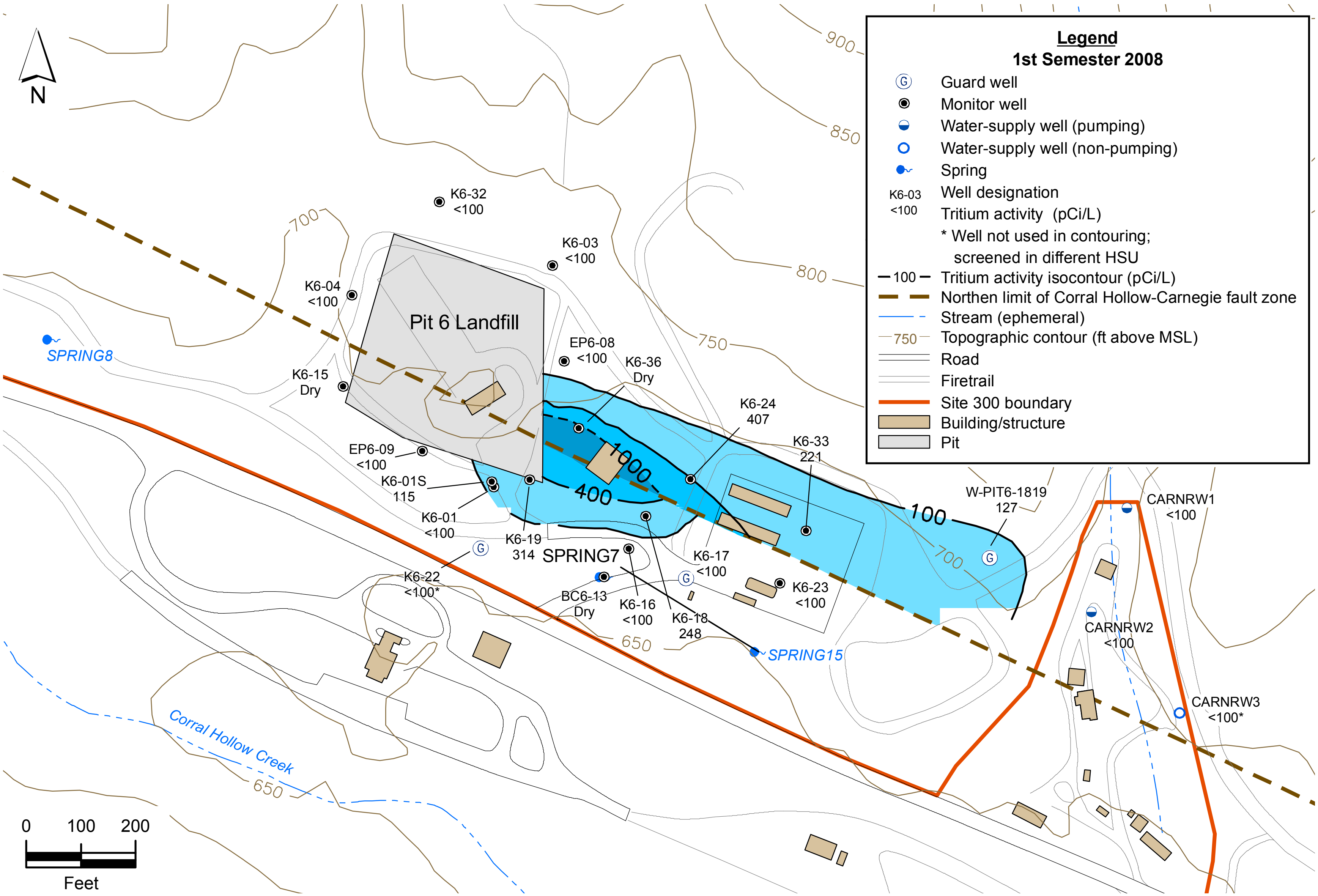

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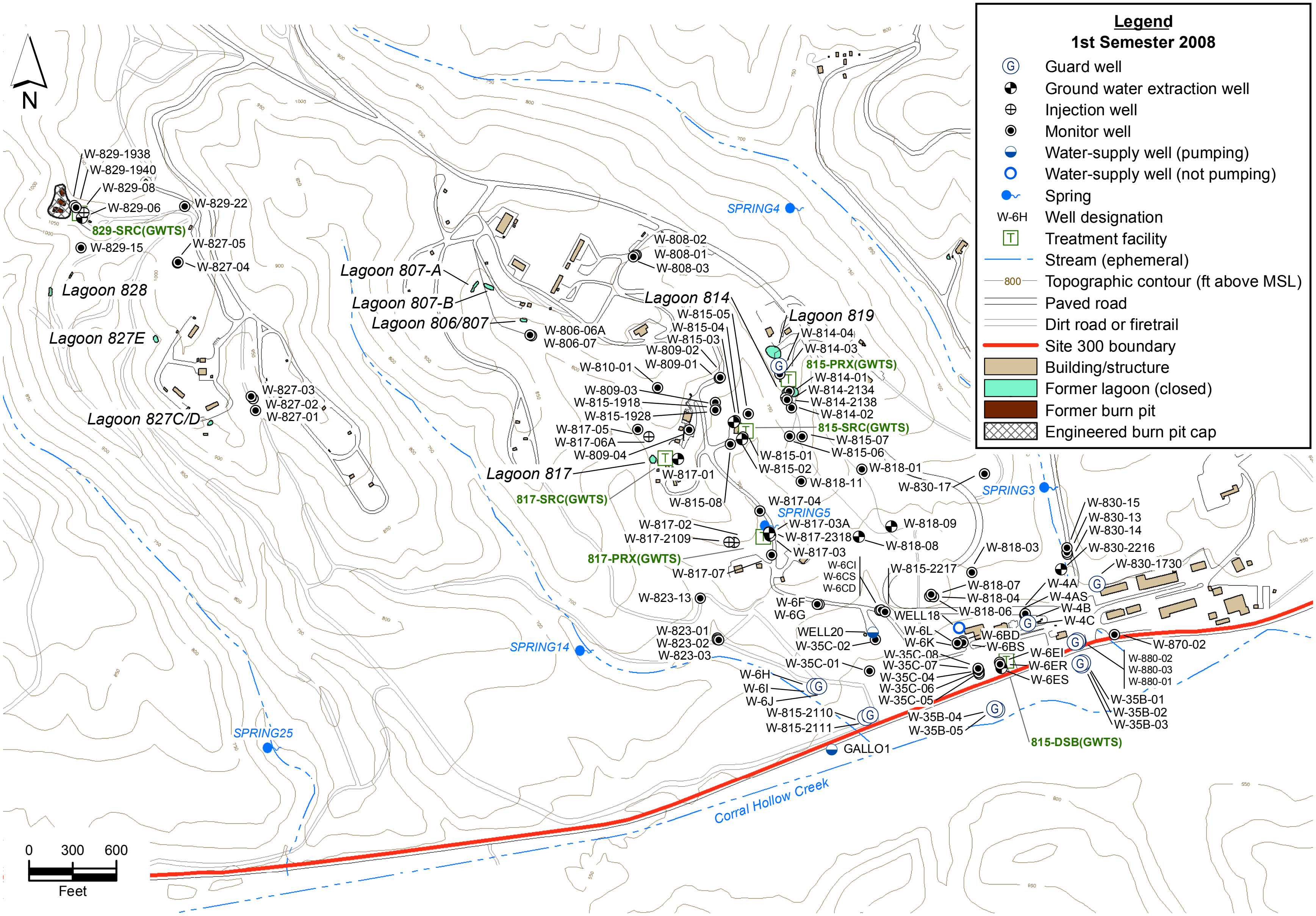

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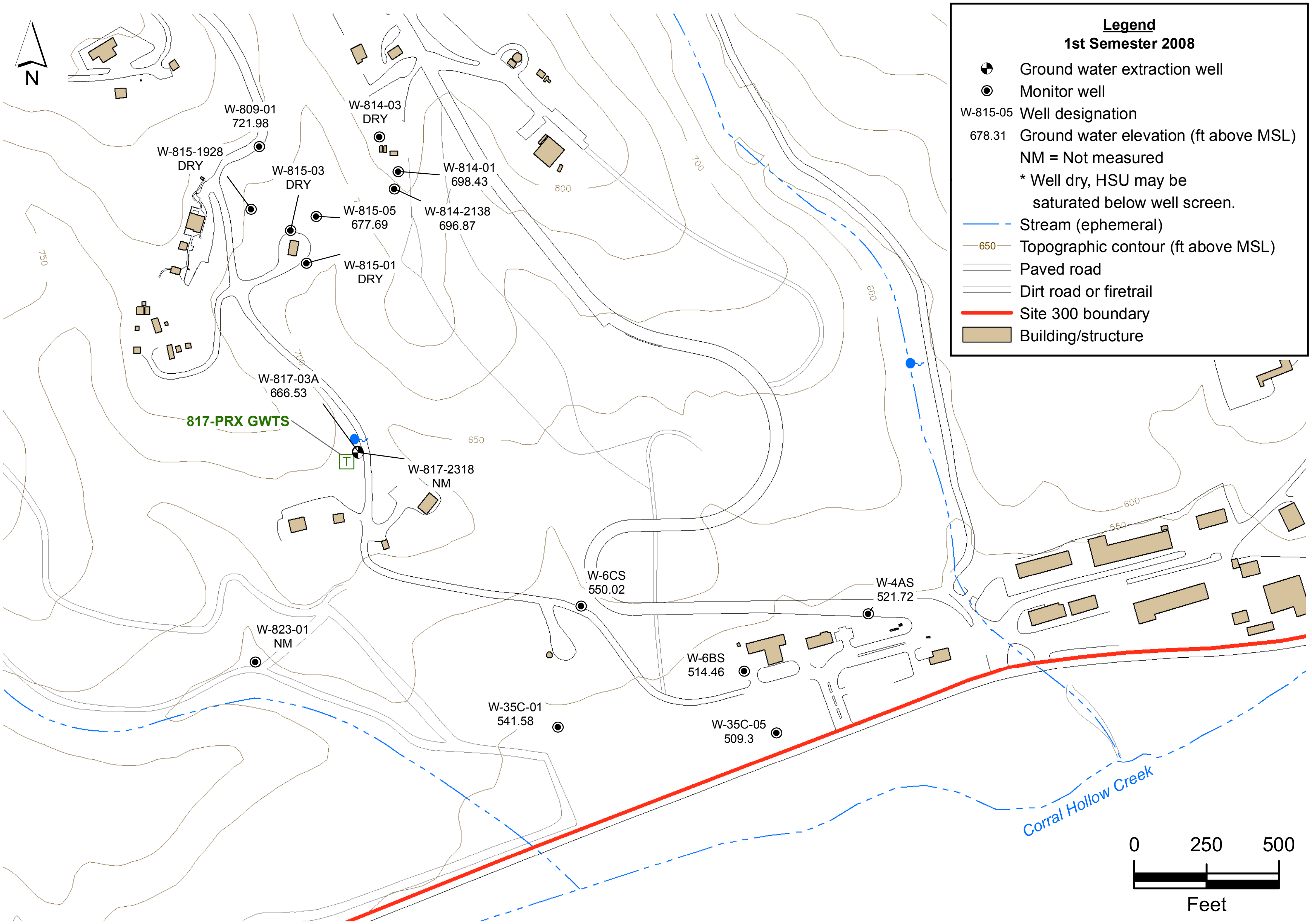

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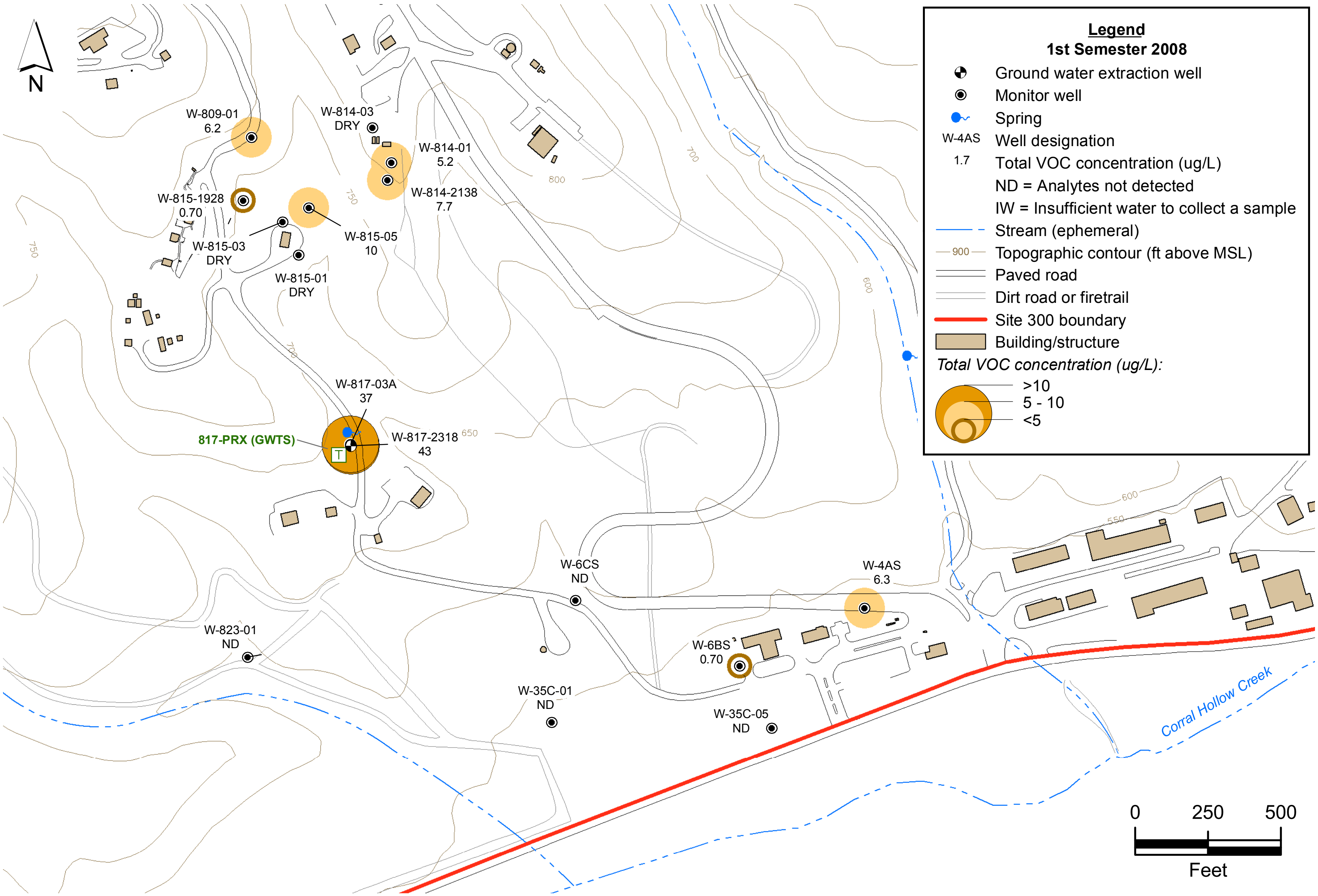

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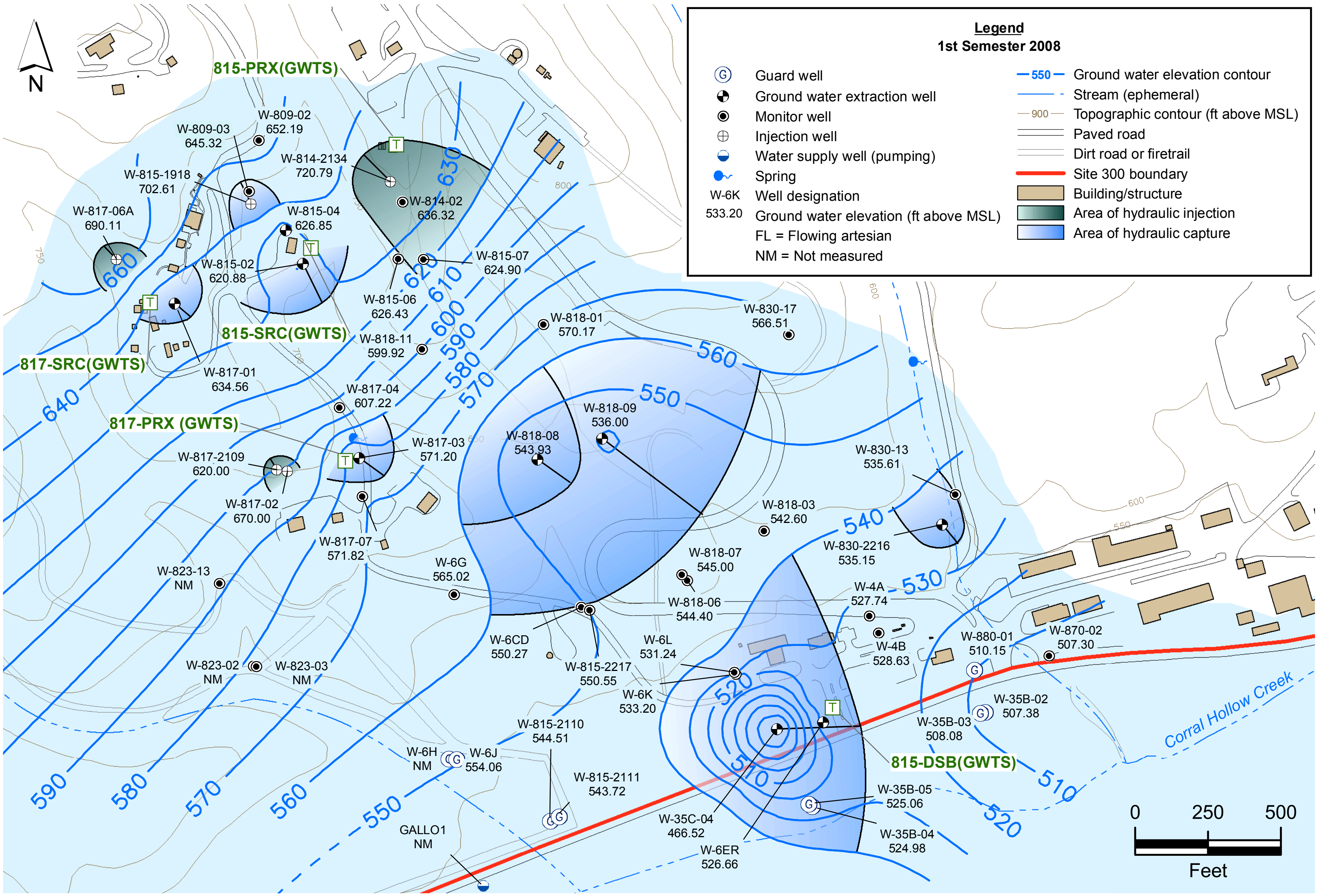

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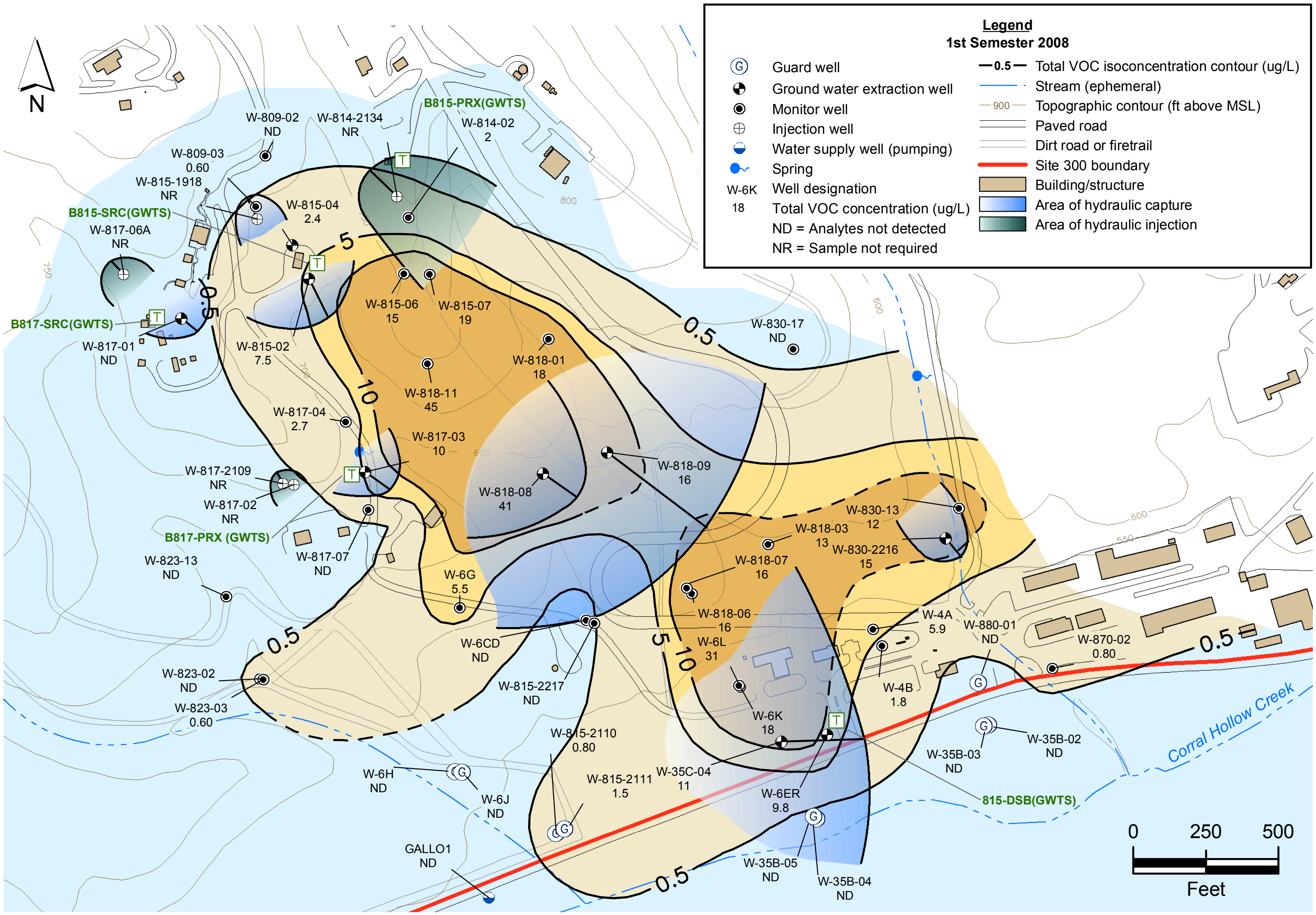

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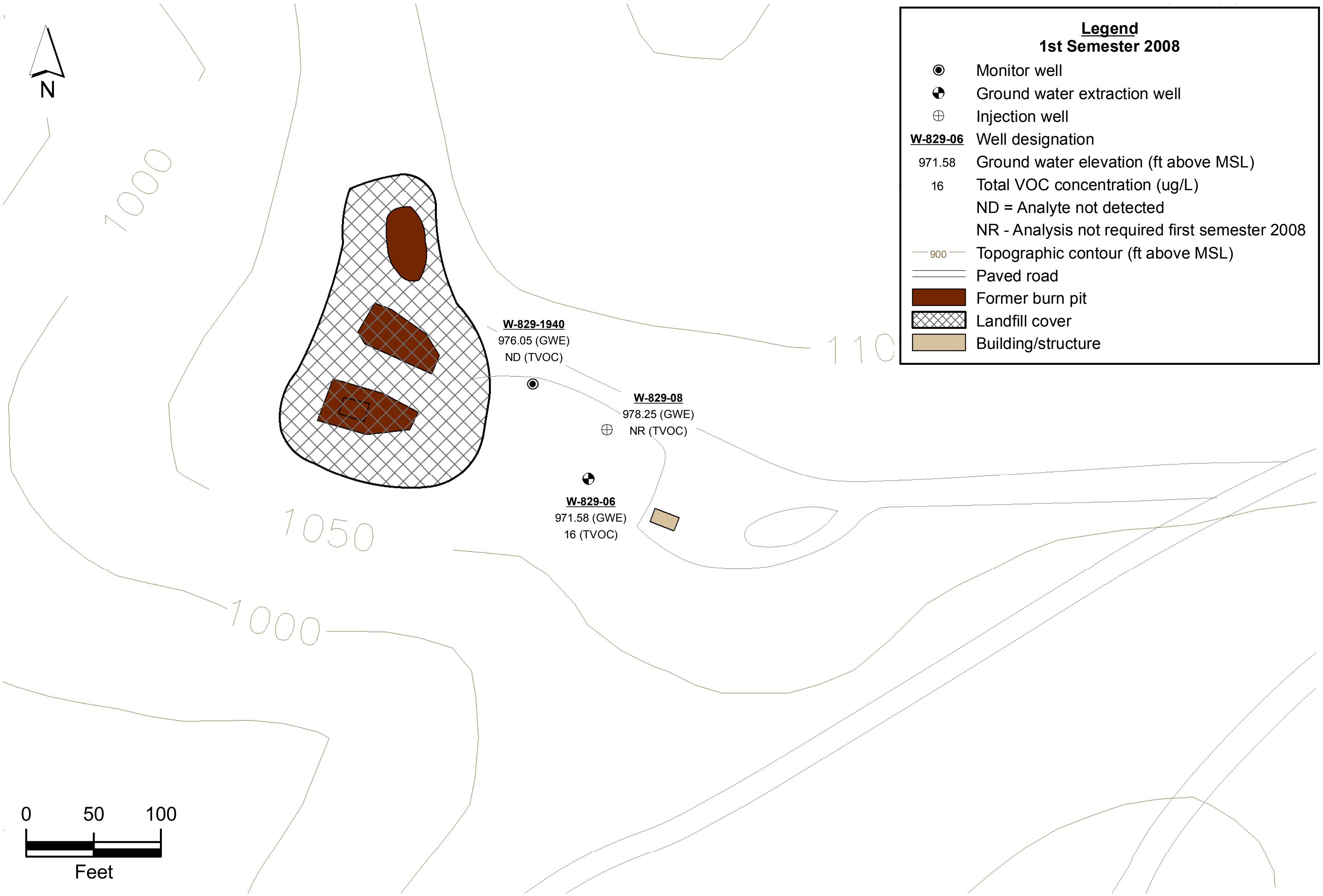

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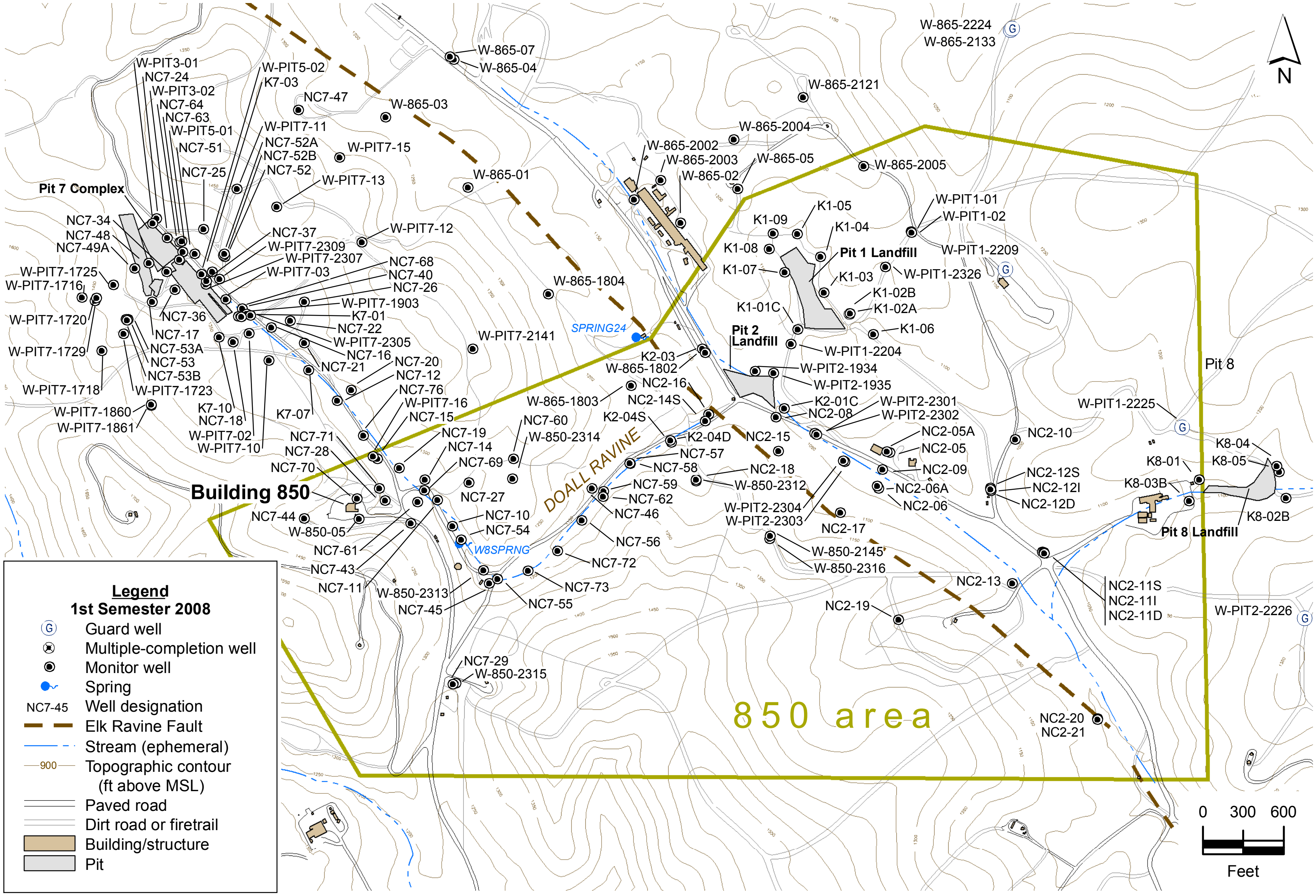

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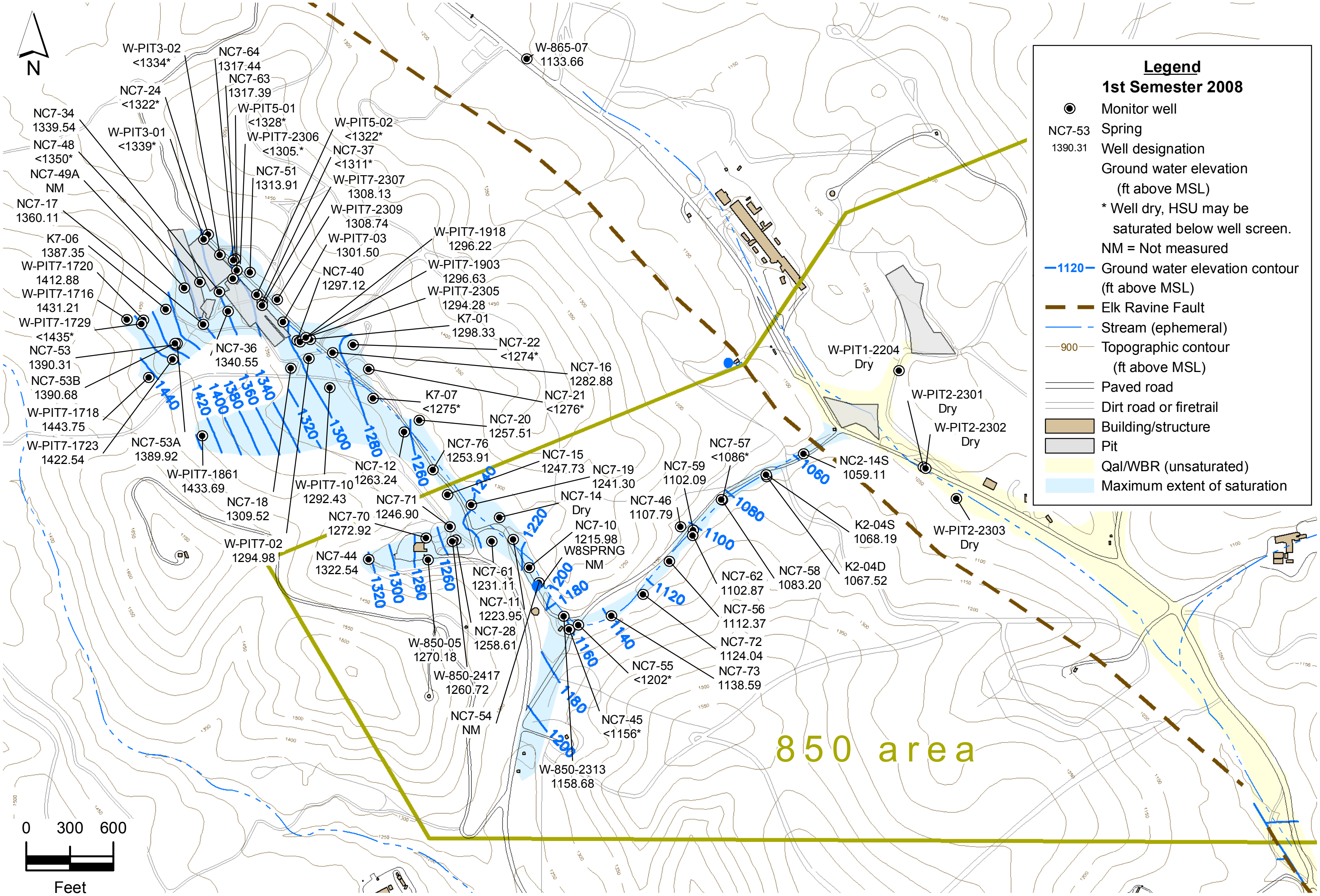

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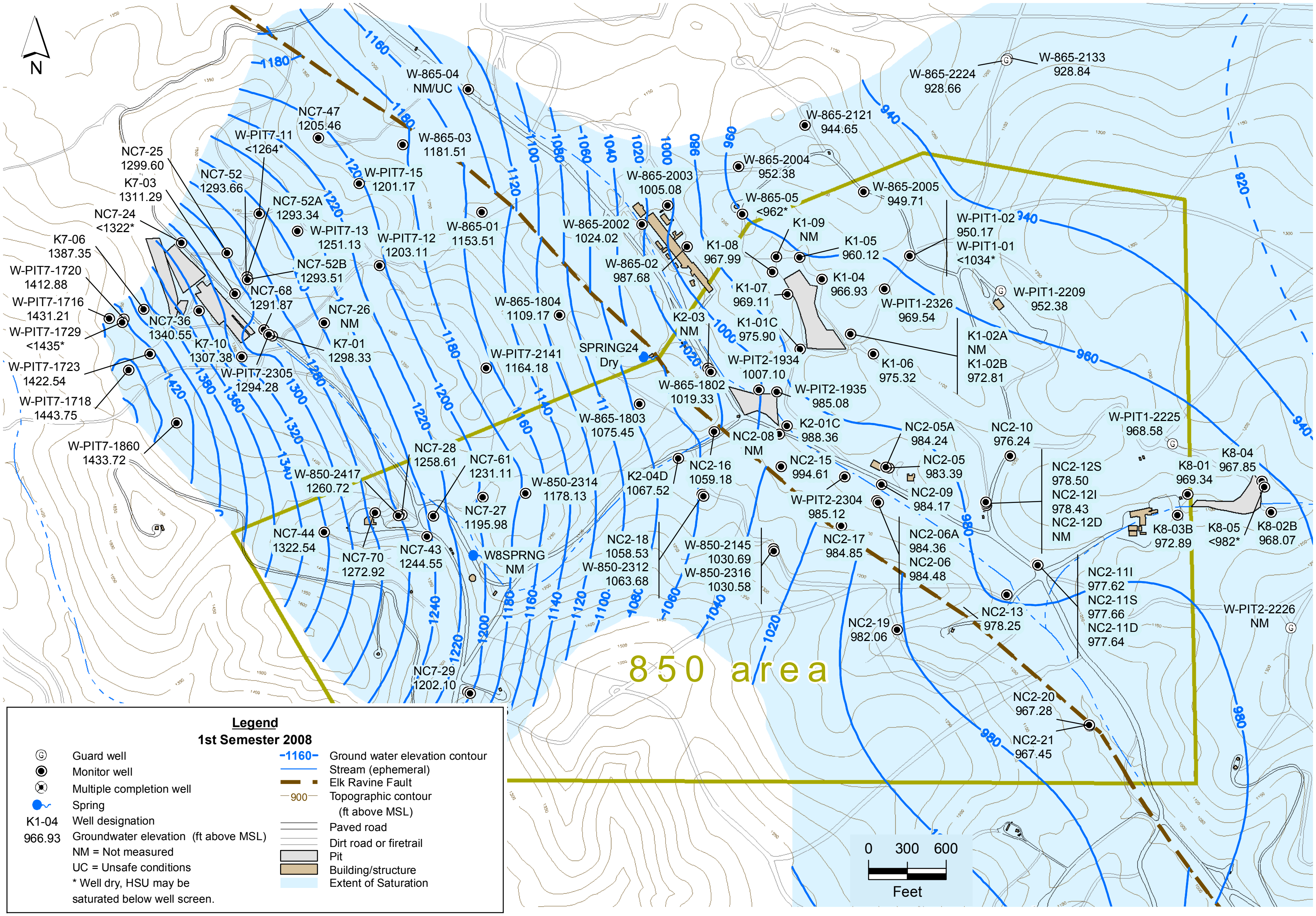

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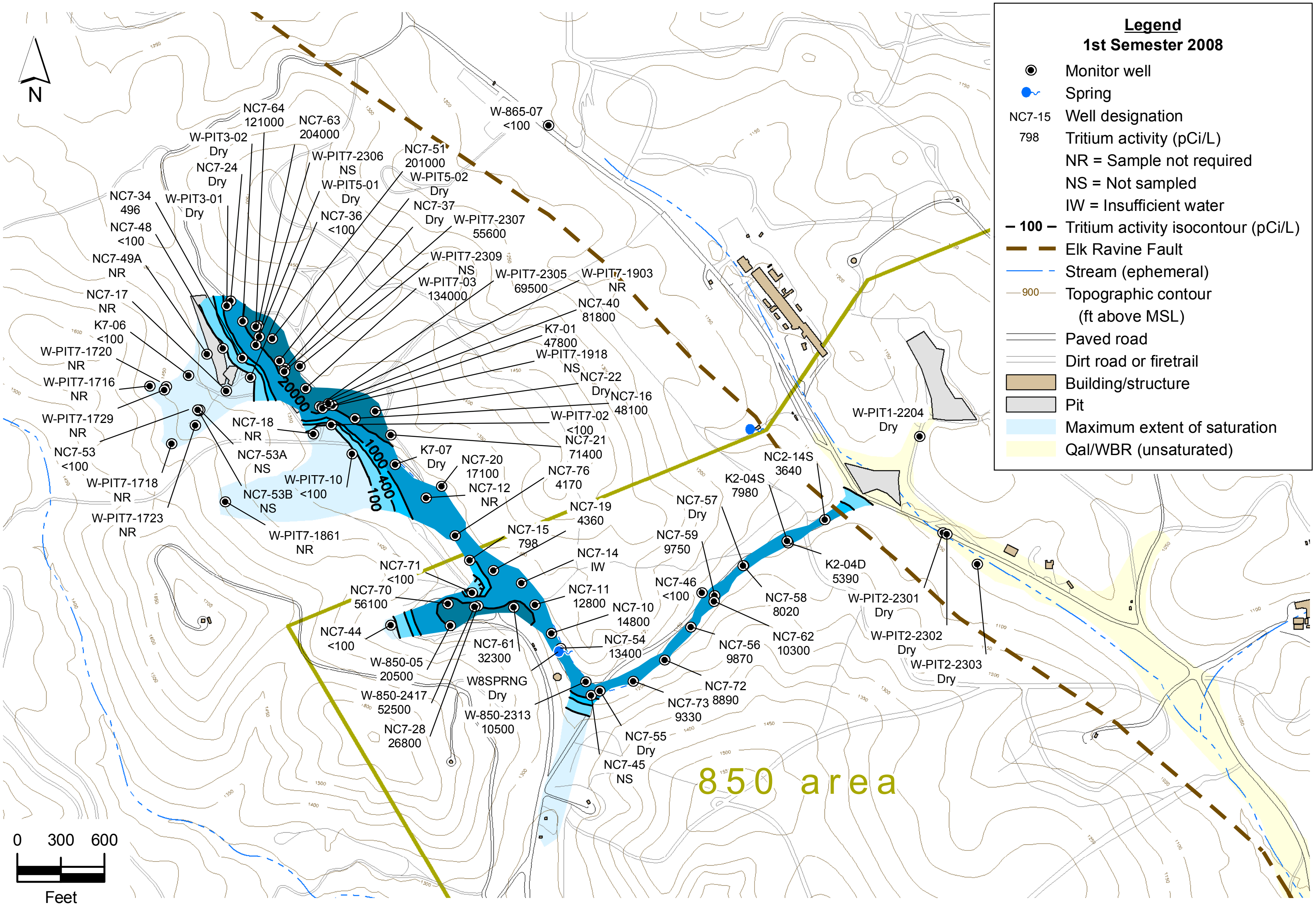

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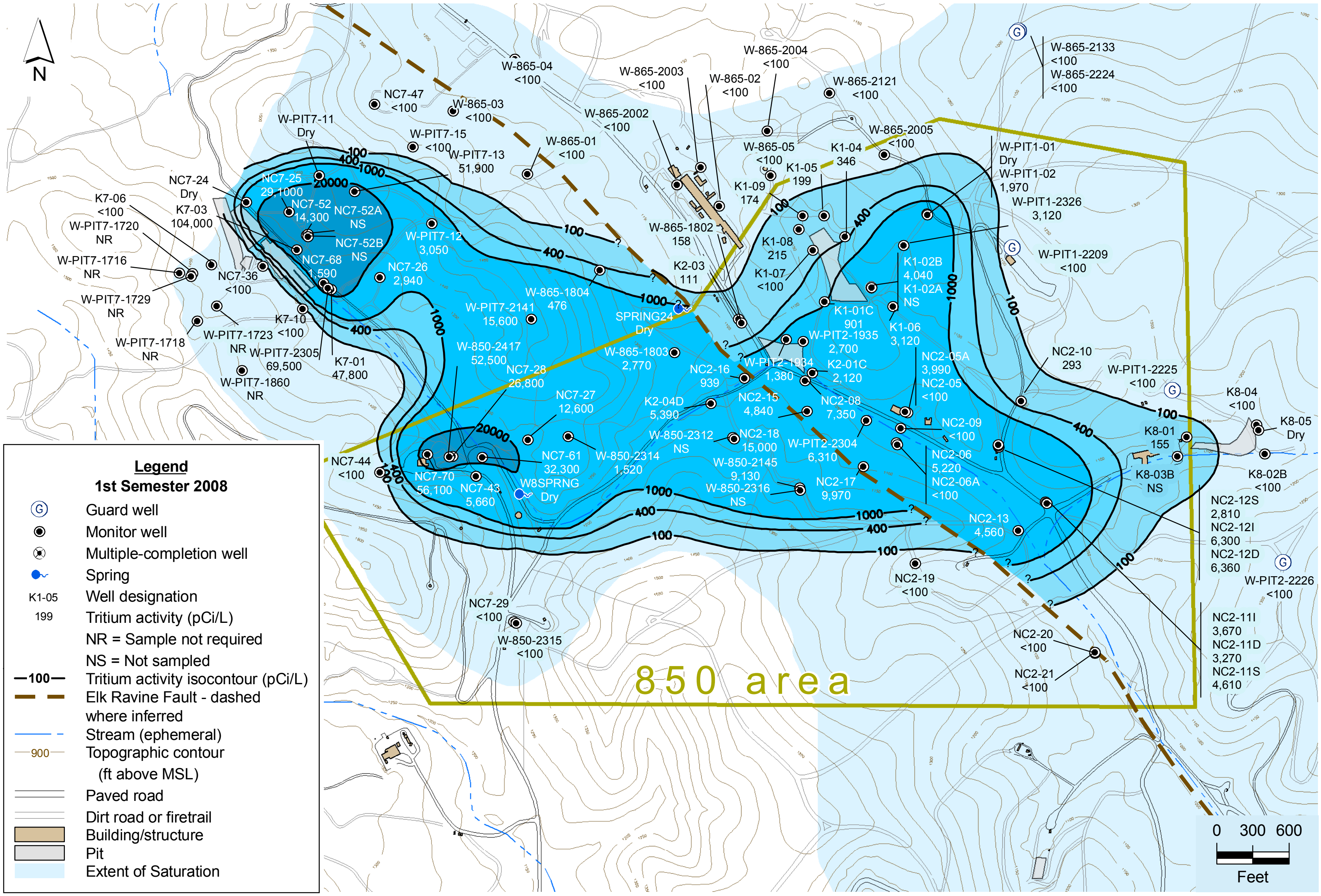

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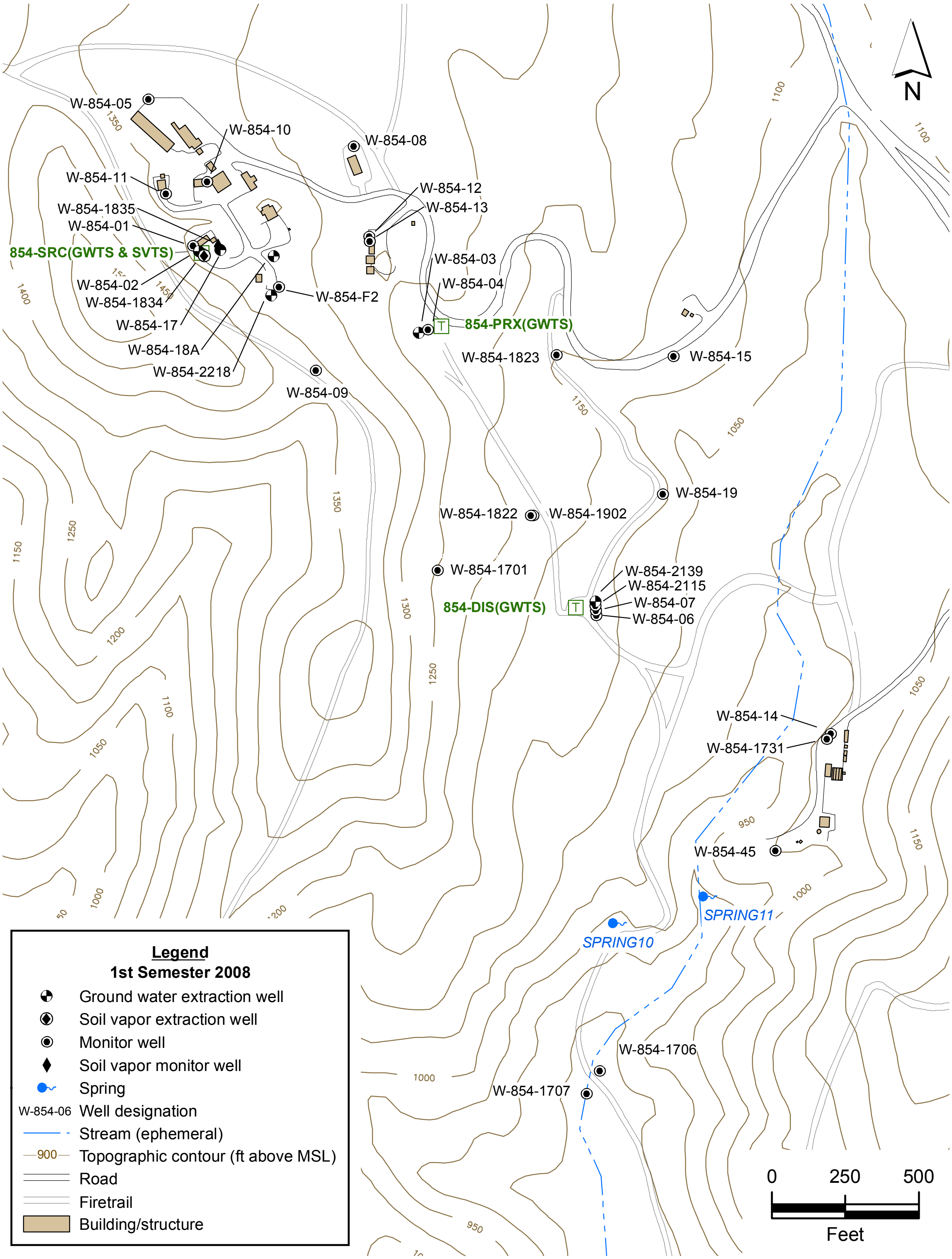

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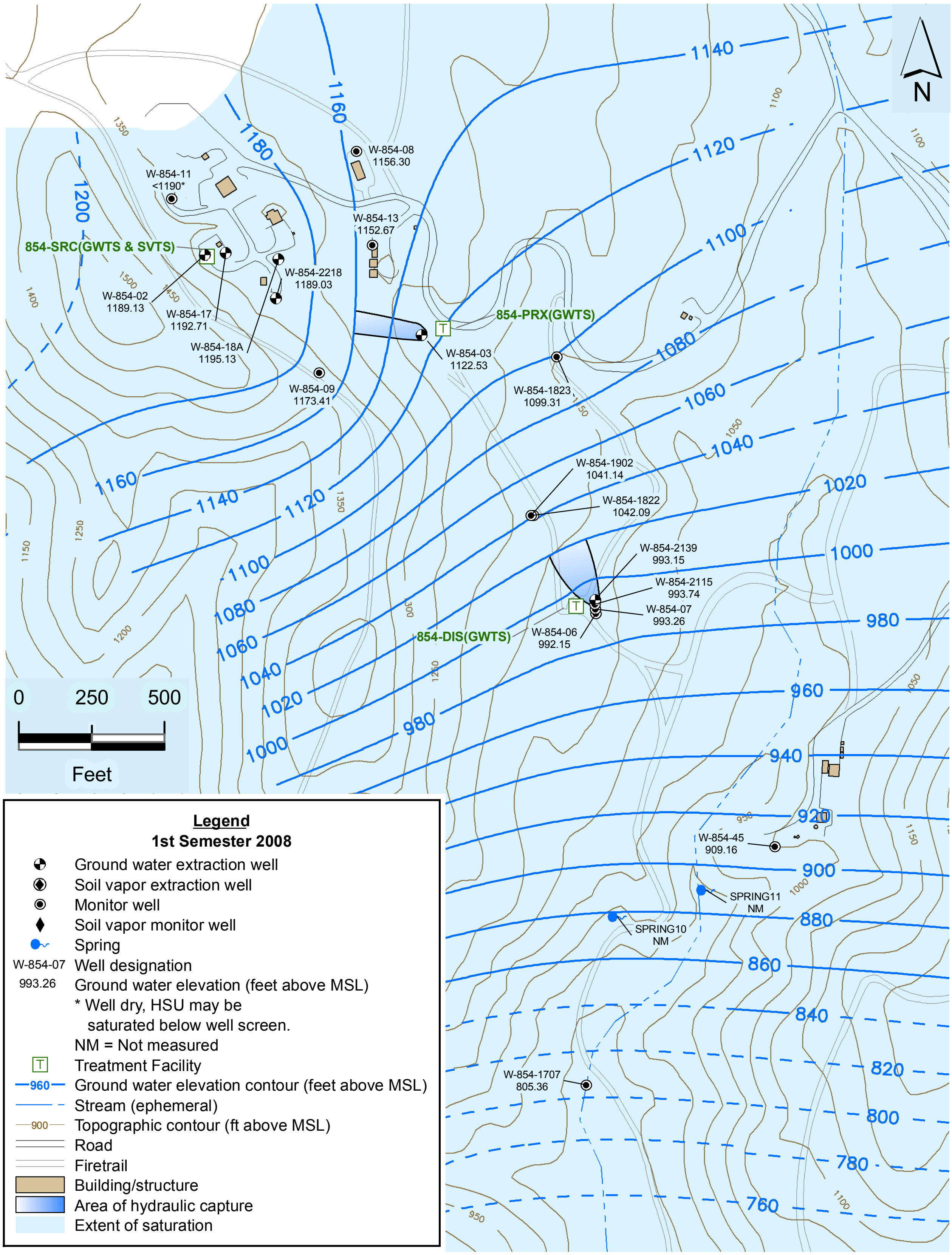

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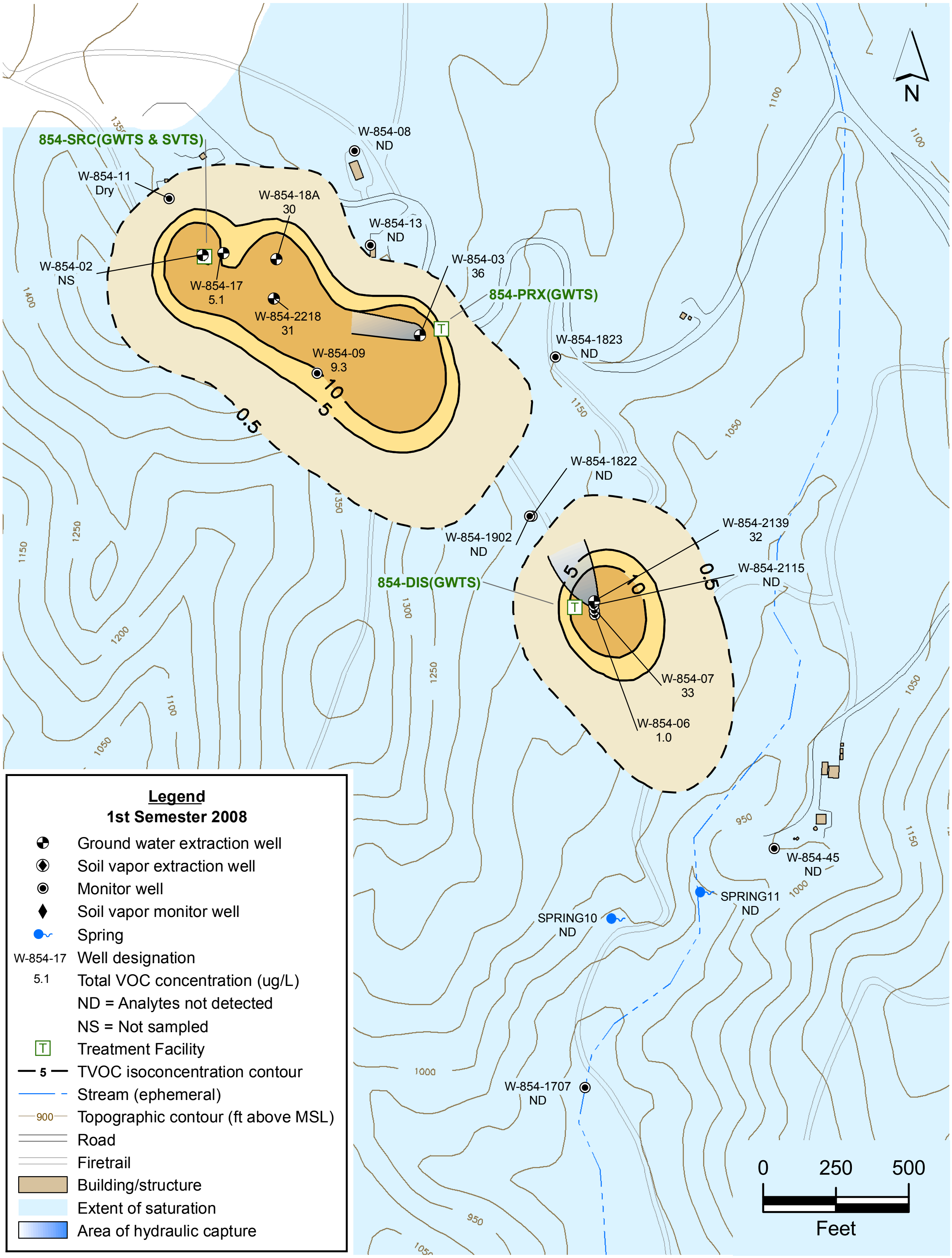

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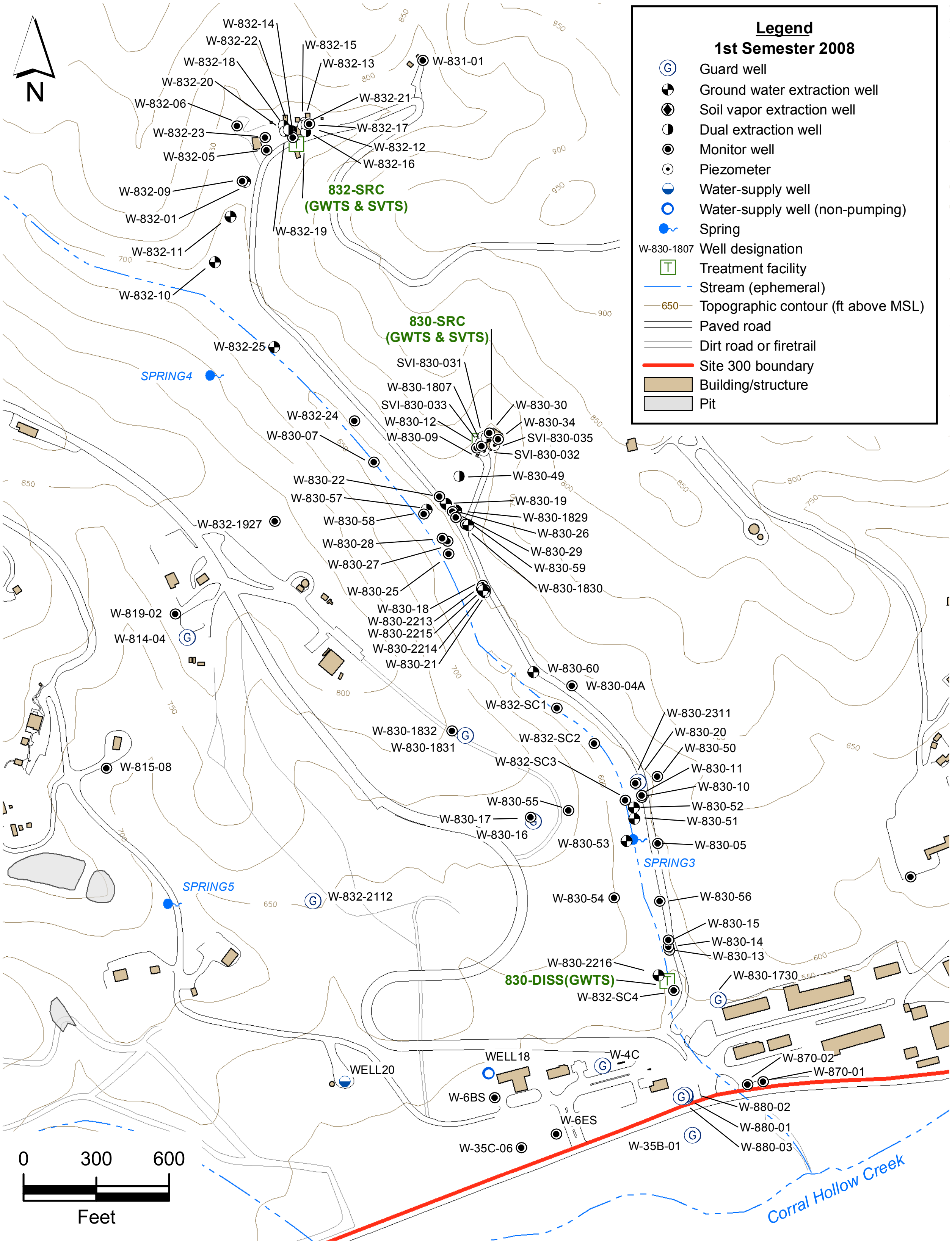

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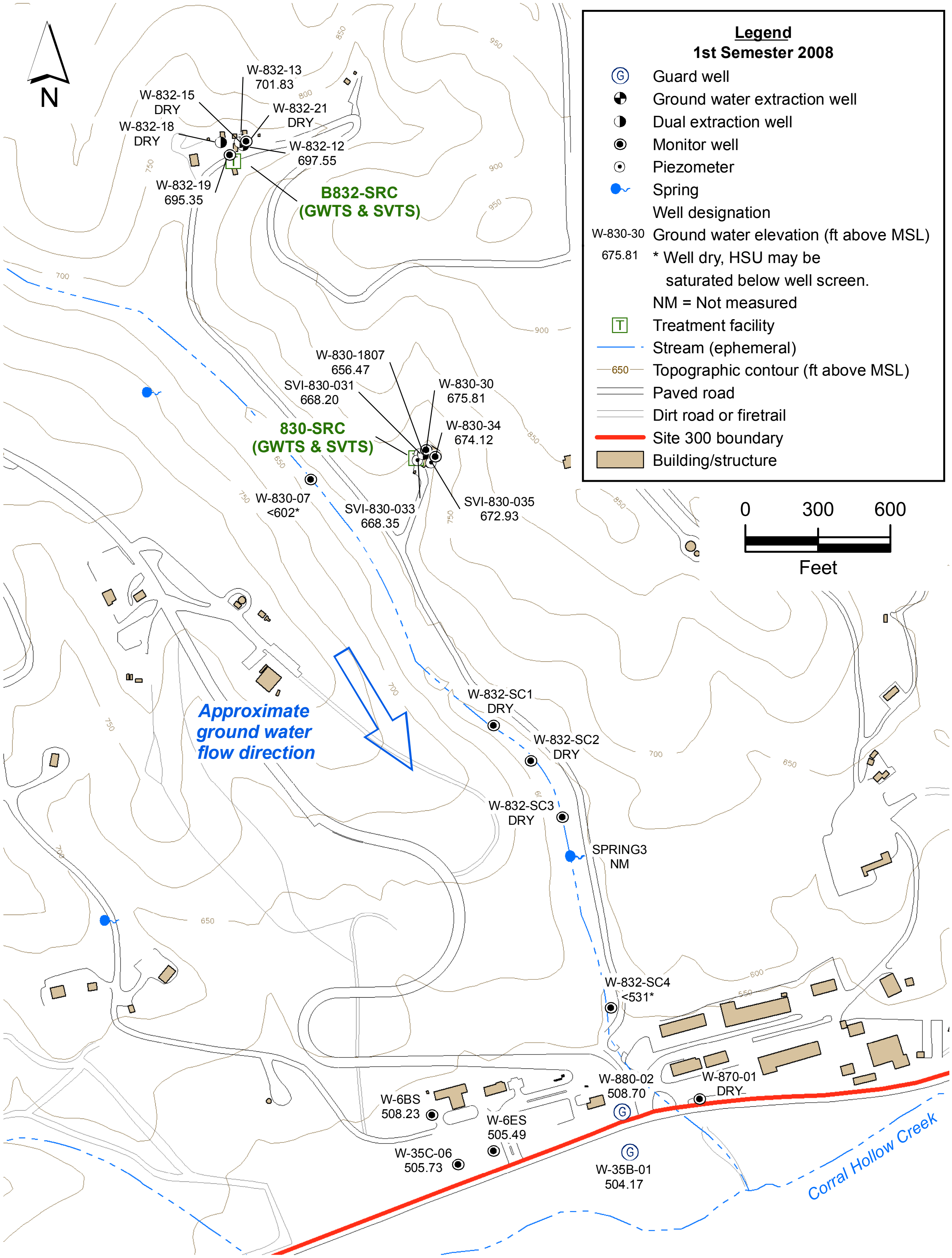

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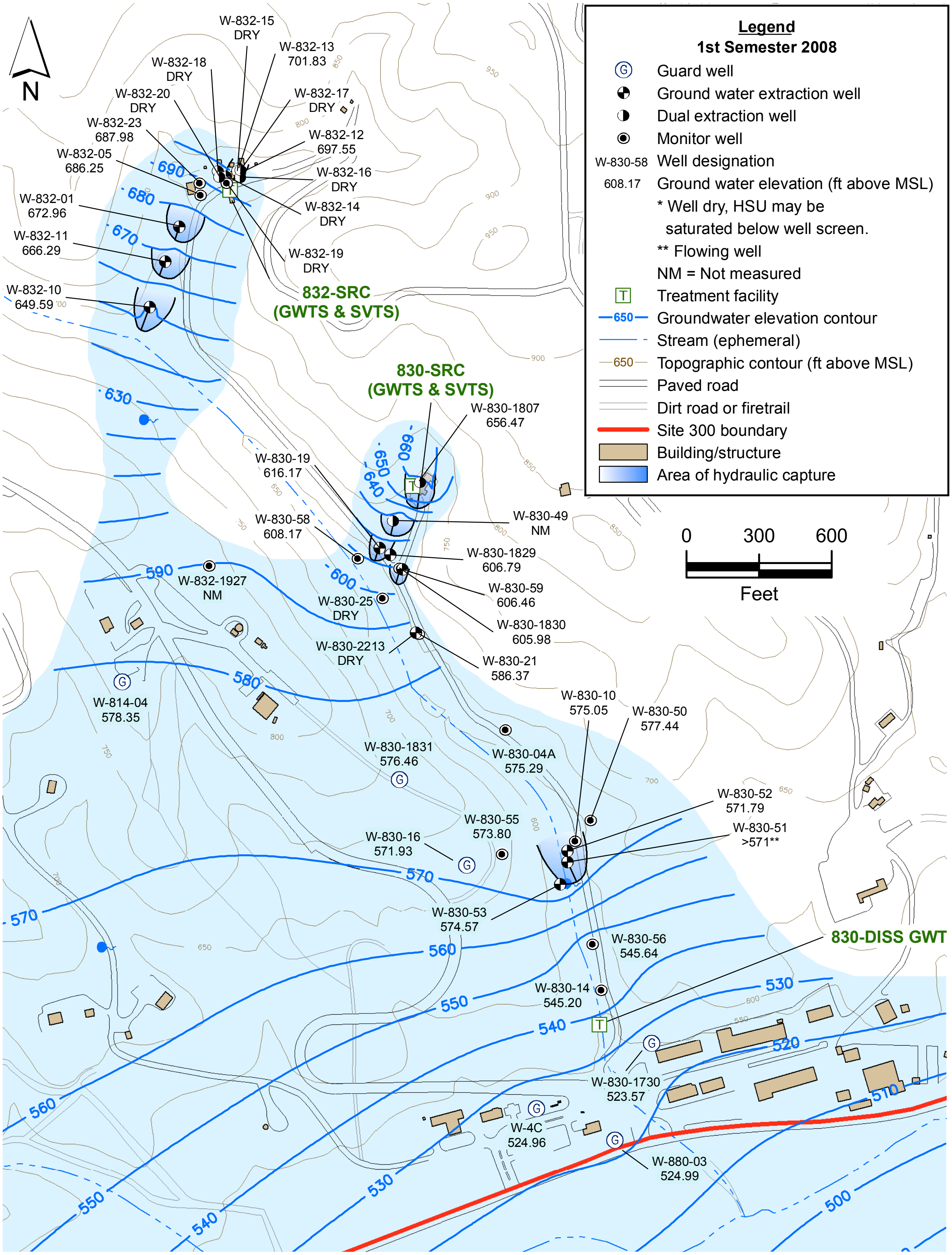

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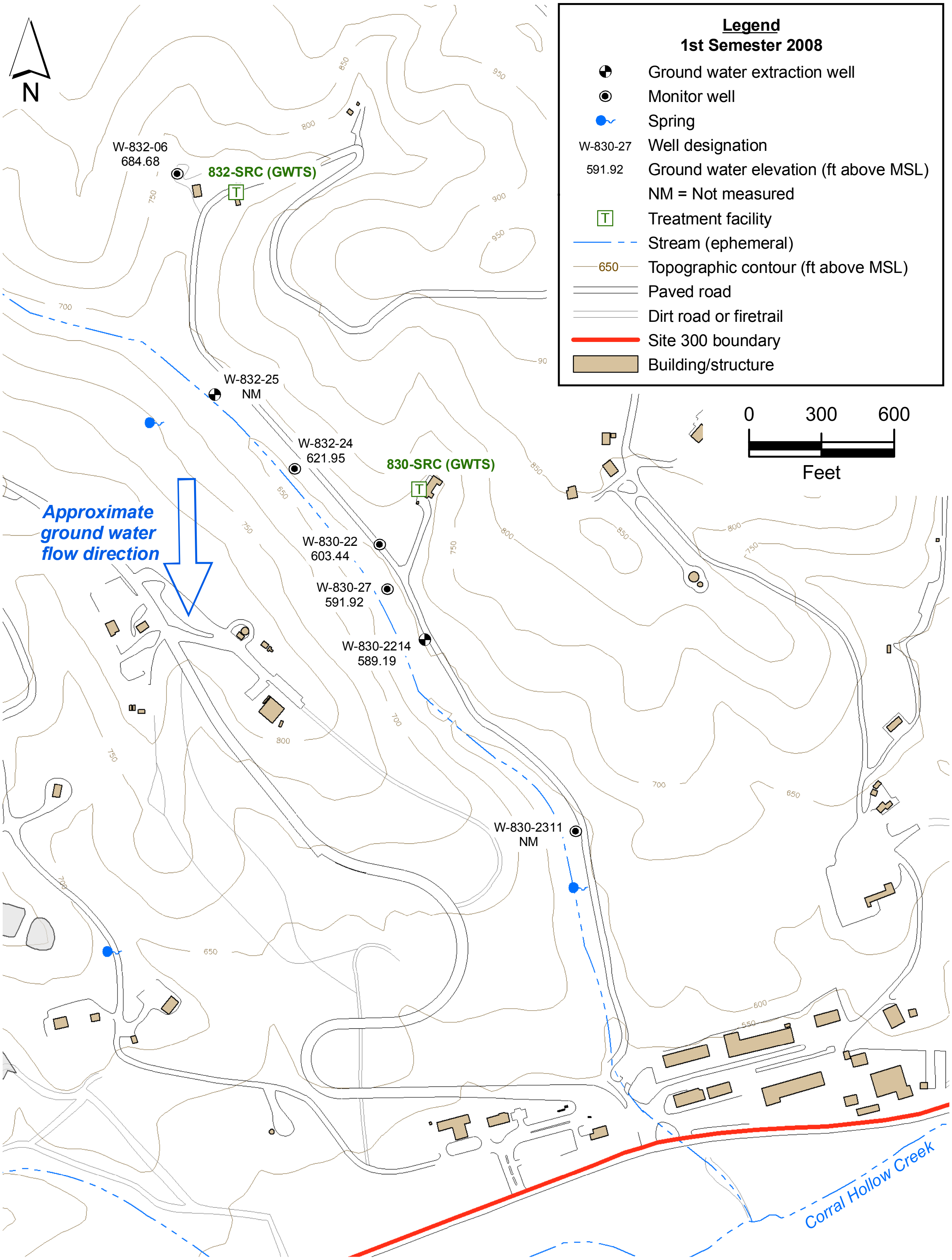

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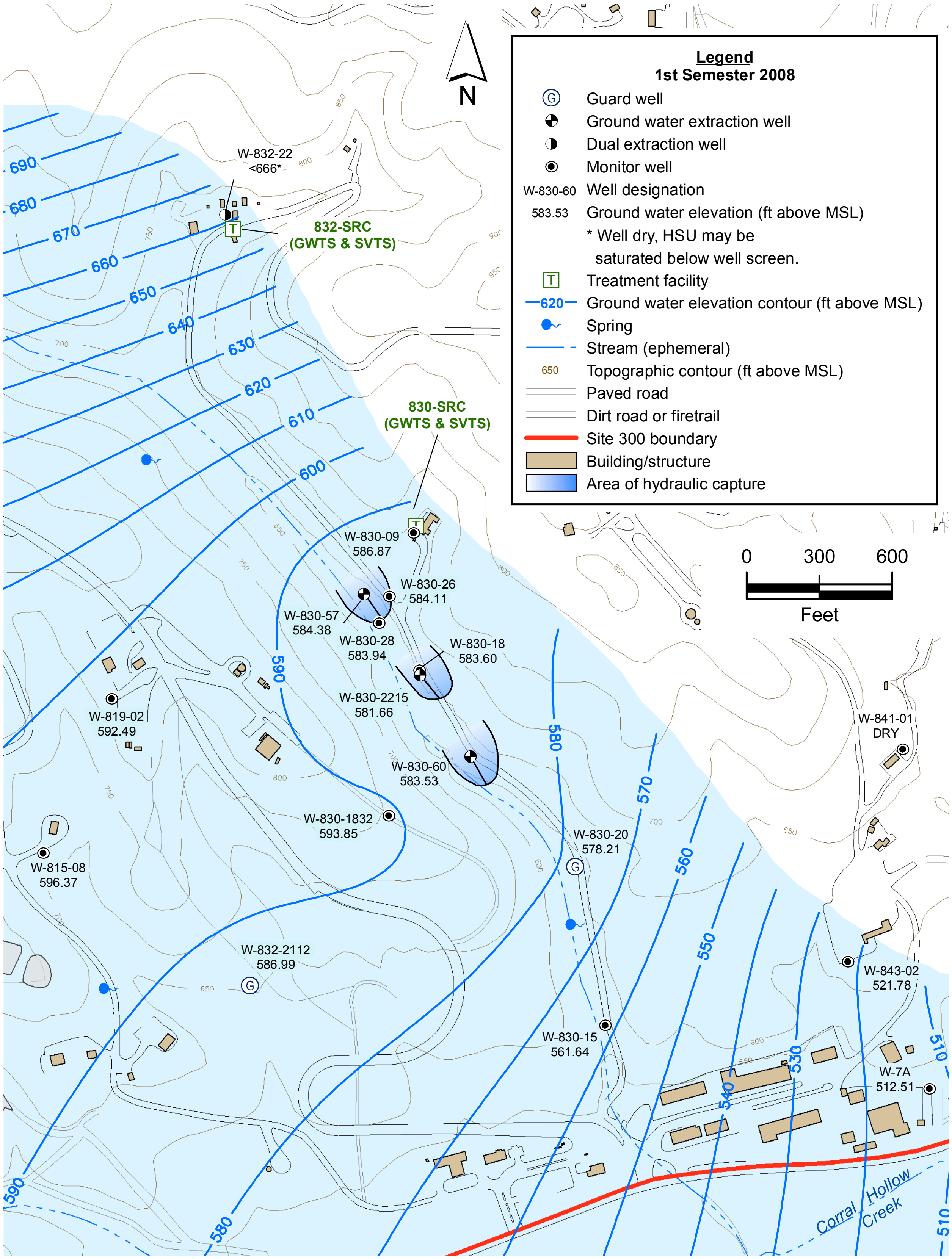

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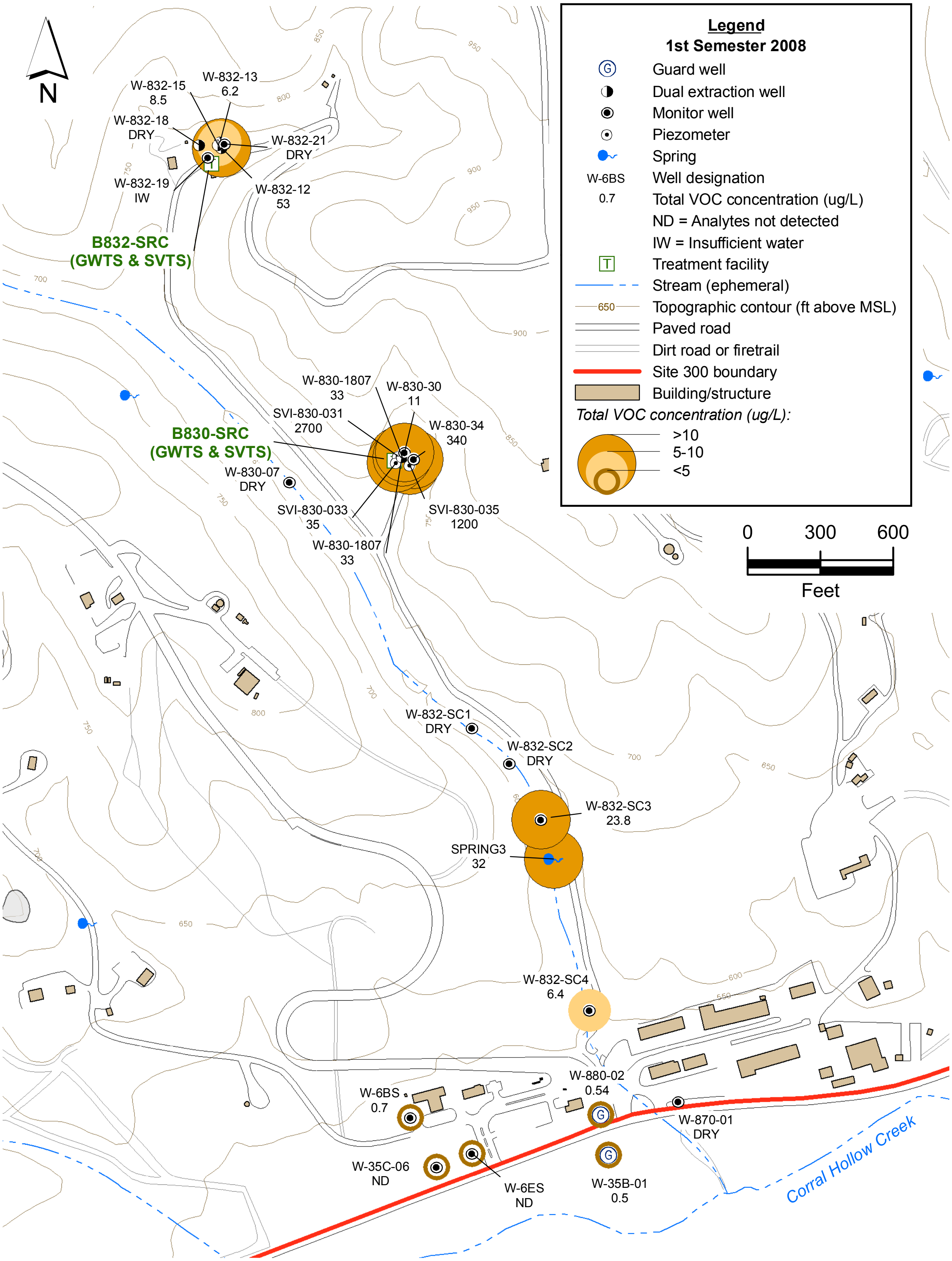

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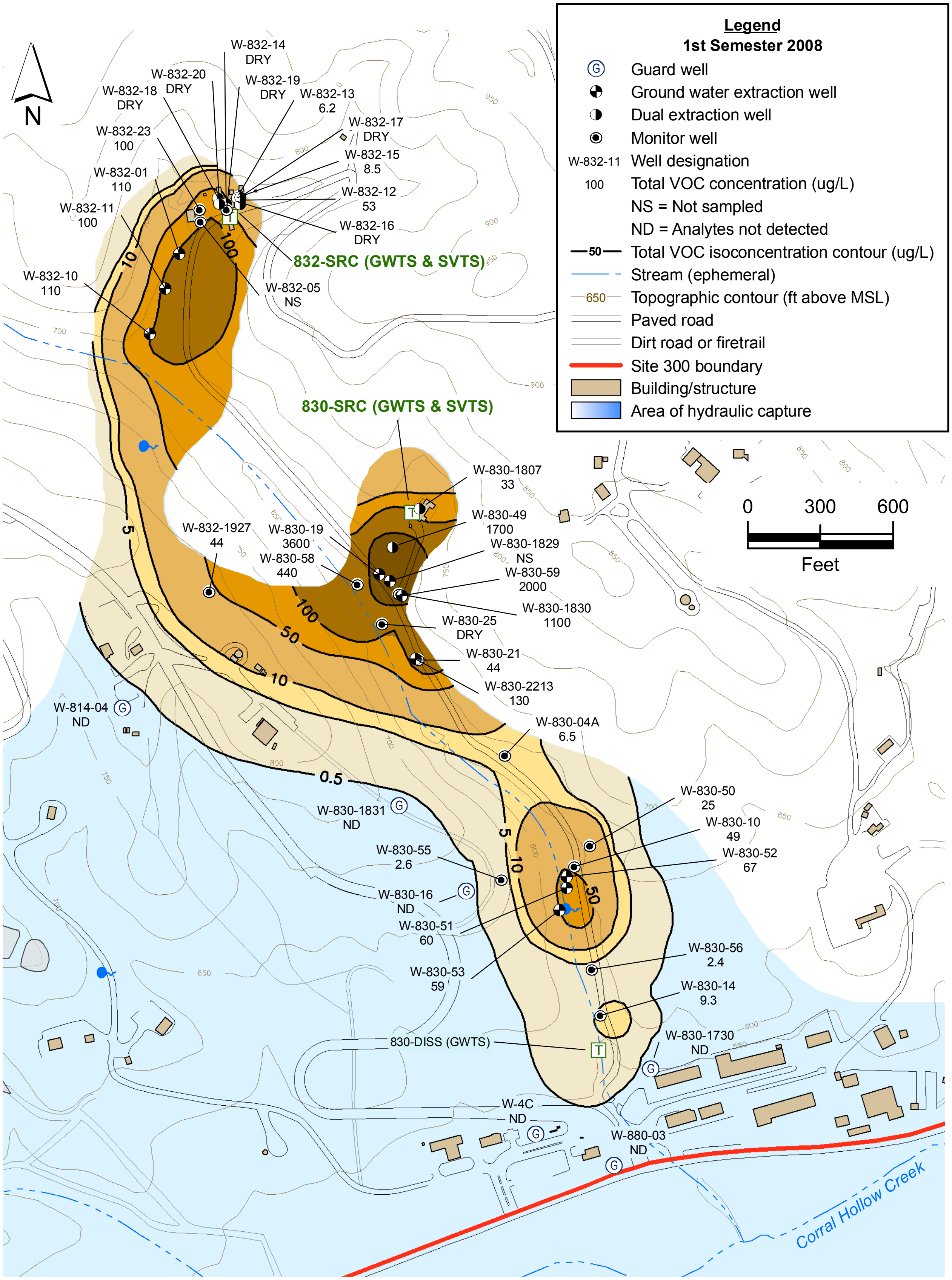

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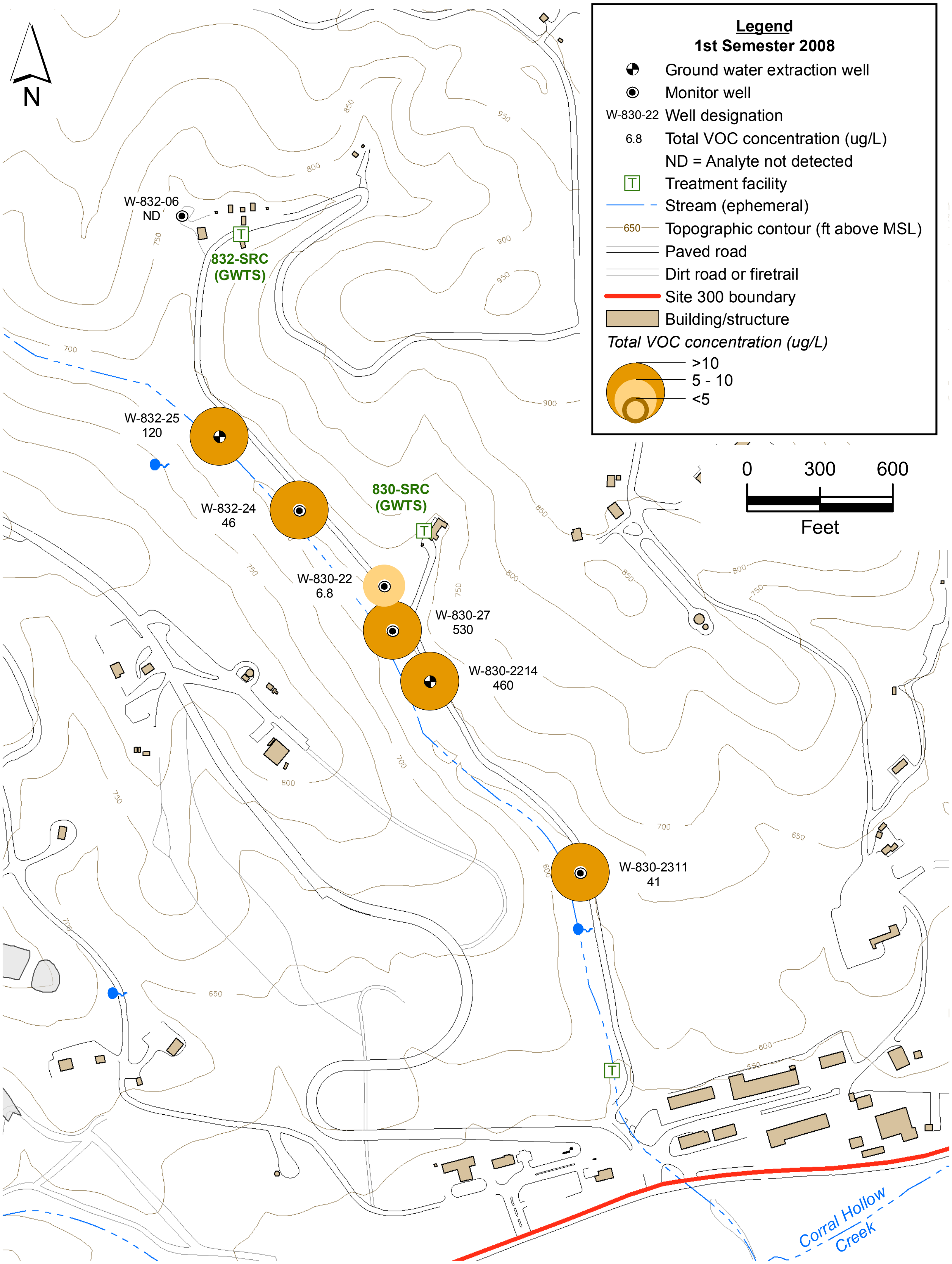

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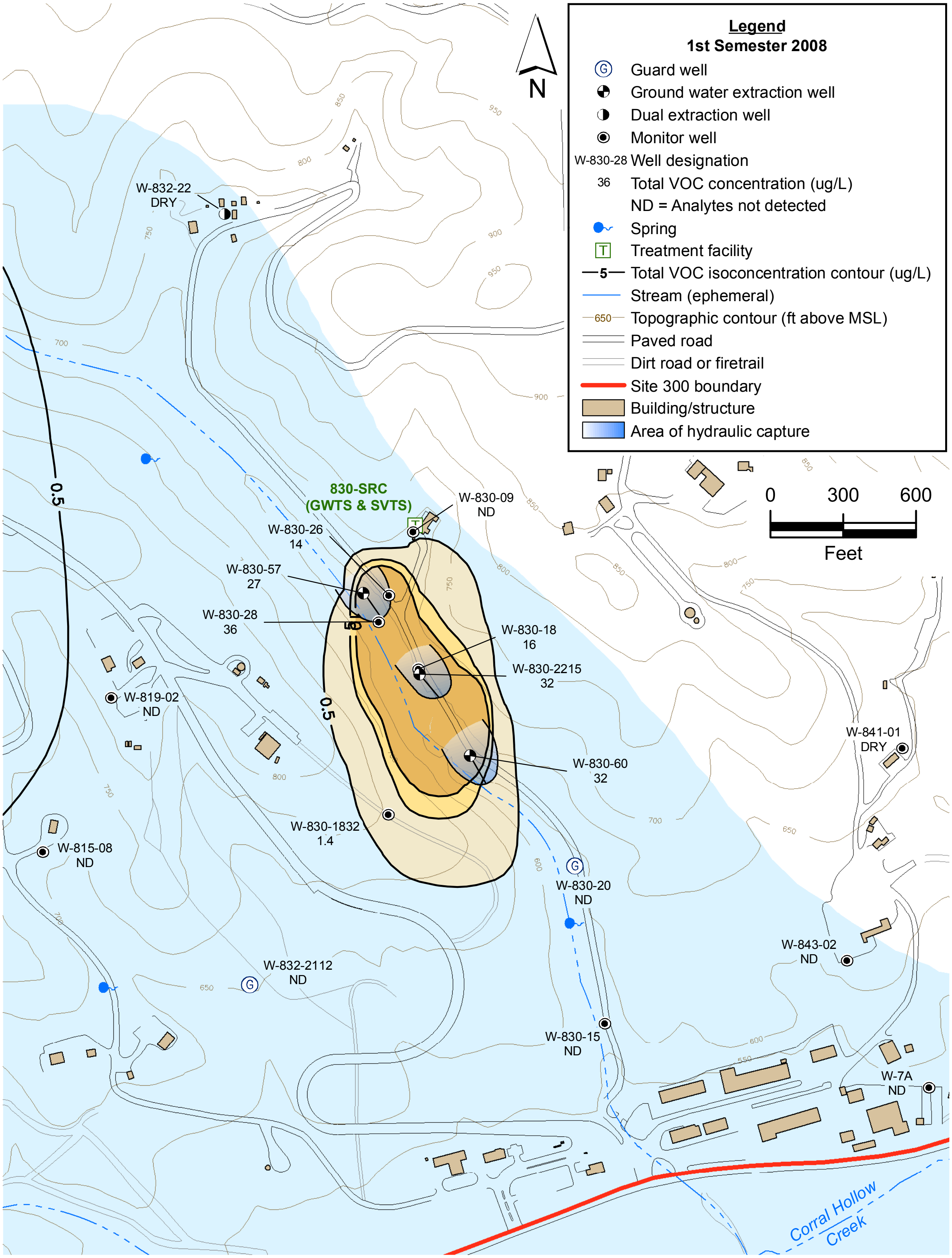

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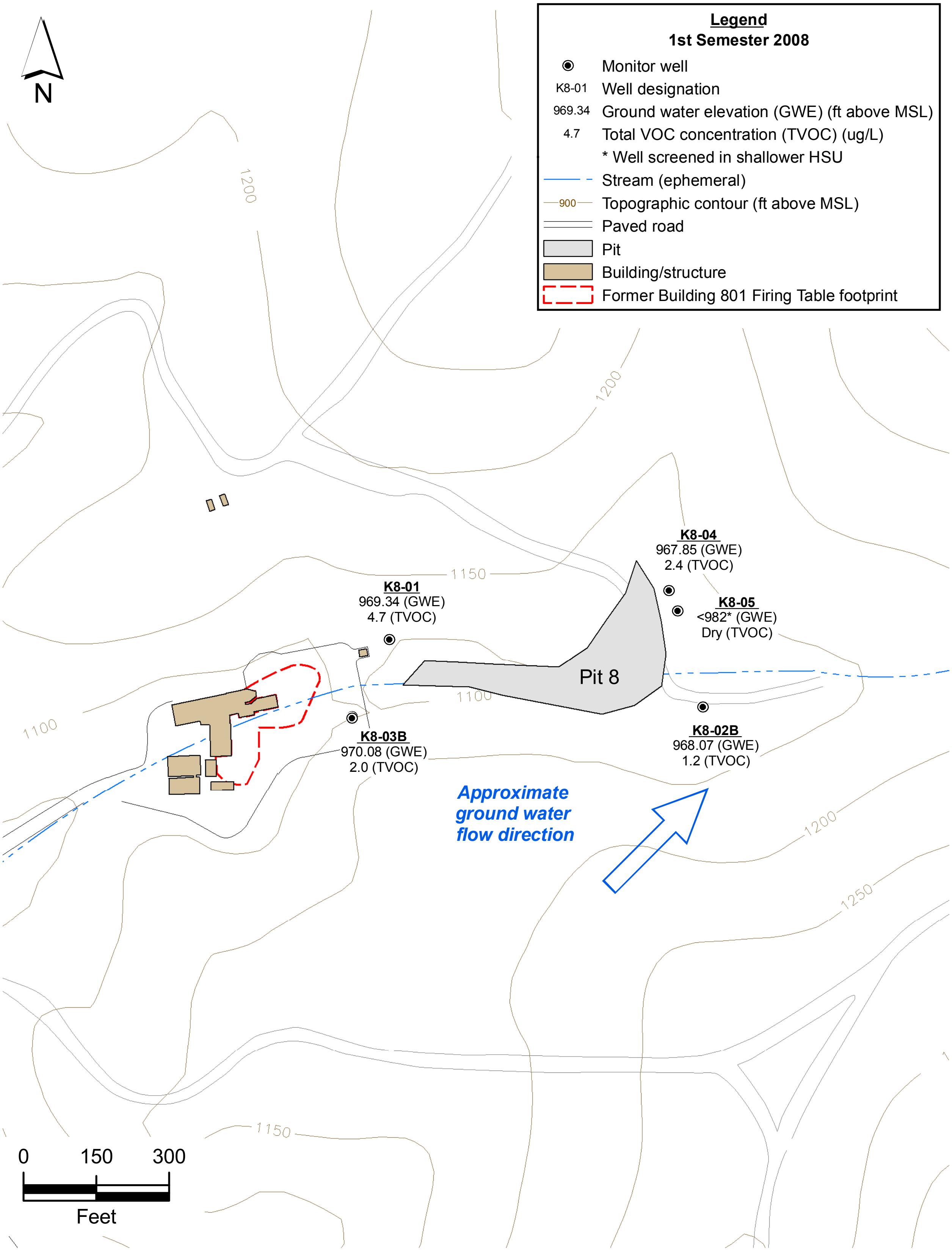

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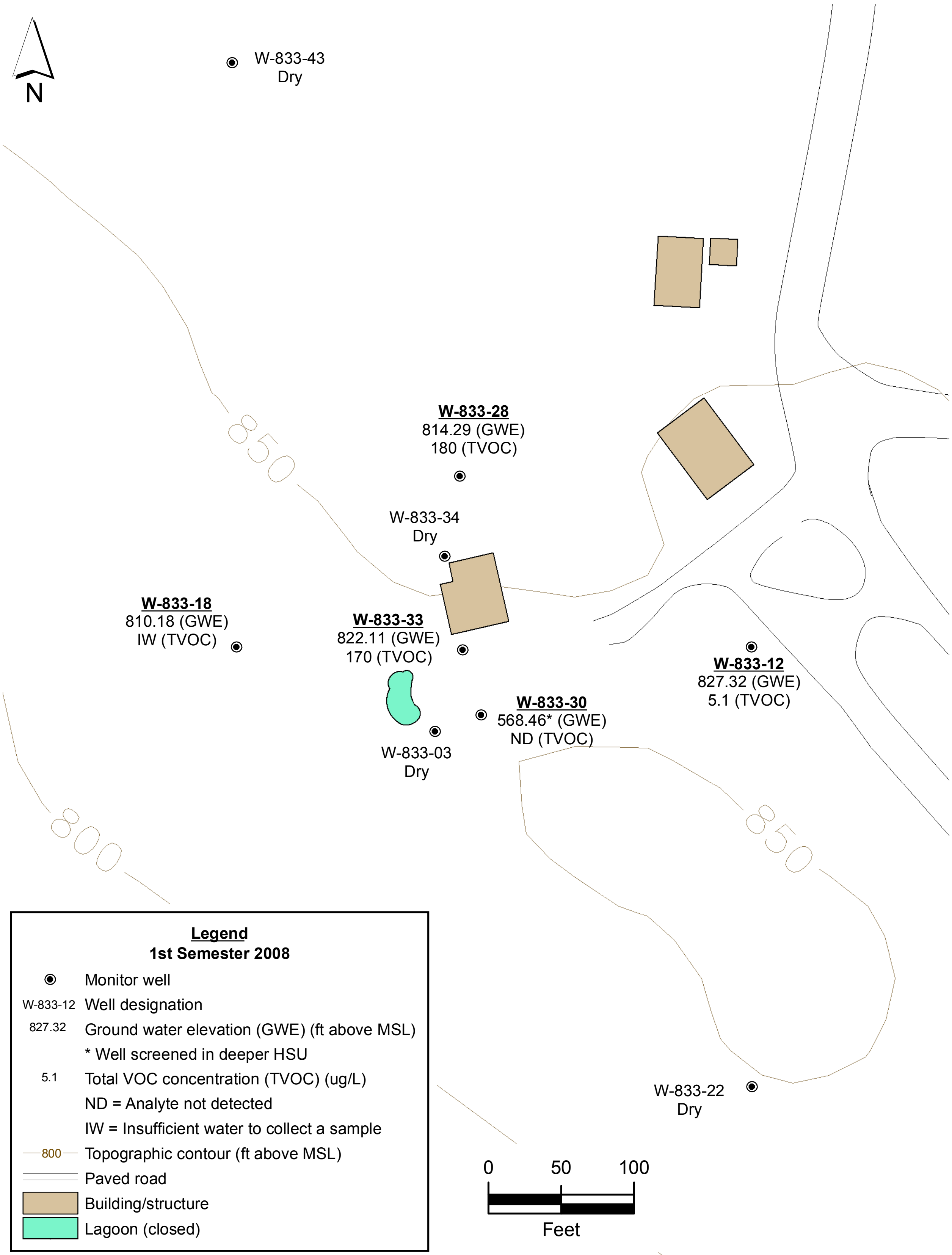

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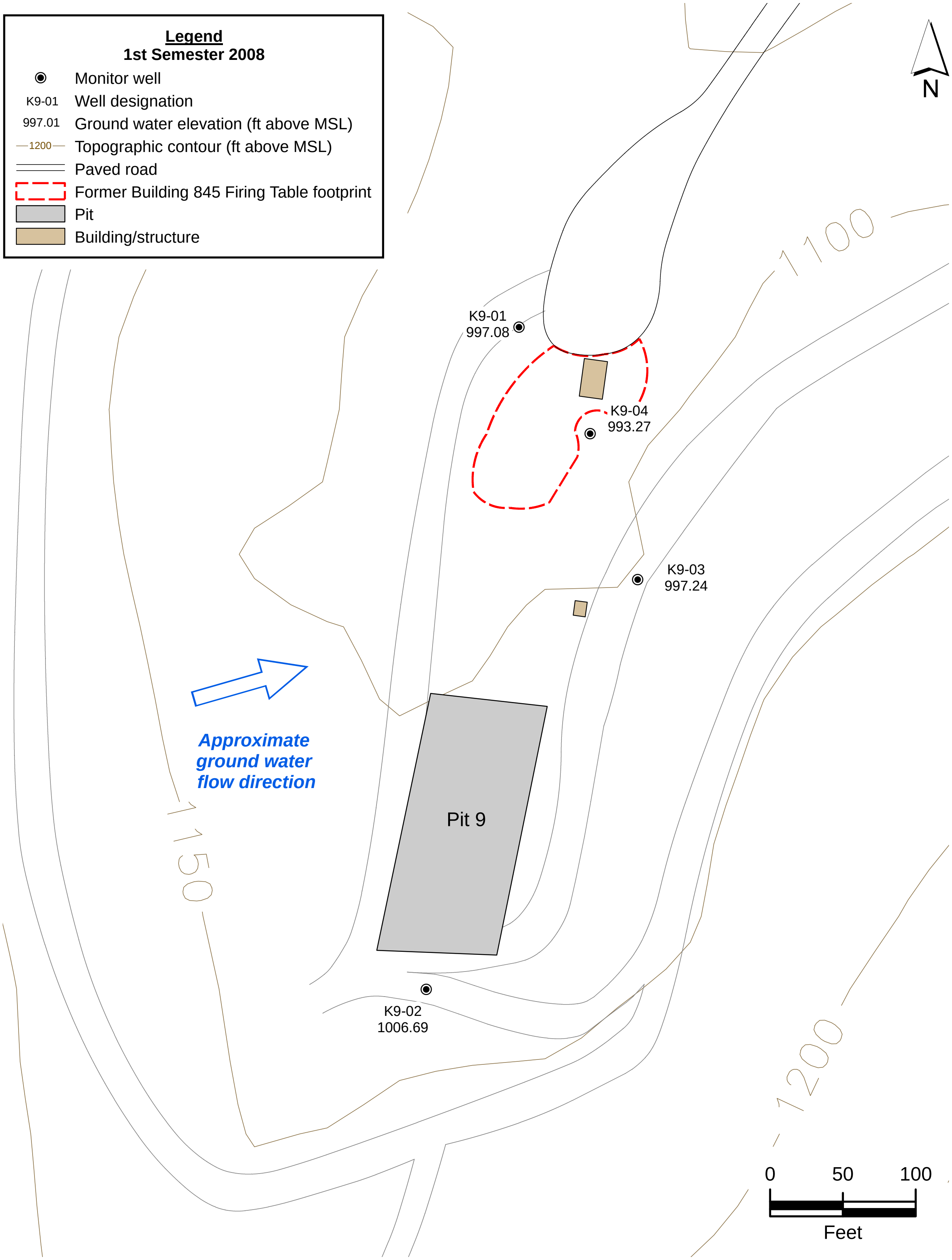

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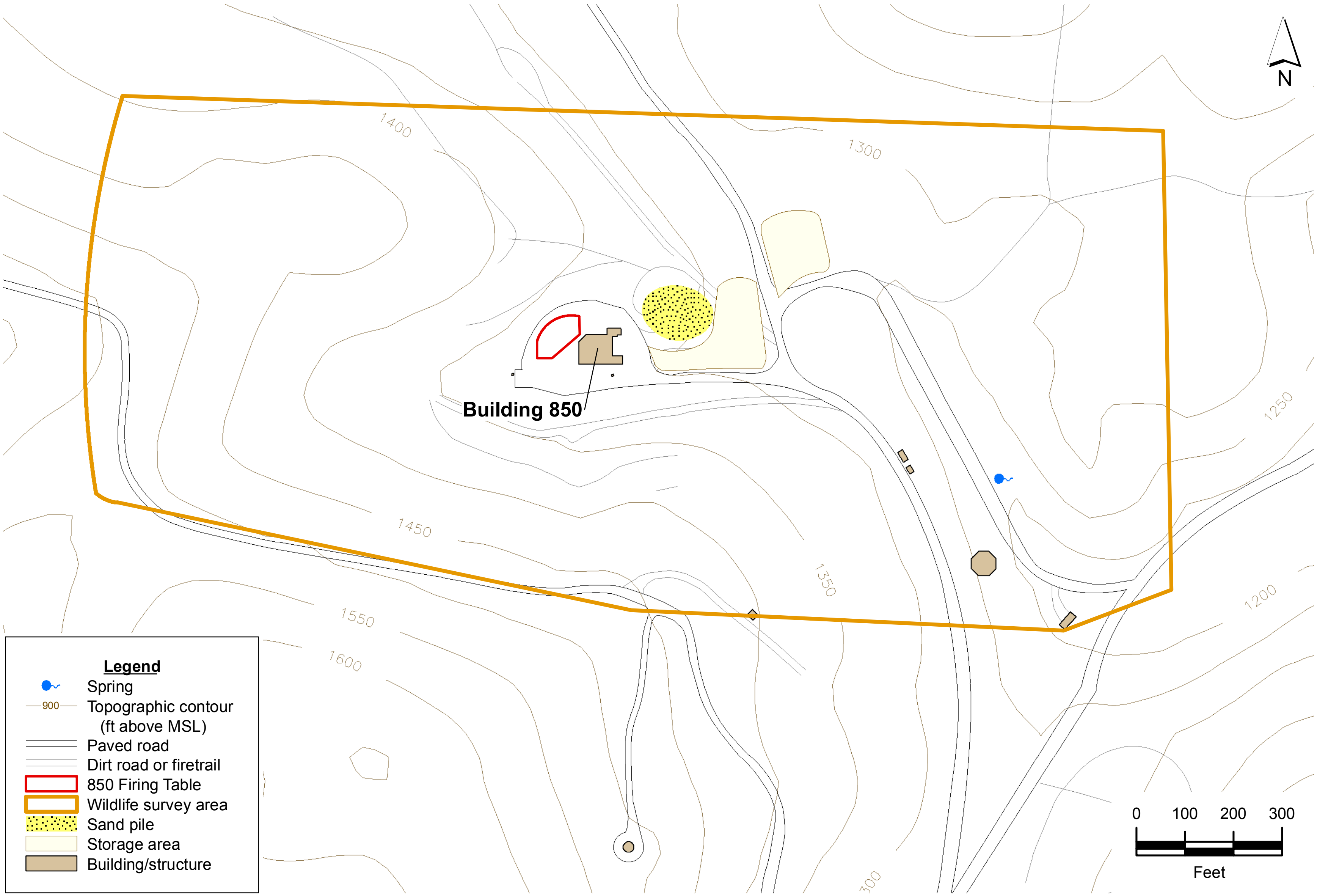

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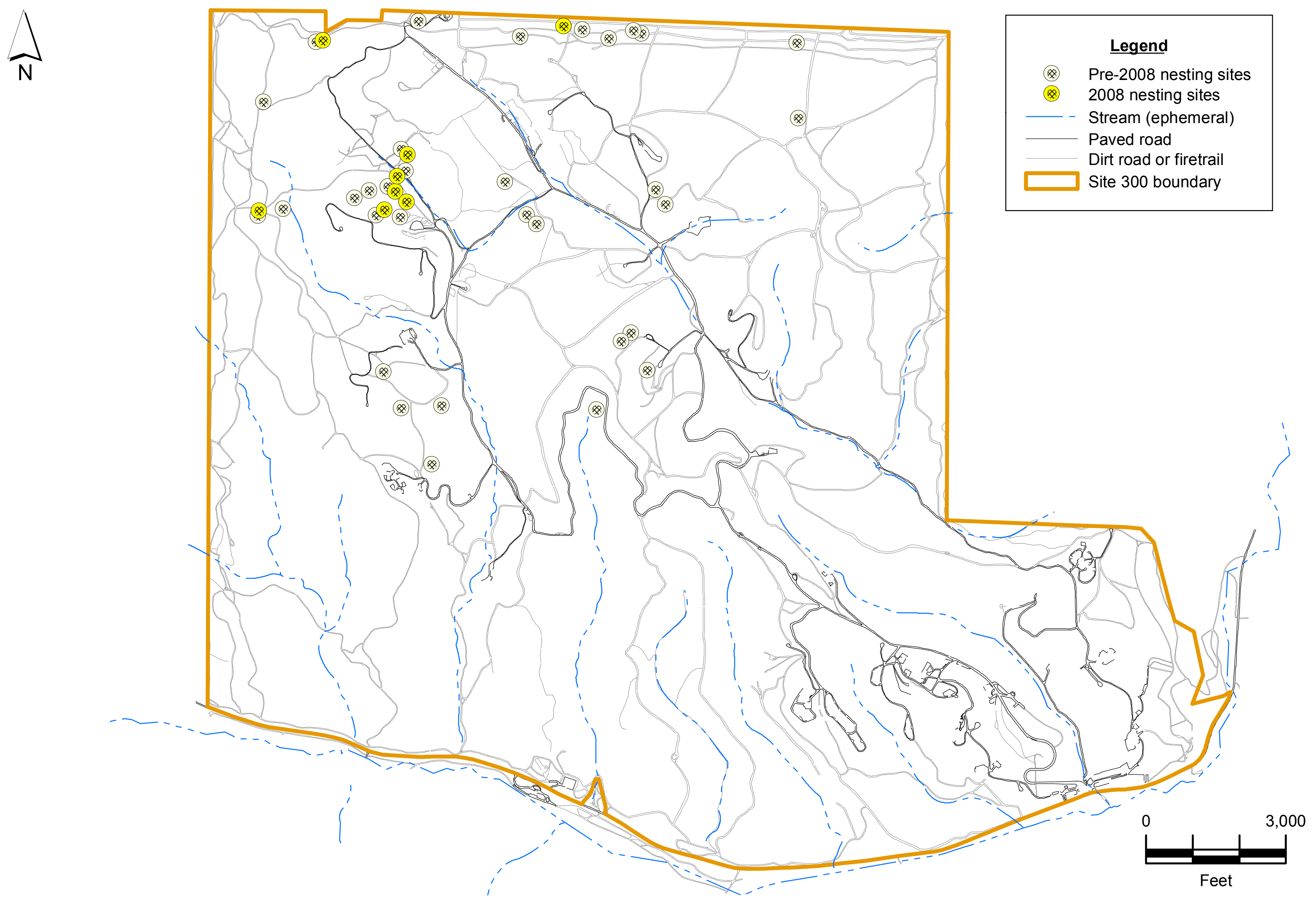

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Acronyms and Abbreviations

815	Building 815
817	Building 817
829	Building 829
832	Building 832
834	Building 834
850	Building 850
854	Building 854
A	Annual
As N	As nitrogen
As $CaCO_3$	As calcium carbonate
B	Biennial
BTEX	Benzene, toluene, ethyl benzene, and xylene
°C	Degrees Celsius
C12-C24	Diesel range organic compounds in the carbon 12 to carbon 24 range
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFE	Carbon filter effluent
CFI	Carbon filter influent
CF2I	Second aqueous phase granular carbon filter influent
CF3I	Third aqueous phase granular carbon filter influent
cfm	Cubic feet per minute
CFV2	Second vapor phase granular activated carbon filter effluent
CGSA	Central General Services Area
CHC	Corral hollow creek
CMP	Compliance Monitoring Plan
CMR	Compliance Monitoring Report
COC	Contaminants of Concern
DCA	Dichloroethane
DCE	Dichloroethylene or dichloroethene
DIS	Discretionary sampling (not required by the CMP)
DISS	Distal south
DMW	Detection monitor well
DNB	Dinitrobenzene
DNT	Dinitrotoluene
DOE	Department of Energy
DSB	Distal Site Boundary
DTSC	Department of Toxic Substances Control
DUP	Duplicate or collocated QC sample
EGSA	Eastern General Services Area
EPA	Environmental Protection Agency

ERD	Environmental Restoration Department
E	Effluent
ES&H	Environmental Safety and Health
EV	Effluent vapor
EW	Extraction well
ft	Feet
ft^3	Cubic feet
g	Gram(s)
GAC	Granular activated carbon
gal	gallon(s)
gpd	Gallons per day
gpm	Gallons per minute
GSA	General Services Area
GTU	Ground Water Treatment Unit.
GW	Guard well
GWTS	Ground Water Treatment System
HE	High Explosives
HEPA	High Explosives Process Area
HMX	High-Melting Explosive
HSU	Hydrostratigraphic unit
I	Influent
ITS	Issues Tracking System
IV	Influent vapor
IW	Injection well
kg	kilograms
km	Kilometers
lb	Pounds
LLNL	Lawrence Livermore National Laboratory
µg/L	Micrograms per liter
$\mu g/m^3$	Micrograms per meters cubed
µmhos/cm	Micro ohms per centimeter
M	Monthly
MCL	Maximum Contaminant Level
mg/L	Milligrams per liter
MNA	Monitored Natural Attenuation
MTU	Miniature Treatment Unit
MWB	Monitor well used for background
N	No
NB	Nitrobenzene
NO_3	Nitrate
NA	Not applicable
NT	Nitrotoluene
NTU	Nephelometric turbidity units

OU	Operable unit
O&M	Operations and Maintenance
PCBs	Polychlorinated biphenyls
PCE	Tetrachloroethylene
pCi/L	PicoCuries per liter
pH	A measure of the acidity or alkalinity of an aqueous solution
ppb_v	Parts per billion by volume
ppm_v	Parts per million on a volume-to-volume basis
PRX	Proximal
PRXN	Proximal north
PSDMP	Post-Monitoring Shutdown Plan
PTMW	Plume Tracking Monitor Well
Q	Quarterly
QAPP	Quality Assurance Project Plan
QA/QC	Quality assurance/quality control
QIF	Quality Improvement Form
R1	Receiving water sampling point located 100 ft upstream
R2	Receiving water sampling point located 100 ft downstream
RDX	Research Department explosive
REX	Resample
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board
S	Semi-annual
Scfm	Standard cubic feet per minute
SLs	Screening Levels
SOP	Standard Operating Procedure
SRC	Source
SPR	Spring
STU	Solar-powered Treatment Unit
SVE	Soil Vapor Extraction
SVTS	Soil Vapor Treatment System
SVI	Soil Vapor Influent
TBOS	Tetrabutyl orthosilicate
TCA	Trichloroethane
TKEBS	Tetrakis (2-ethylbutyl) silane
TCE	Trichloroethylene
TDS	Total dissolved solids
TF	Treatment facility
TNB	Trinitrobenzene
TNT	Trinitrotoluene
$^{235}U/^{238}U$	Atom ratio of the isotopes uranium-235 and uranium-238
U.S.	United States

VCF4I	Fourth vapor phase granular activated carbon filter influent
VE	Vapor effluent
VES	Vapor extraction system
VI	Vapor influent
VOC	Volatile organic compound
WGMG	Water Guidance and Monitoring Group
WS	Water supply well
Y	Yes

Hydrogeologic Units

Lower $Tnbs_1$ = Lower member of the Neroly lower blue sandstone, below claystone marker bed (regional aquifer).
Qal = Quaternary alluvium.
Qls = Quaternary landslide.
Qt = Quaternary terrace.
Tmss = Miocene Cierbo Formation—lower siltstone/claystone member.
$Tnsc_{1a}$, $Tnsc_{1b}$, $Tnsc_{1c}$ = Sandstone bodies within the $Tnsc_1$ Neroly middle siltstone/claystone (1a = deepest).
$Tnbs_1$ = Lower member of the Neroly lower blue sandstone.
$Tnbs_0$ = Neroly silty sandstone.
$Tnbs_2$ = Miocene Neroly upper blue sandstone.
$Tnsc_0$ = Tertiary Neroly Formation—lower siltstone/claystone member.
$Tnsc_2$ = Miocene Neroly Formation—upper siltstone/claystone member.
Tps = Pliocene non-marine unit.
Tpsg = Miocene non-marine unit (gravel facies).
Tts = Tesla Formation.
Upper $Tnbs_1$ = Upper member of the Neroly lower blue sandstone, above claystone marker bed.

Data Qualifier Flag Definitions

B = Analyte found in method blank, sample results should be evaluated.

D = Analysis performed at a secondary dilution or concentration (i.e., vapor samples).

E = The analyte was detected below the LLNL reporting limit, but above the analytical laboratory minimum detection limit.

F = Analyte found in field blank, trip blank, or equipment blank.

G = Quantitated using fuel calibration, but does not match typical fuel fingerprint.

H = Sample analyzed outside of holding time, sample results should be evaluated.

I = Surrogate recoveries were outside of QC limits.

J = Analyte was positively identified; the associated numerical value is the proximate concentration of the analyte in the sample.

L = Spike accuracy not within control limits.

O = Duplicate spike or sample precision not within control limits.

R = Sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

S = Analytical results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be verified.

T = Analyte is tentatively identified compound; result is approximate.

Requested Analyses

AS:THISO = Thorium isotopes performed by alpha spectrometry.
AS:UISO = Uranium isotopes performed by alpha spectrometry.
CMPTRIMET = Thorium, uranium, and lithium performed by EPA Method 200.7.
DWMETALS = Drinking water metals suite performed by various analytical methods.
E200.7:Ba = Barium performed by EPA Method 200.7.
E200.7:Cd = Cadmium performed by EPA Method 200.7.
E200.7:Cu = Copper performed by EPA Method 200.7.
E200.7:SI = Silica performed by EPA Method 200.7.
E200.7:Zn = Zinc performed by EPA Method 200.7.
E210.2 = Beryllium performed by EPA Method 210.2.
E218.2 = Chromium performed by EPA Method 218.2.
E239.2 = Lead performed by EPA Method 239.2.
E245.2 = Mercury performed by EPA Method 245.2.
E300.0:NO3 = Nitrate performed by EPA Method 300.0.
E300.0:PERC = Perchlorate performed by EPA Method 300.0.
E340.2 = Fluoride performed by EPA method 340.2.
E502.2 = Volatile organic compounds performed by EPA Method 502.2.
E601 = Halogenated volatile organic compounds performed by EPA Method 601.
E624 = Volatile organic compounds performed by EPA Method 624.
E8082A = Polychlorinated biphenyls performed by EPA Method 8082A.
E8260 = Volatile organic compounds performed by EPA Method 8260.
E8330 = High explosive compounds performed by EPA Method 8330.
E8330:R+H = High explosive compounds RDX and HMX performed by EPA Method 8330.
E8330:TNT = Trinitrotoluene performed by EPA Method 8330.
E900 = Gross alpha and beta performed by EPA Method 900.
E906 = Tritium performed by EPA Method 906.
EM8015:DIESEL = Diesel range organic compounds performed by modified EPA Method 8015.
GENMIN = General minerals suite performed by various analytical methods.
ICMSRAD = Uranium isotopes performed by mass spectrometry.
KPA = Kinetic phosphorescence analysis.

MS:THISO =	Thorium isotopes performed by mass spectrometry.
MS:UISO =	Uranium isotopes performed by mass spectrometry.
T26METALS =	Title 26 metals.
TBOS =	Tetrabutylorthosilicate.

Table Summ-1. Mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Volume of ground water treated (thousands of gal)	Volume of soil vapor treated (thousands of ft^3)	Estimated total VOC mass removed (g)	Estimated total perchlorate mass removed (g)	Estimated total nitrate mass removed (kg)	Estimated total RDX mass removed (g)	Estimated total TBOS/ TKEBS mass removed (g)
CGSA GWTS	911	NA	180	NA	NA	NA	NA
CGSA SVTS	NA	7,507	1,500	NA	NA	NA	NA
834 GWTS	67	NA	730	NA	14	NA	2.5
834 SVTS	NA	19,018	2,800	NA	NA	NA	NA
815-SRC GWTS	362	NA	7.8	13	140	94	NA
815-PRX GWTS	367	NA	33	9.7	110	NA	NA
815-DSB GWTS	643	NA	26	NA	NA	NA	NA
817-SRC GWTS	4	NA	0	0.42	1.2	0.69	NA
817-PRX GWTS	312	NA	14	29	110	0	NA
829-SRC GWTS	<1	NA	0.057	0.034	0.29	NA	NA
854-SRC GWTS	210	NA	36	1.5	39	NA	NA
854-SRC SVTS	NA	514	53	NA	NA	NA	NA
854-PRX GWTS	224	NA	27	12	40	NA	NA
854-DIS GWTS	4	NA	0.58	0.047	0.17	NA	NA
832-SRC GWTS	43	NA	10	0.84	16	NA	NA
832-SRC SVTS	NA	980	31	NA	NA	NA	NA
830-SRC GWTS	922	NA	290	0.26	48	NA	NA
830-SRC SVTS	NA	4,776	1,400	NA	NA	NA	NA
830-DISS GWTS	213	NA	46	0	41	NA	NA
Total	4,284	32,795	7,200	67	560	95	2.5

Notes:

815 = Building 815.
817 = Building 817.
829 = Building 829.
830 = Building 830.
832 = Building 832.
834 = Building 834.
854 = Building 854.
CGSA = Central General Services Area.
DIS = Distal.
DISS = Distal south.
DSB = Distal site boundary.
ft^3 = Cubic feet.
g = Grams.
gal = Gallons.
GWTS = Ground water treatment system.
kg = Kilograms.
NA = Not applicable.
PRX = Proximal.
RDX = Research Department Explosive.
SRC = Source.
SVTS = Soil vapor treatment system.
TBOS = Tetra 2-ethylbutylorthosilicate.
TKEBS = Tetrakis (2-ethylbutyl) silane.
VOC = Volatile organic compound.
***Nitrate re-injected into the $Tnbs_2$ HSU undergoes in-situ biotransformation to benign N_2 gas by anaerobic denitrifying bacteria.**

Table Summ-2. Summary of cumulative remediation.

Treatment facility	Volume of ground water treated (thousands of gallons)	Volume of soil vapor treated (thousands of ft^3)	Estimated total VOC mass removed (kg)	Estimated total perchlorate mass removed (g)	Estimated total nitrate mass removed (kg)	Estimated total RDX mass removed (kg)	Estimated total TBOS/ TKEBS mass removed (kg)
EGSA GWTS	309,379	NA	7.6	NA	NA	NA	NA
CGSA GWTS	17,157	NA	25	NA	NA	NA	NA
CGSA SVTS	NA	102,160	70	NA	NA	NA	NA
834 GWTS	673	NA	40	NA	150	NA	9.4
834 SVTS	NA	184,229	300	NA	NA	NA	NA
815-SRC GWTS	3,525	NA	0.089	210	1,200	1.0	NA
815-PRX GWTS	4,969	NA	0.56	120	1,400	NA	NA
815-DSB GWTS	9,422	NA	0.32	NA	NA	NA	NA
817-SRC GWTS	26	NA	0	2.6	8.4	0.0044	NA
817-PRX GWTS	1,432	NA	0.056	140	470	0.025	NA
829-SRC GWTS	4	NA	0.00028	0.14	1.2	NA	NA
854-SRC GWTS	5,924	NA	4.7	120	1,200	NA	NA
854-SRC SVTS	NA	29,514	8.0	NA	NA	NA	NA
854-PRX GWTS	2,070	NA	0.52	93	350	NA	NA
854-DIS GWTS	17	NA	0.0021	0.20	1.1	NA	NA
832-SRC GWTS	542	NA	0.17	15	220	NA	NA
832-SRC SVTS	NA	18,757	1.9	NA	NA	NA	NA
830-SRC GWTS	1,729	NA	1.7	3.7	140	NA	NA
830-SRC SVTS	NA	17,789	49	NA	NA	NA	NA
830-PRXN GWTS	1,949	NA	0.26	NA	22	NA	NA
830-DISS GWTS	2,908	NA	1.1	27	680	NA	NA
Total	361,724	352,448	510	730	5,800	1.0	9.4

Notes:

815 = Building 815.
817 = Building 817.
829 = Building 829.
830 = Building 830.
832 = Building 832.
834 = Building 834.
854 = Building 854.
CGSA = Central General Services Area.
DIS = Distal.
DISS = Distal south.
DSB = Distal site boundary.
EGSA = Eastern General Services Area.
ft^3 = Cubic feet.
g = Grams.
GWTS = Ground water treatment system.
kg = Kilograms.
NA = Not applicable.
PRX = Proximal.
PRXN = Proximal North.
RDX = Research Department Explosive.
SRC = Source.
SVTS = Soil vapor treatment system.
TBOS = Tetra 2-ethylbutylorthosilicate.
TKEBS = Tetrakis (2-ethylbutyl) silane.
VOC = Volatile organic compound.
*Nitrate re-injected into the $Tnbs_2$ HSU undergoes in-situ biotransformation to benign N_2 gas by anaerobic denitrifying bacteria.

Table 2.1-1. Central General Services Area (CGSA) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
CGSA	January	0	0	0	0
	February	576	360	1,190	74,491
	March	672	672	1,516	201,778
	April	792	792	1,784	238,255
	May	672	696	1,432	200,207
	June	773	768	1,585	196,020
Total		3,485	3,288	7,507	910,751

Table 2.1-2. Central General Services Area OU VOCs in ground water treatment system influent and effluent.

Location	Date	TCE (μg/L)	PCE (μg/L)	cis-1,2-DCE (μg/L)	trans-1,2-DCE (μg/L)	Carbon tetra-chloride (μg/L)	Chloro-form (μg/L)	1,1-DCA (μg/L)	1,2-DCA (μg/L)	1,1-DCE (μg/L)	1,1,1-TCA (μg/L)	1,1,2-TCA (μg/L)	Freon 11 (μg/L)	Freon 113 (μg/L)	Vinyl chloride (μg/L)
Central General Services Area															
CGSA-GWTS-E	2/6/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CGSA-GWTS-E[a]	2/12/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CGSA-GWTS-E	3/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CGSA-GWTS-E	4/9/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CGSA-GWTS-E	5/8/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CGSA-GWTS-E	6/9/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CGSA-GWTS-I	2/6/08	70	2.2	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5
CGSA-GWTS-I	4/9/08	41	1.1	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5

Notes:

[a] **Extra effluent sample collected in February due to facility being off-line in January.**

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.1-2 (Cont.). Analyte detected but not reported in main table.

Location	Date	Detection frequency	Total 1,2-DCE (μg/L)
Central General Services Area			
CGSA-GWTS-E	2/6/08	0 of 18	–
CGSA-GWTS-E[a]	2/12/08	0 of 18	–
CGSA-GWTS-E	3/5/08	0 of 18	–
CGSA-GWTS-E	4/9/08	0 of 18	–
CGSA-GWTS-E	5/8/08	0 of 18	–
CGSA-GWTS-E	6/9/08	0 of 18	–
CGSA-GWTS-I	2/6/08	1 of 18	2.2
CGSA-GWTS-I	4/9/08	1 of 18	1.0

Notes:

[a] **Extra effluent sample collected in February due to facility being off-line in January.**

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.1-3. Central General Services Area OU nitrate in ground water treatment system influent and effluent.

Location	Date	Nitrate as NO3 (mg/L)
CGSA-GWTS-E	2/6/08	41
CGSA-GWTS-E	2/12/08	38
CGSA-GWTS-E	3/5/08	27
CGSA-GWTS-E	4/9/08	24
CGSA-GWTS-E	5/8/08	18
CGSA-GWTS-E	6/9/08	30 O
CGSA-GWTS-I	2/6/08	42
CGSA-GWTS-I	4/9/08	31

Notes:

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.1-4. Central General Services Area OU treatment facility sampling and analysis plan.

Sample Location	Sample Identification	Parameter	Frequency
CGSA GWTS			
Influent Port	CGSA-I	VOCs	Quarterly
		pH	Quarterly
		Nitrate	Quarterly
Effluent Port	CGSA-E	VOCs	Monthly
		pH	Monthly
		Nitrate	Monthly
Vapor Samples	CGSA-CFI	VOCs	Weekly[a]
	CGSA -CFE	VOCs	Weekly[a]
	CGSA -CF2I	VOCs	Weekly[a]
CGSA SVE System			
Influent Vapor	CGSA-VI	No Monitoring Requirements	
Effluent Vapor	CGSA-VE	VOCs	Weekly[a]
Intermediate GAC	CGSA-VCF4I	VOCs	Weekly[a]

Notes:

One duplicate and one blank (given fictitious labels) shall be taken for every 12 samples.

[a] Weekly monitoring for VOCs will consist of the use of a flame-ionization detector, photo-ionization detector or other District-approved VOC detection device.

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.1-5. Central General Services Area ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-35A-01	PTMW	Qal	B	CMP	E200.7:Cd	2	NA	Next sample required 2ndQ 2009.
W-35A-01	PTMW	Qal	B	CMP	E239.2	2	NA	Next sample required 2ndQ 2009.
W-35A-01	PTMW	Qal	S	CMP	E601	2	Y	
W-35A-01	PTMW	Qal	S	CMP	E601	4		
W-35A-02	PTMW	Qal	B	CMP	E200.7:Zn	2	NA	Next sample required 2ndQ 2009.
W-35A-02	PTMW	Qal	S	CMP	E601	2	Y	
W-35A-02	PTMW	Qal	S	CMP	E601	4		
W-35A-03	PTMW	Qal	S	CMP	E601	2	Y	
W-35A-03	PTMW	Qal	S	CMP	E601	4		
W-35A-04*	PTMW	Qal	B	CMP	E200.7:Cu	2	NA	Next sample required 2ndQ 2009.
W-35A-04*	PTMW	Qal	S	CMP	E601	2	Y	
W-35A-04*	PTMW	Qal	S	CMP	E601	4		
W-35A-05	PTMW	$Tnbs_2$	B	CMP	E239.2	2	NA	Next sample required 2ndQ 2009.
W-35A-05	PTMW	$Tnbs_2$	S	CMP	E601	2	Y	
W-35A-05	PTMW	$Tnbs_2$	S	CMP	E601	4		
W-35A-06	PTMW	Qal	S	CMP	E601	2	Y	
W-35A-06	PTMW	Qal	S	CMP	E601	4		
W-35A-07	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-35A-07	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-35A-08	GW	$Tnbs_2$	Q	CMP	E601	1	Y	
W-35A-08	GW	$Tnbs_2$	Q	CMP	E601	2	Y	
W-35A-08	GW	$Tnbs_2$	Q	CMP	E601	3		
W-35A-08	GW	$Tnbs_2$	Q	CMP	E601	4		
W-35A-09	PTMW	$Tnbs_2$	S	CMP	E601	2	Y	
W-35A-09	PTMW	$Tnbs_2$	S	CMP	E601	4		
W-35A-10	PTMW	$Tnbs_2$	S	CMP	E601	2	Y	
W-35A-10	PTMW	$Tnbs_2$	S	CMP	E601	4		
W-35A-11	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-35A-11	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-35A-12	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-35A-12	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-35A-13	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-35A-13	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-35A-14	GW	$Tnbs_2$	Q	CMP	E601	1	Y	
W-35A-14	GW	$Tnbs_2$	Q	CMP	E601	2	Y	
W-35A-14	GW	$Tnbs_2$	Q	CMP	E601	3		
W-35A-14	GW	$Tnbs_2$	Q	CMP	E601	4		
W-7A	PTMW	$Tnbs_1$	B	CMP	E239.2	2	NA	Next sample required 2ndQ 2009.
W-7A	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-7A	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-7B	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-7B	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-7C	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-7C	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-7E*	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-7E*	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-7ES*	PTMW	Qal	S	CMP	E601	2	Y	
W-7ES*	PTMW	Qal	S	CMP	E601	4		
W-7F	PTMW	$Tnsc_1$	S	CMP	E601	2	Y	
W-7F	PTMW	$Tnsc_1$	S	CMP	E601	4		
W-7G	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-7G	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-7H	PTMW	Qal	S	CMP	E601	2	Y	
W-7H	PTMW	Qal	S	CMP	E601	4		

Table 2.1-5 (Con't.). Central General Services Area ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-7I	EW	$Tnbs_2$	B	CMP-TF	E245.2	4		CGSA extraction well. Next sample required 4thQ 2008.
W-7I	EW	$Tnbs_2$		DIS	E601	1	Y	CGSA extraction well.
W-7I	EW	$Tnbs_2$	S	CMP-TF	E601	2	Y	CGSA extraction well.
W-7I	EW	$Tnbs_2$	S	CMP-TF	E601	4		CGSA extraction well.
W-7J	PTMW	$Tnbs_2$	S	CMP	E601	2	Y	
W-7J	PTMW	$Tnbs_2$	S	CMP	E601	4		
W-7K	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-7K	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-7L	PTMW	$Tnbs_1$	B	CMP	E200.7:Cu	2	NA	Next sample required 2ndQ 2009.
W-7L	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-7L	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-7M	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-7M	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-7N	PTMW	$Tnbs_1$	B	CMP	E245.2	2	NA	Next sample required 2ndQ 2009.
W-7N	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-7N	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-7O	EW	Qal	B	CMP-TF	E200.7:Cu	2	NA	CGSA extraction well. Next sample required 2ndQ 2009.
W-7O	EW	Qal	B	CMP-TF	E200.7:Zn	2	NA	CGSA extraction well. Next sample required 2ndQ 2009.
W-7O	EW	Qal		DIS	E601	1	Y	CGSA extraction well.
W-7O	EW	Qal	S	CMP-TF	E601	2	Y	CGSA extraction well.
W-7O	EW	Qal	S	CMP-TF	E601	4		CGSA extraction well.
W-7P	EW	$Tnbs_1$		DIS	E601	1	Y	CGSA extraction well.
W-7P	EW	$Tnbs_1$	S	CMP-TF	E601	2	Y	CGSA extraction well.
W-7P	EW	$Tnbs_1$	S	CMP-TF	E601	4		CGSA extraction well.
W-7PS*	PTMW	Qal	Q	CMP	E601	1	Y	
W-7PS*	PTMW	Qal	Q	CMP	E601	2	N	Dry.
W-7PS*	PTMW	Qal	Q	CMP	E601	3		
W-7PS*	PTMW	Qal	Q	CMP	E601	4		
W-7Q	PTMW	$Tnbs_2$		DIS	E601	1	Y	
W-7Q	PTMW	$Tnbs_2$		DIS	E601	2	Y	
W-7Q	PTMW	$Tnbs_2$		DIS	E601	3		
W-7Q	PTMW	$Tnbs_2$		DIS	E601	4		
W-7R	EW	Qal		DIS	E601	1	Y	CGSA extraction well.
W-7R	EW	Qal	S	CMP-TF	E601	2	Y	CGSA extraction well.
W-7R	EW	Qal	S	CMP-TF	E601	4		CGSA extraction well.
W-7S	PTMW	Qal		DIS	E601	1	Y	
W-7S	PTMW	Qal		DIS	E601	2	Y	
W-7S	PTMW	Qal		DIS	E601	3		
W-7S	PTMW	Qal		DIS	E601	4		
W-7T	PTMW	Qal		DIS	E601	1	Y	
W-7T	PTMW	Qal		DIS	E601	2	Y	
W-7T	PTMW	Qal		DIS	E601	3		
W-7T	PTMW	Qal		DIS	E601	4		
W-843-01	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-843-01	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-843-02	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-843-02	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-872-01	PTMW	$Tnbs_2$	B	CMP	E200.7:Cu	2	NA	Next sample required 2ndQ 2009.
W-872-01	PTMW	$Tnbs_2$	B	CMP	E239.2	2	NA	Next sample required 2ndQ 2009.
W-872-01	PTMW	$Tnbs_2$	S	CMP	E601	2	Y	
W-872-01	PTMW	$Tnbs_2$	S	CMP	E601	4		
W-872-02	EW	$Tnbs_2$	S	CMP-TF	E601	2	N	CGSA extraction well. Insufficient water.
W-872-02	EW	$Tnbs_2$	S	CMP-TF	E601	4		CGSA extraction well.

Table 2.1-5 (Con't.). Central General Services Area ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-873-01	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-873-01	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-873-02	PTMW	$Tnbs_2$	S	CMP	E601	2	Y	
W-873-02	PTMW	$Tnbs_2$	S	CMP	E601	4		
W-873-03	PTMW	$Tnsc_1$	S	CMP	E601	2	Y	
W-873-03	PTMW	$Tnsc_1$	S	CMP	E601	4		
W-873-04	PTMW	$Tnsc_1$	B	CMP	E239.2	2	NA	Next sample required 2ndQ 2009.
W-873-04	PTMW	$Tnsc_1$	S	CMP	E601	2	Y	
W-873-04	PTMW	$Tnsc_1$	S	CMP	E601	4		
W-873-06	PTMW	$Tnbs_2$	B	CMP	E200.7:Cd	2	NA	Next sample required 2ndQ 2009.
W-873-06	PTMW	$Tnbs_2$	S	CMP	E601	2	Y	
W-873-06	PTMW	$Tnbs_2$	S	CMP	E601	4		
W-873-07	EW	$Tnbs_2$	S	CMP-TF	E601	2	Y	CGSA extraction well.
W-873-07	EW	$Tnbs_2$	S	CMP-TF	E601	4		CGSA extraction well.
W-875-01	PTMW	$Tnbs_2$	B	CMP	E200.7:Cd	2	NA	Next sample required 2ndQ 2009.
W-875-01	PTMW	$Tnbs_2$	B	CMP	E200.7:Cu	2	NA	Next sample required 2ndQ 2009.
W-875-01	PTMW	$Tnbs_2$	B	CMP	E200.7:Zn	2	NA	Next sample required 2ndQ 2009.
W-875-01	PTMW	$Tnbs_2$	B	CMP	E239.2	2	NA	Next sample required 2ndQ 2009.
W-875-01	PTMW	$Tnbs_2$	S	CMP	E601	2	Y	
W-875-01	PTMW	$Tnbs_2$	S	CMP	E601	4		
W-875-02	PTMW	$Tnsc_1$	S	CMP	E601	2	Y	
W-875-02	PTMW	$Tnsc_1$	S	CMP	E601	4		
W-875-03	PTMW	$Tnbs_2$	S	CMP	E601	2	N	Dry.
W-875-03	PTMW	$Tnbs_2$	S	CMP	E601	4		
W-875-04	PTMW	$Tnbs_2$	B	CMP	E239.2	2	NA	Next sample required 2ndQ 2009.
W-875-04	PTMW	$Tnbs_2$	S	CMP	E601	2	Y	
W-875-04	PTMW	$Tnbs_2$	S	CMP	E601	4		
W-875-05	PTMW	$Tnsc_1$	S	CMP	E601	2	Y	
W-875-05	PTMW	$Tnsc_1$	S	CMP	E601	4		
W-875-06	PTMW	$Tnsc_1$	S	CMP	E601	2	Y	
W-875-06	PTMW	$Tnsc_1$	S	CMP	E601	4		
W-875-07	EW	$Tnbs_2$	B	CMP-TF	E239.2	2	NA	CGSA extraction well. Next sample required 2ndQ 2009.
W-875-07	EW	$Tnbs_2$		DIS	E601	1	Y	CGSA extraction well.
W-875-07	EW	$Tnbs_2$	S	CMP-TF	E601	2	Y	CGSA extraction well.
W-875-07	EW	$Tnbs_2$	S	CMP-TF	E601	4		CGSA extraction well.
W-875-08	EW	$Tnbs_2$		DIS	E601	1	Y	CGSA extraction well.
W-875-08	EW	$Tnbs_2$	S	CMP-TF	E601	2	Y	CGSA extraction well.
W-875-08	EW	$Tnbs_2$	S	CMP-TF	E601	4		CGSA extraction well.
W-875-09	PTMW	$Tnbs_2$	S	CMP	E601	2	N	CGSA extraction well. Insufficient water.
W-875-09	PTMW	$Tnbs_2$	S	CMP	E601	4		CGSA extraction well.
W-875-10	PTMW	$Tnbs_2$	B	CMP	E200.7:Ba	2	N	CGSA extraction well. Insufficient water.
W-875-10	PTMW	$Tnbs_2$	B	CMP	E239.2	2	N	CGSA extraction well. Insufficient water.
W-875-10	PTMW	$Tnbs_2$	S	CMP	E601	2	N	CGSA extraction well. Insufficient water.
W-875-10	PTMW	$Tnbs_2$	S	CMP	E601	4		CGSA extraction well.
W-875-11	PTMW	$Tnbs_2$	S	CMP	E601	2	N	CGSA extraction well. Insufficient water.
W-875-11	PTMW	$Tnbs_2$	S	CMP	E601	4		CGSA extraction well.
W-875-15	PTMW	$Tnbs_2$	S	CMP	E601	2	N	CGSA extraction well. Insufficient water.
W-875-15	PTMW	$Tnbs_2$	S	CMP	E601	4		CGSA extraction well.
W-876-01	PTMW	$Tnbs_2$	S	CMP	E601	2	Y	
W-876-01	PTMW	$Tnbs_2$	S	CMP	E601	4		
W-879-01	PTMW	$Tnsc_1$	S	CMP	E601	2	Y	
W-879-01	PTMW	$Tnsc_1$	S	CMP	E601	4		
W-889-01	PTMW	$Tnsc_1$	S	CMP	E601	2	Y	
W-889-01	PTMW	$Tnsc_1$	S	CMP	E601	4		

Table 2.1-5 (Con't.). Central General Services Area ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-CGSA-1732	PTMW	Qal		DIS	E601	2	N	Insufficient water.
W-CGSA-1733	PTMW	Qal		DIS	E601	1	Y	
W-CGSA-1733	PTMW	Qal		DIS	E601	2	Y	
W-CGSA-1733	PTMW	Qal		DIS	E601	3		
W-CGSA-1733	PTMW	Qal		DIS	E601	4		
W-CGSA-1735	PTMW	Qal		DIS	E601	2	Y	
W-CGSA-1736	PTMW	Qal		DIS	E601	2	Y	
W-CGSA-1736	PTMW	Qal		DIS	E601	4		
W-CGSA-1737	PTMW	Qal		DIS	E601	2	Y	
W-CGSA-1737	PTMW	Qal		DIS	E601	4		
W-CGSA-1739	PTMW	Qal		DIS	E601	1	Y	
W-CGSA-1739	PTMW	Qal		DIS	E601	2	Y	
W-CGSA-1739	PTMW	Qal		DIS	E601	3		
W-CGSA-1739	PTMW	Qal		DIS	E601	4		

Notes:
***Well sampled as part of the surveillance monitoring performed by the Water Guidance and Monitoring Group (WGMG) for additional constiutents and the results are reported in the LLNL Site Annual Environmental Report.**

See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.1-6. Eastern General Services Area ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
CDF-1*	WS	Qal-Tnsc$_0$		WGMG	E502.2	1	Y	
CDF-1*	WS	Qal-Tnsc$_0$		WGMG	E502.2	2	Y	
CDF-1*	WS	Qal-Tnsc$_0$	M	CMP	E601	1	Y	
CDF-1*	WS	Qal-Tnsc$_0$	M	CMP	E601	1	Y	
CDF-1*	WS	Qal-Tnsc$_0$	M	CMP	E601	1	Y	
CDF-1*	WS	Qal-Tnsc$_0$	M	CMP	E601	2	Y	
CDF-1*	WS	Qal-Tnsc$_0$	M	CMP	E601	2	Y	
CDF-1*	WS	Qal-Tnsc$_0$	M	CMP	E601	2	Y	
CDF-1*	WS	Qal-Tnsc$_0$	M	CMP	E601	3		
CDF-1*	WS	Qal-Tnsc$_0$	M	CMP	E601	3		
CDF-1*	WS	Qal-Tnsc$_0$	M	CMP	E601	3		
CDF-1*	WS	Qal-Tnsc$_0$	M	CMP	E601	4		
CDF-1*	WS	Qal-Tnsc$_0$	M	CMP	E601	4		
CDF-1*	WS	Qal-Tnsc$_0$	M	CMP	E601	4		
CON-1*	WS	Tnsc$_0$		WGMG	E502.2	1	Y	
CON-1*	WS	Tnsc$_0$	M	CMP	E601	1	Y	
CON-1*	WS	Tnsc$_0$	M	CMP	E601	1	Y	
CON-1*	WS	Tnsc$_0$	M	CMP	E601	1	Y	
CON-1*	WS	Tnsc$_0$	M	CMP	E601	2	Y	
CON-1*	WS	Tnsc$_0$	M	CMP	E601	2	Y	
CON-1*	WS	Tnsc$_0$	M	CMP	E601	2	Y	
CON-1*	WS	Tnsc$_0$	M	CMP	E601	3		
CON-1*	WS	Tnsc$_0$	M	CMP	E601	3		
CON-1*	WS	Tnsc$_0$	M	CMP	E601	3		
CON-1*	WS	Tnsc$_0$	M	CMP	E601	4		
CON-1*	WS	Tnsc$_0$	M	CMP	E601	4		
CON-1*	WS	Tnsc$_0$	M	CMP	E601	4		
CON-2	PTMW	Qal-Tnsc$_0$	M	CMP	E601	1	Y	
CON-2	PTMW	Qal-Tnsc$_0$	M	CMP	E601	1	Y	
CON-2	PTMW	Qal-Tnsc$_0$	M	CMP	E601	1	Y	
CON-2	PTMW	Qal-Tnsc$_0$	M	CMP	E601	2	Y	
CON-2	PTMW	Qal-Tnsc$_0$	M	CMP	E601	2	Y	
CON-2	PTMW	Qal-Tnsc$_0$	M	CMP	E601	2	Y	
CON-2	PTMW	Qal-Tnsc$_0$	M	CMP	E601	3		
CON-2	PTMW	Qal-Tnsc$_0$	M	CMP	E601	3		
CON-2	PTMW	Qal-Tnsc$_0$	M	CMP	E601	3		
CON-2	PTMW	Qal-Tnsc$_0$	M	CMP	E601	4		
CON-2	PTMW	Qal-Tnsc$_0$	M	CMP	E601	4		
CON-2	PTMW	Qal-Tnsc$_0$	M	CMP	E601	4		
W-24P-03	PTMW	Qal	A	PSDMP	E601	2	Y	
W-25D-01	PTMW	Qal	A	PSDMP	E601	2	Y	
W-25D-02	PTMW	Qal	A	PSDMP	E601	2	Y	
W-25M-01	PTMW	Qal	A	PSDMP	E601	2	Y	
W-25M-02	PTMW	Qal	A	PSDMP	E601	2	N	Pump was not working.
W-25M-03	PTMW	Qal	A	PSDMP	E601	2	Y	
W-25N-01	PTMW	Qal		DIS	E601	1	Y	
W-25N-01	PTMW	Qal	S	PSDMP	E601	2	Y	
W-25N-01	PTMW	Qal	S	PSDMP	E601	4		
W-25N-04	PTMW	Tmss	A	PSDMP	E601	2	Y	
W-25N-05	PTMW	Tnbs$_1$		DIS	E601	1	Y	
W-25N-05	PTMW	Tnbs$_1$	S	PSDMP	E601	2	Y	
W-25N-05	PTMW	Tnbs$_1$	S	PSDMP	E601	4		
W-25N-06	PTMW	Qal	A	PSDMP	E601	2	Y	
W-25N-07	GW	Qal	Q	PSDMP	E601	1	Y	
W-25N-07	GW	Qal	Q	PSDMP	E601	2	Y	
W-25N-07	GW	Qal	Q	PSDMP	E601	3		
W-25N-07	GW	Qal	Q	PSDMP	E601	4		
W-25N-08	PTMW	Tnbs$_1$	A	PSDMP	E601	2	Y	

Table 2.1-6 (Cont.). Eastern General Services Area ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-25N-09	PTMW	$Tnbs_1$	A	PSDMP	E601	2	Y	
W-25N-10	GW	$Tnbs_1$	Q	PSDMP	E601	1	Y	
W-25N-10	GW	$Tnbs_1$	Q	PSDMP	E601	2	Y	
W-25N-10	GW	$Tnbs_1$	Q	PSDMP	E601	3		
W-25N-10	GW	$Tnbs_1$	Q	PSDMP	E601	4		
W-25N-11	GW	$Tnbs_1$	Q	PSDMP	E601	1	Y	
W-25N-11	GW	$Tnbs_1$	Q	PSDMP	E601	2	Y	
W-25N-11	GW	$Tnbs_1$	Q	PSDMP	E601	3		
W-25N-11	GW	$Tnbs_1$	Q	PSDMP	E601	4		
W-25N-12	GW	$Tnbs_1$	Q	PSDMP	E601	1	Y	
W-25N-12	GW	$Tnbs_1$	Q	PSDMP	E601	2	Y	
W-25N-12	GW	$Tnbs_1$	Q	PSDMP	E601	3		
W-25N-12	GW	$Tnbs_1$	Q	PSDMP	E601	4		
W-25N-13	GW	$Tnbs_1$	Q	PSDMP	E601	1	Y	
W-25N-13	GW	$Tnbs_1$	Q	PSDMP	E601	2	Y	
W-25N-13	GW	$Tnbs_1$	Q	PSDMP	E601	3		
W-25N-13	GW	$Tnbs_1$	Q	PSDMP	E601	4		
W-25N-15	PTMW	Qal	A	PSDMP	E601	2	Y	
W-25N-18	PTMW	$Tnbs_1$	A	PSDMP	E601	2	Y	
W-25N-20*	PTMW	Qal	A	PSDMP	E601	2	Y	
W-25N-21	PTMW	$Tnbs_1$	A	PSDMP	E601	2	Y	
W-25N-22	PTMW	$Tnbs_1$	A	PSDMP	E601	2	Y	
W-25N-23	PTMW	$Tnbs_1$		DIS	E601	1	Y	
W-25N-23	PTMW	$Tnbs_1$	S	PSDMP	E601	2	Y	
W-25N-23	PTMW	$Tnbs_1$	S	PSDMP	E601	4		
W-25N-24	PTMW	Qal		DIS	E601	1	Y	
W-25N-24	PTMW	Qal	S	PSDMP	E601	2	Y	
W-25N-24	PTMW	Qal	S	PSDMP	E601	4		
W-25N-25	PTMW	$Tnbs_1$	A	PSDMP	E601	2	Y	
W-25N-26	PTMW	$Tnbs_1$	A	PSDMP	E601	2	Y	
W-25N-28	PTMW	$Tnbs_1$	A	PSDMP	E601	2	Y	
W-26R-01	PTMW	$Tnbs_1$		DIS	E601	1	Y	
W-26R-01*	PTMW	$Tnbs_1$	S	PSDMP	E601	2	Y	
W-26R-01*	PTMW	$Tnbs_1$	S	PSDMP	E601	4		
W-26R-02	PTMW	$Tnbs_1$	A	PSDMP	E601	2	Y	
W-26R-03	PTMW	Qal		DIS	E601	1	Y	
W-26R-03	PTMW	Qal	S	PSDMP	E601	2	Y	
W-26R-03	PTMW	Qal	S	PSDMP	E601	4		
W-26R-04	PTMW	Qal		DIS	E601	1	Y	
W-26R-04	PTMW	Qal	S	PSDMP	E601	2	Y	
W-26R-04	PTMW	Qal	S	PSDMP	E601	4		
W-26R-05*	PTMW	Qal		DIS	E601	1	Y	
W-26R-05*	PTMW	Qal	S	PSDMP	E601	2	Y	
W-26R-05*	PTMW	Qal	S	PSDMP	E601	4		
W-26R-06	PTMW	$Tnbs_1$		DIS	E601	1	Y	
W-26R-06	PTMW	$Tnbs_1$	S	PSDMP	E601	2	Y	
W-26R-06	PTMW	$Tnbs_1$	S	PSDMP	E601	4		
W-26R-07	PTMW	$Tnbs_1$	A	PSDMP	E601	2	Y	
W-26R-08	PTMW	$Tnbs_1$	A	PSDMP	E601	2	Y	
W-26R-11*	PTMW	Qal	S	CMP	E601	2	Y	
W-26R-11*	PTMW	Qal	S	CMP	E601	4		
W-7D	PTMW	$Tnbs_1$	A	PSDMP	E601	2	Y	
W-7DS*	PTMW	Qal	A	PSDMP	E601	2	Y	

Notes:
EGSA primary COCs: VOCs (E601, E502.2, or E624).
***Well sampled as part of the surveillance monitoring performed by the Water Guidance and Monitoring Group (WGMG) for additional constiutents and the results are reported in the LLNL Site Annual Environmental Report.**

See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.1-7. Central General Services Area (CGSA) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
CGSA	January	0	0	NA	NA	NA	NA
	February	410	20	NA	NA	NA	NA
	March	300	37	NA	NA	NA	NA
	April	340	46	NA	NA	NA	NA
	May	230	40	NA	NA	NA	NA
	June	260	40	NA	NA	NA	NA
Total		1,500	180	NA	NA	NA	NA

Table 2.2-1. Building 834 (834) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
834	January	382	408	1,371	5,095
	February	569	579	3,016	14,000
	March	652	672	4,049	14,503
	April	625	632	3,817	13,488
	May	472	504	2,978	9,749
	June	612	612	3,787	10,656
Total		3,312	3,407	19,018	67,491

Table 2.2-2. Building 834 OU VOCs in ground water extraction treatment system influent and effluent.

Location	Date	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Carbon tetra-chloride (µg/L)	Chloro-form (µg/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	1,1-DCE (µg/L)	1,1,1-TCA (µg/L)	1,1,2-TCA (µg/L)	Freon 11 (µg/L)	Freon 113 (µg/L)	Vinyl chloride (µg/L)
834-GWTS-E	1/15/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
834-GWTS-E	2/4/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
834-GWTS-E	3/3/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
834-GWTS-E	4/1/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
834-GWTS-E	5/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
834-GWTS-E	6/2/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
834-GWTS-I	1/15/08	1,300 D	7.8	1,000 D	<25 D	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5
834-GWTS-I	4/1/08	2,700 D	29	370 D	<25 D	<0.5	0.63	<0.5	<0.5	0.86	<0.5	1.1	<0.5	<0.5	<0.5

Notes:

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.2-2 (Cont.). Analyte detected but not reported in main table.

Location	Date	Detection frequency	1,2-DCE (total) (µg/L)
834-GWTS-E	1/15/08	0 of 18	–
834-GWTS-E	2/4/08	0 of 18	–
834-GWTS-E	3/3/08	0 of 18	–
834-GWTS-E	4/1/08	0 of 18	–
834-GWTS-E	5/5/08	0 of 18	–
834-GWTS-E	6/2/08	0 of 18	–
834-GWTS-I	1/15/08	1 of 18	1,000 D
834-GWTS-I	4/1/08	1 of 18	370 D

Notes:

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.2-3. Building 834 OU nitrate in ground water extraction treatment system influent and effluent.

Location	Date	Nitrate (as NO3) (mg/L)
834-GWTS-E	1/15/08	67
834-GWTS-E	2/4/08	50
834-GWTS-E	3/3/08	74
834-GWTS-E	4/1/08	71
834-GWTS-E	5/5/08	80
834-GWTS-E	6/2/08	75
834-GWTS-I	1/15/08	100 D
834-GWTS-I	4/1/08	79

Notes:

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.2-4. Building 834 OU diesel range organic compounds in ground water extraction treatment system influent and effluent.

Location	Date	Diesel Range Organics (C12-C24) (μg/L)
834-GWTS-E	1/15/08	<200
834-GWTS-E	2/4/08	<200
834-GWTS-E	3/3/08	<200
834-GWTS-E	4/1/08	<200
834-GWTS-E	5/5/08	470
834-GWTS-E[a]	5/12/08	R
834-GWTS-E	5/15/08	<200
834-GWTS-E	5/20/08	<200
834-GWTS-E	6/2/08	<200
834-GWTS-I	1/15/08	330
834-GWTS-I	2/4/08	340
834-GWTS-I	3/3/08	230
834-GWTS-I	4/1/08	<200
834-GWTS-I	5/5/08	<200
834-GWTS-I[a]	5/12/08	R
834-GWTS-I	6/2/08	<200

Notes:

[a] Analytical results rejected due to failure of laboratory to meet QA/QC requirements.

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.2-5. Building 834 OU TBOS in ground water extraction treatment system influent and effluent.

Location	Date	TBOS (μg/L)
834-GWTS-E	1/15/08	<10
834-GWTS-E	2/4/08	<10
834-GWTS-E	3/3/08	<10 O
834-GWTS-E	4/1/08	<10 O
834-GWTS-E	5/5/08	<10
834-GWTS-E	6/2/08	<10
834-GWTS-I	1/15/08	110
834-GWTS-I	2/4/08	<10
834-GWTS-I	3/3/08	<10 O
834-GWTS-I	4/1/08	<10 O
834-GWTS-I	5/5/08	15
834-GWTS-I	6/2/08	<10

Notes:

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.2-6. Building 834 OU treatment facility sampling and analysis plan.

Sample location	Sample identification	Parameter	Frequency
834 GWTS			
Influent Port	**834-I**	**VOCs**	**Quarterly**
		TBOS	**Quarterly**
		Diesel	**Quarterly**
		Nitrate	**Quarterly**
		pH	**Quarterly**
Effluent Port	**834-E**	**VOCs**	**Monthly**
		TBOS	**Monthly**
		Diesel	**Monthly**
		Nitrate	**Monthly**
		pH	**Monthly**
834 SVTS			
Influent Port	**834-VI**	**No Monitoring Requirements**	
Effluent Port	**834-VE**	**VOCs**	**Weekly[a]**
Intermediate GAC	**834-VCF4I**	**VOCs**	**Weekly[a]**

Notes:

One duplicate and one blank (given fictitious labels) shall be taken for every 12 samples.

[a] Weekly monitoring for VOCs will consist of the use of a flame-ionization detector, photo-ionization detector, or other District-approved VOC detection device.

See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.2-7. Building 834 OU ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-834-1709	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-1709	PTMW	Tpsg		DIS	E300.0:PERC	3		
W-834-1709	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-1709	PTMW	Tpsg	S	CMP	E601	3		
W-834-1709	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-1711	PTMW	Tps		DIS	DWMETALS	3		
W-834-1711	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-834-1711	PTMW	Tps	S	CMP	E601	1	Y	
W-834-1711	PTMW	Tps	S	CMP	E601	3		
W-834-1711	PTMW	Tps	A	CMP	TBOS	1	Y	
W-834-1824	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-1824	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-1824	PTMW	Tpsg	S	CMP	E601	3		
W-834-1824	PTMW	Tpsg	A	DIS	TBOS	1	Y	
W-834-1825	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-1825	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-1825	PTMW	Tpsg	S	CMP	E601	3		
W-834-1825	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-1833	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-1833	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-1833	PTMW	Tpsg	S	CMP	E601	3		
W-834-1833	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-2001	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well.
W-834-2001	EW	Tpsg	S	CMP-TF	E624	1	Y	834 extraction well.
W-834-2001	EW	Tpsg		DIS	E624	2	Y	834 extraction well.
W-834-2001	EW	Tpsg	S	CMP-TF	E601	3		834 extraction well.
W-834-2001	EW	Tpsg	A	CMP-TF	EM8015:DIESEL	1	Y	834 extraction well.
W-834-2001	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well.
W-834-2113	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-2113	PTMW	Tpsg	S	CMP	E624	1	Y	
W-834-2113	PTMW	Tpsg		DIS	E624	2	Y	
W-834-2113	PTMW	Tpsg	S	CMP	E624	3		
W-834-2113	PTMW	Tpsg		DIS	E624	4		
W-834-2113	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-2113	PTMW	Tpsg		DIS	TBOS	3		
W-834-2117	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-2117	PTMW	Tpsg	S	CMP	E624	1	Y	
W-834-2117	PTMW	Tpsg		DIS	E624	2	Y	
W-834-2117	PTMW	Tpsg	S	CMP	E624	3		
W-834-2117	PTMW	Tpsg		DIS	E624	4		
W-834-2117	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-2118	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-2118	PTMW	Tpsg		DIS	E300.0:PERC	1	Y	
W-834-2118	PTMW	Tpsg		DIS	E300.0:PERC	3		
W-834-2118	PTMW	Tpsg	S	CMP	E624	1	Y	
W-834-2118	PTMW	Tpsg		DIS	E624	2	Y	
W-834-2118	PTMW	Tpsg	S	CMP	E624	3		
W-834-2118	PTMW	Tpsg		DIS	E624	4		
W-834-2118	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-2119	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-2119	PTMW	Tpsg	S	CMP	E624	1	Y	
W-834-2119	PTMW	Tpsg	S	CMP	E624	3		
W-834-2119	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-A1	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-834-A1	PTMW	Tps	S	CMP	E624	1	Y	

Table 2.2-7 (Con't.). Building 834 OU ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-834-A1	PTMW	Tps	S	CMP	E624	3		
W-834-A1	PTMW	Tps	A	CMP	EM8015:DIESEL	1	Y	
W-834-A1	PTMW	Tps	A	CMP	TBOS	1	Y	
W-834-A2	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-A2	PTMW	Tpsg		DIS	E300.0:PERC	3		
W-834-A2	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-A2	PTMW	Tpsg	S	CMP	E601	3		
W-834-A2	PTMW	Tpsg	A	CMP	EM8015:DIESEL	1	Y	
W-834-A2	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-B2	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well.
W-834-B2	EW	Tpsg	S	CMP-TF	E601	1	Y	834 extraction well.
W-834-B2	EW	Tpsg		DIS	E601	2	Y	834 extraction well.
W-834-B2	EW	Tpsg	S	CMP-TF	E601	3		834 extraction well.
W-834-B2	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well.
W-834-B3	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well.
W-834-B3	EW	Tpsg	S	CMP-TF	E601	1	Y	834 extraction well.
W-834-B3	EW	Tpsg		DIS	E601	2	Y	834 extraction well.
W-834-B3	EW	Tpsg	S	CMP-TF	E601	3		834 extraction well.
W-834-B3	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well.
W-834-B4	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-B4	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-B4	PTMW	Tpsg	S	CMP	E601	3		
W-834-B4	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-C2	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-C2	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-C2	PTMW	Tpsg	S	CMP	E601	3		
W-834-C2	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-C4	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-C4	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-C4	PTMW	Tpsg	S	CMP	E601	3		
W-834-C4	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-C5	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-C5	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-C5	PTMW	Tpsg	S	CMP	E601	3		
W-834-C5	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-D10	PTMW	Tps	A	CMP	E300.0:NO3	1	N	Dry.
W-834-D10	PTMW	Tps	S	CMP	E624	1	N	Dry.
W-834-D10	PTMW	Tps	S	CMP	E624	3		
W-834-D10	PTMW	Tps	A	CMP	EM8015:DIESEL	1	N	Dry.
W-834-D10	PTMW	Tps	A	CMP	TBOS	1	N	Dry.
W-834-D11	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-D11	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-D11	PTMW	Tpsg	S	CMP	E601	3		
W-834-D11	PTMW	Tpsg	A	CMP	EM8015:DIESEL	1	N	Insufficient water.
W-834-D11	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-D12	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well.
W-834-D12	EW	Tpsg	S	CMP-TF	E624	1	Y	834 extraction well.
W-834-D12	EW	Tpsg		DIS	E601	2	Y	834 extraction well.
W-834-D12	EW	Tpsg	S	CMP-TF	E624	3		834 extraction well.
W-834-D12	EW	Tpsg	A	CMP-TF	EM8015:DIESEL	1	Y	834 extraction well.
W-834-D12	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well.
W-834-D13	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well.
W-834-D13	EW	Tpsg	S	CMP-TF	E601	1	Y	834 extraction well.
W-834-D13	EW	Tpsg		DIS	E601	2	Y	834 extraction well.
W-834-D13	EW	Tpsg	S	CMP-TF	E601	3		834 extraction well.

Table 2.2-7 (Con't.). Building 834 OU ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-834-D13	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well.
W-834-D14	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-D14	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-D14	PTMW	Tpsg	S	CMP	E601	3		
W-834-D14	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-D15	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-D15	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-D15	PTMW	Tpsg	S	CMP	E601	3		
W-834-D15	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-D16	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Dry.
W-834-D16	PTMW	Tpsg	S	CMP	E601	1	N	Dry.
W-834-D16	PTMW	Tpsg	S	CMP	E601	3		
W-834-D16	PTMW	Tpsg	A	CMP	EM8015:DIESEL	1	N	Dry.
W-834-D16	PTMW	Tpsg	A	CMP	TBOS	1	N	Dry.
W-834-D17	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Dry.
W-834-D17	PTMW	Tpsg	S	CMP	E601	1	N	Dry.
W-834-D17	PTMW	Tpsg	S	CMP	E601	3		
W-834-D17	PTMW	Tpsg	A	CMP	EM8015:DIESEL	1	N	Dry.
W-834-D17	PTMW	Tpsg	A	CMP	TBOS	1	N	Dry.
W-834-D18	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-D18	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-D18	PTMW	Tpsg	S	CMP	E601	3		
W-834-D18	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-D2	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	1	N	Dry.
W-834-D2	PTMW	$Tnbs_1$	A	CMP	E601	1	N	Dry.
W-834-D2	PTMW	$Tnbs_1$	A	CMP	TBOS	1	N	Dry.
W-834-D3	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-D3	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-D3	PTMW	Tpsg	S	CMP	E601	3		
W-834-D3	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-D4	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well.
W-834-D4	EW	Tpsg	S	CMP-TF	E601	1	Y	834 extraction well.
W-834-D4	EW	Tpsg		DIS	E601	2	Y	834 extraction well.
W-834-D4	EW	Tpsg	S	CMP-TF	E601	3		834 extraction well.
W-834-D4	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well.
W-834-D5	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well*.
W-834-D5	EW	Tpsg	S	CMP-TF	E601	1	Y	834 extraction well*.
W-834-D5	EW	Tpsg	S	CMP-TF	E601	3		834 extraction well*.
W-834-D5	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well*.
W-834-D6	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well.
W-834-D6	EW	Tpsg	S	CMP-TF	E601	1	Y	834 extraction well.
W-834-D6	EW	Tpsg		DIS	E601	2	Y	834 extraction well.
W-834-D6	EW	Tpsg	S	CMP-TF	E601	3		834 extraction well.
W-834-D6	EW	Tpsg		DIS	EM8015:DIESEL	1	Y	834 extraction well.
W-834-D6	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well.
W-834-D7	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well.
W-834-D7	EW	Tpsg	S	CMP-TF	E624	1	Y	834 extraction well.
W-834-D7	EW	Tpsg		DIS	E601	2	Y	834 extraction well.
W-834-D7	EW	Tpsg	S	CMP-TF	E624	3		834 extraction well.
W-834-D7	EW	Tpsg	A	CMP-TF	EM8015:DIESEL	1	Y	834 extraction well.
W-834-D7	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well.
W-834-D9A	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	N	Dry.
W-834-D9A	PTMW	$Tnbs_2$	A	CMP	E601	1	N	Dry.
W-834-D9A	PTMW	$Tnbs_2$	A	CMP	TBOS	1	N	Dry.
W-834-G3	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Dry.

Table 2.2-7 (Con't.). Building 834 OU ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-834-G3	PTMW	Tpsg	A	CMP	E601	1	N	Dry.
W-834-G3	PTMW	Tpsg	A	CMP	TBOS	1	N	Dry.
W-834-H2	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Dry.
W-834-H2	PTMW	Tpsg	S	CMP	E601	1	N	Dry.
W-834-H2	PTMW	Tpsg	S	CMP	E601	3		
W-834-H2	PTMW	Tpsg	A	CMP	TBOS	1	N	Dry.
W-834-J1	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well.
W-834-J1	EW	Tpsg	S	CMP-TF	E601	1	Y	834 extraction well.
W-834-J1	EW	Tpsg		DIS	E601	2	Y	834 extraction well.
W-834-J1	EW	Tpsg	S	CMP-TF	E601	3		834 extraction well.
W-834-J1	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well.
W-834-J2	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-J2	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-J2	PTMW	Tpsg	S	CMP	E601	3		
W-834-J2	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-J3	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Dry.
W-834-J3	PTMW	Tpsg	S	CMP	E601	1	N	Dry.
W-834-J3	PTMW	Tpsg	S	CMP	E601	3		
W-834-J3	PTMW	Tpsg	A	CMP	TBOS	1	N	Dry.
W-834-K1A	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Dry.
W-834-K1A	PTMW	Tpsg	S	CMP	E601	1	N	Dry.
W-834-K1A	PTMW	Tpsg	S	CMP	E601	3		
W-834-K1A	PTMW	Tpsg	A	CMP	EM8015:DIESEL	1	N	Dry.
W-834-K1A	PTMW	Tpsg	A	CMP	TBOS	1	N	Dry.
W-834-M1	PTMW	Tpsg		DIS	E218.2	1	Y	
W-834-M1	PTMW	Tpsg		DIS	E218.2	3		
W-834-M1	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-M1	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-M1	PTMW	Tpsg	S	CMP	E601	3		
W-834-M1	PTMW	Tpsg		DIS	GENMIN	1	Y	
W-834-M1	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-M2	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Dry.
W-834-M2	PTMW	Tpsg	S	CMP	E601	1	N	Dry.
W-834-M2	PTMW	Tpsg	S	CMP	E601	3		
W-834-M2	PTMW	Tpsg	A	CMP	TBOS	1	N	Dry.
W-834-S1	EW	Tpsg		DIS	E218.2	1	Y	834 extraction well.
W-834-S1	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well.
W-834-S1	EW	Tpsg	S	CMP-TF	E624	1	Y	834 extraction well.
W-834-S1	EW	Tpsg		DIS	E624	2	Y	834 extraction well.
W-834-S1	EW	Tpsg	S	CMP-TF	E624	3		834 extraction well.
W-834-S1	EW	Tpsg	A	CMP-TF	EM8015:DIESEL	1	Y	834 extraction well.
W-834-S1	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well.
W-834-S10	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Dry.
W-834-S10	PTMW	Tpsg	S	CMP	E601	1	N	Dry.
W-834-S10	PTMW	Tpsg	S	CMP	E601	3		
W-834-S10	PTMW	Tpsg	S	CMP	EM8015:DIESEL	1	N	Dry.
W-834-S10	PTMW	Tpsg	A	CMP	TBOS	1	N	Dry.
W-834-S12A	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well.
W-834-S12A	EW	Tpsg	S	CMP-TF	E624	1	Y	834 extraction well.
W-834-S12A	EW	Tpsg		DIS	E624	2	Y	834 extraction well.
W-834-S12A	EW	Tpsg	S	CMP-TF	E624	3		834 extraction well.
W-834-S12A	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well.
W-834-S13	EW	Tpsg	A	CMP-TF	E300.0:NO3	1	Y	834 extraction well.
W-834-S13	EW	Tpsg	S	CMP-TF	E601	1	Y	834 extraction well.
W-834-S13	EW	Tpsg		DIS	E601	2	Y	834 extraction well.

Table 2.2-7 (Con't.). Building 834 OU ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-834-S13	EW	Tpsg	S	CMP-TF	E601	3		834 extraction well.
W-834-S13	EW	Tpsg	A	CMP-TF	TBOS	1	Y	834 extraction well.
W-834-S4	PTMW	Tpsg		DIS	E218.2	1	Y	
W-834-S4	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-S4	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-S4	PTMW	Tpsg	S	CMP	E601	3		
W-834-S4	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-S5	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Dry.
W-834-S5	PTMW	Tpsg	S	CMP	E601	1	N	Dry.
W-834-S5	PTMW	Tpsg	S	CMP	E601	3		
W-834-S5	PTMW	Tpsg	A	CMP	TBOS	1	N	Dry.
W-834-S6	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-S6	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-S6	PTMW	Tpsg	S	CMP	E601	3		
W-834-S6	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-S7	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-S7	PTMW	Tpsg		DIS	E300.0:PERC	1	Y	
W-834-S7	PTMW	Tpsg		DIS	E300.0:PERC	3		
W-834-S7	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-S7	PTMW	Tpsg	S	CMP	E601	3		
W-834-S7	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-S8	PTMW	$Tnsc_2$	A	CMP	E300.0:NO3	1	Y	
W-834-S8	PTMW	$Tnsc_2$	S	CMP	E624	1	Y	
W-834-S8	PTMW	$Tnsc_2$	S	CMP	E624	3		
W-834-S8	PTMW	$Tnsc_2$	A	CMP	EM8015:DIESEL	1	Y	
W-834-S8	PTMW	$Tnsc_2$	A	CMP	TBOS	1	Y	
W-834-S9	PTMW	$Tnsc_2$		DIS	E218.2	1	Y	
W-834-S9	PTMW	$Tnsc_2$	A	CMP	E300.0:NO3	1	Y	
W-834-S9	PTMW	$Tnsc_2$	S	CMP	E624	1	Y	
W-834-S9	PTMW	$Tnsc_2$	S	CMP	E624	3		
W-834-S9	PTMW	$Tnsc_2$	A	CMP	EM8015:DIESEL	1	Y	
W-834-S9	PTMW	$Tnsc_2$	A	CMP	TBOS	1	Y	
W-834-T1	GW	$Tnbs_1$	S	CMP	E300.0:NO3	1	Y	
W-834-T1	GW	$Tnbs_1$	S	CMP	E300.0:NO3	3		
W-834-T1	GW	$Tnbs_1$	Q	CMP	E601	1	Y	
W-834-T1	GW	$Tnbs_1$	Q	CMP	E601	2	Y	
W-834-T1	GW	$Tnbs_1$	Q	CMP	E601	3		
W-834-T1	GW	$Tnbs_1$	Q	CMP	E601	4		
W-834-T1	GW	$Tnbs_1$	S	CMP	TBOS	1	Y	
W-834-T1	GW	$Tnbs_1$	S	CMP	TBOS	3		
W-834-T11	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Dry.
W-834-T11	PTMW	Tpsg	S	CMP	E601	1	N	Dry.
W-834-T11	PTMW	Tpsg	S	CMP	E601	3		
W-834-T11	PTMW	Tpsg	A	CMP	TBOS	1	N	Dry.
W-834-T2	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-T2	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-T2	PTMW	Tpsg	S	CMP	E601	3		
W-834-T2	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-T2A	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-T2A	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-T2A	PTMW	Tpsg	S	CMP	E601	3		
W-834-T2A	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-T2B	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Dry.
W-834-T2B	PTMW	Tpsg	S	CMP	E601	1	N	Dry.
W-834-T2B	PTMW	Tpsg	S	CMP	E601	3		

Table 2.2-7 (Con't.). Building 834 OU ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-834-T2B	PTMW	Tpsg	A	CMP	TBOS	1	N	Dry.
W-834-T2C	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Dry.
W-834-T2C	PTMW	Tpsg	S	CMP	E601	1	N	Dry.
W-834-T2C	PTMW	Tpsg	S	CMP	E601	3		
W-834-T2C	PTMW	Tpsg	A	CMP	TBOS	1	N	Dry.
W-834-T2D	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-T2D	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-T2D	PTMW	Tpsg	S	CMP	E601	3		
W-834-T2D	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-T3	GW	$Tnbs_1$	S	CMP	E300.0:NO3	1	Y	
W-834-T3	GW	$Tnbs_1$	S	CMP	E300.0:NO3	3		
W-834-T3	GW	$Tnbs_1$	Q	CMP	E601	1	Y	
W-834-T3	GW	$Tnbs_1$	Q	CMP	E601	2	Y	
W-834-T3	GW	$Tnbs_1$	Q	CMP	E601	3		
W-834-T3	GW	$Tnbs_1$	Q	CMP	E601	4		
W-834-T3	GW	$Tnbs_1$	S	CMP	TBOS	1	Y	
W-834-T3	GW	$Tnbs_1$	S	CMP	TBOS	3		
W-834-T5	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-834-T5	PTMW	Tpsg	S	CMP	E601	1	Y	
W-834-T5	PTMW	Tpsg	S	CMP	E601	3		
W-834-T5	PTMW	Tpsg	A	CMP	TBOS	1	Y	
W-834-T7A	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Insufficient water.
W-834-T7A	PTMW	Tpsg	S	CMP	E601	1	N	Insufficient water.
W-834-T7A	PTMW	Tpsg	S	CMP	E601	3		
W-834-T7A	PTMW	Tpsg	A	CMP	TBOS	1	N	Insufficient water.
W-834-T8A	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Insufficient water.
W-834-T8A	PTMW	Tpsg	S	CMP	E601	1	N	Insufficient water.
W-834-T8A	PTMW	Tpsg	S	CMP	E601	3		
W-834-T8A	PTMW	Tpsg	A	CMP	TBOS	1	N	Insufficient water.
W-834-T9	PTMW	Tpsg	A	CMP	E300.0:NO3	1	N	Insufficient water.
W-834-T9	PTMW	Tpsg	S	CMP	E601	1	N	Insufficient water.
W-834-T9	PTMW	Tpsg	S	CMP	E601	3		
W-834-T9	PTMW	Tpsg	A	CMP	TBOS	1	N	Insufficient water.
W-834-U1	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-834-U1	PTMW	Tps	S	CMP	E624	1	Y	
W-834-U1	PTMW	Tps	S	CMP	E624	3		
W-834-U1	PTMW	Tps	A	CMP	EM8015:DIESEL	1	Y	
W-834-U1	PTMW	Tps	A	CMP	TBOS	1	Y	

Notes:
Building 834 primary COC: VOCs (E601, 502.2, or E624).
Building 834 secondary COC: Nitrate (E300.0:NO3).
Building 834 secondary COC: TBOS/TKEBS.
Building 834 secondary COC: Diesel.
***Well W-834-D5 is hooked up to the Building 834 treatment system but is not currently being used as an extraction well.**
See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.2-8. Building 834 (834) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
834	January	150	56	NA	0.97	NA	0.26
	February	670	130	NA	2.7	NA	0.52
	March	300	130	NA	2.8	NA	0.56
	April	280	170	NA	2.9	NA	0.48
	May	610	120	NA	2.2	NA	0.34
	June	770	130	NA	2.5	NA	0.38
Total		2,800	730	NA	14	NA	2.5

Table 2.3-1. Pit 6 Landfill OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
BC6-10	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
BC6-10	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
BC6-10	PTMW	$Tnbs_1$	S	CMP	E601	1	Y	
BC6-10	PTMW	$Tnbs_1$	S	CMP	E601	3		
BC6-10	PTMW	$Tnbs_1$	S	CMP	E906	1	Y	
BC6-10	PTMW	$Tnbs_1$	S	CMP	E906	3		
BC6-13 (SPRING 7)	PTMW	$Qt/Tnbs_1$	A	CMP	E300.0:NO3	1	N	Dry.
BC6-13 (SPRING 7)	PTMW	$Qt/Tnbs_1$	A	CMP	E300.0:PERC	1	N	Dry.
BC6-13 (SPRING 7)	PTMW	$Qt/Tnbs_1$	A	CMP	E601	1	N	Dry.
BC6-13 (SPRING 7)	PTMW	$Qt/Tnbs_1$	A	CMP	E906	1	N	Dry.
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:NO3	1	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:NO3	1	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:NO3	1	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:NO3	2	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:NO3	2	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:NO3	2	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:NO3	3		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:NO3	3		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:NO3	3		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:NO3	4		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:NO3	4		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:NO3	4		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:PERC	1	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:PERC	1	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:PERC	1	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:PERC	2	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:PERC	2	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:PERC	2	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:PERC	3		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:PERC	3		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:PERC	3		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:PERC	4		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:PERC	4		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E300.0:PERC	4		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E601	1	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E601	1	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E601	1	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E601	2	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E601	2	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E601	2	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E601	3		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E601	3		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E601	3		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E601	4		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E601	4		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E601	4		
CARNRW1*	WS	$Tnbs_1/Tmss$		WGMG	E624	1	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$		WGMG	E624	2	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$		WGMG	E624	3		
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E906	1	Y	
CARNRW1*	WS	$Tnbs_1/Tmss$	M	CMP	E906	1	Y	

Table 2.3-1 (Con't.). Pit 6 Landfill OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
CARNRW1*	WS	$Tnbs_1$/Tmss	M	CMP	E906	1	Y	
CARNRW1*	WS	$Tnbs_1$/Tmss	M	CMP	E906	2	Y	
CARNRW1*	WS	$Tnbs_1$/Tmss	M	CMP	E906	2	Y	
CARNRW1*	WS	$Tnbs_1$/Tmss	M	CMP	E906	2	Y	
CARNRW1*	WS	$Tnbs_1$/Tmss	M	CMP	E906	3		
CARNRW1*	WS	$Tnbs_1$/Tmss	M	CMP	E906	3		
CARNRW1*	WS	$Tnbs_1$/Tmss	M	CMP	E906	3		
CARNRW1*	WS	$Tnbs_1$/Tmss	M	CMP	E906	4		
CARNRW1*	WS	$Tnbs_1$/Tmss	M	CMP	E906	4		
CARNRW1*	WS	$Tnbs_1$/Tmss	M	CMP	E906	4		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	2	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	2	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	2	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	3		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	3		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	3		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	4		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	4		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	4		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	2	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	2	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	2	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	3		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	3		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	3		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	4		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	4		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	4		
CARNRW2*	WS	$Tnbs_1$/Tmss		WGMG	E502.2	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss		WGMG	E502.2	2	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss		WGMG	E502.2	3		
CARNRW2*	WS	$Tnbs_1$/Tmss		WGMG	E502.2	4		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E601	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E601	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E601	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E601	2	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E601	2	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E601	2	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E601	3		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E601	3		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E601	3		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E601	4		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E601	4		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E601	4		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E906	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E906	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E906	1	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E906	2	Y	

Table 2.3-1 (Con't.). Pit 6 Landfill OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E906	2	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E906	2	Y	
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E906	3		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E906	3		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E906	3		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E906	4		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E906	4		
CARNRW2*	WS	$Tnbs_1$/Tmss	M	CMP	E906	4		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	1	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	1	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	1	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	2	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	2	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	2	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	3		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	3		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	3		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	4		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	4		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:NO3	4		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	1	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	1	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	1	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	2	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	2	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	2	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	3		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	3		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	3		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	4		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	4		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E300.0:PERC	4		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E601	1	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E601	1	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E601	1	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E601	2	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E601	2	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E601	2	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E601	3		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E601	3		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E601	3		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E601	4		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E601	4		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E601	4		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E906	1	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E906	1	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E906	1	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E906	2	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E906	2	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E906	2	Y	
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E906	3		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E906	3		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E906	3		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E906	4		

Table 2.3-1 (Con't.). Pit 6 Landfill OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E906	4		
CARNRW3	WS	$Tnbs_1$/Tmss	M	CMP	E906	4		
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:NO3	1	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:NO3	1	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:NO3	1	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:NO3	2	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:NO3	2	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:NO3	2	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:NO3	3		
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:NO3	3		
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:NO3	3		
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:NO3	4		
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:NO3	4		
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:NO3	4		
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:PERC	1	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:PERC	1	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:PERC	1	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:PERC	2	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:PERC	2	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:PERC	2	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:PERC	3		
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:PERC	3		
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:PERC	3		
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:PERC	4		
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:PERC	4		
CARNRW4	WS	Qal/Tts	M	CMP	E300.0:PERC	4		
CARNRW4	WS	Qal/Tts	M	CMP	E601	1	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E601	1	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E601	1	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E601	2	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E601	2	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E601	2	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E601	3		
CARNRW4	WS	Qal/Tts	M	CMP	E601	3		
CARNRW4	WS	Qal/Tts	M	CMP	E601	3		
CARNRW4	WS	Qal/Tts	M	CMP	E601	4		
CARNRW4	WS	Qal/Tts	M	CMP	E601	4		
CARNRW4	WS	Qal/Tts	M	CMP	E601	4		
CARNRW4	WS	Qal/Tts	M	CMP	E906	1	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E906	1	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E906	1	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E906	2	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E906	2	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E906	2	Y	
CARNRW4	WS	Qal/Tts	M	CMP	E906	3		
CARNRW4	WS	Qal/Tts	M	CMP	E906	3		
CARNRW4	WS	Qal/Tts	M	CMP	E906	3		
CARNRW4	WS	Qal/Tts	M	CMP	E906	4		
CARNRW4	WS	Qal/Tts	M	CMP	E906	4		
CARNRW4	WS	Qal/Tts	M	CMP	E906	4		
EP6-06	DMW	Qt/$Tnbs_1$		WGMG	E300.0:NO3	1	Y	
EP6-06	DMW	Qt/$Tnbs_1$		WGMG	E300.0:NO3	2	Y	
EP6-06	DMW	Qt/$Tnbs_1$		WGMG	E300.0:NO3	3		
EP6-06	DMW	Qt/$Tnbs_1$		WGMG	E300.0:NO3	4		

Table 2.3-1 (Con't.). Pit 6 Landfill OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
EP6-06	DMW	$Qt/Tnbs_1$		WGMG	E300.0:PERC	1	Y	
EP6-06	DMW	$Qt/Tnbs_1$		WGMG	E300.0:PERC	2	Y	
EP6-06	DMW	$Qt/Tnbs_1$		WGMG	E300.0:PERC	3		
EP6-06	DMW	$Qt/Tnbs_1$		WGMG	E300.0:PERC	4		
EP6-06	DMW	$Qt/Tnbs_1$		WGMG	E8260	1	Y	
EP6-06	DMW	$Qt/Tnbs_1$		WGMG	E8260	2	Y	
EP6-06	DMW	$Qt/Tnbs_1$		WGMG	E8260	3		
EP6-06	DMW	$Qt/Tnbs_1$		WGMG	E8260	4		
EP6-06	DMW	$Qt/Tnbs_1$		WGMG	E906	1	Y	
EP6-06	DMW	$Qt/Tnbs_1$		WGMG	E906	2	Y	
EP6-06	DMW	$Qt/Tnbs_1$		WGMG	E906	3		
EP6-06	DMW	$Qt/Tnbs_1$		WGMG	E906	4		
EP6-07	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
EP6-07	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
EP6-07	PTMW	$Tnbs_1$	S	CMP	E601	1	Y	
EP6-07	PTMW	$Tnbs_1$	S	CMP	E601	3		
EP6-07	PTMW	$Tnbs_1$	S	CMP	E906	1	Y	
EP6-07	PTMW	$Tnbs_1$	S	CMP	E906	3		
EP6-08	DMW	$Tnbs_1$		WGMG	E300.0:NO3	1	Y	
EP6-08	DMW	$Tnbs_1$		WGMG	E300.0:NO3	2	Y	
EP6-08	DMW	$Tnbs_1$		WGMG	E300.0:NO3	3		
EP6-08	DMW	$Tnbs_1$		WGMG	E300.0:NO3	4		
EP6-08	DMW	$Tnbs_1$		WGMG	E300.0:PERC	1	Y	
EP6-08	DMW	$Tnbs_1$		WGMG	E300.0:PERC	2	Y	
EP6-08	DMW	$Tnbs_1$		WGMG	E300.0:PERC	3		
EP6-08	DMW	$Tnbs_1$		WGMG	E300.0:PERC	4		
EP6-08	DMW	$Tnbs_1$		WGMG	E8260	1	Y	
EP6-08	DMW	$Tnbs_1$		WGMG	E8260	2	Y	
EP6-08	DMW	$Tnbs_1$		WGMG	E8260	3		
EP6-08	DMW	$Tnbs_1$		WGMG	E8260	4		
EP6-08	DMW	$Tnbs_1$		WGMG	E906	1	Y	
EP6-08	DMW	$Tnbs_1$		WGMG	E906	2	Y	
EP6-08	DMW	$Tnbs_1$		WGMG	E906	3		
EP6-08	DMW	$Tnbs_1$		WGMG	E906	4		
EP6-09	DMW	$Tnbs_1$		WGMG	E300.0:NO3	1	Y	
EP6-09	DMW	$Tnbs_1$		WGMG	E300.0:NO3	2	Y	
EP6-09	DMW	$Tnbs_1$		WGMG	E300.0:NO3	3		
EP6-09	DMW	$Tnbs_1$		WGMG	E300.0:NO3	4		
EP6-09	DMW	$Tnbs_1$		WGMG	E300.0:PERC	1	Y	
EP6-09	DMW	$Tnbs_1$		WGMG	E300.0:PERC	2	Y	
EP6-09	DMW	$Tnbs_1$		WGMG	E300.0:PERC	3		
EP6-09	DMW	$Tnbs_1$		WGMG	E300.0:PERC	4		
EP6-09	DMW	$Tnbs_1$		WGMG	E8260	1	Y	
EP6-09	DMW	$Tnbs_1$		WGMG	E8260	2	Y	
EP6-09	DMW	$Tnbs_1$		WGMG	E8260	3		
EP6-09	DMW	$Tnbs_1$		WGMG	E8260	4		
EP6-09	DMW	$Tnbs_1$		WGMG	E906	1	Y	
EP6-09	DMW	$Tnbs_1$		WGMG	E906	2	Y	
EP6-09	DMW	$Tnbs_1$		WGMG	E906	3		
EP6-09	DMW	$Tnbs_1$		WGMG	E906	4		
K6-01**	DMW	$Tnbs_1$		WGMG	E300.0:NO3	1	Y	
K6-01**	DMW	$Tnbs_1$		WGMG	E300.0:PERC	1	Y	
K6-01**	DMW	$Tnbs_1$		WGMG	E601	1	Y	
K6-01**	DMW	$Tnbs_1$		WGMG	E601	3		

Table 2.3-1 (Con't.). Pit 6 Landfill OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
K6-01**	DMW	Tnbs$_1$		WGMG	E906	1	Y	
K6-01**	DMW	Tnbs$_1$		WGMG	E906	3		
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E300.0:NO3	1	Y	
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E300.0:NO3	2	Y	
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E300.0:NO3	3		
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E300.0:NO3	4		
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E300.0:PERC	1	Y	
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E300.0:PERC	2	Y	
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E300.0:PERC	3		
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E300.0:PERC	4		
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E8260	1	Y	
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E8260	2	Y	
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E8260	3		
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E8260	4		
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E906	1	Y	
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E906	2	Y	
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E906	3		
K6-01S	DMW	Qt/Tnbs$_1$		WGMG	E906	4		
K6-03	PTMW	Tnbs$_1$	A	CMP	E300.0:NO3	1	Y	
K6-03	PTMW	Tnbs$_1$	A	CMP	E300.0:PERC	1	Y	
K6-03	PTMW	Tnbs$_1$	S	CMP	E601	1	Y	
K6-03	PTMW	Tnbs$_1$	S	CMP	E601	3		
K6-03	PTMW	Tnbs$_1$	S	CMP	E906	1	Y	
K6-03	PTMW	Tnbs$_1$	S	CMP	E906	3		
K6-04	PTMW	Tnbs$_1$	A	CMP	E300.0:NO3	1	Y	
K6-04	PTMW	Tnbs$_1$	A	CMP	E300.0:PERC	1	Y	
K6-04	PTMW	Tnbs$_1$	S	CMP	E601	1	Y	
K6-04	PTMW	Tnbs$_1$	S	CMP	E601	3		
K6-04	PTMW	Tnbs$_1$	S	CMP	E906	1	Y	
K6-04	PTMW	Tnbs$_1$	S	CMP	E906	3		
K6-14	PTMW	Tnbs$_1$	A	CMP	E300.0:NO3	1	Y	
K6-14	PTMW	Tnbs$_1$	A	CMP	E300.0:PERC	1	Y	
K6-14	PTMW	Tnbs$_1$	S	CMP	E601	1	Y	
K6-14	PTMW	Tnbs$_1$	S	CMP	E601	3		
K6-14	PTMW	Tnbs$_1$	S	CMP	E906	1	Y	
K6-14	PTMW	Tnbs$_1$	S	CMP	E906	3		
K6-15	PTMW	Qt/Tnbs$_1$	A	CMP	E300.0:NO3	1	N	Dry.
K6-15	PTMW	Qt/Tnbs$_1$	A	CMP	E300.0:PERC	1	N	Dry.
K6-15	PTMW	Qt/Tnbs$_1$	S	CMP	E601	1	N	Dry.
K6-15	PTMW	Qt/Tnbs$_1$	S	CMP	E601	3		
K6-15	PTMW	Qt/Tnbs$_1$	S	CMP	E906	1	N	Dry.
K6-15	PTMW	Qt/Tnbs$_1$	S	CMP	E906	3		
K6-16	PTMW	Qt/Tnbs$_1$	A	CMP	E300.0:NO3	1	Y	
K6-16	PTMW	Qt/Tnbs$_1$	A	CMP	E300.0:PERC	1	Y	
K6-16	PTMW	Qt/Tnbs$_1$	S	CMP	E601	1	Y	
K6-16	PTMW	Qt/Tnbs$_1$	S	CMP	E601	3		
K6-16	PTMW	Qt/Tnbs$_1$	S	CMP	E906	1	Y	
K6-16	PTMW	Qt/Tnbs$_1$	S	CMP	E906	3		
K6-17	GW	Qt/Tnbs$_1$	S	CMP	E300.0:NO3	1	Y	
K6-17	GW	Qt/Tnbs$_1$	S	CMP	E300.0:NO3	3		
K6-17	GW	Qt/Tnbs$_1$	S	CMP	E300.0:PERC	1	Y	
K6-17	GW	Qt/Tnbs$_1$	S	CMP	E300.0:PERC	3		
K6-17	GW	Qt/Tnbs$_1$	Q	CMP	E601	1	Y	
K6-17	GW	Qt/Tnbs$_1$	Q	CMP	E601	2	Y	

Table 2.3-1 (Con't.). Pit 6 Landfill OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
K6-17	GW	Qt/Tnbs$_1$	Q	CMP	E601	3		
K6-17	GW	Qt/Tnbs$_1$	Q	CMP	E601	4		
K6-17	GW	Qt/Tnbs$_1$	Q	CMP	E906	1	Y	
K6-17	GW	Qt/Tnbs$_1$	Q	CMP	E906	2	Y	
K6-17	GW	Qt/Tnbs$_1$	Q	CMP	E906	3		
K6-17	GW	Qt/Tnbs$_1$	Q	CMP	E906	4		
K6-18	PTMW	Qt/Tnbs$_1$	A	CMP	E300.0:NO3	1	Y	
K6-18	PTMW	Qt/Tnbs$_1$	A	CMP	E300.0:PERC	1	Y	
K6-18	PTMW	Qt/Tnbs$_1$	S	CMP	E601	1	Y	
K6-18	PTMW	Qt/Tnbs$_1$	S	CMP	E601	3		
K6-18	PTMW	Qt/Tnbs$_1$	S	CMP	E906	1	Y	
K6-18	PTMW	Qt/Tnbs$_1$	S	CMP	E906	3		
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E300.0:NO3	1	Y	
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E300.0:NO3	2	Y	
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E300.0:NO3	3		
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E300.0:NO3	4		
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E300.0:PERC	1	Y	
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E300.0:PERC	2	Y	
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E300.0:PERC	3		
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E300.0:PERC	4		
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E8260	1	Y	
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E8260	2	Y	
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E8260	3		
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E8260	4		
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E906	1	Y	
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E906	2	Y	
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E906	3		
K6-19	DMW	Qt/Tnbs$_1$		WGMG	E906	4		
K6-21	PTMW	Qt	A	CMP	E300.0:NO3	1	N	Dry.
K6-21	PTMW	Qt	A	CMP	E300.0:PERC	1	N	Dry.
K6-21	PTMW	Qt	A	CMP	E601	1	N	Dry.
K6-21	PTMW	Qt	A	CMP	E906	1	N	Dry.
K6-22	GW	Tnbs$_1$	S	CMP	E300.0:NO3	1	Y	
K6-22	GW	Tnbs$_1$	S	CMP	E300.0:NO3	3		
K6-22	GW	Tnbs$_1$	S	CMP	E300.0:PERC	1	Y	
K6-22	GW	Tnbs$_1$	S	CMP	E300.0:PERC	3		
K6-22	GW	Tnbs$_1$	Q	CMP	E601	1	Y	
K6-22	GW	Tnbs$_1$	Q	CMP	E601	2	Y	
K6-22	GW	Tnbs$_1$	Q	CMP	E601	3		
K6-22	GW	Tnbs$_1$	Q	CMP	E601	4		
K6-22	GW	Tnbs$_1$	Q	CMP	E906	1	Y	
K6-22	GW	Tnbs$_1$	Q	CMP	E906	2	Y	
K6-22	GW	Tnbs$_1$	Q	CMP	E906	3		
K6-22	GW	Tnbs$_1$	Q	CMP	E906	4		
K6-23	PTMW	Tmss	A	CMP	E300.0:NO3	1	Y	
K6-23	PTMW	Tmss	A	CMP	E300.0:PERC	1	Y	
K6-23	PTMW	Tmss	S	CMP	E601	1	Y	
K6-23	PTMW	Tmss	S	CMP	E601	3		
K6-23	PTMW	Tmss	S	CMP	E906	1	Y	
K6-23	PTMW	Tmss	S	CMP	E906	3		
K6-24	PTMW	Tnbs$_1$	A	CMP	E300.0:NO3	1	Y	
K6-24	PTMW	Tnbs$_1$	A	CMP	E300.0:PERC	1	Y	
K6-24	PTMW	Tnbs$_1$	S	CMP	E601	1	Y	
K6-24	PTMW	Tnbs$_1$	S	CMP	E601	3		

Table 2.3-1 (Con't.). Pit 6 Landfill OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
K6-24	PTMW	$Tnbs_1$	S	CMP	E906	1	Y	
K6-24	PTMW	$Tnbs_1$	S	CMP	E906	3		
K6-25	PTMW	Tmss	A	CMP	E300.0:NO3	1	Y	
K6-25	PTMW	Tmss	A	CMP	E300.0:PERC	1	Y	
K6-25	PTMW	Tmss	S	CMP	E601	1	Y	
K6-25	PTMW	Tmss	S	CMP	E601	3		
K6-25	PTMW	Tmss	S	CMP	E906	1	Y	
K6-25	PTMW	Tmss	S	CMP	E906	3		
K6-26	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
K6-26	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
K6-26	PTMW	$Tnbs_1$	S	CMP	E601	1	Y	
K6-26	PTMW	$Tnbs_1$	S	CMP	E601	3		
K6-26	PTMW	$Tnbs_1$	S	CMP	E906	1	Y	
K6-26	PTMW	$Tnbs_1$	S	CMP	E906	3		
K6-27	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
K6-27	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
K6-27	PTMW	$Tnbs_1$	S	CMP	E601	1	Y	
K6-27	PTMW	$Tnbs_1$	S	CMP	E601	3		
K6-27	PTMW	$Tnbs_1$	S	CMP	E906	1	Y	
K6-27	PTMW	$Tnbs_1$	S	CMP	E906	3		
K6-32	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
K6-32	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
K6-32	PTMW	$Tnbs_1$	S	CMP	E601	1	Y	
K6-32	PTMW	$Tnbs_1$	S	CMP	E601	3		
K6-32	PTMW	$Tnbs_1$	S	CMP	E906	1	Y	
K6-32	PTMW	$Tnbs_1$	S	CMP	E906	3		
K6-33	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
K6-33	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
K6-33	PTMW	$Tnbs_1$	S	CMP	E601	1	Y	
K6-33	PTMW	$Tnbs_1$	S	CMP	E601	3		
K6-33	PTMW	$Tnbs_1$	S	CMP	E906	1	Y	
K6-33	PTMW	$Tnbs_1$	S	CMP	E906	3		
K6-34	GW	$Tnbs_1$	S	CMP	E300.0:NO3	1	Y	
K6-34	GW	$Tnbs_1$	S	CMP	E300.0:NO3	3		
K6-34	GW	$Tnbs_1$	S	CMP	E300.0:PERC	1	Y	
K6-34	GW	$Tnbs_1$	S	CMP	E300.0:PERC	3		
K6-34	GW	$Tnbs_1$	Q	CMP	E601	1	Y	
K6-34	GW	$Tnbs_1$	Q	CMP	E601	2	Y	
K6-34	GW	$Tnbs_1$	Q	CMP	E601	3		
K6-34	GW	$Tnbs_1$	Q	CMP	E601	4		
K6-34	GW	$Tnbs_1$	Q	CMP	E906	1	Y	
K6-34	GW	$Tnbs_1$	Q	CMP	E906	2	Y	
K6-34	GW	$Tnbs_1$	Q	CMP	E906	3		
K6-34	GW	$Tnbs_1$	Q	CMP	E906	4		
K6-35	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
K6-35	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
K6-35	PTMW	$Tnbs_1$	S	CMP	E601	1	Y	
K6-35	PTMW	$Tnbs_1$	S	CMP	E601	3		
K6-35	PTMW	$Tnbs_1$	S	CMP	E906	1	Y	
K6-35	PTMW	$Tnbs_1$	S	CMP	E906	3		
K6-36	DMW	$Tnbs_1$		WGMG	E300.0:NO3	1	N	Dry.
K6-36	DMW	$Tnbs_1$		WGMG	E300.0:NO3	2	N	Dry.
K6-36	DMW	$Tnbs_1$		WGMG	E300.0:NO3	3		
K6-36	DMW	$Tnbs_1$		WGMG	E300.0:NO3	4		

Table 2.3-1 (Con't.). Pit 6 Landfill OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample Driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
K6-36	DMW	$Tnbs_1$		WGMG	E300.0:PERC	1	N	Dry.
K6-36	DMW	$Tnbs_1$		WGMG	E300.0:PERC	2	N	Dry.
K6-36	DMW	$Tnbs_1$		WGMG	E300.0:PERC	3		
K6-36	DMW	$Tnbs_1$		WGMG	E300.0:PERC	4		
K6-36	DMW	$Tnbs_1$		WGMG	E8260	1	N	Dry.
K6-36	DMW	$Tnbs_1$		WGMG	E8260	2	N	Dry.
K6-36	DMW	$Tnbs_1$		WGMG	E8260	3		
K6-36	DMW	$Tnbs_1$		WGMG	E8260	4		
K6-36	DMW	$Tnbs_1$		WGMG	E906	1	N	Dry.
K6-36	DMW	$Tnbs_1$		WGMG	E906	2	N	Dry.
K6-36	DMW	$Tnbs_1$		WGMG	E906	3		
K6-36	DMW	$Tnbs_1$		WGMG	E906	4		
SPRING15	SPR	Qt	A	CMP	E300.0:NO3	1	N	Dry.
SPRING15	SPR	Qt	A	CMP	E300.0:PERC	1	N	Dry.
SPRING15	SPR	Qt	A	CMP	E601	1	N	Dry.
SPRING15	SPR	Qt	A	CMP	E906	1	N	Dry.
W-33C-01	PTMW	Tts	A	CMP	E300.0:NO3	1	Y	
W-33C-01	PTMW	Tts	A	CMP	E300.0:PERC	1	Y	
W-33C-01	PTMW	Tts	S	CMP	E601	1	Y	
W-33C-01	PTMW	Tts	S	CMP	E601	3		
W-33C-01	PTMW	Tts	S	CMP	E906	1	Y	
W-33C-01	PTMW	Tts	S	CMP	E906	3		
W-34-01	MWB	$Tnsc_1$		DIS	E300.0:NO3	1	Y	
W-34-01	MWB	$Tnsc_1$		DIS	E300.0:PERC	1	Y	
W-34-01	MWB	$Tnsc_1$		DIS	E601	1	Y	
W-34-01	MWB	$Tnsc_1$		DIS	E906	1	Y	
W-34-02	MWB	Upper $Tnbs_1$		DIS	E300.0:NO3	1	Y	
W-34-02	MWB	Upper $Tnbs_1$		DIS	E300.0:PERC	1	Y	
W-34-02	MWB	Upper $Tnbs_1$		DIS	E601	1	Y	
W-34-02	MWB	Upper $Tnbs_1$		DIS	E906	1	Y	
W-PIT6-1819	GW	$Tnbs_1$	S	CMP	E300.0:NO3	1	Y	
W-PIT6-1819	GW	$Tnbs_1$	S	CMP	E300.0:NO3	3		
W-PIT6-1819	GW	$Tnbs_1$	S	CMP	E300.0:PERC	1	Y	
W-PIT6-1819	GW	$Tnbs_1$	S	CMP	E300.0:PERC	3		
W-PIT6-1819	GW	$Tnbs_1$	Q	CMP	E601	1	Y	
W-PIT6-1819	GW	$Tnbs_1$	Q	CMP	E601	2	Y	
W-PIT6-1819	GW	$Tnbs_1$	Q	CMP	E601	3		
W-PIT6-1819	GW	$Tnbs_1$	Q	CMP	E601	4		
W-PIT6-1819	GW	$Tnbs_1$	Q	CMP	E906	1	Y	
W-PIT6-1819	GW	$Tnbs_1$	Q	CMP	E906	2	Y	
W-PIT6-1819	GW	$Tnbs_1$	Q	CMP	E906	3		
W-PIT6-1819	GW	$Tnbs_1$	Q	CMP	E906	4		

Notes:
DWM Analytes and sampling frequency are specified in the Pit 6 Landfill Post-Closure Plan.
***Well sampled as part of the surveillance monitoring performed by the Water Guidance and Monitoring Group (WGMG) for additional constiutents and the results are reported in the LLNL Site Annual Environmental Report.**
****K6-01 to be sampled quarterly if K6-01S is dry.**
Pit 6 primary COC: VOCs (E601, E502.2, or E624).
Pit 6 primary COC: tritium (E906).
Pit 6 secondary COC: nitrate (E300:NO3).
Pit 6 secondary COC: perchlorate (E300.0:PERC).
See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.4-1. Building 815-Source (815-SRC) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
815-SRC	January	NA	788	NA	67,847
	February	NA	558	NA	47,516
	March	NA	671	NA	37,277
	April	NA	832	NA	91,215
	May	NA	592	NA	44,661
	June	NA	814	NA	73,332
Total		NA	4,255	NA	361,848

Table 2.4-2. Building 815-Proximal (815-PRX) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
815-PRX	January	NA	53	NA	4,766
	February	NA	609	NA	69,485
	March	NA	701	NA	73,361
	April	NA	847	NA	86,181
	May	NA	673	NA	58,861
	June	NA	685	NA	73,946
Total		NA	3,568	NA	366,600

Table 2.4-3. Building 815-Distal Site Boundary (815-DSB) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
815-DSB	January	NA	809	NA	175,207
	February	NA	695	NA	148,248
	March	NA	645	NA	94,947
	April	NA	697	NA	78,416
	May	NA	695	NA	77,277
	June	NA	621	NA	68,955
Total		NA	4,162	NA	643,050

Table 2.4-4. Building 817-Source (817-SRC) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
817-SRC	January	NA	16	NA	364
	February	NA	16	NA	471
	March	NA	22	NA	611
	April	NA	32	NA	899
	May	NA	29	NA	836
	June	NA	30	NA	823
Total		NA	145	NA	4,004

Table 2.4-5. Building 817-Proximal (817-PRX) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
817-PRX	January	NA	338	NA	13,403
	February	NA	568	NA	59,538
	March	NA	671	NA	82,475
	April	NA	671	NA	68,400
	May	NA	328	NA	31,280
	June	NA	688	NA	57,282
Total		NA	3,264	NA	312,378

Table 2.4-6. Building 829-Source (829-SRC) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
829-SRC	January	NA	0	NA	0
	February	NA	17	NA	184
	March	NA	21	NA	274
	April	NA	9	NA	126
	May	NA	7	NA	76
	June	NA	19	NA	284
Total		NA	73	NA	944

Table 2.4-7. High Explosive Process Area OU VOCs in ground water treatment system influent and effluent.

Location	Date	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Carbon tetra-chloride (µg/L)	Chloro-form (µg/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	1,1-DCE (µg/L)	1,1,1-TCA (µg/L)	1,1,2-TCA (µg/L)	Freon 11 (µg/L)	Freon 113 (µg/L)	Vinyl chloride (µg/L)
Building 815-Distal Site Boundry															
815-DSB-GWTS-E	1/14/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-DSB-GWTS-E	2/6/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-DSB-GWTS-E	3/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-DSB-GWTS-E	4/8/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-DSB-GWTS-E	5/8/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-DSB-GWTS-E	6/9/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-DSB-GWTS-I	1/14/08	11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-DSB-GWTS-I	4/8/08	9.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Building 815-Proximal															
815-PRX-GWTS-E	1/29/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-PRX-GWTS-E	2/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-PRX-GWTS-E	3/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-PRX-GWTS-E	4/2/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-PRX-GWTS-E	5/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-PRX-GWTS-E	6/2/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-PRX-GWTS-I	1/29/08	25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-PRX-GWTS-I	4/2/08	27	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Building 815-Source															
815-SRC-GWTS-E	1/9/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-SRC-GWTS-E	2/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-SRC-GWTS-E	3/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-SRC-GWTS-E	4/2/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-SRC-GWTS-E	5/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-SRC-GWTS-E	6/2/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
815-SRC-GWTS-I	1/9/08	5.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.69	<0.5	<0.5	<0.5	<0.5	<0.5
815-SRC-GWTS-I	4/2/08	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.77	<0.5	<0.5	<0.5	<0.5	<0.5

Table 2.4-7 (Con't.). High Explosive Process Area OU VOCs in ground water treatment system influent and effluent.

Location	Date	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Carbon tetra-chloride (µg/L)	Chloro-form (µg/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	1,1-DCE (µg/L)	1,1,1-TCA (µg/L)	1,1,2-TCA (µg/L)	Freon 11 (µg/L)	Freon 113 (µg/L)	Vinyl chloride (µg/L)
Building 817-Proximal															
817-PRX-GWTS-E	1/14/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-PRX-GWTS-E	2/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-PRX-GWTS-E	3/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-PRX-GWTS-E	4/1/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-PRX-GWTS-E	5/20/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-PRX-GWTS-E	6/2/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-PRX-GWTS-I	1/14/08	9.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-PRX-GWTS-I	4/1/08	7.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Building 817-Source															
817-SRC-GWTS-E	1/14/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-SRC-GWTS-E	2/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-SRC-GWTS-E	3/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-SRC-GWTS-E	4/1/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-SRC-GWTS-E	5/6/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-SRC-GWTS-E	6/2/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-SRC-GWTS-I	1/14/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
817-SRC-GWTS-I	4/1/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Building 829-Source[a]															
829-SRC-GWTS-E	2/13/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
829-SRC-GWTS-E	3/4/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
829-SRC-GWTS-E	5/28/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
829-SRC-GWTS-E	6/10/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
829-SRC-GWTS-I	2/13/08	16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
829-SRC-GWTS-I	6/10/08	16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:

[a] **No effluent samples were collected in January and April due to system down for freeze protection and compressor failure, respectively.**

See Acronyms and Abbreviations in the Tables section of this report for definitions.

09-08/ERD CMR:SG:gl

Table 2.4-7 (Cont.). Analyte detected but not reported in main table.

Location	Date	Detection frequency
Building 815-Distal Site Boundry		
815-DSB-GWTS-E	1/14/08	0 of 18
815-DSB-GWTS-E	2/6/08	0 of 18
815-DSB-GWTS-E	3/5/08	0 of 18
815-DSB-GWTS-E	4/8/08	0 of 18
815-DSB-GWTS-E	5/8/08	0 of 18
815-DSB-GWTS-E	6/9/08	0 of 18
815-DSB-GWTS-I	1/14/08	0 of 18
815-DSB-GWTS-I	4/8/08	0 of 18
Building 815-Proximal		
815-PRX-GWTS-E	1/29/08	0 of 18
815-PRX-GWTS-E	2/5/08	0 of 18
815-PRX-GWTS-E	3/5/08	0 of 18
815-PRX-GWTS-E	4/2/08	0 of 18
815-PRX-GWTS-E	5/5/08	0 of 18
815-PRX-GWTS-E	6/2/08	0 of 18
815-PRX-GWTS-I	1/29/08	0 of 18
815-PRX-GWTS-I	4/2/08	0 of 18
Building 815-Source		
815-SRC-GWTS-E	1/9/08	0 of 18
815-SRC-GWTS-E	2/5/08	0 of 18
815-SRC-GWTS-E	3/5/08	0 of 18
815-SRC-GWTS-E	4/2/08	0 of 18
815-SRC-GWTS-E	5/5/08	0 of 18
815-SRC-GWTS-E	6/2/08	0 of 18
815-SRC-GWTS-I	1/9/08	0 of 18
815-SRC-GWTS-I	4/2/08	0 of 18

Table 2.4-7 (Cont.). Analyte detected but not reported in main table.

Location	Date	Detection frequency
Building 817-Proximal		
817-PRX-GWTS-E	**1/14/08**	**0 of 18**
817-PRX-GWTS-E	**2/5/08**	**0 of 18**
817-PRX-GWTS-E	**3/5/08**	**0 of 18**
817-PRX-GWTS-E	**4/1/08**	**0 of 18**
817-PRX-GWTS-E	**5/20/08**	**0 of 18**
817-PRX-GWTS-E	**6/2/08**	**0 of 18**
817-PRX-GWTS-I	**1/14/08**	**0 of 18**
817-PRX-GWTS-I	**4/1/08**	**0 of 18**
Building 817-Source		
817-SRC-GWTS-E	**1/14/08**	**0 of 18**
817-SRC-GWTS-E	**2/5/08**	**0 of 18**
817-SRC-GWTS-E	**3/5/08**	**0 of 18**
817-SRC-GWTS-E	**4/1/08**	**0 of 18**
817-SRC-GWTS-E	**5/6/08**	**0 of 18**
817-SRC-GWTS-E	**6/2/08**	**0 of 18**
817-SRC-GWTS-I	**1/14/08**	**0 of 18**
817-SRC-GWTS-I	**4/1/08**	**0 of 18**
Building 829-Source[a]		
829-SRC-GWTS-E	**2/13/08**	**0 of 18**
829-SRC-GWTS-E	**3/4/08**	**0 of 18**
829-SRC-GWTS-E	**5/28/08**	**0 of 18**
829-SRC-GWTS-E	**6/10/08**	**0 of 18**
829-SRC-GWTS-I	**2/13/08**	**0 of 18**
829-SRC-GWTS-I	**6/10/08**	**0 of 18**

Notes:

[a] **No effluent samples were collected in January and April due to system down for freeze protection and compressor failure, respectively.**

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.4-8. High Explosive Process Area OU nitrate and perchlorate in ground water treatment system influent and effluent.

Location	Date	Nitrate (as NO3) (mg/L)	Perchlorate (μg/L)
Building 815-Distal Site Boundry			
815-DSB-GWTS-E	1/14/08	<0.5	NR
815-DSB-GWTS-E	2/6/08	<0.5	NR
815-DSB-GWTS-E	3/5/08	<0.5	NR
815-DSB-GWTS-E	4/8/08	<0.5	NR
815-DSB-GWTS-E	5/8/08	<0.44	NR
815-DSB-GWTS-E	6/9/08	0.55 O	NR
815-DSB-GWTS-I	1/14/08	<0.5	NR
815-DSB-GWTS-I	4/8/08	<0.5	NR
Building 815-Proximal			
815-PRX-GWTS-E	1/29/08	80	<4
815-PRX-GWTS-E	2/5/08	79	<4
815-PRX-GWTS-E	3/5/08	70	<4
815-PRX-GWTS-E	4/2/08	74	<4
815-PRX-GWTS-E	5/5/08	71	<4
815-PRX-GWTS-E	6/2/08	65	<4
815-PRX-GWTS-I	1/29/08	82	7.1
815-PRX-GWTS-I	4/2/08	78	6.1
Building 815-Source			
815-SRC-GWTS-E	1/9/08	94 D	<4
815-SRC-GWTS-E	2/5/08	99 D	<4
815-SRC-GWTS-E	3/5/08	94 D	<4
815-SRC-GWTS-E	4/2/08	99 D	<4
815-SRC-GWTS-E	5/5/08	110 D	<4
815-SRC-GWTS-E	6/2/08	88	<4
815-SRC-GWTS-I	1/9/08	99 D	9.5
815-SRC-GWTS-I	4/2/08	95 D	9.9
Building 817-Proximal			
817-PRX-GWTS-E	1/14/08	53	<4
817-PRX-GWTS-E	2/5/08	95 D	<4
817-PRX-GWTS-E	3/5/08	91 D	<4
817-PRX-GWTS-E	4/1/08	96 D	<4
817-PRX-GWTS-E	5/20/08	97 D	<4
817-PRX-GWTS-E	6/2/08	99 D	<4
817-PRX-GWTS-I	1/14/08	90 D	27 D
817-PRX-GWTS-I	4/1/08	88 D	23 D

Table 2.4-8. High Explosive Process Area OU nitrate and perchlorate in ground water treatment system influent and effluent.

Location	Date	Nitrate (as NO3) (mg/L)	Perchlorate (μg/L)
Building 817-Source			
817-SRC-GWTS-E	1/14/08	44	<4
817-SRC-GWTS-E	2/5/08	54	<4
817-SRC-GWTS-E	3/5/08	66	<4
817-SRC-GWTS-E	4/1/08	65	<4
817-SRC-GWTS-E	5/6/08	80	<4
817-SRC-GWTS-E	6/2/08	68	<4
817-SRC-GWTS-I	1/14/08	81	25 D
817-SRC-GWTS-I	4/1/08	81	29 D
Building 829-Source[a]			
829-SRC-GWTS-E	2/13/08	1.3 D	<4
829-SRC-GWTS-E	3/4/08	<0.5	<4
829-SRC-GWTS-E	5/28/08	<1 D	<4
829-SRC-GWTS-E	6/10/08	<1 D	<4
829-SRC-GWTS-I	2/13/08	82 D	9.6
829-SRC-GWTS-I	6/10/08	81 D	9.5

Notes:

[a] **No effluent samples were collected in January and April due to system down for freeze protection and compressor failure,**

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.4-9. High Explosive Process Area OU high explosive compounds in ground water treatment system influent and effluent.

Location	Date	1,3,5-TNB (μg/L)	1,3-DNB (μg/L)	TNT (μg/L)	2,4-DNT (μg/L)	2,6-DNT (μg/L)	2-Amino-4,6- DNT (μg/L)	2-NT (μg/L)	3-NT (μg/L)	4-Amino-2,6- DNT (μg/L)	4-NT (μg/L)	HMX (μg/L)	NB (μg/L)	RDX (μg/L)
Building 815-Proximal[a]														
815-PRX-GWTS-E	1/29/08	-	-	-	-	-	-	-	-	-	-	<1 D	-	<1 D
815-PRX-GWTS-E	2/5/08	-	-	-	-	-	-	-	-	-	-	<1 D	-	<1 D
815-PRX-GWTS-E	3/5/08	<0.78	<0.78	<0.78	<0.78	<1.6	<0.78	<1.6	<1.6	<1.6	<1.6	<0.78	<0.78	<0.78
815-PRX-GWTS-E	4/2/08	<1 D	<1 D	<1 D	<1 D	<2 D	<1 D	<2 D	<2 D	<2 D	<2 D	<1 D	<1 D	<1 D
815-PRX-GWTS-E	5/5/08	<1	<1	<1	<1	<2	<1	<2	<2	<2	<2	<1	<1	<1
815-PRX-GWTS-E	6/2/08	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<0.7	<1.4	<0.7
815-PRX-GWTS-I	1/29/08	-	-	-	-	-	-	-	-	-	-	<1 IJ	-	<1 IJ
815-PRX-GWTS-I	4/2/08	<1	<1	<1	<1	<2	<1	<2	<2	<2	<2	<1	<1	<1
Building 815-Source[a]														
815-SRC-GWTS-E	1/9/08	-	-	-	-	-	-	-	-	-	-	<1	-	<1
815-SRC-GWTS-E	2/5/08	-	-	-	-	-	-	-	-	-	-	<1	-	<1
815-SRC-GWTS-E	3/5/08	<0.9	<0.9	<0.9	<0.9	<1.8	<0.9	<1.8	<1.8	<1.8	<1.8	<0.9	<0.9	<0.9
815-SRC-GWTS-E	4/2/08	<1	<1	<1	<1	<2	<1	<2	<2	<2	<2	<1	<1	<1
815-SRC-GWTS-E	5/5/08	<0.89 IJ	<0.89	<0.89 IJ	<0.89 IJ	<1.8 IJ	<0.89 IJ	<1.8 IJ	<1.8 IJ	<1.8 IJ	<1.8 IJ	<0.89 IJ	<0.89 IJ	<0.89 IJ
815-SRC-GWTS-E	6/2/08	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<0.75	<1.5	<0.75
815-SRC-GWTS-I	1/9/08	-	-	-	-	-	-	-	-	-	-	<1	-	68
815-SRC-GWTS-I	4/2/08	<1	<1	<1	<1	<2	<1	<2	<2	<2	<2	6.1	4.1	64
Building 817-Proximal[a]														
817-PRX-GWTS-E	1/14/08	-	-	-	-	-	-	-	-	-	-	<1	-	<1
817-PRX-GWTS-E	2/5/08	-	-	-	-	-	-	-	-	-	-	<1	-	<1
817-PRX-GWTS-E	3/5/08	<0.76	<0.76	<0.76	<0.76	<1.5	<0.76	<1.5	<1.5	<1.5	<1.5	<0.76	<0.76	<0.76
817-PRX-GWTS-E	4/1/08	<1 D	<1 D	<1 D	<1 D	<2 D	<1 D	<2 D	<2 D	<2 D	<2 D	<1 D	<1 D	<1 D
817-PRX-GWTS-E	5/20/08	<2 D	<2 D	<2 D	<2 D	<2 D	<2 D	<2 D	<2 D	<2 D	<2 D	<1 D	<2 D	<1 D
817-PRX-GWTS-E	6/2/08	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<0.82	<1.6	<0.82
817-PRX-GWTS-I	1/14/08	-	-	-	-	-	-	-	-	-	-	55	-	7.3
817-PRX-GWTS-I	4/1/08	<1.1 D	<1.1 D	<1.1 D	<1.1 D	<2.2 D	<1.1 D	<2.2 D	<2.2 D	<2.2 D	<2.2 D	4.2 D	<1.1 D	7.2 D

Table 2.4-9. High Explosive Process Area OU high explosive compounds in ground water treatment system influent and effluent.

Location	Date	1,3,5-TNB (µg/L)	1,3-DNB (µg/L)	TNT (µg/L)	2,4-DNT (µg/L)	2,6-DNT (µg/L)	2-Amino-4,6- DNT (µg/L)	2-NT (µg/L)	3-NT (µg/L)	4-Amino-2,6- DNT (µg/L)	4-NT (µg/L)	HMX (µg/L)	NB (µg/L)	RDX (µg/L)
Building 817-Source[a]														
817-SRC-GWTS-E	2/5/08	-	-	-	-	-	-	-	-	-	-	<1 D	-	<1 D
817-SRC-GWTS-E	3/5/08	<0.73	<0.73	<0.73	<0.73	<1.5	<0.73	<1.5	<1.5	<1.5	<1.5	<0.73	<0.73	<0.73
817-SRC-GWTS-E	4/1/08	<0.89	<0.89	<0.89	<0.89	<1.8	<0.89	<1.8	<1.8	<1.8	<1.8	<0.89	<0.89	<0.89
817-SRC-GWTS-E	5/6/08	<1	<1	<1	<1	<2	<1	<2	<2	<2	<2	<1	<1	<1
817-SRC-GWTS-E	6/2/08	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<0.81	<1.6	<0.81
817-SRC-GWTS-I	1/14/08	-	-	-	-	-	-	-	-	-	-	19	-	42
817-SRC-GWTS-I	4/1/08	<0.83	<0.83	<0.83	<0.83	<1.7	<0.83	<1.7	<1.7	<1.7	<1.7	19	6.2	48
Building 829-Source[a,b]														
829-SRC-GWTS-I	6/10/08	<2 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1 J	<2	<1

Notes:

[a] Analysis for full E8330 suite not conducted until March 2008.

[b] Influent monitoring conducted only once for HE screening; No history of HE contamination in the 829-Source area.

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.4-10. High Explosives Process Area OU treatment facility sampling and analysis plan.

Sample location	Sample identification	Parameter	Frequency
815-SRC GWTS			
Influent Port	**815-SRC-I**	**VOCs**	**Quarterly**
		HE Compounds	**Quarterly**
		Perchlorate	**Quarterly**
		Nitrate	**Quarterly**
		pH	**Quarterly**
Effluent Port	**815-SRC-E**	**VOCs**	**Monthly**
		HE Compounds	**Monthly**
		Perchlorate	**Monthly**
		Nitrate	**Monthly**
		pH	**Monthly**
815-PRX GWTS			
Influent Port	**815-PRX-I**	**VOCs**	**Quarterly**
		HE Compounds	**Quarterly**
		Perchlorate	**Quarterly**
		Nitrate	**Quarterly**
		pH	**Quarterly**
Effluent Port	**815-PRX-E**	**VOCs**	**Monthly**
		HE Compounds	**Monthly**
		Perchlorate	**Monthly**
		Nitrate	**Monthly**
		pH	**Monthly**
815-DSB GWTS			
Influent Port	**815-DSB-I**	**VOCs**	**Quarterly**
		Nitrate	**Quarterly**
		pH	**Quarterly**
Effluent Port	**815-DSB-E**	**VOCs**	**Monthly**
		Nitrate	**Monthly**
		pH	**Monthly**

Table 2.4-10 (Cont.). High Explosives Process Area OU treatment facility sampling and analysis plans.

Sample location	Sample identification	Parameter	Frequency
817-SRC GWTS			
Influent Port	**817-SRC-I**	**VOCs**	**Quarterly**
		HE Compounds	**Quarterly**
		Perchlorate	**Quarterly**
		Nitrate	**Quarterly**
		pH	**Quarterly**
Effluent Port	**817-SRC-E**	**VOCs**	**Monthly**
		HE Compounds	**Monthly**
		Perchlorate	**Monthly**
		Nitrate	**Monthly**
		pH	**Monthly**
817-PRX GWTS			
Influent Port	**817-PRX-I**	**VOCs**	**Quarterly**
		HE Compounds	**Quarterly**
		Perchlorate	**Quarterly**
		Nitrate	**Quarterly**
		pH	**Quarterly**
Effluent Port	**817-PRX-E**	**VOCs**	**Monthly**
		HE Compounds	**Monthly**
		Perchlorate	**Monthly**
		Nitrate	**Monthly**
		pH	**Monthly**
829-SRC GWTS			
Influent Port	**W-829-06-829-SRC-I**	**VOCs**	**Quarterly**
		Perchlorate	**Quarterly**
		Nitrate	**Quarterly**
		pH	**Quarterly**
Effluent Port	**829-SRC-BTU-I**	**VOCs**	**Monthly**
Effluent Port	**829-SRC-E**	**Perchlorate**	**Monthly**
		Nitrate	**Monthly**
		pH	**Monthly**

Notes:

One duplicate and one blank (given fictitious labels) shall be taken for every 12 samples.

See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.4-11. High Explosives Process Area OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:NO3	1	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:NO3	1	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:NO3	1	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:NO3	2	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:NO3	2	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:NO3	2	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:NO3	3		
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:NO3	3		
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:NO3	3		
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:NO3	4		
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:NO3	4		
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:NO3	4		
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:PERC	1	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:PERC	1	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:PERC	1	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:PERC	2	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:PERC	2	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:PERC	2	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:PERC	3		
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:PERC	3		
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:PERC	3		
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:PERC	4		
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:PERC	4		
GALLO1*	WS	$Tnbs_2$	M	CMP	E300.0:PERC	4		
GALLO1*	WS	$Tnbs_2$		WGMG	E502.2	1	Y	
GALLO1*	WS	$Tnbs_2$		WGMG	E502.2	2	Y	
GALLO1*	WS	$Tnbs_2$		WGMG	E502.2	3		
GALLO1*	WS	$Tnbs_2$		WGMG	E502.2	4		
GALLO1*	WS	$Tnbs_2$	M	CMP	E601	1	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E601	1	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E601	1	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E601	2	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E601	2	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E601	2	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E601	3		
GALLO1*	WS	$Tnbs_2$	M	CMP	E601	3		
GALLO1*	WS	$Tnbs_2$	M	CMP	E601	3		
GALLO1*	WS	$Tnbs_2$	M	CMP	E601	4		
GALLO1*	WS	$Tnbs_2$	M	CMP	E601	4		
GALLO1*	WS	$Tnbs_2$	M	CMP	E601	4		
GALLO1*	WS	$Tnbs_2$	M	CMP	E8330	1	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E8330	1	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E8330	1	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E8330	2	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E8330	2	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E8330	2	Y	
GALLO1*	WS	$Tnbs_2$	M	CMP	E8330	3		
GALLO1*	WS	$Tnbs_2$	M	CMP	E8330	3		
GALLO1*	WS	$Tnbs_2$	M	CMP	E8330	3		
GALLO1*	WS	$Tnbs_2$	M	CMP	E8330	4		
GALLO1*	WS	$Tnbs_2$	M	CMP	E8330	4		
GALLO1*	WS	$Tnbs_2$	M	CMP	E8330	4		
SPRING14	SPR	$Tnbs_2$	B	CMP	E300.0:NO3	1	NA	Next sample required 1stQ 2009.
SPRING14	SPR	$Tnbs_2$	B	CMP	E300.0:PERC	1	NA	Next sample required 1stQ 2009.
SPRING14	SPR	$Tnbs_2$	B	CMP	E601	1	NA	Next sample required 1stQ 2009.
SPRING14	SPR	$Tnbs_2$	B	CMP	E8330	1	NA	Next sample required 1stQ 2009.
SPRING5	SPR	Tps	A	CMP	E300.0:NO3	1	N	Dry. Sampled as W-817-03A.
SPRING5	SPR	Tps	A	CMP	E300.0:PERC	1	N	Dry. Sampled as W-817-03A.
SPRING5	SPR	Tps	S	CMP	E601	1	N	Dry. Sampled as W-817-03A.
SPRING5	SPR	Tps	S	CMP	E601	3		Sampled as W-817-03A.
SPRING5	SPR	Tps	A	CMP	E8330	1	N	Dry. Sampled as W-817-03A.
W-35B-01	GW	Qal	S	CMP	E300.0:NO3	1	Y	
W-35B-01	GW	Qal	S	CMP	E300.0:NO3	3		
W-35B-01	GW	Qal	S	CMP	E300.0:PERC	1	Y	
W-35B-01	GW	Qal	S	CMP	E300.0:PERC	3		
W-35B-01	GW	Qal	Q	CMP	E601	1	Y	
W-35B-01	GW	Qal	Q	CMP	E601	2	Y	
W-35B-01	GW	Qal	Q	CMP	E601	3		

Table 2.4-11 (Con't.). High Explosives Process Area OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-35B-01	GW	Qal	Q	CMP	E601	4		
W-35B-01	GW	Qal	S	CMP	E8330	1	Y	
W-35B-01	GW	Qal	S	CMP	E8330	3		
W-35B-02	GW	$Tnbs_2$	S	CMP	E300.0:NO3	1	Y	
W-35B-02	GW	$Tnbs_2$	S	CMP	E300.0:NO3	3		
W-35B-02	GW	$Tnbs_2$	S	CMP	E300.0:PERC	1	Y	
W-35B-02	GW	$Tnbs_2$	S	CMP	E300.0:PERC	3		
W-35B-02	GW	$Tnbs_2$	Q	CMP	E601	1	Y	
W-35B-02	GW	$Tnbs_2$	Q	CMP	E601	2	Y	
W-35B-02	GW	$Tnbs_2$	Q	CMP	E601	3		
W-35B-02	GW	$Tnbs_2$	Q	CMP	E601	4		
W-35B-02	GW	$Tnbs_2$	S	CMP	E8330	1	Y	
W-35B-02	GW	$Tnbs_2$	S	CMP	E8330	3		
W-35B-03	GW	$Tnbs_2$	S	CMP	E300.0:NO3	1	Y	
W-35B-03	GW	$Tnbs_2$	S	CMP	E300.0:NO3	3		
W-35B-03	GW	$Tnbs_2$	S	CMP	E300.0:PERC	1	Y	
W-35B-03	GW	$Tnbs_2$	S	CMP	E300.0:PERC	3		
W-35B-03	GW	$Tnbs_2$	Q	CMP	E601	1	Y	
W-35B-03	GW	$Tnbs_2$	Q	CMP	E601	2	Y	
W-35B-03	GW	$Tnbs_2$	Q	CMP	E601	3		
W-35B-03	GW	$Tnbs_2$	Q	CMP	E601	4		
W-35B-03	GW	$Tnbs_2$	S	CMP	E8330	1	Y	
W-35B-03	GW	$Tnbs_2$	S	CMP	E8330	3		
W-35B-04	GW	$Tnbs_2$	S	CMP	E300.0:NO3	1	Y	
W-35B-04	GW	$Tnbs_2$	S	CMP	E300.0:NO3	3		
W-35B-04	GW	$Tnbs_2$	S	CMP	E300.0:PERC	1	Y	
W-35B-04	GW	$Tnbs_2$	S	CMP	E300.0:PERC	3		
W-35B-04	GW	$Tnbs_2$	Q	CMP	E601	1	Y	
W-35B-04	GW	$Tnbs_2$	Q	CMP	E601	2	Y	
W-35B-04	GW	$Tnbs_2$	Q	CMP	E601	3		
W-35B-04	GW	$Tnbs_2$	Q	CMP	E601	4		
W-35B-04	GW	$Tnbs_2$	S	CMP	E8330	1	Y	
W-35B-04	GW	$Tnbs_2$	S	CMP	E8330	3		
W-35B-05	GW	$Tnbs_2$	S	CMP	E300.0:NO3	1	Y	
W-35B-05	GW	$Tnbs_2$	S	CMP	E300.0:NO3	3		
W-35B-05	GW	$Tnbs_2$	S	CMP	E300.0:PERC	1	Y	
W-35B-05	GW	$Tnbs_2$	S	CMP	E300.0:PERC	3		
W-35B-05	GW	$Tnbs_2$	Q	CMP	E601	1	Y	
W-35B-05	GW	$Tnbs_2$	Q	CMP	E601	2	Y	
W-35B-05	GW	$Tnbs_2$	Q	CMP	E601	3		
W-35B-05	GW	$Tnbs_2$	Q	CMP	E601	4		
W-35B-05	GW	$Tnbs_2$	S	CMP	E8330	1	Y	
W-35B-05	GW	$Tnbs_2$	S	CMP	E8330	3		
W-35C-01	PTMW	$Tnsc_2$	A	CMP	E300.0:NO3	1	Y	
W-35C-01	PTMW	$Tnsc_2$	A	CMP	E300.0:PERC	1	Y	
W-35C-01	PTMW	$Tnsc_2$	S	CMP	E601	1	Y	
W-35C-01	PTMW	$Tnsc_2$	S	CMP	E601	3		
W-35C-01	PTMW	$Tnsc_2$	A	CMP	E8330	1	Y	
W-35C-02	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-35C-02	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-35C-02	PTMW	$Tnbs_1$	S	CMP	E601	1	Y	
W-35C-02	PTMW	$Tnbs_1$	S	CMP	E601	3		
W-35C-02	PTMW	$Tnbs_1$	A	CMP	E8330	1	Y	
W-35C-04	EW	$Tnbs_2$	A	CMP-TF	E300.0:NO3	1	Y	815-DSB extraction well.
W-35C-04	EW	$Tnbs_2$	A	CMP-TF	E300.0:PERC	1	Y	815-DSB extraction well.
W-35C-04	EW	$Tnbs_2$	S	CMP-TF	E601	1	Y	815-DSB extraction well.
W-35C-04	EW	$Tnbs_2$	S	CMP-TF	E601	3		815-DSB extraction well.
W-35C-04	EW	$Tnbs_2$	A	CMP-TF	E8330	1	Y	815-DSB extraction well.
W-35C-05	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-35C-05	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-35C-05	PTMW	Tps	S	CMP	E601	1	Y	
W-35C-05	PTMW	Tps	S	CMP	E601	3		
W-35C-05	PTMW	Tps	A	CMP	E8330	1	Y	
W-35C-06	PTMW	Qal	A	CMP	E300.0:NO3	1	Y	
W-35C-06	PTMW	Qal	A	CMP	E300.0:PERC	1	Y	
W-35C-06	PTMW	Qal	S	CMP	E601	1	Y	
W-35C-06	PTMW	Qal	S	CMP	E601	3		
W-35C-06	PTMW	Qal	A	CMP	E8330	1	Y	

Table 2.4-11 (Con't.). High Explosives Process Area OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-35C-07	PTMW	$Tnsc_2$	A	CMP	E300.0:NO3	1	Y	
W-35C-07	PTMW	$Tnsc_2$	A	CMP	E300.0:PERC	1	Y	
W-35C-07	PTMW	$Tnsc_2$	S	CMP	E601	1	Y	
W-35C-07	PTMW	$Tnsc_2$	S	CMP	E601	3		
W-35C-07	PTMW	$Tnsc_2$	A	CMP	E8330	1	Y	
W-35C-08	PTMW	$Tnsc_2$	A	CMP	E300.0:NO3	1	Y	
W-35C-08	PTMW	$Tnsc_2$	A	CMP	E300.0:PERC	1	Y	
W-35C-08	PTMW	$Tnsc_2$	S	CMP	E601	1	Y	
W-35C-08	PTMW	$Tnsc_2$	S	CMP	E601	3		
W-35C-08	PTMW	$Tnsc_2$	A	CMP	E8330	1	Y	
W-4A	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-4A	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-4A	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-4A	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-4A	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-4AS	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-4AS	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-4AS	PTMW	Tps	S	CMP	E601	1	Y	
W-4AS	PTMW	Tps	S	CMP	E601	3		
W-4AS	PTMW	Tps	A	CMP	E8330	1	Y	
W-4B	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-4B	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-4B	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-4B	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-4B	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-4C	GW	$Tnsc_1$	S	CMP	E300.0:NO3	1	Y	
W-4C	GW	$Tnsc_1$	S	CMP	E300.0:NO3	3		
W-4C	GW	$Tnsc_1$	S	CMP	E300.0:PERC	1	Y	
W-4C	GW	$Tnsc_1$	S	CMP	E300.0:PERC	3		
W-4C	GW	$Tnsc_1$	Q	CMP	E601	1	Y	
W-4C	GW	$Tnsc_1$	Q	CMP	E601	2	Y	
W-4C	GW	$Tnsc_1$	Q	CMP	E601	3		
W-4C	GW	$Tnsc_1$	Q	CMP	E601	4		
W-6BD	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-6BD	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-6BD	PTMW	Tps	S	CMP	E601	1	Y	
W-6BD	PTMW	Tps	S	CMP	E601	3		
W-6BD	PTMW	Tps	A	CMP	E8330	1	Y	
W-6BS	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-6BS	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-6BS	PTMW	Tps	S	CMP	E601	1	Y	
W-6BS	PTMW	Tps	S	CMP	E601	3		
W-6BS	PTMW	Tps	A	CMP	E8330	1	Y	
W-6CD	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-6CD	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-6CD	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-6CD	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-6CD	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-6CI	PTMW	$Tnsc_2$	A	CMP	E300.0:NO3	1	Y	
W-6CI	PTMW	$Tnsc_2$	A	CMP	E300.0:PERC	1	Y	
W-6CI	PTMW	$Tnsc_2$	S	CMP	E601	1	Y	
W-6CI	PTMW	$Tnsc_2$	S	CMP	E601	3		
W-6CI	PTMW	$Tnsc_2$	A	CMP	E8330	1	Y	
W-6CS	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-6CS	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-6CS	PTMW	Tps	S	CMP	E601	1	Y	
W-6CS	PTMW	Tps	S	CMP	E601	3		
W-6CS	PTMW	Tps	A	CMP	E8330	1	Y	
W-6EI	PTMW	$Tnsc_2$	A	CMP	E300.0:NO3	1	Y	
W-6EI	PTMW	$Tnsc_2$	A	CMP	E300.0:PERC	1	Y	
W-6EI	PTMW	$Tnsc_2$	S	CMP	E601	1	Y	
W-6EI	PTMW	$Tnsc_2$	S	CMP	E601	3		
W-6EI	PTMW	$Tnsc_2$	A	CMP	E8330	1	Y	
W-6ER	EW	$Tnbs_2$	A	CMP-TF	E300.0:NO3	1	Y	815-DSB extraction well.
W-6ER	EW	$Tnbs_2$	A	CMP-TF	E300.0:PERC	1	Y	815-DSB extraction well.
W-6ER	EW	$Tnbs_2$	S	CMP-TF	E601	1	Y	815-DSB extraction well.
W-6ER	EW	$Tnbs_2$	S	CMP-TF	E601	3		815-DSB extraction well.
W-6ER	EW	$Tnbs_2$	A	CMP-TF	E8330	1	Y	815-DSB extraction well.

Table 2.4-11 (Con't.). High Explosives Process Area OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-6ES	PTMW	Qal	A	CMP	E300.0:NO3	1	Y	
W-6ES	PTMW	Qal	A	CMP	E300.0:PERC	1	Y	
W-6ES	PTMW	Qal	S	CMP	E601	1	Y	
W-6ES	PTMW	Qal	S	CMP	E601	3		
W-6ES	PTMW	Qal	A	CMP	E8330	1	Y	
W-6F	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-6F	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-6F	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-6F	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-6F	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-6G	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-6G	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-6G	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-6G	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-6G	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-6H	GW	$Tnbs_2$	S	CMP	E300.0:NO3	1	Y	
W-6H	GW	$Tnbs_2$	S	CMP	E300.0:NO3	3		
W-6H	GW	$Tnbs_2$	S	CMP	E300.0:PERC	1	Y	
W-6H	GW	$Tnbs_2$	S	CMP	E300.0:PERC	3		
W-6H	GW	$Tnbs_2$	Q	CMP	E601	1	Y	
W-6H	GW	$Tnbs_2$	Q	CMP	E601	2	Y	
W-6H	GW	$Tnbs_2$	Q	CMP	E601	3		
W-6H	GW	$Tnbs_2$	Q	CMP	E601	4		
W-6H	GW	$Tnbs_2$	S	CMP	E8330	1	Y	
W-6H	GW	$Tnbs_2$	S	CMP	E8330	3		
W-6I	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-6I	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-6I	PTMW	Tps	S	CMP	E601	1	Y	
W-6I	PTMW	Tps	S	CMP	E601	3		
W-6I	PTMW	Tps	A	CMP	E8330	1	Y	
W-6J	GW	$Tnbs_2$	S	CMP	E300.0:NO3	1	Y	
W-6J	GW	$Tnbs_2$	S	CMP	E300.0:NO3	3		
W-6J	GW	$Tnbs_2$	S	CMP	E300.0:PERC	1	Y	
W-6J	GW	$Tnbs_2$	S	CMP	E300.0:PERC	3		
W-6J	GW	$Tnbs_2$	Q	CMP	E601	1	Y	
W-6J	GW	$Tnbs_2$	Q	CMP	E601	2	Y	
W-6J	GW	$Tnbs_2$	Q	CMP	E601	3		
W-6J	GW	$Tnbs_2$	Q	CMP	E601	4		
W-6J	GW	$Tnbs_2$	S	CMP	E8330	1	Y	
W-6J	GW	$Tnbs_2$	S	CMP	E8330	3		
W-6K	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-6K	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-6K	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-6K	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-6K	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-6L	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-6L	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-6L	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-6L	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-6L	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-806-06A	MWB	$Tnsc_1$	B	CMP	E300.0:NO3	1	NA	Next sample required 1stQ 2009.
W-806-06A	MWB	$Tnsc_1$	B	CMP	E300.0:PERC	1	NA	Next sample required 1stQ 2009.
W-806-06A	MWB	$Tnsc_1$	B	CMP	E601	1	NA	Next sample required 1stQ 2009.
W-806-06A	MWB	$Tnsc_1$	B	CMP	E8330	1	NA	Next sample required 1stQ 2009.
W-806-07	MWB	$Tnbs_2$	B	CMP	E300.0:NO3	1	NA	Next sample required 1stQ 2009.
W-806-07	MWB	$Tnbs_2$	B	CMP	E300.0:PERC	1	NA	Next sample required 1stQ 2009.
W-806-07	MWB	$Tnbs_2$	B	CMP	E601	1	NA	Next sample required 1stQ 2009.
W-806-07	MWB	$Tnbs_2$	B	CMP	E8330	1	NA	Next sample required 1stQ 2009.
W-808-01	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-808-01	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-808-01	PTMW	Tps	S	CMP	E601	1	Y	
W-808-01	PTMW	Tps	S	CMP	E601	3		
W-808-01	PTMW	Tps	A	CMP	E8330	1	Y	
W-808-02	PTMW	$Tnsc_2$	A	CMP	E300.0:NO3	1	N	Dry.
W-808-02	PTMW	$Tnsc_2$	A	CMP	E300.0:PERC	1	N	Dry.
W-808-02	PTMW	$Tnsc_2$	S	CMP	E601	1	N	Dry.
W-808-02	PTMW	$Tnsc_2$	S	CMP	E601	3		
W-808-02	PTMW	$Tnsc_2$	A	CMP	E8330	1	N	Dry.

Table 2.4-11 (Con't.). High Explosives Process Area OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-808-03	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-808-03	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-808-03	PTMW	$Tnbs_1$	S	CMP	E601	1	Y	
W-808-03	PTMW	$Tnbs_1$	S	CMP	E601	3		
W-808-03	PTMW	$Tnbs_1$	A	CMP	E8330	1	Y	
W-809-01	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-809-01	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-809-01	PTMW	Tps	S	CMP	E601	1	Y	
W-809-01	PTMW	Tps	S	CMP	E601	3		
W-809-01	PTMW	Tps	A	CMP	E8330	1	Y	
W-809-02	PTMW	$Tnbs_2$	B	CMP	E300.0:NO3	1	NA	Next sample required 1stQ 2009.
W-809-02	PTMW	$Tnbs_2$		DIS	E300.0:PERC	1	Y	Next sample required 1stQ 2009.
W-809-02	PTMW	$Tnbs_2$		DIS	E300.0:PERC	3	NA	Next sample required 1stQ 2009.
W-809-02	PTMW	$Tnbs_2$		DIS	E601	1	Y	Next sample required 1stQ 2009.
W-809-02	PTMW	$Tnbs_2$	B	CMP	E8330	1	NA	Next sample required 1stQ 2009.
W-809-03	PTMW	$Tnbs_2$	B	CMP	E300.0:NO3	1	NA	Next sample required 1stQ 2009.
W-809-03	PTMW	$Tnbs_2$		DIS	E300.0:PERC	1	Y	Next sample required 1stQ 2009.
W-809-03	PTMW	$Tnbs_2$		DIS	E300.0:PERC	3	NA	Next sample required 1stQ 2009.
W-809-03	PTMW	$Tnbs_2$		DIS	E601	1	Y	Next sample required 1stQ 2009.
W-809-03	PTMW	$Tnbs_2$		DIS	E8330	1	Y	Next sample required 1stQ 2009.
W-809-04	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-809-04	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-809-04	PTMW	Tps	S	CMP	E601	1	Y	
W-809-04	PTMW	Tps	S	CMP	E601	3		
W-809-04	PTMW	Tps	A	CMP	E8330	1	Y	
W-810-01	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-810-01	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-810-01	PTMW	$Tnbs_1$	S	CMP	E601	1	Y	
W-810-01	PTMW	$Tnbs_1$	S	CMP	E601	3		
W-810-01	PTMW	$Tnbs_1$	A	CMP	E8330	1	Y	
W-814-01	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-814-01	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-814-01	PTMW	Tps	S	CMP	E601	1	Y	
W-814-01	PTMW	Tps	S	CMP	E601	3		
W-814-01	PTMW	Tps	A	CMP	E8330	1	Y	
W-814-02	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-814-02	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-814-02	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-814-02	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-814-02	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-814-03	PTMW	Tps	A	CMP	E300.0:NO3	1	N	Dry.
W-814-03	PTMW	Tps	A	CMP	E300.0:PERC	1	N	Dry.
W-814-03	PTMW	Tps	S	CMP	E601	1	N	Dry.
W-814-03	PTMW	Tps	S	CMP	E601	3		
W-814-03	PTMW	Tps	A	CMP	E8330	1	N	Dry.
W-814-04	GW	$Tnsc_1$	S	CMP	E300.0:NO3	1	Y	
W-814-04	GW	$Tnsc_1$	S	CMP	E300.0:NO3	3		
W-814-04	GW	$Tnsc_1$	S	CMP	E300.0:PERC	1	Y	
W-814-04	GW	$Tnsc_1$	S	CMP	E300.0:PERC	3		
W-814-04	GW	$Tnsc_1$	Q	CMP	E601	1	Y	
W-814-04	GW	$Tnsc_1$	Q	CMP	E601	2	Y	
W-814-04	GW	$Tnsc_1$	Q	CMP	E601	3		
W-814-04	GW	$Tnsc_1$	Q	CMP	E601	4		
W-814-04	GW	$Tnsc_1$		DIS	E8330	1	Y	
W-814-2138	PTMW	Tpsg	A	CMP	E300.0:NO3	1	Y	
W-814-2138	PTMW	Tpsg	A	CMP	E300.0:PERC	1	Y	
W-814-2138	PTMW	Tpsg	A	CMP	E601	1	Y	
W-814-2138	PTMW	Tpsg	A	CMP	E8330	1	Y	
W-815-01	PTMW	Tps	A	CMP	E300.0:NO3	1	N	Dry.
W-815-01	PTMW	Tps	A	CMP	E300.0:PERC	1	N	Dry.
W-815-01	PTMW	Tps	S	CMP	E601	1	N	Dry.
W-815-01	PTMW	Tps	S	CMP	E601	3		
W-815-01	PTMW	Tps	A	CMP	E8330	1	N	Dry.
W-815-02	EW	$Tnbs_2$	A	CMP-TF	E300.0:NO3	1	Y	815-SRC extraction well.
W-815-02	EW	$Tnbs_2$	A	CMP-TF	E300.0:PERC	1	Y	815-SRC extraction well.
W-815-02	EW	$Tnbs_2$	S	CMP-TF	E601	1	Y	815-SRC extraction well.
W-815-02	EW	$Tnbs_2$	S	CMP-TF	E601	3		815-SRC extraction well.
W-815-02	EW	$Tnbs_2$	A	CMP-TF	E8330	1	Y	815-SRC extraction well.

Table 2.4-11 (Con't.). High Explosives Process Area OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-815-03	PTMW	Tps	A	CMP	E300.0:NO3	1	N	Dry.
W-815-03	PTMW	Tps	A	CMP	E300.0:PERC	1	N	Dry.
W-815-03	PTMW	Tps	S	CMP	E601	1	N	Dry.
W-815-03	PTMW	Tps	S	CMP	E601	3		
W-815-03	PTMW	Tps	A	CMP	E8330	1	N	Dry.
W-815-04	EW	$Tnbs_2$	A	CMP-TF	E300.0:NO3	1	Y	815-SRC extraction well.
W-815-04	EW	$Tnbs_2$	A	CMP-TF	E300.0:PERC	1	Y	815-SRC extraction well.
W-815-04	EW	$Tnbs_2$	S	CMP-TF	E601	1	Y	815-SRC extraction well.
W-815-04	EW	$Tnbs_2$	S	CMP-TF	E601	3		815-SRC extraction well.
W-815-04	EW	$Tnbs_2$	A	CMP-TF	E8330	1	Y	815-SRC extraction well.
W-815-05	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-815-05	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-815-05	PTMW	Tps	S	CMP	E601	1	Y	
W-815-05	PTMW	Tps	S	CMP	E601	3		
W-815-05	PTMW	Tps	A	CMP	E8330	1	Y	
W-815-06	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-815-06	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-815-06	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-815-06	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-815-06	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-815-07	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-815-07	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-815-07	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-815-07	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-815-07	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-815-08	GW	$Tnbs_1$	S	CMP	E300.0:NO3	1	Y	
W-815-08	GW	$Tnbs_1$	S	CMP	E300.0:NO3	3		
W-815-08	GW	$Tnbs_1$	S	CMP	E300.0:PERC	1	Y	
W-815-08	GW	$Tnbs_1$	S	CMP	E300.0:PERC	3		
W-815-08	GW	$Tnbs_1$	Q	CMP	E601	1	Y	
W-815-08	GW	$Tnbs_1$	Q	CMP	E601	2	Y	
W-815-08	GW	$Tnbs_1$	Q	CMP	E601	3		
W-815-08	GW	$Tnbs_1$	Q	CMP	E601	4		
W-815-08	GW	$Tnbs_1$	S	CMP	E8330	1	Y	
W-815-08	GW	$Tnbs_1$	S	CMP	E8330	3		
W-815-1928	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-815-1928	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-815-1928	PTMW	Tps	S	CMP	E601	1	Y	
W-815-1928	PTMW	Tps	S	CMP	E601	3		
W-815-1928	PTMW	Tps	A	CMP	E8330	1	Y	
W-815-2110	GW	$Tnbs_2$	S	CMP	E300.0:NO3	1	Y	
W-815-2110	GW	$Tnbs_2$	S	CMP	E300.0:NO3	3		
W-815-2110	GW	$Tnbs_2$	S	CMP	E300.0:PERC	1	Y	
W-815-2110	GW	$Tnbs_2$	S	CMP	E300.0:PERC	3		
W-815-2110	GW	$Tnbs_2$	Q	CMP	E601	1	Y	
W-815-2110	GW	$Tnbs_2$	Q	CMP	E601	2	Y	
W-815-2110	GW	$Tnbs_2$	Q	CMP	E601	3		
W-815-2110	GW	$Tnbs_2$	Q	CMP	E601	4		
W-815-2110	GW	$Tnbs_2$	S	CMP	E8330	1	Y	
W-815-2110	GW	$Tnbs_2$	S	CMP	E8330	3		
W-815-2111	GW	$Tnbs_2$	S	CMP	E300.0:NO3	1	Y	
W-815-2111	GW	$Tnbs_2$	S	CMP	E300.0:NO3	3		
W-815-2111	GW	$Tnbs_2$	S	CMP	E300.0:PERC	1	Y	
W-815-2111	GW	$Tnbs_2$	S	CMP	E300.0:PERC	3		
W-815-2111	GW	$Tnbs_2$	Q	CMP	E601	1	Y	
W-815-2111	GW	$Tnbs_2$	Q	CMP	E601	2	Y	
W-815-2111	GW	$Tnbs_2$	Q	CMP	E601	3		
W-815-2111	GW	$Tnbs_2$	Q	CMP	E601	4		
W-815-2111	GW	$Tnbs_2$	S	CMP	E8330	1	Y	
W-815-2111	GW	$Tnbs_2$	S	CMP	E8330	3		
W-815-2217	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-815-2217	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-815-2217	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-815-2217	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-815-2217	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-817-01	EW	$Tnbs_2$	A	CMP-TF	E300.0:NO3	1	Y	817-SRC extraction well.
W-817-01	EW	$Tnbs_2$		DIS	E300.0:NO3	2	Y	817-SRC extraction well.
W-817-01	EW	$Tnbs_2$	A	CMP-TF	E300.0:PERC	1	Y	817-SRC extraction well.

Table 2.4-11 (Con't.). High Explosives Process Area OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-817-01	EW	$Tnbs_2$		DIS	E300.0:PERC	2	Y	817-SRC extraction well.
W-817-01	EW	$Tnbs_2$	S	CMP-TF	E601	1	Y	817-SRC extraction well.
W-817-01	EW	$Tnbs_2$		DIS	E601	2	Y	817-SRC extraction well.
W-817-01	EW	$Tnbs_2$	S	CMP-TF	E601	3		817-SRC extraction well.
W-817-01	EW	$Tnbs_2$	A	CMP-TF	E8330	1	Y	817-SRC extraction well.
W-817-01	EW	$Tnbs_2$		DIS	E8330	2	Y	817-SRC extraction well.
W-817-03	EW	$Tnbs_2$	A	CMP-TF	E300.0:NO3	1	Y	817-PRX extraction well.
W-817-03	EW	$Tnbs_2$	A	CMP-TF	E300.0:PERC	1	Y	817-PRX extraction well.
W-817-03	EW	$Tnbs_2$	S	CMP-TF	E601	1	Y	817-PRX extraction well.
W-817-03	EW	$Tnbs_2$	S	CMP-TF	E601	3		817-PRX extraction well.
W-817-03	EW	$Tnbs_2$	A	CMP-TF	E8330	1	Y	817-PRX extraction well.
W-817-03A	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-817-03A	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-817-03A	PTMW	Tps	S	CMP	E601	1	Y	
W-817-03A	PTMW	Tps	S	CMP	E601	3		
W-817-03A	PTMW	Tps	A	CMP	E8330	1	Y	
W-817-04	EW	$Tnbs_2$	A	CMP-TF	E300.0:NO3	1	Y	817-PRX extraction well.
W-817-04	EW	$Tnbs_2$	A	CMP-TF	E300.0:PERC	1	Y	817-PRX extraction well.
W-817-04	EW	$Tnbs_2$	S	CMP-TF	E601	1	Y	817-PRX extraction well.
W-817-04	EW	$Tnbs_2$	S	CMP-TF	E601	3		817-PRX extraction well.
W-817-04	EW	$Tnbs_2$	A	CMP-TF	E8330	1	Y	817-PRX extraction well.
W-817-04	EW	$Tnbs_2$	A	CMP-TF	E8330	3		817-PRX extraction well.
W-817-05	PTMW	$Tnsc_1$	A	CMP	E300.0:NO3	1	Y	
W-817-05	PTMW	$Tnsc_1$	A	CMP	E300.0:PERC	1	Y	
W-817-05	PTMW	$Tnsc_1$	S	CMP	E601	1	Y	
W-817-05	PTMW	$Tnsc_1$	S	CMP	E601	3		
W-817-05	PTMW	$Tnsc_1$	A	CMP	E8330	1	Y	
W-817-07	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-817-07	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-817-07	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-817-07	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-817-07	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-817-2318	EW	Tpsg	A	CMP	E300.0:NO3	1	Y	817-PRX extraction well.
W-817-2318	EW	Tpsg	A	CMP	E300.0:PERC	1	Y	817-PRX extraction well.
W-817-2318	EW	Tpsg	S	CMP	E601	1	Y	817-PRX extraction well.
W-817-2318	EW	Tpsg		DIS	E601	2	Y	817-PRX extraction well.
W-817-2318	EW	Tpsg	S	CMP	E601	3		817-PRX extraction well.
W-817-2318	EW	Tpsg	A	CMP	E8330	1	Y	817-PRX extraction well.
W-818-01	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-818-01	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-818-01	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-818-01	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-818-01	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-818-03	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-818-03	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-818-03	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-818-03	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-818-03	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-818-04	PTMW	$Tnsc_2$	A	CMP	E300.0:NO3	1	Y	
W-818-04	PTMW	$Tnsc_2$	A	CMP	E300.0:PERC	1	Y	
W-818-04	PTMW	$Tnsc_2$	S	CMP	E601	1	Y	
W-818-04	PTMW	$Tnsc_2$	S	CMP	E601	3		
W-818-04	PTMW	$Tnsc_2$	A	CMP	E8330	1	Y	
W-818-06	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-818-06	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-818-06	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-818-06	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-818-06	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-818-07	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-818-07	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-818-07	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-818-07	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-818-07	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-818-08	EW	$Tnbs_2$	A	CMP-TF	E300.0:NO3	1	Y	815-PRX extraction well.
W-818-08	EW	$Tnbs_2$	A	CMP-TF	E300.0:PERC	1	Y	815-PRX extraction well.
W-818-08	EW	$Tnbs_2$	S	CMP-TF	E601	1	Y	815-PRX extraction well.
W-818-08	EW	$Tnbs_2$	S	CMP-TF	E601	3		815-PRX extraction well.
W-818-08	EW	$Tnbs_2$	A	CMP-TF	E8330	1	Y	815-PRX extraction well.

Table 2.4-11 (Con't.). High Explosives Process Area OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-818-09	EW	$Tnbs_2$	A	CMP-TF	E300.0:NO3	1	Y	815-PRX extraction well.
W-818-09	EW	$Tnbs_2$	A	CMP-TF	E300.0:PERC	1	Y	815-PRX extraction well.
W-818-09	EW	$Tnbs_2$	S	CMP-TF	E601	1	Y	815-PRX extraction well.
W-818-09	EW	$Tnbs_2$	S	CMP-TF	E601	3		815-PRX extraction well.
W-818-09	EW	$Tnbs_2$	A	CMP-TF	E8330	1	Y	815-PRX extraction well.
W-818-11	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-818-11	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-818-11	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-818-11	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-818-11	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-819-02	PTMW	$Tnsc_1$	A	CMP	E300.0:NO3	1	Y	
W-819-02	PTMW	$Tnsc_1$	A	CMP	E300.0:PERC	1	Y	
W-819-02	PTMW	$Tnsc_1$	S	CMP	E601	1	Y	
W-819-02	PTMW	$Tnsc_1$	S	CMP	E601	3		
W-819-02	PTMW	$Tnsc_1$	A	CMP	E8330	1	Y	
W-823-01	PTMW	Tps	A	CMP	E300.0:NO3	1	Y	
W-823-01	PTMW	Tps	A	CMP	E300.0:PERC	1	Y	
W-823-01	PTMW	Tps	S	CMP	E601	1	Y	
W-823-01	PTMW	Tps	S	CMP	E601	3		
W-823-01	PTMW	Tps	A	CMP	E8330	1	Y	
W-823-02	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-823-02	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-823-02	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-823-02	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-823-02	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-823-02	PTMW	$Tnbs_2$		DIS	EM8015:DIESEL	3		
W-823-03	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-823-03	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-823-03	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-823-03	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-823-03	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-823-13	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-823-13	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-823-13	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-823-13	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-823-13	PTMW	$Tnbs_2$	A	CMP	E8330	1	Y	
W-827-01	MWB	$Tnbs_2$	B	CMP	E300.0:NO3	1	NA	Next sample required 1stQ 2009.
W-827-01	MWB	$Tnbs_2$	B	CMP	E300.0:PERC	1	NA	Next sample required 1stQ 2009.
W-827-01	MWB	$Tnbs_2$	B	CMP	E601	1	NA	Next sample required 1stQ 2009.
W-827-01	MWB	$Tnbs_2$	B	CMP	E8330	1	NA	Next sample required 1stQ 2009.
W-827-02	MWB	$Tnsc_1$	B	CMP	E300.0:NO3	1	NA	Next sample required 1stQ 2009.
W-827-02	MWB	$Tnsc_1$	B	CMP	E300.0:PERC	1	NA	Next sample required 1stQ 2009.
W-827-02	MWB	$Tnsc_1$	B	CMP	E601	1	NA	Next sample required 1stQ 2009.
W-827-02	MWB	$Tnsc_1$	B	CMP	E8330	1	NA	Next sample required 1stQ 2009.
W-827-03	MWB	$Tnsc_1$	B	CMP	E300.0:NO3	1	NA	Next sample required 1stQ 2009.
W-827-03	MWB	$Tnsc_1$	B	CMP	E300.0:PERC	1	NA	Next sample required 1stQ 2009.
W-827-03	MWB	$Tnsc_1$	B	CMP	E601	1	NA	Next sample required 1stQ 2009.
W-827-03	MWB	$Tnsc_1$	B	CMP	E8330	1	NA	Next sample required 1stQ 2009.
W-827-05	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-827-05	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-827-05	PTMW	$Tnbs_1$	S	CMP	E601	1	Y	
W-827-05	PTMW	$Tnbs_1$	S	CMP	E601	3		
W-827-05	PTMW	$Tnbs_1$	A	CMP	E8330	1	Y	
W-829-06	EW	$Tnsc_1$	A	CMP-TF	E300.0:NO3	1	Y	829-SRC extraction well.
W-829-06	EW	$Tnsc_1$		DIS	E300.0:NO3	2	Y	829-SRC extraction well.
W-829-06	EW	$Tnsc_1$	A	CMP-TF	E300.0:PERC	1	Y	829-SRC extraction well.
W-829-06	EW	$Tnsc_1$		DIS	E300.0:PERC	2	Y	829-SRC extraction well.
W-829-06	EW	$Tnsc_1$	S	CMP-TF	E601	1	Y	829-SRC extraction well.
W-829-06	EW	$Tnsc_1$		DIS	E601	2	Y	829-SRC extraction well.
W-829-06	EW	$Tnsc_1$	S	CMP-TF	E601	3		829-SRC extraction well.
W-829-06	EW	$Tnsc_1$	A	CMP-TF	E8330	2	Y	829-SRC extraction well.
W-829-15	DMW	$Tnbs_1$		WGMG	E300.0:PERC	2	Y	
W-829-15	DMW	$Tnbs_1$		WGMG	E624	2	Y	
W-829-15	DMW	$Tnbs_1$		WGMG	E8330	2	Y	
W-829-1938	DMW	$Tnbs_1$		WGMG	ANIONS	1	Y	
W-829-1938	DMW	$Tnbs_1$		WGMG	E300.0:PERC	1	Y	
W-829-1938	DMW	$Tnbs_1$		WGMG	E300.0:PERC	2	Y	
W-829-1938	DMW	$Tnbs_1$		WGMG	E300.0:PERC	3		

Table 2.4-11 (Con't.). High Explosives Process Area OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-829-1938	DMW	$Tnbs_1$		WGMG	E300.0:PERC	4		
W-829-1938	DMW	$Tnbs_1$		WGMG	E624	1	Y	
W-829-1938	DMW	$Tnbs_1$		WGMG	E624	2	Y	
W-829-1938	DMW	$Tnbs_1$		WGMG	E624	3		
W-829-1938	DMW	$Tnbs_1$		WGMG	E624	4		
W-829-1938	DMW	$Tnbs_1$		WGMG	E8330	1	Y	
W-829-1938	DMW	$Tnbs_1$		WGMG	E8330	2	Y	
W-829-1938	DMW	$Tnbs_1$		WGMG	E8330	3		
W-829-1938	DMW	$Tnbs_1$		WGMG	E8330	4		
W-829-1938	DMW	$Tnbs_1$		WGMG	E8330:TNT	1	Y	
W-829-1938	DMW	$Tnbs_1$		WGMG	E8330:TNT	4		
W-829-1940	PTMW	$Tnsc_1$	A	CMP	E300.0:NO3	1	Y	
W-829-1940	PTMW	$Tnsc_1$	A	CMP	E300.0:PERC	1	Y	
W-829-1940	PTMW	$Tnsc_1$	S	CMP	E601	1	Y	
W-829-1940	PTMW	$Tnsc_1$	S	CMP	E601	3		
W-829-1940	PTMW	$Tnsc_1$	A	CMP	E8330	1	Y	
W-829-22	DMW	$Tnbs_1$		WGMG	E300.0:PERC	2	Y	
W-829-22	DMW	$Tnbs_1$		WGMG	E624	2	Y	
W-829-22	DMW	$Tnbs_1$		WGMG	E8330	2	Y	
W-880-01	GW	$Tnbs_2$	S	CMP	E300.0:NO3	1	Y	
W-880-01	GW	$Tnbs_2$	S	CMP	E300.0:NO3	3		
W-880-01	GW	$Tnbs_2$	S	CMP	E300.0:PERC	1	Y	
W-880-01	GW	$Tnbs_2$	S	CMP	E300.0:PERC	3		
W-880-01	GW	$Tnbs_2$	Q	CMP	E601	1	Y	
W-880-01	GW	$Tnbs_2$	Q	CMP	E601	2	Y	
W-880-01	GW	$Tnbs_2$	Q	CMP	E601	3		
W-880-01	GW	$Tnbs_2$	Q	CMP	E601	4		
W-880-01	GW	$Tnbs_2$	S	CMP	E8330	1	Y	
W-880-01	GW	$Tnbs_2$	S	CMP	E8330	3		
W-880-02	GW	Qal	S	CMP	E300.0:NO3	1	Y	
W-880-02	GW	Qal	S	CMP	E300.0:NO3	3		
W-880-02	GW	Qal	S	CMP	E300.0:PERC	1	Y	
W-880-02	GW	Qal	S	CMP	E300.0:PERC	3		
W-880-02	GW	Qal	Q	CMP	E601	1	Y	
W-880-02	GW	Qal	Q	CMP	E601	2	Y	
W-880-02	GW	Qal	Q	CMP	E601	3		
W-880-02	GW	Qal	Q	CMP	E601	4		
W-880-02	GW	Qal	S	CMP	E8330	1	Y	
W-880-02	GW	Qal	S	CMP	E8330	3		
W-880-03	GW	$Tnsc_1$	S	CMP	E300.0:NO3	1	Y	
W-880-03	GW	$Tnsc_1$	S	CMP	E300.0:NO3	3		
W-880-03	GW	$Tnsc_1$	S	CMP	E300.0:PERC	1	Y	
W-880-03	GW	$Tnsc_1$	S	CMP	E300.0:PERC	3		
W-880-03	GW	$Tnsc_1$	Q	CMP	E601	1	Y	
W-880-03	GW	$Tnsc_1$	Q	CMP	E601	2	Y	
W-880-03	GW	$Tnsc_1$	Q	CMP	E601	3		
W-880-03	GW	$Tnsc_1$	Q	CMP	E601	4		
W-880-03	GW	$Tnsc_1$	S	CMP	E8330	1	Y	
W-880-03	GW	$Tnsc_1$	S	CMP	E8330	3		
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	1	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	1	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	1	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	2	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	2	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	2	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	3		
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	3		
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	3		
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	4		
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	4		
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	4		
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	1	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	1	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	1	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	2	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	2	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	2	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	3		

Table 2.4-11 (Con't.). High Explosives Process Area OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	3		
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	3		
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	4		
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	4		
WELL 18*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	4		
WELL 18*	WS	$Tnbs_1$	M	CMP	E601	1	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E601	1	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E601	1	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E601	2	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E601	2	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E601	2	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E601	3		
WELL 18*	WS	$Tnbs_1$	M	CMP	E601	3		
WELL 18*	WS	$Tnbs_1$	M	CMP	E601	3		
WELL 18*	WS	$Tnbs_1$	M	CMP	E601	4		
WELL 18*	WS	$Tnbs_1$	M	CMP	E601	4		
WELL 18*	WS	$Tnbs_1$	M	CMP	E601	4		
WELL 18*	WS	$Tnbs_1$	M	CMP	E8330	1	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E8330	1	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E8330	1	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E8330	2	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E8330	2	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E8330	2	Y	
WELL 18*	WS	$Tnbs_1$	M	CMP	E8330	3		
WELL 18*	WS	$Tnbs_1$	M	CMP	E8330	3		
WELL 18*	WS	$Tnbs_1$	M	CMP	E8330	3		
WELL 18*	WS	$Tnbs_1$	M	CMP	E8330	4		
WELL 18*	WS	$Tnbs_1$	M	CMP	E8330	4		
WELL 18*	WS	$Tnbs_1$	M	CMP	E8330	4		
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	1	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	1	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	1	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	2	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	2	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	2	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	3		
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	3		
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	3		
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	4		
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	4		
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:NO3	4		
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	1	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	1	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	1	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	2	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	2	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	2	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	3		
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	3		
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	3		
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	4		
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	4		
WELL 20*	WS	$Tnbs_1$	M	CMP	E300.0:PERC	4		
WELL 20*	WS	$Tnbs_1$		WGMG	E502.2	1	Y	
WELL 20*	WS	$Tnbs_1$		WGMG	E502.2	1	Y	
WELL 20*	WS	$Tnbs_1$		WGMG	E502.2	1	Y	
WELL 20*	WS	$Tnbs_1$		WGMG	E502.2	2	Y	
WELL 20*	WS	$Tnbs_1$		WGMG	E502.2	2	Y	
WELL 20*	WS	$Tnbs_1$		WGMG	E502.2	2	Y	
WELL 20*	WS	$Tnbs_1$	M	WGMG	E502.2	3		
WELL 20*	WS	$Tnbs_1$	M	WGMG	E502.2	3		
WELL 20*	WS	$Tnbs_1$	M	WGMG	E502.2	3		
WELL 20*	WS	$Tnbs_1$		WGMG	E502.2	4		
WELL 20*	WS	$Tnbs_1$		WGMG	E502.2	4		
WELL 20*	WS	$Tnbs_1$		WGMG	E502.2	4		
WELL 20*	WS	$Tnbs_1$	M	CMP	E601	1	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E601	1	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E601	1	Y	

Table 2.4-11 (Con't.). High Explosives Process Area OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
WELL 20*	WS	$Tnbs_1$	M	CMP	E601	4		
WELL 20*	WS	$Tnbs_1$	M	CMP	E601	4		
WELL 20*	WS	$Tnbs_1$	M	CMP	E601	4		
WELL 20*	WS	$Tnbs_1$	M	CMP	E8330	1	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E8330	1	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E8330	1	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E8330	2	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E8330	2	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E8330	2	Y	
WELL 20*	WS	$Tnbs_1$	M	CMP	E8330	3		
WELL 20*	WS	$Tnbs_1$	M	CMP	E8330	3		
WELL 20*	WS	$Tnbs_1$	M	CMP	E8330	3		
WELL 20*	WS	$Tnbs_1$	M	CMP	E8330	4		
WELL 20*	WS	$Tnbs_1$	M	CMP	E8330	4		
WELL 20*	WS	$Tnbs_1$	M	CMP	E8330	4		

Notes:

***Well sampled as part of the surveillance monitoring performed by the Water Guidance and Monitoring Group (WGMG) for additional constiutents and the results are reported in the LLNL Site Annual Environmental Report.**

W-829-15, W-829-22, and W-829-1938 are detection monitoring wells. Analytes and sampling frequency are specified in the RCRA Closure Plan for the High Explosives Open Burn Facility.

HEPA primary COC: VOCs (E601, E502.2, or E624).
HEPA secondary COC: nitrate (E300:NO3).
HEPA secondary COC: perchlorate (E300.0:PERC).
HEPA secondary COC: RDX (E8330).

See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.4-12. Building 815-Source (815-SRC) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
815-SRC	January	NA	1.5	2.4	25	18	NA
	February	NA	1.0	1.7	18	12	NA
	March	NA	1.1	1.7	14	9.5	NA
	April	NA	1.7	2.8	34	24	NA
	May	NA	1.0	1.7	17	12	NA
	June	NA	1.5	2.4	27	19	NA
Total		NA	7.8	13	140	94	NA

Notes:

***Nitrate re-injected into the $Tnbs_2$ HSU undergoes in-situ biotransformation to benign N_2 gas by anaerobic denitrifying bacteria.**

Table 2.4-13. Building 815-Proximal (815-PRX) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
815-PRX	January	NA	0.46	0.13	1.5	NA	NA
	February	NA	6.3	1.8	22	NA	NA
	March	NA	6.7	1.9	23	NA	NA
	April	NA	7.8	2.3	27	NA	NA
	May	NA	4.7	1.5	19	NA	NA
	June	NA	7.1	2.0	23	NA	NA
Total		NA	33	9.7	110	NA	NA

Notes:

***Nitrate re-injected into the $Tnbs_2$ HSU undergoes in-situ biotransformation to benign N_2 gas by anaerobic denitrifying bacteria.**

Table 2.4-14. Building 815-Distal Site Boundary (815-DSB) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
815-DSB	January	NA	6.9	NA	NA	NA	NA
	February	NA	5.8	NA	NA	NA	NA
	March	NA	3.8	NA	NA	NA	NA
	April	NA	3.3	NA	NA	NA	NA
	May	NA	3.2	NA	NA	NA	NA
	June	NA	2.9	NA	NA	NA	NA
Total		NA	26	NA	NA	NA	NA

Table 2.4-15. Building 817-Source (817-SRC) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
817-SRC	January	NA	0	0.034	0.11	0.058	NA
	February	NA	0	0.045	0.14	0.075	NA
	March	NA	0	0.058	0.19	0.097	NA
	April	NA	0	0.099	0.28	0.16	NA
	May	NA	0	0.092	0.26	0.15	NA
	June	NA	0	0.090	0.25	0.15	NA
Total		NA	0	0.42	1.2	0.69	NA

Notes:

***Nitrate re-injected into the $Tnbs_2$ HSU undergoes in-situ biotransformation to benign N_2 gas by anaerobic denitrifying bacteria.**

Table 2.4-16. Building 817-Proximal (817-PRX) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
817-PRX	January	NA	0.51	1.3	4.7	0	NA
	February	NA	2.3	5.6	21	0	NA
	March	NA	3.1	7.8	29	0	NA
	April	NA	2.6	6.5	24	0	NA
	May	NA	2.0	2.8	12	0	NA
	June	NA	3.6	5.1	22	0	NA
Total		NA	14	29	110	0	NA

Notes:

***Nitrate re-injected into the $Tnbs_2$ HSU undergoes in-situ biotransformation to benign N_2 gas by anaerobic denitrifying bacteria.**

Table 2.4-17. Building 829-Source (829-SRC) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
829-SRC	January	NA	0	0	0	NA	NA
	February	NA	0.011	0.0067	0.057	NA	NA
	March	NA	0.017	0.010	0.085	NA	NA
	April	NA	0.0076	0.0046	0.039	NA	NA
	May	NA	0.0046	0.0028	0.024	NA	NA
	June	NA	0.017	0.010	0.087	NA	NA
Total		NA	0.057	0.034	0.29	NA	NA

Table 2.5-1. Building 850 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
K1-01C	DMW	$Tnbs_1$		WGMG	AS:THISO	1	Y	
K1-01C	DMW	$Tnbs_1$		WGMG	AS:THISO	2	Y	
K1-01C	DMW	$Tnbs_1$		WGMG	AS:THISO	3		
K1-01C	DMW	$Tnbs_1$		WGMG	AS:THISO	4		
K1-01C	DMW	$Tnbs_1$		WGMG	AS:UISO	1	Y	
K1-01C	DMW	$Tnbs_1$		WGMG	AS:UISO	2	Y	
K1-01C	DMW	$Tnbs_1$		WGMG	AS:UISO	3		
K1-01C	DMW	$Tnbs_1$		WGMG	AS:UISO	4		
K1-01C	DMW	$Tnbs_1$		WGMG	E300.0:NO3	1	Y	
K1-01C	DMW	$Tnbs_1$		WGMG	E300.0:NO3	2	Y	
K1-01C	DMW	$Tnbs_1$		WGMG	E300.0:NO3	3		
K1-01C	DMW	$Tnbs_1$		WGMG	E300.0:NO3	4		
K1-01C	DMW	$Tnbs_1$		WGMG	E300.0:PERC	1	Y	
K1-01C	DMW	$Tnbs_1$		WGMG	E300.0:PERC	2	Y	
K1-01C	DMW	$Tnbs_1$		WGMG	E300.0:PERC	3		
K1-01C	DMW	$Tnbs_1$		WGMG	E300.0:PERC	4		
K1-01C	DMW	$Tnbs_1$		WGMG	E8260	1	Y	
K1-01C	DMW	$Tnbs_1$		WGMG	E8260	2	Y	
K1-01C	DMW	$Tnbs_1$		WGMG	E8260	3		
K1-01C	DMW	$Tnbs_1$		WGMG	E8260	4		
K1-01C	DMW	$Tnbs_1$		WGMG	E906	1	Y	
K1-01C	DMW	$Tnbs_1$		WGMG	E906	2	Y	
K1-01C	DMW	$Tnbs_1$		WGMG	E906	3		
K1-01C	DMW	$Tnbs_1$		WGMG	E906	4		
K1-01C	DMW	$Tnbs_1$		DIS	MS:UISO	2	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	AS:THISO	1	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	AS:THISO	2	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	AS:THISO	3		
K1-02B	DMW	$Tnbs_0$		WGMG	AS:THISO	4		
K1-02B	DMW	$Tnbs_0$		WGMG	AS:UISO	1	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	AS:UISO	2	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	AS:UISO	3		
K1-02B	DMW	$Tnbs_0$		WGMG	AS:UISO	4		
K1-02B	DMW	$Tnbs_0$		WGMG	E300.0:NO3	1	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	E300.0:NO3	2	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	E300.0:NO3	3		
K1-02B	DMW	$Tnbs_0$		WGMG	E300.0:NO3	4		
K1-02B	DMW	$Tnbs_0$		WGMG	E300.0:PERC	1	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	E300.0:PERC	2	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	E300.0:PERC	3		
K1-02B	DMW	$Tnbs_0$		WGMG	E300.0:PERC	4		
K1-02B	DMW	$Tnbs_0$		WGMG	E8260	1	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	E8260	2	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	E8260	3		
K1-02B	DMW	$Tnbs_0$		WGMG	E8260	4		
K1-02B	DMW	$Tnbs_0$		WGMG	E906	1	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	E906	2	Y	
K1-02B	DMW	$Tnbs_0$		WGMG	E906	3		
K1-02B	DMW	$Tnbs_0$		WGMG	E906	4		
K1-02B	DMW	$Tnbs_0$		DIS	MS:UISO	2	Y	
K1-04	DMW	$Tnbs_1/Tnbs_0$		WGMG	AS:THISO	1	Y	
K1-04	DMW	$Tnbs_1/Tnbs_0$		WGMG	AS:THISO	2	Y	
K1-04	DMW	$Tnbs_1/Tnbs_0$		WGMG	AS:THISO	3		
K1-04	DMW	$Tnbs_1/Tnbs_0$		WGMG	AS:THISO	4		

Table 2.5-1 (Con't.). Building 850 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	AS:UISO	1	Y	
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	AS:UISO	2	Y	
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	AS:UISO	3		
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	AS:UISO	4		
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E300.0:NO3	1	Y	
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E300.0:NO3	2	Y	
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E300.0:NO3	3		
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E300.0:NO3	4		
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E300.0:PERC	1	Y	
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E300.0:PERC	2	Y	
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E300.0:PERC	3		
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E300.0:PERC	4		
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E8260	1	Y	
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E8260	2	Y	
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E8260	3		
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E8260	4		
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E906	1	Y	
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E906	2	Y	
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E906	3		
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		WGMG	E906	4		
K1-04	DMW	Tnbs$_1$/Tnbs$_0$		DIS	MS:UISO	2	Y	
K1-05	DMW	Tnbs$_1$		WGMG	AS:THISO	1	Y	
K1-05	DMW	Tnbs$_1$		WGMG	AS:THISO	2	Y	
K1-05	DMW	Tnbs$_1$		WGMG	AS:THISO	3		
K1-05	DMW	Tnbs$_1$		WGMG	AS:THISO	4		
K1-05	DMW	Tnbs$_1$		WGMG	AS:UISO	1	Y	
K1-05	DMW	Tnbs$_1$		WGMG	AS:UISO	2	Y	
K1-05	DMW	Tnbs$_1$		WGMG	AS:UISO	3		
K1-05	DMW	Tnbs$_1$		WGMG	AS:UISO	4		
K1-05	DMW	Tnbs$_1$		WGMG	E300.0:NO3	1	Y	
K1-05	DMW	Tnbs$_1$		WGMG	E300.0:NO3	2	Y	
K1-05	DMW	Tnbs$_1$		WGMG	E300.0:NO3	3		
K1-05	DMW	Tnbs$_1$		WGMG	E300.0:NO3	4		
K1-05	DMW	Tnbs$_1$		WGMG	E300.0:PERC	1	Y	
K1-05	DMW	Tnbs$_1$		WGMG	E300.0:PERC	2	Y	
K1-05	DMW	Tnbs$_1$		WGMG	E300.0:PERC	3		
K1-05	DMW	Tnbs$_1$		WGMG	E300.0:PERC	4		
K1-05	DMW	Tnbs$_1$		WGMG	E8260	1	Y	
K1-05	DMW	Tnbs$_1$		WGMG	E8260	2	Y	
K1-05	DMW	Tnbs$_1$		WGMG	E8260	3		
K1-05	DMW	Tnbs$_1$		WGMG	E8260	4		
K1-05	DMW	Tnbs$_1$		WGMG	E906	1	Y	
K1-05	DMW	Tnbs$_1$		WGMG	E906	2	Y	
K1-05	DMW	Tnbs$_1$		WGMG	E906	3		
K1-05	DMW	Tnbs$_1$		WGMG	E906	4		
K1-05	DMW	Tnbs$_1$		DIS	MS:UISO	2	Y	
K1-06	PTMW	Tnbs$_1$	A	CMP	E300.0:NO3	2	Y	
K1-06	PTMW	Tnbs$_1$		DIS	E300.0:PERC	1	Y	
K1-06	PTMW	Tnbs$_1$		DIS	E300.0:PERC	2	Y	
K1-06	PTMW	Tnbs$_1$		DIS	E300.0:PERC	3		
K1-06	PTMW	Tnbs$_1$		DIS	E300.0:PERC	4		
K1-06	PTMW	Tnbs$_1$	S	CMP	E906	2	Y	
K1-06	PTMW	Tnbs$_1$	S	CMP	E906	4		
K1-06	PTMW	Tnbs$_1$	A	CMP	MS:UISO	2	Y	

Table 2.5-1 (Con't.). Building 850 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
K1-07	DMW	$Tnbs_1$		WGMG	AS:THISO	1	Y	
K1-07	DMW	$Tnbs_1$		WGMG	AS:THISO	2	Y	
K1-07	DMW	$Tnbs_1$		WGMG	AS:THISO	3		
K1-07	DMW	$Tnbs_1$		WGMG	AS:THISO	4		
K1-07	DMW	$Tnbs_1$		WGMG	AS:UISO	1	Y	
K1-07	DMW	$Tnbs_1$		WGMG	AS:UISO	2	Y	
K1-07	DMW	$Tnbs_1$		WGMG	AS:UISO	3		
K1-07	DMW	$Tnbs_1$		WGMG	AS:UISO	4		
K1-07	DMW	$Tnbs_1$		WGMG	E300.0:NO3	1	Y	
K1-07	DMW	$Tnbs_1$		WGMG	E300.0:NO3	2	Y	
K1-07	DMW	$Tnbs_1$		WGMG	E300.0:NO3	3		
K1-07	DMW	$Tnbs_1$		WGMG	E300.0:NO3	4		
K1-07	DMW	$Tnbs_1$		WGMG	E300.0:PERC	1	Y	
K1-07	DMW	$Tnbs_1$		WGMG	E300.0:PERC	2	Y	
K1-07	DMW	$Tnbs_1$		WGMG	E300.0:PERC	3		
K1-07	DMW	$Tnbs_1$		WGMG	E300.0:PERC	4		
K1-07	DMW	$Tnbs_1$		WGMG	E8260	1	Y	
K1-07	DMW	$Tnbs_1$		WGMG	E8260	2	Y	
K1-07	DMW	$Tnbs_1$		WGMG	E8260	3		
K1-07	DMW	$Tnbs_1$		WGMG	E8260	4		
K1-07	DMW	$Tnbs_1$		WGMG	E906	1	Y	
K1-07	DMW	$Tnbs_1$		WGMG	E906	2	Y	
K1-07	DMW	$Tnbs_1$		WGMG	E906	3		
K1-07	DMW	$Tnbs_1$		WGMG	E906	4		
K1-07	DMW	$Tnbs_1$		DIS	MS:UISO	2	Y	
K1-08	DMW	$Tnbs_1$		WGMG	AS:THISO	1	Y	
K1-08	DMW	$Tnbs_1$		WGMG	AS:THISO	2	Y	
K1-08	DMW	$Tnbs_1$		WGMG	AS:THISO	3		
K1-08	DMW	$Tnbs_1$		WGMG	AS:THISO	4		
K1-08	DMW	$Tnbs_1$		WGMG	AS:UISO	1	Y	
K1-08	DMW	$Tnbs_1$		WGMG	AS:UISO	2	Y	
K1-08	DMW	$Tnbs_1$		WGMG	AS:UISO	3		
K1-08	DMW	$Tnbs_1$		WGMG	AS:UISO	4		
K1-08	DMW	$Tnbs_1$		WGMG	E300.0:NO3	1	Y	
K1-08	DMW	$Tnbs_1$		WGMG	E300.0:NO3	2	Y	
K1-08	DMW	$Tnbs_1$		WGMG	E300.0:NO3	3		
K1-08	DMW	$Tnbs_1$		WGMG	E300.0:NO3	4		
K1-08	DMW	$Tnbs_1$		WGMG	E300.0:PERC	1	Y	
K1-08	DMW	$Tnbs_1$		WGMG	E300.0:PERC	2	Y	
K1-08	DMW	$Tnbs_1$		WGMG	E300.0:PERC	3		
K1-08	DMW	$Tnbs_1$		WGMG	E300.0:PERC	4		
K1-08	DMW	$Tnbs_1$		WGMG	E8260	1	Y	
K1-08	DMW	$Tnbs_1$		WGMG	E8260	2	Y	
K1-08	DMW	$Tnbs_1$		WGMG	E8260	3		
K1-08	DMW	$Tnbs_1$		WGMG	E8260	4		
K1-08	DMW	$Tnbs_1$		WGMG	E906	1	Y	
K1-08	DMW	$Tnbs_1$		WGMG	E906	2	Y	
K1-08	DMW	$Tnbs_1$		WGMG	E906	3		
K1-08	DMW	$Tnbs_1$		WGMG	E906	4		
K1-08	DMW	$Tnbs_1$		DIS	MS:UISO	2	Y	
K1-09	DMW	$Tnbs_1$		WGMG	AS:THISO	1	Y	
K1-09	DMW	$Tnbs_1$		WGMG	AS:THISO	2	Y	
K1-09	DMW	$Tnbs_1$		WGMG	AS:THISO	3		
K1-09	DMW	$Tnbs_1$		WGMG	AS:THISO	4		

Table 2.5-1 (Con't.). Building 850 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
K1-09	DMW	$Tnbs_1$		WGMG	AS:UISO	1	Y	
K1-09	DMW	$Tnbs_1$		WGMG	AS:UISO	2	Y	
K1-09	DMW	$Tnbs_1$		WGMG	AS:UISO	3		
K1-09	DMW	$Tnbs_1$		WGMG	AS:UISO	4		
K1-09	DMW	$Tnbs_1$		WGMG	E300.0:NO3	1	Y	
K1-09	DMW	$Tnbs_1$		WGMG	E300.0:NO3	2	Y	
K1-09	DMW	$Tnbs_1$		WGMG	E300.0:NO3	3		
K1-09	DMW	$Tnbs_1$		WGMG	E300.0:NO3	4		
K1-09	DMW	$Tnbs_1$		WGMG	E300.0:PERC	1	Y	
K1-09	DMW	$Tnbs_1$		WGMG	E300.0:PERC	2	Y	
K1-09	DMW	$Tnbs_1$		WGMG	E300.0:PERC	3		
K1-09	DMW	$Tnbs_1$		WGMG	E300.0:PERC	4		
K1-09	DMW	$Tnbs_1$		WGMG	E8260	1	Y	
K1-09	DMW	$Tnbs_1$		WGMG	E8260	2	Y	
K1-09	DMW	$Tnbs_1$		WGMG	E8260	3		
K1-09	DMW	$Tnbs_1$		WGMG	E8260	4		
K1-09	DMW	$Tnbs_1$		WGMG	E906	1	Y	
K1-09	DMW	$Tnbs_1$		WGMG	E906	2	Y	
K1-09	DMW	$Tnbs_1$		WGMG	E906	3		
K1-09	DMW	$Tnbs_1$		WGMG	E906	4		
K1-09	DMW	$Tnbs_1$		DIS	MS:UISO	2	Y	
K2-03	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
K2-03	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
K2-03	PTMW	$Tnbs_1$	S	CMP	E906	4		
K2-03	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
K2-04D*	PTMW	$Tnbs_1$	A	CMP/WGMG	E300.0:NO3	2	Y	
K2-04D*	PTMW	$Tnbs_1$		WGMG	E300.0:PERC	1	Y	
K2-04D*	PTMW	$Tnbs_1$		WGMG	E300.0:PERC	2	Y	
K2-04D*	PTMW	$Tnbs_1$		WGMG	E300.0:PERC	3		
K2-04D*	PTMW	$Tnbs_1$		WGMG	E300.0:PERC	4		
K2-04D*	PTMW	$Tnbs_1$	S	CMP/WGMG	E906	2	Y	
K2-04D*	PTMW	$Tnbs_1$	S	CMP/WGMG	E906	4		
K2-04D*	PTMW	$Tnbs_1$	A	CMP/WGMG	MS:UISO	2	Y	
K2-04S*	PTMW	$Tnbs_1$	A	CMP/WGMG	E300.0:NO3	2	Y	
K2-04S*	PTMW	$Tnbs_1$		WGMG	E300.0:PERC	1	Y	
K2-04S*	PTMW	$Tnbs_1$		WGMG	E300.0:PERC	2	Y	
K2-04S*	PTMW	$Tnbs_1$		WGMG	E300.0:PERC	3		
K2-04S*	PTMW	$Tnbs_1$		WGMG	E300.0:PERC	4		
K2-04S*	PTMW	$Tnbs_1$	S	CMP/WGMG	E906	2	Y	
K2-04S*	PTMW	$Tnbs_1$	S	CMP/WGMG	E906	4		
K2-04S*	PTMW	$Tnbs_1$	A	CMP/WGMG	MS:UISO	2	Y	
NC2-05	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-05	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC2-05	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-05	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-05	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-05A	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-05A	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC2-05A	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-05A	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-05A	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-06	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-06	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC2-06	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	

Table 2.5-1 (Con't.). Building 850 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
NC2-06	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-06	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-06A	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-06A	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC2-06A	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-06A	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-06A	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-09	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-09	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC2-09	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-09	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-09	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-10	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-10	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC2-10	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-10	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-10	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-11D*	PTMW	$Tnbs_1$	A	CMP/WGMG	E300.0:NO3	2	Y	
NC2-11D*	PTMW	$Tnbs_1$	S	CMP/WGMG	E906	2	Y	
NC2-11D*	PTMW	$Tnbs_1$	S	CMP/WGMG	E906	4		
NC2-11D*	PTMW	$Tnbs_1$	A	CMP/WGMG	MS:UISO	2	Y	
NC2-11I	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-11I	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-11I	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-11I	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-11S	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-11S	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-11S	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-11S	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-12D*	PTMW	$Tnbs_1$	A	CMP/WGMG	E300.0:NO3	2	Y	
NC2-12D*	PTMW	$Tnbs_1$		WGMG	E300.0:PERC	2	Y	
NC2-12D*	PTMW	$Tnbs_1$	S	CMP/WGMG	E906	2	Y	
NC2-12D*	PTMW	$Tnbs_1$	S	CMP/WGMG	E906	4		
NC2-12D*	PTMW	$Tnbs_1$	A	CMP/WGMG	MS:UISO	2	Y	
NC2-12I	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-12I	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-12I	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-12I	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-12S	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-12S	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-12S	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-12S	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-13	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-13	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-13	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-13	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-14S	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-14S	PTMW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	
NC2-14S	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-14S	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-14S	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-15	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-15	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC2-15	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	

Table 2.5-1 (Con't.). Building 850 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
NC2-15	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-15	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-16	PTMW	$Tnbs_1$	S	CMP	E300.0:NO3	2	Y	
NC2-16	PTMW	$Tnbs_1$	A	CMP	E906	2	Y	
NC2-16	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-16	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-17	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-17	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC2-17	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-17	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-17	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-18	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-18	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC2-18	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-18	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-18	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-19	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-19	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC2-19	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-19	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-19	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC2-20	PTMW	$Tnbs_0$	A	CMP	E300.0:NO3	2	Y	
NC2-20	PTMW	$Tnbs_0$		DIS	E300.0:PERC	2	Y	
NC2-20	PTMW	$Tnbs_0$	S	CMP	E906	2	Y	
NC2-20	PTMW	$Tnbs_0$	S	CMP	E906	4		
NC2-20	PTMW	$Tnbs_0$	A	CMP	MS:UISO	2	Y	
NC2-21	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-21	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC2-21	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC2-21	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC2-21	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-10	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-10	PTMW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	
NC7-10	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-10	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-10	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-11	PTMW	$Qal/Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-11	PTMW	$Qal/Tnbs_1$		DIS	E300.0:PERC	1	Y	
NC7-11	PTMW	$Qal/Tnbs_1$	S	CMP	E906	2	Y	
NC7-11	PTMW	$Qal/Tnbs_1$	S	CMP	E906	4		
NC7-11	PTMW	$Qal/Tnbs_1$	A	DIS	MS:UISO	2	Y	
NC7-14	PTMW	$Qal/Tnbs_1$	A	CMP	E300.0:NO3	2	N	Insufficient water.
NC7-14	PTMW	$Qal/Tnbs_1$		DIS	E300.0:PERC	2	N	Insufficient water.
NC7-14	PTMW	$Qal/Tnbs_1$	S	CMP	E906	2	N	Insufficient water.
NC7-14	PTMW	$Qal/Tnbs_1$	S	CMP	E906	4		
NC7-14	PTMW	$Qal/Tnbs_1$	A	CMP	MS:UISO	2	N	Insufficient water.
NC7-15	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-15	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC7-15	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-15	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-15	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-19	PTMW	$Qal/Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-19	PTMW	$Qal/Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC7-19	PTMW	$Qal/Tnbs_1$	S	CMP	E906	2	Y	

Table 2.5-1 (Con't.). Building 850 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
NC7-19	PTMW	$Qal/Tnbs_1$	S	CMP	E906	4		
NC7-19	PTMW	$Qal/Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-27	PTMW	$Tnsc_0$	A	CMP	E300.0:NO3	2	Y	
NC7-27	PTMW	$Tnsc_0$		DIS	E300.0:PERC	2	Y	
NC7-27	PTMW	$Tnsc_0$	S	CMP	E906	2	Y	
NC7-27	PTMW	$Tnsc_0$	S	CMP	E906	4		
NC7-27	PTMW	$Tnsc_0$	A	CMP	MS:UISO	2	Y	
NC7-28	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-28	PTMW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	
NC7-28	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC7-28	PTMW	$Tnbs_1$		DIS	E300.0:PERC	3		
NC7-28	PTMW	$Tnbs_1$		DIS	E300.0:PERC	4		
NC7-28	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-28	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-28	PTMW	$Tnbs_1$		DIS	MS:UISO	1	Y	
NC7-28	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-28	PTMW	$Tnbs_1$		DIS	MS:UISO	3		
NC7-28	PTMW	$Tnbs_1$		DIS	MS:UISO	4		
NC7-29	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-29	PTMW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	
NC7-29	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-29	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-29	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-43	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-43	PTMW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	
NC7-43	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-43	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-43	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-44	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-44	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC7-44	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-44	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-44	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-45	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	NA	Cannot be sampled-bent casing.
NC7-45	PTMW	$Tnbs_1$	S	CMP	E906	2	NA	Cannot be sampled-bent casing.
NC7-45	PTMW	$Tnbs_1$	S	CMP	E906	4	NA	Cannot be sampled-bent casing.
NC7-45	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	NA	Cannot be sampled-bent casing.
NC7-46	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-46	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-46	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-46	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-54	PTMW	Qal	A	CMP	E300.0:NO3	2	Y	
NC7-54	PTMW	Qal	S	CMP	E906	2	Y	
NC7-54	PTMW	Qal	S	CMP	E906	4		
NC7-54	PTMW	Qal	A	CMP	MS:UISO	2	Y	
NC7-55	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	N	Dry.
NC7-55	PTMW	$Tnbs_1$	S	CMP	E906	2	N	Dry.
NC7-55	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-55	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	N	Dry.
NC7-56	PTMW	$Qal/Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-56	PTMW	$Qal/Tnbs_1$		DIS	E300.0:PERC	1	Y	
NC7-56	PTMW	$Qal/Tnbs_1$	S	CMP	E906	2	Y	
NC7-56	PTMW	$Qal/Tnbs_1$	S	CMP	E906	4		
NC7-56	PTMW	$Qal/Tnbs_1$	A	CMP	MS:UISO	2	Y	

Table 2.5-1 (Con't.). Building 850 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
NC7-57	PTMW	Qal	A	CMP	E300.0:NO3	2	N	Dry.
NC7-57	PTMW	Qal	S	CMP	E906	2	N	Dry.
NC7-57	PTMW	Qal	S	CMP	E906	4		
NC7-57	PTMW	Qal	A	CMP	MS:UISO	2	N	Dry.
NC7-58	PTMW	Qal	A	CMP	E300.0:NO3	2	Y	
NC7-58	PTMW	Qal		DIS	E300.0:PERC	1	Y	
NC7-58	PTMW	Qal	S	CMP	E906	2	Y	
NC7-58	PTMW	Qal	S	CMP	E906	4		
NC7-58	PTMW	Qal	A	CMP	MS:UISO	2	Y	
NC7-59	PTMW	Qal/$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-59	PTMW	Qal/$Tnbs_1$		DIS	E300.0:PERC	1	Y	
NC7-59	PTMW	Qal/$Tnbs_1$	S	CMP	E906	2	Y	
NC7-59	PTMW	Qal/$Tnbs_1$	S	CMP	E906	4		
NC7-59	PTMW	Qal/$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-60	PTMW	$Tnbs_0$	A	CMP	E300.0:NO3	2	Y	
NC7-60	PTMW	$Tnbs_0$		DIS	E300.0:PERC	1	Y	
NC7-60	PTMW	$Tnbs_0$	S	CMP	E906	2	Y	
NC7-60	PTMW	$Tnbs_0$	S	CMP	E906	4		
NC7-60	PTMW	$Tnbs_0$	A	CMP	MS:UISO	2	Y	
NC7-61*	PTMW	$Tnbs_0$	A	CMP/WGMG	E300.0:NO3	2	Y	
NC7-61*	PTMW	$Tnbs_0$	S	CMP/WGMG	E906	2	Y	
NC7-61*	PTMW	$Tnbs_0$	S	CMP/WGMG	E906	4		
NC7-61*	PTMW	$Tnbs_0$		DIS	MS:UISO	1	Y	
NC7-61*	PTMW	$Tnbs_0$	A	CMP/WGMG	MS:UISO	2	Y	
NC7-61*	PTMW	$Tnbs_0$		DIS	MS:UISO	3		
NC7-61*	PTMW	$Tnbs_0$		DIS	MS:UISO	4		
NC7-62	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-62	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-62	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-62	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-69*	PTMW	Tmss	A	CMP/WGMG	E300.0:NO3	2	Y	
NC7-69*	PTMW	Tmss		DIS	E601	2	Y	
NC7-69*	PTMW	Tmss	S	CMP/WGMG	E906	2	Y	
NC7-69*	PTMW	Tmss	S	CMP/WGMG	E906	4		
NC7-69*	PTMW	Tmss	A	CMP/WGMG	MS:UISO	2	Y	
NC7-70	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-70	PTMW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	
NC7-70	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-70	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-70	PTMW	$Tnbs_1$		DIS	MS:UISO	1	Y	
NC7-70	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-70	PTMW	$Tnbs_1$		DIS	MS:UISO	3		
NC7-70	PTMW	$Tnbs_1$		DIS	MS:UISO	4		
NC7-71	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-71	PTMW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	
NC7-71	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC7-71	PTMW	$Tnbs_1$		DIS	E300.0:PERC	3		
NC7-71	PTMW	$Tnbs_1$		DIS	E300.0:PERC	4		
NC7-71	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-71	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-71	PTMW	$Tnbs_1$		DIS	MS:UISO	1	Y	
NC7-71	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-71	PTMW	$Tnbs_1$		DIS	MS:UISO	3		
NC7-71	PTMW	$Tnbs_1$		DIS	MS:UISO	4		

Table 2.5-1 (Con't.). Building 850 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
NC7-72	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-72	PTMW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	
NC7-72	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-72	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-72	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-73	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-73	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-73	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-73	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
NC7-76	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC7-76	PTMW	$Tnbs_1$		DIS	E300.0:PERC	2	Y	
NC7-76	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
NC7-76	PTMW	$Tnbs_1$	S	CMP	E906	4		
NC7-76	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
SPRING24	SPR	$Tnbs_0/Tnbs_1$	A	CMP	E300.0:NO3	2	N	Dry.
SPRING24	SPR	$Tnbs_0/Tnbs_1$		DIS	E300.0:PERC	2	N	Dry.
SPRING24	SPR	$Tnbs_0/Tnbs_1$	S	CMP	E906	2	N	Dry.
SPRING24	SPR	$Tnbs_0/Tnbs_1$	S	CMP	E906	4		
SPRING24	SPR	$Tnbs_0/Tnbs_1$	A	CMP	MS:UISO	2	N	Dry.
W-850-05	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
W-850-05	PTMW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	
W-850-05	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
W-850-05	PTMW	$Tnbs_1$	S	CMP	E906	4		
W-850-05	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
W-850-2145	PTMW	$Tnbs_1/Tnbs_0$	A	CMP	E300.0:NO3	2	Y	
W-850-2145	PTMW	$Tnbs_1/Tnbs_0$		DIS	E300.0:PERC	2	Y	
W-850-2145	PTMW	$Tnbs_1/Tnbs_0$	S	CMP	E906	2	Y	
W-850-2145	PTMW	$Tnbs_1/Tnbs_0$	S	CMP	E906	4		
W-850-2145	PTMW	$Tnbs_1/Tnbs_0$	A	CMP	MS:UISO	2	Y	Inadvertently not sampled.
W-850-2312	PTMW	$Tnbs_0$	A	CMP	E300.0:NO3	2	Y	Insufficient personnel.
W-850-2312	PTMW	$Tnbs_0$	A	CMP	E300.0:PERC	4		
W-850-2312	PTMW	$Tnbs_0$	S	CMP	E906	2	Y	Insufficient personnel.
W-850-2312	PTMW	$Tnbs_0$	S	CMP	E906	4		
W-850-2312	PTMW	$Tnbs_0$	A	CMP	MS:UISO	2	Y	Insufficient personnel.
W-850-2313	PTMW	$Tnbs_0$	A	Baseline/CMP	E300.0:NO3	1	Y	
W-850-2313	PTMW	$Tnbs_0$	A	Baseline/CMP	E300.0:PERC	1	Y	
W-850-2313	PTMW	$Tnbs_0$	S	Baseline/CMP	E906	1	Y	
W-850-2313	PTMW	$Tnbs_0$	S	CMP	E906	3/4		
W-850-2313	PTMW	$Tnbs_0$	A	Baseline/CMP	MS:UISO	1	Y	
W-850-2313	PTMW	$Tnbs_0$		Baseline	E624	1	Y	
W-850-2313	PTMW	$Tnbs_0$		Baseline	E8330	1	Y	
W-850-2313	PTMW	$Tnbs_0$		Baseline	KPA	1	Y	
W-850-2313	PTMW	$Tnbs_0$		Baseline	DWMETALS	1	Y	
W-850-2313	PTMW	$Tnbs_0$		Baseline	GENMIN	1	Y	
W-850-2313	PTMW	$Tnbs_0$		Baseline	E200.7:SI	1	Y	
W-850-2314	PTMW	$Tnbs_0$	A	CMP	E300.0:NO3	2	Y	
W-850-2314	PTMW	$Tnbs_0$	A	CMP	E300.0:PERC	4		
W-850-2314	PTMW	$Tnbs_0$	S	CMP	E906	2	Y	
W-850-2314	PTMW	$Tnbs_0$	S	CMP	E906	4		
W-850-2314	PTMW	$Tnbs_0$	A	CMP	MS:UISO	2	N	Inadvertently not sampled.
W-850-2315	PTMW	$Tnbs_0$	A	CMP	E300.0:NO3	2	Y	
W-850-2315	PTMW	$Tnbs_0$		DIS	E300.0:PERC	2	Y	
W-850-2315	PTMW	$Tnbs_0$	A	CMP	E300.0:PERC	4		
W-850-2315	PTMW	$Tnbs_0$	S	CMP	E906	2	Y	

Table 2.5-1 (Con't.). Building 850 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-850-2315	PTMW	$Tnbs_0$	S	CMP	E906	4		
W-850-2315	PTMW	$Tnbs_0$	A	CMP	MS:UISO	2	Y	
W-850-2316	PTMW	$Tnbs_0$	A	CMP	E300.0:NO3	2	N	Insufficient personnel.
W-850-2316	PTMW	$Tnbs_0$	A	CMP	E300.0:PERC	4		
W-850-2316	PTMW	$Tnbs_0$	S	CMP	E906	2	N	Insufficient personnel.
W-850-2316	PTMW	$Tnbs_0$	S	CMP	E906	4		
W-850-2316	PTMW	$Tnbs_0$	A	CMP	MS:UISO	2	N	Insufficient personnel.
W-850-2416	PTMW	$Tnbs_0$	A	CMP	E300.0:NO3	2	N	Inadvertently not sampled.
W-850-2416	PTMW	$Tnbs_0$	A	CMP	E300.0:PERC	4		
W-850-2416	PTMW	$Tnbs_0$	S	CMP	E906	2	N	Inadvertently not sampled.
W-850-2416	PTMW	$Tnbs_0$	S	CMP	E906	4		
W-850-2416	PTMW	$Tnbs_0$	A	CMP	MS:UISO	2	N	Inadvertently not sampled.
W-850-2417	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	N	Inadvertently not sampled.
W-850-2417	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	4		
W-850-2417	PTMW	$Tnbs_1$	S	CMP	E906	2	N	Inadvertently not sampled.
W-850-2417	PTMW	$Tnbs_1$	S	CMP	E906	4		
W-850-2417	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	N	Inadvertently not sampled.
W-865-1802	PTMW	$Tnbs_0$-$Tnsc_0$	A	CMP	E300.0:NO3	2	Y	
W-865-1802	PTMW	$Tnbs_0$-$Tnsc_0$	S	CMP	E906	2	Y	
W-865-1802	PTMW	$Tnbs_0$-$Tnsc_0$	S	CMP	E906	4		
W-865-1802	PTMW	$Tnbs_0$-$Tnsc_0$	A	CMP	MS:UISO	2	Y	
W-865-1803	PTMW	$Tnbs_0$-$Tnsc_0$	A	CMP	E300.0:NO3	2	Y	
W-865-1803	PTMW	$Tnbs_0$-$Tnsc_0$		DIS	E300.0:PERC	2	Y	
W-865-1803	PTMW	$Tnbs_0$-$Tnsc_0$	S	CMP	E906	2	Y	
W-865-1803	PTMW	$Tnbs_0$-$Tnsc_0$	S	CMP	E906	4		
W-865-1803	PTMW	$Tnbs_0$-$Tnsc_0$	A	CMP	MS:UISO	2	Y	
W8SPRNG	SPR	$Tnbs_1$	A	CMP	E300.0:NO3	2	N	Dry.
W8SPRNG	SPR	$Tnbs_1$		DIS	E300.0:PERC	1	N	Dry.
W8SPRNG	SPR	$Tnbs_1$	S	CMP	E906	2	N	Dry.
W8SPRNG	SPR	$Tnbs_1$	S	CMP	E906	4		
W8SPRNG	SPR	$Tnbs_1$	A	CMP	MS:UISO	2	N	Dry.
W-PIT1-02*	PTMW	$Tnbs_1$		DIS	DWMETALS	1	Y	
W-PIT1-02*	PTMW	$Tnbs_1$		DIS	E300.0:NO3	1	Y	
W-PIT1-02*	PTMW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	
W-PIT1-02*	PTMW	$Tnbs_1$		DIS	E601	1	Y	
W-PIT1-02*	PTMW	$Tnbs_1$		DIS	E602	1	Y	
W-PIT1-02*	PTMW	$Tnbs_1$		DIS	E906	1	Y	
W-PIT1-2204	PTMW	Qal/$Tnbs_1$-cong		Baseline	DWMETALS	2	N	Insufficient personnel.
W-PIT1-2204	PTMW	Qal/$Tnbs_1$-cong		Baseline	E200.7:SI	2	N	Insufficient personnel.
W-PIT1-2204	PTMW	Qal/$Tnbs_1$-cong	A	CMP/Baseline	E300.0:NO3	2	N	Insufficient personnel.
W-PIT1-2204	PTMW	Qal/$Tnbs_1$-cong	A	CMP/Baseline	E300.0:PERC	2	N	Insufficient personnel.
W-PIT1-2204	PTMW	Qal/$Tnbs_1$-cong		Baseline	E624	2	N	Insufficient personnel.
W-PIT1-2204	PTMW	Qal/$Tnbs_1$-cong		Baseline	E8330:R+H	2	N	Insufficient personnel.
W-PIT1-2204	PTMW	Qal/$Tnbs_1$-cong		Baseline	E900	2	N	Insufficient personnel.
W-PIT1-2204	PTMW	Qal/$Tnbs_1$-cong	S	CMP/Baseline	E906	2	N	Insufficient personnel.
W-PIT1-2204	PTMW	Qal/$Tnbs_1$-cong	S	CMP/Baseline	E906	4		
W-PIT1-2204	PTMW	Qal/$Tnbs_1$-cong		Baseline	GENMIN	2	N	Insufficient personnel.

Table 2.5-1 (Con't.). Building 850 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-PIT1-2204	PTMW	Qal/$Tnbs_1$-cong	A	CMP/Baseline	MS:UISO	2	N	Insufficient personnel.
W-PIT1-2209	PTMW	$Tnbs_1$		DIS	E300.0:NO3	1	Y	
W-PIT1-2209	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
W-PIT1-2209	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-PIT1-2209	PTMW	$Tnbs_1$		DIS	E601	1	Y	
W-PIT1-2209	PTMW	$Tnbs_1$		DIS	E906	1	Y	
W-PIT1-2209	PTMW	$Tnbs_1$	S	CMP	E906	2	Y	
W-PIT1-2209	PTMW	$Tnbs_1$		DIS	E906	3		
W-PIT1-2209	PTMW	$Tnbs_1$	S	CMP	E906	4		
W-PIT1-2209	PTMW	$Tnbs_1$	A	CMP	MS:UISO	2	Y	
W-PIT1-2225	GW	$Tnbs_1$/$Tnbs_0$	A	CMP	E300.0:NO3	2	Y	
W-PIT1-2225	GW	$Tnbs_1$/$Tnbs_0$		DIS	E300.0:PERC	1	Y	
W-PIT1-2225	GW	$Tnbs_1$/$Tnbs_0$	A	CMP	E300.0:PERC	2	Y	
W-PIT1-2225	GW	$Tnbs_1$/$Tnbs_0$		DIS	E300.0:PERC	3		
W-PIT1-2225	GW	$Tnbs_1$/$Tnbs_0$		DIS	E300.0:PERC	4		
W-PIT1-2225	GW	$Tnbs_1$/$Tnbs_0$	Q	CMP	E906	1	Y	
W-PIT1-2225	GW	$Tnbs_1$/$Tnbs_0$	Q	CMP	E906	2	Y	
W-PIT1-2225	GW	$Tnbs_1$/$Tnbs_0$	Q	CMP	E906	3		
W-PIT1-2225	GW	$Tnbs_1$/$Tnbs_0$	Q	CMP	E906	4		
W-PIT1-2225	GW	$Tnbs_1$/$Tnbs_0$	A	CMP	MS:UISO	2	Y	
W-PIT1-2326	DMW	$Tnbs_1$/$Tnbs_0$		WGMG	AS:THISO	2	Y	
W-PIT1-2326	DMW	$Tnbs_1$/$Tnbs_0$		WGMG	AS:UISO	2	Y	
W-PIT1-2326	DMW	$Tnbs_1$/$Tnbs_0$		WGMG	E906	2	Y	
W-PIT1-2326	DMW	$Tnbs_1$/$Tnbs_0$		WGMG	MS:UISO	2	Y	
W-PIT1-2326	DMW	$Tnbs_1$/$Tnbs_0$		WGMG	E300.0:NO3	2	Y	
W-PIT1-2326	DMW	$Tnbs_1$/$Tnbs_0$		WGMG	E300.0:PERC	2	Y	
W-PIT7-16	PTMW	$Tnsc_0$	A	CMP	E300.0:NO3	2	Y	
W-PIT7-16	PTMW	$Tnsc_0$	S	CMP	E906	2	Y	
W-PIT7-16	PTMW	$Tnsc_0$	S	CMP	E906	4		
W-PIT7-16	PTMW	$Tnsc_0$	A	CMP	MS:UISO	2	Y	

Notes:

K1-01C, K1-02B, K1-04, K1-05, K1-07, K1-08, K1-09, and W-PIT1-2326 are Pit 1 Landfill detection monitoring wells. Analytes and sampling frequency are specified in Waste Discharge Requirements for the Pit 1 Landfill (not ncluded in this CMR).

***Well sampled as part of the surveillance monitoring performed by the Water Guidance and Monitoring Group (WGMG) for additional constiutents and the results are reported in the LLNL Site Annual Environmental Report.**

Building 850 primary COC: tritium (E906).
Building 850 secondary COC: nitrate (E300.0:NO3).
Building 850 secondary COC: perchlorate (E300.0:PERC) for select wells.
Building 850 secondary COC: uranium (MS:UISO).
Contaminants of Concern in the Vadose Zone not detected in Ground Water: PCBs.

See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.6-1. Building 854-Source (854-SRC) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
854-SRC	January	0	833	0	139,651
	February	0	457	0	70,470
	March	0	0	0	0
	April	184	0	514	0
	May	0	0	0	0
	June	0	0	0	0
Total		184	1,290	514	210,121

Table 2.6-2. Building 854-Proximal (854-PRX) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
854-PRX	January	NA	0	NA	0
	February	NA	379	NA	31,769
	March	NA	671	NA	53,261
	April	NA	698	NA	52,136
	May	NA	545	NA	38,174
	June	NA	672	NA	48,984
Total		NA	2,965	NA	224,324

Table 2.6-3. Building 854-Distal (854-DIS) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
854-DIS	January	NA	0	NA	0
	February	NA	14	NA	721
	March	NA	15	NA	844
	April	NA	19	NA	1,065
	May	NA	18	NA	900
	June	NA	16	NA	884
Total		NA	82	NA	4,414

Table 2.6-4. Building 854 OU VOCs in ground water treatment system influent and effluent.

Location	Date	TCE (µg/L)	PCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Carbon tetra-chloride (µg/L)	Chloro-form (µg/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	1,1-DCE (µg/L)	1,1,1-TCA (µg/L)	1,1,2-TCA (µg/L)	Freon 11 (µg/L)	Freon 113 (µg/L)	Vinyl chloride (µg/L)
Building 854-Distal[a]															
854-DIS-GWTS-E	2/12/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-DIS-GWTS-E	3/4/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-DIS-GWTS-E	4/8/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-DIS-GWTS-E	5/6/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-DIS-GWTS-E	6/4/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-DIS-GWTS-I	2/12/08	40	<0.5	0.56	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-DIS-GWTS-I	4/8/08	31	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Building 854-Proximal[a]															
854-PRX-GWTS-E	2/11/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-PRX-GWTS-E	3/4/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-PRX-GWTS-E	4/8/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-PRX-GWTS-E	5/6/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-PRX-GWTS-E	6/2/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-PRX-GWTS-I	2/11/08	26	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-PRX-GWTS-I	4/8/08	36	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Building 854-Source[b]															
854-SRC-GWTS-E	1/9/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-SRC-GWTS-E	2/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
854-SRC-GWTS-I	1/9/08	65	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:

[a] **No samples collected in January due to system shut down for freeze protection.**

[b] **No samples collected from March through June due to system off-line for interlock and flow meter problems.**

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.6-4 (Cont.). Analyte detected but not reported in main table.

Location	Date	Detection frequency
Building 854-Distal		
854-DIS-GWTS-E	**2/12/08**	**0 of 18**
854-DIS-GWTS-E	**3/4/08**	**0 of 18**
854-DIS-GWTS-E	**4/8/08**	**0 of 18**
854-DIS-GWTS-E	**5/6/08**	**0 of 18**
854-DIS-GWTS-E	**6/4/08**	**0 of 18**
854-DIS-GWTS-I	**2/12/08**	**0 of 18**
854-DIS-GWTS-I	**4/8/08**	**0 of 18**
Building 854-Proximal [a]		
854-PRX-GWTS-E	**2/11/08**	**0 of 18**
854-PRX-GWTS-E	**3/4/08**	**0 of 18**
854-PRX-GWTS-E	**4/8/08**	**0 of 18**
854-PRX-GWTS-E	**5/6/08**	**0 of 18**
854-PRX-GWTS-E	**6/2/08**	**0 of 18**
854-PRX-GWTS-I	**2/11/08**	**0 of 18**
854-PRX-GWTS-I	**4/8/08**	**0 of 18**
Building 854-Source [b]		
854-SRC-GWTS-E	**1/9/08**	**0 of 18**
854-SRC-GWTS-E	**2/5/08**	**0 of 18**
854-SRC-GWTS-I	**1/9/08**	**0 of 18**

Notes:

See Acronyms and Abbreviations in the Tables section of this report for definitions.

[a] **No samples collected in January due to system shut down for freeze protection.**

[b] **No samples collected from March through June due to system off-line for interlock and flow meter problems.**

Table 2.6-5. Building 854 OU nitrate and perchlorate in ground water treatment system influent and effluent.

Location	Date	Nitrate (as NO3) (mg/L)	Perchlorate (μg/L)
Building 854-Distal[a]			
854-DIS-GWTS-E	2/12/08	<0.5	<4
854-DIS-GWTS-E	3/4/08	<0.5	<4
854-DIS-GWTS-E	4/8/08	<0.5	<4
854-DIS-GWTS-E	5/6/08	0.99	<4
854-DIS-GWTS-E	6/4/08	<0.5 O	<4
854-DIS-GWTS-I	2/12/08	25	<4
854-DIS-GWTS-I	4/8/08	1.8	4.4
Building 854-Proximal[a]			
854-PRX-GWTS-E	2/11/08	<0.5	<4
854-PRX-GWTS-E	3/4/08	9.6	<4
854-PRX-GWTS-E	4/8/08	0.56	<4
854-PRX-GWTS-E	5/6/08	19	<4
854-PRX-GWTS-E	6/2/08	33	<4
854-PRX-GWTS-I	2/11/08	46	14
854-PRX-GWTS-I	4/8/08	47	14
Building 854-Source[b]			
854-SRC-GWTS-E	1/9/08	49	<4
854-SRC-GWTS-E	2/5/08	46	<4
854-SRC-GWTS-I	1/9/08	49	<4 E

Notes:

[a] **No samples collected in January due to system shut down for freeze protection.**

[b] **No samples collected from March through June due to system off-line for interlock and flow meter problems.**

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.6-6. Building 854 OU treatment facility sampling and analysis plan.

Sample location	Sample identification	Parameter	Frequency
854-SRC GWTS			
Influent Port	**854-SRC-I**	**VOCs**	**Quarterly**
		Perchlorate	**Quarterly**
		Nitrate	**Quarterly**
		pH	**Quarterly**
Effluent Port	**854-SRC-E**	**VOCs**	**Monthly**
		Perchlorate	**Monthly**
		Nitrate	**Monthly**
		pH	**Monthly**
854-SRC SVTS			
Influent Port	**W-854-1834-854-SRC-VI**	**No Monitoring Requirements**	
Effluent Port	**854-SRC-E**	**VOCs**	**Weekly[a]**
Intermediate GAC	**854-SRC-VCF3I**	**VOCs**	**Weekly[a]**
854-PRX GWTS			
Influent Port	**W-854-03-854-PRX-I**	**VOCs**	**Quarterly**
		Perchlorate	**Quarterly**
		Nitrate	**Quarterly**
		pH	**Quarterly**
Effluent Port	**854-PRX-BTU-I**	**VOCs**	**Monthly**
Effluent Port	**854-PRX-E**	**Perchlorate**	**Monthly**
		Nitrate	**Monthly**
		pH	**Monthly**
854-DIS GWTS			
Influent Port	**W-854-2139-854-DIS-I**	**VOCs**	**Quarterly**
		Perchlorate	**Quarterly**
		Nitrate	**Quarterly**
		pH	**Quarterly**
Effluent Port	**854-DIS-E**	**VOCs**	**Monthly**
		Perchlorate	**Monthly**
		Nitrate	**Monthly**
		pH	**Monthly**

Notes:

One duplicate and one blank (given fictitious labels) shall be taken for every 12 samples.

[a] **Weekly monitoring for VOCs will consist of the use of a flame-ionization detector, photo-ionization detector, or other District-approved VOC detection device.**

See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.6-7. Building 854 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
SPRING10	SPR	Qls	Q	CMP	E601	1	Y	
SPRING10	SPR	Qls	Q	CMP	E601	2	Y	
SPRING10	SPR	Qls	Q	CMP	E601	3		
SPRING10	SPR	Qls	Q	CMP	E601	4		
SPRING10	SPR	Qls	A	CMP	E300.0:NO3	2	Y	
SPRING10	SPR	Qls	A	CMP	E300.0:PERC	2	Y	
SPRING11	SPR	Qls-$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
SPRING11	SPR	Qls-$Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
SPRING11	SPR	Qls-$Tnbs_1$	Q	CMP	E601	1	Y	
SPRING11	SPR	Qls-$Tnbs_1$	Q	CMP	E601	2	Y	
SPRING11	SPR	Qls-$Tnbs_1$	Q	CMP	E601	3		
SPRING11	SPR	Qls-$Tnbs_1$	Q	CMP	E601	4		
W-854-01	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
W-854-01	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
W-854-01	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-854-01	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-854-02	EW	$Tnbs_1$	A	CMP-TF	E300.0:NO3	2	N	854-SRC extraction well. Facility off during quarter.
W-854-02	EW	$Tnbs_1$	A	CMP-TF	E300.0:PERC	2	N	854-SRC extraction well. Facility off during quarter.
W-854-02	EW	$Tnbs_1$	S	CMP-TF	E601	2	N	854-SRC extraction well. Facility off during quarter.
W-854-02	EW	$Tnbs_1$	S	CMP-TF	E601	4		854-SRC extraction well.
W-854-03	EW	$Tnbs_1$		DIS	E300.0:NO3	1	Y	854-PRX extraction well.
W-854-03	EW	$Tnbs_1$	A	CMP-TF	E300.0:NO3	2	Y	854-PRX extraction well.
W-854-03	EW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	854-PRX extraction well.
W-854-03	EW	$Tnbs_1$	A	CMP-TF	E300.0:PERC	2	Y	854-PRX extraction well.
W-854-03	EW	$Tnbs_1$		DIS	E601	1	Y	854-PRX extraction well.
W-854-03	EW	$Tnbs_1$	S	CMP-TF	E601	2	Y	854-PRX extraction well.
W-854-03	EW	$Tnbs_1$	S	CMP-TF	E601	4		854-PRX extraction well.
W-854-04	PTMW	Tmss	A	CMP	E300.0:NO3	2	Y	
W-854-04	PTMW	Tmss	A	CMP	E300.0:PERC	2	Y	
W-854-04	PTMW	Tmss	S	CMP	E601	2	Y	
W-854-04	PTMW	Tmss	S	CMP	E601	4		
W-854-05	PTMW	Qls-$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
W-854-05	PTMW	Qls-$Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
W-854-05	PTMW	Qls-$Tnbs_1$	S	CMP	E601	2	Y	
W-854-05	PTMW	Qls-$Tnbs_1$	S	CMP	E601	4		
W-854-06	PTMW	$Tnsc_0$	A	CMP	E300.0:NO3	2	Y	
W-854-06	PTMW	$Tnsc_0$	A	CMP	E300.0:PERC	2	Y	
W-854-06	PTMW	$Tnsc_0$	S	CMP	E601	2	Y	
W-854-06	PTMW	$Tnsc_0$	S	CMP	E601	4		
W-854-07	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
W-854-07	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
W-854-07	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-854-07	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-854-08	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
W-854-08	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
W-854-08	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-854-08	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-854-09	PTMW	$Tnsbs_0$	A	CMP	E300.0:NO3	2	Y	
W-854-09	PTMW	$Tnsbs_0$	A	CMP	E300.0:PERC	2	Y	
W-854-09	PTMW	$Tnsbs_0$	S	CMP	E601	2	Y	
W-854-09	PTMW	$Tnsbs_0$	S	CMP	E601	4		
W-854-10	PTMW	$Tnsbs_0$	A	CMP	E300.0:NO3	2	Y	

Table 2.6-7 (Con't.). Building 854 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-854-10	PTMW	$Tnsbs_0$	A	CMP	E300.0:PERC	2	Y	
W-854-10	PTMW	$Tnsbs_0$	S	CMP	E601	2	Y	
W-854-10	PTMW	$Tnsbs_0$	S	CMP	E601	4		
W-854-11	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	N	Dry.
W-854-11	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	2	N	Dry.
W-854-11	PTMW	$Tnbs_1$	S	CMP	E601	2	N	Dry.
W-854-11	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-854-12	PTMW	Tmss	B	CMP	E300.0:NO3	2	N	Insufficient water.
W-854-12	PTMW	Tmss	B	CMP	E300.0:PERC	2	N	Insufficient water.
W-854-12	PTMW	Tmss	B	CMP	E601	2	N	Insufficient water.
W-854-13	PTMW	$Tnsc_0$	A	CMP	E300.0:NO3	2	Y	
W-854-13	PTMW	$Tnsc_0$	A	CMP	E300.0:PERC	2	Y	
W-854-13	PTMW	$Tnsc_0$	S	CMP	E601	2	Y	
W-854-13	PTMW	$Tnsc_0$	S	CMP	E601	4		
W-854-13	PTMW	$Tnsc_0$	B	CMP	E8082A	2	NA	Next sample required 2ndQ 2009.
W-854-14	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
W-854-14	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
W-854-14	PTMW	$Tnbs_1$	A	CMP	E601	2	Y	
W-854-15	PTMW	Qls	A	CMP	E300.0:NO3	2	Y	
W-854-15	PTMW	Qls	A	CMP	E300.0:PERC	2	Y	
W-854-15	PTMW	Qls	S	CMP	E601	2	Y	
W-854-15	PTMW	Qls	S	CMP	E601	4		
W-854-17	EW	$Tnsbs_0$-$Tnsc_0$	A	CMP-TF	E300.0:NO3	1	Y	854-SRC extraction well.
W-854-17	EW	$Tnsbs_0$-$Tnsc_0$	A	CMP-TF	E300.0:PERC	1	Y	854-SRC extraction well.
W-854-17	EW	$Tnsbs_0$-$Tnsc_0$	S	CMP-TF	E601	1	Y	854-SRC extraction well.
W-854-17	EW	$Tnsbs_0$-$Tnsc_0$	S	CMP-TF	E601	4		854-SRC extraction well.
W-854-1701	PTMW	$Tnsc_0$	A	CMP	E300.0:NO3	2	Y	
W-854-1701	PTMW	$Tnsc_0$	A	CMP	E300.0:PERC	2	Y	
W-854-1701	PTMW	$Tnsc_0$	S	CMP	E601	2	Y	
W-854-1701	PTMW	$Tnsc_0$	S	CMP	E601	4		
W-854-1706	PTMW	Qal-$Tnbs_1$	A	CMP	E300.0:NO3	2	N	Dry.
W-854-1706	PTMW	Qal-$Tnbs_1$	A	CMP	E300.0:PERC	2	N	Dry.
W-854-1706	PTMW	Qal-$Tnbs_1$	A	CMP	E601	2	N	Dry.
W-854-1707	PTMW	$Tnsc_0$	A	CMP	E300.0:NO3	2	Y	
W-854-1707	PTMW	$Tnsc_0$	A	CMP	E300.0:PERC	2	Y	
W-854-1707	PTMW	$Tnsc_0$	S	CMP	E601	2	Y	
W-854-1707	PTMW	$Tnsc_0$	S	CMP	E601	4		
W-854-1731	PTMW	Tmss	A	CMP	E300.0:NO3	2	Y	
W-854-1731	PTMW	Tmss	A	CMP	E300.0:PERC	2	Y	
W-854-1731	PTMW	Tmss	S	CMP	E601	2	Y	
W-854-1731	PTMW	Tmss	S	CMP	E601	4		
W-854-1822	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
W-854-1822	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
W-854-1822	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-854-1822	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-854-1823	PTMW	$Tnsbs_1$-$Tnsc_0$	A	CMP	E300.0:NO3	2	Y	
W-854-1823	PTMW	$Tnsbs_1$-$Tnsc_0$	A	CMP	E300.0:PERC	2	Y	
W-854-1823	PTMW	$Tnsbs_1$-$Tnsc_0$	S	CMP	E601	2	Y	
W-854-1823	PTMW	$Tnsbs_1$-$Tnsc_0$	S	CMP	E601	4		
W-854-18A	EW	$Tnbs_1$	A	CMP-TF	E300.0:NO3	1	Y	854-SRC extraction well.
W-854-18A	EW	$Tnbs_1$	A	CMP-TF	E300.0:PERC	1	Y	854-SRC extraction well.
W-854-18A	EW	$Tnbs_1$	S	CMP-TF	E601	1	Y	854-SRC extraction well.
W-854-18A	EW	$Tnbs_1$	S	CMP-TF	E601	4		854-SRC extraction well.
W-854-19	PTMW	Qls	A	CMP	E300.0:NO3	2	N	Dry.

Table 2.6-7 (Con't.). Building 854 OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-854-19	PTMW	Qls	A	CMP	E300.0:PERC	2	N	Dry.
W-854-19	PTMW	Qls	A	CMP	E601	2	N	Dry.
W-854-1902	PTMW	$Tnsbs_1$-$Tnsc_0$	A	CMP	E300.0:NO3	2	Y	
W-854-1902	PTMW	$Tnsbs_1$-$Tnsc_0$	A	CMP	E300.0:PERC	2	Y	
W-854-1902	PTMW	$Tnsbs_1$-$Tnsc_0$	S	CMP	E601	2	Y	
W-854-1902	PTMW	$Tnsbs_1$-$Tnsc_0$	S	CMP	E601	4		
W-854-2115	PTMW	$Tnsbs_1$-$Tnsc_0$	A	CMP	E300.0:NO3	2	Y	
W-854-2115	PTMW	$Tnsbs_1$-$Tnsc_0$	A	CMP	E300.0:PERC	2	Y	
W-854-2115	PTMW	$Tnsbs_1$-$Tnsc_0$	S	CMP	E601	2	Y	
W-854-2115	PTMW	$Tnsbs_1$-$Tnsc_0$	S	CMP	E601	4		
W-854-2139	EW	$Tnsbs_1$-$Tnsc_0$		DIS	E300.0:NO3	1	Y	854-DIS extraction well.
W-854-2139	EW	$Tnsbs_1$-$Tnsc_0$	A	CMP-TF	E300.0:NO3	2	Y	854-DIS extraction well.
W-854-2139	EW	$Tnsbs_1$-$Tnsc_0$		DIS	E300.0:PERC	1	Y	854-DIS extraction well.
W-854-2139	EW	$Tnsbs_1$-$Tnsc_0$	A	CMP-TF	E300.0:PERC	2	Y	854-DIS extraction well.
W-854-2139	EW	$Tnsbs_1$-$Tnsc_0$		DIS	E601	1	Y	854-DIS extraction well.
W-854-2139	EW	$Tnsbs_1$-$Tnsc_0$	S	CMP-TF	E601	2	Y	854-DIS extraction well.
W-854-2139	EW	$Tnsbs_1$-$Tnsc_0$	S	CMP-TF	E601	4		854-DIS extraction well.
W-854-2218	EW	$Tnbs_1$	A	CMP-TF	E300.0:NO3	1	Y	854-SRC extraction well.
W-854-2218	EW	$Tnbs_1$	A	CMP-TF	E300.0:PERC	1	Y	854-SRC extraction well.
W-854-2218	EW	$Tnbs_1$	S	CMP-TF	E601	1	Y	854-SRC extraction well.
W-854-2218	EW	$Tnbs_1$	S	CMP-TF	E601	4		854-SRC extraction well.
W-854-45	PTMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
W-854-45	PTMW	$Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
W-854-45	PTMW	$Tnbs_1$	S	CMP	E601	2	Y	
W-854-45	PTMW	$Tnbs_1$	S	CMP	E601	4		
W-854-F2	PTMW	Qls-$Tnbs_1$	B	CMP	E300.0:NO3	2	N	Dry.
W-854-F2	PTMW	Qls-$Tnbs_1$	B	CMP	E300.0:PERC	2	N	Dry.
W-854-F2	PTMW	Qls-$Tnbs_1$	B	CMP	E601	2	N	Dry.

Notes:

Building 854 primary Contaminants of Concern in Ground Water: VOCs (E601 or E624).

Building 854 secondary COC: nitrate (E300:NO3).

Building 854 secondary COC: perchlorate (E300.0:PERC).

Contaminants of Concern in the Vadose Zone not detected in Ground Water: PCBs.

See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.6-8. Building 854-Source (854-SRC) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
854-SRC	January	0	24	1.0	26	NA	NA
	February	0	12	0.51	13	NA	NA
	March	0	0	0	0	NA	NA
	April	53	0	0	0	NA	NA
	May	0	0	0	0	NA	NA
	June	0	0	0	0	NA	NA
Total		53	36	1.5	39	NA	NA

Table 2.6-9. Building 854-Proximal (854-PRX) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
854-PRX	January	NA	0	0	0	NA	NA
	February	NA	3.1	1.7	5.5	NA	NA
	March	NA	5.2	2.8	9.3	NA	NA
	April	NA	7.1	2.8	9.3	NA	NA
	May	NA	5.2	2.0	6.8	NA	NA
	June	NA	6.7	2.6	8.7	NA	NA
Total		NA	27	12	40	NA	NA

Table 2.6-10. Building 854-Distal (854-DIS) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
854-DIS	January	NA	0	0	0	NA	NA
	February	NA	0.11	0	0.068	NA	NA
	March	NA	0.13	0	0.080	NA	NA
	April	NA	0.13	0.018	0.0073	NA	NA
	May	NA	0.11	0.015	0.0061	NA	NA
	June	NA	0.11	0.015	0.0060	NA	NA
Total		NA	0.58	0.047	0.17	NA	NA

Table 2.7-1. Building 832-Source (832-SRC) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
832-SRC	January	840	840	152	3,051
	February	580	579	90	7,030
	March	672	672	101	8,955
	April	798	798	123	9,825
	May	672	672	104	7,273
	June	672	672	410	6,493
Total		4,234	4,233	980	42,627

Table 2.7-2. Building 830-Source (830-SRC) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
830-SRC	January	772	840	678	221,473
	February	516	579	499	140,918
	March	600	672	1,052	143,718
	April	584	797	842	147,410
	May	670	672	682	121,697
	June	545	576	1,023	146,582
Total		3,687	4,136	4,776	921,798

Table 2.7-3. Building 830-Distal South (830-DISS) volumes of ground water and soil vapor extracted and discharged, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS Operational hours	GWTS Operational hours	Volume of vapor extracted (thousands of ft^3)	Volume of ground water discharged (gal)
830-DISS	January	NA	0	NA	0
	February	NA	187	NA	20,733
	March	NA	360	NA	31,602
	April	NA	344	NA	27,525
	May	NA	216	NA	23,379
	June	NA	768	NA	109,948
Total		NA	1,875	NA	213,187

Table 2.7-4. Building 832 Canyon OU VOCs in ground water treatment system influent and effluent.

Location	Date	TCE (μg/L)	PCE (μg/L)	cis-1,2-DCE (μg/L)	trans-1,2-DCE (μg/L)	Carbon tetra-chloride (μg/L)	Chloro-form (μg/L)	1,1-DCA (μg/L)	1,2-DCA (μg/L)	1,1-DCE (μg/L)	1,1,1-TCA (μg/L)	1,1,2-TCA (μg/L)	Freon 11 (μg/L)	Freon 113 (μg/L)	Vinyl chloride (μg/L)
Building 830-Distal South[a]															
Building 830-Source															
830-SRC-GWTS-E	1/9/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
830-SRC-GWTS-E	2/4/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
830-SRC-GWTS-E	3/3/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
830-SRC-GWTS-E	4/1/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
830-SRC-GWTS-E	5/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
830-SRC-GWTS-E	6/2/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
830-SRC-GWTS-I	1/9/08	28	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
830-SRC-GWTS-I	4/1/08	29	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Building 832-Source															
832-SRC-GWTS-E	1/9/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
832-SRC-GWTS-E	2/4/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
832-SRC-GWTS-E	3/3/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
832-SRC-GWTS-E	4/1/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
832-SRC-GWTS-E	5/5/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
832-SRC-GWTS-E	6/2/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
832-SRC-GWTS-I	1/9/08	47	<0.5	0.86	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
832-SRC-GWTS-I	4/1/08	98 D	<0.5	3	<0.5	<0.5	0.82	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:

[a] No influent or effluent monitoring conducted due to VOC treatment at CGSA GWTS.

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.7-4 (Cont.). Analyte detected but not reported in main table.

Location	Date	Detection frequency	1,2-Dichloroethene (total) (μg/L)
Building 830-Distal South[a]			
Building 830-Source			
830-SRC-GWTS-E	**1/9/08**	**0 of 18**	**-**
830-SRC-GWTS-E	**2/4/08**	**0 of 18**	**-**
830-SRC-GWTS-E	**3/3/08**	**0 of 18**	**-**
830-SRC-GWTS-E	**4/1/08**	**0 of 18**	**-**
830-SRC-GWTS-E	**5/5/08**	**0 of 18**	**-**
830-SRC-GWTS-E	**6/2/08**	**0 of 18**	**-**
830-SRC-GWTS-I	**1/9/08**	**0 of 18**	**-**
830-SRC-GWTS-I	**4/1/08**	**0 of 18**	**-**
Building 832-Source			
832-SRC-GWTS-E	**1/9/08**	**0 of 18**	**-**
832-SRC-GWTS-E	**2/4/08**	**0 of 18**	**-**
832-SRC-GWTS-E	**3/3/08**	**0 of 18**	**-**
832-SRC-GWTS-E	**4/1/08**	**0 of 18**	**-**
832-SRC-GWTS-E	**5/5/08**	**0 of 18**	**-**
832-SRC-GWTS-E	**6/2/08**	**0 of 18**	**-**
832-SRC-GWTS-I	**1/9/08**	**0 of 18**	**-**
832-SRC-GWTS-I	**4/1/08**	**1 of 18**	**3**

Notes:

[a] **No influent or effluent monitoring conducted due to VOC treatment at CGSA GWTS.**

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.7-5. Building 832 Canyon OU nitrate and perchlorate in ground water treatment system influent and effluent.

Location	Date	Nitrate (as NO3) (mg/L)	Perchlorate (μg/L)
Building 830-Distal South			
830-DISS-GWTS-E	2/5/08	52 D	<4
830-DISS-GWTS-E	3/3/08	50	<4
830-DISS-GWTS-E	4/1/08	50	<4
830-DISS-GWTS-E	5/8/08	56	<4
830-DISS-GWTS-E	6/9/08	62	<4 O
830-DISS-GWTS-I	2/5/08	49 D	<4
830-DISS-GWTS-I	4/1/08	55	<4
Building 830-Source			
830-SRC-GWTS-E	1/9/08	14	<4
830-SRC-GWTS-E	2/4/08	18	<4
830-SRC-GWTS-E	3/3/08	21 D	<4
830-SRC-GWTS-E	4/1/08	20	<4
830-SRC-GWTS-E	5/5/08	17	<4
830-SRC-GWTS-E	6/2/08	42 D	<4
830-SRC-GWTS-I	1/9/08	13	<4
830-SRC-GWTS-I	4/1/08	8.6	<4
Building 832-Source			
832-SRC-GWTS-E	1/9/08	61	<4
832-SRC-GWTS-E	2/4/08	79 D	<4
832-SRC-GWTS-E	3/3/08	81 D	<4
832-SRC-GWTS-E	4/1/08	84	<4
832-SRC-GWTS-E	5/5/08	86 D	<4
832-SRC-GWTS-E	6/2/08	90 D	<4
832-SRC-GWTS-I	1/9/08	120 D	4.2
832-SRC-GWTS-I	4/1/08	83	9.6

Notes:

See Acronyms and Abbreviations in the Tables section of this report for definitions.

Table 2.7-6. Building 832 Canyon OU treatment facility sampling and analysis plan.

Sample location	Sample identification	Parameter	Frequency
832-SRC GWTS			
Influent Port	**832-SRC-I**	**VOCs**	**Quarterly**
		Perchlorate	**Quarterly**
		Nitrate	**Quarterly**
		pH	**Quarterly**
Effluent Port	**832-SRC-E**	**VOCs**	**Monthly**
		Perchlorate	**Monthly**
		Nitrate	**Monthly**
		PH	**Monthly**
832-SRC SVTS			
Influent Port	**832-SRC-VI**	**No Monitoring Requirements**	
Effluent Port	**832-SRC-VE**	**VOCs**	**Weekly**[a]
Intermediate GAC	**832-SRC-VCF3I**	**VOCs**	**Weekly**[a]
830-SRC GWTS			
Influent Port	**830-SRC-I**	**VOCs**	**Quarterly**
		Perchlorate	**Quarterly**
		Nitrate	**Quarterly**
		PH	**Quarterly**
Effluent Port	**830-SRC-E**	**VOCs**	**Monthly**
		Perchlorate	**Monthly**
		Nitrate	**Monthly**
		PH	**Monthly**
830-SRC SVTS			
Influent Port	**830-SRC-VI**	**No Monitoring Requirements**	
Effluent Port	**830-SRC-VE**	**VOCs**	**Weekly**[a]
Intermediate GAC	**830-SRC-VCF3I**	**VOCs**	**Weekly**[a]

Table 2.7-6 (Cont.). Building 832 Canyon treatment facility sampling and analysis plans.

Sample Location	Sample Identification	Parameter	Frequency
830-DISS GWTS			
Influent Port	**830-DISS-I**	**Perchlorate**	**Quarterly**
		Nitrate	**Quarterly**
		pH	**Quarterly**
Effluent Port	**830-DISS-E**	**Perchlorate**	**Monthly**
		Nitrate	**Monthly**
		pH	**Monthly**

Notes:

One duplicate and one blank (given fictitious labels) shall be taken for every 12 samples.

[a] **Weekly monitoring for VOCs will consist of the use of a flame-ionization detector, photo-ionization detector, or other District-approved VOC detection device.**

See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.7-7. Building 832 Canyon OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
SPRING3	SPR	Qal	A	CMP	E300.0:NO3	1	Y	
SPRING3	SPR	Qal	A	CMP	E300.0:PERC	1	Y	
SPRING3	SPR	Qal	S	CMP	E601	1	Y	
SPRING3	SPR	Qal	S	CMP	E601	3		
SPRING4	SPR	Tps	B	CMP	E300.0:NO3	1	NA	Next sample required 1stQ 2009.
SPRING4	SPR	Tps	B	CMP	E300.0:PERC	1	NA	Next sample required 1stQ 2009.
SPRING4	SPR	Tps	B	CMP	E601	1	NA	Next sample required 1stQ 2009.
SVI-830-031	PTMW	$Tnsc_1$	A	CMP	E300.0:NO3	1	Y	
SVI-830-031	PTMW	$Tnsc_1$	A	CMP	E300.0:PERC	1	Y	
SVI-830-031	PTMW	$Tnsc_1$	S	CMP	E601	1	Y	
SVI-830-031	PTMW	$Tnsc_1$	S	CMP	E601	3		
SVI-830-032	PTMW	$Tnsc_1$	A	CMP	E300.0:NO3	1	N	Dry.
SVI-830-032	PTMW	$Tnsc_1$	A	CMP	E300.0:PERC	1	N	Dry.
SVI-830-032	PTMW	$Tnsc_1$	S	CMP	E601	1	N	Dry.
SVI-830-032	PTMW	$Tnsc_1$	S	CMP	E601	3		
SVI-830-033	PTMW	$Tnsc_1$	A	CMP	E300.0:NO3	1	Y	
SVI-830-033	PTMW	$Tnsc_1$	A	CMP	E300.0:PERC	1	Y	
SVI-830-033	PTMW	$Tnsc_1$	S	CMP	E601	1	Y	
SVI-830-033	PTMW	$Tnsc_1$	S	CMP	E601	3		
SVI-830-035	PTMW	$Tnsc_1$	A	CMP	E300.0:NO3	1	Y	
SVI-830-035	PTMW	$Tnsc_1$	A	CMP	E300.0:PERC	1	Y	
SVI-830-035	PTMW	$Tnsc_1$	S	CMP	E601	1	Y	
SVI-830-035	PTMW	$Tnsc_1$	S	CMP	E601	3		
W-830-04A	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-830-04A	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-830-04A	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-830-04A	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-830-05	PTMW	$Tnbs_2$-$Tnsc_{1c}$	A	CMP	E300.0:NO3	1	Y	
W-830-05	PTMW	$Tnbs_2$-$Tnsc_{1c}$	A	CMP	E300.0:PERC	1	Y	
W-830-05	PTMW	$Tnbs_2$-$Tnsc_{1c}$	S	CMP	E601	1	Y	
W-830-05	PTMW	$Tnbs_2$-$Tnsc_{1c}$	S	CMP	E601	3		
W-830-07	PTMW	$Tnsc_1$	A	CMP	E300.0:NO3	1	N	Dry.
W-830-07	PTMW	$Tnsc_1$	A	CMP	E300.0:PERC	1	N	Dry.
W-830-07	PTMW	$Tnsc_1$	S	CMP	E601	1	N	Dry.
W-830-07	PTMW	$Tnsc_1$	S	CMP	E601	3		
W-830-09	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-830-09	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-830-09	PTMW	Upper $Tnbs_1$	S	CMP	E601	1	Y	
W-830-09	PTMW	Upper $Tnbs_1$	S	CMP	E601	3		
W-830-10	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-830-10	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-830-10	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-830-10	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-830-11	PTMW	$Tnsc_{1c}$	A	CMP	E300.0:NO3	1	Y	
W-830-11	PTMW	$Tnsc_{1c}$	A	CMP	E300.0:PERC	1	Y	
W-830-11	PTMW	$Tnsc_{1c}$	S	CMP	E601	1	Y	
W-830-11	PTMW	$Tnsc_{1c}$	S	CMP	E601	3		
W-830-12	PTMW	Lower $Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-830-12	PTMW	Lower $Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-830-12	PTMW	Lower $Tnbs_1$	S	CMP	E601	1	Y	
W-830-12	PTMW	Lower $Tnbs_1$	S	CMP	E601	3		
W-830-13	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-830-13	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-830-13	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-830-13	PTMW	$Tnbs_2$	S	CMP	E601	3		

Table 2.7-7 (Con't.). Building 832 Canyon OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-830-14	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-830-14	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-830-14	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-830-14	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-830-15	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-830-15	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-830-15	PTMW	Upper $Tnbs_1$	S	CMP	E601	1	Y	
W-830-15	PTMW	Upper $Tnbs_1$	S	CMP	E601	3		
W-830-16	GW	$Tnsc_{1b}$	S	CMP	E300.0:NO3	1	Y	
W-830-16	GW	$Tnsc_{1b}$	S	CMP	E300.0:NO3	3		
W-830-16	GW	$Tnsc_{1b}$	S	CMP	E300.0:PERC	1	Y	
W-830-16	GW	$Tnsc_{1b}$	S	CMP	E300.0:PERC	3		
W-830-16	GW	$Tnsc_{1b}$	Q	CMP	E601	1	Y	
W-830-16	GW	$Tnsc_{1b}$	Q	CMP	E601	2	Y	
W-830-16	GW	$Tnsc_{1b}$	Q	CMP	E601	3		
W-830-16	GW	$Tnsc_{1b}$	Q	CMP	E601	4		
W-830-17	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-830-17	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-830-17	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-830-17	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-830-1730	GW	$Tnsc_{1b}$	S	CMP	E300.0:NO3	1	Y	
W-830-1730	GW	$Tnsc_{1b}$	S	CMP	E300.0:NO3	3		
W-830-1730	GW	$Tnsc_{1b}$	S	CMP	E300.0:PERC	1	Y	
W-830-1730	GW	$Tnsc_{1b}$	S	CMP	E300.0:PERC	3		
W-830-1730	GW	$Tnsc_{1b}$	Q	CMP	E601	1	Y	
W-830-1730	GW	$Tnsc_{1b}$	Q	CMP	E601	2	Y	
W-830-1730	GW	$Tnsc_{1b}$	Q	CMP	E601	3		
W-830-1730	GW	$Tnsc_{1b}$	Q	CMP	E601	4		
W-830-18	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-830-18	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-830-18	PTMW	Upper $Tnbs_1$	S	CMP	E601	1	Y	
W-830-18	PTMW	Upper $Tnbs_1$	S	CMP	E601	3		
W-830-1807	EW	$Qal/Tnsc_1$	A	CMP-TF	E300.0:NO3	1	Y	830-SRC extraction well.
W-830-1807	EW	$Qal/Tnsc_1$	A	CMP-TF	E300.0:PERC	1	Y	830-SRC extraction well.
W-830-1807	EW	$Qal/Tnsc_1$	S	CMP-TF	E601	1	Y	830-SRC extraction well.
W-830-1807	EW	$Qal/Tnsc_1$		DIS	E601	2	Y	830-SRC extraction well.
W-830-1807	EW	$Qal/Tnsc_1$	S	CMP-TF	E601	3		830-SRC extraction well.
W-830-1829	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:NO3	1	N	830-SRC extraction well. Insufficient water.
W-830-1829	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:PERC	1	N	830-SRC extraction well. Insufficient water.
W-830-1829	EW	$Tnsc_{1b}$	S	CMP-TF	E601	1	N	830-SRC extraction well. Insufficient water.
W-830-1829	EW	$Tnsc_{1b}$	S	CMP-TF	E601	3		830-SRC extraction well.
W-830-1830	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-830-1830	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-830-1830	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-830-1830	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-830-1831	GW	$Tnsc_{1b}$	S	CMP	E300.0:NO3	1	Y	
W-830-1831	GW	$Tnsc_{1b}$	S	CMP	E300.0:NO3	3		
W-830-1831	GW	$Tnsc_{1b}$	S	CMP	E300.0:PERC	1	Y	
W-830-1831	GW	$Tnsc_{1b}$	S	CMP	E300.0:PERC	3		
W-830-1831	GW	$Tnsc_{1b}$	Q	CMP	E601	1	Y	
W-830-1831	GW	$Tnsc_{1b}$	Q	CMP	E601	2	Y	
W-830-1831	GW	$Tnsc_{1b}$	Q	CMP	E601	3		
W-830-1831	GW	$Tnsc_{1b}$	Q	CMP	E601	4		

Table 2.7-7 (Con't.). Building 832 Canyon OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-830-1832	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-830-1832	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-830-1832	PTMW	Upper $Tnbs_1$	S	CMP	E601	1	Y	
W-830-1832	PTMW	Upper $Tnbs_1$	S	CMP	E601	3		
W-830-19	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:NO3	1	Y	830-SRC extraction well.
W-830-19	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:PERC	1	Y	830-SRC extraction well.
W-830-19	EW	$Tnsc_{1b}$	S	CMP-TF	E601	1	Y	830-SRC extraction well.
W-830-19	EW	$Tnsc_{1b}$	S	CMP-TF	E601	3		830-SRC extraction well.
W-830-20	GW	Upper $Tnbs_1$	S	CMP	E300.0:NO3	1	Y	
W-830-20	GW	Upper $Tnbs_1$	S	CMP	E300.0:NO3	3		
W-830-20	GW	Upper $Tnbs_1$	S	CMP	E300.0:PERC	1	Y	
W-830-20	GW	Upper $Tnbs_1$	S	CMP	E300.0:PERC	3		
W-830-20	GW	Upper $Tnbs_1$	Q	CMP	E601	1	Y	
W-830-20	GW	Upper $Tnbs_1$	Q	CMP	E601	2	Y	
W-830-20	GW	Upper $Tnbs_1$	Q	CMP	E601	3		
W-830-20	GW	Upper $Tnbs_1$	Q	CMP	E601	4		
W-830-21	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-830-21	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-830-21	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-830-21	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-830-22	PTMW	$Tnsc_{1a}$	A	CMP	E300.0:NO3	1	Y	
W-830-22	PTMW	$Tnsc_{1a}$	A	CMP	E300.0:PERC	1	Y	
W-830-22	PTMW	$Tnsc_{1a}$	S	CMP	E601	1	Y	
W-830-22	PTMW	$Tnsc_{1a}$	S	CMP	E601	3		
W-830-2213	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:NO3	1	Y	830-SRC extraction well.
W-830-2213	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:PERC	1	Y	830-SRC extraction well.
W-830-2213	EW	$Tnsc_{1b}$	S	CMP-TF	E601	1	Y	830-SRC extraction well.
W-830-2213	EW	$Tnsc_{1b}$	S	CMP-TF	E601	3		830-SRC extraction well.
W-830-2214	EW	$Tnsc_{1a}$	A	CMP-TF	E300.0:NO3	1	Y	830-SRC extraction well.
W-830-2214	EW	$Tnsc_{1a}$		DIS	E300.0:NO3	2	Y	830-SRC extraction well.
W-830-2214	EW	$Tnsc_{1a}$	A	CMP-TF	E300.0:PERC	1	Y	830-SRC extraction well.
W-830-2214	EW	$Tnsc_{1a}$		DIS	E300.0:PERC	2	Y	830-SRC extraction well.
W-830-2214	EW	$Tnsc_{1a}$	S	CMP-TF	E601	1	Y	830-SRC extraction well.
W-830-2214	EW	$Tnsc_{1a}$		DIS	E601	2	Y	830-SRC extraction well.
W-830-2214	EW	$Tnsc_{1a}$	S	CMP-TF	E601	3		830-SRC extraction well.
W-830-2215	EW	Upper $Tnbs_1$	A	CMP-TF	E300.0:NO3	1	Y	830-SRC extraction well.
W-830-2215	EW	Upper $Tnbs_1$		DIS	E300.0:NO3	2	Y	830-SRC extraction well.
W-830-2215	EW	Upper $Tnbs_1$	A	CMP-TF	E300.0:PERC	1	Y	830-SRC extraction well.
W-830-2215	EW	Upper $Tnbs_1$		DIS	E300.0:PERC	2	Y	830-SRC extraction well.
W-830-2215	EW	Upper $Tnbs_1$	S	CMP-TF	E601	1	Y	830-SRC extraction well.
W-830-2215	EW	Upper $Tnbs_1$		DIS	E601	2	Y	830-SRC extraction well.
W-830-2215	EW	Upper $Tnbs_1$	S	CMP-TF	E601	3		830-SRC extraction well.
W-830-2216	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	830-DISS extraction well.
W-830-2216	PTMW	$Tnbs_2$		DIS	E300.0:NO3	2	Y	830-DISS extraction well.
W-830-2216	PTMW	$Tnbs_2$		DIS	E300.0:NO3	3		830-DISS extraction well.
W-830-2216	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	830-DISS extraction well.
W-830-2216	PTMW	$Tnbs_2$		DIS	E300.0:PERC	2	Y	830-DISS extraction well.
W-830-2216	PTMW	$Tnbs_2$		DIS	E300.0:PERC	3		830-DISS extraction well.
W-830-2216	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	830-DISS extraction well.
W-830-2216	PTMW	$Tnbs_2$		DIS	E601	2	Y	830-DISS extraction well.
W-830-2216	PTMW	$Tnbs_2$	S	CMP	E601	3		830-DISS extraction well.
W-830-2216	PTMW	$Tnbs_2$		DIS	E601	4		830-DISS extraction well.
W-830-2311	GW	$Tnsc_{1a}$	S	CMP	E300.0:NO3	1	Y	
W-830-2311	GW	$Tnsc_{1a}$	S	CMP	E300.0:NO3	3		
W-830-2311	GW	$Tnsc_{1a}$	S	CMP	E300.0:PERC	1	Y	

Table 2.7-7 (Con't.). Building 832 Canyon OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-830-2311	GW	$Tnsc_{1a}$	S	CMP	E300.0:PERC	3		
W-830-2311	GW	$Tnsc_{1a}$	Q	CMP	E601	2	Y	
W-830-2311	GW	$Tnsc_{1a}$	Q	CMP	E601	3		
W-830-2311	GW	$Tnsc_{1a}$	Q	CMP	E601	4		
W-830-2311	GW	$Tnsc_{1a}$	Q	CMP	E624	1	Y	
W-830-2311	GW	$Tnsc_{1a}$		DIS	E8330	1	Y	
W-830-2311	GW	$Tnsc_{1a}$	A	CMP	E8330:R+H	4		
W-830-25	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	N	Dry.
W-830-25	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	N	Dry.
W-830-25	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	N	Dry.
W-830-25	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-830-26	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-830-26	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-830-26	PTMW	Upper $Tnbs_1$	S	CMP	E601	1	Y	
W-830-26	PTMW	Upper $Tnbs_1$	S	CMP	E601	3		
W-830-27	PTMW	$Tnsc_{1a}$	A	CMP	E300.0:NO3	1	Y	
W-830-27	PTMW	$Tnsc_{1a}$	A	CMP	E300.0:PERC	1	Y	
W-830-27	PTMW	$Tnsc_{1a}$	S	CMP	E601	1	Y	
W-830-27	PTMW	$Tnsc_{1a}$	S	CMP	E601	3		
W-830-28	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-830-28	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-830-28	PTMW	Upper $Tnbs_1$	S	CMP	E601	1	Y	
W-830-28	PTMW	Upper $Tnbs_1$	S	CMP	E601	3		
W-830-29	PTMW	Lower $Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-830-29	PTMW	Lower $Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-830-29	PTMW	Lower $Tnbs_1$	S	CMP	E601	1	Y	
W-830-29	PTMW	Lower $Tnbs_1$	S	CMP	E601	3		
W-830-30	PTMW	Qal/$Tnsc_1$	A	CMP	E300.0:NO3	1	Y	
W-830-30	PTMW	Qal/$Tnsc_1$	A	CMP	E300.0:PERC	1	Y	
W-830-30	PTMW	Qal/$Tnsc_1$	S	CMP	E601	1	Y	
W-830-30	PTMW	Qal/$Tnsc_1$	S	CMP	E601	3		
W-830-34	PTMW	Qal/$Tnsc_1$	A	CMP	E300.0:NO3	1	Y	
W-830-34	PTMW	Qal/$Tnsc_1$	A	CMP	E300.0:PERC	1	Y	
W-830-34	PTMW	Qal/$Tnsc_1$	S	CMP	E601	1	Y	
W-830-34	PTMW	Qal/$Tnsc_1$	S	CMP	E601	3		
W-830-49	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:NO3	1	Y	830-SRC extraction well.
W-830-49	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:PERC	1	Y	830-SRC extraction well.
W-830-49	EW	$Tnsc_{1b}$		DIS	E601	2	Y	830-SRC extraction well.
W-830-49	EW	$Tnsc_{1b}$	S	CMP-TF	E601	3		830-SRC extraction well.
W-830-49	EW	$Tnsc_{1b}$	S	CMP-TF	E624	1	Y	830-SRC extraction well.
W-830-50	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-830-50	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-830-50	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-830-50	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-830-51	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:NO3	1	Y	830-DISS extraction well.
W-830-51	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:PERC	1	Y	830-DISS extraction well.
W-830-51	EW	$Tnsc_{1b}$	S	CMP-TF	E601	1	Y	830-DISS extraction well.
W-830-51	EW	$Tnsc_{1b}$	S	CMP-TF	E601	3		830-DISS extraction well.
W-830-52	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:NO3	1	Y	830-DISS extraction well.
W-830-52	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:PERC	1	Y	830-DISS extraction well.
W-830-52	EW	$Tnsc_{1b}$	S	CMP-TF	E601	1	Y	830-DISS extraction well.
W-830-52	EW	$Tnsc_{1b}$	S	CMP-TF	E601	3		830-DISS extraction well.
W-830-53	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:NO3	1	Y	830-DISS extraction well.
W-830-53	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:PERC	1	Y	830-DISS extraction well.
W-830-53	EW	$Tnsc_{1b}$	S	CMP-TF	E601	1	Y	830-DISS extraction well.

Table 2.7-7 (Con't.). Building 832 Canyon OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-830-53	EW	$Tnsc_{1b}$	S	CMP-TF	E601	3		830-DISS extraction well.
W-830-54	PTMW	$Tnsc_{1c}$	A	CMP	E300.0:NO3	1	Y	
W-830-54	PTMW	$Tnsc_{1c}$	A	CMP	E300.0:PERC	1	Y	
W-830-54	PTMW	$Tnsc_{1c}$	S	CMP	E601	1	Y	
W-830-54	PTMW	$Tnsc_{1c}$	S	CMP	E601	3		
W-830-55	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-830-55	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-830-55	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-830-55	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-830-56	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-830-56	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-830-56	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-830-56	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-830-57	EW	Upper $Tnbs_1$	A	CMP-TF	E300.0:NO3	1	Y	830-SRC extraction well.
W-830-57	EW	Upper $Tnbs_1$	A	CMP-TF	E300.0:PERC	1	Y	830-SRC extraction well.
W-830-57	EW	Upper $Tnbs_1$	S	CMP-TF	E601	1	Y	830-SRC extraction well.
W-830-57	EW	Upper $Tnbs_1$		DIS	E601	2	Y	830-SRC extraction well.
W-830-57	EW	Upper $Tnbs_1$	S	CMP-TF	E601	3		830-SRC extraction well.
W-830-58	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-830-58	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-830-58	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-830-58	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-830-59	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:NO3	1	Y	830-SRC extraction well.
W-830-59	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:PERC	1	Y	830-SRC extraction well.
W-830-59	EW	$Tnsc_{1b}$	S	CMP-TF	E601	1	Y	830-SRC extraction well.
W-830-59	EW	$Tnsc_{1b}$		DIS	E601	2	Y	830-SRC extraction well.
W-830-59	EW	$Tnsc_{1b}$	S	CMP-TF	E601	3		830-SRC extraction well.
W-830-60	EW	Upper $Tnbs_1$	A	CMP-TF	E300.0:NO3	1	Y	830-SRC extraction well.
W-830-60	EW	Upper $Tnbs_1$	A	CMP-TF	E300.0:PERC	1	Y	830-SRC extraction well.
W-830-60	EW	Upper $Tnbs_1$	S	CMP-TF	E601	1	Y	830-SRC extraction well.
W-830-60	EW	Upper $Tnbs_1$		DIS	E601	2	Y	830-SRC extraction well.
W-830-60	EW	Upper $Tnbs_1$	S	CMP-TF	E601	3		830-SRC extraction well.
W-831-01	MWB	Lower $Tnbs_1$	B	CMP	E300.0:NO3	1	NA	Next sample required 1stQ 2009.
W-831-01	MWB	Lower $Tnbs_1$	B	CMP	E300.0:PERC	1	NA	Next sample required 1stQ 2009.
W-831-01	MWB	Lower $Tnbs_1$	B	CMP	E601	1	NA	Next sample required 1stQ 2009.
W-832-01	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:NO3	1	Y	832-SRC extraction well.
W-832-01	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:PERC	1	Y	832-SRC extraction well.
W-832-01	EW	$Tnsc_{1b}$	S	CMP-TF	E601	1	Y	832-SRC extraction well.
W-832-01	EW	$Tnsc_{1b}$	S	CMP-TF	E601	3		832-SRC extraction well.
W-832-06	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-832-06	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-832-06	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-832-06	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-832-09	PTMW	Lower $Tnbs_1$	A	CMP	E300.0:NO3	1	Y	
W-832-09	PTMW	Lower $Tnbs_1$	A	CMP	E300.0:PERC	1	Y	
W-832-09	PTMW	Lower $Tnbs_1$	S	CMP	E601	1	Y	
W-832-09	PTMW	Lower $Tnbs_1$	S	CMP	E601	3		
W-832-10	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:NO3	1	Y	832-SRC extraction well.
W-832-10	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:PERC	1	Y	832-SRC extraction well.
W-832-10	EW	$Tnsc_{1b}$	S	CMP-TF	E601	1	Y	832-SRC extraction well.
W-832-10	EW	$Tnsc_{1b}$	S	CMP-TF	E601	3		832-SRC extraction well.
W-832-11	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:NO3	1	Y	832-SRC extraction well.
W-832-11	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:PERC	1	Y	832-SRC extraction well.
W-832-11	EW	$Tnsc_{1b}$	S	CMP-TF	E601	1	Y	832-SRC extraction well.
W-832-11	EW	$Tnsc_{1b}$	S	CMP-TF	E601	3		832-SRC extraction well.

Table 2.7-7 (Con't.). Building 832 Canyon OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-832-12	EW	Qal/fill	A	CMP-TF	E300.0:NO3	1	Y	832-SRC extraction well.
W-832-12	EW	Qal/fill	A	CMP-TF	E300.0:PERC	1	Y	832-SRC extraction well.
W-832-12	EW	Qal/fill	S	CMP-TF	E601	1	Y	832-SRC extraction well.
W-832-12	EW	Qal/fill	S	CMP-TF	E601	3		832-SRC extraction well.
W-832-13	PTMW	Qal/fill	A	CMP	E300.0:NO3	1	Y	
W-832-13	PTMW	Qal/fill	A	CMP	E300.0:PERC	1	Y	
W-832-13	PTMW	Qal/fill	S	CMP	E601	1	Y	
W-832-13	PTMW	Qal/fill	S	CMP	E601	3		
W-832-14	PTMW	Qal/fill	A	CMP	E300.0:NO3	1	N	Dry.
W-832-14	PTMW	Qal/fill	A	CMP	E300.0:PERC	1	N	Dry.
W-832-14	PTMW	Qal/fill	S	CMP	E601	1	N	Dry.
W-832-14	PTMW	Qal/fill	S	CMP	E601	3		
W-832-15	EW	Qal/fill	B	CMP-TF	E8330:R+H	1	NA	832-SRC extraction well. Next sample required 1stQ 2009.
W-832-15	EW	Qal/fill	A	CMP-TF	E300.0:NO3	1	Y	832-SRC extraction well.
W-832-15	EW	Qal/fill	A	CMP-TF	E300.0:PERC	1	Y	832-SRC extraction well.
W-832-15	EW	Qal/fill	S	CMP-TF	E601	1	Y	832-SRC extraction well.
W-832-15	EW	Qal/fill	S	CMP-TF	E601	3		832-SRC extraction well.
W-832-16	PTMW	Qal/fill	A	CMP	E300.0:NO3	1	N	Dry.
W-832-16	PTMW	Qal/fill	A	CMP	E300.0:PERC	1	N	Dry.
W-832-16	PTMW	Qal/fill	S	CMP	E601	1	N	Dry.
W-832-16	PTMW	Qal/fill	S	CMP	E601	3		
W-832-17	PTMW	Qal/fill	A	CMP	E300.0:NO3	1	N	Dry.
W-832-17	PTMW	Qal/fill	A	CMP	E300.0:PERC	1	N	Dry.
W-832-17	PTMW	Qal/fill	S	CMP	E601	1	N	Dry.
W-832-17	PTMW	Qal/fill	S	CMP	E601	3		
W-832-18	PTMW	Qal/fill	A	CMP	E300.0:NO3	1	N	Dry.
W-832-18	PTMW	Qal/fill	A	CMP	E300.0:PERC	1	N	Dry.
W-832-18	PTMW	Qal/fill	S	CMP	E601	1	N	Dry.
W-832-18	PTMW	Qal/fill	S	CMP	E601	3		
W-832-19	PTMW	Qal/fill	A	CMP	E300.0:NO3	1	N	Dry.
W-832-19	PTMW	Qal/fill	A	CMP	E300.0:PERC	1	N	Dry.
W-832-19	PTMW	Qal/fill	S	CMP	E601	1	N	Dry.
W-832-19	PTMW	Qal/fill	S	CMP	E601	3		
W-832-1927	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-832-1927	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-832-1927	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-832-1927	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-832-20	PTMW	Qal/fill	A	CMP	E300.0:NO3	1	N	Dry.
W-832-20	PTMW	Qal/fill	A	CMP	E300.0:PERC	1	N	Dry.
W-832-20	PTMW	Qal/fill	S	CMP	E601	1	N	Dry.
W-832-20	PTMW	Qal/fill	S	CMP	E601	3		
W-832-21	PTMW	Qal/fill	A	CMP	E300.0:NO3	1	N	Dry.
W-832-21	PTMW	Qal/fill	A	CMP	E300.0:PERC	1	N	Dry.
W-832-21	PTMW	Qal/fill	S	CMP	E601	1	N	Dry.
W-832-21	PTMW	Qal/fill	S	CMP	E601	3		
W-832-2112	GW	Upper $Tnbs_1$	S	CMP	E300.0:NO3	1	Y	
W-832-2112	GW	Upper $Tnbs_1$	S	CMP	E300.0:NO3	3		
W-832-2112	GW	Upper $Tnbs_1$	S	CMP	E300.0:PERC	1	Y	
W-832-2112	GW	Upper $Tnbs_1$	S	CMP	E300.0:PERC	3		
W-832-2112	GW	Upper $Tnbs_1$	Q	CMP	E601	1	Y	
W-832-2112	GW	Upper $Tnbs_1$	Q	CMP	E601	2	Y	
W-832-2112	GW	Upper $Tnbs_1$	Q	CMP	E601	3		
W-832-2112	GW	Upper $Tnbs_1$	Q	CMP	E601	4		
W-832-22	PTMW	Qal/fill	A	CMP	E300.0:NO3	1	N	Dry.
W-832-22	PTMW	Qal/fill	A	CMP	E300.0:PERC	1	N	Dry.

Table 2.7-7 (Con't.). Building 832 Canyon OU ground and surface water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-832-22	PTMW	Qal/fill	S	CMP	E601	1	N	Dry.
W-832-22	PTMW	Qal/fill	S	CMP	E601	3		
W-832-23	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-832-23	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-832-23	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-832-23	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-832-24	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:NO3	1	Y	
W-832-24	PTMW	$Tnsc_{1b}$	A	CMP	E300.0:PERC	1	Y	
W-832-24	PTMW	$Tnsc_{1b}$	S	CMP	E601	1	Y	
W-832-24	PTMW	$Tnsc_{1b}$	S	CMP	E601	3		
W-832-25	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:NO3	1	Y	832-SRC extraction well.
W-832-25	EW	$Tnsc_{1b}$	A	CMP-TF	E300.0:PERC	1	Y	832-SRC extraction well.
W-832-25	EW	$Tnsc_{1b}$	S	CMP-TF	E601	1	Y	832-SRC extraction well.
W-832-25	EW	$Tnsc_{1b}$		DIS	E601	2	Y	832-SRC extraction well.
W-832-25	EW	$Tnsc_{1b}$	S	CMP-TF	E601	3		832-SRC extraction well.
W-832-SC1	PTMW	Qal	A	CMP	E300.0:NO3	1	N	Dry.
W-832-SC1	PTMW	Qal	A	CMP	E300.0:PERC	1	N	Dry.
W-832-SC1	PTMW	Qal	S	CMP	E601	1	N	Dry.
W-832-SC1	PTMW	Qal	S	CMP	E601	3		
W-832-SC2	PTMW	Qal	A	CMP	E300.0:NO3	1	N	Dry.
W-832-SC2	PTMW	Qal	A	CMP	E300.0:PERC	1	N	Dry.
W-832-SC2	PTMW	Qal	S	CMP	E601	1	N	Dry.
W-832-SC2	PTMW	Qal	S	CMP	E601	3		
W-832-SC3	PTMW	Qal	A	CMP	E300.0:NO3	1	Y	
W-832-SC3	PTMW	Qal	A	CMP	E300.0:PERC	1	Y	
W-832-SC3	PTMW	Qal	S	CMP	E601	1	Y	
W-832-SC3	PTMW	Qal	S	CMP	E601	3		
W-832-SC4	PTMW	Qal	A	CMP	E300.0:NO3	1	Y	
W-832-SC4	PTMW	Qal	A	CMP	E300.0:PERC	1	Y	
W-832-SC4	PTMW	Qal	S	CMP	E601	1	Y	
W-832-SC4	PTMW	Qal	S	CMP	E601	3		
W-870-01	PTMW	Qal	A	CMP	E300.0:NO3	1	N	Dry.
W-870-01	PTMW	Qal	A	CMP	E300.0:PERC	1	N	Dry.
W-870-01	PTMW	Qal	S	CMP	E601	1	N	Dry.
W-870-01	PTMW	Qal	S	CMP	E601	3		
W-870-02	PTMW	$Tnbs_2$	A	CMP	E300.0:NO3	1	Y	
W-870-02	PTMW	$Tnbs_2$	A	CMP	E300.0:PERC	1	Y	
W-870-02	PTMW	$Tnbs_2$	S	CMP	E601	1	Y	
W-870-02	PTMW	$Tnbs_2$	S	CMP	E601	3		
W-880-01	GW	$Tnbs_2$	S	CMP	E300.0:NO3	NA	NA	See High Explosives Process Area.
W-880-01	GW	$Tnbs_2$	S	CMP	E300.0:PERC	NA	NA	See High Explosives Process Area.
W-880-01	GW	$Tnbs_2$	Q	CMP	E601	NA	NA	See High Explosives Process Area.
W-880-02	GW	Qal	S	CMP	E300.0:NO3	NA	NA	See High Explosives Process Area.
W-880-02	GW	Qal	S	CMP	E300.0:PERC	NA	NA	See High Explosives Process Area.
W-880-02	GW	Qal	Q	CMP	E601	NA	NA	See High Explosives Process Area.
W-880-03	GW	$Tnsc_{1b}$	S	CMP	E300.0:NO3	NA	NA	See High Explosives Process Area.
W-880-03	GW	$Tnsc_{1b}$	S	CMP	E300.0:PERC	NA	NA	See High Explosives Process Area.
W-880-03	GW	$Tnsc_{1b}$	Q	CMP	E601	NA	NA	See High Explosives Process Area.

Notes:
Building 830 primary Contaminants of Concern in Ground Water: VOCs (E601 or E624).
Building 830 secondary COC: nitrate (E300:NO3).
Building 830 secondary COC: perchlorate (E300.0:PERC).
Building 832 primary Contaminants of Concern in Ground Water: VOCs (E601 or E624).
Building 832 secondary COC: nitrate (E300:NO3).
Building 832 secondary COC: perchlorate (E300.0:PERC).
See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.7-8. Building 832-Source (832-SRC) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
832-SRC	January	7.9	0.34	0.13	1.4	NA	NA
	February	4.7	1.8	0.13	2.6	NA	NA
	March	2.3	2.5	0.16	3.3	NA	NA
	April	2.8	2.6	0.18	3.6	NA	NA
	May	2.4	1.8	0.13	2.7	NA	NA
	June	11	1.5	0.11	2.4	NA	NA
Total		31	10	0.84	16	NA	NA

Table 2.7-9. Building 830-Source (830-SRC) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
830-SRC	January	77	25	0	12	NA	NA
	February	57	38	0.066	9.7	NA	NA
	March	680	56	0.061	11	NA	NA
	April	440	67	0.045	7.2	NA	NA
	May	150	54	0.050	4.3	NA	NA
	June	26	50	0.035	4.7	NA	NA
Total		1,400	290	0.26	48	NA	NA

Table 2.7-10. Building 830-Distal South (830-DISS) mass removed, January 1, 2008 through June 30, 2008.

Treatment facility	Month	SVTS VOC mass removed (g)	GWTS VOC mass removed (g)	Perchlorate mass removed (g)	Nitrate mass removed (kg)	RDX mass removed (g)	TBOS/TKEBS mass removed (g)
830-DISS	January	NA	0	0	0	NA	NA
	February	NA	4.0	0	4.0	NA	NA
	March	NA	6.2	0	6.1	NA	NA
	April	NA	6.1	0	5.2	NA	NA
	May	NA	5.2	0	4.4	NA	NA
	June	NA	25	0	21	NA	NA
Total		NA	46	0	41	NA	NA

Table 2.8-1. Building 801 and Pit 8 Landfill area ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
K8-01	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
K8-01	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
K8-01	PTMW	Upper $Tnbs_1$	S	CMP	E601	2	Y	
K8-01	PTMW	Upper $Tnbs_1$	S	CMP	E601	4		
K8-01	PTMW	Upper $Tnbs_1$		DIS	E906	2	Y	
K8-01	PTMW	Upper $Tnbs_1$		DIS	E906	4		
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	A	CMP	CMPTRIMET	2	Y	
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	A	CMP	E340.2	2	Y	
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	A	CMP	E601	2	Y	
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$		DIS	E601	4		
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	A	CMP	E8330	2	Y	
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	Q	CMP	E906	1	Y	
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	Q	CMP	E906	2	Y	
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	Q	CMP	E906	3		
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	Q	CMP	E906	4		
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	B	CMP	MS:THISO	2	NA	Next sample required 2ndQ 2009.
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	B	CMP	MS:UISO	2	NA	Next sample required 2ndQ 2009.
K8-02B	CMP DMW	$Tnsc_1$/Upper $Tnbs_1$	A	CMP	T26METALS	2	Y	
K8-03B	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
K8-03B	PTMW	Upper $Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
K8-03B	PTMW	Upper $Tnbs_1$	S	CMP	E601	2	Y	
K8-03B	PTMW	Upper $Tnbs_1$	S	CMP	E601	4		
K8-04	CMP DMW	Upper $Tnbs_1$	A	CMP	CMPTRIMET	2	Y	
K8-04	CMP DMW	Upper $Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
K8-04	CMP DMW	Upper $Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
K8-04	CMP DMW	Upper $Tnbs_1$	A	CMP	E340.2	2	Y	
K8-04	CMP DMW	Upper $Tnbs_1$	A	CMP	E601	2	Y	
K8-04	CMP DMW	Upper $Tnbs_1$		DIS	E601	4		
K8-04	CMP DMW	Upper $Tnbs_1$	A	CMP	E8330	2	Y	
K8-04	CMP DMW	Upper $Tnbs_1$	Q	CMP	E906	1	Y	
K8-04	CMP DMW	Upper $Tnbs_1$	Q	CMP	E906	2	Y	
K8-04	CMP DMW	Upper $Tnbs_1$	Q	CMP	E906	3		
K8-04	CMP DMW	Upper $Tnbs_1$	Q	CMP	E906	4		
K8-04	CMP DMW	Upper $Tnbs_1$	B	CMP	MS:THISO	2	NA	Next sample required 2ndQ 2009.
K8-04	CMP DMW	Upper $Tnbs_1$	B	CMP	MS:UISO	2	NA	Next sample required 2ndQ 2009.
K8-04	CMP DMW	Upper $Tnbs_1$	A	CMP	T26METALS	2	Y	
K8-05	CMP DMW	$Tnbs_2$	B	CMP	CMPTRIMET	2	N	Dry.
K8-05	CMP DMW	$Tnbs_2$	B	CMP	E300.0:NO3	2	N	Dry.
K8-05	CMP DMW	$Tnbs_2$	B	CMP	E300.0:PERC	2	N	Dry.
K8-05	CMP DMW	$Tnbs_2$	B	CMP	E340.2	2	N	Dry.
K8-05	CMP DMW	$Tnbs_2$	B	CMP	E601	2	N	Dry.
K8-05	CMP DMW	$Tnbs_2$	B	CMP	E8330	2	N	Dry.
K8-05	CMP DMW	$Tnbs_2$	B	CMP	E906	2	N	Dry.
K8-05	CMP DMW	$Tnbs_2$	B	CMP	MS:THISO	2	N	Dry.
K8-05	CMP DMW	$Tnbs_2$	B	CMP	MS:UISO	2	N	Dry.
K8-05	CMP DMW	$Tnbs_2$	B	CMP	T26METALS	2	N	Dry.

Notes appear on the following page.

Table 2.8-1 (Cont.). Building 801 and Pit 8 Landfill area ground water sampling and analysis plan.

Notes:
No COCs in ground water.
CMP Detection monitoring analyte: tritium (E906) sampled quarterly.
CMP Detection monitoring analyte: VOCs (E601 or E624) sampled annually.
CMP Detection monitoring analyte: fluoride (E340.2) sampled annually.
CMP Detection monitoring analyte: HE compounds (E8330:R+H) sampled annually.
CMP Detection monitoring analyte: nitrate (E300.0:NO3) sampled annually.
CMP Detection monitoring analyte: perchlorate (E300.0:PERC) sampled annually.
CMP Detection monitoring analytes: Title 26 metals plus U, Th, Li, Be (T26METALS and CMPTRIMET) sampled annually.
CMP Detection monitoring analytes: uranium and thorium isotopes by mass spectrometry (MS:UISO and MS:THISO) sampled biennially.
Contaminants of Concern in the Vadose Zone not detected in Ground Water: HE Compounds and uranium.
Building 801 primary COC: VOCs (E601 or E624).
Building 801 secondary COC: nitrate (E300.0:NO3).
Building 801 secondary COC: uranium (MS:UISO) .

See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.8-2. Building 833 area ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-833-03	PTMW	Tps	A	CMP	E601	1	N	Dry.
W-833-12	PTMW	Tps	A	CMP	E601	1	Y	
W-833-18	PTMW	Tps	A	CMP	E601	1	N	Insufficient water.
W-833-22	PTMW	Tps	B	CMP	E601	1	N	Dry.
W-833-28	PTMW	Tps	A	CMP	E601	1	Y	
W-833-30	PTMW	Lower $Tnbs_1$	S	CMP	E601	1	Y	
W-833-30	PTMW	Lower $Tnbs_1$	S	CMP	E601	3		
W-833-33	PTMW	Tps	B	CMP	E601	1	Y	
W-833-34	PTMW	Tps	A	CMP	E601	1	N	Dry.
W-833-43	PTMW	Tps	B	CMP	E601	1	N	Dry.
W-840-01	PTMW	Lower $Tnbs_1$		DIS	E300.0:NO3	1	Y	
W-840-01	PTMW	Lower $Tnbs_1$		DIS	E300.0:PERC	1	Y	
W-840-01	PTMW	Lower $Tnbs_1$		DIS	E601	1	Y	
W-841-01	PTMW	Upper $Tnbs_1$		DIS	E300.0:NO3	1	N	Dry.
W-841-01	PTMW	Upper $Tnbs_1$		DIS	E300.0:PERC	1	N	Dry.
W-841-01	PTMW	Upper $Tnbs_1$		DIS	E601	1	N	Dry.

Notes:
Building 833 primary COC: VOCs (E601).
See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.8-3. Building 845 Firing Table and Pit 9 Landfill area ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
K9-01	CMP DMW	Tmss	A	CMP	CMPTRIMET	2	Y	
K9-01	CMP DMW	Tmss	A	CMP	E300.0:NO3	2	Y	
K9-01	CMP DMW	Tmss	A	CMP	E300.0:PERC	2	Y	
K9-01	CMP DMW	Tmss	A	CMP	E340.2	2	Y	
K9-01	CMP DMW	Tmss	A	CMP	E601	2	Y	
K9-01	CMP DMW	Tmss	A	CMP	E8330	2	Y	
K9-01	CMP DMW	Tmss	Q	CMP	E906	1	Y	
K9-01	CMP DMW	Tmss	Q	CMP	E906	2	Y	
K9-01	CMP DMW	Tmss	Q	CMP	E906	3		
K9-01	CMP DMW	Tmss	Q	CMP	E906	4		
K9-01	CMP DMW	Tmss	B	CMP	MS:THISO	2	NA	Next sample required 2ndQ 2009.
K9-01	CMP DMW	Tmss	B	CMP	MS:UISO	2	NA	Next sample required 2ndQ 2009.
K9-01	CMP DMW	Tmss	A	CMP	T26METALS	2	Y	
K9-02	CMP DMW	Tmss	A	CMP	CMPTRIMET	2	Y	
K9-02	CMP DMW	Tmss	A	CMP	E300.0:NO3	2	Y	
K9-02	CMP DMW	Tmss	A	CMP	E300.0:PERC	2	Y	
K9-02	CMP DMW	Tmss	A	CMP	E340.2	2	Y	
K9-02	CMP DMW	Tmss	A	CMP	E601	2	Y	
K9-02	CMP DMW	Tmss	A	CMP	E8330	2	Y	
K9-02	CMP DMW	Tmss	Q	CMP	E906	1	Y	
K9-02	CMP DMW	Tmss	Q	CMP	E906	2	Y	
K9-02	CMP DMW	Tmss	Q	CMP	E906	3		
K9-02	CMP DMW	Tmss	Q	CMP	E906	4		
K9-02	CMP DMW	Tmss	B	CMP	MS:THISO	2	NA	Next sample required 2ndQ 2009.
K9-02	CMP DMW	Tmss	B	CMP	MS:UISO	2	NA	Next sample required 2ndQ 2009.
K9-02	CMP DMW	Tmss	A	CMP	T26METALS	2	Y	
K9-03	CMP DMW	Tmss	A	CMP	CMPTRIMET	2	Y	
K9-03	CMP DMW	Tmss	A	CMP	E300.0:NO3	2	Y	
K9-03	CMP DMW	Tmss	A	CMP	E300.0:PERC	2	Y	
K9-03	CMP DMW	Tmss	A	CMP	E340.2	2	Y	
K9-03	CMP DMW	Tmss	A	CMP	E601	2	Y	
K9-03	CMP DMW	Tmss	A	CMP	E8330	2	Y	
K9-03	CMP DMW	Tmss	Q	CMP	E906	1	Y	
K9-03	CMP DMW	Tmss	Q	CMP	E906	2	Y	
K9-03	CMP DMW	Tmss	Q	CMP	E906	3		
K9-03	CMP DMW	Tmss	Q	CMP	E906	4		
K9-03	CMP DMW	Tmss	B	CMP	MS:THISO	2	NA	Next sample required 2ndQ 2009.
K9-03	CMP DMW	Tmss	B	CMP	MS:UISO	2	NA	Next sample required 2ndQ 2009.
K9-03	CMP DMW	Tmss	A	CMP	T26METALS	2	Y	
K9-04	CMP DMW	Tmss	A	CMP	CMPTRIMET	2	Y	
K9-04	CMP DMW	Tmss	A	CMP	E300.0:NO3	2	Y	
K9-04	CMP DMW	Tmss	A	CMP	E300.0:PERC	2	Y	
K9-04	CMP DMW	Tmss	A	CMP	E340.2	2	Y	
K9-04	CMP DMW	Tmss	A	CMP	E601	2	Y	
K9-04	CMP DMW	Tmss	A	CMP	E8330	2	Y	
K9-04	CMP DMW	Tmss	Q	CMP	E906	1	Y	
K9-04	CMP DMW	Tmss	Q	CMP	E906	2	Y	
K9-04	CMP DMW	Tmss	Q	CMP	E906	3		
K9-04	CMP DMW	Tmss	Q	CMP	E906	4		
K9-04	CMP DMW	Tmss	B	CMP	MS:THISO	2	NA	Next sample required 2ndQ 2009.
K9-04	CMP DMW	Tmss	B	CMP	MS:UISO	2	NA	Next sample required 2ndQ 2009.
K9-04	CMP DMW	Tmss	A	CMP	T26METALS	2	Y	

Notes appear on the following page.

Table 2.8-3 (Cont.). Building 845 Firing Table and Pit 9 Landfill area ground water sampling and analysis plan.

Notes:
No COCs in ground water.
CMP Detection monitoring analyte: tritium (E906) sampled quarterly.
CMP Detection monitoring analyte: VOCs (E601 or E624) sampled annually.
CMP Detection monitoring analyte: fluoride (E340.2) sampled annually.
CMP Detection monitoring analyte: HE compounds (E8330:R+H) sampled annually.
CMP Detection monitoring analyte: nitrate (E300.0:NO3) sampled annually.
CMP Detection monitoring analyte: perchlorate (E300.0:PERC) sampled annually.
CMP Detection monitoring analytes: Title 26 metals plus U, Th, Li, Be (T26METALS and CMPTRIMET) sampled annually.
CMP Detection monitoring analytes: uranium and thorium isotopes by mass spectrometry (MS:UISO and MS:THISO) sampled biennially.
Contaminants of Concern in the Vadose Zone not detected in Ground Water: HE Compounds and uranium.
See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 2.8-4. Building 851 area ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-851-05	PTMW	Tmss	B	CMP	E601	2	NA	Next sample required 2ndQ 2009.
W-851-05	PTMW	Tmss	A	CMP	E906	2	Y	
W-851-05	PTMW	Tmss	S	CMP	MS:UISO	2	Y	
W-851-05	PTMW	Tmss	S	CMP	MS:UISO	4		
W-851-06	PTMW	Tmss	A	CMP	E906	2	Y	
W-851-06	PTMW	Tmss	S	CMP	MS:UISO	2	Y	
W-851-06	PTMW	Tmss	S	CMP	MS:UISO	4		
W-851-07	PTMW	Tmss	A	CMP	E906	2	Y	
W-851-07	PTMW	Tmss	S	CMP	MS:UISO	2	Y	
W-851-07	PTMW	Tmss	S	CMP	MS:UISO	4		
W-851-08	PTMW	Tmss	A	CMP	E906	2	Y	
W-851-08	PTMW	Tmss	S	CMP	MS:UISO	2	Y	
W-851-08	PTMW	Tmss	S	CMP	MS:UISO	4		

Notes:

Building 851 primary COC: uranium (MS:UISO).

Contaminants of Concern in the Vadose Zone not detected in Ground Water: VOCs (E601).

See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 3.1-1. Pit 2 Landfill area ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
K2-01C*	DMW	$Tnbs_1$		WGMG	AS:UISO	3		
K2-01C*	DMW	$Tnbs_1$		WGMG	AS:UISO	4		
K2-01C*	DMW	$Tnbs_1$	A	CMP	CMPTRIMET	2	Y	
K2-01C*	DMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
K2-01C*	DMW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	
K2-01C*	DMW	$Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
K2-01C*	DMW	$Tnbs_1$		DIS	E300.0:PERC	3		
K2-01C*	DMW	$Tnbs_1$		DIS	E300.0:PERC	4		
K2-01C*	DMW	$Tnbs_1$	A	CMP	E340.2	2	Y	
K2-01C*	DMW	$Tnbs_1$	A	CMP	E601	2	Y	
K2-01C*	DMW	$Tnbs_1$	A	CMP	E8330	2	Y	
K2-01C*	DMW	$Tnbs_1$	Q	CMP	E906	1	Y	
K2-01C*	DMW	$Tnbs_1$	Q	CMP	E906	2	Y	
K2-01C*	DMW	$Tnbs_1$	Q	CMP	E906	3		
K2-01C*	DMW	$Tnbs_1$	Q	CMP	E906	4		
K2-01C*	DMW	$Tnbs_1$		DIS	MS:THISO	1	Y	
K2-01C*	DMW	$Tnbs_1$	B	CMP	MS:THISO	2	Y	
K2-01C*	DMW	$Tnbs_1$		DIS	MS:THISO	4		
K2-01C*	DMW	$Tnbs_1$		DIS	MS:UISO	1	Y	
K2-01C*	DMW	$Tnbs_1$	B	CMP	MS:UISO	2	Y	
K2-01C*	DMW	$Tnbs_1$		DIS	MS:UISO	3		
K2-01C*	DMW	$Tnbs_1$		DIS	MS:UISO	4		
K2-01C*	DMW	$Tnbs_1$	A	CMP	T26METALS	2	Y	
NC2-08	DMW	$Tnbs_1$	A	CMP	CMPTRIMET	2	Y	
NC2-08	DMW	$Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
NC2-08	DMW	$Tnbs_1$		DIS	E300.0:PERC	1	Y	
NC2-08	DMW	$Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
NC2-08	DMW	$Tnbs_1$		DIS	E300.0:PERC	3		
NC2-08	DMW	$Tnbs_1$		DIS	E300.0:PERC	4		
NC2-08	DMW	$Tnbs_1$	A	CMP	E340.2	2	Y	
NC2-08	DMW	$Tnbs_1$	A	CMP	E601	2	Y	
NC2-08	DMW	$Tnbs_1$	A	CMP	E8330	2	Y	
NC2-08	DMW	$Tnbs_1$	Q	CMP	E906	1	Y	
NC2-08	DMW	$Tnbs_1$	Q	CMP	E906	2	Y	
NC2-08	DMW	$Tnbs_1$	Q	CMP	E906	3		
NC2-08	DMW	$Tnbs_1$	Q	CMP	E906	4		
NC2-08	DMW	$Tnbs_1$	B	CMP	MS:THISO	2	Y	
NC2-08	DMW	$Tnbs_1$		DIS	MS:THISO	4		
NC2-08	DMW	$Tnbs_1$	B	CMP	MS:UISO	2	Y	
NC2-08	DMW	$Tnbs_1$		DIS	MS:UISO	4		
NC2-08	DMW	$Tnbs_1$	A	CMP	T26METALS	2	Y	
W-PIT2-1934	DMW	Lower $Tnbs_1$	A	CMP	CMPTRIMET	2	Y	
W-PIT2-1934	DMW	Lower $Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
W-PIT2-1934	DMW	Lower $Tnbs_1$		DIS	E300.0:PERC	1	Y	
W-PIT2-1934	DMW	Lower $Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
W-PIT2-1934	DMW	Lower $Tnbs_1$		DIS	E300.0:PERC	3		
W-PIT2-1934	DMW	Lower $Tnbs_1$		DIS	E300.0:PERC	4		
W-PIT2-1934	DMW	Lower $Tnbs_1$	A	CMP	E340.2	2	Y	
W-PIT2-1934	DMW	Lower $Tnbs_1$	A	CMP	E601	2	Y	
W-PIT2-1934	DMW	Lower $Tnbs_1$	A	CMP	E8330	2	Y	
W-PIT2-1934	DMW	Lower $Tnbs_1$	Q	CMP	E906	1	Y	
W-PIT2-1934	DMW	Lower $Tnbs_1$	Q	CMP	E906	2	Y	
W-PIT2-1934	DMW	Lower $Tnbs_1$	Q	CMP	E906	3		
W-PIT2-1934	DMW	Lower $Tnbs_1$	Q	CMP	E906	4		
W-PIT2-1934	DMW	Lower $Tnbs_1$		DIS	MS:THISO	1	Y	
W-PIT2-1934	DMW	Lower $Tnbs_1$	B	CMP	MS:THISO	2	NA	Next sample required 2ndQ 2009.
W-PIT2-1934	DMW	Lower $Tnbs_1$		DIS	MS:THISO	3		
W-PIT2-1934	DMW	Lower $Tnbs_1$		DIS	MS:THISO	4		
W-PIT2-1934	DMW	Lower $Tnbs_1$		DIS	MS:UISO	1	Y	
W-PIT2-1934	DMW	Lower $Tnbs_1$	B	CMP	MS:UISO	2	NA	Next sample required 2ndQ 2009.
W-PIT2-1934	DMW	Lower $Tnbs_1$		DIS	MS:UISO	3		
W-PIT2-1934	DMW	Lower $Tnbs_1$		DIS	MS:UISO	4		
W-PIT2-1934	DMW	Lower $Tnbs_1$	A	CMP	T26METALS	2	Y	

Table 3.1-1 (Con't.). Pit 2 Landfill area ground water sampling and analysis plan.

Sampling location	Location type	Completion interval	Sampling frequency required	Sample driver	Requested analysis	Sampling quarter	Sampled Y/N	Comment
W-PIT2-1935	DMW	Lower $Tnbs_1$	A	CMP	CMPTRIMET	2	Y	
W-PIT2-1935	DMW	Lower $Tnbs_1$	A	CMP	E300.0:NO3	2	Y	
W-PIT2-1935	DMW	Lower $Tnbs_1$		DIS	E300.0:PERC	1	Y	
W-PIT2-1935	DMW	Lower $Tnbs_1$	A	CMP	E300.0:PERC	2	Y	
W-PIT2-1935	DMW	Lower $Tnbs_1$		DIS	E300.0:PERC	3		
W-PIT2-1935	DMW	Lower $Tnbs_1$		DIS	E300.0:PERC	4		
W-PIT2-1935	DMW	Lower $Tnbs_1$	A	CMP	E340.2	2	Y	
W-PIT2-1935	DMW	Lower $Tnbs_1$	A	CMP	E601	2	Y	
W-PIT2-1935	DMW	Lower $Tnbs_1$	A	CMP	E8330	2	Y	
W-PIT2-1935	DMW	Lower $Tnbs_1$	Q	CMP	E906	1	Y	
W-PIT2-1935	DMW	Lower $Tnbs_1$	Q	CMP	E906	2	Y	
W-PIT2-1935	DMW	Lower $Tnbs_1$	Q	CMP	E906	3		
W-PIT2-1935	DMW	Lower $Tnbs_1$	Q	CMP	E906	4		
W-PIT2-1935	DMW	Lower $Tnbs_1$		DIS	MS:THISO	1	Y	
W-PIT2-1935	DMW	Lower $Tnbs_1$	B	CMP	MS:THISO	2	NA	Next sample required 2ndQ 2009.
W-PIT2-1935	DMW	Lower $Tnbs_1$		DIS	MS:THISO	3		
W-PIT2-1935	DMW	Lower $Tnbs_1$		DIS	MS:THISO	4		
W-PIT2-1935	DMW	Lower $Tnbs_1$		DIS	MS:UISO	1	Y	
W-PIT2-1935	DMW	Lower $Tnbs_1$	B	CMP	MS:UISO	2	NA	Next sample required 2ndQ 2009.
W-PIT2-1935	DMW	Lower $Tnbs_1$		DIS	MS:UISO	3		
W-PIT2-1935	DMW	Lower $Tnbs_1$		DIS	MS:UISO	4		
W-PIT2-1935	DMW	Lower $Tnbs_1$	A	CMP	T26METALS	2	Y	
W-PIT2-2226	GW	$Tnbs_1/Tnbs_0$	Q	CMP	E906	1	Y	
W-PIT2-2226	GW	$Tnbs_1/Tnbs_0$	Q	CMP	E906	2	Y	
W-PIT2-2226	GW	$Tnbs_1/Tnbs_0$	Q	CMP	E906	3		
W-PIT2-2226	GW	$Tnbs_1/Tnbs_0$	Q	CMP	E906	4		
W-PIT2-2301	PTMW	Qal/WBR	A	CMP	E300.0:NO3	2	N	Dry.
W-PIT2-2301	PTMW	Qal/WBR	A	CMP	E300.0:PERC	2	N	Dry.
W-PIT2-2301	PTMW	Qal/WBR	S	CMP	E906	2	N	Dry.
W-PIT2-2301	PTMW	Qal/WBR	S	CMP	E906	4		
W-PIT2-2301	PTMW	Qal/WBR	A	CMP	MS:UISO	2	N	Dry.
W-PIT2-2302	PTMW	Qal/WBR	A	CMP	E300.0:NO3	2	N	Dry.
W-PIT2-2302	PTMW	Qal/WBR	A	CMP	E300.0:PERC	2	N	Dry.
W-PIT2-2302	PTMW	Qal/WBR	S	CMP	E906	2	N	Dry.
W-PIT2-2302	PTMW	Qal/WBR	S	CMP	E906	4		
W-PIT2-2302	PTMW	Qal/WBR	A	CMP	MS:UISO	2	N	Dry.
W-PIT2-2303	PTMW	Qal/WBR	A	CMP	E300.0:NO3	2	N	Dry.
W-PIT2-2303	PTMW	Qal/WBR	A	CMP	E300.0:PERC	2	N	Dry.
W-PIT2-2303	PTMW	Qal/WBR	S	CMP	E906	2	N	Dry.
W-PIT2-2303	PTMW	Qal/WBR	S	CMP	E906	4		
W-PIT2-2303	PTMW	Qal/WBR	A	CMP	MS:UISO	2	N	Dry.
W-PIT2-2304	PTMW	Qal/WBR	A	CMP	E300.0:NO3	2	Y	
W-PIT2-2304	PTMW	Qal/WBR	A	CMP	E300.0:PERC	2	Y	
W-PIT2-2304	PTMW	Qal/WBR		DIS	E906	1	Y	
W-PIT2-2304	PTMW	Qal/WBR	S	CMP	E906	2	Y	
W-PIT2-2304	PTMW	Qal/WBR	S	CMP	E906	4		
W-PIT2-2304	PTMW	Qal/WBR	A	CMP	MS:UISO	2	Y	

Notes:
Pit 2 Landfill primary COC: nitrate (E300:NO3).
CMP Detection monitoring analyte: tritium (E906) sampled quarterly.
CMP Detection monitoring analyte: VOCs (E601 or E624) sampled annually.
CMP Detection monitoring analyte: fluoride (E340.2) sampled annually.
CMP Detection monitoring analyte: HE compounds (E8330:R+H) sampled annually.
CMP Detection monitoring analyte: nitrate (E300.0:NO3) sampled annually.
CMP Detection monitoring analyte: perchlorate (E300.0:PERC) sampled annually.
CMP Detection monitoring analytes: Title 26 metals plus U, Th, Li, Be (T26METALS and CMPTRIMET) sampled annually.
CMP Detection monitoring analytes: uranium and thorium isotopes by mass spectrometry (MS:UISO and MS:THISO) sampled biennially.
***Well sampled as part of the surveillance monitoring performed by the Water Guidance and Monitoring Group (WGMG) for additional constiutents and the results are reported in the LLNL Site Annual Environmental Report.**

See Acronyms and Abbreviations in the Tables section of this report for acronym and abbreviation definitions.

Table 4.1-1. Analytical results for the first semester 2008 ambient air sampling at Spring 3.

Constitutent	SPRING3-001 Results (ppbv)	SPRING3-002 Results (ppbv)	SPRING3-003 Results (ppbv)	SL[b] (ppbv)
Vinyl chloride	<0.02	<0.02	<0.02	1.1
1,1-Dichloroethene	<0.02	0.026	<0.02	220
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.02	<0.02	<0.02	17,000
Cis-1,2-Dichloroethene	<0.02	<0.02	<0.02	No SL
Chloroform	0.022	<0.02	<0.02	0.11
1,2-Dichloroethane	<0.02	<0.02	<0.02	0.12
Trichloroethene	<0.02	<0.02	<0.02	1.1
1,2-Dichloropropane	<0.02	<0.02	<0.02	0.26
1,1,2-Trichloroethane	<0.02	<0.02	<0.02	0.14
Tetrachloroethene	0.035	<0.02	<0.02	0.31
Trans-1,2-Dichloroethene	<0.02	<0.02	<0.02	66
Methylene chloride	0.028[a]	0.029[a]	0.029[a]	7.5

Notes:

Samples collected on 6/9/08 in SUMMA canisters and analyzed by EPA method TO14.

[a] Common analytical laboratory contaminant.

[b] Industrial Air Regional Screening Levels for Chemical Contaminants at Superfund Sites, as of July 7, 2008 converted from μg/m^3 to ppbv.

Appendix A

Results of Influent and effluent pH Monitoring

A-1. Results of infuent and effluent pH, and effluent dissolved oxygen monitoring, January through June 2008.

Sample Location	Sample Date	Influent pH Result	Effluent pH Result	Effluent Dissolved Oxygen (mg/L)
GSA OU				
CGSA GWTS	**01/31/2008**	**NM**	**NA**	**NR**
CGSA GWTS	**02/12/2008**	**NA**	**7.5**	**NR**
CGSA GWTS	**03/05/2008**	**NA**	**7.3**	**NR**
CGSA GWTS	**04/09/2008**	**7**	**7.5**	**NR**
CGSA GWTS	**05/08/2008**	**NA**	**7.5**	**NR**
CGSA GWTS	**06/09/2008**	**NA**	**7.5**	**NR**
Building 834 OU				
834 GWTS	**01/15/2008**	**8.4**	**7.7**	**NR**
834 GWTS	**02/04/2008**	**NA**	**7.4**	**NR**
834 GWTS	**03/03/2008**	**NA**	**8.17**	**NR**
834 GWTS	**04/01/2008**	**7.99**	**8.13**	**NR**
834 GWTS	**05/05/2008**	**NA**	**8.23**	**NR**
834 GWTS	**06/02/2008**	**NA**	**8.2**	**NR**
HEPA OU				
815-SRC GWTS	**01/09/2008**	**7**	**7**	**NR**
815-SRC GWTS	**01/29/2008**	**NA**	**7**	**NR**
815-SRC GWTS	**03/05/2008**	**NA**	**7**	**NR**
815-SRC GWTS	**04/02/2008**	**7.64**	**7.24**	**NR**
815-SRC GWTS	**05/05/2008**	**NA**	**7.17**	**NR**
815-SRC GWTS	**06/02/2008**	**NA**	**7.3**	**NR**
815-PRX GWTS	**01/29/2008**	**7**	**7**	**NR**
815-PRX GWTS	**02/05/2008**	**NA**	**7.15**	**NR**
815-PRX GWTS	**03/05/2008**	**NA**	**7**	**NR**
815-PRX GWTS	**04/02/2008**	**7.85**	**7.51**	**NR**
815-PRX GWTS	**05/05/2008**	**NA**	**7.77**	**NR**
815-PRX GWTS	**06/02/2008**	**NA**	**7.8**	**NR**
815-DSB GWTS	**01/04/2008**	**7**	**7**	**NR**
815-DSB GWTS	**02/06/2008**	**NA**	**7**	**NR**

A-1. Results of infuent and effluent pH, and effluent dissolved oxygen monitoring, January through June 2008.

Sample Location	Sample Date	Influent pH Result	Effluent pH Result	Effluent Dissolved Oxygen (mg/L)
815-DSB GWTS	**03/05/2008**	**NA**	**7**	**NR**
815-DSB GWTS	**04/08/2008**	**7**	**7**	**NR**
815-DSB GWTS	**05/08/2008**	**NA**	**7**	**NR**
815-DSB GWTS	**06/09/2008**	**NA**	**7**	**NR**
817-SRC GWTS	**01/14/2008**	**7**	**7**	**NR**
817-SRC GWTS	**02/05/2008**	**NA**	**7**	**NR**
817-SRC GWTS	**03/05/2008**	**NA**	**7**	**NR**
817-SRC GWTS	**04/01/2008**	**8.24**	**7.92**	**NR**
817-SRC GWTS	**05/06/2008**	**NA**	**7**	**NR**
817-SRC GWTS	**06/02/2008**	**NA**	**7**	**NR**
817-PRX GWTS	**02/05/2008**	**NA**	**7**	**NR**
817-PRX GWTS	**03/05/2008**	**NA**	**7**	**NR**
817-PRX GWTS	**04/01/2008**	**7.72**	**7.19**	**NR**
817-PRX GWTS	**05/20/2008**	**NA**	**6.6**	**NR**
817-PRX GWTS	**06/02/2008**	**NA**	**7.1**	**NR**
817-PRX GWTS	**12/14/2007**	**7**	**7**	**NR**
829-SRC GWTS	**01/31/2008**	**NM**	**NA**	**NR**
829-SRC GWTS	**02/13/2008**	**NA**	**7**	**NR**
829-SRC GWTS	**03/04/2008**	**NA**	**7**	**NR**
829-SRC GWTS	**04/30/2008**	**NM**	**NA**	**NR**
829-SRC GWTS	**05/28/2008**	**NA**	**7**	**NR**
829-SRC GWTS	**06/10/2008**	**NA**	**7**	**NR**
Building 854 OU				
854-SRC GWTS	**01/09/2008**	**7**	**7**	**NR**
854-SRC GWTS	**02/05/2008**	**NA**	**7**	**NR**
854-SRC GWTS	**03/31/2008**	**NA**	**NA**	**NR**
854-SRC GWTS	**04/30/2008**	**NM**	**NA**	**NR**
854-SRC GWTS	**05/31/2008**	**NA**	**NA**	**NR**
854-SRC GWTS	**06/30/2008**	**NA**	**NA**	**NR**

A-1. Results of infuent and effluent pH, and effluent dissolved oxygen monitoring, January through June 2008.

Sample Location	Sample Date	Influent pH Result	Effluent pH Result	Effluent Dissolved Oxygen (mg/L)
854-PRX GWTS	**01/31/2008**	**NM**	**NA**	**NR**
854-PRX GWTS	**02/11/2008**	**NA**	**7**	**NR**
854-PRX GWTS	**03/04/2008**	**NA**	**7**	**NR**
854-PRX GWTS	**04/08/2008**	**7**	**7**	**NR**
854-PRX GWTS	**05/06/2008**	**NA**	**6.5**	**NR**
854-PRX GWTS	**06/02/2008**	**NA**	**7**	**NR**
854-DIS GWTS	**01/31/2008**	**NM**	**NA**	**NR**
854-DIS GWTS	**02/12/2008**	**NA**	**7**	**NR**
854-DIS GWTS	**03/04/2008**	**NA**	**7**	**NR**
854-DIS GWTS	**04/08/2008**	**7**	**7**	**NR**
854-DIS GWTS	**05/06/2008**	**NA**	**7**	**NR**
854-DIS GWTS	**06/04/2008**	**NA**	**7**	**NR**
832 Canyon OU				
832-SRC GWTS	**01/09/2008**	**7.1**	**7.5**	**NR**
832-SRC GWTS	**02/04/2008**	**NA**	**7.4**	**NR**
832-SRC GWTS	**03/03/2008**	**NA**	**7.58**	**NR**
832-SRC GWTS	**04/01/2008**	**7.65**	**7.28**	**NR**
832-SRC GWTS	**05/05/2008**	**NA**	**7.28**	**NR**
832-SRC GWTS	**06/02/2008**	**NA**	**7.4**	**NR**
830-SRC GWTS	**01/09/2008**	**7.3**	**7.1**	**NR**
830-SRC GWTS	**02/04/2008**	**NA**	**7.35**	**NR**
830-SRC GWTS	**03/03/2008**	**NA**	**7.46**	**NR**
830-SRC GWTS	**04/01/2008**	**7.59**	**7.15**	**NR**
830-SRC GWTS	**05/05/2008**	**NA**	**7.43**	**NR**
830-SRC GWTS	**06/02/2008**	**NA**	**7.3**	**NR**
830-DISS GWTS	**01/31/2008**	**NM**	**NA**	**NR**
830-DISS GWTS	**02/05/2008**	**NA**	**7.4**	**NR**
830-DISS GWTS	**03/03/2008**	**NA**	**7.42**	**NR**
830-DISS GWTS	**04/01/2008**	**7.76**	**7.41**	**NR**

A-1. Results of infuent and effluent pH, and effluent dissolved oxygen monitoring, January through June 2008.

Sample Location	Sample Date	Influent pH Result	Effluent pH Result	Effluent Dissolved Oxygen (mg/L)
830-DISS GWTS	05/08/2008	NA	7	NR
830-DISS GWTS	06/09/2008	NA	7	NR

Notes:

834 = Building 834.
815 = Building 815.
817 = Building 817.
829 = Building 829.
854 = Building 854.
832 = Building 832.
830 = Building 830.
CGSA = Central General Services Area.
EGSA = Eastern General Services Area.
DISS = Distal south.
DSB = Distal site boundary.
GWTS = Ground water treatment system.
PRX = Proximal.
PRXN = Proximal North.
SRC = Source.
NA = Not applicable.
NM = Not measured due to facility not operating during this period.
NR = Not required.
OU = Operable unit.
pH = A measure of the acidity or alkalinity of an aqueous solution.
mg/L = milligrams per liter

Errata

The enclosed figure was missing from the 2007 Annual CMR.

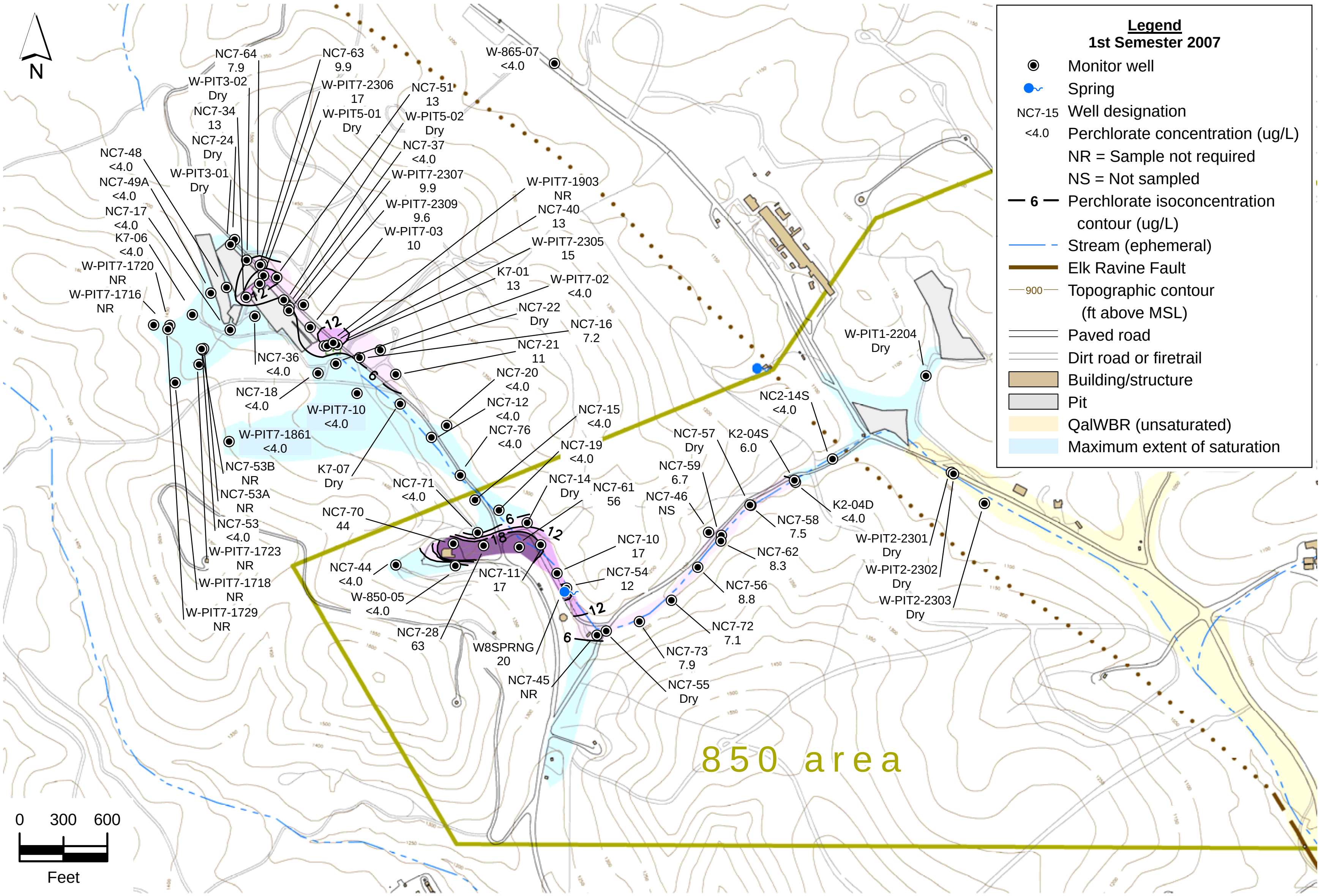

Figure 2.5-10. Building 850 area perchlorate isoconcentration contour map for the Qal/WBR HSU.

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