Semiannual Groundwater Monitoring Report
(April-September 2008)

Hunters Point Shipyard
San Francisco, California

February 2009

Document Control number: CEKA-3001-0000-0012
Contract N62473-07-C-3001

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Certification

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I certify that the work presented in this report was performed under my supervision. To the best of my knowledge, the data contained herein are true and accurate and the work was performed in accordance with professional standards.

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Abbreviations and Acronyms

APPL	Agriculture & Priority Pollutants Laboratories, Inc.
BGMP	Basewide Groundwater Monitoring Program
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
DCE	Dichloroethene
DNAPL	Dense non-aqueous phase liquid
DTSC	(California) Department of Toxic Substances Control
HGAL	Hunters Point Groundwater Ambient Level
HPS	Hunters Point Shipyard
IR	Installation Restoration
JV	Joint Venture
LNAPL	Light non-aqueous phase liquid
µg/L	Microgram per liter (parts per billion)
MS/MSD	Matrix spike/matrix spike duplicate
MSL	Mean sea level
NAPL	Non-aqueous phase liquid
Navy	U.S. Department of the Navy
NAWQC	National Ambient Water Quality Criteria
NNP	Non-Navy property
NOAA	National Oceanic and Atmospheric Administration
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene
QA/QC	Quality assurance and quality control
QAPP	Quality Assurance Project Plan
RAMP	Remedial Action Monitoring Plan
ROD	Record of Decision
RPD	Relative percent difference
RU	Remedial Unit
SAP	Sampling and Analysis Plan
SVOC	Semivolatile organic compound
TCE	Trichloroethene
TtEMI	Tetra Tech EM, Inc.
TPH	Total petroleum hydrocarbons
TMSRA	Technical Memorandum in Support of a Record of Decision Amendment
U.S. EPA	U.S. Environmental Protection Agency
VOC	Volatile organic compound
WAL	Well Action Limit
Water Board	(California) Regional Water Quality Control Board

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1.0 Introduction

On behalf of the U.S. Department of the Navy, Naval Facilities Engineering Command, Southwest Division (Navy), the CE2-Kleinfelder Joint Venture (JV) has prepared this Semiannual Groundwater Monitoring Report for Hunters Point Shipyard (HPS) located in San Francisco, California. The location of HPS is shown on Figure 1-1.

This report documents data collected from April through September 2008 consisting of Second Quarter 2008 (2Q2008) and Third Quarter 2008 (3Q2008). This report includes basewide data from terrestrial Parcels B, C, D-1, D-2, E, E-2, G, and UC-1, as well as from non-Navy property (NNP).

1.1 Regulatory Framework

Groundwater issues at HPS are primarily regulated by the United States Environmental Protection Agency (U.S. EPA), the California Regional Water Quality Control Board (Water Board), and the California Department of Toxic Substances Control (DTSC). In 1989, the U.S. EPA placed HPS on the National Priorities List in response to historical shipyard activities that had resulted in soil and groundwater contamination.

A Record of Decision (ROD) for Parcel B is in place (U.S. Department of the Navy, 2009).

As of 3Q2008, RODs have not been implemented for other HPS parcels. The Basewide Groundwater Monitoring Program (BGMP) incorporated protocols specified under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).

1.2 Scope

1.2.1 2Q2008 Event

The first quarterly sampling event of this semiannual reporting period (2Q2008) was conducted in compliance with the 2004 HPS BGMP Sampling and Analysis Plan (SAP) (Tetra Tech EM Inc., 2004) and SAP Addenda 1 through 4 (CE2-Kleinfelder JV, 2007a, 2007b, 2008a and 2008b). SAP Addenda 3 and 4 modified the monitoring program prior to the 2Q2008 monitoring event. Table 4-1 reflects the basewide monitoring program that was in place for the 2Q2008 event. The following changes were implemented effective for the 2Q2008 event.

- SAP Addendum 3 included additional wells and analyses to provide baseline data for a planned treatability study in former Parcel D (current Parcels D-1 and G). This Addendum added 25 wells to the compliance program for a one time-sampling event, and added analyses to 12 wells that were in the compliance program at the time. Sampling to accomplish this objective was conducted in both the 2Q2008 and 3Q2008 events, and has been fully completed. Table 4-5 summarizes the 2004 BGMP SAP Addendum 3 sampling program.
- SAP Addendum 4 added analyses for radionuclides at 25 wells that were already in the monitoring program for other analytes, and added radionuclide analyses to 13

wells that were not already in the monitoring program. One decommissioned well was removed from the program (previously used for depth to water measurement only). Analysis for VOCs was added to one well that was not previously in the program.

1.2.2 3Q2008 Event

Effective beginning in the 3Q2008 event, basewide groundwater monitoring is conducted in accordance with:

- *Draft Final Sampling and Analysis Plan (SAP) for the Basewide Groundwater Monitoring Program (BGMP)* (CE2-Kleinfelder, 2008c). This SAP replaces the previous BGMP SAP and addenda, as well as the Parcel B RAMP (TtEMI, 1999).
- Revisions to the 2008 Draft Final BGMP SAP as requested by the Navy, to be incorporated into the Final BGMP SAP (in progress).

The revised SAP reflects the revised BGMP goals, including:

- *Goal 1*: Verify that the groundwater flow and contaminant conditions used to develop remedial alternatives in the Feasibility Studies will continue to be appropriate for use in the Remedial Design (RD) phase, ensuring that the selected remedies will be effective and protective of human health and the environment, in accordance with the CERCLA process. Wells sampled to support this Goal are referred to as the "Monitoring Network."
- *Goal 2*: Measure depth to water to determine potentiometric surfaces.
- *Goal 3*: Monitor non-aqueous phase liquids (NAPL).
- *Goal 4*: Evaluate potential impacts to groundwater associated with the Parcel E-2 landfill.
- *Goal 5*: Supplemental data collection to collect a limited amount of groundwater data for specific analytes in specific locations. Wells sampled to support this Goal are referred to as "Supplemental Data Collection" locations. The frequency and duration of Supplemental Data Collection well sampling varies depending on data needs.

The revised SAP utilizes a dynamic work strategy in which the well lists and sampling/measurement frequencies have the potential to change as needed to support the goals of the BGMP. Changes to the program are documented in the semiannual groundwater monitoring reports.

The scope of the groundwater monitoring program includes:

- Measuring groundwater levels.
- Collecting and analyzing groundwater samples.

- Verifying and validating the analytical data.
- Making recommendations for revising the well lists.
- Submitting monitoring reports.
- Disposing of wastewater generated from purging groundwater monitoring wells and from decontaminating sampling equipment.

Table 4-3 reflects the monitoring program that was in place for the 3Q2008 event.

Plate 1 shows the location of all HPS monitoring wells, including decommissioned wells. Table 1-1 presents well construction details for these wells.

There are several wells discussed in this report that are not physically located within the site boundaries. These wells are designated as non-Navy property (NNP) wells and are located outside the northwestern boundaries of Parcels B and E-2.

1.3 Changes to Basewide Program

The following sub-sections discuss changes to the monitoring program in addition to the well monitoring network, analytical methods, and sampling frequency.

1.3.1 Well Installation and Decommissioning

Four wells were installed by the CE2-Kleinfelder JV (including well development and surveying of horizontal and vertical location coordinates) in the current semiannual reporting period:

- Wells IR02MW374A and IR02MW375A were installed to replace decommissioned wells IR02MW141A and IR02MW372A, respectively, at the "IR-02 Northwest/Central Excavation" area in Parcel E.
- Well IR46MW49A was installed near the Parcel B seawall to replace decommissioned well IR24MW06A.
- Well IR01MW65A was installed at the western end of the Panhandle Area in Parcel E-2, to replace damaged well IR01MWI-8.

Well IR26MW51A was installed to replace well IR26MW47A that was removed during a remedial action (this well was installed in 4Q2008).

An additional 14 wells were installed by another Navy contractor in IR-33 (Parcels D-1 and G) as part of a treatability study. One of those wells (IR33MW02) is currently in the BGMP.

Three wells were decommissioned or removed during a remedial action in the current semiannual reporting period.

- IR01MW58A and IR01MWI-6 (both in Parcel E-2) were decommissioned due to damage.

- One well (IR26MW47A in Parcel B) was removed during a remedial action at Point Avisadero.

1.3.2 Well Re-Surveying

No wells were re-surveyed in the current semiannual reporting period.

1.3.3 Well Re-Development

A total of 45 wells (in addition to the newly-installed wells discussed in Section 1.3.1 above) were re-developed in the current semiannual reporting period for one or more of the following reasons:

- Low recharge during well purging.
- Elevated turbidity or failure to stabilize during well purging.
- Accumulated sediment at the bottom of the well casing.
- Well was added to the sampling program and had not been purged in more than a year.
- Dedicated pumps were installed in the well for the first time.

Re-developed wells include:

- IR02MW183A, IR02MWB-2, IR04MW31A, IR06MW46A, IR09MW31A, IR09MW54B, IR09P041A, IR09P042A, IR09P043A, IR09P043A, IR10MW70A, IR12MW11A, IR12MW18A, IR14MW13A, IR24MW05A, IR25MW54A, IR25MW56A, IR25MW60A1, IR25MW902B, IR26MW40A, IR28MW124A-R1, IR33MW116A, IR33MW120B, IR33MW121B, IR33MW64A, IR33MW65A, IR33MW66A, IR34MW01A, IR34MW02A, IR34MW35A, IR34MW36B, IR39MW21A, IR46MW46A, IR46MW47A, IR46MW48A, IR55MW01A, IR55MW02A, IR67MW04A, IR70MW11A, IR70MW12A, PA28MW50A, PA28MW52A, PA33MW36A, PA33MW37A, and PA36MW03A.

2.0 Site Conditions and Background

This section presents a summary of the site setting, history, contaminant sources, and a conceptual summary of hydrogeologic conditions.

2.1 Site Description and History

HPS is located on the southeastern edge of San Francisco and along the western shore of San Francisco Bay. HPS currently covers approximately 425 acres of lowland coast and shoreline. HPS is divided into nine terrestrial Parcels (B, C, D-1, D-2, E, E-2, G, UC-1, and UC-2) and submerged Parcel F. The locations of the terrestrial Parcels are shown on Figure 1-1. In July 2008 (effective for the 3Q2008 sampling event), former Parcel D was sub-divided into five parcels (D-1, D-2, G, UC-1, and UC-2). This report incorporates the parcel boundary revisions, except when referencing specific wells that were sampled in 2Q2008 (prior to the Parcel D boundary revision). There are currently no BGMP wells located in Parcels D-2, UC-1, or UC-2.

HPS is bounded to the north, east, and south by San Francisco Bay. Off-site non-Navy property (NNP) is located to the west and south of Parcel B, to the west of Parcel UC-2, to the north of Parcels D-2 and UC-1, and to the north and west of Parcels E and E-2.

Approximately 80 percent of the land area at HPS is composed of artificial fill, mostly quarried rock and dredged soil placed on top of marshland. Most of this filling occurred in the 1940s. The 1935 shoreline is shown on Plate 1.

From 1869 until 1939, the shipyard was operated as a commercial dry dock facility. The Navy obtained ownership of the property in 1940 and began operating the shipyard for ship building, repair, and maintenance activities. At the conclusion of World War II, activities shifted from ship repair to submarine servicing and testing. HPS was deactivated in 1974 and remained relatively unused until 1976. Between 1976 and 1986, the Navy leased most of the property to a privately owned ship repair firm. In 1986, the Navy again occupied the shipyard and began a program to investigate and clean up contamination resulting from past activities.

The primary land use has been office and commercial/industrial buildings. Parcels E and E-2 are mostly unpaved, while most of the remaining parcels are paved. Except along the boundary with the NNP, HPS is relatively flat with ground surface elevations averaging approximately 5 to 10 feet above mean sea level (MSL).

2.2 Site Contaminants

Previous investigations at HPS have identified 78 Installation Restoration (IR) or Site Inspection (SI) sites at HPS, of which 12 sites are assigned to Parcel B as described in the RAMP, and 66 sites are assigned to the remaining parcels, as described in *Informal Briefing: Environmental Clean-Up Sites* (U.S. Department of the Navy, 2003).

Seven groundwater remedial units (RUs) have been defined at HPS. Four RUs (RU-C1, RU-C2, RU-C4, and RU-C5) are located in Parcel C. Two RUs (the Northwest Bay Fill Area, and the Former Oil Reclamation Ponds) are located in Parcel E. The final RU (the Industrial

Landfill Area) is located in the northeast portion of Parcel E-2.

The primary contaminants of concern for HPS groundwater include volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), pesticides, cyanide, metals, and radionuclides. Additional analytical groups are associated with the Parcel E-2 landfill detection monitoring program. Dense non-aqueous phase liquid (DNAPL) and/or light non-aqueous phase liquid (LNAPL) have historically been present in a number of monitoring wells. The LNAPL typically consists of petroleum hydrocarbons such as fuel and waste oil; the DNAPL typically consisted of chlorinated solvents such as tetrachloroethene (PCE) and trichloroethene (TCE). DNAPL has not been detected in HPS wells (as part of the BGMP) since 2002.

2.3 Hydrogeology

Conceptual summaries of the stratigraphy, hydrostratigraphy, recharge and discharge areas, and groundwater flow at HPS are presented in the following sections.

2.3.1 Stratigraphy

Five principal geologic units have been defined at HPS. In order of increasing depth, and approximately from youngest to oldest, these units are:

Artificial Fill (Qaf) – Most of the land area for HPS was created using quarried rock from upland areas. The artificial fill consists mostly of serpentinite with lesser amounts of dredged marshland deposits. The artificial fill also contains pockets of industrial fill consisting of building debris and sandblast grit. As a result, the artificial fill is a heterogeneous mixture of unconsolidated material with a wide range of grain sizes. The artificial fill overlies natural sediments or bedrock, depending on the location. The variable thickness of the artificial fill reflects erosional features such as stream channels in the natural sediments and an uneven bedrock surface. A relatively thin unit of slope debris and ravine fill underlies the artificial fill at scattered locations.

Undifferentiated Upper Sands (Quus) – This naturally occurring unit is comprised of poorly-graded, discontinuous estuarine, lagoonal, and alluvial sand deposits that overlie, but in places interbed with, the underlying Bay Mud. These sands may also directly overlie bedrock.

Bay Mud (Qbm) – The Bay Mud unit consists of estuarine sediments that are predominantly composed of silt and clay, but may include clayey or silty sands. The Bay Mud may underlie artificial fill or the upper sand deposits, and overlie the deeper undifferentiated sediments or bedrock. The Bay Mud is occasionally interbedded with the Undifferentiated Upper Sands unit.

Undifferentiated Sediments (Qu) – This unit consists of naturally occurring unconsolidated silty or clayey sands containing discontinuous, isolated sand lenses. These sediments can underlie any of the younger units.

Franciscan Complex Bedrock (Kf) – The bedrock consists primarily of serpentinite and minor amounts of metamorphosed basalt (greenstone) or shale. Bedrock competency is variable and factures are common. Bedrock outcrops are present along the western boundary of Parcel B and the northern boundary of Parcel C. The bedrock surface is irregular across the HPS. For example, bedrock is shallow near the northern boundary of Parcels UC-1, UC-2, D-2, and E, and along the north side of Dry Dock 3, but can be present at depths exceeding 130 feet in Parcel B and 280 feet in Parcel E.

2.3.2 Hydrostratigraphy

Four hydrostratigraphic units have been defined at HPS:

A-Aquifer - The unconfined A-Aquifer is present primarily in the artificial fill and Undifferentiated Upper Sands units. In some locations, the A-Aquifer has been subdivided into A-1, A-2, and A-3 zones to reflect localized water-bearing zones. Groundwater in shallow fractured bedrock is occasionally in hydraulic connection with the A-Aquifer at scattered locations.

Bay Mud Aquitard - The discontinuous Bay Mud Aquitard separates the A-Aquifer from the B-Aquifer, where present.

B-Aquifer - The B-Aquifer is not continuous and directly underlies the A-Aquifer where the Bay Mud Aquitard is absent. The B-Aquifer is typically under semi-confined or confined conditions.

Bedrock Water-Bearing Zone - The Bedrock Water-bearing Zone consists of isolated pockets of fractured bedrock that are not hydraulically connected to upper hydrostratigraphic units.

2.3.3 Recharge and Discharge

Most groundwater recharge at HPS occurs by infiltration of precipitation falling on the off-site upland areas and by precipitation falling on unpaved areas onsite, especially in Parcels E and E-2. Recharge sources to the A-Aquifer can also include open trenches associated with the ongoing utility-removal projects.

Groundwater discharges from the A-Aquifer to San Francisco Bay below sea level along the shoreline, although specific areas of discharge have not been identified. Vertical gradients suggest that groundwater can flow either upward or downward between the A-Aquifer and the B-Aquifer depending on localized conditions, where the intervening Bay Mud Aquitard is absent.

2.3.4 Groundwater Flow Direction

Groundwater flow direction in the A-Aquifer is generally towards San Francisco Bay, but natural heterogeneities and anthropogenic features have created preferential groundwater pathways. The natural heterogeneities consist of stratigraphic discontinuities and facies changes. The anthropogenic features consist of heterogeneous pockets of artificial fill and an extensive system of buried utilities.

Groundwater elevations in the A-Aquifer are influenced by tidal fluctuations that create a sinusoidal pressure wave near the shoreline. Tidal influence in the A-Aquifer decreases with increasing distance from the shoreline. The tidal period is approximately 6 hours. At HPS, the mean tide range (difference in height between mean high water and mean low water) averages approximately 5 ft throughout the year.

Local anomalies in groundwater elevation can be caused by the interaction of subsurface utilities (sanitary sewer, storm sewer, and water supply lines) with the regional groundwater regime. Storm/sanitary sewer lines and backfill in the utility trenches can serve as a preferential pathways for groundwater flow and can either discharge or receive water. Local anomalies in groundwater elevation have also been caused by groundwater injection/extraction activities associated with treatability studies.

Open trenches associated with ongoing utility removal projects (in Parcels B and G, and the northern portion of Parcel D-1) may be influencing groundwater elevations where the trenches extend below the water table. To facilitate removal and radiological screening of buried utilities, the sanitary sewer system in Parcel B was deactivated in September 2005 and the storm sewer outfalls in Parcel B were sealed in 2006.

Except for trenching on the northwestern and northeastern sides of Building 134, utility-removal trenches have not been excavated in Parcel C.

As part of the ongoing utility removal projects, the storm sewer outfalls in Parcel G and the northern portion of Parcel D-1 were sealed in 2007. Prior to May 2007, an extensive system of sanitary sewer lines in these areas and the northeaster part of Parcel E drained to a lift station near Building 819 from which the water was subsequently pumped offsite to the local sewage treatment plant. The lift station was deactivated in May 2007.

3.0 Groundwater Flow

This section discusses the collection of groundwater elevation data and the evaluation of groundwater flow for the current semiannual monitoring period.

3.1 Groundwater Elevation Data

The measurement of groundwater levels are typically scheduled to occur during a 4-hour period around the higher-low neap tide, to reduce tidal influence on the measurements. However, collecting groundwater level measurements within this time period is not possible if the higher-low neap tide occurs on a weekend, holiday, or at night. Tidal data for the current events were obtained from the National Oceanic and Atmospheric Administration [NOAA] (NOAA, 2008).

Groundwater elevations were calculated by subtracting the depth to water measurements from the respective top of casing elevations. Groundwater elevation measurement information and data are included in the following appendices:

Appendix A. Groundwater elevation measurement forms.

Appendix B. Basewide groundwater elevation data.

For the current semiannual reporting period, depths to groundwater were measured on April 29, 2008 (2Q2008) and July 10, 2008 (3Q2008).

3.1.1 2Q2008 Groundwater Elevation Data

Basewide groundwater elevations were measured in 349 monitoring wells for the 2Q2008 measurement event. For this event, no useful daylight hours coincided with the higher-low tide and groundwater measurements were made during the lower-low tide on the day following a neap tide.

3.1.2 3Q2008 Groundwater Elevation Data

Basewide groundwater elevations were measured in 269 monitoring wells for the 3Q2008 event. Per the 2008 Draft Final BGMP SAP, the number of wells at which groundwater elevation measurements were made was reduced, and eliminated redundant wells. For this event, groundwater depth measurements were made during the higher-low neap tide.

3.2 Groundwater Flow

3.2.1 A-Aquifer

Plate 2 presents basewide potentiometric surface contour maps for the A-Aquifer constructed using data from 2Q2008 and 3Q2008.

In general, groundwater flows from NNP upland recharge areas towards San Francisco Bay. Consistent with previous quarters, groundwater flow directions and lateral gradients in the A-aquifer across HPS are similar between 2Q2008 and 3Q2008. For 2Q2008, which coincided

with the beginning of the dry season, groundwater elevations across the shipyard ranged from approximately minus 2.5 ft MSL to 6.4 ft MSL. For 3Q2008, groundwater elevations across the shipyard were somewhat higher, ranging from approximately minus 0.5 ft MSL to 7.0 ft MSL.

In Parcel B, the A-aquifer potentiometric surface contours continue to roughly parallel the shoreline and sea wall. Relatively minor irregularities in the contours across the remainder of Parcel B may be attributable to ongoing trenching and removal of buried utilities. Slight groundwater mounding is present on Point Avisadero east of the pumphouse tunnel.

In Parcel C, the A-aquifer potentiometric surface contours continue to approximately parallel the shoreline and dry docks. Groundwater mounds persist near Buildings 134 and 272.

The A-aquifer potentiometric surface continues to be relatively flat across much of Parcels D-1 and G. A groundwater depression with elevations below sea level has historically been observed along the northeastern boundary of Parcel E. The depression is most likely the residual effect of groundwater draining into damaged sanitary sewer lines. Where the sanitary sewer lines are submerged below the water table, the lines served as conduits to drain the surrounding sediments and artificial fill. The sanitary sewer lines drained to a lift station where the water was subsequently pumped offsite to the local sewage treatment plant. The sanitary sewer lift station operated until early May 2007. In 2Q2007, the lateral extent of the sanitary sewer line groundwater depression was approximately 73 acres. In 3Q2007, the depression had shrunk to approximately 16 acres, indicating that natural hydrogeological conditions were being reestablished. In 4Q2007 and 1Q2008, the lateral extent of the groundwater depression was approximately 6 and 5 acres, respectively. The depression is not readily discernible in the 2Q2008 contours. In 3Q2008, the lateral extent of the groundwater depression was approximately 11 acres. Relatively minor irregularities in the 2Q2008 and 3Q2008 contours across Parcel G may be attributable to the ongoing trenching and removal of buried utilities.

During 2Q2008 and 3Q2008, the A-aquifer potentiometric surface across much of Parcel E was relatively flat. The A-aquifer groundwater ridge continues to parallel much of the western shoreline and extends northward from near Building 600 to the Industrial Landfill.

Across the Panhandle Area of Parcel E-2, the A-aquifer potentiometric surface contours mimic the shoreline. Groundwater mounding persists at the Industrial Landfill.

3.2.2 B-Aquifer

Plate 2 presents basewide potentiometric surface contour maps for the B-aquifer constructed using data from 2Q2008 and 3Q2008.

Orientation of the B-aquifer potentiometric surface contours across the shipyard are relatively consistent from quarter to quarter, but unlike the A-aquifer do not mimic the shoreline, sea wall, or dry docks. Groundwater in the B-Aquifer flows generally southeastward.

Lateral gradients in the B-aquifer are lower than in the A-aquifer and are generally similar for 2Q2008 and 3Q2008. From quarter to quarter, groundwater elevations in the B-Aquifer typically fluctuate within a narrow range. For 2Q2008, groundwater elevations in the B-Aquifer

across the shipyard ranged from approximately minus 0.4 ft MSL to 7.2 ft MSL. For 3Q2008, groundwater elevations in the B-Aquifer across the shipyard ranged from approximately 0.2 ft MSL to 6.7 ft MSL.

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4.0 Groundwater Sampling and Analysis

Groundwater sampling conducted in the current semiannual reporting period included the following:

- 2Q2008 (April 14 through April 25, 2008), conducted in accordance with the 2004 BGMP SAP.
- 3Q2008 (July 16 through September 25, 2008), conducted in accordance with the 2008 Draft Final BGMP SAP.
- One-time sampling in Parcels D-1 and G in accordance with 2004 BGMP SAP Addendum 3, to provide baseline analytical data for the zero-valent iron (ZVI) treatability study (sampling conducted in both 2Q2008 and 3Q2008).

Groundwater analyses for non-radionuclides were performed by Agriculture & Priority Pollutants Laboratories, Inc. (APPL) in Fresno, California. Analyses for radionuclides were conducted by Eberline Services, Inc. (Eberline) in Richmond, California. Samples were transported to APPL from HPS by a courier. APPL then shipped samples for radionuclide analyses to Eberline.

4.1 Summary of Analytical Results

4.1.1 2Q2008 Sampling Event

Sampling was conducted in 2Q2008 in accordance with the 2004 BGMP SAP and associated addenda. A total of 230 wells were scheduled for sampling; 17 wells could not be sampled. Tables 4-1 and 4-2 summarize groundwater sample information from the 2Q2008 event. Section 5.0 contains parcel-specific summaries of 2Q2008 analytical results.

4.1.2 3Q2008 Sampling Event

Effective for the 3Q2008 event, two types of groundwater samples were collected in accordance with the 2008 Draft Final BGMP SAP:

- *Monitoring Network*. These wells are sampled on an ongoing basis to verify that the contaminant conditions used to develop remedial alternatives in the FSs will continue to be appropriate for use in the Remedial Design (RD) phase.
- *Supplemental Data Collection*. These wells are sampled for a limited duration (generally, two sampling events) to provide additional groundwater data for specific analytes in selected locations.

Note that some wells may be sampled in the same event to support both the Monitoring Network goal and the Supplemental Data Collection goal.

Section 5.0 contains parcel-specific summaries of the 3Q2008 analytical results.

The locations of Monitoring Network and Supplemental Data Collection wells, as of 3Q2008, are shown on the following figures:

Figure 4-1. Parcels B and C sampling network (3Q2008).

Figure 4-2. Parcels D-1 and G sampling network (3Q2008).

Figure 4-3. Parcels E and E-2 sampling network (3Q2008).

4.1.2.1 Monitoring Network (3Q2008)

Wells in the Monitoring Network are sampled at a frequency determined by an evaluation of the trend and variability of target analyte concentrations. A minimum of six data points are required to conduct the evaluation. Quarterly sampling is conducted until the required six data points are available. Analyte- and well-specific Well Action Limits (WALs) (historical maximum and minimum concentrations) have been established for the Monitoring Network wells. The WALs are bracketing concentrations used in the trend and variability evaluation to determine sampling frequency. When Project Action Limits (PALs) have been specified in FS reports, these PALs are used in place of WAL maxima. These PALs remain constant until revised by the FS decision makers.

In general, wells that have analytical data with high trends and high variability are sampled more frequently than wells that are stable (low trend and low variability). Variability is measured by the R-squared value, which is a measure of the "goodness of fit" of the trend line. A trend is considered to be high if it projects that a new WAL (minimum or maximum) will be reached within one year, and is considered to be low if the projected concentration lie within the established WAL range. The WALs are updated semiannually to reflect new data. Trend and variability evaluations are conducted as part of each semiannual report for the purpose of recommending changes to the sampling frequency. Section 5.0 summarizes analytical results for the 3Q2008 event that were outside the WAL ranges. Appendix I lists all WALs as of the conclusion of this semiannual reporting period.

Monitoring Network wells with semiannual sampling frequency are sampled in either the 1st or 4th quarters of each calendar year (representing the wet season), and either the 2nd or 3rd quarters of each calendar year (representing the dry season).

Monitoring Network wells with annual sampling frequency are sampled in either the 1st or 2nd quarters of each calendar year (representing the wet season).

The following summarizes the Monitoring Network sampling for the 3Q2008 event (Table 4-3).

- Ninety-two Monitoring Network wells were scheduled for sampling and analysis in 3Q2008. This includes two newly installed wells (IR02MW374A and IR02MW375A) that were added to the well list after the 2008 Draft Final BGMP SAP was published.
- Eighty-nine wells scheduled for sampling in the Monitoring Network were sampled;

3 wells could not be sampled (see SAP deviations in Section 4.4).

- Twenty-four wells in the Monitoring Network (comprising 44 results for 11 separate analytes) displayed concentrations that were less than the previous WAL minimum concentration. These totals do not include new minimum concentrations that resulted from lower method detection limits. See Section 5.0 for parcel-specific findings.
- Fifteen wells in the Monitoring Network (comprising 23 results for six separate analytes) displayed concentrations that were greater than the previous WAL maximum concentration or FS-specified PAL. These totals do not include new maximum concentrations that resulted from changes in method detection limits. See Section 5.0 for parcel-specific findings.

4.1.2.2 Supplemental Data Collection (3Q2008)

Wells sampled to support the Supplemental Data Collection SAP goal have a limited duration: two semiannual events (or until two samples are collected). Semiannual events are conducted in the wet season (in calendar quarters #1 or #4), and the dry season (in calendar quarters #2 or #3). The 3Q2008 sampling event corresponds to the first of the two Supplemental Data Collection sampling events, and represents the dry season. Supplemental Data Collection wells that were scheduled for dry season semiannual sampling in 3Q2008 and could not be sampled will be re-attempted in the dry season of 2009 (2nd or 3rd quarters). Wet season samples will be attempted during the 4Q2008 or 1Q2009 events.

The following summarizes the Supplemental Data Collection sampling for the 3Q2008 event (Table 4-3).

- A total of 96 Supplemental Data Collection wells were scheduled for sampling and analysis in 3Q2008 (representing the dry season). This includes two newly installed wells (IR02MW374A and IR02MW375A) that were added to the well list after the 2008 Draft Final BGMP SAP was published.
- Eighty-nine of the wells scheduled for sampling were sampled in 3Q2008; 7 wells could not be sampled. Sampling of these wells will be re-attempted in subsequent quarters until two samples are obtained.
- Analysis for radionuclides was conducted in 34 wells. No radionuclides were detected at concentrations above the Release Criteria for Water (U.S. Department of the Navy, 2006). Table 4-5 summarizes the results of radionuclide sampling.
- Analysis for total petroleum hydrocarbons (TPH, purgeables and extractables) was conducted in 23 wells (not including Parcel E-2 wells). Table 4-6 summarizes TPH analytical results for the most recent sampling event in the current semiannual reporting period. Figure 4-4 shows TPH detections in the 3Q2008 event. Section 5.0 contains parcel-specific discussions of TPH analytical results. The TPH Corrective Action Program (CAP) has established a screening level of 3,500 ug/L total TPH (sum of gasoline, diesel and motor oil ranges). No samples displayed TPH concentrations in excess of the screening level.

- Analysis for metals was conducted in 60 wells. Table 4-7 and Figure 4-5 show 3Q2008 metals analytical results that exceeded Hunters Point Groundwater Ambient Levels (HGALs) (all metals except hexavalent chromium) and National Ambient Water Quality Criteria (NAWQC) (hexavalent chromium only). Section 5.0 contains parcel-specific discussions of metals analytical results.

- Analysis for VOCs was conducted in 11 wells. Table 4-8 and Figure 4-6 show VOC detections in the 3Q2008 event. Section 5.0 contains parcel-specific discussions of VOCs analytical results.

- Analysis for PCBs was conducted in one well. Section 5.0 contains parcel-specific discussions of PCBs analytical results.

Table 4-9 summarizes the number of Supplemental Data Collection sampling events that have been conducted in each well, as of the end of the current semiannual reporting period.

4.1.3 2004 BGMP SAP Addendum 3

Table 4-10 summarizes sampling conducted in the current semiannual reporting period to address the 2004 BGMP SAP Addendum 3. Figure 4-7 shows the well locations for this sampling. These analyses were a one-time sampling event to support the treatability study in former Parcel D, in addition to analyses that were already scheduled for the 2Q2008 and 3Q2008 sampling events in these parcels. Table 4-10 includes the following data:

- One-time analyses added per 2004 BGMP SAP Addendum 3.
- Analyses that were scheduled to be collected as part of the normal quarterly sampling event in 2Q2008, but whose collection had to be delayed to 3Q2008 because of accessibility issues during the 2Q2008 event. (Note that these wells, though collected in 3Q2008 are not part of the 3Q2008 well list, but are a holdover from the 2Q2008 sampling event conducted in accordance with the 2004 BGMP SAP).

Section 5.0 contains a discussion of 2004 BGMP SAP Addendum 3 sampling analytical results.

4.2 NAPL Measurements

Per the 2008 Draft Final BGMP SAP (CE2-Kleinfelder JV, 2008c), NAPL measurements are conducted annually (generally in the 3rd or 4th quarter of the calendar year) at a select group of wells having historical NAPL presence. NAPL measurements were conducted at 13 wells in the current semiannual reporting period, and are summarized in Table 4-11. Table 4-12 and Figure 4-8 summarize the NAPL measurement results from the current and previous annual measurement events, including recommended changes to the NAPL measurement strategy. After two consecutive NAPL measurements at a particular well demonstrate no quantifiable thickness, NAPL measurements will be discontinued for that well.

4.3 Quality Control Summary

Appendix J contains the Quality Control Summary Report (QCSR) that discusses quality control (QC) activities for the current semiannual reporting period. In summary:

- Field sampling procedures were conducted in compliance with the 2004 BGMP SAP (for the 2Q2008 sampling event) and the 2008 Draft Final BGMP SAP (for the 3Q2008 sampling event), except as noted in Section 4.5.
- A total of 412 groundwater samples, with 247 accompanying field QC samples, were collected and analyzed in the two quarterly sampling events comprising the semiannual period.
- Data validation was performed on 100 percent of the data, with approximately 80 percent undergoing a Level III data validation and 20 percent undergoing a Level IV validation.
- A total of 32,864 analytical results were evaluated by a third-party data validation firm. Of these, 99.96% are considered usable, which meets the criteria of both the 2004 BGMP SAP and the 2008 Draft Final BGMP SAP.
- The data quality assessment process determined that the precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS) parameters were met, and the results are of good quality and are acceptable for use during the decision-making process.

4.4 Deviations from the SAPs

Tables 4-13 and 4-14 list SAP deviations that are applicable to the 2Q2008 and 3Q2008 sampling events, respectively. As discussed in Section 1.0, SAP deviations for each event reflect the monitoring program that was in place at the time the event was conducted. The following sections summarize SAP deviations for each event in the current semiannual reporting period.

4.4.1 Deviations from the 2004 BGMP SAP (2Q2008 event)

- Water levels were not measured in 34 monitoring wells because these wells were inaccessible (18 wells), were wells where NAPL has historically been present (13 wells), were wells that had been previously decommissioned but not yet removed from the monitoring program by a SAP addendum (2 wells), or were inadvertently not measured (1 well).
- Groundwater samples were not collected from 17 monitoring wells because these wells were inaccessible (8 wells), were wells where NAPL has historically been present (6 wells), or were inadvertently not sampled (3 wells).
- Specific conductance did not stabilize prior to sampling in 2 wells, and less than the required 14 Liters were purged prior to sampling.

The sampling pump intakes were placed within the well screened intervals during the purging and sampling of all wells.

4.4.2 Deviations from the 2008 Draft Final BGMP SAP (3Q2008 event)

The following summarizes the SAP deviations related to the Monitoring Network portion of the 3Q2008 sampling event (the first event conducted under the 2008 Draft Final BGMP SAP). The sampling requirement for Supplemental Data Collection wells is based on a specified number of sampling events. Therefore, if a well that supports the Supplemental Data Collection SAP goal cannot be sampled in a given event, it will be re-attempted in a later event (see Section 1.0 for details). Therefore, not sampling a Supplemental Data Collection well is not a SAP deviation.

- Water levels were not measured in 17 monitoring wells because these wells were: inaccessible (covered by debris or soil piles, or too near a trench for safe access) (16 wells); or, had kinked casing (1 well).
- Groundwater samples were not collected from four Monitoring Network monitoring wells because there was evidence of gravel intrusion into the well (1 well), or were decommissioned (3 wells).
- Specific conductance did not stabilize prior to sampling in one well, and dissolved oxygen did not stabilize prior to sampling in one well. Less than the required 14 Liters were purged prior to sampling.

The sampling pump intakes were placed within the well screened intervals during the purging and sampling of all wells.

4.4.3 Deviations from the 2004 BGMP SAP Addendum 3

There were no deviations from the 2004 BGMP SAP Addendum 3.

The sampling pump intakes were placed within the well screened intervals during the purging and sampling of all wells.

4.5 Trend and Variability Analysis

Per the 2008 Draft Final BGMP SAP, sampling frequency is determined on a well-specific basis for Monitoring Network Wells (not including Parcel E-2 landfill wells). Sampling frequency is determined based on the trend and variability of groundwater concentrations for each target analyte. In general, wells with target analyte concentrations having strong trends (either increasing or decreasing) and high variability are sampled more frequently than wells that are more stable. The following criteria apply to the analysis.

- Six BGMP data points since 4Q2005 are required to conduct the analysis.
- The analysis is conducted for each Monitoring Network well having established WAL/PAL values (i.e., E-2 wells, which do not have established WAL/PAL values are excluded from trend and variability analysis). The WAL/PAL values are used as bracketing concentrations in the analysis.
- The most recent six BGMP data points are used in the analysis.

- There is only one sampling frequency per well, and it is based on the target analyte(s) with the highest sampling frequency indicated by the analysis.

- Increasing the sampling frequency is indicated when an analyte is projected to achieve a new WAL maximum/minimum or PAL value within the next year. Wells are to be sampled no more frequently than quarterly.

- Decreasing the sampling frequency is indicated when an analyte is projected to remain within its WAL/PAL range and variability is low. Wells are to be sampled no less frequently than annually.

- If an increase in sampling frequency is indicated due to a new WAL maximum (or strongly increasing trend), sampling frequency will be revised in the next practicable event.

- If a decrease in sampling frequency is indicated or if a well's target analytes exhibit a strong decreasing trend, sampling frequency will be revised annually (during the third quarter sampling event).

Table 4-15 lists the 24 wells where a change in sampling frequency is indicated by trend and variability analysis. Of these, less frequent sampling is indicated for 19 wells. More frequent sampling is indicated for 5 wells because of sharply decreasing trends. These frequency changes will be implemented starting 3Q2009, provided these wells/analytes continue to exhibit the same behavior during the next semiannual groundwater monitoring report.

While E-2 wells are not part of the sampling frequency analysis, trend and variability results were calculated for E-2 monitoring wells for the purpose of evaluating general patterns of target analyte trends. However, these calculations indicated that there are no clearly discernible overall patterns to analyte concentration trends in E-2.

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5.0 Parcel-Specific Summaries

This section provides parcel-specific summaries of the current semiannual reporting period analytical findings. Analytical results from the 2Q2008 event are compared to the following water quality criteria.

- Hunters Point Groundwater Ambient Levels (HGALs).
- California and federal Maximum Contaminant Levels (MCLs).
- National Ambient Water Quality Criteria (NAWQC).

Table 5-1 summarizes 2Q2008 analytical results that exceeded the specified criteria.

Per the 2008 Draft Final BGMP SAP, analytical results from the 3Q2008 event are discussed in the context of the following:

- Well Action Limits (WALs) (for Monitoring Network samples).
- HGALs (for Supplemental Data Collection samples).
- Project Action Limits (PALs) (for Monitoring Network wells in Parcel G for which PALs have been established).
- Detectable concentrations of TPH and VOCs (for Supplemental Data Collection samples).

Appendix I lists all wells and target analytes for which WALs have been established, including their current values and when the current values were established. Tables 5-2 and 5-3 summarize analytical results that were outside the WAL ranges, since the WALs were first established in the 2008 Draft Final BGMP SAP (which included data through 4Q2007). These tables, and the discussions below, do not include changes to WAL values that were the result of changes to method reporting limits only, but focus on WAL changes related to groundwater conditions. However, all changes to WAL values are reflected in the full WAL list (Appendix I).

Figures 4-4 through 4-6 summarize TPH, metals, and VOCs findings for Supplemental Data Collection wells.

5.1 Parcel B

5.1.1 2Q2008 Event

- Thirty one Parcel B wells were scheduled for sampling and analysis in the 2Q2008 event. Three could not be sampled.
- Water quality criteria were exceeded in 15 separate analytical results, comprising 11 wells and six analytes.

5.1.2 Monitoring Network (3Q2008 event)

- Eleven Parcel B Monitoring Network wells were scheduled for sampling and analysis in the 3Q2008 event. All were sampled.
- Three wells (comprising 3 results for 3 separate analytes) had concentrations that were less than the previous WAL minimum concentration.
- Three wells (comprising 7 results for 5 separate analytes) had concentrations that were greater than the previous WAL maximum concentration.
- Figure 5-1 shows Parcel B analytical results with new WAL maxima.

5.1.3 Supplemental Data Collection (3Q2008 event)

- Twenty Parcel B Supplemental Data Collection wells were scheduled for sampling and analysis in the 3Q2008 event. All were sampled.
- Eight wells were analyzed for radionuclides. No radionuclides were detected at concentrations above the Release Criteria for Water (U.S. Department of the Navy, 2006).
- Ten wells were analyzed for purgeable and extractable total petroleum hydrocarbons (TPH). Purgeable TPH (gasoline) was not detected. Extractable TPH (diesel and/or motor oil) was detected in one well.
- Fifteen wells were analyzed for metals. Eight wells (comprising 13 results for five metals) had concentrations exceeding Hunters Point Groundwater Ambient Levels (HGALs).
- Three wells were analyzed for VOCs. Two wells (comprising five results for five VOCs) had detectable levels of VOCs.

One well (IR46MW49A) was analyzed for methyl mercury, which was not detected. This well is not in either the Monitoring Network or Supplemental Data Collection programs. The well was sampled to provide analytical data for the Parcel B Time-Critical Removal Action (TCRA) (Insight Environmental Engineering and Construction, Inc., 2009).

5.2 Parcel C

5.2.1 2Q2008 Event

- Ninety three Parcel C wells were scheduled for sampling and analysis in the 2Q2008 event. All were sampled.
- Water quality criteria were exceeded in 67 separate analytical results, comprising 33 wells and 16 analytes.

5.2.2 Monitoring Network (3Q2008 event)

- Thirty-two Parcel C Monitoring Network wells were scheduled for sampling and analysis in the 3Q2008 event.
- Thirty-one of the scheduled Parcel C Monitoring Network wells were sampled in the 3Q2008 event; 1 well could not be sampled (see SAP deviations in Section 4.5).
- Fourteen wells (comprising 30 results for 7 separate analytes) had concentrations that were less than the previous WAL minimum concentration. Three of the results (all in well IR25MW55A) resulted from sampling this well for the first time.
- Eight wells (comprising 14 results for 3 separate analytes), had concentrations that were greater than the previous WAL maximum concentration. Three of the results (all in well IR25MW55A) resulted from sampling this well for the first time.
- Figure 5-2 shows Parcel C analytical results with new WAL maxima.

5.2.3 Supplemental Data Collection (3Q2008 event)

- Thirty four Parcel C Supplemental Data Collection wells were scheduled for sampling and analysis in the 3Q2008 event. All were sampled.
- Seven wells were analyzed for radionuclides. No radionuclides were detected at concentrations above the Release Criteria for Water (U.S. Department of the Navy, 2006).
- Six wells were analyzed for purgeable and extractable total petroleum hydrocarbons (TPH). Purgeable TPH (gasoline) was detected in two wells. Extractable TPH (diesel and/or motor oil) was detected in five wells.
- Twenty-three wells were analyzed for metals. Fourteen wells (comprising 21 results for 6 separate metals) had concentrations exceeding HGALs. One metal (hexavalent chromium, which does not have an HGAL) was detected in 3 wells at concentrations exceeding NAWQCs.
- Three wells were analyzed for VOCs. Two wells (comprising 13 results for nine VOCs) had detectable levels of VOCs.

5.3 Parcel D-1 and Parcel G

5.3.1 2Q2008 Event

- Twenty six Parcel D (comprising newly-designated Parcels D-1 and G) wells were scheduled for sampling and analysis in the 2Q2008 event. Four could not be sampled.
- Water quality criteria were exceeded in four separate analytical results, comprising two wells and four analytes.

5.3.2 Monitoring Network (3Q2008 event)

- Sixteen Parcel D-1 and Parcel G Monitoring Network wells were scheduled for sampling and analysis in the 3Q2008 event.
- Fourteen of the scheduled Parcel D-1 and Parcel G Monitoring Network wells were sampled in the 3Q2008 event; 2 wells could not be sampled (see SAP deviations in Section 4.5).
- In Parcel G, 6 wells (comprising 11 results for 7 separate analytes) had concentrations that were less than the previous WAL minimum concentration.
- Concentrations of hexavelent chromium in IR09PPY1 exhibited a steep decline between 2Q2008 (601 ug/l) and 3Q2008 (26.2ug/l). Trenching associated with utility line removal in the vicinity of this well appears to have removed the source material.

A zero-valent iron (ZVI) treatability study is being conducted in Parcel D-1 and Parcel G. IR-specific PALs have been developed by the Navy's treatability study contractor and are documented in the Feasibility Study report for former Parcel D (SulTech, 2007). As of 3Q2008 there are nine BGMP wells scheduled for sampling and analysis (all in Parcel G) for which PALs have been established. Tables 5-4 and 5-5 summarize BGMP groundwater sampling information in Parcel G from the current semiannual reporting period (including both the 2Q2008 and 3Q2008 sampling events), including analytical results that exceeded PALs. Figure 5-3 shows Parcel G groundwater analytical results, for wells and analytes with established PALs, from the most recent sampling event (3Q2008). Exceedances of PALs were as follows:

- In the 2Q2008 event, one well (IR71MW03A) had one analyte (PCE) at a concentration (4.9 μg/L) that exceeded the PAL (0.9 μg/L).
- In the 3Q2008 event, one well (IR71MW03A) had one analyte (PCE) at a concentration (2.7 μg/L) that exceeded the PAL (2.9 μg/L). One well (IR09MW51F) had one analyte (TCE) at a concentration (6.9 μg/L) that exceeded the PAL (2.9 μg/L).

5.3.3 Supplemental Data Collection (3Q2008 event)

- Eleven Parcel D-1 and Parcel G Supplemental Data Collection wells were scheduled for sampling and analysis in the 3Q2008 event.
- Six of the scheduled Parcel D-1 and Parcel G Supplemental Data Collection wells were sampled in the 3Q2008 event; five wells were not sampled. Dry season event sampling of those wells will be re-attempted during the next dry season sampling event (2Q2009).
- Three wells were analyzed for radionuclides. No radionuclides were detected at concentrations above the Release Criteria for Water (U.S. Department of the Navy, 2006).
- One well (in Parcel G) was analyzed for purgeable and extractable total petroleum hydrocarbons (TPH). Neither purgeable nor extractable TPH was detected.

- Six wells were analyzed for metals. Two wells (comprising 2 results for 2 separate metals) were detected at concentrations exceeding HGALs.

- No Supplemental Data Collections wells in Parcels G-1 or G were analyzed for VOCs.

5.4 Parcel E

5.4.1 2Q2008 Event

- Fifty Parcel E were scheduled for sampling and analysis in the 2Q2008 event. Ten could not be sampled.
- Water quality criteria were exceeded in 20 separate analytical results, comprising 13 wells and ten analytes.

5.4.2 Monitoring Network (3Q2008 event)

- Eleven Parcel E Monitoring Network wells were scheduled for sampling and analysis in the 3Q2008 event. This includes one well (IR04P31AB) scheduled for sampling that was inaccessible (and is presumed to be destroyed). Adjacent well IR04MW31A (physically located in Parcel E-2) was sampled as a replacement. All wells were sampled.
- Two wells (comprising two results for two separate analytes) had concentrations that were greater than the previous WAL maximum concentration.

- Figure 5-4 shows Parcel E analytical results with new WAL maxima.

5.4.3 Supplemental Data Collection (3Q2008 event)

- Twenty-seven Parcel E Supplemental Data Collection wells were scheduled for sampling and analysis in the 3Q2008 event. All were sampled.

- Sixteen wells were analyzed for radionuclides. No radionuclides were detected at concentrations above the Release Criteria for Water (U.S. Department of the Navy, 2006).

- Six wells were analyzed for purgeable and extractable total petroleum hydrocarbons (TPH). Purgeable TPH (gasoline) was detected in 2 wells. Extractable TPH (diesel and/or motor oil) was detected in 5 wells.

- Fourteen wells were analyzed for metals. Six wells (comprising 11 results for 5 separate metals) had concentrations exceeding HGALs.

- Five wells were analyzed for VOCs. One well comprising seven results had detectable concentrations of VOCs. The concentration for TCE exceeded the NAWQC.

- One well (IR14MW10A) was analyzed for PCBs; none were detected.

5.5 Parcel E-2

5.5.1 2Q2008 Event

- Twenty three Parcel E-2 wells were scheduled for sampling and analysis in the 2Q2008 event. All were sampled.
- Water quality criteria were exceeded in 71 separate analytical results, comprising 21 wells and 18 analytes.

5.5.2 Monitoring Network (3Q2008 event)

- Twenty-two Parcel E-2 Monitoring Network wells were scheduled for sampling and analysis in the 3Q2008 event. All were sampled.
- WAL criteria have not been established for Parcel E-2 wells.

5.5.3 Supplemental Data Collection (3Q2008 event)

- Four Parcel E-2 Supplemental Data Collection wells were scheduled for sampling and analysis (for perchlorate only) in the 3Q2008 event. All wells were sampled. Perchlorate was not detected.

5.6 Non-Navy Property

5.5.1 2Q2008 Event

- Seven non-Navy property (NN) wells were scheduled for sampling and analysis in the 2Q2008 event. All were sampled.
- Water quality criteria were exceeded in 13 separate analytical results, comprising five wells and 8 analytes.

There are no NNP wells in the Monitoring Network or Supplemental Data Collection sampling programs.

6.0 Summary and Conclusions

The BGMP was revised between the 2nd and 3rd quarters of 2008, per the 2008 Draft Final BGMP Sampling and Analysis Plan (SAP). Revisions included: the list of wells sampled for analysis with their analytical groups; sampling frequency; wells measured for NAPL; wells with depth to water measurements for evaluating potentiometric surfaces; and criteria against which analytical results will be evaluated. A dynamic strategy has been implemented that will be used to revise the BGMP in the future.

Groundwater elevations were measured in the two quarterly events comprising the current semiannual reporting period (2Q2008 and 3Q2008). In the 2Q2008 event, depth to water measurements were conducted in 349 wells on April 29, 2008, comprising 91.2% of the wells scheduled for measurement. In the 3Q2008 event, depth to water measurements were conducted in 269 wells on July 10, 2008, comprising 87.3% of the wells scheduled for measurement. The missing data points did not affect interpretation of the hydraulic regime.

Groundwater in the A-Aquifer generally flows toward San Francisco Bay from upland recharge areas on NNP. In Parcels B, C, D-1, and G, groundwater flow is relatively uniform toward the Bay except for localized disturbances that may be caused by preferential flow into, and recharge from, subsurface utilities and/or utility trenches. The A-aquifer potentiometric surface continues to be relatively flat across much of the southern portion of Parcels D-1 and E. Groundwater elevations along the northeastern boundary of Parcel E have historically been anomalously low, forming a groundwater depression that is often below sea level and may be attributable to ruptured sanitary sewer lines previously draining into a sanitary-sewer collection facility. Groundwater flow in Parcels E and E-2 is influenced by a groundwater ridge that extends northeastward along the western shoreline and merges into a groundwater mound at the Industrial Landfill (Parcel E-2). Groundwater in the Panhandle Area of Parcel E-2 flows southward to the Bay. The potentiometric surface of the B-Aquifer indicates that groundwater flows southeastward in Parcels C, E, E-2, and G.

Groundwater sampling was conducted in the two quarterly events comprising the current semiannual reporting period: 213 wells in 2Q2008 (sampling conducted in accordance with 2004 BGMP SAP and associated addenda); and 178 wells in 3Q2008 (sampling conducted in accordance with 2008 Draft Final BGMP SAP).

In the 2Q2008 event, 92.6% of the wells scheduled for sampling were sampled, including six wells that have historically had NAPL presence and therefore were not attempted for sampling. Two wells had one analyte each that exceeded the FS-specified Project Action Limit (PAL) concentration. Water quality criteria (HGALs, MCLs and/or NAWQC) were exceeded for a total of 190 separate analytical results, comprising 83 wells and 25 analytes.

In the 3Q2008 event, 97.2% of the Monitoring Network wells scheduled for sampling were sampled. Supplemental Data Collection wells that were scheduled for sampling but were inaccessible will be re-attempted in subsequent quarters until two samples are collected.

Historical contaminant concentration maxima and minima (Well Action Limits [WALs]) were established for wells in the Monitoring Network in the 2008 BGMP SAP (data cutoff date

was 4Q2007). In the three subsequent sampling events, previous WAL maxima were exceeded in 13 wells (comprising 23 results for six separate analytes). New minima were established for 23 wells in the Monitoring Network (comprising 44 results for 11 separate analytes) that displayed concentrations that were less than the previous WAL minimum concentration. In particular, concentrations of hexavalent chromium in IR09PPY1 dropped significantly between 2Q2008 and 3Q2008. The sharp decline is likely due to incidental source removal associated with the utility-line excavation and trenching that occurred in that area.

In both the 2Q2008 and 3Q2008 sampling events, Project Action Limits (PALs) established in the former Parcel D zero-valent iron treatability study were exceeded at two wells (one analyte each well each event).

Sampling frequency changes are indicated by trend and variability analysis, using WALs as bracketing concentrations, in 24 wells. This includes reduced sampling frequency in 19 wells and increased sampling frequency in five wells. Trend and variability analysis will be conducted again, on all Monitoring Network wells that meet the criteria for analysis, in the next semiannual report and changes will be made at that time, as appropriate.

Regarding Supplemental Data Collection, no radionuclides were detected at concentrations above the Navy's Release Criteria for Water. Four wells showed detectable levels of purgeable hydrocarbons (TPH gasoline), and 11 wells showed detectable levels of extractable TPH (diesel and/or motor oil), comprising 26 separate analyses. No wells had total TPH (sum of gasoline, diesel and motor oil ranges) in excess of the TPH CAP's screening criterion of 3,700 μg/L. Analysis for metals indicated that 30 wells had exceedances of HGALs (NAWQC in the case of hexavalent chromium) for one or more metal constituents, comprising 50 separate analyses for 12 different metals. VOC analysis showed that five wells had detectable levels of VOCs, comprising 25 separate analyses for 14 different VOCs.

Dry season sampling of Supplemental Data Collection wells (which require one dry season sampling and one wet season sampling) was conducted in 89 wells. Dry season sampling was not possible in five wells, and will be re-attempted in 2Q2009 or 3Q2009. The wet season sampling event will be conducted in 4Q2008 or 1Q2009.

All sampling associated with the 2004 BGMP SAP Addendum 3 (baseline sampling for the former Parcel D zero-valent iron treatability study) has been completed.

NAPL measurements in 13 wells over the previous two years indicate that measureable LNAPL is present and measurement should be continued in 11 wells, and is not present and should be discontinued in two wells.

The data validation process determined that 99.96 percent of the groundwater analytical data (including field-collected samples and QA/QC samples) from the two events comprising the current semiannual reporting period are considered usable.

In accordance with the revised BGMP SAP, the sampling list for future events will be revised as directed by the Navy, and documented in semiannual groundwater monitoring reports.

7.0 References

CE2-Kleinfelder Joint Venture (JV), 2007a. Final Addendum 1 to the Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Basewide Groundwater Monitoring Program, Hunters Point Shipyard, San Francisco, California. April.

CE2-Kleinfelder JV, 2007b. Final Addendum 2 to the Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Basewide Groundwater Monitoring Program, Hunters Point Shipyard, San Francisco, California. December.

CE2-Kleinfelder JV, 2008a. Final Addendum 3 to the Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Basewide Groundwater Monitoring Program, Hunters Point Shipyard, San Francisco, California. March.

CE2-Kleinfelder JV, 2008b. Final Addendum 4 to the Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Basewide Groundwater Monitoring Program, Hunters Point Shipyard, San Francisco, California. May.

CE2-Kleinfelder JV, 2008c. Draft Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Basewide Groundwater Monitoring Program, Hunters Point Shipyard, San Francisco, California. June 17.

Insight Environmental Engineering and Construction, Inc., 2009. Final Hunters Point Shipyard Parcel B, IR-26 Time-Critical Removal Action Action Closeout Report. January

National Oceanic and Atmospheric Administration [NOAA], 2008. NOAA Center for Operational Oceanographic Products and Services. Tidal Prediction NOAA station ID 9414358 - Hunters Point Shipyard, San Francisco, California. website: http://tidesandcurrents.noaa.gov/data_menu.shtml?type=Tide+Predictions&mstn=941358.

SulTech, 2006. Draft Parcel B Technical Memorandum in Support of a Record of Decision Amendment, Hunters Point Shipyard San Francisco, California. March 28.

SulTech, 2007. Final Revised Feasibility Study for Parcel D, Hunters Point Shipyard, San Francisco, California. November 30.

Tetra Tech EM, Inc. (TtEMI), 1999. Final Parcel B Remedial Design Document V, Remedial Action Monitoring Plan, Remedial Action, Hunters Point Shipyard, San Francisco, California, Revision 2. July 2.

TtEMI, 2004. Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) Basewide Groundwater Monitoring Program, Hunters Point Shipyard, San Francisco, California, August 20.

U.S. Department of the Navy, 2003. Informal Briefing: Environmental Clean-Up Sites at Hunters Point Shipyard, 2pp. September 18.

U.S. Department of the Navy, 2006. Final Basewide Radiological Removal Action - Action Memorandum - Revision 2006, Hunters Point Shipyard, San Francisco, California. April 21.

U.S. Department of the Navy, 2009. Hunters Point Shipyard, Parcel B Final Record of Decision, January 14.

U.S. Environmental Protection Agency, 1999. National Functional Guidelines for Organic Data Review. Office of Emergency and Remedial Response. Washington, DC. EPA-540/R-99-008. April.

U.S. Environmental Protection Agency, 2001. EPA Requirements for Quality Assurance Project Plans. EPA QA/—R-5. Office of Environmental Information. Washington DC. EPA/600/R-96/055. March.

U.S. Environmental Protection Agency, 2004. National Functional Guidelines for Inorganic Data Review. Office of Emergency and Remedial Response. Washington, DC. EPA-540/R-04/004. October.

Tables

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Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR01MW02B	NNP	20.61	28.3	38.3	34.0	
IR01MW03A	NNP	19.89	12.5	27.5	21.0	
IR01MW05A	NNP	22.56	12.4	29.4	23.5	
IR01MW07A	E-2	19.02	7.3	24.3		decommissioned
IR01MW09B	E-2	10.05	31.4	41.4	37.0	
IR01MW10A	E-2	13.75	4.8	21.8	15.0	
IR01MW11A	E-2	17.96	7.1	19.1		
IR01MW12A	E-2	18.25	7.0	24.0		
IR01MW16A	E-2	24.55	15.4	30.4		
IR01MW17B	E-2	29.55	44.5	54.5		
IR01MW18A	E-2	23.58	15.6	33.6		
IR01MW26B	E-2	23.95	48.3	58.3	54.0	
IR01MW31A	E-2	13.81	8.2	26.2	17.0	
IR01MW366A	E-2	17.31	7.2	17.2	17.5	
IR01MW366B	E-2	16.70	46.4	56.4	51.5	
IR01MW367A	E-2	12.12	4.4	14.4		
IR01MW38A	E-2	17.36	12.9	25.9	19.0	
IR01MW400A	NNP	11.58	7.4	22.4		
IR01MW401A	NNP	13.87	4.6	19.6		
IR01MW402A	NNP	12.51	4.7	19.7		
IR01MW403A	NNP	13.00	5.6	20.6	14.5	
IR01MW403B	E-2	10.54	26.2	36.2	31.0	
IR01MW42A	E-2	13.28	18.5	27.0	21.5	
IR01MW43A	E-2	12.16	7.0	24.5		decommissioned
IR01MW44A	E-2	9.22	6.6	10.6		decommissioned
IR01MW47B	E-2	12.31	37.0	47.0		decommissioned

Table 4-1. Summary of groundwater sample information (2Q2008).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	Comments	Mercury-CLP	Metals-CLP	Pesticides and PCBs-CLP	SVOCs-CLP	VOCs-CLP	EPA160-1 TDS	EPA160-2 TSS	EPA1664 Oil And Grease	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	EPA351-2 Nitrogen-Kjeldahl_Total	EPA376-1 Sulfide	EPA6010B Dissolved_Metals	EPA7199 Hexavalent Chromium	EPA7470A Dissolved Mercury	EPA8015B-G Gasoline	EPA8015B-D Diesel or Motor Oil	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds and Pesticides	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	FPD-GC Organotins	SM2520B Salinity	EPA901-0 Cesium-137	EPA901-1MCobalt-60	DOE_HASL-300 Plutonium-239	EPA903-1 Radium-226	EPA905-0 Strontium-90	EPA520 Thorium-232
IR01MW02B	NNP	0816H022	4/17/08	1014								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MW03A	NNP	0816H021	4/17/08	0929								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MW05A	NNP	0816H023	4/17/08	1055								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MW09B	E-2	0816H018	4/16/08	1442								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MW10A	E-2	0817G021	4/21/08	0958								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MW16A	E-2	0823E075	6/4/08	1122																											Q			Q	Q	
IR01MW18A	E-2	0823E078	6/5/08	0946																											Q			Q	Q	
IR01MW26B	E-2	0823G048	6/4/08	0933								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q			Q			Q	Q	
IR01MW31A	E-2	0816D021	4/17/08	1344								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MW366B	E-2	0816G016	4/16/08	1502								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MW38A	E-2	0816D023	4/17/08	1510								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MW403A	NNP	0817G022	4/21/08	1122								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MW403B	E-2	0816D019	4/17/08	0922								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MW42A	E-2	0816D016	4/16/08	1319								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MW48A	E-2	0816G019	4/17/08	1053								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q	Q							
IR01MW53B	E-2	0816G018	4/17/08	0943								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MW60A	E-2	0823G049	6/4/08	1038								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q	Q		Q			Q	Q	
IR01MW62A	E-2	0816E024	4/16/08	1423								Q						Q		Q						Q	Q	Q								
IR01MW63A	E-2	0816E022	4/16/08	1335								Q						Q		Q						Q		Q								
IR01MW64A	E-2	0823G050	6/4/08	1328								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q	Q		Q			Q	Q	
IR01MWI-7	E-2	0817D055	4/25/08	1327								Q						Q		Q						Q	Q		Q							
IR01MWI-8	E-2	0817D030	4/21/08	1008								Q						Q		Q						Q	Q	Q	Q							
IR01MWLF1A	E-2	0817D031	4/21/08	1108								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MWLF2A	E-2	0816D020	4/17/08	1037								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR01MWLF4B	E-2	0816D017	4/16/08	1428								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR02MW101A1	E	0823E074	6/4/08	1007																											Q			Q	Q	
IR02MW126A	E	0817H036	4/21/08	1413								Q						Q		Q	Q	Q				Q	Q		Q		Q			Q		
IR02MW147A	E	0817G029	4/22/08	1512								Q						Q		Q						Q			Q		Q			Q		
IR02MW149A	E	0817D032	4/21/08	1406								Q						Q	Q	Q									Q		Q			Q		
IR02MW175A	E	0817D033	4/21/08	1521								Q						Q		Q						Q			Q		Q			Q		
IR02MW179A	E	0817H037	4/21/08	1510								Q						Q		Q									Q		Q			Q		
IR02MW209A	E	0817E036	4/22/08	1015								Q						Q		Q						Q			Q		Q			Q		
IR02MW301A	E	0817G023	4/21/08	1455								Q						Q		Q			Q				Q		Q		Q			Q		

Table 4-1. Summary of groundwater sample information (2Q2008).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	Comments	Mercury-CLP	Metals-CLP	Pesticides and PCBs-CLP	SVOCs-CLP	VOCs-CLP	EPA160-1 TDS	EPA160-2 TSS	EPA1664 Oil And Grease	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	EPA351-2 Nitrogen-Kjeldahl_Total	EPA376-1 Sulfide	EPA6010B Dissolved_Metals	EPA7199 Hexavalent Chromium	EPA7470A Dissolved Mercury	EPA8015B-G Gasoline	EPA8015B-D Diesel or Motor Oil	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds and Pesticides	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	FPD-GC Organotins	SM2520B Salinity	EPA901-0 Cesium-137	EPA901-1MCobalt-60	DOE_HASL-300 Plutonium-239	EPA903-1 Radium-226	EPA905-0 Strontium-90	EPA520 Thorium-232
IR01MW02B	NNP	0816H022	4/17/08	1014								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q									
IR02MWB-1	E	0817E032	4/21/08	1459								Q						Q	Q	Q									Q		Q			Q			
IR03MW218A2	E	0823H060	6/4/08	0952								Q						Q	Q	Q	Q	Q		Q		Q	Q				Q			Q			
IR03MW224A	E	0817E029	4/21/08	1051								Q						Q		Q				Q		Q	Q										
IR03MW228B	E	0817E030	4/21/08	1134																						Q											
IR03MW342A	E	0817E034	4/22/08	0921								Q						Q	Q	Q			Q			Q	Q										
IR03MW369A	E				Not sampled: NAPL							Q						Q		Q	Q	Q		Q		Q	Q										
IR03MW370A	E				Not sampled: NAPL							Q						Q		Q	Q	Q	Q	Q		Q	Q										
IR03MW371A	E				Not sampled: NAPL							Q						Q		Q	Q	Q		Q		Q	Q		Q								
IR03MW373B	E	0817E028	4/21/08	0931								Q						Q		Q	Q	Q	Q	Q		Q	Q										
IR04MW13A	E-2	0823H062	6/4/08	1125								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q			Q			Q	Q		
IR04MW36A	E-2	0816H017	4/16/08	1402								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q									
IR04MW37A	E	0823G046	6/3/08	1527																						Q					Q			Q	Q		
IR04MW40A	E	0823G053	6/5/08	1452																											Q			Q	Q		
IR05MW85A	E	0816E025	4/16/08	1518								Q								Q						Q	Q										
IR06MW32A	C	0817H042	4/22/08	1204																	Q	Q				Q											
IR06MW35A	C	0816D012	4/15/08	1540																						Q											
IR06MW40A	C	0817H041	4/22/08	1134																						Q											
IR06MW42A	C+	0816N002	4/15/08	1305		Q	Q	Q	Q	Q		Q							Q		Q	Q															
IR06MW47F	C	0816E015	4/15/08	1512																						Q											
IR06MW52F	C	0816D011	4/15/08	1435																						Q											
IR06MW53F	C	0816H013	4/16/08	1031								Q						Q								Q											
IR06MW54F	C	0816H011	4/16/08	0852								Q						Q	Q				Q			Q											
IR06MW55F	C	0816H012	4/16/08	0928																						Q											
IR06MW59A1	C	0816H015	4/16/08	1136																						Q	Q										
IR06MW59A2	C	0816H016	4/16/08	1207																						Q											
IR06MW60A	C	0816N003	4/15/08	1402						Q		Q						Q	Q	Q	Q	Q															
IR07MW19A	B				Not sampled: inaccessible – trench	Q	Q			Q		Q							Q		Q	Q																
IR07MW20A1	B	0816G014	4/16/08	1146		Q	Q			Q		Q							Q		Q	Q															
IR07MW21A1	B	0816G011	4/16/08	0924		Q	Q			Q		Q							Q		Q	Q															
IR07MW24A	B	0816G013	4/16/08	1038		Q	Q			Q		Q							Q		Q	Q															
IR07MW25A	B	0823G051	6/4/08	1511		Q	Q			Q		Q							Q		Q	Q									Q		Q	Q	Q		

Table 4-1. Summary of groundwater sample information (2Q2008).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	Comments	Mercury-CLP	Metals-CLP	Pesticides and PCBs-CLP	SVOCs-CLP	VOCs-CLP	EPA160-1 TDS	EPA160-2 TSS	EPA1664 Oil And Grease	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	EPA351-2 Nitrogen-Kjeldahl_Total	EPA376-1 Sulfide	EPA6010B Dissolved_Metals	EPA7199 Hexavalent Chromium	EPA7470A Dissolved Mercury	EPA8015B-G Gasoline	EPA8015B-D Diesel or Motor Oil	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds and Pesticides	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	FPD-GC Organotins	SM2520B Salinity	EPA901-0 Cesium-137	EPA901-1MCobalt-60	DOE_HASL-300 Plutonium-239	EPA903-1 Radium-226	EPA905-0 Strontium-90	EPA520 Thorium-232
IR01MW02B	NNP	0816H022	4/17/08	1014								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR07MW26A	B	0823H063	6/4/08	1503		Q	Q			Q		Q							Q		Q	Q									Q		Q	Q	Q	
IR07MW28A	NNP	0816E019	4/16/08	1030		Q	Q	Q	Q	Q		Q							Q		Q	Q														
IR07MWS-2	B	0816E018	4/16/08	0905		Q	Q			Q		Q							Q		Q	Q														
IR07MWS-4	B	0816D015	4/16/08	1026		Q	Q			Q		Q							Q		Q	Q														
IR08MW41A	E	0823E079	6/5/08	1108																											Q			Q	Q	
IR09MW35A	D				Not sampled: inaccessible - trench							Q						Q	Q									Q			Q	Q		Q		
IR09MW36A	D	0826D006	6/24/08	1013								Q						Q	Q									Q								
IR09MW37A	D	0826E013	6/25/08	1009								Q						Q	Q																	
IR09MW38A	D	0826D011	6/25/08	1058								Q						Q	Q																	
IR09MW39A	D				Not sampled: inaccessible – trench							Q						Q	Q																	
IR09MW44A	D	0826D007	6/24/08	1357								Q						Q	Q												Q	Q		Q		
IR09MW45F	D	0826D015	6/26/08	1137								Q						Q	Q																	
IR09MW51F	D				Not sampled: unsafe to access due to trenching							Q						Q	Q							Q										
IR09MW52A	D	0826D014	6/26/08	1027								Q						Q	Q																	
IR09MW61A	D	0817G025	4/22/08	0959							Q	Q						Q	Q							Q				Q						
IR09MW62A	D	0817G031	4/23/08	0933							Q	Q						Q	Q							Q				Q						
IR09MW63A	D				Not sampled: inaccessible – trench						Q	Q						Q	Q							Q				Q						
IR09P040A	D	0823H058	6/3/08	1505								Q						Q	Q									Q			Q	Q		Q		
IR09P040A	D	0826D002	6/23/08	1139								Q						Q	Q									Q			Q	Q		Q		
IR09PPY1	D	0826D009	6/25/08	1016								Q						Q	Q									Q								
IR10MW13A1	B	0816H008	4/15/08	1014						Q																										
IR10MW14A	B	0817E062	4/25/08	0904						Q																										
IR10MW31A1	B				Not sampled: unsafe to access due to trenching	Q	Q			Q		Q							Q		Q	Q														
IR10MW33A	B	0816H003	4/14/08	1447						Q																	Q									
IR10MW59A	B	0816E009	4/15/08	1008						Q																										
IR10MW61A	B	0816H004	4/14/08	1524																						Q										
IR10MW62A	B	0816E014	4/15/08	1404																						Q										
IR10MW71A	B	0816E010	4/15/08	1036																						Q										

Table 4-1. Summary of groundwater sample information (2Q2008).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	Comments	Mercury-CLP	Metals-CLP	Pesticides and PCBs-CLP	SVOCs-CLP	VOCs-CLP	EPA160-1 TDS	EPA160-2 TSS	EPA1664 Oil And Grease	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	EPA351-2 Nitrogen-Kjeldahl_Total	EPA376-1 Sulfide	EPA6010B Dissolved_Metals	EPA7199 Hexavalent Chromium	EPA7470A Dissolved Mercury	EPA8015B-G Gasoline	EPA8015B-D Diesel or Motor Oil	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds and Pesticides	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	FPD-GC Organotins	SM2520B Salinity	EPA901-0 Cesium-137	EPA901-1MCobalt-60	DOE_HASL-300 Plutonium-239	EPA903-1 Radium-226	EPA905-0 Strontium-90	EPA520 Thorium-232
IR01MW02B	NNP	0816H022	4/17/08	1014								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR10MW76A	B	0816E007	4/15/08	0912																						Q										
IR10MW79A	B	0816H006	4/15/08	0919																						Q										
IR10MW80A	B	0816H007	4/15/08	0946																						Q										
IR10MW81A	B	0816E012	4/15/08	1134								Q						Q	Q							Q										
IR10MW82A	B	0816E013	4/15/08	1318								Q						Q	Q							Q										
IR12MW13A	E	0816G015	4/16/08	1414																						Q										
IR12MW14A	E	0823H061	6/4/08	1042																						Q					Q		Q	Q	Q	
IR12MW21A	E				Not sampled: NAPL							Q						Q								Q	Q									
IR15MW06A	E	0816H024	4/17/08	1309																						Q										
IR15MW10F	E	0816H026	4/17/08	1339																						Q										
IR18MW21A	B	0816D014	4/16/08	0924		Q	Q	Q	Q	Q		Q							Q		Q	Q														
IR22MW16A	D	0817G028	4/22/08	1345								Q						Q											Q							
IR22MW20A	D	0823H057	6/3/08	1224								Q						Q													Q			Q	Q	
IR25MW16A	C	0817E059	4/24/08	1420																				Q		Q	Q									
IR25MW17A	C+	0816G009	4/15/08	1512						Q		SA						SA	SA	SA	SA	SA														
IR25MW37A	C+	0816G007	4/15/08	1400						Q																										
IR25MW40A	C	0816D028	4/18/08	1444																						Q										
IR25MW61A1	B+	0816G004	4/15/08	0922							Q															Q	Q			Q						
IR25MW61A2	B+	0816G005	4/15/08	1007							Q															Q	Q			Q						
IR26MW41A	B				inaccessible	Q	Q			Q		Q							Q		Q	Q														
IR26MW46A	B	0823H056	6/3/08	1132		Q	Q	Q	Q			Q							Q												Q		Q	Q	Q	
IR26MW47A	B	0823H055	6/3/08	1041		Q	Q	Q	Q			Q							Q												Q		Q	Q	Q	
IR26MW48A	B	0816D007	4/15/08	0944		Q	Q	Q	Q			Q							Q																	
IR26MW49A	B	0816D008	4/15/08	1051		Q	Q	Q	Q			Q							Q																	
IR26MW50A	B	0816D010	4/15/08	1314		Q	Q	Q	Q			Q							Q																	
IR28MW122A	C	0817N013	4/23/08	1152																						Q			Q							
IR28MW125A	C	0817N010	4/23/08	1009								Q						Q	Q							Q										
IR28MW136A	C	0817G040	4/24/08	1437								Q						Q								Q	Q									
IR28MW140F	C	0817N011	4/23/08	1059																						Q										
IR28MW150A	C	0817D053	4/24/08	1504																						Q										
IR28MW151A	C	0817E044	4/23/08	0945								Q						Q	Q	Q						Q	Q									
IR28MW155A	C	0817E046	4/23/08	1054																	Q	Q		Q		Q	Q									

Table 4-1. Summary of groundwater sample information (2Q2008).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	Comments	Mercury-CLP	Metals-CLP	Pesticides and PCBs-CLP	SVOCs-CLP	VOCs-CLP	EPA160-1 TDS	EPA160-2 TSS	EPA1664 Oil And Grease	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	EPA351-2 Nitrogen-Kjeldahl_Total	EPA376-1 Sulfide	EPA6010B Dissolved_Metals	EPA7199 Hexavalent Chromium	EPA7470A Dissolved Mercury	EPA8015B-G Gasoline	EPA8015B-D Diesel or Motor Oil	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds and Pesticides	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	FPD-GC Organotins	SM2520B Salinity	EPA901-0 Cesium-137	EPA901-1MCobalt-60	DOE_HASL-300 Plutonium-239	EPA903-1 Radium-226	EPA905-0 Strontium-90	EPA520 Thorium-232
IR01MW02B	NNP	0816H022	4/17/08	1014								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR28MW169A	C	0817E047	4/23/08	1140																						Q										
IR28MW170A	C	0823G058	6/6/08	1409																											Q			Q		Q
IR28MW171A	C	0817H045	4/24/08	0851																			Q	Q		Q										
IR28MW171B	C	0817H046	4/24/08	0926							Q															Q	Q			Q						
IR28MW172F	C	0817E060	4/24/08	1457																	Q	Q				Q										
IR28MW173B	C	0817E045	4/23/08	1028																						Q										
IR28MW188F	C	0816D027	4/18/08	1345																	Q	Q				Q										
IR28MW189F	C	0816D025	4/18/08	1120																						Q										
IR28MW190F	C	0817H053	4/25/08	1108																						Q										
IR28MW200A	C	0817G034	4/23/08	1517																						Q										
IR28MW201F	C	0817E055	4/24/08	1018																						Q										
IR28MW211F	C	0816E003	4/14/08	1109								Q								Q						Q										
IR28MW216F	C	0817H049	4/24/08	1149																						Q										
IR28MW217A	C	0817D045	4/23/08	1449																						Q										
IR28MW221A	C	0817G036	4/24/08	0931							Q															Q				Q						
IR28MW221B	C	0817G037	4/24/08	1008							Q															Q				Q						
IR28MW255F	C	0817D049	4/24/08	1043																						Q										
IR28MW268A	C	0817D048	4/24/08	1009																						Q										
IR28MW270A	C	0817N014	4/23/08	1410																						Q										
IR28MW272A	C	0816D003	4/14/08	1456																						Q										
IR28MW272F	C	0816D004	4/14/08	1538							Q															Q				Q						
IR28MW287A	C	0817H051	4/24/08	1454																						Q										
IR28MW294A	C	0817H047	4/24/08	1005																						Q			Q							
IR28MW298A	C	0817E053	4/24/08	0908																						Q										
IR28MW299B	C	0817P015	4/25/08	1032																						Q										
IR28MW300F	C	0816D026	4/18/08	1258																						Q	Q									
IR28MW308A	C	0817D047	4/24/08	0913																						Q										
IR28MW309B	C	0817G038	4/24/08	1047																						Q										
IR28MW311A	C	0817E058	4/24/08	1215																						Q										
IR28MW312F	C	0817E054	4/24/08	0939																						Q	Q									
IR28MW315A	C	0816D002	4/14/08	1209							Q															Q				Q						
IR28MW315B	C	0816P002	4/17/08	0908							Q															Q				Q						

Table 4-1. Summary of groundwater sample information (2Q2008).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	Comments	Mercury-CLP	Metals-CLP	Pesticides and PCBs-CLP	SVOCs-CLP	VOCs-CLP	EPA160-1 TDS	EPA160-2 TSS	EPA1664 Oil And Grease	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	EPA351-2 Nitrogen-Kjeldahl_Total	EPA376-1 Sulfide	EPA6010B Dissolved_Metals	EPA7199 Hexavalent Chromium	EPA7470A Dissolved Mercury	EPA8015B-G Gasoline	EPA8015B-D Diesel or Motor Oil	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds and Pesticides	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	FPD-GC Organotins	SM2520B Salinity	EPA901-0 Cesium-137	EPA901-1MCobalt-60	DOE_HASL-300 Plutonium-239	EPA903-1 Radium-226	EPA905-0 Strontium-90	EPA520 Thorium-232
IR01MW02B	NNP	0816H022	4/17/08	1014								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR28MW315F	C	0816P004	4/17/08	0957							Q															Q				Q						
IR28MW341F	C	0823E071	6/3/08	1432																											Q	Q		Q		
IR28MW350F	C	0817E063	4/25/08	0952																						Q										
IR28MW352A	C	0817P014	4/25/08	0928																						Q										
IR28MW353A	C	0817D051	4/24/08	1324																						Q										
IR28MW353B	C	0817D052	4/24/08	1416							Q															Q	Q			Q						
IR28MW355F	C	0816E002	4/14/08	1037																						Q										
IR28MW394A	C	0816E005	4/14/08	1541																	Q	Q				Q										
IR28MW394B	C	0816E004	4/14/08	1151																	Q	Q				Q										
IR28MW395F	C	0817H048	4/24/08	1114																						Q										
IR28MW396A	C	0817E050	4/23/08	1520																						Q										
IR28MW396B	C	0817E049	4/23/08	1438																						Q										
IR28MW397B	C	0817H050	4/24/08	1347																						Q	Q									
IR28MW398A	C	0816P011	4/18/08	1138																						Q										
IR28MW398B	C	0816G002	4/14/08	1441																						Q										
IR28MW399B	C	0817G039	4/24/08	1311																						Q										
IR28MW405A	C	0823E072	6/3/08	1532																											Q	Q		Q		
IR28MW406	C	0817E056	4/24/08	1105																						Q										
IR28MW407	C	0817E057	4/24/08	1140																						Q										
IR28MW408A	C	0823E069	6/3/08	1112																											Q	Q		Q		
IR28MW919A	C	0823E082	6/6/08	1013																											Q		Q	Q	Q	Q
IR28MW921A	C	0823E083	6/6/08	1059																											Q		Q	Q	Q	Q
IR28MW930A	C	0823E085	6/6/08	1334																											Q		Q	Q	Q	Q
IR29MW56F	C	0816H002	4/14/08	1215																	Q	Q				Q	Q		Q							
IR29MW58F	C	0816H009	4/15/08	1114																	Q	Q	Q			Q										
IR29MW59F	C	0817D050	4/24/08	1127																						Q			Q							
IR29MW72F	C	0817E048	4/23/08	1354								Q						Q	Q																	
IR29MW85F	C	0816N004	4/15/08	1503								Q						Q					Q			Q										
IR30MW04F	C	0816P006	4/17/08	1224																						Q										
IR34MW36A	D	0817D035	4/22/08	0929								Q						Q	Q																	
IR36MW09A	E	0823G044	6/3/08	1208																						Q					Q			Q		
IR36MW11A	E	0816H019	4/16/08	1530																						Q										

Table 4-1. Summary of groundwater sample information (2Q2008).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	Comments	Mercury-CLP	Metals-CLP	Pesticides and PCBs-CLP	SVOCs-CLP	VOCs-CLP	EPA160-1 TDS	EPA160-2 TSS	EPA1664 Oil And Grease	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	EPA351-2 Nitrogen-Kjeldahl_Total	EPA376-1 Sulfide	EPA6010B Dissolved_Metals	EPA7199 Hexavalent Chromium	EPA7470A Dissolved Mercury	EPA8015B-G Gasoline	EPA8015B-D Diesel or Motor Oil	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds and Pesticides	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	FPD-GC Organotins	SM2520B Salinity	EPA901-0 Cesium-137	EPA901-1MCobalt-60	DOE_HASL-300 Plutonium-239	EPA903-1 Radium-226	EPA905-0 Strontium-90	EPA520 Thorium-232
IR01MW02B	NNP	0816H022	4/17/08	1014								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR36MW120B	E				inadvertently not sampled																					A										
IR36MW121A	E				inadvertently not sampled																					A										
IR36MW122A	E	0817H043	4/22/08	1347																						Q										
IR36MW123B	E	0823G042	6/3/08	1057																						Q					Q			Q		
IR36MW127A	E	0816N006	4/17/08	1335																						Q										
IR36MW128A	E	0817E038	4/22/08	1154																						Q										
IR36MW129B	E	0817E037	4/22/08	1126																						Q										
IR36MW12A	E	0817E041	4/22/08	1411																	Q	Q				Q	Q									
IR36MW135A	E	0823G056	6/6/08	1004																						Q										
IR36MW14A	E	0817E042	4/22/08	1505																						Q										
IR36MW16A	D	0817G027	4/22/08	1120																						Q										
IR36MW17A	E				Not sampled: inaccessible – covered by soil pile																		Q			Q										
IR39MW21A	E				Not sampled: NAPL																Q	Q	Q			Q	Q									
IR39MW23A	E	0816N008	4/17/08	1516																							Q									
IR39MW33A	E	0816H027	4/17/08	1416								Q						Q																		
IR39MW36A	E	0816H029	4/17/08	1447																						Q										
IR44MW08A	D	0817D039	4/22/08	1320																						Q										
IR46MW37A	B	0816G006	4/15/08	1112		Q	Q			Q		Q							Q		Q	Q														
IR56MW39A	E	0817D043	4/23/08	1056																	Q	Q				Q	Q									
IR58MW25F	C	0817H034	4/21/08	1135								Q						Q	Q							Q										
IR58MW26A	C	0816P010	4/18/08	1001																						Q										
IR58MW31A	C	0816H031	4/18/08	1109																	Q	Q	Q	Q		Q										
IR58MW31F	C	0816P012	4/18/08	1423																						Q										
IR58MW32B	C	0816P009	4/18/08	0904																			Q			Q										
IR58MW33B	C	0817H035	4/21/08	1207																						Q										
IR64MW05A	C	0817H033	4/21/08	1024																						Q			Q							
IR70MW04A	D	0817G032	4/23/08	1043																						Q										
IR70MW07A	D	0817G033	4/23/08	1412																						Q										
IR71MW03A	D	0823G045	6/3/08	1417																						Q	Q							Q		
IR71MW04A	D	0817D036	4/22/08	1018							Q															Q				Q						

Table 4-1. Summary of groundwater sample information (2Q2008).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	Comments	Mercury-CLP	Metals-CLP	Pesticides and PCBs-CLP	SVOCs-CLP	VOCs-CLP	EPA160-1 TDS	EPA160-2 TSS	EPA1664 Oil And Grease	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	EPA351-2 Nitrogen-Kjeldahl_Total	EPA376-1 Sulfide	EPA6010B Dissolved_Metals	EPA7199 Hexavalent Chromium	EPA7470A Dissolved Mercury	EPA8015B-G Gasoline	EPA8015B-D Diesel or Motor Oil	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds and Pesticides	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	FPD-GC Organotins	SM2520B Salinity	EPA901-0 Cesium-137	EPA901-1MCobalt-60	DOE_HASL-300 Plutonium-239	EPA903-1 Radium-226	EPA905-0 Strontium-90	EPA520 Thorium-232
IR01MW02B	NNP	0816H022	4/17/08	1014								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR71MW12B	D	0817D038	4/22/08	1112																						Q										
IR74MW01A	E	0817H039	4/22/08	0918																						Q										
IR75MW05B	NNP	0817H040	4/22/08	1003								Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q								
IR76MW13A	NNP	0817D044	4/23/08	1403																						Q										
PA28P04A	C	0816E020	4/16/08	1127																						Q										
PA36MW01A	E				inadvertently not sampled																					A										
PA36MW02A	E	0817D042	4/23/08	0945								Q						Q	Q																	
PA36MW04A	E	0817E040	4/22/08	1332																						Q										
PA36MW07A	E	0816N007	4/17/08	1426																						Q										
PA36MW08A	E				Not sampled: NAPL																					Q	Q									
PA50MW03A	C	0817N015	4/23/08	1444																						Q		Q	Q							
PA50MW07A	D	0817D040	4/22/08	1426								Q						Q		Q						Q										

Notes:
The analyses to be performed are as outlined in SAP Tables 7B-7M (TtEMI, 2004), and SAP Addenda nos. 1 through 4.

Abbreviations/Acronyms:
- A: Annual sampling frequency
- CLP: Contract Laboratory Program
- EPA: U.S. Environmental Protection Agency
- NAPL: Non-aqueous phase liquid
- PCB: Polychlorinated biphenyls
- Q: Quarterly sampling frequency
- SA: Semiannual sampling frequency; sampled in 1st and 3rd quarters
- SVOC: Semi-volatile organic compounds
- TDS: Total dissolved solids
- TSS: Total suspended solids
- VOC: Volatile organic compounds

Parcel:
- B+: Well is physically located in Parcel B, is assigned in the 2004 SAP to Parcel C, and is not assigned in the RAMP.
- C+: Well is physically located in Parcel C, is assigned in the 2004 SAP to Parcel C, and is assigned in the RAMP to Parcel B.
- NNP: Non-Navy Property, reported by 2004 SAP-assigned parcel

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR01MW48A	E-2	10.96	6.9	19.9	14.7	
IR01MW53B	E-2	10.01	35.2	45.2	41.8	
IR01MW58A	E-2	9.19	6.4	18.9		decommissioned
IR01MW60A	E-2	14.60	9.5	19.5	16.0	
IR01MW62A	E-2	7.91	4.3	14.3	10.4	
IR01MW63A	E-2	7.88	5.4	19.4	12.8	
IR01MW64A	E-2	14.27	8.7	18.7	14.0	
IR01MW65A	E-2					
IR01MWI-2	E-2	13.22	6.4	21.4		
IR01MWI-3	E-2	13.80	5.2	18.2		decommissioned
IR01MWI-5	E-2	24.18	12.9	27.9		
IR01MWI-6	E-2	9.55	4.7	12.2		decommissioned
IR01MWI-7	E-2	5.81	13.0	23.0	8.3	
IR01MWI-8	E-2	6.64	4.5	14.5	8.6	
IR01MWI-9	E-2	8.04	3.7	13.7		
IR01MWLF1A	E-2	20.83	7.3	22.3	20.0	
IR01MWLF2A	E-2	19.62	8.5	23.5	18.5	
IR01MWLF4A	E-2	14.88	5.3	25.3		
IR01MWLF4B	E-2	14.48	41.2	56.2	48.5	
IR01P03A	E	20.13	7.8	27.8		decommissioned
IR01P03AA	NNP	21.86	12.4	27.4		
IR01P03AB	E-2	19.87	11.4	26.4		
IR01P04A	E-2	21.61	10.3	30.3		
IR01P18AB	E-2	18.91	9.1	14.1		
IR01PZ131F	E-2	13.50				
IR01PZ138E	E-2	14.39				

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR01PZ138F	E-2	15.76				
IR01PZ144E	E-2	15.08				
IR01PZ150D	E-2	15.15				
IR01PZ150E	E-2	15.30				
IR01PZ161D	E-2	13.28				
IR02MW101A1	E	11.23	9.0	19.0		
IR02MW101A2	E	11.22	29.0	36.0		
IR02MW114A1	E	13.63	7.0	12.0		
IR02MW114A2	E	12.43	13.8	25.8		
IR02MW114A3	E	13.29	43.7	50.7		
IR02MW126A	E	11.36	6.0	15.0	12.6	
IR02MW127B	E	14.59	56.1	66.1		decommissioned
IR02MW141A	E	15.49	8.0	18.0		decommissioned
IR02MW146A	E	11.30	7.9	19.9		
IR02MW147A	E	8.36	5.2	10.2	8.5	
IR02MW149A	E	8.72	7.1	22.1	14.9	
IR02MW173A	E	9.51	7.7	20.7		
IR02MW175A	E	10.70	11.9	33.9	21.5	
IR02MW179A	E	11.23	7.4	20.9	15.5	
IR02MW183A	E	10.40	5.7	35.7		
IR02MW196A	E	8.05	4.2	11.2		
IR02MW206A1	E	7.43	3.9	8.9		
IR02MW206A2	E	7.41	11.6	21.6		
IR02MW209A	E	6.34	10.1	20.1	15.1	
IR02MW210B	E	9.17	23.8	31.8		
IR02MW298A	E	11.79	7.9	22.9		

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR02MW299A	E	10.56	8.0	23.0		
IR02MW300A	E	9.00	9.7	24.7		decommissioned
IR02MW301A	E	9.47	13.5	33.5	23.0	
IR02MW372A	E	14.21	4.2	14.2		decommissioned
IR02MW373A	E	11.34	4.5	9.5		
IR02MW374A	E					
IR02MW375A	E					
IR02MW87A	E	8.48	4.1	14.1		
IR02MW89A	E	10.08	7.5	22.5		
IR02MW93A	E	7.25	3.6	18.6		
IR02MW97A	E	8.95	7.3	24.3		
IR02MWB-1	E	8.46	5.1	20.1	12.9	
IR02MWB-2	E	11.88	4.7	19.7		
IR02MWB-3	E	12.95	4.8	19.8		decommissioned
IR02MWB-5	E	4.74	3.0	17.0		
IR02MWC5-W	E	7.49	4.4	14.4		
IR02P126AA	E	10.58	5.8	15.8		
IR02P126AB	E	11.00	6.0	16.0		
IR02P93AA	E	6.93	4.1	19.1		
IR02P93AB	E	7.11	3.5	18.5		
IR02P97AA	E	7.09	6.1	24.1		
IR02P97AB	E	7.54	5.6	25.6		decommissioned
IR03MW218A1	E	11.92	8.3	14.3		
IR03MW218A2	E	12.26	16.8	21.8	20.5	
IR03MW218A3	E	12.00	24.1	34.1		
IR03MW224A	E	10.92	7.5	15.5	13.5	

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR03MW225A	E	12.27	4.0	19.0		
IR03MW226A	E	11.81	4.0	19.0		
IR03MW228B	E	12.12	62.1	72.1	67.5	
IR03MW342A	E	8.48	6.9	16.4	12.5	
IR03MW369A	E	10.01	4.5	19.5		
IR03MW370A	E	11.19	5.5	20.5		
IR03MW371A	E	12.48	5.4	20.4		
IR03MW372A	E	8.18	4.9	19.9		
IR03MW373B	E	7.87	74.6	84.6	79.0	
IR03MWO-1	E	11.92	3.7	18.7		
IR03MWO-2	E	11.55	4.2	20.7		
IR03MWO-3	E	9.22	5.1	20.1		
IR04MW09A	E	9.34	4.5	19.5		
IR04MW13A	E-2	12.55	7.1	22.1	17.0	
IR04MW31A	E-2	12.53	12.7	27.7		
IR04MW35A	E-2	11.11	6.8	26.8		
IR04MW36A	E-2	9.84	5.6	25.6	18.0	
IR04MW37A	E	9.54	6.8	21.8	16.5	
IR04MW38A	E	9.76	5.4	20.4		
IR04MW39A	E	7.86	4.0	24.0		
IR04MW40A	E	7.16	4.3	26.3		
IR04P31AA	E-2	11.89	9.9	19.9		
IR04P31AB	E	12.14	11.2	31.2		status uncertain
IR04P38A	E	9.81	7.4	22.4		
IR05MW73A	E	6.59	5.1	10.1		
IR05MW74A	E	7.40	5.8	22.8		

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR05MW76A	E	4.97	3.0	12.0		
IR05MW77A	E	10.43	8.4	34.2		
IR05MW82A	E	12.00	7.0	22.0		
IR05MW85A	E	9.80	7.9	22.9	17.0	
IR05P77AA	E	10.04	9.0	36.0		
IR05P77AB	E	9.62	5.7	35.7		
IR06MW22A	C	10.00	4.6	9.6		
IR06MW22AD	C	10.08	3.4	8.4		decommissioned
IR06MW23A	C	9.77	4.3	12.3		decommissioned
IR06MW27A	C	11.75	4.1	10.8		decommissioned
IR06MW30A	C	9.87	6.4	16.4		decommissioned
IR06MW32A	C	9.90	4.6	14.6	10.5	
IR06MW32AD	C	10.02	5.9	13.4		decommissioned
IR06MW34A	C	10.37	6.3	11.3		
IR06MW35A	C	9.73	5.4	14.4	10.0	
IR06MW40A	C	10.08	6.4	19.9	14.0	
IR06MW41A	C	9.78	6.4	16.4		
IR06MW42A	C	11.89	8.0	13.0	12.5	
IR06MW44A	C	9.81	4.5	14.5		
IR06MW45A	C	9.89	3.3	13.3		decommissioned
IR06MW46A	B	9.46	6.4	16.4		
IR06MW47F	C	9.66	29.5	39.5	36.0	
IR06MW48F	C	10.03	9.4	19.4		decommissioned
IR06MW49F	C	11.49	8.6	18.6		
IR06MW50F	C	10.38	19.1	29.1		decommissioned
IR06MW51F	C	10.19	26.4	36.4		decommissioned

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR06MW52F	C	9.70	18.3	28.3	23.5	
IR06MW53F	C	10.51	13.6	23.6	18.0	
IR06MW54F	C	35.02	41.2	51.2	46.0	
IR06MW55F	C	32.34	35.4	45.4	40.5	
IR06MW56F	C	25.04	32.5	42.5		
IR06MW57F	C	28.02	29.4	39.9		
IR06MW58F	C	25.91	27.4	37.4		decommissioned
IR06MW59A1	C	9.13	4.3	9.3	8.0	
IR06MW59A2	C	9.15	19.5	29.5	24.5	
IR06MW60A	C	10.59	3.8	13.8	9.0	
IR06P30A	C	10.12	6.8	16.8		
IR06P54FA	NNP	35.48	41.5	51.5		
IR06P54FB	C	34.96	41.4	51.4		
IR07MW19A	B	9.56	5.4	15.4	12.5	
IR07MW20A1	B	9.26	5.2	23.2	16.5	
IR07MW20A2	B	9.27	38.0	43.0		decommissioned
IR07MW21A1	B	13.89	42.0	52.0	16.9	
IR07MW21A2	B	14.42	30.5	35.5		decommissioned
IR07MW23A	B	15.76	6.4	16.4	16.0	
IR07MW24A	B	16.26	39.0	49.0	15.1	
IR07MW25A	B	12.67	43.0	53.0	16.4	
IR07MW26A	B	14.50	38.0	48.0	15.6	
IR07MW27A	B	16.15	10.7	20.7	16.0	
IR07MW28A	NNP	12.03	7.9	17.9	13.8	
IR07MW93A	B	19.53	18.9	28.9		
IR07MW94A	B	15.15	14.0	24.0		

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR07MW95A	NNP	16.60	13.7	23.7		
IR07MWP-1	B	9.87	4.0	19.0		decommissioned
IR07MWP-2	B	9.77	3.7	18.7		decommissioned
IR07MWS-1	B	10.25	4.6	17.6		decommissioned
IR07MWS-2	B	12.71	8.1	18.1	13.9	
IR07MWS-2D	B	9.13	2.5	17.5		decommissioned
IR07MWS-3	B	9.75	4.4	19.4		decommissioned
IR07MWS-4	B	16.78	44.0	54.0	17.5	
IR07MWS-4D	B	13.22	6.0	21.0		decommissioned
IR07P20A	B	9.57	4.3	24.3		
IR08MW37A	E	4.25	6.8	21.8		
IR08MW38A	E	6.82	6.1	24.1		
IR08MW39A	D-1	5.05	5.6	35.6		decommissioned
IR08MW40A	E	5.41	7.4	27.4		
IR08MW41A	E	6.34	4.9	24.9		
IR08MW42A	E	4.15	9.9	19.9		decommissioned
IR08MW43A	D-1	8.82	6.2	21.2		decommissioned
IR08MW44A	E	5.94	5.6	20.6		
IR08MWW-6	D-1	4.88	9.6	19.6		
IR08P39A	D-1	4.91	5.6	35.6		
IR09MW06A	G	11.34	4.1	19.1		
IR09MW07A	G	11.29	24.6	34.6		
IR09MW08A	G	11.70	10.9	20.9		
IR09MW31A	G	8.42	6.4	11.4		
IR09MW35A	G	8.71	7.3	18.3	13.5	
IR09MW36A	G	8.87	10.5	20.5	15.0	

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR09MW37A	G	9.15	7.0	13.5	12.0	
IR09MW38A	G	9.02	7.0	12.0	11.0	
IR09MW39A	G	8.18	12.4	22.4	18.0	
IR09MW44A	G	8.78	7.0	17.0	12.5	
IR09MW45F	G	8.46	6.6	16.6	12.5	
IR09MW51F	G	8.64	5.7	20.7	14.5	
IR09MW52A	G	9.59	5.5	20.5	15.0	
IR09MW54B	G	9.26	24.8	28.8		
IR09MW55B	G	9.07	34.8	43.8		
IR09MW61A	G	8.49	10.1	20.1	14.5	
IR09MW62A	G	8.50	9.7	19.7	14.5	
IR09MW63A	G	8.66	9.7	19.7	14.5	
IR09P040A	G	9.05	10.4	15.4	12.5	
IR09P041A	G	8.86	11.4	16.4		
IR09P042A	G	8.91	34.5	39.5		
IR09P043A	G	8.96	9.6	14.6		
IR09P35AA	G	8.75	4.3	24.3		
IR09P35AB	G	8.76	4.4	24.4		
IR09PPY1	G	8.78	6.7	11.7	10.5	
IR10MW12A	B	9.08	2.3	17.3		decommissioned
IR10MW13A1	B	9.92	4.6	19.6	13.0	
IR10MW13A2	B	9.96	24.7	39.7		
IR10MW14A	B	10.23	4.6	19.6	13.5	
IR10MW15A	B	9.70	4.6	17.6		decommissioned
IR10MW28A	B	13.57	6.4	16.4		
IR10MW29A1	B	9.15	4.3	14.3		

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR10MW29A2	B	9.04	48.0	58.0		
IR10MW31A1	B	10.34	6.8	16.8	13.5	
IR10MW31A1D	B	9.86	4.3	19.3		decommissioned
IR10MW31A2	B	9.96	24.4	39.4		decommissioned
IR10MW32A	B	9.77	5.7	20.7	14.0	
IR10MW33A	B	10.17	5.1	15.1	10.5	
IR10MW59A	B	13.79	8.1	17.1	14.5	
IR10MW60A	B	10.24	11.0	21.0		
IR10MW61A	B	10.05	10.9	20.9	15.5	
IR10MW62A	B	9.53	11.0	21.0	15.5	
IR10MW63A	B	9.62	10.0	20.0		
IR10MW64A	B	9.55	10.9	20.9		
IR10MW65A	B	13.62	15.0	25.0		
IR10MW66A	B	13.67	15.0	25.0		
IR10MW67A	B	14.04	14.5	24.5		
IR10MW68A	B	13.84	14.5	24.5		
IR10MW69A	B	13.91	15.0	25.0		
IR10MW70A	B	14.15	14.0	24.0		
IR10MW71A	B	13.87	14.0	24.0	19.0	
IR10MW72A	B	14.12	14.3	24.3		
IR10MW73A	B	13.46	15.0	25.0		
IR10MW74A	B	13.77	31.6	36.6		
IR10MW76A	B	13.83	8.0	18.0	15.0	
IR10MW77A	B	13.68	15.0	25.0		
IR10MW78A	B	13.76	14.5	24.7		
IR10MW79A	B	10.11	10.9	20.9	16.0	

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR10MW80A	B	9.67	11.0	21.0	15.0	
IR10MW81A	B	9.88	7.3	17.3	12.0	
IR10MW82A	B	9.59	2.6	17.6	12.0	
IR10P13A	B	9.83	4.4	19.4		
IR10P13AA	B	9.99	4.9	19.9		
IR10P15A	B	9.06	4.3	14.3		decommissioned
IR11MW25A	E	11.40	4.9	10.9		
IR11MW26A	E	9.33	5.7	9.7		
IR11MW27A	E	9.88	4.9	9.9	10.5	
IR12MW11A	E-2	11.68	6.3	19.3		
IR12MW12A	E	8.40	3.3	16.3		
IR12MW13A	E	12.52	7.0	22.0	17.0	
IR12MW14A	E	9.23	4.5	19.5	16.5	
IR12MW15A	E	7.28	4.2	19.2		
IR12MW16A	E	8.57	5.3	15.3		
IR12MW17A	E	12.46	6.6	16.6		
IR12MW18A	E	12.37	11.7	21.7		
IR12MW19A	E	13.02	8.1	23.1		
IR12MW20A	E	12.27	8.0	23.0		
IR12MW21A	E	10.42	7.2	22.2		
IR12P12AA	E	9.81	5.0	20.0		
IR12P12AB	E	10.09	5.0	20.0		
IR12P14AA	E	10.68	5.0	25.0		
IR12P14AB	E	10.43	6.3	26.3		
IR13MW10A	E	3.56	3.1	17.1		
IR13MW11A	E	4.84	3.9	8.9		

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR13MW12A	E	4.12	4.4	17.4		
IR13MWB5A-W	E	5.93	2.7	12.7		
IR13P12AA	E	4.49	7.8	17.8		
IR13P12AB	E	4.53	4.8	19.8		
IR14MW09A	E	9.93	6.6	14.6		
IR14MW10A	E	8.89	6.7	16.7		
IR14MW12A	E	8.52	6.8	18.3		
IR14MW13A	E	9.75	6.9	21.9		
IR15MW06A	E	11.11	8.0	21.0	16.0	
IR15MW07A	E	11.18	6.8	19.8		
IR15MW08A	E	11.70	7.0	22.0		
IR15MW09F	E	11.48	19.8	29.8		
IR15MW10F	E	10.98	19.9	29.9	25.5	
IR15P08AA	E	11.65	6.5	21.5		
IR15P08AB	E	11.14	4.4	19.4		
IR15P08B	E	11.11	41.3	51.3		
IR17MW11A	D-1	7.85	3.6	16.6		
IR17MW12A	D-1	7.72	3.7	16.5		
IR17MW13A	D-1	6.98	3.6	16.6		
IR17P12AA	D-1	9.59	6.2	21.2		
IR17P12AB	D-1	9.82	6.3	21.3		
IR18MW100B	B	17.94	39.7	44.7		
IR18MW101B	B	18.89	36.9	41.9		
IR18MW200A	NNP	26.96	19.6	34.6		
IR18MW21A	B	17.56	9.8	19.8	17.0	
IR18MW21AD	B	17.11	11.4	26.4		decommissioned

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR18MW22A	B	18.11	11.3	26.3		decommissioned
IR18MW91A	NNP	18.75	14.7	24.7		
IR18MW92A	B	20.70	16.8	26.8		
IR18P21A1	B	17.52	11.8	26.8		decommissioned
IR18P21A2	B	17.12	11.3	26.8		decommissioned
IR20MW01A	B	8.31	2.9	16.9		decommissioned
IR20MW06A	B	9.85	7.5	22.5		decommissioned
IR20MW11A	B	10.52	5.6	18.6		decommissioned
IR20MW17A	B	10.51	6.7	21.7	15.0	
IR22MW07A	D-1	7.74	6.4	21.4		
IR22MW08A	D-1	8.77	5.3	20.3		
IR22MW15A	D-1	10.83	7.0	22.0		
IR22MW16A	D-1	7.86	6.5	21.5	14.3	
IR22MW20A	D-1	7.84	5.5	20.5	13.8	
IR22P15A1	D-1	10.75	8.8	26.3		
IR22P15A2	D-1	11.00	8.0	23.0		
IR23MW14A	B	9.61	5.8	20.8		decommissioned
IR24MW04A	B	11.16	8.0	18.0		decommissioned
IR24MW05A	B	10.42	6.9	21.9		
IR24MW06A	B	10.25	4.7	19.7	14.5	decommissioned
IR24MW07A	B	9.92	4.8	19.8		
IR25EW01A	C	10.81	6.0	16.0		
IR25IW02A	C	10.73	11.0	15.3		
IR25MW11A	C	10.45	4.4	19.4		
IR25MW15A1	C	7.84	3.7	13.7		decommissioned
IR25MW15A2	C	7.38	20.2	30.2		decommissioned

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR25MW15F	C	10.50	36.4	46.4		
IR25MW16A	C	11.02	5.4	20.4	15.0	
IR25MW17A	C	10.31	5.0	20.5	13.5	
IR25MW18A	C	10.46	10.7	15.7		decommissioned
IR25MW19A	C	10.51	10.8	15.8		decommissioned
IR25MW20A	C	10.48	7.7	12.7		decommissioned
IR25MW22A	C	11.19	5.7	10.7		decommissioned
IR25MW37A	C	10.07	6.7	15.7	11.5	
IR25MW37B	C	10.21	19.8	22.8		
IR25MW38B	C	10.44	29.7	33.7		
IR25MW39A	C	11.21	6.7	13.7		
IR25MW39B	C	11.25	18.8	24.8		
IR25MW40A	C	9.72	9.8	19.8	11.0	
IR25MW41A	C	10.08	21.1	26.1		decommissioned
IR25MW42B	C	10.01	24.3	27.8		decommissioned
IR25MW50A	C	10.02	4.5	11.5		
IR25MW51A	C	10.47	19.9	29.9		decommissioned
IR25MW52A	C	10.06	4.8	13.7		decommissioned
IR25MW53A	C	11.07	11.0	15.5		
IR25MW54A	C	11.12	11.0	15.3		
IR25MW55A	C	10.39	7.5	16.8		
IR25MW56A	C	11.10	25.0	29.3		
IR25MW57A	C	9.21	11.0	15.3		
IR25MW60A1	C	9.57	13.6	23.6	15.0	
IR25MW60A2	C	9.48	29.6	39.6		decommissioned
IR25MW61A1	B	9.56	17.8	27.8	23.0	

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR25MW61A2	B	9.67	27.8	32.8	30.5	
IR25MW900B	C	11.02	18.6	27.6		
IR25MW901B	C	10.98	18.6	27.6		
IR25MW902B	C	11.02	17.6	27.6		
IR25MW903B	C	10.48	23.7	28.7		decommissioned
IR25MW904B	C	10.43	21.7	27.2		
IR25MW905B	C	7.63	10.2	17.2		decommissioned
IR26MW36A	B	8.28	6.2	18.2		decommissioned
IR26MW40A	B	9.89	5.4	25.4		
IR26MW41A	B	10.15	5.6	20.6	13.1	
IR26MW42A	B	8.18	5.4	20.4		decommissioned
IR26MW43A	B	7.09	5.3	15.3		
IR26MW44A	B	8.25	5.4	12.4		
IR26MW45A	B	8.28	6.3	16.3		decommissioned
IR26MW46A	B	8.08	6.5	16.5	13.0	
IR26MW47A	B	7.75	4.6	14.6	11.4	decommissioned
IR26MW48A	B	8.13	8.8	18.8	13.8	
IR26MW49A	B	7.99	4.3	14.3	11.4	
IR26MW50A	B	7.42	3.9	13.9	10.3	
IR28EW01A	C					
IR28IW901A	C	8.71	9.7	14.7		
IR28IW902A	C	8.62	9.6	19.6		
IR28IW903A	C	8.49	8.9	18.9		
IR28IW938F	C	9.21	10.1	20.1		
IR28IW939F	C	9.09	10.2	20.2		
IR28IW940F	C	9.02	10.0	20.0		

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR28MW122A	C	7.48	5.6	21.1	14.7	
IR28MW123A	C	8.09	5.7	20.7		
IR28MW124A	C	7.14	4.6	20.1		decommissioned
IR28MW124A-R1	C	7.86	5.7	20.7		
IR28MW125A	C	7.74	4.5	16.5	11.5	
IR28MW126A	C	7.76	4.8	20.3		
IR28MW127A	C	7.63	5.0	20.5		
IR28MW128A	C	8.11	4.8	16.8		
IR28MW129A	C	8.83	5.4	20.9		
IR28MW136A	C	7.55	4.5	15.0	10.5	
IR28MW140F	C	7.66	28.7	44.2	36.3	
IR28MW149A	C	8.92	5.3	20.8		decommissioned
IR28MW149A-R1	C	9.18	5.6	21.1		
IR28MW150A	C	7.87	5.5	21.0	15.0	
IR28MW151A	C	8.57	5.5	21.0	14.0	
IR28MW155A	C	8.57	5.3	20.8	14.5	
IR28MW169A	C	9.69	5.5	21.0	14.5	
IR28MW170A	C	8.76	5.1	20.2		
IR28MW171A	C	6.67	5.5	21.0	14.0	
IR28MW171B	C	7.19	49.7	59.7	55.0	
IR28MW172F	C	8.57	56.1	66.1	61.0	
IR28MW173B	C	8.06	48.6	58.6	53.0	
IR28MW188F	C	9.64	7.7	21.2	15.0	
IR28MW189F	C	8.87	6.9	16.9	12.0	
IR28MW190F	C	10.06	12.9	16.2	14.5	
IR28MW200A	C	8.28	5.0	15.5	11.5	

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR28MW201F	C	8.04	24.3	34.3	29.5	
IR28MW211F	C	8.90	5.4	15.9	11.5	
IR28MW216F	C	8.38	17.3	27.8	22.5	
IR28MW217A	C	8.98	5.4	19.4	13.5	
IR28MW221A	C	9.56	9.2	19.2	14.5	
IR28MW221B	C	9.58	32.2	42.2	38.0	
IR28MW255F	C	7.83	39.4	54.9	47.3	
IR28MW268A	C	7.90	5.4	20.4	13.3	
IR28MW269A	C	7.84	3.0	18.0		decommissioned
IR28MW270A	C	7.61	5.3	20.3	13.7	
IR28MW271A	C	7.06	5.3	20.3		
IR28MW272A	C	7.85	5.9	10.9	8.5	
IR28MW272F	C	8.19	49.8	59.8	55.0	
IR28MW273F	C	9.01	5.4	20.4		decommissioned
IR28MW275F	C	8.62	6.6	11.6		
IR28MW286A	C	9.81	5.6	10.6		
IR28MW287A	C	9.31	4.5	9.5	8.5	
IR28MW290A	C	8.14	5.6	20.6		decommissioned
IR28MW293A	C	7.50	5.2	20.2		
IR28MW294A	C	7.78	5.4	20.4	13.5	
IR28MW295A	C	7.62	5.3	20.3		
IR28MW297A	C	7.68	5.3	20.3		
IR28MW298A	C	8.04	4.0	9.0	8.0	
IR28MW299B	C	9.60	5.7	20.7	14.0	
IR28MW300F	C	9.67	5.8	20.8	14.0	
IR28MW308A	C	7.63	5.5	15.5	10.5	

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR28MW309B	C	9.06	39.0	54.0	44.0	
IR28MW310F	C	7.62	25.3	35.3		
IR28MW311A	C	8.02	3.7	18.7		decommissioned
IR28MW311A-R1	C	7.90	3.6	18.6	11.5	
IR28MW312F	C	8.45	8.7	18.7	13.5	
IR28MW313F	C	12.17	12.4	27.4		
IR28MW314B	C	8.68	19.7	24.7		
IR28MW315A	C	8.84	4.7	9.7	8.0	
IR28MW315B	C	9.03	21.9	31.9	27.0	
IR28MW315F	C	8.97	64.8	74.8	70.5	
IR28MW324A	C	8.79	7.8	12.8		decommissioned
IR28MW325A	C	8.83	7.8	12.8		
IR28MW326A	C	8.75	7.7	12.7		decommissioned
IR28MW327A	C	8.73	7.7	12.7		
IR28MW328A	C	8.04	7.7	12.7		
IR28MW329A	C	7.78	7.6	12.6		
IR28MW330A	C	8.78	7.8	12.8		
IR28MW331A	C	7.97	7.6	12.6		
IR28MW333A	C	8.71	7.7	12.7		decommissioned
IR28MW334A	C	8.78	7.8	12.8		
IR28MW335A	C	8.87	7.8	12.8		
IR28MW336A	C	8.55	7.6	12.6		
IR28MW337A	C	8.77	7.7	12.7		
IR28MW338A	C	8.83	7.8	12.8		
IR28MW339A	C	8.47	7.7	12.7		
IR28MW340A	C	8.65	7.8	12.8		

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR28MW341F	C	9.20	13.3	16.8		
IR28MW342F	C	8.86	7.6	14.6		
IR28MW350F	C	9.83	19.3	28.6	25.0	
IR28MW351F	C	9.00	50.9	58.9		
IR28MW352A	C	8.05	6.6	10.9	9.5	
IR28MW353A	C	8.19	5.6	19.6	13.5	
IR28MW353B	C	7.33	42.7	52.7	47.0	
IR28MW354A	C	8.32	6.0	15.0		
IR28MW354B	C	8.19	25.6	30.6		
IR28MW355F	C	9.03	10.3	19.5	14.5	
IR28MW356F	C	9.00	10.3	19.5		
IR28MW357F	C	8.62	10.1	19.2		
IR28MW358F	C	8.73	10.2	19.4		
IR28MW359F	C	8.64	10.1	19.2		
IR28MW360F	C	8.57	10.0	19.1		
IR28MW361F	C	8.80	10.1	19.3		
IR28MW362F	C	9.08	9.8	19.8		
IR28MW393F	C	7.33	55.6	58.4		
IR28MW394A	C	9.06	4.5	10.5	9.0	
IR28MW394B	C	9.02	44.6	54.1	49.0	
IR28MW395F	C	9.12	47.2	51.2	49.5	
IR28MW396A	C	8.99	4.7	11.2	9.0	
IR28MW396B	C	9.09	32.3	41.8	37.5	
IR28MW397A	C	9.13	2.6	7.6		
IR28MW397B	C	9.37	33.2	36.7	35.5	
IR28MW398A	C	8.94	4.4	8.4	8.5	

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR28MW398B	C	8.92	38.0	42.5	41.5	
IR28MW399B	C	7.82	36.2	40.2	38.5	
IR28MW400B	C	8.88	24.8	27.8		
IR28MW401B	C	8.58	56.8	60.6		
IR28MW402B	C					
IR28MW402F	C	7.45	40.3	42.3		
IR28MW403A	C	8.82	14.5	24.5		
IR28MW404A	C	8.73	15.0	25.0		
IR28MW405A	C	8.70	15.0	25.0		
IR28MW406A	C	8.59	15.0	25.0	18.0	
IR28MW407A	C	8.36	14.0	24.0	18.5	
IR28MW408A	C	8.18	53.5	58.5		
IR28MW409A	C	8.80	15.0	25.0		
IR28MW410A	C	9.38	14.5	19.5		
IR28MW411A	C	8.47	17.5	22.5		
IR28MW412A	C	7.50	7.0	12.0		
IR28MW413B	C	9.99	15.0	20.0		
IR28MW414B	C	8.95	20.0	30.0		
IR28MW415F	C	8.52	15.5	25.5		
IR28MW909A	C	8.89	6.7	15.7		
IR28MW910A	C	8.93	18.8	24.8		
IR28MW911A	C	8.94	6.8	14.8		
IR28MW912A	C	8.85	17.6	24.6		
IR28MW913A	C	8.99	17.7	19.7		
IR28MW914A	C	9.45	9.8	16.8		
IR28MW916A	C	8.80	9.6	18.6		

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR28MW918A	C	8.81	23.7	32.2		
IR28MW919A	C	8.63	9.6	19.6		
IR28MW920A	C	8.62	9.6	17.4		
IR28MW921A	C	8.67	9.7	19.7		
IR28MW930A	C	8.70	9.7	18.7		
IR28MW931A	C					
IR28MW932A	C					
IR28MW933A	C					
IR28MW934A	C					
IR28MW936A	C					
IR28MW932F	C	8.87	26.6	29.6		
IR28MW933F	C	9.02	9.1	29.6		
IR28MW934F	C	9.05	9.2	29.7		
IR28MW935F	C	9.06	9.6	19.6		
IR28MW936F	C	9.19	9.7	19.7		
IR28MW937F	C	8.96	9.5	19.5		
IR28P155AA	C	8.34	5.6	20.6		
IR28P155AB	C	9.13	5.5	20.5		
IR28P50AA	C	8.16	4.3	17.3		
IR28P50AB	C	8.63	4.6	19.6		
IR29MW48A	C	8.04	3.8	9.3		
IR29MW56F	C	8.15	5.5	14.5	11.0	
IR29MW57A	C	7.67	4.5	10.5		decommissioned
IR29MW58F	C	8.54	14.6	18.6	16.0	
IR29MW59F	C	8.21	14.7	24.7	19.7	
IR29MW72F	C	9.27	5.6	25.6	15.5	

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR29MW84A	C	8.09	5.3	10.3		
IR29MW85F	C	9.66	6.0	21.0	13.0	
IR30MW01F	C	8.92	5.0	18.9		
IR30MW02F	C	9.77	5.3	19.2		
IR30MW03F	C	8.89	5.2	19.1		
IR30MW04F	C	8.96	5.2	19.1	12.5	
IR33MW01A	G	10.73	6.6	21.6		
IR33MW02A	G	10.89	6.0	21.0		
IR33MW04A	G	10.63	6.0	21.0		
IR33MW05A	G	11.16	25.6	35.6		
IR33MW116A	G	8.38	5.7	20.7		
IR33MW120B	G	9.45	66.9	70.9		
IR33MW121B	G	7.20	68.6	72.6		
IR33MW61A	G	12.26	6.0	20.5		decommissioned
IR33MW62A	G	8.21	5.0	15.0		decommissioned
IR33MW63A	G	7.80	5.4	20.4		
IR33MW64A	G	9.30	7.0	13.0		
IR33MW65A	G	8.32	5.5	15.5		
IR33MW66A	G	8.91	5.3	20.3		
IR34MW01A	G	8.62	5.1	15.1		
IR34MW02A	G	8.03	5.5	20.5		
IR34MW35A	G	8.15	5.1	20.1		
IR34MW36A	G	8.80	8.3	17.3	13.0	
IR34MW36B	G	9.23	23.8	32.8		
IR34MW37A	G	8.78	5.7	19.7		
IR34MW37B	G	8.60	29.7	33.7		

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR35MW01A	D-1	8.85	5.1	20.1		
IR36MW09A	E	5.00	5.0	20.0	13.0	
IR36MW11A	E	8.55	5.5	20.5	15.0	
IR36MW120B	E	7.05	57.2	72.2		
IR36MW121A	E	6.96	14.4	29.4		
IR36MW122A	E	7.64	16.9	31.9	24.5	
IR36MW123B	E	7.55	49.3	64.3	57.0	
IR36MW125A	E	6.55	3.9	8.9	7.5	
IR36MW126A	E	5.16	3.3	8.3		
IR36MW127A	E	6.45	5.5	25.5	16.5	
IR36MW128A	E	8.01	5.6	20.6	15.0	
IR36MW129B	E	7.80	53.7	68.7	59.5	
IR36MW12A	E	7.18	5.2	20.2	14.0	
IR36MW135A	E	7.85	5.4	25.4		
IR36MW137A	E	7.76	4.9	6.4		
IR36MW139A	E	7.10	3.8	18.8		
IR36MW13A	E	8.96	8.2	13.2		
IR36MW14A	E	5.52	5.4	15.4	10.5	
IR36MW15A	E	7.04	5.5	20.5		
IR36MW16A	G	8.26	5.3	25.3	16.0	
IR36MW17A	E	8.36	5.5	20.5	15.0	
IR37MW01A	G	7.59	5.4	20.4		
IR37MW26B	G	8.14	29.8	34.8		
IR38MW01A	E	4.28	13.1	33.1		
IR38MW02A	E	2.88	9.6	29.6		
IR38MW03A	E	4.00	5.4	20.4		

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR39MW21A	E	7.92	8.0	15.0		
IR39MW22A	E	6.34	4.9	19.9		
IR39MW23A	E	5.61	5.2	20.2	11.5	
IR39MW24A	E	4.80	4.9	14.9		
IR39MW33A	E	4.31	5.3	23.3	11.5	
IR39MW35A	E	5.56	5.5	25.5		
IR39MW36A	E	4.66	5.4	25.4	15.5	
IR44MW08A	G	7.24	4.6	14.6	10.5	
IR46MW37A	B	9.58	5.0	20.0	14.0	
IR46MW38A	B	9.78	5.4	20.4		
IR46MW39A	B	9.75	5.6	20.6		decommissioned
IR46MW39A2	B	9.32	25.3	30.3		decommissioned
IR46MW39A3	B	9.47	35.4	40.4		decommissioned
IR46MW40A	B	9.29	4.7	20.2		decommissioned
IR46MW40A2	B	9.33	25.3	30.3		decommissioned
IR46MW40A3	B	9.28	35.3	40.3		decommissioned
IR46MW41A	B	9.57	5.3	20.3		
IR46MW42A	B	9.53	5.3	20.3		decommissioned
IR46MW43A	B	8.98	5.2	20.2		
IR46MW46A	B	9.61	5.4	20.4		
IR46MW47A	B	9.69	5.6	20.6		
IR46MW48A	B	8.89	5.5	20.5		
IR46P38AA	B	10.68	6.6	31.6		
IR46P38AB	B	10.75	6.2	21.2		
IR50MW13F	C	7.68	5.5	15.5		
IR50MW14A	D-1	6.86	5.6	20.9		

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR50MW15A	D-1	6.60	4.5	19.5		
IR55MW01A	D-1	5.14	3.8	13.8		
IR55MW02A	D-1	7.27	5.5	20.5		
IR55MW04A	D-1	4.80	5.5	20.5		
IR56MW39A	E	9.84	5.5	20.5	15.0	
IR57MW30A	C	8.02	5.3	20.3		
IR58MW24F	C	15.48	14.5	25.0		
IR58MW25F	C	9.72	16.2	26.7	21.5	
IR58MW26A	C	8.24	5.4	20.9	21.5	
IR58MW31A	C	8.97	4.4	14.9	10.0	
IR58MW31F	C	9.22	54.3	58.8	57.0	
IR58MW32B	C	8.77	9.1	24.1	17.0	
IR58MW33B	C	9.06	17.8	24.8	20.0	
IR58MW34A	C	9.80	14.7	24.7		
IR58MW35A	C	9.55	4.8	24.8		
IR59MW01F	NNP	121.36	62.4	81.9		decommissioned
IR59MW02F	NNP	124.34	45.3	65.3		decommissioned
IR59MW03F	NNP	124.14	86.4	106.4		decommissioned
IR59MW04F	NNP	120.37	63.4	83.4		decommissioned
IR59MW05F	NNP	120.75	47.1	67.1		decommissioned
IR59MW06F	NNP	31.88	13.8	18.8		decommissioned
IR60MW04A	B	9.34	5.7	20.7		decommissioned
IR60MW08A	B	9.40	5.8	20.8		decommissioned
IR60MW10A	B	9.11	5.3	20.3		decommissioned
IR61MW04A	B	10.35	5.8	20.8		
IR61MW05A	B	10.11	5.4	20.4	14.0	

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR62MW07A	B	10.20	6.2	21.2		
IR62MW08A	B	10.35	5.5	15.5		
IR64MW05A	C	7.83	4.6	9.6	7.7	
IR67MW04A	G	8.17	5.4	20.4		
IR70MW04A	D-1	7.32	5.7	20.7	13.5	
IR70MW07A	D-1	7.90	4.5	19.5	13.0	
IR70MW11A	D-1	6.07	2.7	17.7		
IR70MW12A	D-1	8.44	5.5	20.5		
IR71MW03A	G	8.31	5.7	20.7	14.5	
IR71MW04A	G	7.70	8.3	18.3	14.5	
IR71MW12B	G	8.23	90.7	99.7	98.0	
IR71MW20A	D-1	10.10	5.1	20.1		
IR71MW22A	D-1	8.21	4.8	14.8		
IR71MW24A	D-1	11.29	4.9	14.9		
IR71MW27A	D-1	8.64	8.7	18.7		
IR71MW28A	D-1	8.66	8.6	23.6		
IR71MW30A	D-1	10.82	5.6	21.6		
IR71MW32A	D-1	8.75	4.7	14.7		
IR72MW32A	E	10.08	5.3	20.3		
IR72MW33A	E	12.00	5.5	20.5		
IR72P33AA	E	12.07	5.5	20.5		
IR72P33AB	E	12.35	5.7	20.7		
IR73MW04A	E	13.48	5.4	20.4		
IR74MW01A	E	13.16	9.9	14.9	14.0	
IR75MW05B	NNP	15.57	10.6	20.6	15.5	
IR75P05AA	NNP	15.34	10.3	20.3		

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
IR75P05AB	NNP	15.52	10.6	20.6		
IR76MW13A	NNP	19.69	8.7	23.7	19.0	
PA16MW16A	D-1	8.58	4.7	19.7		
PA16MW17A	D-1	8.45	3.8	16.3		
PA16MW18A	D-1	8.37	4.9	19.9		
PA18MW08A	NNP	24.67	9.6	24.6		decommissioned
PA18MW09A	B	17.66	9.6	24.6		
PA24MW01A	B	10.12	6.7	26.7		
PA24MW02A	B	9.46	6.0	21.5		decommissioned
PA24MW03A	B	10.09	4.4	14.4		decommissioned
PA24MW03AD	B	9.97	5.4	25.4		decommissioned
PA28MW50A	C	8.60	4.5	19.5		
PA28MW51A	C	8.41	5.6	26.1		
PA28MW52A	C	8.58	5.6	20.6		
PA28P02A	C	7.73	5.5	20.5		
PA28P03A	C	7.71	3.8	17.8		
PA28P04A	C	8.61	4.6	18.1	12.5	
PA32MW04A	D-1	7.05	5.1	25.1		
PA33MW36A	G	9.24	5.6	20.6		
PA33MW37A	G	9.27	5.6	20.6		
PA35P01A	G	8.14	5.5	20.5		
PA36MW01A	E	7.64	5.5	21.0		
PA36MW02A	E	8.02	5.5	21.0	15.5	
PA36MW03A	E	9.26	7.5	17.5		
PA36MW04A	E	7.33	5.0	20.5	14.5	
PA36MW05A	E	7.40	4.5	24.5		decommissioned

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
PA36MW06A	E	8.94	5.4	25.4		
PA36MW07A	E	6.80	4.4	19.4	14.0	
PA36MW08A	E	7.65	5.3	20.3		
PA36P04AA	E	8.03	5.5	20.5		
PA36P04AB	E	8.47	4.0	19.0		
PA39MW01A	E	4.53	5.4	25.4		
PA39MW02A	E	6.13	5.2	25.7		
PA39MW03A	E	10.46	6.6	27.1		
PA50MW01A	B	9.18	5.5	15.7		decommissioned
PA50MW02A	B	7.80	5.4	15.4	11.5	
PA50MW03A	C	7.03	4.2	14.2	11.0	
PA50MW04A	C	7.56	4.0	12.5		
PA50MW05A	E	6.07	4.4	10.9		
PA50MW06A	E	7.64	4.5	14.5		
PA50MW07A	D-1	8.71	4.5	11.5	10.0	
PA50MW08A	E	7.48	4.4	12.4		
PA50MW09A	E	5.00	4.4	14.4		
PA50MW10A	E	8.45	4.5	17.5		
PA50MW11A	G	7.66	4.6	16.6	13.0	decommissioned
PA50MW12A	G	8.62	4.5	16.0	13.0	decommissioned
UT02MW15A	B	12.57	5.9	20.9		
UT02MW16A	B	9.91	3.8	18.8		decommissioned
UT02MW17A	B	10.12	5.7	15.7		
UT03MW10A	B	10.60	4.6	14.1		decommissioned
UT03MW11A	B	9.94	4.4	19.4	13.0	

Table 1-1. Monitoring well construction details.

Well ID	Parcel	Current Top of Casing (ft above MSL)	TOS depth (ft below TOC)	BOS depth (ft below TOC)	Dedicated Pump Intake (ft below TOC)	Comments
UT03MW12A	B	10.10	5.4	20.4		decommissioned
UT03MW16A	B	10.45	5.4	20.4		

Notes:
BOS = bottom of screen
ft = feet
ID = identification number
IR = Installation Restoration
MSL = Mean Sea Level
MW = monitoring well
NNP = non-Navy property
PZ = piezometer
PA = Preliminary Assessment
TOC = top of casing
TOS = top of screen
UT = underground tank

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Table 4-2. Summary of quality control sample information (2Q2008).

Well ID	Parcel	Sample ID	QC Type	Sample Date	Sample Time	Mercury-CLP	Metals-CLP	Pesticides and PCBs-CLP	SVOCs-CLP	VOCs-CLP	EPA160-1 TDS	EPA160-2 TSS	EPA1664 Oil And Grease	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	PA351-2 Nitrogen-Kjeldahl Total	EPA376-1 Sulfide	EPA6010B Dissolved Metals	PA7199 Hexavalent Chromium	PA7470A Dissolved Mercury	EPA8015B-G Gasoline	EPA8015B-D Diesel or Motor Oil	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds and Pesticides	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	FPD-GC Organotins	SM2520B Salinity	EPA901-0 Cesium-137	EPA901-1M Cobalt-60	DOE_HASL-300 Plutonium-239	EPA903-1 Radium-226	EPA905-0 Strontium-90	EPA520 Thorium-232
IR01MW16A	E-2	0823E076	EB	6/4/08	1200																										X			X	X	
IR01MW31A	E-2	0816D022	FD	4/17/08	1349							X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X								
IR01MW63A	E-2	0816E023	FD	4/16/08	1340							X						X		X						X		X								
IR03MW228B	E	0817E031	FD	4/21/08	1139																					X										
IR03MW342A	E	0817E035	FD	4/22/08	0926							X						X	X	X			X			X	X									
IR04MW40A	E	0823G054	EB	6/5/08	1512																										X			X	X	
IR05MW85A	E	0816E026	FD	4/16/08	1523							X								X						X	X									
IR06MW47F	C	0816E016	FD	4/15/08	1517																					X										
IR06MW53F	C	0816H014	FD	4/16/08	1036							X						X								X										
IR07MW21A1	B	0816G012	FD	4/16/08	0929	X	X			X		X							X		X	X														
IR08MW41A	E	0823E080	EB	6/5/08	1113																										X			X	X	
IR09MW61A	D	0817G026	FD	4/22/08	1004						X	X						X	X							X				X						
IR09P040A	D	0826D003	FD	6/23/08	1144							X						X	X									X			X	X		X		
IR09P042A	G	0826G007	EB	6/24/08	1038													X	X							X										
IR09P043A	D	0826G010	FD	6/25/08	1009																															
IR09PPY1	D	0826D010	FD	6/25/08	1021							X						X	X									X								
IR10MW71A	B	0816E011	FD	4/15/08	1041																					X										
IR10MW76A	B	0816E008	FD	4/15/08	0917																					X										
IR15MW06A	E	0816H025	FD	4/17/08	1314																					X										
IR25MW37A	C+	0816G008	FD	4/15/08	1405					X																										
IR26MW49A	B	0816D009	FD	4/15/08	1056	X	X	X	X			X							X																	
IR28MW140F	C	0817N012	FD	4/23/08	1104																					X										
IR28MW272F	C	0816D005	FD	4/14/08	1543						X															X				X						
IR28MW315B	C	0816P003	FD	4/17/08	0913						X															X				X						
IR28MW315F	C	0816P005	FD	4/17/08	1002						X															X				X						
IR28MW350F	C	0817E064	EB	4/25/08	1012																					X										
IR28MW396A	C	0817E051	FD	4/23/08	1525																					X										
IR28MW408A	C	0823E070	EB	6/3/08	1200																										X	X		X		
IR28MW921A	C	0823E084	EB	6/6/08	1200																										X		X	X	X	X
IR30MW04F	C	0816P007	FD	4/17/08	1229																					X										
IR33MW116A	G	0826E009	EB	6/24/08	1132													X	X							X										

Table 4-2. Summary of quality control sample information (2Q2008).

Well ID	Parcel	Sample ID	QC Type	Sample Date	Sample Time	Mercury-CLP	Metals-CLP	Pesticides and PCBs-CLP	SVOCs-CLP	VOCs-CLP	EPA160-1 TDS	EPA160-2 TSS	EPA1664 Oil And Grease	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	PA351-2 Nitrogen-Kjeldahl Total	EPA376-1 Sulfide	EPA6010B Dissolved Metals	PA7199 Hexavalent Chromium	PA7470A Dissolved Mercury	EPA8015B-G Gasoline	EPA8015B-D Diesel or Motor Oil	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds and Pesticides	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	FPD-GC Organotins	SM2520B Salinity	EPA901-0 Cesium-137	EPA901-1M Cobalt-60	DOE_HASL-300 Plutonium-239	EPA903-1 Radium-226	EPA905-0 Strontium-90	EPA520 Thorium-232
IR33MW120B	G	0826E005	EB	6/23/08	1521																					X										
IR33MW64A	D	0826E020	FD	6/26/08	1024																															
IR33MW65A	G	0826E024	EB	6/26/08	1504														X							X										
IR36MW123B	E	0823G043	FD	6/3/08	1102																					X					X			X		
IR36MW128A	E	0817E039	FD	4/22/08	1159																					X										
IR36MW135A	E	0823G057	EB	6/6/08	1130																					X										
IR39MW33A	E	0816H028	FD	4/17/08	1421							X						X																		
IR55MW01A	D-1	0826G012	EB	6/25/08	1207																					X										
IR55MW02A	D-1	0826G017	EB	6/26/08	1203																					X										
IR67MW04A	G	0826E015	EB	6/25/08	1120																					X										
IR71MW04A	D	0817D037	FD	4/22/08	1023						X															X				X						
PA28P04A	C	0816E021	FD	4/16/08	1132																					X										
TB	Not Assigned	0816D006	TB	4/15/08	0800																					X										
TB	Not Assigned	0816D013	TB	4/16/08	0800					X											X															
TB	Not Assigned	0816D018	TB	4/17/08	0800																X					X										
TB	Not Assigned	0816D024	TB	4/18/08	0800																X					X										
TB	Not Assigned	0816E001	TB	4/14/08	0800																X					X										
TB	Not Assigned	0816E006	TB	4/15/08	0800					X																										
TB	Not Assigned	0816E017	TB	4/16/08	0800					X											X															
TB	Not Assigned	0816G001	TB	4/14/08	0800																					X										
TB	Not Assigned	0816G003	TB	4/15/08	0800					X											X															
TB	Not Assigned	0816G010	TB	4/16/08	0800					X											X															
TB	Not Assigned	0816G017	TB	4/17/08	0800																X					X										
TB	Not Assigned	0816H001	TB	4/14/08	0800																X					X										
TB	Not Assigned	0816H005	TB	4/15/08	0800					X											X															
TB	Not Assigned	0816H010	TB	4/16/08	0800																X					X										
TB	Not Assigned	0816H020	TB	4/17/08	0800																X					X										
TB	Not Assigned	0816H030	TB	4/18/08	0800																X					X										
TB	Not Assigned	0816N001	TB	4/15/08	1400					X											X															
TB	Not Assigned	0816N005	TB	4/17/08	1300																					X										
TB	Not Assigned	0816P001	TB	4/17/08	0800																					X										

Table 4-2. Summary of quality control sample information (2Q2008).

Well ID	Parcel	Sample ID	QC Type	Sample Date	Sample Time	Mercury-CLP	Metals-CLP	Pesticides and PCBs-CLP	SVOCs-CLP	VOCs-CLP	EPA160-1 TDS	EPA160-2 TSS	EPA1664 Oil And Grease	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	PA351-2 Nitrogen-Kjeldahl Total	EPA376-1 Sulfide	EPA6010B Dissolved Metals	PA7199 Hexavalent Chromium	PA7470A Dissolved Mercury	EPA8015B-G Gasoline	EPA8015B-D Diesel or Motor Oil	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds and Pesticides	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	FPD-GC Organotins	SM2520B Salinity	EPA901-0 Cesium-137	EPA901-1M Cobalt-60	DOE_HASL-300 Plutonium-239	EPA903-1 Radium-226	EPA905-0 Strontium-90	EPA520 Thorium-232
TB	Not Assigned	0816P008	TB	4/18/08	0800																					X										
TB	Not Assigned	0816X001	TB	4/14/08	1500																X					X										
TB	Not Assigned	0816X002	TB	4/15/08	1300					X											X															
TB	Not Assigned	0816X003	TB	4/16/08	0000					X											X															
TB	Not Assigned	0816X004	TB	4/16/08	1600					X											X															
TB	Not Assigned	0816X005	TB	4/17/08	1330					X											X															
TB	Not Assigned	0816X006	TB	4/18/08	1330																X					X										
TB	Not Assigned	0817D029	TB	4/21/08	0800																X					X										
TB	Not Assigned	0817D034	TB	4/22/08	0800																					X										
TB	Not Assigned	0817D041	TB	4/23/08	0800																X					X										
TB	Not Assigned	0817D046	TB	4/24/08	0800																					X										
TB	Not Assigned	0817D054	TB	4/25/08	0800																					X										
TB	Not Assigned	0817E027	TB	4/21/08	0800																X					X										
TB	Not Assigned	0817E033	TB	4/22/08	0800																X					X										
TB	Not Assigned	0817E043	TB	4/23/08	0800																X					X										
TB	Not Assigned	0817E052	TB	4/24/08	0800																X					X										
TB	Not Assigned	0817E061	TB	4/25/08	0800																					X										
TB	Not Assigned	0817G020	TB	4/21/08	0800																X					X										
TB	Not Assigned	0817G024	TB	4/22/08	0800																					X										
TB	Not Assigned	0817G030	TB	4/23/08	0800																					X										
TB	Not Assigned	0817G035	TB	4/24/08	0800																					X										
TB	Not Assigned	0817H032	TB	4/21/08	0800																X					X										
TB	Not Assigned	0817H038	TB	4/22/08	0800																X					X										
TB	Not Assigned	0817H044	TB	4/24/08	0800																					X										
TB	Not Assigned	0817H052	TB	4/25/08	0800																					X										
TB	Not Assigned	0817N009	TB	4/23/08	0800																					X										
TB	Not Assigned	0817P013	TB	4/25/08	0800																					X										
TB	Not Assigned	0817X007	TB	4/21/08	1400																X					X										
TB	Not Assigned	0817X008	TB	4/22/08	1530																X					X										
TB	Not Assigned	0817X009	TB	4/23/08	1430																X					X										
TB	Not Assigned	0817X010	TB	4/24/08	1600																X					X										

Table 4-2. Summary of quality control sample information (2Q2008).

Well ID	Parcel	Sample ID	QC Type	Sample Date	Sample Time	Mercury-CLP	Metals-CLP	Pesticides and PCBs-CLP	SVOCs-CLP	VOCs-CLP	EPA160-1 TDS	EPA160-2 TSS	EPA1664 Oil And Grease	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	PA351-2 Nitrogen-Kjeldahl Total	EPA376-1 Sulfide	EPA6010B Dissolved Metals	PA7199 Hexavalent Chromium	PA7470A Dissolved Mercury	EPA8015B-G Gasoline	EPA8015B-D Diesel or Motor Oil	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds and Pesticides	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	FPD-GC Organotins	SM2520B Salinity	EPA901-0 Cesium-137	EPA901-1M Cobalt-60	DOE_HASL-300 Plutonium-239	EPA903-1 Radium-226	EPA905-0 Strontium-90	EPA520 Thorium-232
TB	Not Assigned	0817X011	TB	4/25/08	1500																X					X										
TB	Not Assigned	0823E068	TB	6/3/08	0800																					X										
TB	Not Assigned	0823E073	TB	6/4/08	0800																					X										
TB	Not Assigned	0823E077	TB	6/5/08	0800																					X										
TB	Not Assigned	0823E081	TB	6/6/08	0800																					X										
TB	Not Assigned	0823G041	TB	6/3/08	0800																					X										
TB	Not Assigned	0823G047	TB	6/4/08	0800					X											X															
TB	Not Assigned	0823G052	TB	6/5/08	0800																					X										
TB	Not Assigned	0823G055	TB	6/6/08	0800																					X										
TB	Not Assigned	0823H054	TB	6/3/08	0800																					X										
TB	Not Assigned	0823H059	TB	6/4/08	0800					X											X															
TB	Not Assigned	0823X012	TB	6/3/08	1600																					X										
TB	Not Assigned	0823X013	TB	6/4/08	1600					X											X															
TB	Not Assigned	0823X014	TB	6/6/08	1500																					X										
TB	Not Assigned	0826D001	TB	6/23/08	0800																					X										
TB	Not Assigned	0826D005	TB	6/24/08	0800																					X										
TB	Not Assigned	0826D008	TB	6/25/08	0800																					X										
TB	Not Assigned	0826D013	TB	6/26/08	0800																					X										
TB	Not Assigned	0826E001	TB	6/23/08	0800																					X										
TB	Not Assigned	0826E006	TB	6/24/08	0800																					X										
TB	Not Assigned	0826E012	TB	6/25/08	0800																					X										
TB	Not Assigned	0826E018	TB	6/26/08	0800																					X										
TB	Not Assigned	0826G005	TB	6/24/08	0800																					X										
TB	Not Assigned	0826G008	TB	6/25/08	0800																					X										
TB	Not Assigned	0826G014	TB	6/26/08	0800																					X										
TB	Not Assigned	0826X001	TB	6/23/08	1530																					X										
TB	Not Assigned	0826X002	TB	6/24/08	1533																					X										
TB	Not Assigned	0826X003	TB	6/26/08	1539																					X										
TB	Not Assigned	0826X004	TB	6/26/08	1500																					X										

Notes:
The analyses to be performed are as outlined in SAP Tables 7B-7M (TtEMI, 2004) and SAP Addenda nos. 1 through 4.

Abbreviations/Acronyms:

FD:	Field Duplication
EB:	Equipment blank (rinsate)
PCBs:	Polychlorinated biphenyls
SVOCs:	Semi-volatile organic compounds
SM:	Standard Method for Wastewater
TB:	Trip Blank
TDS:	Total dissolved solids
TSS:	Total suspended solids
VOCs:	Volatile organic compounds

Parcel:

B+:	Well is physically located in Parcel B, is assigned in the 2004 SAP to Parcel C, and is not assigned in the RAMP.
C+:	Well is physically located in Parcel C, is assigned in the 2004 SAP to Parcel C, and is assigned in the RAMP to Parcel B.
NNP:	Non-Navy Property, reported by 2004 SAP-assigned parcel

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Table 4-3. Summary of groundwater sample information (3Q2008).

Well ID	Parcel	Sample Type (SAP Goal)	Comments	Sample ID	Sample Date	Sample Time	EPA 8260B: VOCs	EPA 8270C: SVOCs	EPA 8081A: Organochlorine Pesticides	EPA 8141A: Organophosphorus Compounds	EPA 8082: PCBs	EPA 8015B-G: Gasoline	EPA 8015B-D: Diesel or Motor Oil	EPA 1664: Oil and Grease	EPA 6010B: Dissolved Metals [1]	EPA 7470A: Dissolved Mercury	GC-MS: Organotins	EPA 9010C / 9014: Cyanide	EPA 300.0: Anions	EPA 350.1: Ammonia as Nitrogen	EPA 351.2: Total Kjeldahl Nitrogen	EPA 376.1: Sulfide	EPA 160.2: TSS	EPA 7199: Hexavalent Chromium	EPA 6850: Perchlorate	EPA 901.0 modified: Cesium-137	EPA 901.1 modified: Cobalt-60	DOE HASL-300 Pu-10: Plutonium-90	EPA 903.1: Radium-226	EPA 905.0: Strontium-90	EPA 520, Method 00-07: Thorium-232	Monitoring Network Analytical Comments	Supplemental Data Collection Analytical Comments
IR01MW09B	E-2	MN		0830H029 0830H030	7/22/2008	1331 1336	A	A	A	A	A	A	A		A	A		A	A	A	A	A	A										
IR01MW10A	E-2	MN		0830E029	7/22/2008	0924	A	A	A	A	A	A	A		A	A		A	A	A	A	A	A										
IR01MW16A	E-2	SDC		0831E057	7/29/2008	0940																			2-SA								
IR01MW26B	E-2	MN		0830G021	7/21/2008	1000	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA		SA	SA	SA	SA	SA	SA										
IR01MW31A	E-2	MN		0830D025	7/22/2008	1454	SA	SA	SA	SA	SA	SA	SA		SA	SA		SA	SA	SA	SA	SA	SA									Metals + Mo	
IR01MW366B	E-2	MN		0830H027	7/22/2008	1020	SA	SA	SA	SA	SA	SA	SA		SA	SA		SA	SA	SA	SA	SA	SA										
IR01MW38A	E-2	MN		0830G022	7/21/2008	1133	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q										
		SDC																							2-SA								
IR01MW403B	E-2	MN		0830E031	7/22/2008	1439	A	A	A	A	A	A	A		A	A		A	A	A	A	A	A										
IR01MW48A	E-2	MN		0830G027	7/22/2008	1117	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q									Metals + V	
IR01MW53B	E-2	MN		0830G026	7/22/2008	1014	Q	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q	Q	Q	Q	Q	Q									Metals + V	
IR01MW60A	E-2	MN		0830E025	7/21/2008	1325	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q										
		SDC																							2-SA								
IR01MW62A	E-2	MN		0830D023	7/22/2008	1039	SA	SA							SA	SA		SA					SA									Metals + V	
IR01MW63A	E-2	MN		0830D024	7/22/2008	1359	SA								SA	SA		SA					SA									Metals + V	
IR01MW64A	E-2	MN		0830E024	7/21/2008	0949	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q										
		SDC																							2-SA								
IR01MWI-7	E-2	MN		0830E030	7/22/2008	1349	Q	Q							Q	Q	Q						Q									Metals + V	
IR01MWI-8	E-2	MN		0830G028	7/22/2008	1342	Q	Q							Q	Q	Q	Q					Q									Metals + V	
IR01MWLF1A	E-2	MN		0830E027	7/21/2008	1449	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA		SA	SA	SA	SA	SA	SA										
IR01MWLF2A	E-2	MN		0830H041	7/24/2008	0930	A	A	A	A	A	A	A		A	A		A	A	A	A	A	A										
IR01MWLF4B	E-2	MN		0830G029	7/22/2008	1441	SA	SA	SA	SA	SA	SA	SA		SA	SA		SA	SA	SA	SA	SA	SA										
IR02MW101A1	E	SDC		0830G031	7/23/2008	1024									2-SA											2-SA			2-SA	2-SA			
IR02MW126A	E	MN		0830D021	7/21/2008	1533									Q																	Cu, Pb, Ni & Zn only	
		SDC										2-SA	2-SA													2-SA			2-SA	2-SA			
IR02MW175A	E	SDC		0830H034	7/23/2008	1014									2-SA											2-SA			2-SA	2-SA			
IR02MW179A	E	SDC		0830H037	7/23/2008	1135									2-SA											2-SA			2-SA	2-SA			
IR02MW209A	E	SDC		0830H033	7/23/2008	0942									2-SA											2-SA			2-SA	2-SA			

Table 4-3. Summary of groundwater sample information (3Q2008).

Well ID	Parcel	Sample Type (SAP Goal)	Comments	Sample ID	Sample Date	Sample Time	EPA 8260B: VOCs	EPA 8270C: SVOCs	EPA 8081A: Organochlorine Pesticides	EPA 8141A: Organophosphorus Compounds	EPA 8082: PCBs	EPA 8015B-G: Gasoline	EPA 8015B-D: Diesel or Motor Oil	EPA 1664: Oil and Grease	EPA 6010B: Dissolved Metals [1]	EPA 7470A: Dissolved Mercury	GC-MS: Organotins	EPA 9010C / 9014: Cyanide	EPA 300.0: Anions	EPA 350.1: Ammonia as Nitrogen	EPA 351.2: Total Kjeldahl Nitrogen	EPA 376.1: Sulfide	EPA 160.2: TSS	EPA 7199: Hexavalent Chromium	EPA 6850: Perchlorate	EPA 901.0 modified: Cesium-137	EPA 901.1 modified: Cobalt-60	DOE HASL-300 Pu-10: Plutonium-90	EPA 903.1: Radium-226	EPA 905.0: Strontium-90	EPA 520, Method 00-07: Thorium-232	Monitoring Network Analytical Comments	Supplemental Data Collection Analytical Comments
IR02MW301A	E	MN													Q																	Cu & Zn only	
		SDC		0830H035	7/23/2008	1048									2-SA											2-SA			2-SA	2-SA			Metals less Cu & Zn
IR02MW373A	E	SDC		0830G033	7/23/2008	1504	2-SA																										
IR02MW374A	E	MN		0836G017	9/3/2008	1516					Q				Q																		
		SDC										2-SA	2-SA													2-SA			2-SA	2-SA			
IR02MW375A	E	MN		0836G016	9/3/2008	1028					Q				Q																		
		SDC										2-SA	2-SA													2-SA			2-SA	2-SA			
IR02MWB-1	E	SDC		0830H043	7/24/2008	1352									2-SA											2-SA			2-SA	2-SA			
IR02MWB-2	E	SDC		0839G035	9/23/2008	1128									2-SA											2-SA			2-SA	2-SA			
IR04MW13A	E-2	MN		0830H028	7/22/2008	1058	SA	SA	SA	SA	SA	SA	SA		SA	SA		SA	SA	SA	SA	SA	SA										
IR04MW31A	E-2	MN		0836G019	9/3/2008	1025	Q																										
IR04MW36A	E-2	MN		0831H031	7/22/2008	1440	A	A	A	A	A	A	A		A	A		A	A	A	A	A	A										
IR04MW37A	E	MN		0829G018	7/18/2008	1352	Q																										
		SDC													2-SA											2-SA			2-SA	2-SA			
IR04MW40A	E	SDC		0830E048	7/25/2008	1101									2-SA											2-SA			2-SA	2-SA			
IR04P31AB	E	MN	poss. destroyed [2]				Q																										
IR06MW22A	C	MN		0830G035	7/24/2008	1111	Q																										
IR06MW32A	C	MN		0829H009	7/17/2008	1447	Q																										
IR06MW35A	C	MN		0829H007	7/17/2008	1401	Q																										
IR06MW40A	C	MN		0830G037	7/24/2008	1339	Q																										
IR06MW42A	C	MN		0829D011	7/17/2008	1324		SA																								naphthalene only	
		SDC										2-SA	2-SA																				
IR06MW46A	B	SDC		0836G022	9/4/2008	1318	2-SA					2-SA	2-SA																				
IR06MW54F	C	SDC		0829D012	7/17/2008	1454									2-SA									2-SA									
IR06MW59A1	C	MN		0829H008	7/17/2008	1428	Q																										
IR07MW20A1	B	MN		0829D009	7/17/2008	0948									SA																	Cu only	
		SDC													2-SA																		Metals less Cu

Table 4-3. Summary of groundwater sample information (3Q2008).

Well ID	Parcel	Sample Type (SAP Goal)	Comments	Sample ID	Sample Date	Sample Time	EPA 8260B: VOCs	EPA 8270C: SVOCs	EPA 8081A: Organochlorine Pesticides	EPA 8141A: Organophosphorus Compounds	EPA 8082: PCBs	EPA 8015B-G: Gasoline	EPA 8015B-D: Diesel or Motor Oil	EPA 1664: Oil and Grease	EPA 6010B: Dissolved Metals [1]	EPA 7470A: Dissolved Mercury	GC-MS: Organotins	EPA 9010C / 9014: Cyanide	EPA 300.0: Anions	EPA 350.1: Ammonia as Nitrogen	EPA 351.2: Total Kjeldahl Nitrogen	EPA 376.1: Sulfide	EPA 160.2: TSS	EPA 7199: Hexavalent Chromium	EPA 6850: Perchlorate	EPA 901.0 modified: Cesium-137	EPA 901.1 modified: Cobalt-60	DOE HASL-300 Pu-10: Plutonium-90	EPA 903.1: Radium-226	EPA 905.0: Strontium-90	EPA 520, Method 00-07: Thorium-232	Monitoring Network Analytical Comments	Supplemental Data Collection Analytical Comments
IR07MW24A	B	SDC		0829H004	7/17/2008	1024									2-SA											2-SA		2-SA	2-SA	2-SA			
IR07MW25A	B	SDC		0829H003	7/17/2008	0949						2-SA	2-SA		2-SA											2-SA		2-SA	2-SA	2-SA			
IR07MW26A	B	SDC		0829D008	7/17/2008	0900									2-SA											2-SA		2-SA	2-SA	2-SA			
IR07MW27A	B	SDC		0829H002	7/17/2008	0915																				2-SA		2-SA	2-SA	2-SA			
IR07MW93A	B	SDC		0831D041	7/28/2008	1012						2-SA	2-SA		2-SA											2-SA		2-SA	2-SA	2-SA			
IR07MWS-2	B	MN		0829D010	7/17/2008	1026									SA																	Cu only	
IR07MWS-4	B	SDC		0830H049	7/25/2008	1340									2-SA											2-SA		2-SA	2-SA	2-SA			
IR08MW41A	E	SDC		0830D039	7/25/2008	1131	2-SA																			2-SA			2-SA	2-SA			
IR09MW35A	G	MN		0834G002	8/20/2008	1054	Q								Q									Q								Cr only	
		SDC													2-SA											2-SA	2-SA		2-SA				Metals less Cr
IR09MW37A	G	MN		0831N007	7/29/2008	1515	Q								Q									Q								Cr only	
		SDC													2-SA																		Metals less Cr
IR09MW44A	G	SDC	inadvertently not sampled																							2-SA	2-SA		2-SA				
IR09MW51F	G	MN		0831N003	7/28/2008	1241	Q								Q									Q								Cr only	
IR09MW62A	G	MN		0831N002	7/28/2008	1154	Q								Q									Q								Cr only	
IR09MW63A	G	MN		0831N009	7/30/2008	0913	Q								Q									Q								Cr only	
IR09P040A	G	MN		0830H047	7/25/2008	1107	Q																										
		SDC													2-SA											2-SA	2-SA		2-SA				
IR09P043A	G	MN		0831N005	7/29/2008	1036									Q																	Ni only	
		SDC	inadvertently not sampled												2-SA																		Metals less Ni
IR09PPY1	G	MN		0834D002	8/20/2008	1048	Q								Q									Q								Cr only	
IR10MW13A1	B	MN		0829E006	7/16/2008	1343	SA																										
IR10MW31A1	B	MN		0829E005	7/16/2008	1151	Q																										
IR10MW59A	B	MN		0829H015	7/18/2008	1415	Q																										
IR10MW61A	B	MN		0829G004	7/16/2008	1155	Q																										
IR10MW70A	C	SDC		0830E039	7/24/2008	1015	2-SA																										
IR10MW71A	B	MN		0829G013	7/17/2008	1500	Q																										

Table 4-3. Summary of groundwater sample information (3Q2008).

Well ID	Parcel	Sample Type (SAP Goal)	Comments	Sample ID	Sample Date	Sample Time	EPA 8260B: VOCs	EPA 8270C: SVOCs	EPA 8081A: Organochlorine Pesticides	EPA 8141A: Organophosphorus Compounds	EPA 8082: PCBs	EPA 8015B-G: Gasoline	EPA 8015B-D: Diesel or Motor Oil	EPA 1664: Oil and Grease	EPA 6010B: Dissolved Metals [1]	EPA 7470A: Dissolved Mercury	GC-MS: Organotins	EPA 9010C / 9014: Cyanide	EPA 300.0: Anions	EPA 350.1: Ammonia as Nitrogen	EPA 351.2: Total Kjeldahl Nitrogen	EPA 376.1: Sulfide	EPA 160.2: TSS	EPA 7199: Hexavalent Chromium	EPA 6850: Perchlorate	EPA 901.0 modified: Cesium-137	EPA 901.1 modified: Cobalt-60	DOE HASL-300 Pu-10: Plutonium-90	EPA 903.1: Radium-226	EPA 905.0: Strontium-90	EPA 520, Method 00-07: Thorium-232	Monitoring Network Analytical Comments	Supplemental Data Collection Analytical Comments
IR10MW80A	B	MN		0829G005	7/16/2008	1346	A																										
IR10MW81A	B	MN		0829E002	7/16/2008	1003	Q								Q									Q								Cr only	
		SDC													2-SA																		Metals less Cr
IR10MW82A	B	MN		0829E004	7/16/2008	1047	Q								Q									Q								Cr only	
		SDC													2-SA																		Metals less Cr
IR12MW11A	E-2	MN		0839G034	9/23/2008	1014	SA	SA	SA	SA	SA	SA	SA		SA	SA		SA	SA	SA	SA	SA	SA										
IR12MW14A	E	SDC		0830D020	7/21/2008	1333									2-SA											2-SA		2-SA	2-SA	2-SA			
IR12MW18A	E	MN		0830D027	7/23/2008	957									Q																	Ni only	
		SDC													2-SA																		Metals less Ni
IR14MW10A	E	SDC		0831E059	7/29/2008	1116 1056					2-SA				2-SA																		
IR14MW13A	E	SDC		0830E033	7/23/2008	1055						2-SA	2-SA																				
IR20MW17A	B	SDC		0830G038	7/24/2008	1457	2-SA								2-SA									2-SA									
IR22MW16A	D-1	SDC		0829G015	7/18/2008	1049									2-SA																		
IR22MW20A	D-1	SDC		0829G017	7/18/2008	1129																				2-SA			2-SA	2-SA			
IR25MW16A	C	MN		0829G012	7/17/2008	1328	Q																										
IR25MW17A	C	MN		0829D004	7/16/2008	1311	SA																										
IR25MW39A	C	SDC		0831E051	7/28/2008	1024									2-SA																		
IR25MW54A	C	SDC		0836G023	9/4/2008	1359									2-SA																		
IR25MW55A	C	MN		0830E049	7/25/2008	1245	Q																										
		SDC													2-SA																		
IR25MW56A	C	SDC		0835G014	8/27/2008	1334									2-SA																		
IR25MW60A1	C	MN	not sampled - gravel in well				Q																										
IR25MW61A1	B	SDC		0829G003	7/16/2008	1113									2-SA																		
IR25MW61A2	B	SDC		0829G002	7/16/2008	1039									2-SA																		

Table 4-3. Summary of groundwater sample information (3Q2008).

Well ID	Parcel	Sample Type (SAP Goal)	Comments	Sample ID	Sample Date	Sample Time	EPA 8260B: VOCs	EPA 8270C: SVOCs	EPA 8081A: Organochlorine Pesticides	EPA 8141A: Organophosphorus Compounds	EPA 8082: PCBs	EPA 8015B-G: Gasoline	EPA 8015B-D: Diesel or Motor Oil	EPA 1664: Oil and Grease	EPA 6010B: Dissolved Metals [1]	EPA 7470A: Dissolved Mercury	GC-MS: Organotins	EPA 9010C / 9014: Cyanide	EPA 300.0: Anions	EPA 350.1: Ammonia as Nitrogen	EPA 351.2: Total Kjeldahl Nitrogen	EPA 376.1: Sulfide	EPA 160.2: TSS	EPA 7199: Hexavalent Chromium	EPA 6850: Perchlorate	EPA 901.0 modified: Cesium-137	EPA 901.1 modified: Cobalt-60	DOE HASL-300 Pu-10: Plutonium-90	EPA 903.1: Radium-226	EPA 905.0: Strontium-90	EPA 520, Method 00-07: Thorium-232	Monitoring Network Analytical Comments	Supplemental Data Collection Analytical Comments
IR25MW902B	C	MN		0836G024	9/4/2008	1440	Q																										
		SDC													2-SA																		
IR26MW40A	B	SDC		0831D050	7/30/2008	0948						2-SA	2-SA		2-SA																		
IR26MW46A	B	SDC		0830E041	7/24/2008	1125																			2-SA		2-SA	2-SA	2-SA				
IR26MW47A	B	MN		0830G025 & 0830E041	7/21/2008 & 7/24/2008	1459 & 1125										Q																	
		SDC																							2-SA		2-SA	2-SA	2-SA				
IR26MW49A	B	SDC		0829D002	7/16/2008	1010									2-SA	2-SA																	
IR28MW122A	C	SDC		0829D005	7/16/2008	1412									2-SA																		
IR28MW124A-R1	C	SDC		0830D035	7/24/2008	1521	2-SA								2-SA																		
IR28MW125A	C	MN		0829E015	7/17/2008	1510	SA																										
		SDC													2-SA									2-SA									
IR28MW126A	C	SDC		0830D032	7/24/2008	1027									2-SA																		
IR28MW136A	C	MN		0829D015	7/18/2008	0940	Q																										
IR28MW151A	C	MN		0829D016	7/18/2008	1132	Q																										
IR28MW170A	C	MN		0831G046	7/28/2008	1500	Q																										
		SDC																							2-SA			2-SA		2-SA			
IR28MW173B	C	MN		0829E017	7/18/2008	1027	A																										
IR28MW188F	C	MN		0829E018	7/18/2008	1100	Q																										
IR28MW190F	C	MN		0830H046	7/25/2008	0950	Q																										
IR28MW200A	C	MN		0829H005	7/17/2008	1134	Q																										
IR28MW211F	C	MN		0829H011	7/18/2008	0924	Q																										
IR28MW216F	C	SDC		0829E007	7/16/2008	1417	2-SA								2-SA																		
IR28MW268A	C	MN		0829E013	7/17/2008	1322	A																										
		SDC													2-SA																		
IR28MW270A	C	SDC		0829G006	7/16/2008	1431									2-SA																		
IR28MW271A	C	SDC		0830D034	7/24/2008	1347									2-SA																		

Table 4-3. Summary of groundwater sample information (3Q2008).

Well ID	Parcel	Sample Type (SAP Goal)	Comments	Sample ID	Sample Date	Sample Time	EPA 8260B: VOCs	EPA 8270C: SVOCs	EPA 8081A: Organochlorine Pesticides	EPA 8141A: Organophosphorus Compounds	EPA 8082: PCBs	EPA 8015B-G: Gasoline	EPA 8015B-D: Diesel or Motor Oil	EPA 1664: Oil and Grease	EPA 6010B: Dissolved Metals [1]	EPA 7470A: Dissolved Mercury	GC-MS: Organotins	EPA 9010C / 9014: Cyanide	EPA 300.0: Anions	EPA 350.1: Ammonia as Nitrogen	EPA 351.2: Total Kjeldahl Nitrogen	EPA 376.1: Sulfide	EPA 160.2: TSS	EPA 7199: Hexavalent Chromium	EPA 6850: Perchlorate	EPA 901.0 modified: Cesium-137	EPA 901.1 modified: Cobalt-60	DOE HASL-300 Pu-10: Plutonium-90	EPA 903.1: Radium-226	EPA 905.0: Strontium-90	EPA 520, Method 00-07: Thorium-232	Monitoring Network Analytical Comments	Supplemental Data Collection Analytical Comments
IR28MW272A	C	SDC		0830H039	7/23/2008	1502									2-SA																		
IR28MW272F	C	MN		0830H023	7/21/2008	1400	Q																										
IR28MW294A	C	SDC		0830H024	7/21/2008	1429									2-SA																		
IR28MW298A	C	MN		0830H025	7/21/2008	1516	Q																										
IR28MW300F	C	SDC		0829E019	7/18/2008	1206	2-SA																										
IR28MW308A	C	SDC		0829E014	7/17/2008	1418						2-SA	2-SA		2-SA																		
IR28MW341F	C	SDC		0831E062	7/29/2008	1503																			2-SA	2-SA		2-SA					
IR28MW352A	C	MN		0829H006	7/17/2008	1207	Q																										
		SDC													2-SA																		
IR28MW355F	C	MN		0829H012	7/18/2008	0959	A																										
IR28MW394B	C	SDC		0829E011	7/17/2008	1113						2-SA	2-SA																				
IR28MW399B	C	MN		0829D006	7/16/2008	1450	A																										
IR28MW405A	C	SDC		0831E061	7/29/2008	1345																			2-SA	2-SA		2-SA					
IR28MW407	C	MN		0830E042	7/24/2008	1343	Q																										
		SDC													2-SA																		
IR28MW408A	C	SDC		0830E044	7/24/2008	1510									2-SA										2-SA	2-SA		2-SA					
IR28MW919A	C	SDC		0831E064	7/30/2008	1101																			2-SA		2-SA	2-SA	2-SA	2-SA			
IR28MW921A	C	SDC		0831E053	7/28/2008	1346																			2-SA		2-SA	2-SA	2-SA	2-SA			
IR28MW930A	C	SDC		0831E055	7/28/2008	1503																			2-SA		2-SA	2-SA	2-SA	2-SA			
IR29MW56F	C	SDC		0830H044	7/24/2008	1432						2-SA	2-SA																				
IR29MW58F	C	SDC		0829E010	7/17/2008	0907						2-SA	2-SA		2-SA																		
IR33MW61A	G	MN	not sampled - decommissioned				Q								Q								Q								Cr only	

Table 4-3. Summary of groundwater sample information (3Q2008).

Well ID	Parcel	Sample Type (SAP Goal)	Comments	Sample ID	Sample Date	Sample Time	EPA 8260B: VOCs	EPA 8270C: SVOCs	EPA 8081A: Organochlorine Pesticides	EPA 8141A: Organophosphorus Compounds	EPA 8082: PCBs	EPA 8015B-G: Gasoline	EPA 8015B-D: Diesel or Motor Oil	EPA 1664: Oil and Grease	EPA 6010B: Dissolved Metals [1]	EPA 7470A: Dissolved Mercury	GC-MS: Organotins	EPA 9010C / 9014: Cyanide	EPA 300.0: Anions	EPA 350.1: Ammonia as Nitrogen	EPA 351.2: Total Kjeldahl Nitrogen	EPA 376.1: Sulfide	EPA 160.2: TSS	EPA 7199: Hexavalent Chromium	EPA 6850: Perchlorate	EPA 901.0 modified: Cesium-137	EPA 901.1 modified: Cobalt-60	DOE HASL-300 Pu-10: Plutonium-90	EPA 903.1: Radium-226	EPA 905.0: Strontium-90	EPA 520, Method 00-07: Thorium-232	Monitoring Network Analytical Comments	Supplemental Data Collection Analytical Comments
IR33MW62A	G	MN	not sampled - decommissioned				Q																										
		SDC													2-SA									2-SA									Cr only
IR34MW35A	G	MN		0831D045	7/29/2008	1019	Q																										
IR34MW36A	G	MN		0831D047	7/29/2008	1136	Q																										
		SDC													2-SA									2-SA									Cr only
IR35MW01A	D-1	MN		0831D048	7/29/2008	1404	Q																										
IR36MW09A	E	MN		0829H013	7/18/2008	1055	Q																										
		SDC																							2-SA			2-SA					
IR36MW12A	E	SDC		0829G019	7/18/2008	1437									2-SA																		
IR36MW123B	E	SDC		0839G039	9/25/2008	1032																			2-SA			2-SA					
IR36MW125A	E	SDC		0829D018	7/18/2008		2-SA																										
IR36MW127A	E	MN		0829H014	7/18/2008	1123	A																										
IR36MW135A	E	SDC		0830E046	7/25/2008	0948	2-SA																										
IR36MW14A	E	SDC		0829D017	7/18/2008	1414						2-SA	2-SA																				
IR39MW21A	E	MN		0836G021	9/4/2008	1114	Q																									Benzene only	
IR39MW33A	E	MN		0830H038	7/23/2008	1401	Q																									Benzene only	
IR44MW08A	G	MN		0829E022	7/18/2008	1512	SA																										
IR46MW43A	B	SDC		0831D043	7/28/2008	1500						2-SA	2-SA		2-SA																		
IR46MW46A	B	SDC		0839G031 0830G043	9/22/2008 7/25/2008	1320 1326						2-SA	2-SA		2-SA																		
IR56MW39A	E	SDC		0830H042	7/24/2008	1141						2-SA	2-SA																				
IR58MW25F	C	SDC		0830G024	7/21/2008	1420									2-SA									2-SA									
IR58MW31A	C	MN		0830G023	7/21/2008	1338	Q																										
		SDC										2-SA	2-SA																				
IR58MW32B	C	MN		0829G011	7/17/2008	1106	Q																										

Table 4-3. Summary of groundwater sample information (3Q2008).

Well ID	Parcel	Sample Type (SAP Goal)	Comments	Sample ID	Sample Date	Sample Time	EPA 8260B: VOCs	EPA 8270C: SVOCs	EPA 8081A: Organochlorine Pesticides	EPA 8141A: Organophosphorus Compounds	EPA 8082: PCBs	EPA 8015B-G: Gasoline	EPA 8015B-D: Diesel or Motor Oil	EPA 1664: Oil and Grease	EPA 6010B: Dissolved Metals [1]	EPA 7470A: Dissolved Mercury	GC-MS: Organotins	EPA 9010C / 9014: Cyanide	EPA 300.0: Anions	EPA 350.1: Ammonia as Nitrogen	EPA 351.2: Total Kjeldahl Nitrogen	EPA 376.1: Sulfide	EPA 160.2: TSS	EPA 7199: Hexavalent Chromium	EPA 6850: Perchlorate	EPA 901.0 modified: Cesium-137	EPA 901.1 modified: Cobalt-60	DOE HASL-300 Pu-10: Plutonium-90	EPA 903.1: Radium-226	EPA 905.0: Strontium-90	EPA 520, Method 00-07: Thorium-232	Monitoring Network Analytical Comments	Supplemental Data Collection Analytical Comments
IR58MW33B	C	MN		0829G010	7/17/2008	0917	Q																										
IR70MW04A	D-1	MN		0829E020	7/18/2008	1351	Q																										
IR71MW03A	G	MN		0829E021	7/18/2008	1427	Q																										
		SDC													2-SA														2-SA				
IR74MW01A	E	MN		0829H016	7/18/2008	1503	Q																										
PA16MW17A	D-1	SDC		0830D037	7/25/2008	0953									2-SA																		
PA28MW50A	C	MN		0830G040	7/25/2008	0948	Q																										
PA28MW52A	C	MN		0830G042	7/25/2008	1113	Q																										
PA36MW03A	E	SDC		0830D029	7/23/2008	1136									2-SA																		
PA39MW01A	E	SDC		0830D030	7/23/2008	1438	2-SA																										
PA50MW03A	C	SDC		0829G007	7/16/2008	1514									2-SA																		

Notes:

1 Analysis for metals includes all EPA 6010B metals, except as noted otherwise in analytical comments columns

2 Adjacent well IR04MW31A sampled, as a replacement.

Abbreviations/Acronyms:

A: Annual sampling frequency
EPA: U.S. Environmental Protection Agency
GC-FPD: Gas chromatography - flame photometric detector
GC-MS: Gas chromatography - mass spectroscopy
MN: Monitoring Network
NNP: Non-Navy Property, reported by SAP-assigned parcel
PCBs: Polychlorinated biphenyls
Q: Quarterly sampling frequency
SA: Semi-annual sampling frequency
2-SA: 2 sampling event duration, sampled on semi-annual frequency
SDC: Supplemental Data Collection
SVOCs: Semi-volatile organic compounds
TKN: Total Kjeldahl Nitrogen
TSS: Total suspended solids
VOCs: Volatile organic compounds

Table 4-4. Summary of quality control sample information (3Q2008).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	QC Type	DOE HASL-300 Plutonium-239	EPA160-2 TSS	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	EPA351-2 Nitrogen-Kjeldahl Total	EPA376-1 Sulfide	EPA6010B Dissolved Metals	EPA6020 Dissolved Metals	EPA6850 Perchlorate	EPA7199 Hexavalent Chromium	EPA7470A Dissolved Mercury	EPA8015B-D Diesel or Motor Oil	EPA8015B-G Gasoline	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	EPA901-0 Cesium-137	EPA901-1M Cobalt-60	EPA903-1 Radium-226	EPA905-0 Strontium-90
IR01MW09B	E-2	0830H030	7/22/08	1336	FD		X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X				
IR01MW16A	E-2	0831E058	7/29/08	1000	EB									X														
IR02MW101A1	E	0830G032	7/23/08	1044	EB							X	X												X		X	X
IR02MW301A	E	0830H036	7/23/08	1053	FD							X	X												X		X	X
IR04MW31A	E-2	0836G020	9/4/08	1030	FD																	X						
IR06MW22A	C	0830G036	7/24/08	1131	EB																	X						
IR06MW54F	C	0829D013	7/17/08	1459	FD							X	X		X													
IR07MW93A	B	0831D042	7/28/08	1032	EB	X						X	X				X	X							X		X	X
IR07MWS-4	B	0830H050	7/25/08	1345	FD	X						X	X												X		X	X
IR09P040A	G	0830H048	7/25/08	1112	FD							X	X									X			X	X	X	
IR09P043A	G	0831N006	7/29/08	1110	EB							X																
IR10MW70A	C	0830E040	7/24/08	1035	EB																	X						
IR10MW81A	B	0829E003	7/16/08	1008	FD							X	X		X							X						
IR12MW18A	E	0830D028	7/23/08	1017	EB							X	X															
IR14MW13A	E	0830E034	7/23/08	1115	EB												X	X		X								
IR14MW13A	E	0830E037	7/24/08	0805	EB												X	X				X						
IR22MW16A	C	0829G016	7/18/08	1054	FD							X	X															
IR25MW39A	C	0831E052	7/28/08	1044	EB							X	X															
IR25MW902B	C	0831G045	7/28/08	1140	EB												X	X				X						
IR26MW40A	B	0831D051	7/30/08	1008	EB							X	X				X	X										
IR28MW126A	C	0830D033	7/24/08	1047	EB							X	X															
IR28MW170A	C	0831G048	7/28/08	1525	EB																	X			X		X	
IR28MW170A	C	0831G047	7/28/08	1505	FD																	X			X		X	
IR28MW394B	C	0829E012	7/17/08	1118	FD												X	X										
IR28MW407	C	0830E043	7/24/08	1348	FD							X	X									X						
IR28MW9191A	C	0831E066	7/30/08	1230	EB	X																			X		X	X
IR28MW919A	C	0831E065	7/30/08	1106	FD	X																			X		X	X
IR28MW921A	C	0831E054	7/28/08	1351	FD	X																			X		X	X
IR34MW35A	G	0831D046	7/29/08	1039	EB																	X						
IR35MW01A	D-1	0831E060	7/29/08	1116	EB							X	X				X	X		X		X						

Table 4-4. Summary of quality control sample information (3Q2008).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	QC Type	DOE HASL-300 Plutonium-239	EPA160-2 TSS	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	EPA351-2 Nitrogen-Kjeldahl Total	EPA376-1 Sulfide	EPA6010B Dissolved Metals	EPA6020 Dissolved Metals	EPA6850 Perchlorate	EPA7199 Hexavalent Chromium	EPA7470A Dissolved Mercury	EPA8015B-D Diesel or Motor Oil	EPA8015B-G Gasoline	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	EPA901-0 Cesium-137	EPA901-1M Cobalt-60	EPA903-1 Radium-226	EPA905-0 Strontium-90
IR36MW135A	E	0830E047	7/25/08	1008	EB																	X						
PA16MW17A	D-1	0830D038	7/25/08	1013	EB							X	X															
PA28MW50A	C	0830G041	7/25/08	1008	EB																	X						
PA50MW03A	C	0829G008	7/16/08	1519	FD							X	X															
TB	not assigned	0829D001	7/16/08	0800	TB																	X						
TB	not assigned	0829D007	7/17/08	0800	TB													X				X						
TB	not assigned	0829D014	7/18/08	0800	TB													X				X						
TB	not assigned	0829E001	7/16/08	0800	TB																	X						
TB	not assigned	0829E009	7/17/08	0800	TB													X				X						
TB	not assigned	0829E016	7/18/08	0800	TB																	X						
TB	not assigned	0829G001	7/16/08	0800	TB																	X						
TB	not assigned	0829G009	7/17/08	0800	TB																	X						
TB	not assigned	0829G014	7/18/08	0800	TB																	X						
TB	not assigned	0829H001	7/17/08	0800	TB													X				X						
TB	not assigned	0829H010	7/18/08	0800	TB																	X						
TB	not assigned	0829X001	7/16/08	1555	TB																	X						
TB	not assigned	0829X002	7/17/08	1229	TB													X				X						
TB	not assigned	0829X003	7/17/08	1545	TB													X				X						
TB	not assigned	0829X004	7/18/08	1414	TB																	X						
TB	not assigned	0829X005	7/18/08	1442	TB													X				X						
TB	not assigned	0830D019	7/21/08	0800	TB													X				X						
TB	not assigned	0830D022	7/22/08	0800	TB													X				X						
TB	not assigned	0830D026	7/23/08	0800	TB																	X						
TB	not assigned	0830D031	7/24/08	0800	TB																	X						
TB	not assigned	0830D036	7/25/08	0800	TB																	X						
TB	not assigned	0830E023	7/21/08	0800	TB													X				X						
TB	not assigned	0830E028	7/22/08	0800	TB													X				X						
TB	not assigned	0830E032	7/23/08	0800	TB													X				X						
TB	not assigned	0830E038	7/24/08	0808	TB																	X						
TB	not assigned	0830E045	7/25/08	0800	TB																	X						

Table 4-4. Summary of quality control sample information (3Q2008).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	QC Type	DOE HASL-300 Plutonium-239	EPA160-2 TSS	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	EPA351-2 Nitrogen-Kjeldahl Total	EPA376-1 Sulfide	EPA6010B Dissolved Metals	EPA6020 Dissolved Metals	EPA6850 Perchlorate	EPA7199 Hexavalent Chromium	EPA7470A Dissolved Mercury	EPA8015B-D Diesel or Motor Oil	EPA8015B-G Gasoline	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	EPA901-0 Cesium-137	EPA901-1M Cobalt-60	EPA903-1 Radium-226	EPA905-0 Strontium-90
TB	not assigned	0830G020	7/21/08	0800	TB													X				X						
TB	not assigned	0830G030	7/23/08	0800	TB													X				X						
TB	not assigned	0830G034	7/24/08	0800	TB																	X						
TB	not assigned	0830G039	7/25/08	0800	TB													X				X						
TB	not assigned	0830G049	7/22/08	0800	TB																	X						
TB	not assigned	0830H017	7/21/08	0800	TB																	X						
TB	not assigned	0830H026	7/22/08	0800	TB													X				X						
TB	not assigned	0830H032	7/23/08	0800	TB																	X						
TB	not assigned	0830H040	7/24/08	0800	TB													X				X						
TB	not assigned	0830H045	7/25/08	0800	TB																	X						
TB	not assigned	0830X006	7/21/08	1535	TB													X				X						
TB	not assigned	0830X007	7/22/08	1530	TB													X				X						
TB	not assigned	0830X008	7/22/08	1535	TB													X				X						
TB	not assigned	0830X009	7/23/08	1415	TB													X				X						
TB	not assigned	0830X010	7/23/08	1600	TB													X				X						
TB	not assigned	0830X011	7/24/08	1520	TB													X				X						
TB	not assigned	0830X012	7/25/08	1500	TB													X				X						
TB	not assigned	0831D040	7/28/08	0800	TB													X				X						
TB	not assigned	0831D044	7/29/08	0800	TB																	X						
TB	not assigned	0831D049	7/30/08	0800	TB													X										
TB	not assigned	0831E050	7/28/08	0800	TB																	X						
TB	not assigned	0831E056	7/29/08	0800	TB													X				X						
TB	not assigned	0831E063	7/30/08	0800	TB																	X						
TB	not assigned	0831G044	7/28/08	0800	TB													X				X						
TB	not assigned	0831N001	7/28/08	0800	TB																	X						
TB	not assigned	0831N004	7/29/08	0800	TB																	X						
TB	not assigned	0831N008	7/30/08	0800	TB																	X						
TB	not assigned	0831X013	7/28/08	1500	TB													X				X						
TB	not assigned	0831X014	7/29/08	1500	TB													X				X						
TB	not assigned	0834D001	8/20/08	0800	TB																	X						

Table 4-4. Summary of quality control sample information (3Q2008).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	QC Type	DOE HASL-300 Plutonium-239	EPA160-2 TSS	EPA300-0 Anions-Inorganics	EPA350-1 Nitrogen-Ammonia	EPA351-2 Nitrogen-Kjeldahl Total	EPA376-1 Sulfide	EPA6010B Dissolved Metals	EPA6020 Dissolved Metals	EPA6850 Perchlorate	EPA7199 Hexavalent Chromium	EPA7470A Dissolved Mercury	EPA8015B-D Diesel or Motor Oil	EPA8015B-G Gasoline	EPA8081A Organochlorine Pesticides	EPA8082 PCBs	EPA8141A Organophosphorus Compounds	EPA8260B VOCs	EPA8270C SVOCs	EPA9014 Cyanide	EPA901-0 Cesium-137	EPA901-1M Cobalt-60	EPA903-1 Radium-226	EPA905-0 Strontium-90
TB	not assigned	0834D005	8/21/08	0800	TB																	X						
TB	not assigned	0834D008	8/22/08	0800	TB																	X						
TB	not assigned	0834G001	8/20/08	0800	TB																	X						
TB	not assigned	0834G005	8/21/08	0800	TB																	X						
TB	not assigned	0834G008	8/22/08	0800	TB																	X						
TB	not assigned	0834X001	8/22/08	1130	TB																	X						
TB	not assigned	0835G010	8/26/08	0800	TB													X										
TB	not assigned	0835X002	8/27/08	1500	TB													X										
TB	not assigned	0836G015	9/3/08	0800	TB													X										
TB	not assigned	0836G018	9/4/08	0800	TB													X				X						
TB	not assigned	0836X003	9/3/08	1600	TB													X										
TB	not assigned	0836X004	9/4/08	1600	TB													X				X						
TB	not assigned	0836X005	9/4/08	1600	TB													X				X						
TB	not assigned	0837G025	9/11/08	0800	TB																	X						
TB	not assigned	0837X006	9/11/08	1530	TB																	X						
TB	not assigned	0838T001	9/18/08	0800	TB													X										
TB	not assigned	0838T004	9/19/08	0800	TB													X										
TB	not assigned	0839G028	9/22/08	0800	TB													X										
TB	not assigned	0839G033	9/23/08	0800	TB													X				X						
TB	not assigned	0839G038	9/25/08	0800	TB													X										
TB	not assigned	0839X007	9/23/08	1600	TB													X				X						
TB	not assigned	0839X008	9/25/08	1530	TB													X										

Notes:

Abbreviations/Acronyms:

EB: Equipment blank (rinsate)
EPA: U.S. Environmental Protection Agency
FD: Field duplicate
PCBs: Polychlorinated biphenyls
QC: Quality control
SVOCs: Semivolatile organic compounds
TB: Trip Blank
TDS: Total dissolved solids
TKN: Total Kjeldahl Nitrogen
TSS: Total suspended solids
VOCs: Volatile organic compounds

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Table 4-5. Radionuclides in supplemental data collection wells (3Q2008).

Well ID	Parcel	Radionuclide	Release Criteria for Water [1]	Result	Data Qualifier
IR07MW24A	B	Cesium-137	119	0.494	
IR07MW24A	B	Plutonium-239	15	0.012	U
IR07MW24A	B	Radium-226	5	0.286	U
IR07MW24A	B	Strontium-90	8	0.562	
IR07MW25A	B	Cesium-137	119	0.487	U
IR07MW25A	B	Plutonium-239	15	0	U
IR07MW25A	B	Radium-226	5	0.422	U
IR07MW25A	B	Strontium-90	8	0.815	
IR07MW26A	B	Cesium-137	119	0.321	U
IR07MW26A	B	Plutonium-239	15	0.035	
IR07MW26A	B	Radium-226	5	0.403	U
IR07MW26A	B	Strontium-90	8	0.040	U
IR07MW27A	B	Cesium-137	119	0.496	
IR07MW27A	B	Plutonium-239	15	0.014	U
IR07MW27A	B	Radium-226	5	0.074	U
IR07MW27A	B	Strontium-90	8	0.032	U
IR07MW93A	B	Cesium-137	119	0.139	U
IR07MW93A	B	Plutonium-239	15	-0.005	U
IR07MW93A	B	Radium-226	5	0.233	U
IR07MW93A	B	Strontium-90	8	-0.021	U
IR07MWS-4	B	Cesium-137	119	0.303	U
IR07MWS-4	B	Plutonium-239	15	0.007	U
IR07MWS-4	B	Radium-226	5	0.122	U
IR07MWS-4	B	Strontium-90	8	-0.128	U
IR26MW46A	B	Cesium-137	119	0.060	U
IR26MW46A	B	Plutonium-239	15	-0.007	U
IR26MW46A	B	Radium-226	5	0.596	U
IR26MW46A	B	Strontium-90	8	0.053	U
IR26MW47A	B	Cesium-137	119	0.356	U
IR26MW47A	B	Plutonium-239	15	0.015	U
IR26MW47A	B	Radium-226	5	0.090	U
IR26MW47A	B	Strontium-90	8	0.308	U
IR28MW170A	C	Cesium-137	119	0.404	U
IR28MW170A	C	Radium-226	5	0.387	U
IR28MW170A	C	Thorium-228/230/232	15	0.076	
IR28MW341F	C	Cesium-137	119	0.194	U
IR28MW341F	C	Cobalt-60	100	0	U
IR28MW341F	C	Radium-226	5	0.047	U
IR28MW405	C	Cesium-137	119	0.245	U
IR28MW405	C	Cobalt-60	100	0	U
IR28MW405	C	Radium-226	5	0.210	U
IR28MW408	C	Cesium-137	119	0.085	UJ
IR28MW408	C	Cobalt-60	100	0	U

Table 4-5. Radionuclides in supplemental data collection wells (3Q2008).

Well ID	Parcel	Radionuclide	Release Criteria for Water [1]	Result	Data Qualifier
IR28MW408	C	Radium-226	5	-0.062	U
IR28MW919A	C	Cesium-137	119	0.734	U
IR28MW919A	C	Plutonium-239	15	0	U
IR28MW919A	C	Radium-226	5	0.385	U
IR28MW919A	C	Strontium-90	8	-0.028	U
IR28MW919A	C	Thorium-228/230/232	15	0.046	U
IR28MW921A	C	Cesium-137	119	0.653	U
IR28MW921A	C	Plutonium-239	15	0.016	U
IR28MW921A	C	Radium-226	5	0.191	U
IR28MW921A	C	Strontium-90	8	0.012	U
IR28MW921A	C	Thorium-228/230/232	15	0.026	
IR28MW930A	C	Cesium-137	119	0.287	U
IR28MW930A	C	Plutonium-239	15	0.022	U
IR28MW930A	C	Radium-226	5	0.097	U
IR28MW930A	C	Strontium-90	8	-0.135	U
IR28MW930A	C	Thorium-228/230/232	15	-0.019	U
IR08MW41A	D	Cesium-137	119	0.062	U
IR08MW41A	D	Radium-226	5	0.878	
IR08MW41A	D	Strontium-90	8	-0.005	U
IR22MW20A	D-1	Cesium-137	119	0.414	U
IR22MW20A	D-1	Radium-226	5	0.262	U
IR22MW20A	D-1	Strontium-90	8	0.119	U
IR02MW101A1	E	Cesium-137	119	0.451	
IR02MW101A1	E	Radium-226	5	-0.039	U
IR02MW101A1	E	Strontium-90	8	0.206	U
IR02MW126A	E	Cesium-137	119	0.498	
IR02MW126A	E	Radium-226	5	-0.093	U
IR02MW126A	E	Strontium-90	8	0.261	U
IR02MW175A	E	Cesium-137	119	0.144	U
IR02MW175A	E	Radium-226	5	0.660	U
IR02MW175A	E	Strontium-90	8	0.103	U
IR02MW179A	E	Cesium-137	119	0.282	U
IR02MW179A	E	Radium-226	5	0.083	U
IR02MW179A	E	Strontium-90	8	0.133	U
IR02MW209A	E	Cesium-137	119	0.250	U
IR02MW209A	E	Radium-226	5	0.237	U
IR02MW209A	E	Strontium-90	8	0.207	U
IR02MW301A	E	Cesium-137	119	0.360	U
IR02MW301A	E	Radium-226	5	0.442	U
IR02MW301A	E	Strontium-90	8	1.09	U
IR02MW374A	E	Cesium-137	119	0.286	U
IR02MW374A	E	Radium-226	5	0.360	U
IR02MW374A	E	Strontium-90	8	1.71	

Table 4-5. Radionuclides in supplemental data collection wells (3Q2008).

Well ID	Parcel	Radionuclide	Release Criteria for Water [1]	Result	Data Qualifier
IR02MW375A	E	Cesium-137	119	0.631	U
IR02MW375A	E	Radium-226	5	0.382	U
IR02MW375A	E	Strontium-90	8	1.40	
IR02MWB-1	E	Cesium-137	119	0.330	U
IR02MWB-1	E	Radium-226	5	0.054	U
IR02MWB-1	E	Strontium-90	8	0.590	U
IR02MWB-2	E	Cesium-137	119	3.83	
IR02MWB-2	E	Radium-226	5	0.583	
IR02MWB-2	E	Strontium-90	8	0.672	
IR04MW37A	E	Cesium-137	119	0.414	U
IR04MW37A	E	Radium-226	5	-0.111	U
IR04MW37A	E	Strontium-90	8	0.160	U
IR04MW40A	E	Cesium-137	119	0.104	U
IR04MW40A	E	Radium-226	5	0.702	U
IR04MW40A	E	Strontium-90	8	0.084	U
IR12MW14A	E	Cesium-137	119	0.555	
IR12MW14A	E	Plutonium-239	15	0.008	U
IR12MW14A	E	Radium-226	5	0.302	U
IR12MW14A	E	Strontium-90	8	-0.106	U
IR36MW09A	E	Cesium-137	119	0.522	
IR36MW09A	E	Radium-226	5	-0.069	U
IR36MW123B	E	Cesium-137	119	0.545	
IR36MW123B	E	Radium-226	5	0.174	U
IR09P040A	G	Cesium-137	119	-0.009	U
IR09P040A	G	Cobalt-60	100	0	U
IR09P040A	G	Radium-226	5	0.050	U
IR71MW03A	G	Radium-226	5	0.085	U

Notes:
[1] From Table 1 of "Final Basewide Radiological Removal Action, Action Memorandum - Revision 2006, Hunters Point Shipyard, San Francisco, California.

Abbreviations
pCi/L: picoCuries per Liter
U: Not detected above method detection limit

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Table 4-6. Total petroleum hydrocarbons in supplemental data collection wells (3Q2008).

Well ID	Parcel	Analyte	Result (ug/L)	Data Qualifier
IR06MW46A	B	TPH-g	20	U
		TPH-d	40	U
		TPH-mo	40	U
IR07MW25A	B	TPH-g	20	U
		TPH-d	75	
		TPH-mo	170	
IR07MW93A	B	TPH-g	20	U
		TPH-d	40	U
		TPH-mo	40	U
IR26MW40A	B	TPH-g	20	U
		TPH-d	40	U
		TPH-mo	40	U
IR46MW43A	B	TPH-g	20	U
		TPH-d	40	U
		TPH-mo	40	U
IR46MW46A	B	TPH-g	20	U
		TPH-d	40	U
		TPH-mo	40	U
IR46MW48A	B	TPH-g	20	U
		TPH-d	40	U
		TPH-mo	40	U
IR06MW42A	C	TPH-g	15	J
		TPH-d	1,000	
		TPH-mo	540	
IR28MW308A	C	TPH-g	20	U
		TPH-d	40	U
		TPH-mo	40	U
IR28MW394B	C	TPH-g	20	U
		TPH-d	40	
		TPH-mo	81	
IR29MW56F	C	TPH-g	20	U
		TPH-d	740	
		TPH-mo	520	
IR29MW58F	C	TPH-g	20	U
		TPH-d	360	
		TPH-mo	580	
IR58MW31A	C	TPH-g	2,700	
		TPH-d	160	
		TPH-mo	140	
IR02MW126A	E	TPH-g	36	
		TPH-d	780	
		TPH-mo	1,700	J
IR02MW374A	E	TPH-g	20	U
		TPH-d	230	

Table 4-6. Total petroleum hydrocarbons in supplemental data collection wells (3Q2008).

Well ID	Parcel	Analyte	Result (ug/L)	Data Qualifier
		TPH-mo	210	
IR02MW375A	E	TPH-g	20	U
		TPH-d	630	
		TPH-mo	990	
IR14MW13A	E	TPH-g	20	U
		TPH-d	820	U
		TPH-mo	850	UJ
IR36MW14A	E	TPH-g	20	U
		TPH-d	110	
		TPH-mo	140	
IR56MW39A	E	TPH-g	57	
		TPH-d	260	
		TPH-mo	290	
IR33MW02A	G	TPH-g	20	U
		TPH-d	40	U
		TPH-mo	40	U

Table 4-7. Metals exceedances in supplemental data collection wells (3Q2008).

Well	Parcel	Aquifer	Metal	Concentration (ug/L)	Data Qualifier	HGAL (ug/L)
IR07MW20A1	B	A	Lead	15.4		14.44
			Selenium	42.9		14.5
IR07MW24A	B	A	Selenium	52		14.5
			Thallium	19.7	J	12.97
IR07MW25A	B	A	Selenium	24.5		14.5
IR07MW26A	B	A	Selenium	46.9		14.5
			Thallium	25.1	J	12.97
IR10MW81A	B	A	Selenium	26.9		14.5
IR20MW17A	B	A	Manganese	8,530	J	8,140
IR25MW61A2	B	A	Selenium	41.5		14.5
IR26MW49A	B	A	Mercury	2.9		0.6
			Mercury	1.93		0.6
			Selenium	19.4		14.5
IR06MW54F	C	Bedrock	Chromium (total)	75.7	J	15.66
			Hexavalent chromium	57.1	J	50 (1)
			Selenium	23.6		14.5
IR28MW122A	C	A	Selenium	23.1		14.5
IR28MW125A	C	A	Chromium (total)	161	J	15.66
			Hexavalent chromium	185	J	50 (1)
IR28MW216F	C	Bedrock	Barium	875		504
			Chromium (total)	16		15.66
IR28MW268A	C	A	Lead	15	J	14.44
			Selenium	51.5		14.5
IR28MW270A	C	A	Selenium	25		14.5
IR28MW272A	C	A	Lead	17.4		14.44
			Thallium	27.8		12.97
IR28MW294A	C	A	Lead	19.4		14.44
			Thallium	19.2		12.97
IR28MW308A	C	A	Selenium	40		14.5
IR28MW352A	C	A	Manganese	8,280		8,140
			Selenium	52.7		14.5
			Thallium	17.3	J	12.97
IR28MW408A	C	A	Barium	3,080	J	504
IR29MW58F	C	Bedrock	Selenium	32.3		14.5
IR58MW25F	C	Bedrock	Chromium (total)	68.8		15.66
			Hexavalent chromium	52.9		50 (1)
PA50MW03A	C	A	Selenium	22.8		14.5
IR22MW16A	D-1	A	Silver	23.4		7.43
IR02MW175A	E	A	Lead	18.4		14.44
			Thallium	21.8		12.97
IR02MW179A	E	A	Lead	14.7		14.44
			Thallium	14.3		12.97
IR02MW209A	E	A	Lead	17.1		14.44

Table 4-7. Metals exceedances in supplemental data collection wells (3Q2008).

Well	Parcel	Aquifer	Metal	Concentration (ug/L)	Data Qualifier	HGAL (ug/L)
			Thallium	23		12.97
IR02MW301A	E	A	Lead	18.3		14.44
			Thallium	23.5		12.97
IR02MWB-2	E	A	Nickel	170		96.5
PA36MW03A	E	A	Copper	219		28
			Zinc	425		75.68
IR09MW37A	G	A	Chromium (total)	28.2		15.66

Notes:

(1) Value is the NAWQC; there is no HGAL for this analyte.

Abbreviations:

HGAL: Hunters Point Ambient Groundwater Level
J: Detected below the practical quantitation limit but above the method detection limit; estimated value
NAWQC: National Ambient Water Quality Criterion

Table 4-8. VOC detections in supplemental data collection wells (3Q2008).

Well ID	Parcel	Analyte	Result (ug/L)
IR06MW46A	B	trichlorofluoromethane	0.43
IR20MW17A	B	benzene	0.57
		cis-1,2-dichloroethene	15
		dichlorodifluoromethane	0.65
		vinyl chloride	18
IR28MW216F	C	1,2-dichloroethane	0.092
		chloroform	0.38 J
		cis-1,2-dichloroethene	7.5
		trans-1,2-dichloroethene	0.46 J
		trichloroethene	2.7
IR28MW300F	C	1,1,2-trichlorotrifluoroethane	0.43 J
		carbon tetrachloride	10
		chloroform	18
		chloromethane	0.54
		cis-1,2-dichloroethene	1.2
		tetrachloroethene	0.16 J
		trichloroethene	12
		trichlorofluoromethane	16
IR36MW125A	E	1,1-dichloroethene	3.9
		chloroform	0.09 J
		cis-1,2-dichloroethene	1,700
		tetrachloroethene	0.36 J
		trans-1,2-dichloroethene	37
		trichloroethene	2,500
		vinyl chloride	81

Notes:

Abbreviations:

J: Detected below the practical quantitation limit but above the method detection limit; estimated value
VOC: Volatile organic compound

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Table 4-9. Status of Supplemental Data Collection sampling events.

Well	Number of Sampling Events to be Conducted (and frequency)	Number of Sampling Events Conducted (and season) [1]	Comments
IR01MW16A	2 (SA)	1 – dry season	
IR01MW38A	2 (SA)	1 – dry season	
IR01MW60A	2 (SA)	1 – dry season	
IR01MW64A	2 (SA)	1 – dry season	
IR02MW101A1	2 (SA)	1 – dry season	
IR02MW126A	2 (SA)	1 – dry season	
IR02MW175A	2 (SA)	1 – dry season	
IR02MW179A	2 (SA)	1 – dry season	
IR02MW209A	2 (SA)	1 – dry season	
IR02MW301A	2 (SA)	1 – dry season	
IR02MW373A	2 (SA)	0	Analyte list for this well changed after initial sampling event; 2 event sampling requirement will begin in next event.
IR02MW374A	2 (SA)	1 – dry season	
IR02MW375A	2 (SA)	1 – dry season	
IR02MWB-1	2 (SA)	1 – dry season	
IR02MWB-2	2 (SA)	1 – dry season	
IR04MW37A	2 (SA)	1 – dry season	
IR04MW40A	2 (SA)	1 – dry season	
IR06MW42A	2 (SA)	1 – dry season	
IR06MW46A	2 (SA)	1 – dry season	
IR06MW54F	2 (SA)	1 – dry season	
IR07MW20A1	2 (SA)	1 – dry season	
IR07MW24A	2 (SA)	1 – dry season	
IR07MW25A	2 (SA)	1 – dry season	
IR07MW26A	2 (SA)	1 – dry season	
IR07MW27A	2 (SA)	1 – dry season	
IR07MW93A	2 (SA)	1 – dry season	
IR07MWS-4	2 (SA)	1 – dry season	
IR08MW41A	2 (SA)	1 – dry season	

Table 4-9. Status of Supplemental Data Collection sampling events.

Well	Number of Sampling Events to be Conducted (and frequency)	Number of Sampling Events Conducted (and season) [1]	Comments
IR09MW35A	2 (SA)	0	Well inaccessible in 2008 dry season event (3Q2008). Dry season sampling event will be re-attempted in 2Q2009.
IR09MW37A	2 (SA)	0	Well inaccessible in 2008 dry season event (3Q2008). Dry season sampling event will be re-attempted in 2Q2009.
IR09MW44A	2 (SA)	0	Well inaccessible in 2008 dry season event (3Q2008). Dry season sampling event will be re-attempted in 2Q2009.
IR09P040A	2 (SA)	1 – dry season	
IR09P043A	2 (SA)	0	Well inaccessible in 2008 dry season event (3Q2008). Dry season sampling event will be re-attempted in 2Q2009.
IR10MW70A	2 (SA)	1 – dry season	
IR10MW81A	2 (SA)	1 – dry season	
IR10MW82A	2 (SA)	1 – dry season	
IR12MW14A	2 (SA)	1 – dry season	
IR12MW18A	2 (SA)	1 – dry season	
IR14MW10A	2 (SA)	1 – dry season	
IR14MW13A	2 (SA)	1 – dry season	
IR20MW17A	2 (SA)	1 – dry season	
IR22MW16A	2 (SA)	1 – dry season	
IR22MW20A	2 (SA)	1 – dry season	
IR25MW39A	2 (SA)	1 – dry season	
IR25MW54A	2 (SA)	1 – dry season	
IR25MW55A	2 (SA)	1 – dry season	
IR25MW56A	2 (SA)	1 – dry season	
IR25MW61A1	2 (SA)	1 – dry season	
IR25MW61A2	2 (SA)	1 – dry season	
IR25MW902B	2 (SA)	1 – dry season	
IR26MW40A	2 (SA)	1 – dry season	
IR26MW46A	2 (SA)	1 – dry season	
IR26MW47A	2 (SA)	1 – dry season	Well destroyed in remedial excavation following initial SDC sampling event. No further sampling will be conducted.

Table 4-9. Status of Supplemental Data Collection sampling events.

Well	Number of Sampling Events to be Conducted (and frequency)	Number of Sampling Events Conducted (and season) [1]	Comments
IR26MW49A	2 (SA)	1 – dry season	
IR28MW122A	2 (SA)	1 – dry season	
IR28MW124A-R1	2 (SA)	1 – dry season	
IR28MW125A	2 (SA)	1 – dry season	
IR28MW126A	2 (SA)	1 – dry season	
IR28MW170A	2 (SA)	1 – dry season	
IR28MW216F	2 (SA)	1 – dry season	
IR28MW268A	2 (SA)	1 – dry season	
IR28MW270A	2 (SA)	1 – dry season	
IR28MW271A	2 (SA)	1 – dry season	
IR28MW272A	2 (SA)	1 – dry season	
IR28MW294A	2 (SA)	1 – dry season	
IR28MW300F	2 (SA)	1 – dry season	
IR28MW308A	2 (SA)	1 – dry season	
IR28MW341F	2 (SA)	1 – dry season	
IR28MW352A	2 (SA)	1 – dry season	
IR28MW394B	2 (SA)	1 – dry season	
IR28MW405A	2 (SA)	1 – dry season	
IR28MW407	2 (SA)	1 – dry season	
IR28MW408A	2 (SA)	1 – dry season	
IR28MW919A	2 (SA)	1 – dry season	
IR28MW921A	2 (SA)	1 – dry season	
IR28MW930A	2 (SA)	1 – dry season	
IR29MW56F	2 (SA)	1 – dry season	
IR29MW58F	2 (SA)	1 – dry season	
IR33MW62A	2 (SA)	0	Well destroyed in remedial excavation before initial SDC sampling event. No further sampling will be conducted.
IR34MW36A	2 (SA)	1 – dry season	
IR36MW09A	2 (SA)	1 – dry season	

Table 4-9. Status of Supplemental Data Collection sampling events.

Well	Number of Sampling Events to be Conducted (and frequency)	Number of Sampling Events Conducted (and season) [1]	Comments
IR36MW123B	2 (SA)	1 – dry season	
IR36MW125A	2 (SA)	1 – dry season	
IR36MW12A	2 (SA)	1 – dry season	
IR36MW135A	2 (SA)	1 – dry season	
IR36MW14A	2 (SA)	1 – dry season	
IR46MW43A	2 (SA)	1 – dry season	
IR46MW46A	2 (SA)	1 – dry season	
IR56MW39A	2 (SA)	1 – dry season	
IR58MW25F	2 (SA)	1 – dry season	
IR58MW31A	2 (SA)	1 – dry season	
IR71MW03A	2 (SA)	1 – dry season	
PA16MW17A	2 (SA)	1 – dry season	
PA36MW03A	2 (SA)	1 – dry season	
PA39MW01A	2 (SA)	1 – dry season	
PA50MW03A	2 (SA)	1 – dry season	

Notes:

[1] As of the most recent sampling event in the current semi-annual reporting period.

Acronyms/Abbreviations:

SA: Semi-annual (dry season [2nd or 3rd calendar quarters] and wet season [4th or 1st calendar quarters])

Table 4-10. Summary of groundwater sample information (2004 SAP Addendum 3).

Well ID	Parcel	Sample ID	Sample Date	Sample Time	EPA 8260B: VOCs	EPA 6010B: Nickel	EPA 7199: Hexavalent Chromium
IR09MW31A	G	0826E007	6/24/08	1024	X		X
IR09MW35A	G	0834G002	8/20/08	1054	X		
IR09MW36A	G	0826D006	6/24/08	1013	X		
IR09MW37A	G	0826E013	6/25/08	1009	X		
IR09MW38A	G	0826D011	6/25/08	1058	X		
IR09MW39A	G	0834G007	8/21/08	1301	X		
IR09MW44A	G	0826D007	6/24/08	1357	X		
IR09MW45F	G	0826D015	6/26/08	1137	X		
IR09MW52A	G	0826D014	6/26/08	1027	X		
IR09MW54B	G	0826E010	6/24/08	1342	X		X
IR09MW55B	G	0834G003	8/20/08	1238	X	X	X
IR09P040A	G	0826D002	6/28/08	1139	X		
IR09P041A	G	0826E011	6/24/08	1426	X	X	X
IR09P042A	G	0826G006	6/24/08	1018	X	X	X
IR09P043A	G	0826G009	6/25/08	1004	X	X	X
IR09P35AA	G	0834G009	8/22/08	1015	X		
IR09P35AB	G	0834G004	8/20/08	1348	X		
IR09PPY1	G	0826D009	6/25/08	1016	X		
IR33MW116A	G	0826E008	6/24/08	1112	X	X	X
IR33MW120B	G	0826E004	6/23/08	1501	X		
IR33MW121B	G	0826E014	6/25/08	1348	X		
IR33MW63A	D-1	0834D006	8/21/08	1126	X		
IR33MW64A	G	0826E019	6/26/08	1019	X		X
IR33MW65A	G	0826E023	6/26/08	1444	X		X
IR33MW66A	G	0826G013	6/25/08	1446	X		X
IR34MW01A	G	0826E021	6/26/08	1120	X		X
IR34MW02A	G	0826E017	6/25/08	1447	X	X	X
IR34MW36A	G	0826D004	6/23/08	1502	X		
IR34MW36B	G	0826E022	6/26/08	1348	X		X
IR55MW01A	D-1	0826G011	6/25/08	1107	X		
IR55MW02A	D-1	0826G016	6/26/08	1143	X		
IR67MW04A	G	0826E014	6/25/08	1100	X		
IR70MW11A	D-1	0826G018	6/26/08	1445	X		
IR70MW12A	D-1	0826G015	6/26/08	1020	X		
IR71MW04A	G	0826D012	6/25/08	1418		X	X
PA33MW36A	G	0826E003	6/23/08	1409	X	X	X
PA33MW37A	G	0826E002	6/23/08	1148	X		

Notes:
Table includes only wells/analyses added, per SAP Addendum no. 3, for one-time sampling event to support the former Parcel D Treatability Study.
See Tables 4-1 and 4-3 for remaining wells/analyses conducted under the BGMP in 2Q2008 and 3Q2008 respectively.

Abbreviations/Acronyms:
VOCs: Volatile organic compounds

Table 4-11. NAPL measurements (September 24, 2008).

Monitoring Well ID	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Depth to DNAPL (ft btoc)	DNAPL Thickness (ft)	Well Total Depth (ft btoc)
Parcel C						
IR25MW11A	4.53	4.62	0.09	NP	0.00	18.72
IR28MW129A	7.20	NM*	NM*	NM*	NM*	NM*
IR-03 Area in Parcel E						
IR02MW146A	10.62	13.90	3.28	NP	0.00	22.60
IR02MW173A	9.89	12.23	2.34	NP	0.00	21.30
IR03MW218A1	NP	11.22	0.00	NP	0.00	14.63
IR03MW218A2	NP	11.65	0.00	NP	0.00	23.39
IR03MW225A	11.83	11.86	0.03	NP	0.00	23.52
IR03MW226A	11.10	11.12	0.02	NP	0.00	23.89
IR03MW369A	8.98	9.02	0.04	NP	0.00	22.05
IR03MW370A	8.45	13.78	5.33	NP	0.00	22.40
IR03MWO-2	11.00	11.80	0.80	NP	0.00	22.10
IR03MWO-3	10.38	15.79	5.41	NP	0.00	19.00
Northern Portion of Parcel E						
IR12MW21A	NP	9.65	0.00	NP	0.00	22.02

Notes:

DNAPL: dense non-aqueous phase liquid
ft btoc: feet below top of casing
LNAPL: light non-aqueous phase liquid
NAPL: non-aqueous phase liquid
NP: not present
NM*: not measurable because the interface probe could not sink through the highly viscous LNAPL

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Table 4-12. NAPL measurements (2007 and 2008).

Monitoring Well ID	LNAPL Thickness (ft)	DNAPL Thickness (ft)	LNAPL Thickness (ft)	DNAPL Thickness (ft)	Recommended Changes to NAPL Measurement Program
	August 2007		September 2008		
Parcel C					
IR25MW11A	**0.21**	0.00	**0.09**	0.00	No change – continue NAPL measurement
IR28MW129A	NM [a]	NM	NM [a]	NM	No change – continue NAPL measurement
IR-03 Area in Parcel E					
IR02MW146A	**3.31**	0.00	**3.28**	0.00	No change – continue NAPL measurement
IR02MW173A	**2.30**	0.00	**2.34**	0.00	No change – continue NAPL measurement
IR03MW218A1	0.00	0.00	0.00	0.00	Discontinue NAPL measurement
IR03MW218A2	0.00	0.00	0.00	0.00	Discontinue NAPL measurement
IR03MW225A	**5.10**	0.00	**0.03**	0.00	No change – continue NAPL measurement
IR03MW226A	**0.27**	0.00	**0.02**	0.00	No change – continue NAPL measurement
IR03MW369A	**0.05**	0.00	**0.04**	0.00	No change – continue NAPL measurement
IR03MW370A	**4.53**	0.00	**5.33**	0.00	No change – continue NAPL measurement
IR03MWO-2	**1.50**	0.00	**0.80**	0.00	No change – continue NAPL measurement
IR03MWO-3	**5.65**	0.00	**5.41**	0.00	No change – continue NAPL measurement
Northern Portion of Parcel E					
IR12MW21A	**0.01**	0.00	0.00	0.00	No change – continue NAPL measurement

Notes:

List of wells for NAPL measurement are per 2008 BGMP SAP, Table 17-4.
DNAPL: dense non-aqueous phase liquid
LNAPL: light non-aqueous phase liquid
NAPL: non-aqueous phase liquid
NM: not measured
[a] Product is extremely viscous; bottom of LNAPL layer could not be determined.

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Table 4-13. SAP deviations for 2Q2008.

Well ID	Parcel	SAP Deviations and Justifications		
		Justification for Water Level Not Measured	Justification for Well Not Sampled	Field Procedure Deviation
IR01MW38A	E-2	inaccessible – jammed slip cap	no deviation	no deviation
IR02MW146A	E	NAPL	sampling not required	N/A
IR02MW147A	E	no deviation	no deviation	specific conductance did not stabilize; purging stopped at 9L
IR02MW173A	E	NAPL	sampling not required	N/A
IR03MW218A1	E	NAPL	sampling not required	N/A
IR03MW225A	E	NAPL	sampling not required	N/A
IR03MW226A	E	NAPL	sampling not required	N/A
IR03MW369A	E	NAPL	NAPL	N/A
IR03MW370A	E	NAPL	NAPL	N/A
IR03MW371A	E	NAPL	NAPL	N/A
IR03MWO-1	E	NAPL	sampling not required	N/A
IR03MWO-2	E	NAPL	sampling not required	N/A
IR03MWO-3	E	NAPL	sampling not required	N/A
IR06MW44A	B	inaccessible – covered by gravel	sampling not required	N/A
IR06MW59A1	C	inadvertently not measured	no deviation	no deviation
IR07MW19A	B	inaccessible – trench	inaccessible – trench	N/A
IR07MW93A	B	inaccessible – covered by soil in laydown area	sampling not required	N/A
IR07MW94A	B	inaccessible – covered by soil in laydown area	sampling not required	N/A
IR09MW35A	D	no deviation	inaccessible - trench	no deviation
IR09MW38A	D	inaccessible – trench	no deviation	no deviation
IR09MW39A	D	inaccessible – trench	inaccessible – trench	N/A
IR09MW44A	D	inaccessible – trench	no deviation	no deviation
IR09MW51F	D	no deviation	unsafe to access due to trenching	no deviation
IR09MW63A	D	inaccessible – trench	inaccessible – trench	N/A
IR10MW31A1	B	no deviation	unsafe to access due to trenching	no deviation
IR12MW21A	E	NAPL	NAPL	N/A
IR18MW100B	B	inaccessible – covered by soil in laydown area	sampling not required	N/A
IR18MW101B	B	inaccessible – covered by soil in laydown area	sampling not required	N/A
IR24MW06A	B	decommissioned*	sampling not required	N/A
IR25MW11A	C	NAPL	sampling not required	N/A
IR26MW41A	B	inaccessible – trench	inaccessible – trench	no deviation
IR26MW44A	C	inaccessible – trench	sampling not required	N/A

Table 4-13. SAP deviations for 2Q2008.

Well ID	Parcel	SAP Deviations and Justifications		
		Justification for Water Level Not Measured	**Justification for Well Not Sampled**	**Field Procedure Deviation**
IR33MW63A	D	inaccessible – trench	sampling not required	N/A
IR33MW65A	D	inaccessible – covered by mud	sampling not required	N/A
IR34MW02A	D	inaccessible – covered by soil pile	sampling not required	N/A
IR36MW17A	E	inaccessible – covered by soil pile	inaccessible – covered by soil pile	N/A
IR36MW120B	E	no deviation	inadvertently not sampled	no deviation
IR36MW121A	E	no deviation	inadvertently not sampled	no deviation
IR39MW21A	E	measurement not required	NAPL	N/A
IR46MW39A	B	decommissioned*	sampling not required	N/A
IR46MW48A	B	inaccessible – covered by soil	sampling not required	N/A
IR64MW05A	C	no deviation	no deviation	specific conductance did not stabilize; purging stopped at 9 liters
PA36MW01A	E	no deviation	inadvertently not sampled	no deviation
PA36MW08A	E	measurement not required	NAPL	N/A
UT03MW11A	B	inaccessible – covered by soil	sampling not required	N/A

Notes:

N/A: Deviation precluded sampling and/or water level measurement.
NAPL: Non-aqueous phase liquid present or historically present.
SAP: Sampling and Analysis Plan (TtEMI 2004); includes SAP addendum no. 1 (dated April 2007) and SAP addendum no. 2 (dated December 2007).
* Well was decommissioned in 2004 during remedial actions conducted by the Total Petroleum Hydrocarbon Corrective Action Program (TPA-CKY Joint Venture, 2005), but not removed from SAP compliance until SAP addendum no. 4 (dated May 2008).

Table 4-14. SAP deviations for Monitoring Network wells in 3Q2008.

Well ID	Parcel	SAP Deviations and Justifications		
		Justification for Water Level Not Measured	Justification for Well Not Sampled	Field Procedure Deviation
IR01MW17B	E-2	inaccessible – kinked casing	sampling not required	N/A
IR02MW101A1	E	inaccessible – covered by soil and concrete rubble	sampling not required	N/A
IR04P31AB	E	measurement not required	Probably destroyed. Sampling was conducted in nearby well IR04MW31A.	N/A
IR07MWS-2	B	no deviation	no deviation	Specific conductance did not stabilize. Purging stopped at 10 Liters.
IR09MW39A	G	inaccessible – near trench	sampling not required	N/A
IR09MW52A	G	inaccessible – near trench	sampling not required	N/A
IR09MW55B	G	inaccessible – near trench	sampling not required	N/A
IR18MW100B	B	inaccessible – covered by soil in laydown area	sampling not required	N/A
IR18MW101B	B	inaccessible – covered by soil in laydown area	sampling not required	N/A
IR25MW50A	C	inaccessible – covered by debris	sampling not required	N/A
IR25MW60A1	C	measurement not required	Gravel in well	N/A
IR25MW61A1	C	inaccessible – covered by soil	sampling not required	N/A
IR26MW41A	B	inaccessible – covered by soil	sampling not required	N/A
IR26MW44A	C	inaccessible – near trench	sampling not required	N/A
IR29MW56F	C	measurement not required	no deviation	Dissolved oxygen did not stabilize. Purging stopped at 13 Liters.
IR33MW61A	G	measurement not required	Decommissioned	N/A
IR33MW62A	G	measurement not required	Decommissioned	N/A
IR36MW17A	E	inaccessible – covered by soil pile	sampling not required	N/A
IR46MW48A	B	inaccessible – covered by soil	sampling not required	N/A
PA50MW02A	B	inaccessible – covered by soil	sampling not required	N/A
PA50MW06A	E	inaccessible – covered by debris	sampling not required	N/A

Table 4-14. SAP deviations for Monitoring Network wells in 3Q2008.

Well ID	Parcel	SAP Deviations and Justifications		
		Justification for Water Level Not Measured	Justification for Well Not Sampled	Field Procedure Deviation
PA50MW07A	D-1	inaccessible – covered by soil in laydown area	sampling not required	N/A
UT03MW11A	B	inaccessible – covered by soil and concrete rubble	sampling not required	N/A

Notes:

N/A: Deviation precluded sampling and/or depth to water measurement.

SAP: Sampling and Analysis Plan, Draft Final (dated June 2008) (CE2-Kleinfelder Joint Venture, 2008c).

Table 4-15. Indicated sampling frequency changes based on trend and variability analysis.

Well	Parcel	Aquifer	Determining Target Analyte(s) [1]	Current Sampling Frequency [2]	Indicated Sampling Frequency [3]	Immediate Action
IR07MW20A1	B	A	copper	Q	SA	No change [4]
IR07MWS-2	B	A	copper	SA	Q	No change [4]
IR10MW13A1	B	A	DCE; TCE	SA	Q	No change [4]
IR10MW31A1	B	A	DCE	Q	SA	No change [4]
IR10MW61A	B	A	DCE; TCE; vinyl chloride	Q	SA	No change [4]
IR10MW71A	B	A	DCE; TCE; vinyl chloride	Q	SA	No change [4]
1R28MW190F	C	Bedrock	CCl_4	Q	SA	No change [4]
IR06MW42A	C	A	naphthalene	SA	Q	No change [4]
IR25MW16A	C	A	trans-1,2-DCA; DCE; TCE; vinyl chloride	Q	SA	No change [4]
IR25MW17A	C	A	DCA	SA	Q	No change [4]
IR28MW136A	C	A	DCE; PCE; TCE; vinyl chloride	Q	SA	No change [4]
IR28MW173B	C	B	TCE	A	Q	No change [4]
IR28MW188F	C	Bedrock	CCl_4	Q	SA	No change [4]
IR28MW200A	C	A	DCE; TCE	Q	A	No change [4]
IR28MW268A	C	A	DCE	A	SA	No change [4]
IR28MW352A	C	A	DCE; TCE	Q	SA	No change [4]
IR28MW355F	C	Bedrock	TCE	A	SA	No change [4]
IR70MW04A	D-1	A	chloroform	Q	A	No change [4]
IR02MW301A	E	A	zinc	Q	SA	No change [4]
IR04MW37A	E	A	TCE	Q	SA	No change [4]
IR74MW01A	E	A	TCE	Q	A	No change [4]
IR09MW37A	G	A	hexavalent chromium	Q	SA	No change [4]
IR09MW62A	G	A	hexavalent chromium	Q	SA	No change [4]
IR09MW63A	G	A	hexavalent chromium	Q	A	No change [4]

Notes:

[1] Target analyte(s) that determined the indicated change in sampling frequency.
[2] As of the most recent sampling event in the current semiannual reporting period.
[3] Based on groundwater concentration trend and variability analysis through the current semiannual reporting period.
[4] Trend and variability analysis will be conducted again in the next semi-annual report, and changes will be made at that time, as appropriate.

Abbreviations:

A: annual
CCl_4: carbon tetrachloride
DCA: 1,2-dichloroethane
DCE: cis-1,2-dichloroethene
PCE: tetrachloroethylene
Q: quarterly
SA: semi-annual
TCE: trichloroethylene
trans-1,2-DCE: trans-1,2-dichloroethene

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Table 5-1. Exceedances of water quality criteria (2Q2008).

Well ID	Parcel	Analyte	Result (ug/L) and Validation Qualifier	Fed MCL (ug/L)	Cal MCL (ug/L)	HGAL (ug/L)	NAWQC (ug/L)
IR07MW20A1	B	Nickel	15.7 J	NL	100	96.5	8
IR07MW21A1	B	Nickel	21.3 J	NL	100	96.5	8
IR07MW24A	B	Nickel	16.4 J	NL	100	96.5	8
IR07MW26A	B	Nickel	12.2 J	NL	100	96.5	8
IR10MW13A1	B	cis-1,2-DCE	6.7	70	6	NL	22,400
IR10MW33A	B	cis-1,2-DCE	6.2	70	6	NL	22,400
IR10MW59A	B	Vinyl chloride	45	2	0.5	NL	NL
IR10MW61A	B	cis-1,2-DCE	35	70	6	NL	22,400
IR10MW61A	B	Vinyl chloride	23	2	0.5	NL	NL
IR10MW71A	B	cis-1,2-DCE	6.1	70	6	NL	22,400
IR10MW71A	B	Trichloroethylene (TCE)	12	5	5	NL	200
IR10MW71A	B	Vinyl chloride	0.73	2	0.5	NL	NL
IR26MW47A	B	Mercury	2.2	2	2	0.6	0.94
IR26MW49A	B	Copper	4.5 J	1,300	1,300	28	3.1
IR26MW49A	B	Mercury	1.4	2	2	0.6	0.94
IR06MW32A	C	Vinyl chloride	5.2	2	0.5	NL	NL
IR06MW35A	C	Vinyl chloride	0.61	2	0.5	NL	NL
IR06MW40A	C	Vinyl chloride	160	2	0.5	NL	NL
IR06MW54F	C	Carbon Tetrachloride	4.9	5	0.5	NL	6,400
IR06MW54F	C	Chromium	72.2	100	50	15.66	1,030
IR06MW54F	C	Hexavalent chromium	59.2	NL	NL	NL	50
IR06MW55F	C	Carbon Tetrachloride	0.79	5	0.5	NL	6,400
IR06MW59A1	C	Benzene	1.1	5	1	NL	510
IR06MW59A1	C	cis-1,2-DCE	45	70	6	NL	22,400
IR06MW59A1	C	Tetrachloroethylene (PCE)	40	5	5	NL	450
IR06MW59A1	C	Trichloroethylene (TCE)	96	5	5	NL	200

Table 5-1. Exceedances of water quality criteria (2Q2008).

Well ID	Parcel	Analyte	Result (ug/L) and Validation Qualifier	Fed MCL (ug/L)	Cal MCL (ug/L)	HGAL (ug/L)	NAWQC (ug/L)
IR06MW59A1	C	Vinyl chloride	31	2	0.5	NL	NL
IR06MW60A	C	Thallium	3.2 J	2	2	12.97	213
IR25MW16A	C	cis-1,2-DCE	87	70	6	NL	22,400
IR25MW16A	C	trans-1,2-DCE	13	100	10	NL	22,400
IR25MW16A	C	Trichloroethylene (TCE)	220	5	5	NL	200
IR25MW16A	C	Vinyl chloride	9.2	2	0.5	NL	NL
IR28MW125A	C	Chromium	155	100	50	15.66	1,030
IR28MW125A	C	Hexavalent chromium	168	NL	NL	NL	50
IR28MW136A	C	Benzene	1.4	5	1	NL	510
IR28MW136A	C	cis-1,2-DCE	120	70	6	NL	22,400
IR28MW136A	C	Silver	0.25 J	100	100	7.43	0.19
IR28MW136A	C	Tetrachloroethylene (PCE)	13	5	5	NL	450
IR28MW136A	C	Trichloroethylene (TCE)	9.3	5	5	NL	200
IR28MW136A	C	Vinyl chloride	74	2	0.5	NL	NL
IR28MW151A	C	cis-1,2-DCE	79	70	6	NL	22,400
IR28MW151A	C	trans-1,2-DCE	26	100	10	NL	22,400
IR28MW151A	C	Trichloroethylene (TCE)	5.1	5	5	NL	200
IR28MW151A	C	Vinyl chloride	130	2	0.5	NL	NL
IR28MW188F	C	Carbon Tetrachloride	39	5	0.5	NL	6,400
IR28MW189F	C	Trichloroethylene (TCE)	6	5	5	NL	200
IR28MW190F	C	Carbon Tetrachloride	28	5	0.5	NL	6,400
IR28MW211F	C	cis-1,2-DCE	13	70	6	NL	22,400
IR28MW211F	C	Freon 150	15	5	0.5	NL	11,300
IR28MW211F	C	Vinyl chloride	14	2	0.5	NL	NL
IR28MW216F	C	cis-1,2-DCE	7.7	70	6	NL	22,400
IR28MW272F	C	Carbon Tetrachloride	1.5	5	0.5	NL	6,400

Table 5-1. Exceedances of water quality criteria (2Q2008).

Well ID	Parcel	Analyte	Result (ug/L) and Validation Qualifier	Fed MCL (ug/L)	Cal MCL (ug/L)	HGAL (ug/L)	NAWQC (ug/L)
IR28MW272F	C	cis-1,2-DCE	6.3	70	6	NL	22,400
IR28MW272F	C	Trichloroethylene (TCE)	24	5	5	NL	200
IR28MW298A	C	Trichloroethylene (TCE)	7	5	5	NL	200
IR28MW300F	C	Carbon Tetrachloride	8.9	5	0.5	NL	6,400
IR28MW300F	C	Trichloroethylene (TCE)	12	5	5	NL	200
IR28MW312F	C	Trichloroethylene (TCE)	9.4	5	5	NL	200
IR28MW315F	C	Carbon Tetrachloride	0.92	5	0.5	NL	6,400
IR28MW350F	C	Trichloroethylene (TCE)	71 J	5	5	NL	200
IR28MW355F	C	Trichloroethylene (TCE)	12	5	5	NL	200
IR28MW397B	C	Carbon Tetrachloride	11	5	0.5	NL	6,400
IR28MW406	C	Carbon Tetrachloride	0.54	5	0.5	NL	6,400
IR28MW406	C	cis-1,2-DCE	19	70	6	NL	22,400
IR28MW406	C	Trichloroethylene (TCE)	140	5	5	NL	200
IR28MW407	C	1,4-Dichlorobenzene	15	75	5	NL	129
IR28MW407	C	cis-1,2-DCE	8.7	70	6	NL	22,400
IR28MW407	C	Freon 150	2.9	5	0.5	NL	11,300
IR28MW407	C	trans-1,2-DCE	13	100	10	NL	22,400
IR28MW407	C	Vinyl chloride	41	2	0.5	NL	NL
IR58MW25F	C	Chromium	67.2	100	50	15.66	1,030
IR58MW25F	C	Hexavalent chromium	64.7	NL	NL	NL	50
IR58MW31A	C	1,4-Dichlorobenzene	140	75	5	NL	129
IR58MW31A	C	Benzene	9.5	5	1	NL	510
IR58MW31A	C	Chlorobenzene (MCB)	1,200	100	70	NL	129
IR58MW31A	C	PCB-1260	0.26 J	0.5	0.5	NL	0.03
IR58MW31A	C	Vinyl chloride	50	2	0.5	NL	NL
IR58MW31F	C	Carbon Tetrachloride	1.2	5	0.5	NL	6,400

Table 5-1. Exceedances of water quality criteria (2Q2008).

Well ID	Parcel	Analyte	Result (ug/L) and Validation Qualifier	Fed MCL (ug/L)	Cal MCL (ug/L)	HGAL (ug/L)	NAWQC (ug/L)
IR58MW32B	C	1,4-Dichlorobenzene	5.7	75	5	NL	129
IR58MW32B	C	Tetrachloroethylene (PCE)	12	5	5	NL	450
IR58MW33B	C	cis-1,2-DCE	6.6	70	6	NL	22,400
IR25MW17A	C+	Freon 150	0.83	5	0.5	NL	11,300
IR09MW62A	D	Chromium	29.6	100	50	15.66	1,030
PA50MW07A	D	Arsenic	12.7	10	50	27.34	36
PA50MW07A	D	Nickel	17	NL	100	96.5	8.2
PA50MW07A	D	Thallium	2.7 J	2	2	12.97	213
IR02MW126A	E	Arsenic	15.4	10	50	27.34	36
IR02MW126A	E	Copper	23.8	1,300	1,300	28	3.1
IR02MW126A	E	Zinc	178	NL	NL	75.68	81
IR02MW147A	E	Thallium	5.7	2	2	12.97	213
IR02MW149A	E	Arsenic	18.1	10	50	27.34	36
IR02MW149A	E	Copper	3.2 J	1,300	1,300	28	3.1
IR02MW149A	E	Nickel	17.2	NL	100	96.5	8.2
IR02MW175A	E	Copper	3.5 J	1,300	1,300	28	3.1
IR02MW179A	E	Arsenic	19.6	10	50	27.34	36
IR02MW209A	E	Thallium	8	2	2	12.97	213
IR02MW301A	E	Copper	4.2 J	1,300	1,300	28	3.1
IR02MWB-1	E	Arsenic	16	10	50	27.34	36
IR02MWB-1	E	Nickel	15	NL	100	96.5	8.2
IR03MW218A2	E	Barium	4,330 J	2,000	1,000	504	NL
IR03MW218A2	E	Benzene	5.4	5	1	NL	510
IR03MW218A2	E	Silver	2	100	100	7.43	0.19
IR03MW342A	E	Thallium	2.2 J	2	2	12.97	213
IR04MW37A	E	Trichloroethylene (TCE)	5.5	5	5	NL	200

Table 5-1. Exceedances of water quality criteria (2Q2008).

Well ID	Parcel	Analyte	Result (ug/L) and Validation Qualifier	Fed MCL (ug/L)	Cal MCL (ug/L)	HGAL (ug/L)	NAWQC (ug/L)
IR05MW85A	E	Mercury	6.6	2	2	0.6	0.94
IR39MW33A	E	Barium	2,370 J	2,000	1,000	504	NL
IR01MW09B	E-2	Ammonia (as N)	2,800	NL	NL	NL	35
IR01MW09B	E-2	Thallium	2.7 J	2	2	12.97	213
IR01MW10A	E-2	Ammonia (as N)	250 J	NL	NL	NL	35
IR01MW10A	E-2	Nickel	26.7	NL	100	96.5	8.2
IR01MW26B	E-2	Ammonia (as N)	5,600	NL	NL	NL	35
IR01MW26B	E-2	Silver	0.45 J	100	100	7.43	0.19
IR01MW31A	E-2	Ammonia (as N)	3,800	NL	NL	NL	35
IR01MW31A	E-2	Nickel	11.3	NL	100	96.5	8.2
IR01MW31A	E-2	Thallium	2.4 J	2	2	12.97	213
IR01MW366B	E-2	Ammonia (as N)	4,600	NL	NL	NL	35
IR01MW366B	E-2	Arsenic	18.1	10	50	27.34	36
IR01MW38A	E-2	Ammonia (as N)	18,600	NL	NL	NL	35
IR01MW38A	E-2	Barium	1,000 J	2,000	1,000	504	NL
IR01MW38A	E-2	Cyanide	7.9 J	200	150	NL	1
IR01MW38A	E-2	Thallium	4.1 J	2	2	12.97	213
IR01MW403B	E-2	Ammonia (as N)	340 J	NL	NL	NL	35
IR01MW403B	E-2	Freon 150	1.7	5	0.5	NL	11,300
IR01MW403B	E-2	Silver	0.28 J	100	100	7.43	0.19
IR01MW403B	E-2	Thallium	2.3 J	2	2	12.97	213
IR01MW42A	E-2	Ammonia (as N)	7,300	NL	NL	NL	35
IR01MW42A	E-2	Arsenic	10.3	10	50	27.34	36
IR01MW42A	E-2	Barium	824 J	2,000	1,000	504	NL
IR01MW42A	E-2	Nickel	25	NL	100	96.5	8.2
IR01MW48A	E-2	Ammonia (as N)	16,600	NL	NL	NL	35

Table 5-1. Exceedances of water quality criteria (2Q2008).

Well ID	Parcel	Analyte	Result (ug/L) and Validation Qualifier	Fed MCL (ug/L)	Cal MCL (ug/L)	HGAL (ug/L)	NAWQC (ug/L)
IR01MW48A	E-2	Barium	1,070 J	2,000	1,000	504	NL
IR01MW48A	E-2	Benzene	2.8	5	1	NL	510
IR01MW48A	E-2	Cyanide	5.1 J	200	150	NL	1
IR01MW48A	E-2	Thallium	6.4	2	2	12.97	213
IR01MW53B	E-2	Ammonia (as N)	290 J	NL	NL	NL	35
IR01MW53B	E-2	Copper	7.6	1,300	1,300	28	3.1
IR01MW53B	E-2	Nickel	11.3	NL	100	96.5	8.2
IR01MW53B	E-2	Zinc	140 J	NL	NL	75.68	81
IR01MW60A	E-2	1,4-Dichlorobenzene	9.2 J	75	5	NL	129
IR01MW60A	E-2	1,4-Dichlorobenzene	14 J	75	5	NL	129
IR01MW60A	E-2	Ammonia (as N)	11,300	NL	NL	NL	35
IR01MW60A	E-2	Barium	553 J	2,000	1,000	504	NL
IR01MW60A	E-2	Benzene	2.1 J	5	1	NL	510
IR01MW60A	E-2	Nickel	10.2	NL	100	96.5	8.2
IR01MW60A	E-2	Silver	1.2	100	100	7.43	0.19
IR01MW62A	E-2	Arsenic	13.4	10	50	27.34	36
IR01MW62A	E-2	Barium	899 J	2,000	1,000	504	NL
IR01MW62A	E-2	Cyanide	6.5 J	200	150	NL	1
IR01MW62A	E-2	Thallium	6.6	2	2	12.97	213
IR01MW63A	E-2	Cyanide	17	200	150	NL	1
IR01MW63A	E-2	Thallium	2.9 J	2	2	12.97	213
IR01MW64A	E-2	Ammonia (as N)	74,000	NL	NL	NL	35
IR01MW64A	E-2	Benzene	2.1	5	1	NL	510
IR01MW64A	E-2	Cyanide	15.5	200	150	NL	1
IR01MW64A	E-2	Nickel	10.6	NL	100	96.5	8.2
IR01MW64A	E-2	Silver	1.1	100	100	7.43	0.19

Table 5-1. Exceedances of water quality criteria (2Q2008).

Well ID	Parcel	Analyte	Result (ug/L) and Validation Qualifier	Fed MCL (ug/L)	Cal MCL (ug/L)	HGAL (ug/L)	NAWQC (ug/L)
IR01MWI-7	E-2	Thallium	9.4 J	2	2	12.97	213
IR01MWI-8	E-2	Copper	5.2	1,300	1,300	28	3.1
IR01MWI-8	E-2	Cyanide	35.4	200	150	NL	1
IR01MWI-8	E-2	Nickel	9.3	NL	100	96.5	8.2
IR01MWLF1A	E-2	Arsenic	17.7	10	50	27.34	36
IR01MWLF2A	E-2	Ammonia (as N)	1,300	NL	NL	NL	35
IR01MWLF2A	E-2	Nickel	16.5	NL	100	96.5	8.2
IR01MWLF4B	E-2	Ammonia (as N)	8,300	NL	NL	NL	35
IR01MWLF4B	E-2	Arsenic	11.6	10	50	27.34	36
IR01MWLF4B	E-2	Thallium	3.8 J	2	2	12.97	213
IR04MW13A	E-2	1,1-Dichloroethane	41	NL	5	NL	NL
IR04MW13A	E-2	1,1-Dichloroethene	37	7	6	NL	22,400
IR04MW13A	E-2	Ammonia (as N)	2,700	NL	NL	NL	35
IR04MW13A	E-2	cis-1,2-DCE	36	70	6	NL	22,400
IR04MW13A	E-2	Freon 150	1.3	5	0.5	NL	11,300
IR04MW13A	E-2	Nickel	25.4	NL	100	96.5	8.2
IR04MW13A	E-2	Tetrachloroethylene (PCE)	35	5	5	NL	450
IR04MW13A	E-2	Trichloroethylene (TCE)	52	5	5	NL	200
IR04MW13A	E-2	Vinyl chloride	4.2	2	0.5	NL	NL
IR04MW36A	E-2	Ammonia (as N)	140 J	NL	NL	NL	35
IR04MW36A	E-2	Arsenic	151	10	50	27.34	36
IR01MW02B	NNP	Ammonia (as N)	690	NL	NL	NL	35
IR01MW03A	NNP	Ammonia (as N)	390	NL	NL	NL	35
IR01MW03A	NNP	Silver	0.27 J	100	100	7.43	0.19
IR01MW03A	NNP	Thallium	3.5 J	2	2	12.97	213
IR01MW05A	NNP	Ammonia (as N)	7,200	NL	NL	NL	35

Table 5-1. Exceedances of water quality criteria (2Q2008).

Well ID	Parcel	Analyte	Result (ug/L) and Validation Qualifier	Fed MCL (ug/L)	Cal MCL (ug/L)	HGAL (ug/L)	NAWQC (ug/L)
IR01MW05A	NNP	Barium	607 J	2,000	1,000	504	NL
IR01MW05A	NNP	Benzene	1.6	5	1	NL	510
IR01MW05A	NNP	Nickel	49.5	NL	100	96.5	8.2
IR01MW05A	NNP	Vinyl chloride	0.96	2	0.5	NL	NL
IR01MW403A	NNP	Ammonia (as N)	280 J	NL	NL	NL	35
IR75MW05B	NNP	Ammonia (as N)	290 J	NL	NL	NL	35
IR75MW05B	NNP	Chromium	18.9	100	50	15.66	1,030
IR75MW05B	NNP	Nickel	11.8	NL	100	96.5	8.2

Notes: Shaded values indicate exceedance of criterion.

Data qualifier*:*
J: Detected below the practical quantitation limit but above the method detection limit; estimated value.

Acronyms/Abbreviations:
HGAL: Hunters Point Groundwater Ambient Level
MCL: Maximum Contaminant Level
NAWQC: National Ambient Water Quality Criteria
N: Nitrogen
NL: Not Listed
NNP: Non-Navy property, reported by SAP-assigned parcel
ug/L: Micrograms per liter

Table 5-2. Summary of changes to well action limit ranges.

Parcel	WAL Minimum Concentrations			WAL Maximum Concentrations		
	Total Analytical Results Less Than Previous WAL Minimum	**Number of Separate Analytes**	**Number of Separate Wells**	**Total Analytical Results Greater Than Previous WAL Maximum**	**Number of Separate Analytes**	**Number of Separate Wells**
B	3	3 Cr, DCE, TCE	3	7	5 Cr, $Cr6^+$, DCE, TCE, VC	3
C	30	7 DCA, DCB, DCE, Naphthalene, PCE, TCE, VC	14	14	3 DCE, TCE, VC	8
D-1	0	0	0	0	0	0
E	0	0	0	2	2 Cu, TCE	2
G	11	7 CCl_4, Chloroform, $Cr6^+$, DCE, Ni, PCE, TCE	6	0 (1)	0 (1)	0 (1)
Totals	**44**	**11**	**23**	**23**	**6**	**13**

Notes:
Table includes wells/target analytes with analytical results outside the WAL ranges specified in the 2008 BGMP SAP (CE-Kleinfelder JV, 2008) including analytical results after 4Q2007 (data cutoff date in 2008 BGMP SAP), not including not-detected results unless the detection limit is lower than a previous not-detected value.
Table 5-2 summarizes individual wells/target analytes with revised WAL values. Appendix I contains additional WAL information.

Revisions are based on data collected since 2008 BGMP SAP data cutoff date (4Q2007).
(1) No new WAL maxima were detected in Parcel G wells for which PALs have not been established. See Table 5-2 for historical maximum concentrations in wells that have established PALs.

Abbreviations:
DCA: 1,2-dichloroethane
DCB: 1,4-dichlorobenzene
DCE: cis-1,2-dichloroethene
Cr: chromium (total)
$Cr6^+$: hexalavent chromium
Cu: copper
Ni: nickel
PAL: Project Action Limit, specified in Feasibility Study Report (Sultech 2007)
PCE: tetrachloroethylene
TCE: trichloroethene
VC: vinyl chloride
WAL: Well Action Limit

Table 5-3. Changes to well action limits.

Well ID	Parcel	Aquifer	Target Analytes	Previous WAL Minimum Concentration (ug/L)	Current WAL Minimum Concentration (ug/L)	Previous WAL Maximum Concentration (ug/L)	Current WAL Maximum Concentration (ug/L)	PAL (ug/L)
IR10MW59A	B	A	TCE	1.1	**0.17 J**	410	unchanged	NA
			vinyl chloride	0.24 J	unchanged	30	**61**	NA
IR10MW81A	B	A	chromium (hexavalent)	0.5 U	unchanged	0.5 U	**15**	NA
			chromium (total)	5 U	unchanged	5 U	**16.1**	NA
			DCE	0.5 U	**0.28 J**	0.55	**0.75**	NA
			TCE	0.5	unchanged	0.63	**1.5**	NA
IR10MW82A	B	A	chromium (hexavalent)	0.5 U	unchanged	0.86	**3**	NA
			chromium (total)	5 U	**3.6 J**	5 U	**3.6 J**	NA
IR06MW22A	C	A	DCE	270	**100**	420	unchanged	NA
			TCE	22	**11**	38	unchanged	NA
			vinyl chloride	4	unchanged	16 J	**240**	NA
IR06MW32A	C	A	DCE	0.21 J	unchanged	2	**3.8**	NA
			vinyl chloride	0.34 J	unchanged	1.6	**5.2**	NA
IR06MW35A	C	A	DCE	6.5	**2.9**	31	unchanged	NA
			vinyl chloride	0.5 U	**0.37**	6	unchanged	NA
IR06MW40A	C	A	DCE	0.48 J	unchanged	3.6	**4.5**	NA
			vinyl chloride	0.5 U	unchanged	150	**160**	NA
IR06MW42A	C	A	naphthalene	6.1 J	**3.5 J**	360	unchanged	NA
IR25MW16A	C	A	TCE	6	**2.1 J**	510 J	unchanged	NA
			vinyl chloride	0.5 U	unchanged	7.8	**9.2**	NA
IR25MW17A	C	A	1,2-DCA	0.5 UJ	**0.28**	5 J	unchanged	NA
			TCE	0.5 U	**0.20 J**	0.6	unchanged	NA
IR25MW55A	C	A	DCE	no data	**22,000**	no data	**22,000**	NA
			TCE	no data	**76 J**	no data	**76 J**	NA
			vinyl chloride	no data	**1,400**	no data	**1,400**	NA

Table 5-3. Changes to well action limits.

Well ID	Parcel	Aquifer	Target Analytes	Previous WAL Minimum Concentration (ug/L)	Current WAL Minimum Concentration (ug/L)	Previous WAL Maximum Concentration (ug/L)	Current WAL Maximum Concentration (ug/L)	PAL (ug/L)
IR25MW902B	C	B	DCE	1,900	unchanged	5,100	**25,000**	NA
			TCE	1,400	unchanged	5,100	**6,500**	NA
			vinyl chloride	260	unchanged	390	**73,000**	NA
IR28MW136A	C	A	DCE	75	**42**	260	unchanged	NA
IR28MW151A	C	A	DCE	32	**29**	2,400	unchanged	NA
			PCE	0.3 J	**0.20 J**	74	unchanged	NA
			TCE	3.3 J	**2.5**	1,400	unchanged	NA
IR28MW173B	C	B	TCE	0.5 U	**0.19 J**	15	unchanged	NA
IR28MW211F	C	Bedrock	1,2-DCA	21	**0.40**	110	unchanged	NA
IR28MW272F	C	Bedrock	DCE	3.9 J	unchanged	6.3	**6.4**	NA
IR28MW352A	C	A	DCE	1	unchanged	2.3	**2.5**	NA
IR28MW407	C	A	1,2-DCA	1.3	**0.12**	44	unchanged	NA
IR58MW32B	C	A	1,4-DCB	0.7 J	**0.5 U**	31	unchanged	NA
			DCE	3.3	**0.5 U**	22	unchanged	NA
			PCE	9.6	**0.18 J**	30	unchanged	NA
			TCE	4.1	**0.5 U**	10	unchanged	NA
			vinyl chloride	0.3 J	**0.039 J**	2	unchanged	NA
IR58MW33B	C	A	DCE	2.8	**1.6 J**	830	unchanged	NA
PA28MW50A	C	A	DCE	79	**56**	130	unchanged	NA
			TCE	10	**5.8**	48	unchanged	NA
			vinyl chloride	51	**3.4**	170	unchanged	NA
PA28MW52A	C	A	DCE	2	**0.88**	2	unchanged	NA
			PCE	4 U	**0.55**	46	unchanged	NA
			TCE	4 J	**0.56**	4 J	unchanged	NA
IR02M301A	E	A	copper	1.7	unchanged	5 U	**4.2 J**	NA

Table 5-3. Changes to well action limits.

Well ID	Parcel	Aquifer	Target Analytes	Previous WAL Minimum Concentration (ug/L)	Current WAL Minimum Concentration (ug/L)	Previous WAL Maximum Concentration (ug/L)	Current WAL Maximum Concentration (ug/L)	PAL (ug/L)
IR04MW37A	E	A	TCE	2.9	unchanged	8	**13**	NA
IR09MW35A	G	A	chromium (hexavalent)	40	**19.3 J**	not established	130 (1)	900
			nickel	35.5	**22.4**	not established	130 (1)	1,544
IR09P040A	G	A	chromium (hexavalent)	10 U	**0.7**	not established	2.7 (1)	900
			nickel	12.5	**4.7 UJ**	not established	15.3 (1)	1,544
IR09P043A	G	A	nickel	99.6	**72.5**	not established	185 (1)	1,544
IR09PPY1	G	A	chromium (hexavalent)	100	**26.2 J**	not established	601 (1)	600
IR34MW35A	G	A	DCE	0.8 J	**0.5 U**	0.8 J	unchanged	NA
IR71MW03A	G	A	carbon tetrachloride	0.3 J	**0.1U**	not established	0.9 J (1)	0.5
			chloroform	0.17 J	**0.11 J**	not established	2 (1)	1.2
			PCE	5	**2.7**	not established	25 (1)	0.9
			TCE	3.3	**1.8**	not established	17 (1)	4.8

Notes:

Table includes wells/target analytes with analytical results outside the WAL ranges specified in the 2008 BGMP SAP (CE2-Kleinfelder JV, 2008) including analytical results after 4Q2007 (data cutoff date in 2008 BGMP SAP), not including not-detected results unless the detection limit is lower than a previous not-detected value.

Appendix I contains additional WAL information.

(1) Historical maximum concentration. This is not a WAL maximum because the WAL maximum is superseded by the PAL. Tables 5-3 and 5-4 summarize 2Q2008 and 3Q2008 analytical results, respectively for wells with PALs.

Abbreviations:

DCA: dichloroethane
DCB: dichlorobenzene
DCE: cis-1,2-dichloroethene
NA: not applicable (no PAL is established for this analyte in this well)
J: Detected below the practical quantitation limit but above the method detection limit; estimated value
PAL: Project Action Limit specified in the former Parcel D Feasibility Study Report (Sultech, 2007).
PCE: tetrachloroethylene
TCE: trichloroethene
U: Not detected above method detection limit
WAL: Well Action Limit

Table 5-4. Summary of groundwater sampling information in Parcel G (2Q2008).

	Well →	**IR09MW35A**	**IR09MW37A**	**IR09MW51F**	**IR09MW62A**	**IR09P040A**	**IR09P043A**	**IR09PPY1**	**IR71MW03A**
	IR →	IR-09 South	IR-09 North	IR-09 North	IR-09 North	IR-09 South	IR-09 South	IR-09 North	IR-71
Analyte		↓	↓	↓	↓	↓	↓	↓	↓
Benzene	ZVI PAL	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
	Concentration	NR	0.5 U	NR	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	ZVI PAL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Concentration	NR	0.5 U	NR	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	ZVI PAL	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.2
	Concentration	NR	0.5 U	NR	0.5 U	0.5 U	0.5 U	0.5 U	0.11 J
Hexavalent Chromium	ZVI PAL	900	600	600	600	900	900	600	NL
	Concentration	NS-D	NS-D	NR	39.4	0.85	0.30 J	**601**	NR
Methylene Chloride	ZVI PAL	27	27	27	27	27	27	27	27
	Concentration	NR	5.0 U	NR	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ
Naphthalene	ZVI PAL	NL	NL	NL	NL	NL	NL	NL	NL
	Concentration	NR	NR	NR	NR	NR	NR	NR	NR
Nickel	ZVI PAL	1,544	NL	NL	NL	1,544	1,544	NL	NL
	Concentration	NS-D	NR	NR	NR	NS-D	92.3 J	NR	NR
PCE	ZVI PAL	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Concentration	NR	0.5 U	NR	0.5 U	0.5 U	0.5 U	0.5 U	**4.9**
TCE	ZVI PAL	2.9	2.9	2.9	2.9	2.9	2.9	2.9	4.8
	Concentration	NR	0.5 U	NR	0.5 U	0.5 U	0.5 U	0.5 U	1.9
Xylenes	ZVI PAL	NL	NL	NL	NL	NL	NL	NL	NL
	Concentration	NR	NR	NR	NR	NR	NR	NR	NR

Notes:
All concentrations are in ug/L
Table includes only BGMP wells in the specified Installation Restoration (IR) areas that have corresponding ZVI PALs.
ZVI PALs excerpted from (SulTech, 2007): "Final Revised Feasibility Study for Parcel D, Hunters Point Shipyard, San Francisco, California."
Values in bold exceed the respective PAL(s).

Acronyms/Abbreviations:
- BGMP Basewide Groundwater Monitoring Program
- IR Installation Restoration
- J Detected below the practical quantitation limit but above the method detection limit; estimated value
- NL PAL not listed
- NR Not required to be sampled
- NS-D Not sampled for this analyte in this event (deviation from Sampling and Analysis Plan)
- PAL Project Action Limit
- PCE Tetrachloroethylene
- TCE Trichloroethylene
- U Not detected above method detection limit
- ZVI Zero-valent iron

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Table 5-5. Summary of groundwater sampling information in Parcel G (3Q2008).

	Well →	**IR09MW35A**	**IR09MW37A**	**IR09MW51F**	**IR09MW62A**	**IR09MW63A**	**IR09P040A**	**IR09P043A**	**IR09PPY1**	**IR71MW03A**
	Parcel →	G	G	G	G	G	G	G	G	G
	IR →	IR-09 South	IR-09 North	IR-09 North	IR-09 North	IR-09 North	IR-09 South	IR-09 South	IR-09 North	IR-71
Analyte		↓	↓	↓	↓	↓	↓	↓	↓	↓
Benzene	ZVI PAL	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
	Concentration	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NR	0.5 U	0.5 U
Carbon Tetrachloride	ZVI PAL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Concentration	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NR	0.1 U	0.1 U
Chloroform	ZVI PAL	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.2
	Concentration	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NR	0.5 U	0.20 J
Hexavalent Chromium	ZVI PAL	900	600	600	600	600	900	900	600	NL
	Concentration	19.3 J	21.7 J	16.6	28.9	51.6	NR	NR	26.2 J	NR
Methylene Chloride	ZVI PAL	27	27	27	27	27	27	27	27	27
	Concentration	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NR	5.0 U	5.0 U
Naphthalene	ZVI PAL	NL	NL	NL	NL	NL	NL	NL	NL	NL
	Concentration	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nickel	ZVI PAL	1,544	NL	NL	NL	NL	1,544	1,544	NL	NL
	Concentration	22.4	NR	NR	NR	NR	4.7 UJ	72.5	NR	NR
PCE	ZVI PAL	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Concentration	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NR	0.5 U	**2.7**
TCE	ZVI PAL	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	4.8
	Concentration	0.5 U	0.5 U	**6.9**	0.5 U	0.5 U	0.5 U	NR	0.5 U	1.8
Xylenes	ZVI PAL	NL	NL	NL	NL	NL	NL	NL	NL	NL
	Concentration	NR	NR	NR	NR	NR	NR	NR	NR	NR

Notes:
All concentrations are in ug/L.
Table includes only BGMP wells in the specified Installation Restoration (IR) areas that have corresponding ZVI PALs.
ZVI PALs excerpted from (SulTech, 2007): "Final Revised Feasibility Study for Parcel D, Hunters Point Shipyard, San Francisco, California".
Values in bold exceed the respective PAL(s).

Acronyms/Abbreviations:

BGMP	Basewide Groundwater Monitoring Program
IR	Installation Restoration
J	Detected below the practical quantitation limit but above the method detection limit; estimated value
NL	PAL not listed
NR	Not required to be sampled
PAL	Project Action Limit
PCE	Tetrachloroethylene
TCE	Trichloroethylene
U	Not detected above method detection limit
ZVI	Zero-valent iron

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Figures

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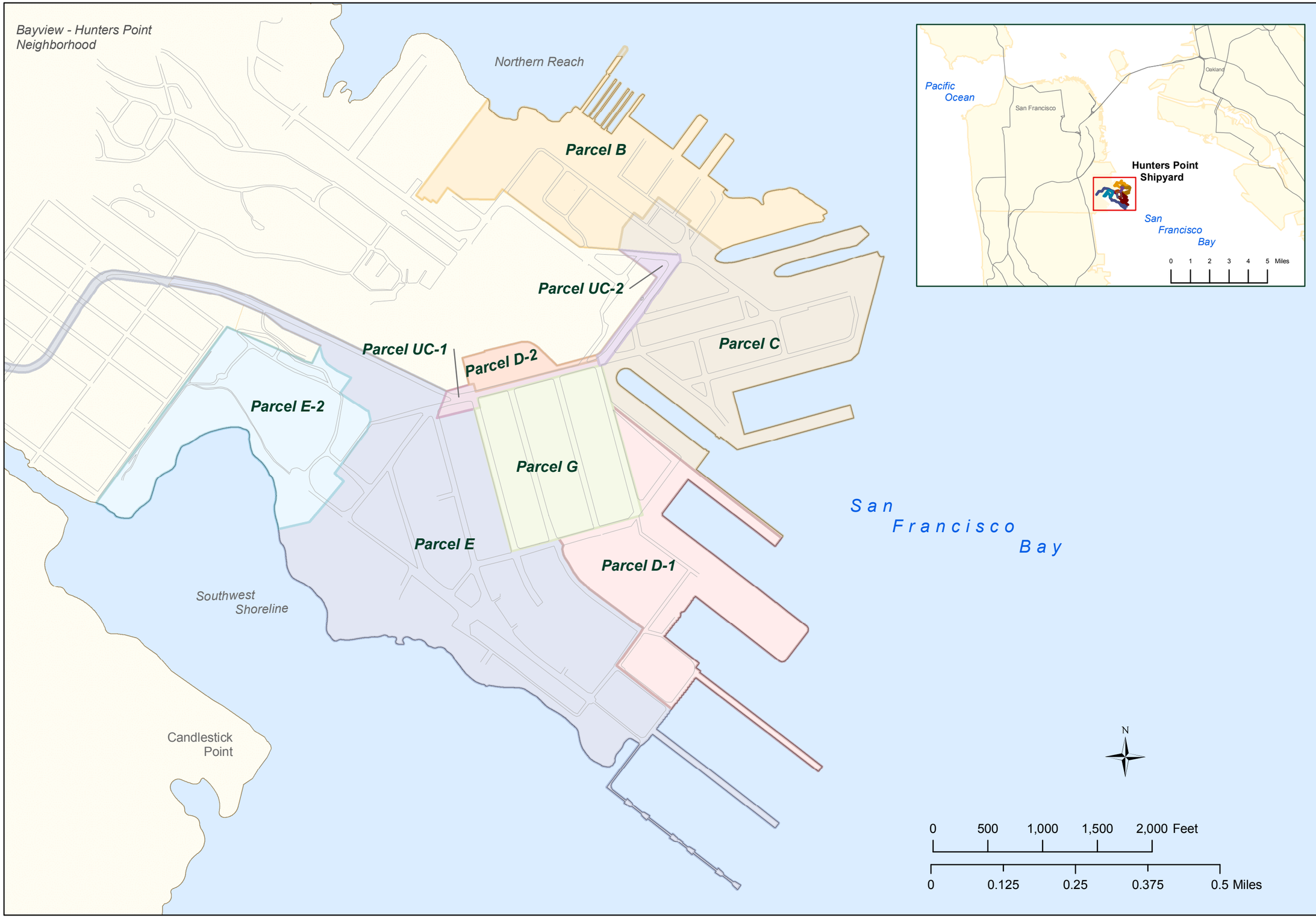

FIGURE 1-1

Geographic setting

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Legend

Well Category

- Monitoring Network
- Supplemental Data Collection
- Monitoring Network and Supplemental Data Collection
- NAPL Measurement

- Roads
- Buildings
- Parcel B
- Parcel C
- Parcel D-1
- Parcel D-2
- Parcel E
- Parcel E-2
- Parcel G
- Parcel UC-1
- Parcel UC-2
- San Francisco Bay

Abbreviation

NAPL Non-aqueous phase liquid

N

0 200 400 600 800 Feet

FIGURE **4-1**

Parcels B and C sampling network (3Q2008)

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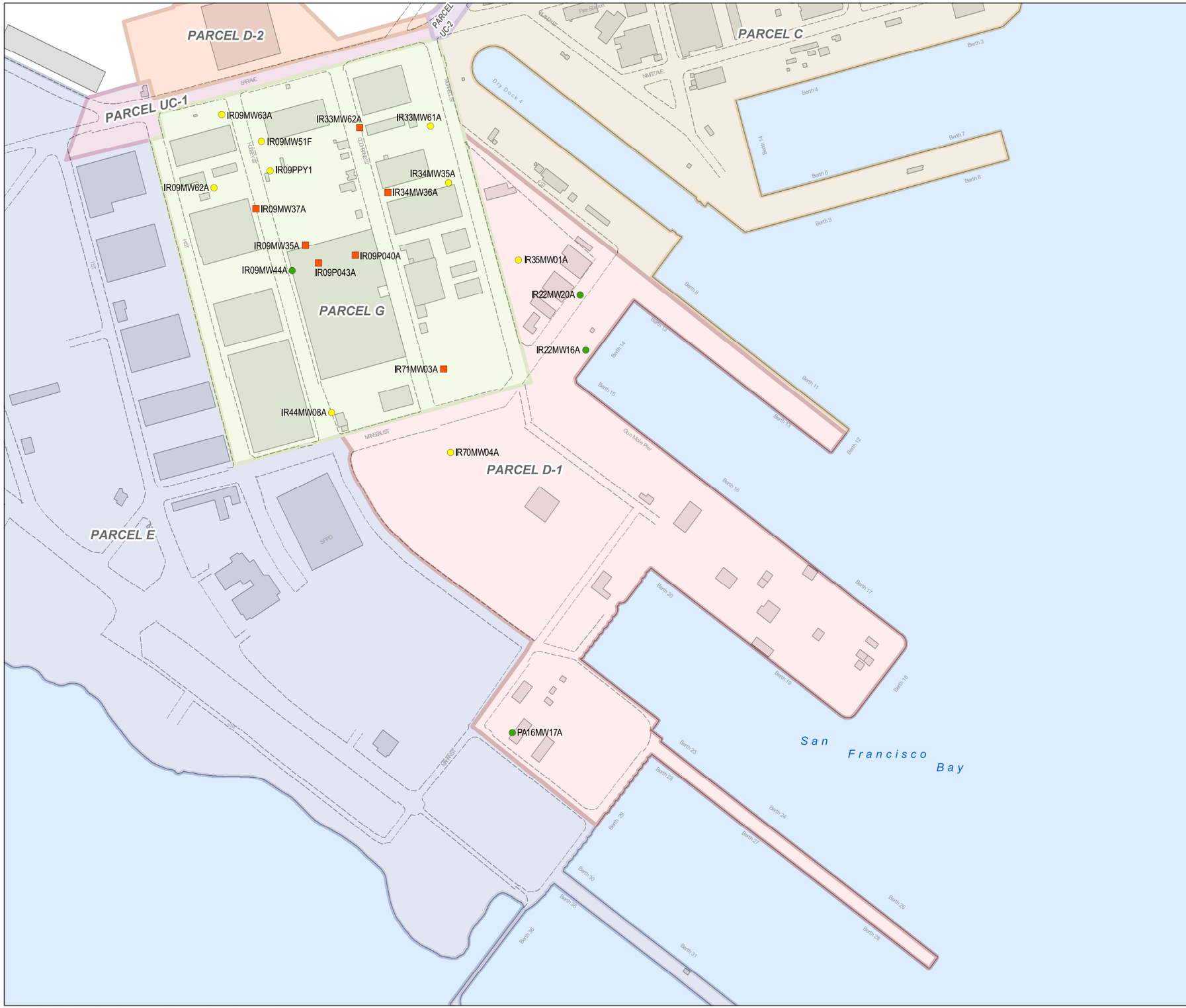

Legend

Well Category

- Monitoring Network
- Supplemental Data Collection
- Monitoring Network and Supplemental Data Collection

- Roads
- Buildings
- Parcel C
- Parcel D-1
- Parcel D-2
- Parcel E
- Parcel E-2
- Parcel G
- Parcel UC-1
- Parcel UC-2
- San Francisco Bay

N

0 200 400 600 800 Feet

FIGURE **4-2**

Parcels D-1 and G sampling network (3Q2008)

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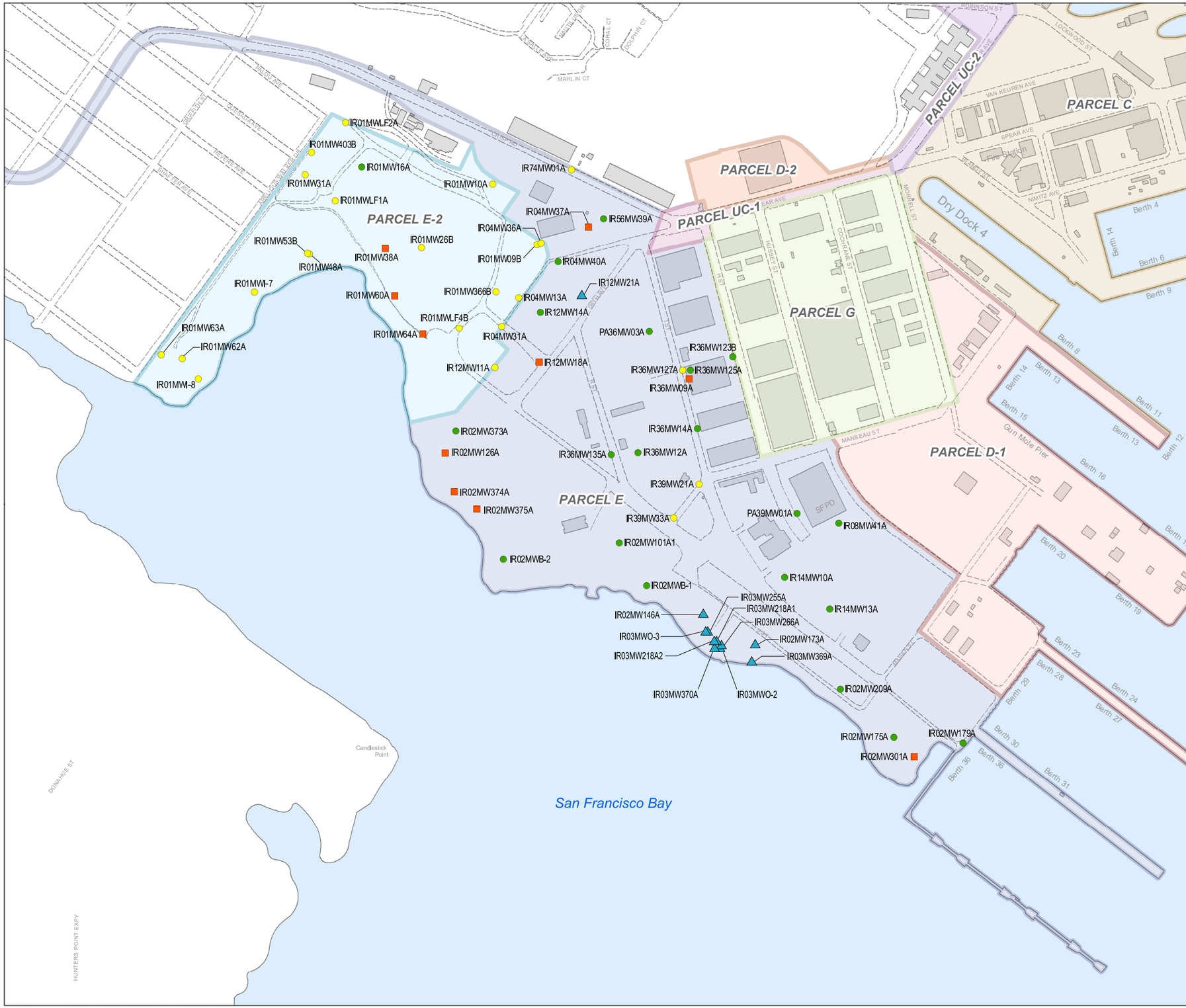

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Well Category

- Monitoring Network
- Supplemental Data Collection
- Monitoring Network and Supplemental Data Collection
- NAPL Measurement

- Roads
- Buildings
- Parcel C
- Parcel D-1
- Parcel D-2
- Parcel E
- Parcel E-2
- Parcel G
- Parcel UC-1
- Parcel UC-2
- San Francisco Bay

Abbreviation

NAPL Non-aqueous phase liquid

N

0 300 600 900 1,200 Feet

FIGURE **4-3**

Parcels E and E-2 sampling network (3Q2008)

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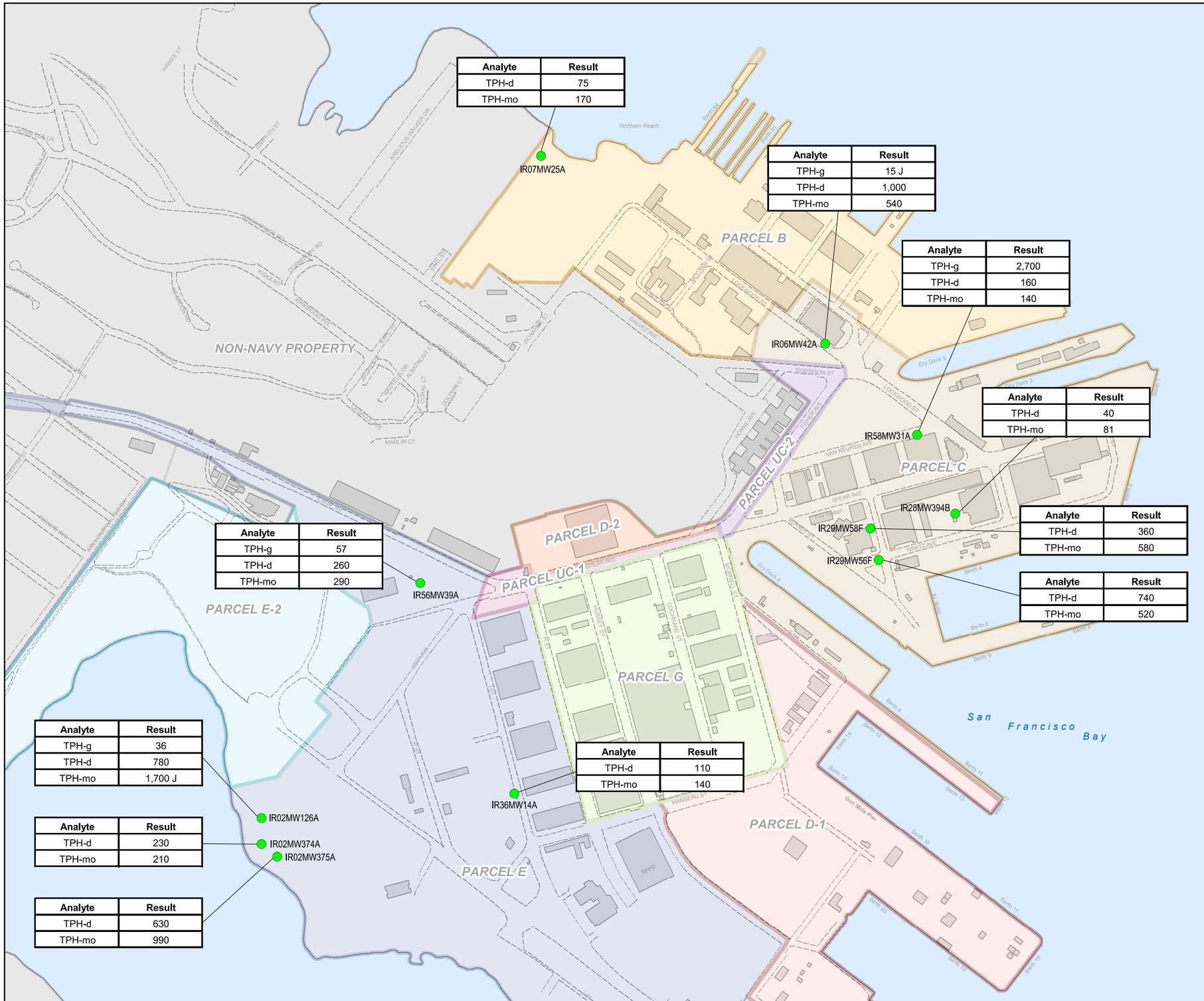

Analyte	Result
TPH-d	75
TPH-mo	170

Analyte	Result
TPH-g	15 J
TPH-d	1,000
TPH-mo	540

Analyte	Result
TPH-g	2,700
TPH-d	160
TPH-mo	140

Analyte	Result
TPH-d	40
TPH-mo	81

Analyte	Result
TPH-d	360
TPH-mo	580

Analyte	Result
TPH-d	740
TPH-mo	520

Analyte	Result
TPH-g	57
TPH-d	260
TPH-mo	290

Analyte	Result
TPH-g	36
TPH-d	780
TPH-mo	1,700 J

Analyte	Result
TPH-d	110
TPH-mo	140

Analyte	Result
TPH-d	230
TPH-mo	210

Analyte	Result
TPH-d	630
TPH-mo	990

Legend

- TPH Detection in Well
- Roads
- Buildings
- Parcel B
- Parcel C
- Parcel D-1
- Parcel D-2
- Parcel E
- Parcel E-2
- Parcel G
- Parcel UC-1
- Parcel UC-2
- Non-Navy Property
- San Francisco Bay

Notes

1. All concentrations in ug/L.
2. Figure includes Supplemental Data Collection wells with detected TPH.
3. All samples analyzed for TPH-g, TPH-d, and TPH-mo.

Abbreviations

J Detected below the practical quantitation limit but above the method detection limit; estimated value

TPH Total petroleum hydrocarbons

TPH-d TPH - diesel range

TPH-g TPH - gasoline range

TPH-mo TPH - motor oil range

N

0 300 600 900 1,200 Feet

FIGURE **4-4**

TPH detections in supplemental data collection wells (3Q2008)

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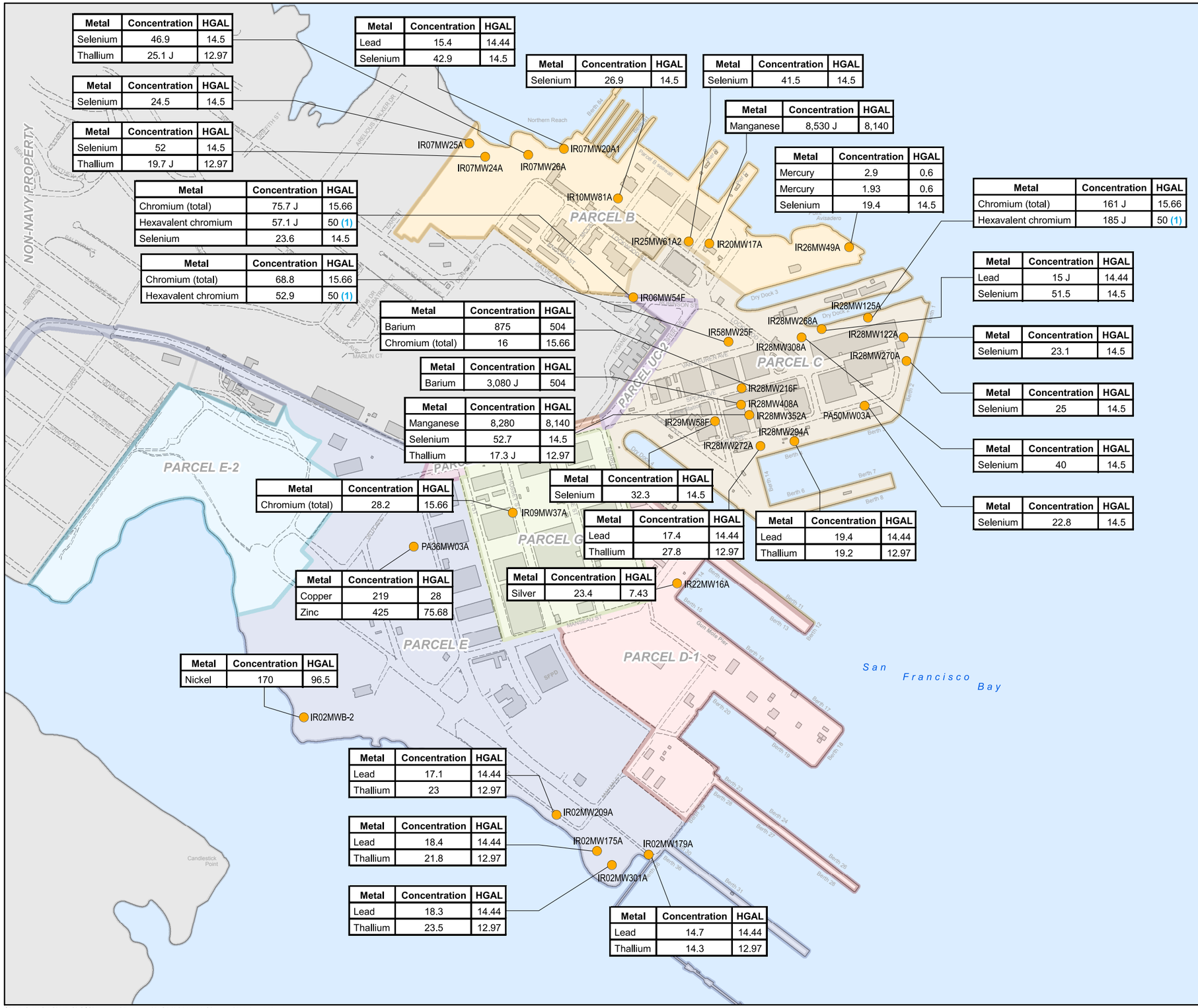

Metal	Concentration	HGAL
Selenium	46.9	14.5
Thallium	25.1 J	12.97

Metal	Concentration	HGAL
Selenium	24.5	14.5

Metal	Concentration	HGAL
Selenium	52	14.5
Thallium	19.7 J	12.97

Metal	Concentration	HGAL
Chromium (total)	75.7 J	15.66
Hexavalent chromium	57.1 J	50 (1)
Selenium	23.6	14.5

Metal	Concentration	HGAL
Chromium (total)	68.8	15.66
Hexavalent chromium	52.9	50 (1)

Metal	Concentration	HGAL
Lead	15.4	14.44
Selenium	42.9	14.5

Metal	Concentration	HGAL
Selenium	26.9	14.5

Metal	Concentration	HGAL
Selenium	41.5	14.5

Metal	Concentration	HGAL
Manganese	8,530 J	8,140

Metal	Concentration	HGAL
Mercury	2.9	0.6
Mercury	1.93	0.6
Selenium	19.4	14.5

Metal	Concentration	HGAL
Chromium (total)	161 J	15.66
Hexavalent chromium	185 J	50 (1)

Metal	Concentration	HGAL
Lead	15 J	14.44
Selenium	51.5	14.5

Metal	Concentration	HGAL
Selenium	23.1	14.5

Metal	Concentration	HGAL
Selenium	25	14.5

Metal	Concentration	HGAL
Selenium	40	14.5

Metal	Concentration	HGAL
Selenium	22.8	14.5

Metal	Concentration	HGAL
Barium	875	504
Chromium (total)	16	15.66

Metal	Concentration	HGAL
Barium	3,080 J	504

Metal	Concentration	HGAL
Manganese	8,280	8,140
Selenium	52.7	14.5
Thallium	17.3 J	12.97

Metal	Concentration	HGAL
Chromium (total)	28.2	15.66

Metal	Concentration	HGAL
Selenium	32.3	14.5

Metal	Concentration	HGAL
Lead	17.4	14.44
Thallium	27.8	12.97

Metal	Concentration	HGAL
Lead	19.4	14.44
Thallium	19.2	12.97

Metal	Concentration	HGAL
Copper	219	28
Zinc	425	75.68

Metal	Concentration	HGAL
Silver	23.4	7.43

Metal	Concentration	HGAL
Nickel	170	96.5

Metal	Concentration	HGAL
Lead	17.1	14.44
Thallium	23	12.97

Metal	Concentration	HGAL
Lead	18.4	14.44
Thallium	21.8	12.97

Metal	Concentration	HGAL
Lead	18.3	14.44
Thallium	23.5	12.97

Metal	Concentration	HGAL
Lead	14.7	14.44
Thallium	14.3	12.97

Legend

- Metals Exceedances in Well
- Roads
- Buildings
- Parcel B
- Parcel C
- Parcel D-1
- Parcel D-2
- Parcel E
- Parcel G
- Parcel UC-1
- Parcel UC-2
- Non-Navy Property
- San Francisco Bay

Notes

1. All concentrations in ug/L.
2. Figure includes Supplemental Data Collection wells with metals detected above HGAL or NAWQC.

Abbreviations

(1) Value is the NAWQC; there is no HGAL for this analyte

J Detected below the practical quantitation limit but above the method detection limit; estimated value

HGAL Hunters Point Ambient Groundwater Level

NAWQC National Ambient Water Quality Criteria

N

0 400 800 1,200 1,600 Feet

FIGURE 4-5

Metals exceedances in supplemental data collection wells (3Q2008)

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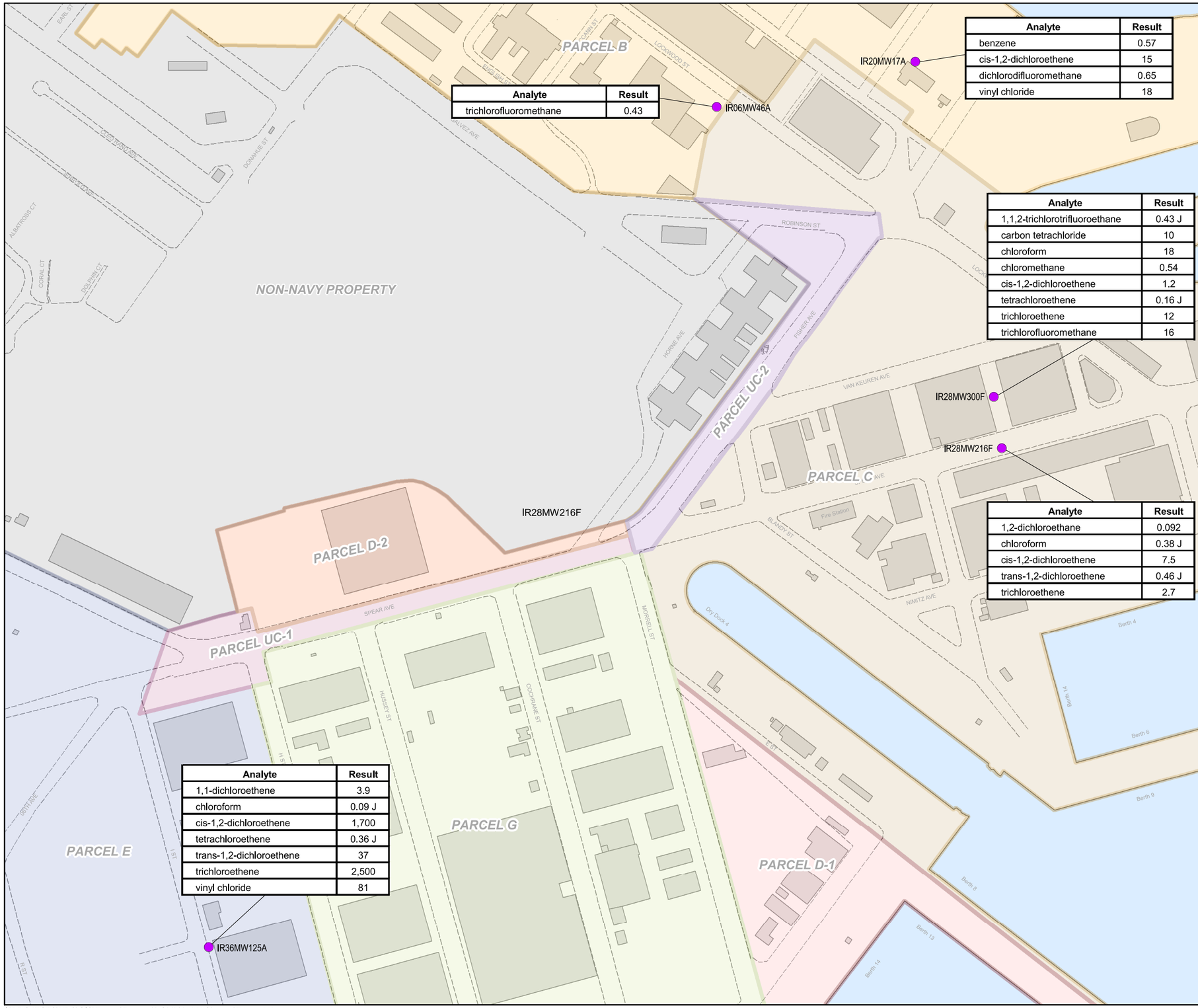

Analyte	Result
trichlorofluoromethane	0.43

Analyte	Result
benzene	0.57
cis-1,2-dichloroethene	15
dichlorodifluoromethane	0.65
vinyl chloride	18

Analyte	Result
1,1,2-trichlorotrifluoroethane	0.43 J
carbon tetrachloride	10
chloroform	18
chloromethane	0.54
cis-1,2-dichloroethene	1.2
tetrachloroethene	0.16 J
trichloroethene	12
trichlorofluoromethane	16

Analyte	Result
1,2-dichloroethane	0.092
chloroform	0.38 J
cis-1,2-dichloroethene	7.5
trans-1,2-dichloroethene	0.46 J
trichloroethene	2.7

Analyte	Result
1,1-dichloroethene	3.9
chloroform	0.09 J
cis-1,2-dichloroethene	1,700
tetrachloroethene	0.36 J
trans-1,2-dichloroethene	37
trichloroethene	2,500
vinyl chloride	81

Legend

- VOCs Detection in Well
- Roads
- Buildings
- Parcel B
- Parcel C
- Parcel D-1
- Parcel D-2
- Parcel E
- Parcel G
- Parcel UC-1
- Parcel UC-2
- Non-Navy Property
- San Francisco Bay

Notes

1. All concentrations in ug/L.
2. Figure includes Supplemental Data Collection wells with detected VOCs.
3. All samples analyzed for U.S. EPA 8260B list of VOCs.

Abbreviations

J Detected below the practical quantitation limit but above the method detection limit; estimated value

U.S. EPA United States Environmental Protection Agency

VOCs Volatile organic compounds

N

0 150 300 450 600 Feet

FIGURE **4-6**

VOC detections in supplemental data collection wells (3Q2008)

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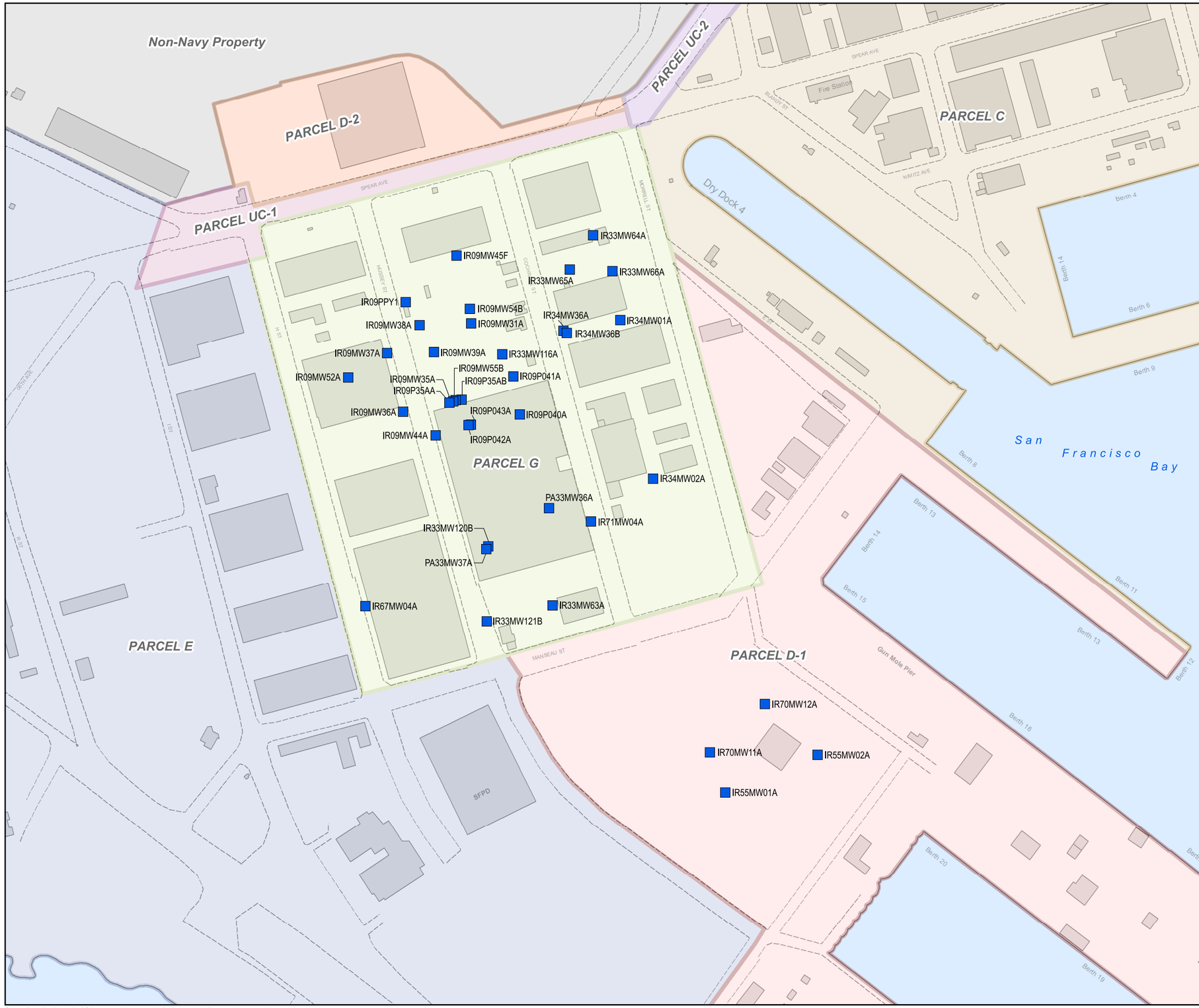

Legend

- Sampled per 2004 BGMP SAP Addendum 3 in second quarter 2008 or third quarter 2008
- Roads
- Buildings
- Parcel C
- Parcel D-1
- Parcel D-2
- Parcel E
- Parcel G
- Parcel UC-1
- Parcel UC-2
- Non-Navy Property
- San Francisco Bay

Abbreviations

SAP Sampling and Analysis Plan

FIGURE **4-7**

2004 BGMP SAP Addendum 3 sampling locations

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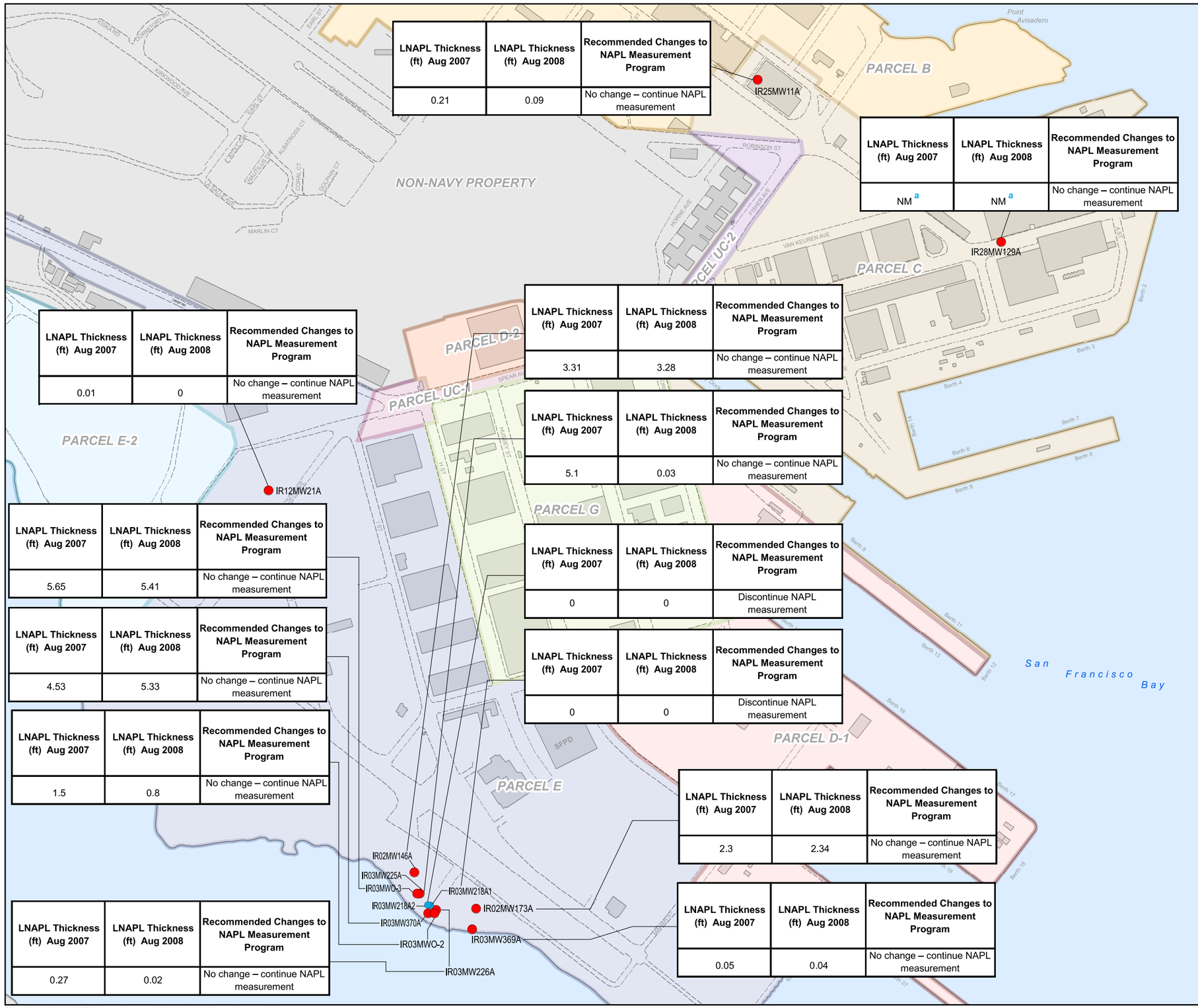

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
0.21	0.09	No change – continue NAPL measurement

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
NM [a]	NM [a]	No change – continue NAPL measurement

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
0.01	0	No change – continue NAPL measurement

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
3.31	3.28	No change – continue NAPL measurement

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
5.1	0.03	No change – continue NAPL measurement

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
5.65	5.41	No change – continue NAPL measurement

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
0	0	Discontinue NAPL measurement

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
4.53	5.33	No change – continue NAPL measurement

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
0	0	Discontinue NAPL measurement

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
1.5	0.8	No change – continue NAPL measurement

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
2.3	2.34	No change – continue NAPL measurement

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
0.27	0.02	No change – continue NAPL measurement

LNAPL Thickness (ft) Aug 2007	LNAPL Thickness (ft) Aug 2008	Recommended Changes to NAPL Measurement Program
0.05	0.04	No change – continue NAPL measurement

Legend

- Measurable LNAPL present in 2007 and/or 2008 events, continue NAPL measurement
- No measurable LNAPL present in 2007 and/or 2008 events, discontinue NAPL measurement
- Roads
- Buildings
- Parcel B
- Parcel C
- Parcel D-1
- Parcel D-2
- Parcel E
- Parcel E-2
- Parcel G
- Parcel UC-1
- Parcel UC-2
- Non-Navy Property
- San Francisco Bay

Notes

1. Figure shows only wells in NAPL measurement program.
2. No measurable DNAPL was present in either measurement event.
3. All concentrations in ug/L.

Abbreviations

DNAPL Dense non-aqueous phase liquid

LNAPL Light non-aqueous phase liquid

NM Not measured

[a] Product is extremely viscous; bottom of LNAPL layer could not be determined

N

0 250 500 750 1,000 Feet

FIGURE **4-8**

NAPL measurements (2007 and 2008)

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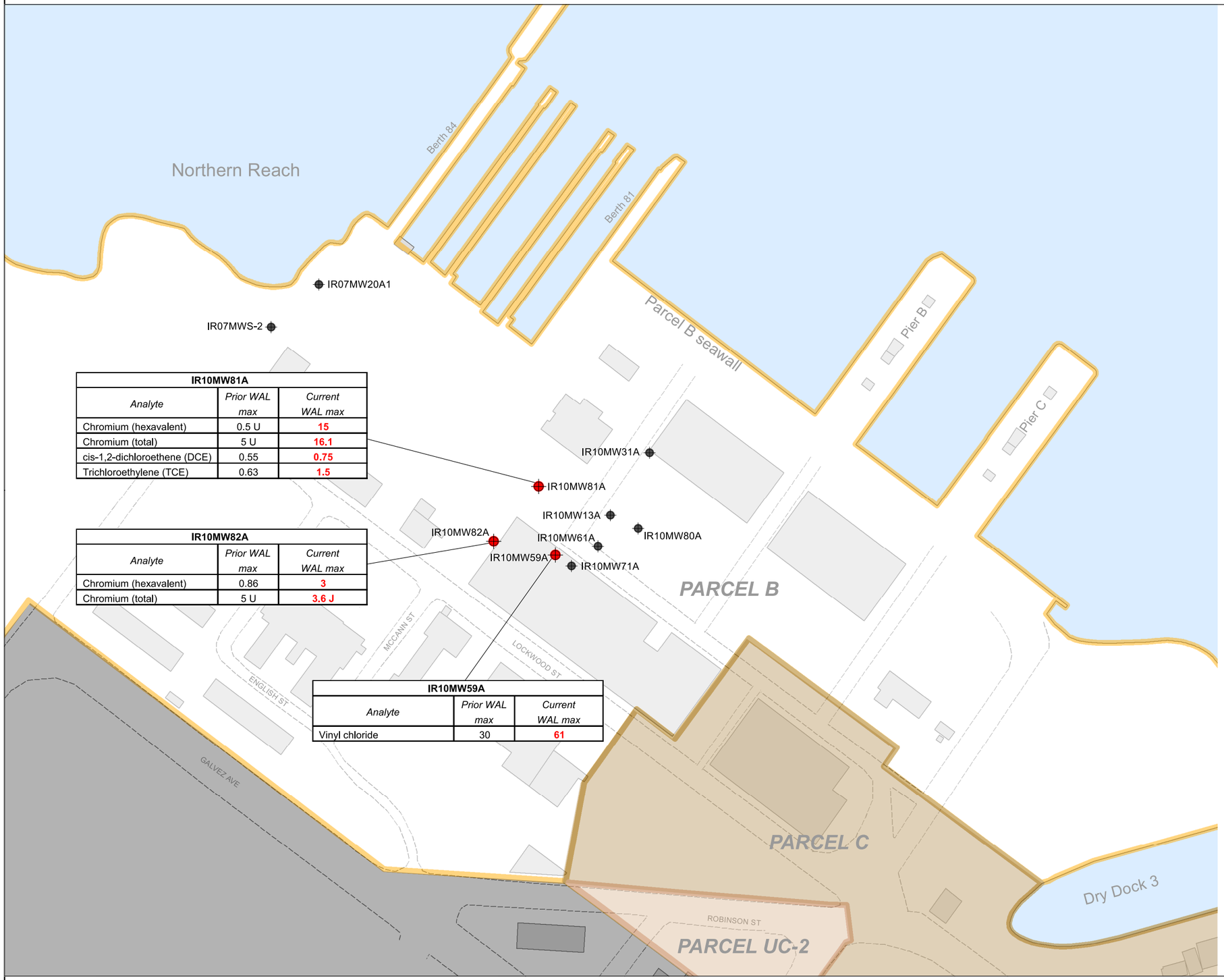

IR10MW81A		
Analyte	*Prior WAL max*	*Current WAL max*
Chromium (hexavalent)	0.5 U	**15**
Chromium (total)	5 U	**16.1**
cis-1,2-dichloroethene (DCE)	0.55	**0.75**
Trichloroethylene (TCE)	0.63	**1.5**

IR10MW82A		
Analyte	*Prior WAL max*	*Current WAL max*
Chromium (hexavalent)	0.86	**3**
Chromium (total)	5 U	**3.6 J**

IR10MW59A		
Analyte	*Prior WAL max*	*Current WAL max*
Vinyl chloride	30	**61**

Legend

- One or more results outside previous WAL range
- All results within previous WAL range
- Roads
- Buildings
- Parcel B
- Parcel C
- Parcel UC-2
- Non-Navy Property
- San Francisco Bay

Notes

1. Figure shows only BGMP sampled wells in the Monitoring Network.
2. WAL max is the historical maximum concentration.
3. Bold and **red** indicates new WAL max revised since 4Q2007 event.
4. Figure shows only analytical results that exceeded the previous WAL max, and does not include new WAL max values resulting from changes in method detection limits. Appendix I contains all WAL range values, including WAL minima values.
5. All concentrations are in ug/L.

Abbreviations

BGMP Basewide Groundwater Monitoring Program

J Detected below the practical quantitation limit, but above method detection limit; estimated value

U Not detected above the method detection limit

WAL Well Action Limit

N

0 100 200 300 400 Feet

FIGURE **5-1**

Parcel B new WAL maxima (3Q2008)

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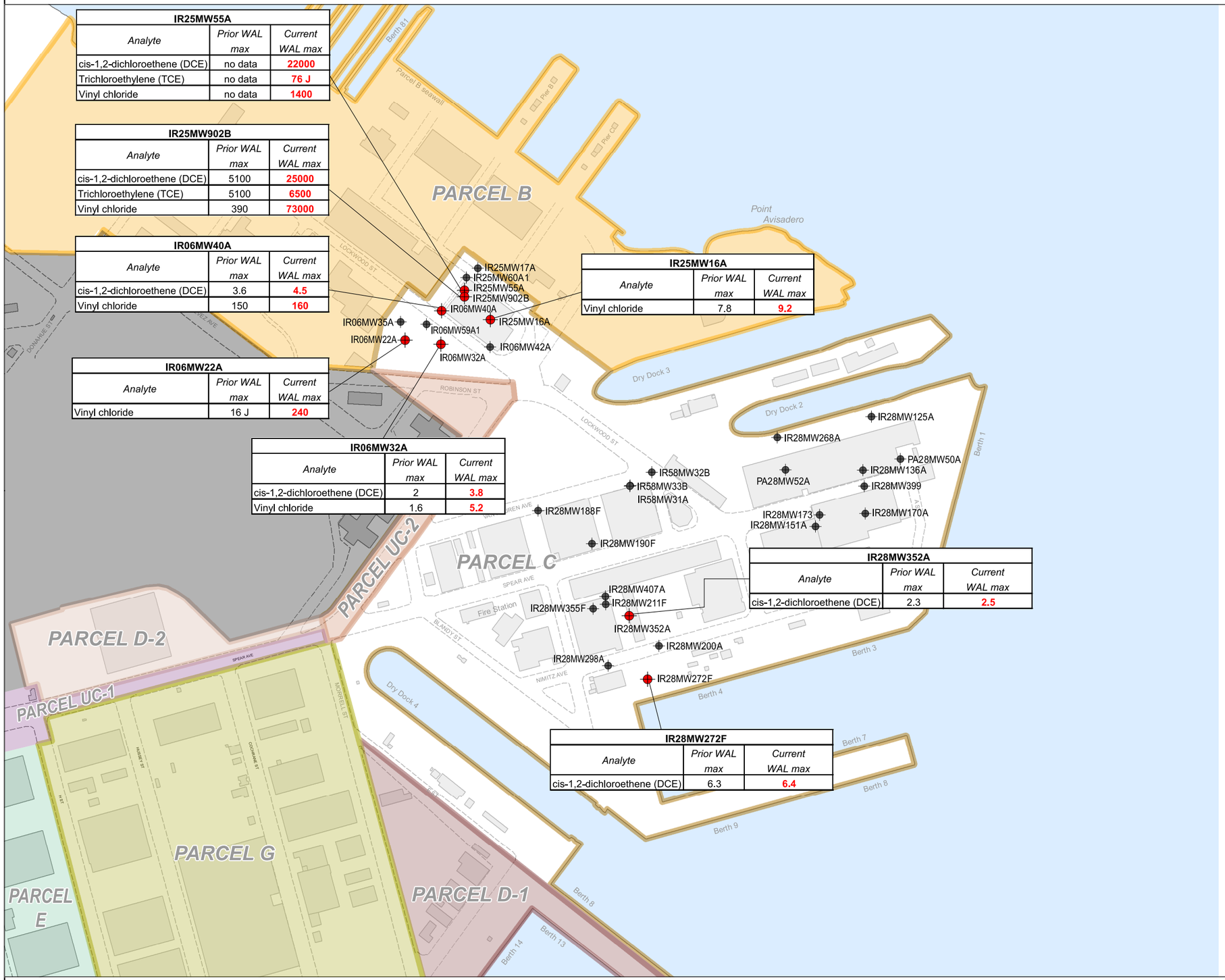

IR25MW55A		
Analyte	*Prior WAL max*	*Current WAL max*
cis-1,2-dichloroethene (DCE)	no data	**22000**
Trichloroethylene (TCE)	no data	**76 J**
Vinyl chloride	no data	**1400**

IR25MW902B		
Analyte	*Prior WAL max*	*Current WAL max*
cis-1,2-dichloroethene (DCE)	5100	**25000**
Trichloroethylene (TCE)	5100	**6500**
Vinyl chloride	390	**73000**

IR06MW40A		
Analyte	*Prior WAL max*	*Current WAL max*
cis-1,2-dichloroethene (DCE)	3.6	**4.5**
Vinyl chloride	150	**160**

IR06MW22A		
Analyte	*Prior WAL max*	*Current WAL max*
Vinyl chloride	16 J	**240**

IR06MW32A		
Analyte	*Prior WAL max*	*Current WAL max*
cis-1,2-dichloroethene (DCE)	2	**3.8**
Vinyl chloride	1.6	**5.2**

IR25MW16A		
Analyte	*Prior WAL max*	*Current WAL max*
Vinyl chloride	7.8	**9.2**

IR28MW352A		
Analyte	*Prior WAL max*	*Current WAL max*
cis-1,2-dichloroethene (DCE)	2.3	**2.5**

IR28MW272F		
Analyte	*Prior WAL max*	*Current WAL max*
cis-1,2-dichloroethene (DCE)	6.3	**6.4**

Legend

- One or more results outside previous WAL range
- All results within previous WAL range
- Roads
- Buildings
- Parcel B
- Parcel C
- Parcel D-1
- Parcel D-2
- Parcel E
- Parcel G
- Parcel UC-1
- Parcel UC-2
- Non-Navy Property
- San Francisco Bay

Notes

1. Figure shows only BGMP sampled wells in the Monitoring Network.
2. WAL max is the historical maximum concentration.
3. Bold and **red** indicates new WAL max revised since 4Q2007 event.
4. Figure shows only analytical results that exceeded the previous WAL max, and does not include new WAL max values resulting from changes in method detection limits. Appendix I contains all WAL range values, including WAL minima values.
5. All concentrations are in ug/L.

Abbreviations

BGMP Basewide Groundwater Monitoring Program

J Detected below the practical quantitation limit, but above method detection limit; estimated value

U Not detected above the method detection limit

WAL Well Action Limit

N

0 200 400 600 800 Feet

FIGURE **5-2**

Parcel C new WAL maxima (3Q2008)

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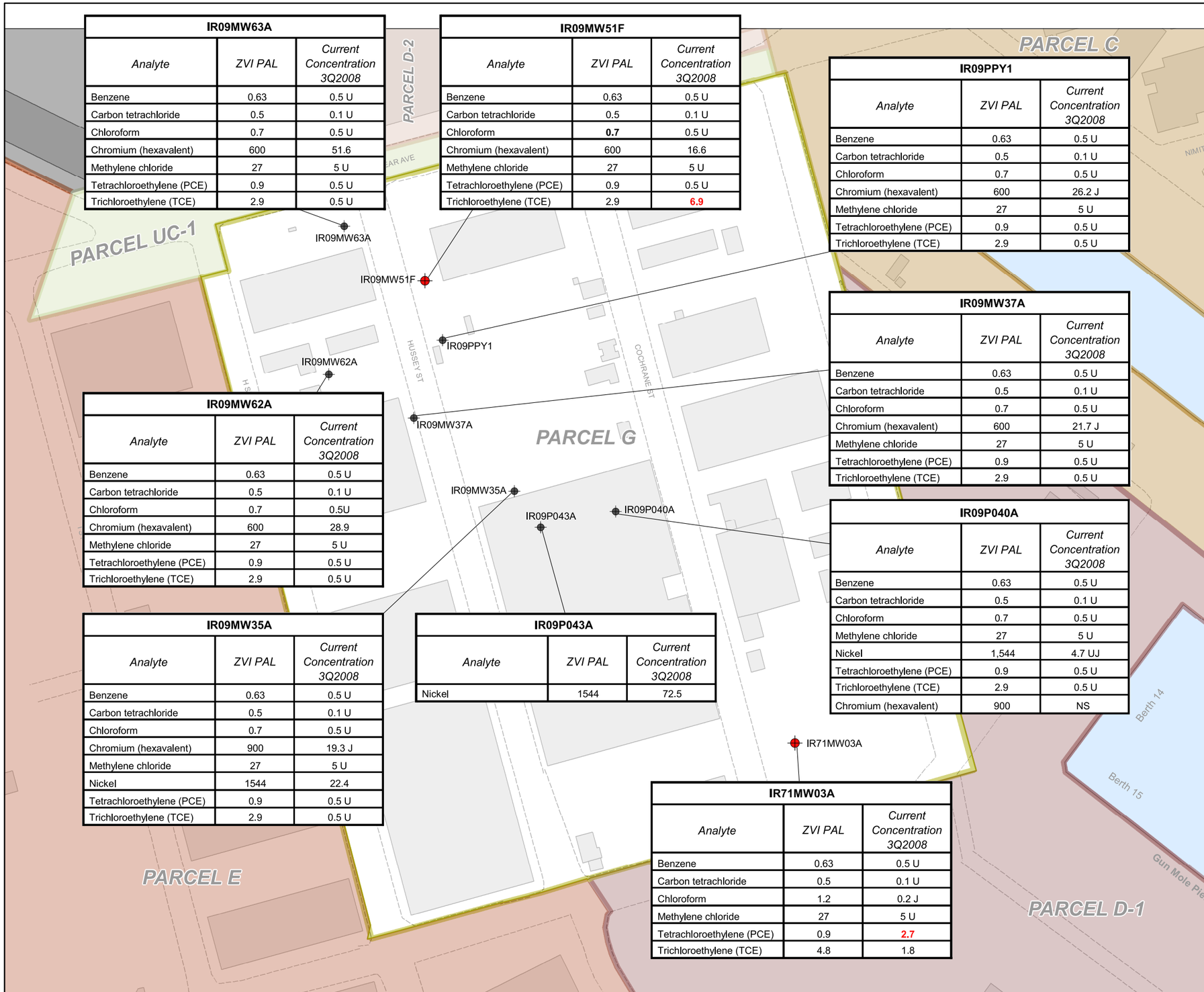

IR09MW63A		
Analyte	*ZVI PAL*	*Current Concentration 3Q2008*
Benzene	0.63	0.5 U
Carbon tetrachloride	0.5	0.1 U
Chloroform	0.7	0.5 U
Chromium (hexavalent)	600	51.6
Methylene chloride	27	5 U
Tetrachloroethylene (PCE)	0.9	0.5 U
Trichloroethylene (TCE)	2.9	0.5 U

IR09MW51F		
Analyte	*ZVI PAL*	*Current Concentration 3Q2008*
Benzene	0.63	0.5 U
Carbon tetrachloride	0.5	0.1 U
Chloroform	**0.7**	0.5 U
Chromium (hexavalent)	600	16.6
Methylene chloride	27	5 U
Tetrachloroethylene (PCE)	0.9	0.5 U
Trichloroethylene (TCE)	2.9	**6.9**

IR09PPY1		
Analyte	*ZVI PAL*	*Current Concentration 3Q2008*
Benzene	0.63	0.5 U
Carbon tetrachloride	0.5	0.1 U
Chloroform	0.7	0.5 U
Chromium (hexavalent)	600	26.2 J
Methylene chloride	27	5 U
Tetrachloroethylene (PCE)	0.9	0.5 U
Trichloroethylene (TCE)	2.9	0.5 U

IR09MW37A		
Analyte	*ZVI PAL*	*Current Concentration 3Q2008*
Benzene	0.63	0.5 U
Carbon tetrachloride	0.5	0.1 U
Chloroform	0.7	0.5 U
Chromium (hexavalent)	600	21.7 J
Methylene chloride	27	5 U
Tetrachloroethylene (PCE)	0.9	0.5 U
Trichloroethylene (TCE)	2.9	0.5 U

IR09MW62A		
Analyte	*ZVI PAL*	*Current Concentration 3Q2008*
Benzene	0.63	0.5 U
Carbon tetrachloride	0.5	0.1 U
Chloroform	0.7	0.5U
Chromium (hexavalent)	600	28.9
Methylene chloride	27	5 U
Tetrachloroethylene (PCE)	0.9	0.5 U
Trichloroethylene (TCE)	2.9	0.5 U

IR09P040A		
Analyte	*ZVI PAL*	*Current Concentration 3Q2008*
Benzene	0.63	0.5 U
Carbon tetrachloride	0.5	0.1 U
Chloroform	0.7	0.5 U
Methylene chloride	27	5 U
Nickel	1,544	4.7 UJ
Tetrachloroethylene (PCE)	0.9	0.5 U
Trichloroethylene (TCE)	2.9	0.5 U
Chromium (hexavalent)	900	NS

IR09MW35A		
Analyte	*ZVI PAL*	*Current Concentration 3Q2008*
Benzene	0.63	0.5 U
Carbon tetrachloride	0.5	0.1 U
Chloroform	0.7	0.5 U
Chromium (hexavalent)	900	19.3 J
Methylene chloride	27	5 U
Nickel	1544	22.4
Tetrachloroethylene (PCE)	0.9	0.5 U
Trichloroethylene (TCE)	2.9	0.5 U

IR09P043A		
Analyte	*ZVI PAL*	*Current Concentration 3Q2008*
Nickel	1544	72.5

IR71MW03A		
Analyte	*ZVI PAL*	*Current Concentration 3Q2008*
Benzene	0.63	0.5 U
Carbon tetrachloride	0.5	0.1 U
Chloroform	1.2	0.2 J
Methylene chloride	27	5 U
Tetrachloroethylene (PCE)	0.9	**2.7**
Trichloroethylene (TCE)	4.8	1.8

Legend

- Wells with analyte(s) exceeding PAL
- Wells with analyte(s) not exceeding PAL
- Roads
- Buildings
- Parcel C
- Parcel D-1
- Parcel D-2
- Parcel E
- Parcel G
- Parcel UC-1
- Non-NavyProperty
- San Francisco Bay

Notes

1. Figure shows only BGMP sampled wells for which ZVI PALs have been established, all of which are located in Parcel G.
2. Bold and **red** indicates PAL exceedance in the 3Q2008 event.
3. All concentrations are in ug/L.

Abbreviations

BGMP Basewide Groundwater Monitoring Program

J Detected below the practical quantitation limit, but above method detection limit; estimated value

NS Not sampled in current event

PAL Project Action Limit per Sultech 2007

U Not detected above the method detection limit

WAL Well Action Limit

ZVI Zero-valent iron treatability study

N

0 100 200 300 400 Feet

FIGURE **5-3**

Parcel G groundwater analytical results for wells with PALs (3Q2008)

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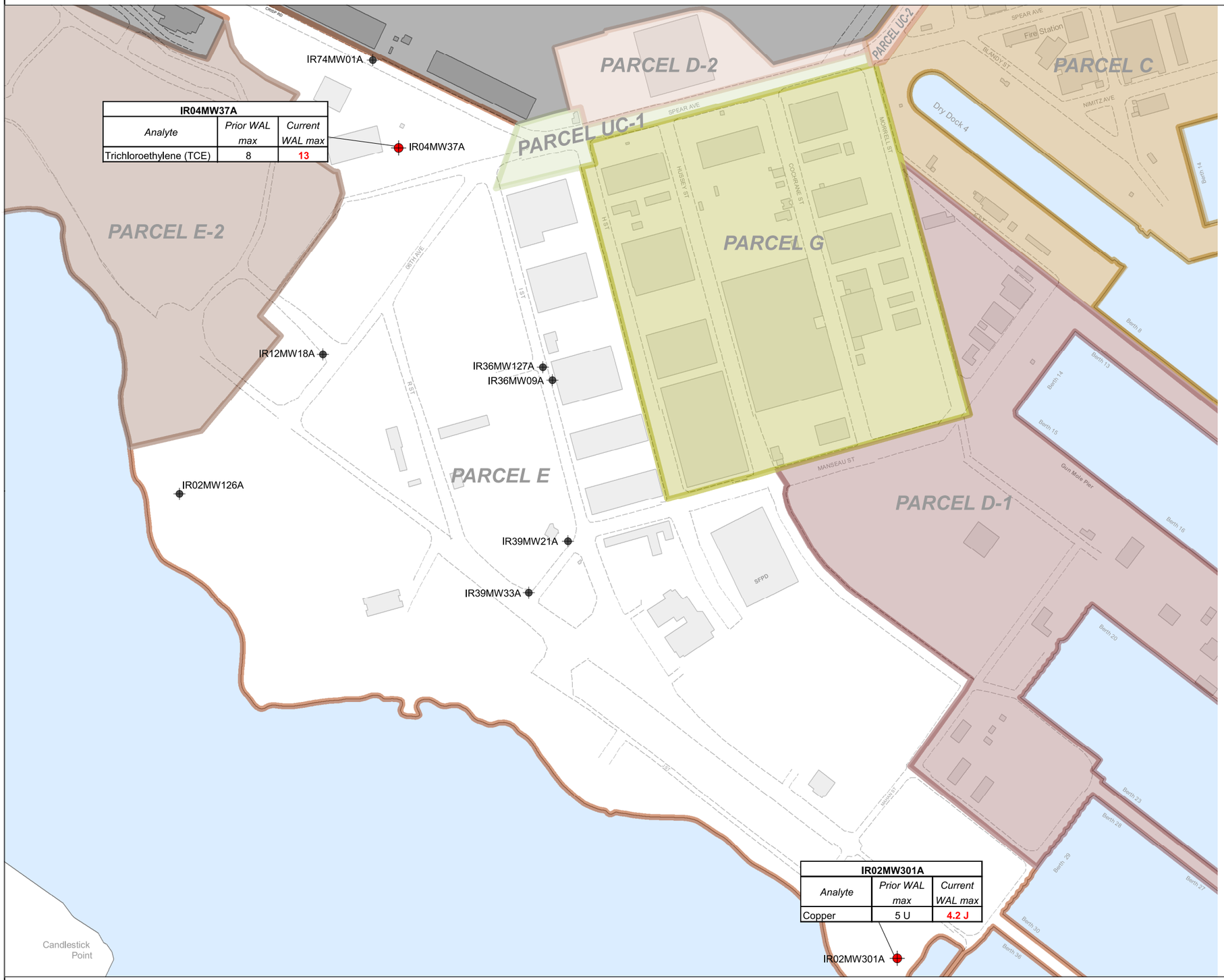

IR04MW37A		
Analyte	*Prior WAL max*	*Current WAL max*
Trichloroethylene (TCE)	8	**13**

IR02MW301A		
Analyte	*Prior WAL max*	*Current WAL max*
Copper	5 U	**4.2 J**

Legend

- One or more results outside previous WAL range
- All results within previous WAL range
- Roads
- Buildings
- Parcel C
- Parcel D-1
- Parcel D-2
- Parcel E
- Parcel E-2
- Parcel G
- Parcel UC-1
- Parcel UC-2
- Non-Navy Property
- San Francisco Bay

Notes

1. Figure shows only BGMP sampled wells in the Monitoring Network.
2. WAL max is the historical maximum concentration.
3. Bold and **red** indicates new WAL max revised since 4Q2007 event.
4. Figure shows only analytical results that exceeded the previous WAL max, and does not include new WAL max values resulting from changes in method detection limits. Appendix I contains all WAL range values, including WAL minima values.
5. All concentrations are in ug/L.

Abbreviations

BGMP Basewide Groundwater Monitoring Program

J Detected below the practical quantitation limit, but above method detection limit; estimated value

U Not detected above the method detection limit

WAL Well Action Limit

N

0 200 400 600 800 Feet

FIGURE **5-4**

Parcel E new WAL maxima (3Q2008)

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Plates

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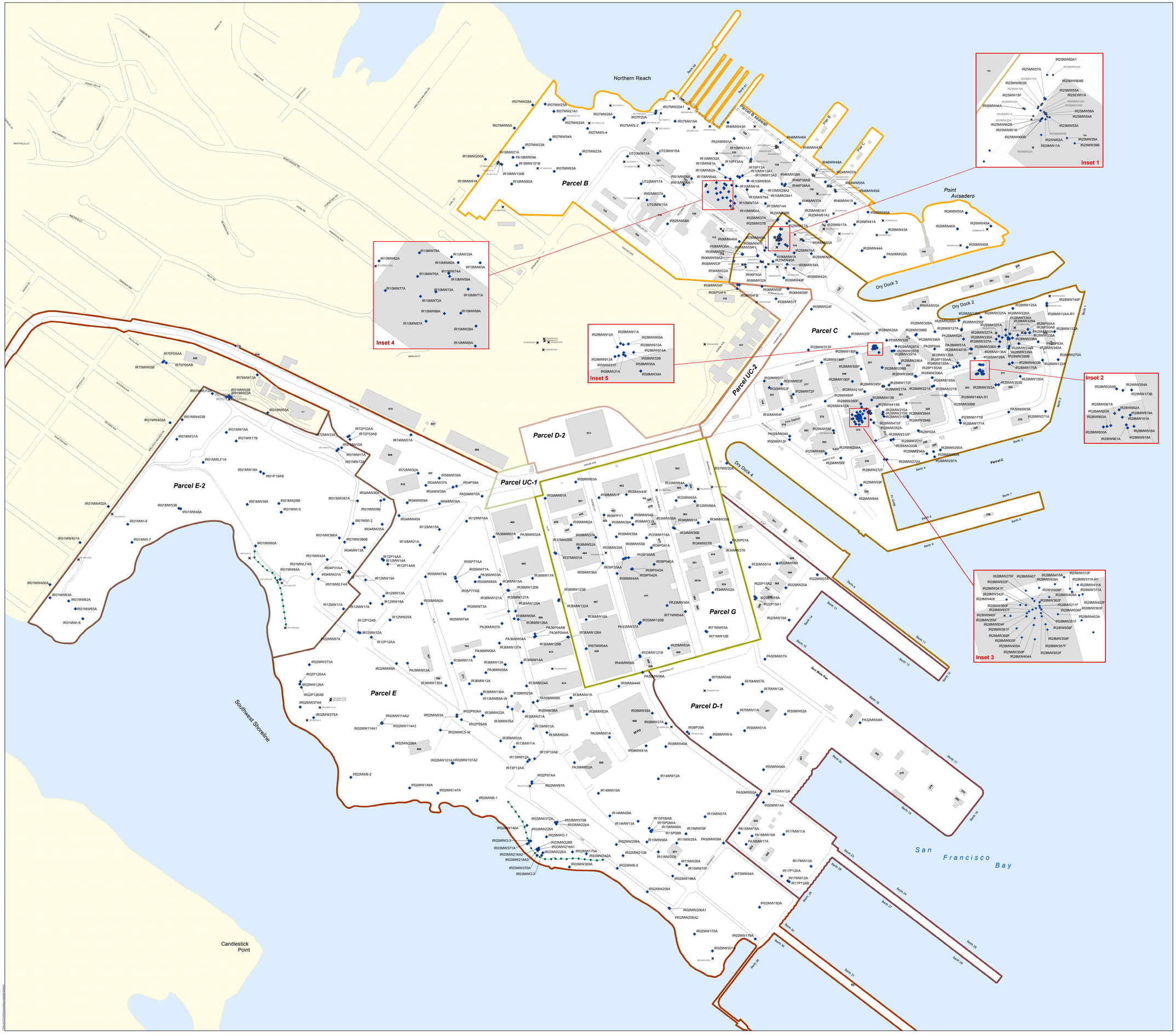

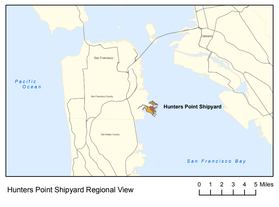

Hunters Point Shipyard Regional View

0 1 2 3 4 5 Miles

Legend

- Monitoring Well
- Monitoring Well, decommissioned
- 1935 Shoreline
- Parcel B seawall
- Parcels E and E-2 sheetpile wall
- 231 Buildings
- Roads
- Parcel B
- Parcel C
- Parcel D-1
- Parcel D-2
- Parcel E
- Parcel E-2
- Parcel G
- Parcel UC-1
- Parcel UC-2
- Non - Navy property
- San Francisco Bay

Note:
Well status is current as of the end of 3Q2008

N

0 25 50 75 100 ft

Inset scale

0 250 500 750 1,000 ft

Basewide scale

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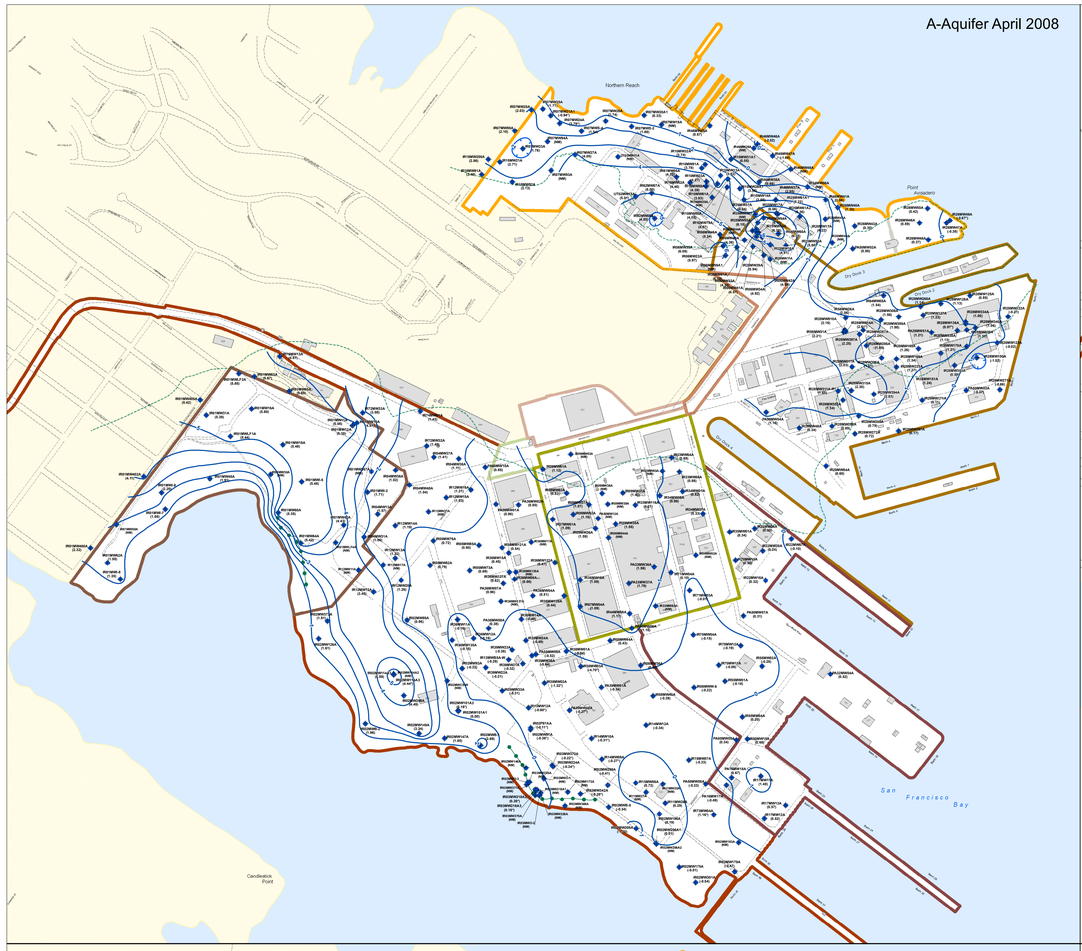
Plate 1
Locations of groundwater monitoring wells

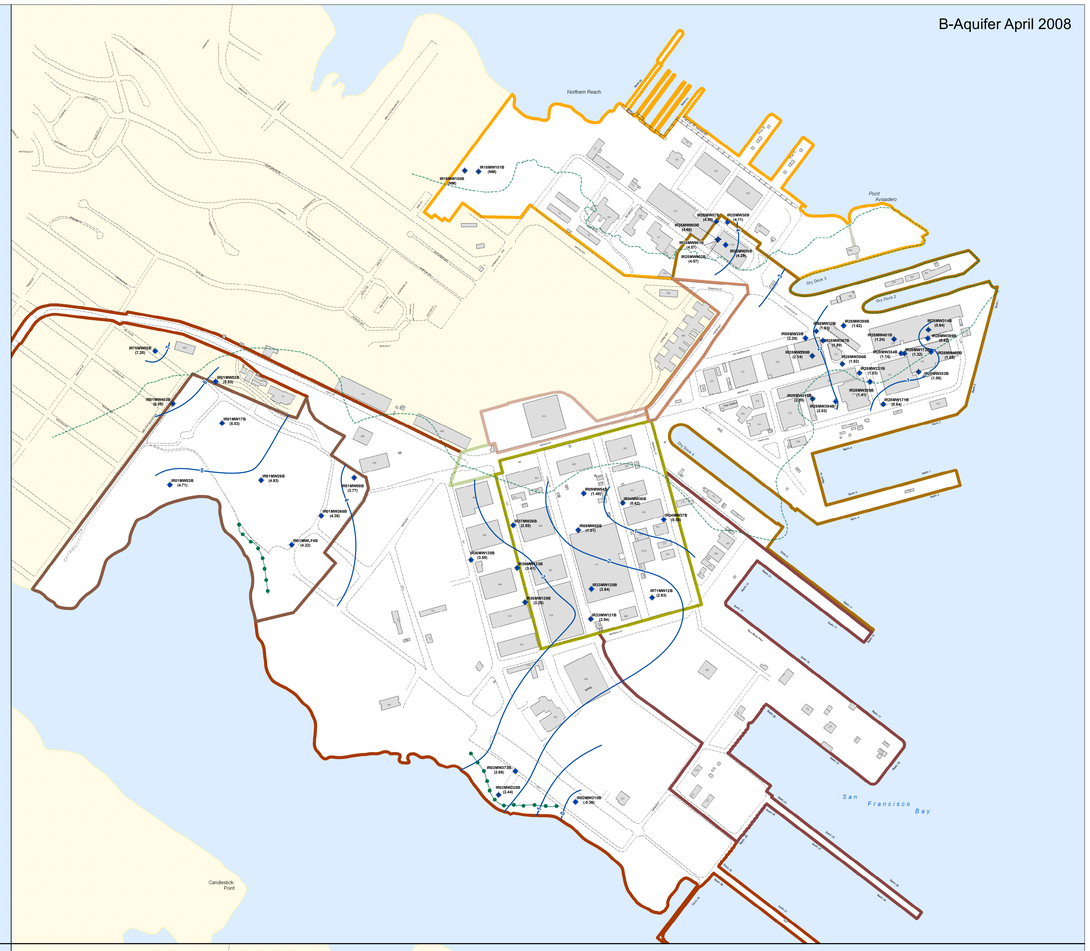
Semi-Annual Groundwater Monitoring Report
(April - September 2008)

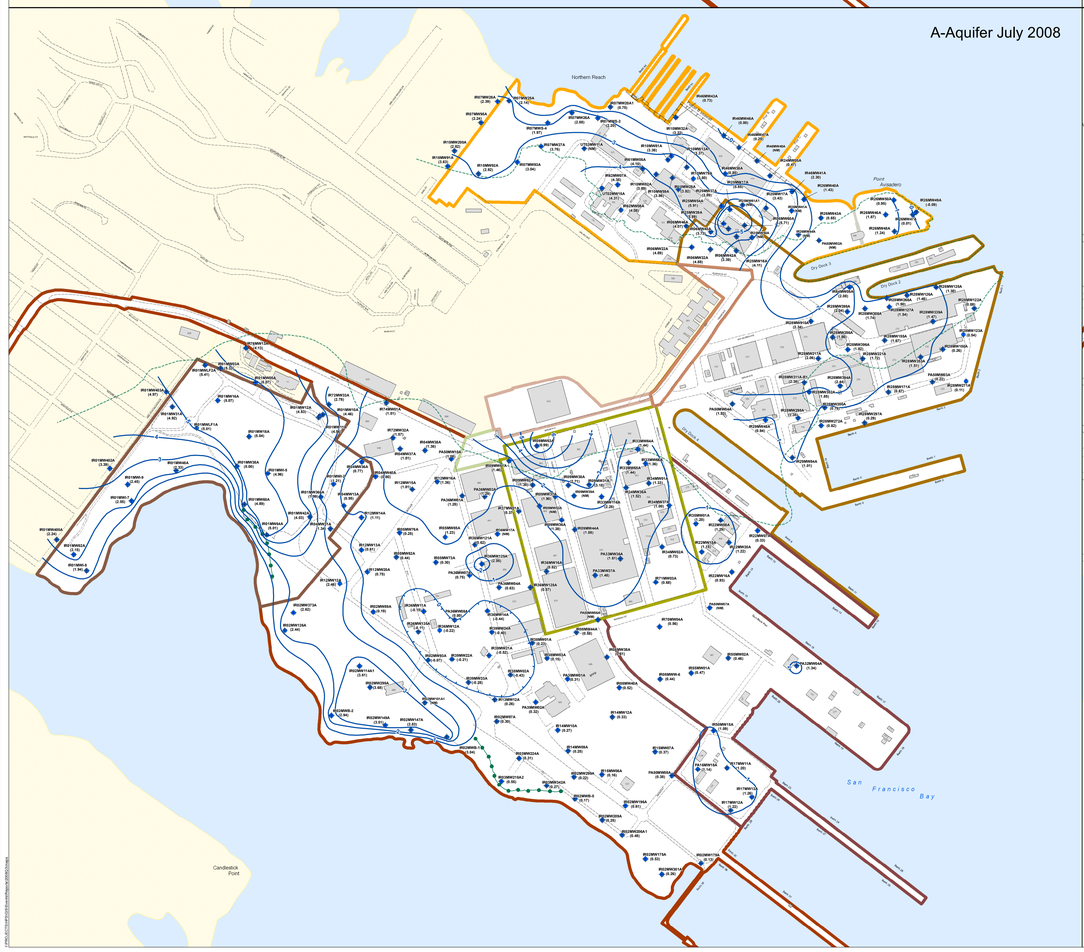
February 2009 CEKA-3001-0000-0012

N. Cook, CE2 Corporation
02/09/09

NAD 1927, StatePlane 1927 California III FIPS 0403
Lambert Conformal Conic, (Foot US)
GCS_North American 1927






A-Aquifer July 2008
Northern Reach
Point Avisadero
Dry Dock 3
Dry Dock 2
Dry Dock 1
Dry Dock 4
Dry Dock 5
Dry Dock 6
Dry Dock 7
Dry Dock 8
Pier 1
Pier 2
Pier 3
Pier 4
Pier 5
Pier 6
Pier 7
Pier 8
Pier 9
Pier 10
Pier 11
Pier 12
Pier 13
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