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Site Environmental Report for 2010

Volume I

September 2011

Ernest Orlando Lawrence Berkeley National Laboratory

Cover photo by John Turner of the Material Sciences Division

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Preface

Each year, the University of California (UC), as the managing and operating contractor of the Ernest Orlando Lawrence Berkeley National Laboratory, prepares an integrated report regarding its environmental programs to satisfy the requirements of United States Department of Energy (DOE) Order 231.1A, *Environment, Safety, and Health Reporting.*[1] The *Site Environmental Report for 2010* summarizes Berkeley Lab's environmental management performance, presents environmental monitoring results, and describes significant programs for calendar year (CY) 2010. Throughout this report, "Berkeley Lab" or "LBNL" refers both to (1) the multiprogram scientific facility the UC manages and operates on the 202-acre university-owned site located in the hills above the UC Berkeley campus, and the site itself, and (2) the UC as managing and operating contractor for Ernest Orlando Lawrence Berkeley National Laboratory.

The report is separated into two volumes. Volume I is organized into an executive summary followed by six chapters that contain an overview of LBNL, a discussion of its Environmental Management System (EMS), the status of environmental programs, summarized results from surveillance and monitoring activities, and quality assurance (QA) measures. Volume II contains individual data results from surveillance and monitoring activities.

The *Site Environmental Report* is distributed by releasing it on the World Wide Web (Web) from the Berkeley Lab Environmental Services Group (ESG) home page, which is located at www.lbl.gov/ehs/esg/. Many of the documents cited in this report also are accessible from the ESG Web page. Links to documents available on the Web are given with the citations in the References section. Compact disc and printed copies of this *Site Environmental Report* are available upon request.

The report follows Berkeley Lab's policy of using the International System of Units (SI), also known as the metric system of measurements. Whenever possible, results are also reported using the more conventional (non-SI) system of measurements, because the non-SI system is referenced by several current regulatory standards and is more familiar to some readers. Two tables are provided at the end of the Glossary to help readers: Table G-1 defines the prefixes used with SI units of measurement, and Table G-2 provides conversions to non-SI units.

Years mentioned in this report refer to calendar years unless specified as fiscal year(s). Berkeley Lab's fiscal year (FY) is October 1 to September 30, and begins in the year previous to its name, i.e., FY 2010 was from October 1, 2009, to September 30, 2010. For ease of reference, a key to acronyms and abbreviations used in this report can be found directly after the text, at the end of Chapter 6. Following that is also a glossary for readers who may be unfamiliar with some of the terms used in this report.

This report was prepared under the direction of Ron Pauer of ESG. Please address any questions regarding this report to him by telephone at 510-486-7614, or by e-mail at ropauer@lbl.gov. The primary contributors were David Baskin, Tim Bauters, Ned Borglin, Robert Fox, Blair Horst, John Jelinski, Ginny Lackner, Jeff Phillibe r, Nancy Rothermich, Patrick Thorson, Linnea Wahl, and Suying Xu (Volume II).

Readers are encouraged to comment on this report by completing the survey form found at the ESG Web page where this report is available.

Executive Summary

Building 50 Complex

LBNL is a multiprogram scientific facility operated by the UC for the DOE. LBNL's research is directed toward the physical, biological, environmental, and computational sciences, in order to deliver scientific knowledge and discoveries pertinent to DOE's missions.

This annual *Site Environmental Report* covers activities conducted in CY 2010. The format and content of this report satisfy the requirements of DOE Order 231.1A, *Environment, Safety, and Health Reporting*,[1] and the operating contract between UC and DOE.[2]

INTEGRATED SAFETY MANAGEMENT AND ENVIRONMENTAL MANAGEMENT SYSTEMS

Berkeley Lab employs an Integrated Safety Management System (ISMS), which is a management approach that applies the following core environmental, safety, and health functions to all LBNL work:

1. Work planning
2. Hazard and risk analysis
3. Establishment of controls
4. Work performance in accordance with the controls
5. Feedback and improvement.

LBNL activities are planned and conducted with full regard to protecting employees, the public, and the environment and complying with all applicable environmental, health, and safety laws and regulations.

In 2010, Berkeley Lab continued to implement its Environmental Management System (EMS) and integrate it with LBNL's ISMS. When practical, the existing processes used for integrated safety management were used to support and implement environmental performance improvement and compliance management. New processes were developed to support the EMS where needed.

The EMS itself promoted activities for reducing Berkeley Lab's environmental impacts in areas such as energy, fuel, water use, toxic air emissions, and landfill waste, while improving performance in acquiring more environmentally sustainable and preferable products, such as computers and monitors that meet international environmental performance criteria. The most notable achievement during the year for this management system was compiling the initial comprehensive greenhouse gas emissions inventory for LBNL activities.

For more information, see Chapter 2.

OPERATING PERMITS, INSPECTIONS, AND INCIDENTS IN 2010

At the end of the year, Berkeley Lab held 48 environmental operating permits from various regulatory agencies for air and water quality protection and hazardous waste handling.

Twenty-two inspections of Berkeley Lab's environmental programs occurred during the year, including both regulatory agency inspections and internal LBNL inspections. Eight violations resulted from these inspections. One concerned discrepancies in a required document, which have been addressed and resolved. Another was based on a citizen complaint and is being contested by LBNL. The other site violations resulted from a joint City of Berkeley/U.S. EPA inspection. One of these violations is being contested, and two were corrected on the spot. The other three were administrative in nature, and did not result in any fines or injuries.

For additional information on operating permits, inspections, and violations, please see Sections 3.3.1 and 3.3.2. For details of DOE-reportable environmental incidents, see Section 3.3.3.

PERFORMANCE EVALUATION

Each year, UC and DOE assess the performance of Berkeley Lab's environmental program using measures and a rating system developed jointly by Berkeley Lab, UC, and DOE. The rating system includes possible letter grades ranging from A+ to F. For FY10, there were three performance measures that included environmental components:

1. Provide a work environment that protects workers and the environment
2. Efficiently and effectively implement integrated safety, health, and environment management

3. Efficiently and effectively manage and minimize waste, and prevent pollution.

Berkeley Lab received ratings of A-, B, and B+, respectively for these three measures for FY10.

ENVIRONMENTAL MONITORING AND DOSE ASSESSMENT

Berkeley Lab's environmental monitoring program serves several purposes:

- Demonstrate that LBNL activities operate within regulatory and DOE requirements
- Provide a historical record of LBNL impacts on the environment
- Support environmental management decisions
- Provide information on the effectiveness of emission control programs
- Assess the maximum potential radiological dose to members of the public.

To assess potential doses to the public resulting from Berkeley Lab operations, three types of environmental radiation are measured:

1. Penetrating radiation (gamma and neutron) from sources such as accelerators
2. Discharges of dispersible radionuclides to stack air and sanitary sewer water from LBNL activities
3. Concentrations of radionuclides in the ambient environment (air, surface water, vegetation, soil, sediment, and groundwater).

In 2010, the maximum dose to an individual member of the public residing near Berkeley Lab from penetrating radiation and dispersible airborne radionuclides was about 1.3×10^{-3} millisievert (mSv) (0.13 millirem [mrem]). This is approximately 0.04% of the average United States natural background radiation dose (3.1 mSv [310 mrem])[3] and about 0.1 % of the DOE annual limit from all sources (1.0 mSv [100 mrem]).[4] The estimated maximum potential dose from airborne radionuclides released from Berkeley Lab in 2010 was 7.3×10^{-5} mSv (0.0073 mrem). This is approximately 0.07% of the United States Environmental Protection Agency (U.S. EPA) annual dose limit for dispersible radionuclide emissions (0.10 mSv/year [yr] [10 mrem/yr]).[5]

Berkeley Lab also estimates the cumulative dose impact (population dose) from penetrating radiation and dispersible airborne radionuclides to the entire population found within an 80-kilometer (km) (50-mile) radius of Berkeley Lab. This measure is the sum of all individual doses to the population residing or working within this radius. The population dose for 2010 from penetrating radiation and airborne radionuclides was estimated at 2.2×10^{-3} person-sievert (person-Sv) (0.22 person-rem). From natural background radionuclides alone, this same population receives an estimated dose of 12,000 person-Sv (1,200,000 person-rem).[6] No regulatory standard exists for this measure.

During the year, ambient air, creek water, groundwater, sediment, soil, stormwater, and wastewater were monitored for radiological and nonradiological constituents to comply with operational permits and DOE requirements. Most results were below or near analytical detection limits, or within urban background levels and below regulatory limits.

Investigations conducted as part of the Resource Conservation and Recovery Act (RCRA) Corrective Action Program (CAP) since the early 1990s have identified and characterized nine principal groundwater contamination plumes at Berkeley Lab. Berkeley Lab is currently in the Corrective Measures Implementation (CMI) phase of the RCRA CAP. The purpose of the CMI phase is to operate, maintain, and monitor the corrective measures (clean-up activities) approved by the Department of Toxic Substances Control (DTSC) for cleanup of the contaminated groundwater. Groundwater monitoring data indicate that the corrective measures have been effective in reducing concentrations of contaminants in the groundwater, the groundwater plumes

are stable or attenuating, and contaminants are not migrating offsite in the groundwater. Although the groundwater at Berkeley Lab is not used for domestic, irrigation, or industrial purposes, the long-term goal is to restore all groundwater at LBNL to drinking water standards, if practicable. For more details on environmental monitoring conducted in 2010, see Chapter 4. For more details on radiological dose assessments conducted in 2010, see Chapter 5.

All Berkeley Lab activities, in particular environmental activities, are carried out within the framework of its *2006 Long Range Development Plan* (LRDP)[7] and the accompanying Final Environmental Impact Report (FEIR).[8] These documents constitute LBNL's basic planning and land-use documents, and are intended to guide future growth and change through 2025. For further information on the LRDP and FEIR, please see www.lbl.gov/LRDP/.

1 Introduction

Lawrence Berkeley National Laboratory (outlined) is located east of the University of California Berkeley campus

1.1 HISTORY

Berkeley Lab was founded by Ernest O. Lawrence in 1931. Lawrence received the 1939 Nobel Prize in physics for his invention of the cyclotron (particle accelerator), and he is generally credited with the modern concept of interdisciplinary science, in which scientists, engineers, and technicians from different fields work together on complex scientific projects addressing national needs and programs. Lawrence's pioneering work established a great tradition of scientific inquiry and discovery at LBNL. Eleven Nobelists have been associated with Berkeley Lab. Seventy-eight of its current researchers are members of the National Academies,[1] which forms committees to advise the federal government and public.

Berkeley Lab supports work in such diverse fields as genomics, physical biosciences, alternative fuels, nanoscience, life sciences, fundamental physics, accelerator physics and engineering, energy conservation technology, and materials science. Through its fundamental research in these fields, Berkeley Lab has achieved international recognition for its leadership and has made numerous contributions to national programs. Berkeley Lab's research embraces the following concepts to align with the DOE mission:

- Explore the complexity of energy and matter
- Advance the science needed to attain abundant clean energy
- Understand energy impacts on our living planet
- Provide extraordinary tools for multidisciplinary research.

Since its beginning, Berkeley Lab has been managed by UC. Numerous Berkeley Lab scientists are faculty members on the campuses of either UC Berkeley or UC San Francisco. They and other Berkeley Lab researchers guide the work of graduate students pursuing advanced degrees through research at LBNL. High school students and teachers, as well as college students, also participate in many Berkeley Lab programs designed to enhance science education, which is part of LBNL's mission.

1.2 LOCATION

Berkeley Lab is located about five kilometers (km) (three miles [mi]) east of San Francisco Bay (see Figure 1-1) on land owned by UC. The main site is situated on approximately 82 hectares (202 acres) of land. UC provides long-term land leases to the DOE for many of the facilities and buildings at LBNL.

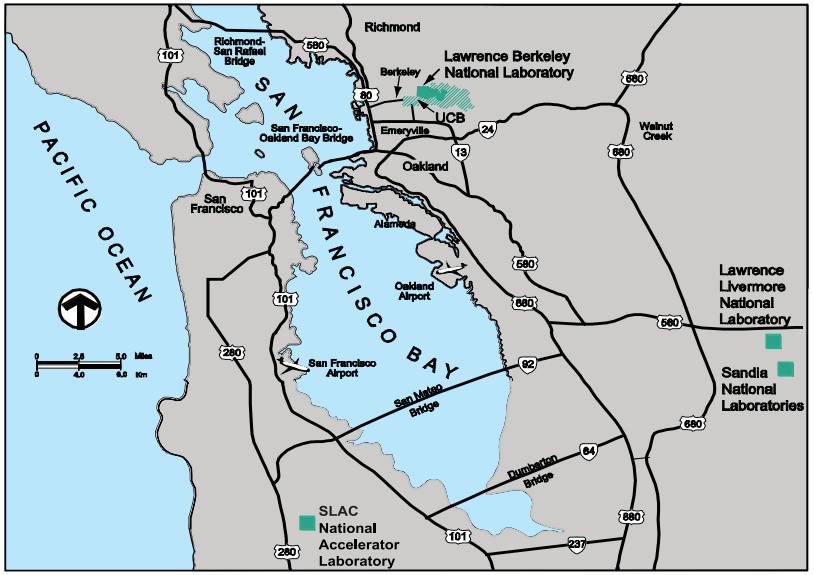


Figure 1-1 Map of National Laboratories in the San Francisco Bay Area

The main site lies in the hills above the UC Berkeley campus, on the ridges and draws of Blackberry Canyon (which forms much of the western part of the site) and adjacent Strawberry Canyon (which forms much of the southern part of the site). Elevations across the site range from 135 to 350 meters (m) (450 to 1,150 feet [ft]) above sea level. The western portion of the site is in Berkeley, while the eastern portion is in Oakland; the entire site is located within Alameda County. The population of Berkeley is estimated at approximately 103,000, and that of Oakland at 400,000.[2]

Adjacent land use consists of residential, institutional, and recreational areas (see Figure 1-2). The area to the south and east of LBNL, which is University land, is maintained largely in a natural or undeveloped state, but includes UC Berkeley's Strawberry Canyon Recreational Area and Botanical Garden. To the northeast are the University's Lawrence Hall of Science (LHS), Space Sciences Laboratory, and Mathematical Sciences Research Institute. Berkeley Lab is bordered on the north by a residential neighborhood of low-density, single-family homes and on the west by the UC Berkeley campus, as well as by multi-unit dwellings, student residence halls, and private homes. The area to the west of Berkeley Lab is highly urbanized.

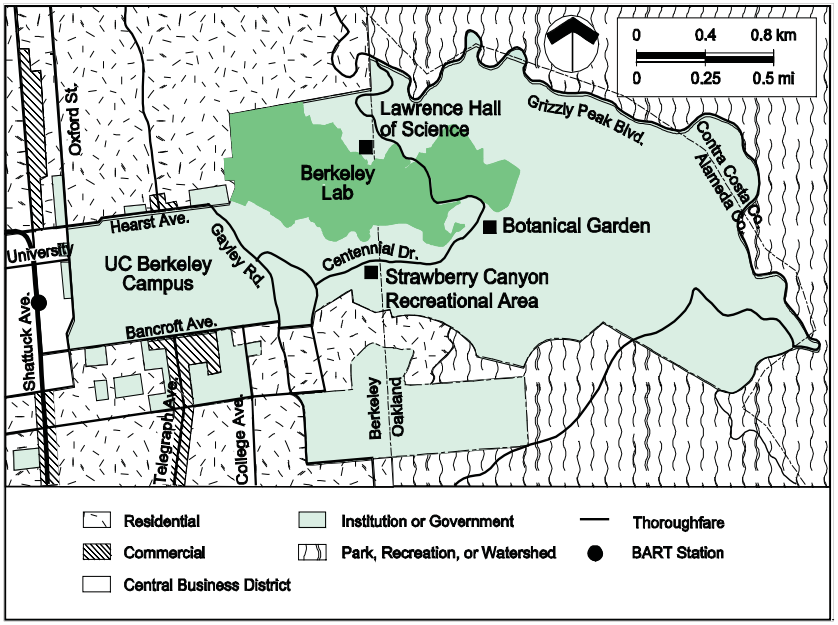


Figure 1-2 Adjacent Land Use

1.3 POPULATION AND SPACE DISTRIBUTION

Approximately 3,500 scientists and support personnel, plus approximately 1,000 faculty and students, work at Berkeley Lab. In addition, LBNL hosts over 5,000 participating guests who use its unique scientific facilities for varying lengths of time. Berkeley Lab also supports over 700 scientists and staff at off-site locations including Walnut Creek, Oakland, Berkeley, Emeryville, and Washington, D.C. Approximately 1,400 of LBNL's scientists and guests are jointly affiliated with some university campus.

Berkeley Lab research and support activities are conducted in structures having a total area of about 190,000 gross square meters (approximately 2.0 million gross square feet). About 82% of the total space is at the main site, about 3% is on the UC Berkeley campus (e.g., Donner Laboratory), and the remaining 15% is located in various other off-site leased buildings. Figure 1-3 shows the Berkeley Lab space distribution.

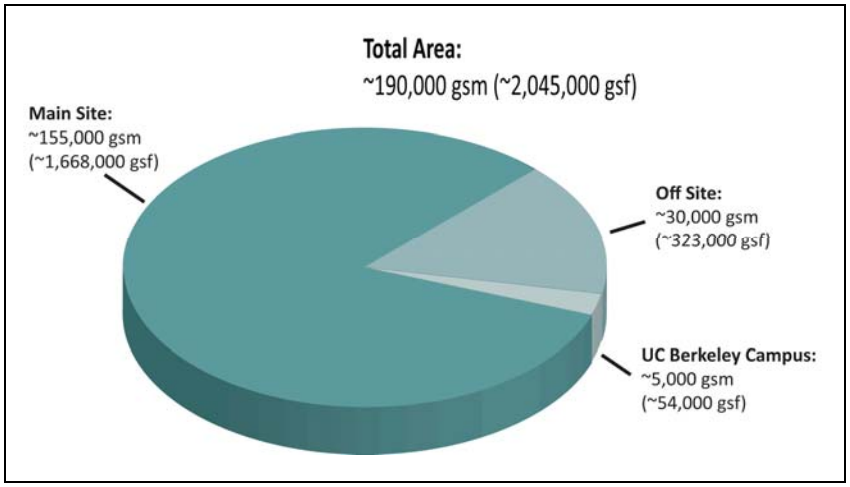


Figure 1-3 Approximate Space Distribution

1.4 WATER SUPPLY

All domestic water for LBNL's main site is supplied by the East Bay Municipal Utility District (EBMUD). The site has no drinking water wells. The domestic water originates in Sierra Nevada watershed lands and is transported to the Bay Area and ultimately to Berkeley Lab through a system of lakes, aqueducts, treatment plants, and pumping stations. EBMUD tests the water for contaminants and treats it to meet disinfection standards required by the Safe Drinking Water Act.[3]

Wisely managing water use in a region prone to periodic drought is a critical issue for LBNL. Additionally, Federal requirements help create incentives for reducing water consumption. Most recently, Executive Order (EO) 13514, *Federal Leadership in Environmental, Energy, and Economic Performance,*[4] extended the earlier goals of EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*[5] for DOE to reduce the water use intensity (i.e., consumption per square foot of building space). The new goal increases the reduction to 26% (from 16%) by October 2020 (from 2015), relative to 2007 water use intensity levels. EO 13514 sets a second, new goal of reducing industrial, landscaping, and agricultural (ILA) potable water use by 20% from 2010 usage by this same date. DOE, in turn, passes these goals down to contractor sites like LBNL in the form of a DOE Order. In this case, the goal is to link DOE Order 436.1, *Departmental Sustainability*[6] (approved May 2011).

LBNL has been actively implementing measures to reduce potable water consumption, as it works toward achieving this goal. During FY09 LBNL achieved a water use intensity savings of almost 18%. During FY10, savings dropped to 8% largely due to new leaks in LBNL's water distribution piping. These are being repaired. Long term, even with a well-maintained, efficient system in place, LBNL predicts difficulty in achieving the FY15 and FY20 total potable and ILA potable water savings goals because planned new facilities are designed to use economically justified water-based cooling systems instead of high-energy consuming air-based cooling systems to meet their cooling needs.

1.5 ENERGY USE

All electric power for Berkeley Lab's main site is provided by the Western Area Power Administration. Power purchases are arranged through DOE's Northern California Power Purchase Consortium. This consortium serves the electric power needs of DOE facilities in the San Francisco Bay Area, namely LBNL, Lawrence Livermore National Laboratory, and the SLAC National Accelerator Laboratory. Natural gas is provided from the Defense Logistics Agency - Energy, formerly known as the Defense Fuel Supply Center, and is transported through Pacific Gas and Electric transmission piping. In response to DOE's accelerated renewable energy acquisition goals, Berkeley Lab set a goal to offset at least 7.5 % of its overall electric power need (including off-site facilities) through purchasing renewable energy credits, starting in FY10. In FY10, these credits represented 8.0% of overall electric power, exceeding the 7.5% goal.

LBNL has committed to achieving an energy use intensity reduction of 30% from 2003 levels by October 2015 in response to EO 13423. By the end of FY10, Berkeley Lab had achieved a 15.5% savings. EO 13514 did not extend this goal. Instead, it indirectly addressed energy use reductions by adding requirements to reduce greenhouse gas (GHG) emissions (see next section).

1.6 GREENHOUSE GAS EMISSIONS

DOE Order 436.1, incorporating EO 13514 requirements, establishes significant reductions in GHG emissions from federal facilities by October 2020. DOE has established department-wide GHG reduction goals of 28% for Scope 1 and 2 emissions and 13% for Scope 3 emissions. To meet these goals, LBNL has developed a Site Sustainability Plan to meet these goals, which includes an initiative titled *Sustainable Science–A Living Laboratory for*

Carbon Reduction. This *Living Lab* initiative demonstrates how, with sufficient capital funding, Berkeley Lab could double the overall DOE GHG emissions reduction to 57%. Because Scope 1 and 2 GHG emissions are comprised primarily of facilities energy use, reducing GHG emissions will indirectly continue to lower LBNL's energy use intensity.

1.7 METEOROLOGY

The climate at LBNL is temperate, influenced by the moderating effects of nearby San Francisco Bay and the Pacific Ocean to the west, and on the east by the East Bay hills paralleling the eastern shore of this same bay. These physical barriers contribute significantly to the relatively warm, wet winters and cool, dry summers of the site. The average annual temperature at the site is about 13° Celsius (C) (55° Fahrenheit [F]). More than 90% of the time the temperature is in the range of 5° to 20°C (41° to 68°F). Seldom does the maximum temperature exceed 32°C (90°F) or the minimum temperature drop below 0°C (32°F).

The average annual precipitation, based on more than 30 years of Berkeley Lab records, is slightly more than 77 centimeters (cm) (30.4 inches [in]) of rain during the season (October 1 to September 30). Measurable snow does not fall at Berkeley Lab. About 95% of the annual rainfall occurs between October and April; typically the wettest of these months are December through February. The 2009/2010 rainfall season closed with 83.9 cm (33.03 in) of precipitation, or about 109 % of the normal amount.

On-site wind patterns change little from one year to the next. Figure 1-4 is a graphical summary of the annual wind patterns called a "wind rose," illustrating the frequency of the predominant wind patterns. The most prevalent wind pattern occurs during fair weather, with daytime westerly winds blowing off the bay, followed by lighter nighttime southeasterly drainage winds of the East Bay hills. The other predominant wind pattern is associated with storm systems passing through the region, which usually occur during the winter months. South-to-southeast winds in advance of each storm are followed by a shift to west or northwest winds after passage of the system.

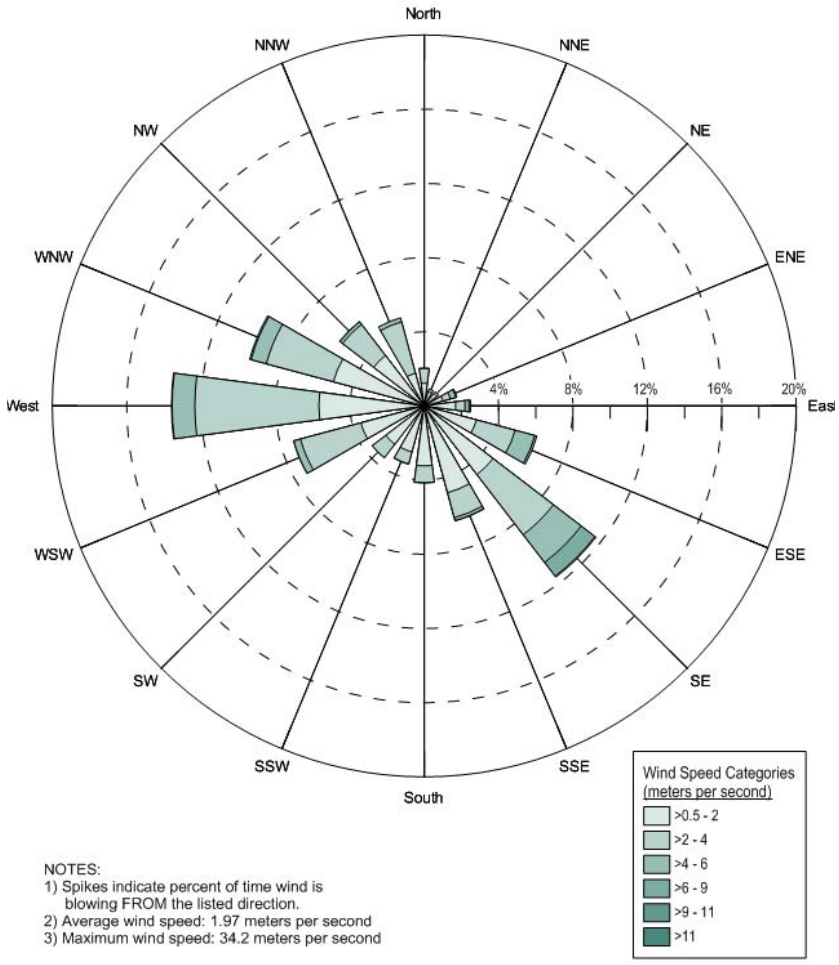


Figure 1-4 Annual Wind Patterns

1.8 VEGETATION

Vegetation on the Berkeley Lab site is a mixture of native plants, naturalized exotics, and ornamental species. The site was intensively grazed and farmed for approximately 150 years before the development of Berkeley Lab on it in the 1930s. Current vegetation is managed in harmony with the local natural succession of native plant communities. Berkeley Lab also works to maintain a wooded and savanna character in the areas surrounding buildings and roads. Ornamental species are generally restricted to public spaces and courtyards and to areas adjacent to buildings. The site has no rare, threatened, or endangered species of plants present.

Figure 1-5 shows the vegetation types and locations on-site.

The site is also managed to minimize wildland fire damage to structures. The vegetation management program is designed to reduce the potential flame heights of ground cover vegetation to no more than 0.9 m (3 ft).

The following vegetation management is conducted annually:

- Cutting off tree limbs below a minimum of 1.8 to 2.4 m (6 to 8 ft) from the ground (depending on species)
- Cutting grasses to a maximum of 7.6 cm (3 in)
- Removing brush, except ornamental bushes, throughout the vegetation management area.

The purpose of these vegetation management efforts is to minimize the amount of available fuel and consequently the intensity of any future wildland fire. As a result, buildings at the site would more likely survive such a fire, and the lower-intensity fire conditions would allow regional fire fighters to suppress the flame front so that it would not proceed to the west of LBNL.

As a member of the Hills Emergency Forum, Berkeley Lab collaborates with other members (representatives from the neighboring cities of Berkeley and Oakland, EBMUD, and UC Berkeley), to improve vegetation management of the urban-wildland interface in adjacent areas.

1.9 WILDLIFE

Wildlife is abundant at Berkeley Lab because the site is adjacent to open spaces managed by the East Bay Regional Park District and UC. Wildlife that frequents the site is typical of wildlife in disturbed (e.g., previously grazed) areas that have a Mediterranean climate and are located in midlatitude California. More than 120 species of birds, mammals, reptiles, and amphibians are thought to exist on the site. The most abundant large mammal is the Columbian black-tailed deer.

1.9.1 Protected Habitats

Specific instances of habitat protected by various environmental laws exist on-site. These are:

- An area of LBNL on the south-facing slope of Blackberry Canyon has been identified as the type of locality where *Microcina Leei* (Lee's Micro-Blind Harvestman) occurs. This area consists of a dense canopy of oak-bay woodland with undisturbed sandstone rocks that are embedded in the soil and have moist conditions underneath.[7] *Microcina Leei* is listed as a "special animal" by the California Department of Fish and Game; however, it is not considered by the state to be a special status species. It was once proposed to be a federal "candidate" species under the Endangered Species Act, but it has not been so designated by the U.S. Fish and Wildlife Service (USFWS) and is no longer proposed for federal listing. This arachnid was first identified on the main site in the 1960s and again in the 1980s.

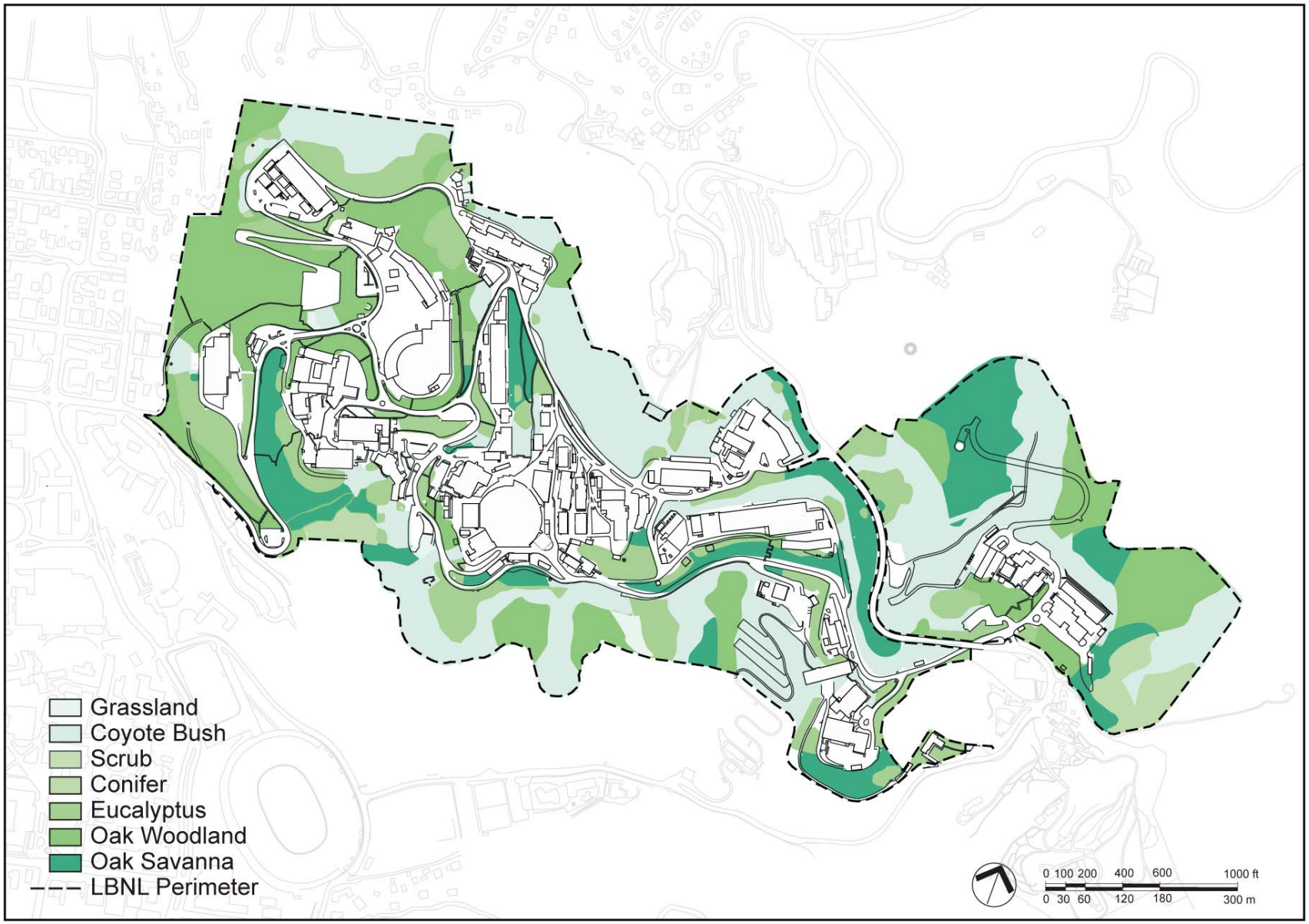


Figure 1-5 Vegetation Types

- An approximately five-acre area at the eastern boundary of LBNL is included in the USFWS' designated critical habitat for the Alameda whipsnake. This snake species *(Masticophis lateralis euryxanthus*) is listed as threatened under both federal and state law and is found in open-canopied shrub communities, including coastal scrub and chaparral, and adjacent habitats including oak woodland, savanna, and grassland areas. The entire LBNL site was surveyed for whipsnake suitability in 2006. Several undeveloped areas were identified as having high and moderate "potential" or suitability for habitation by the Alameda whipsnake.[8] In 2008, a three-month trapping survey was commissioned by LBNL and conducted by a licensed, permitted biologist. A single juvenile Alameda whipsnake was trapped in the undeveloped southeastern areas of the site.
- A number of drainages, including potentially "jurisdictional" drainages as defined under the Clean Water Act (CWA), exist on the main site; some are ephemeral or intermittent, and others, such as the North Fork of Strawberry Creek and Chicken Creek, are perennial. All jurisdictional waterways warrant special attention and protection under the CWA. These jurisdictional drainages, along with four freshwater seeps, appear to support riparian habitat.[9]

1.10 SOILS

The Moraga Formation, the Orinda Formation, and the Great Valley Group constitute the principal bedrock units underlying the site. These formations and their properties are described below:

1. The western and southern parts of Berkeley Lab are underlain by marine siltstones and shales of the Great Valley Group. The permeability of these rocks is relatively low, with the movement of groundwater primarily controlled by flow through open fractures rather than through pore spaces.
2. Non-marine sedimentary rocks of the Orinda Formation overlie the Great Valley Group and constitute the exposed bedrock over most of the developed area of the site. The Orinda Formation consists primarily of sandstones, mudstones, and conglomerates deposited in fluvial and alluvial environments. The Orinda Formation typically has lower values of hydraulic conductivity (measure of the rate at which water can move through a permeable medium) than the underlying Great Valley Group or overlying Moraga Formation, and therefore it impedes the horizontal and vertical flow of groundwater.
3. The Moraga Formation consists of volcanic rocks that underlie most of the higher elevations of Berkeley Lab, as well as much of the central developed area ("Old Town"), and constitutes the main water-bearing unit at Berkeley Lab. Although the permeability of the rock is low, groundwater flows readily through the numerous open fractures.

In addition to the three main units described above, the Claremont Formation and San Pablo Group underlie the easternmost area of the site. The Claremont Formation consists of marine chert and shale. The San Pablo Group consists of marine sandstones.

Surface materials at Berkeley Lab consist primarily of soil, colluvium (soil accumulated at the foot of a slope), and artificial fill. Soil derived primarily from the bedrock units has accumulated to typical thicknesses of one to several meters across much of the site. Cutting and filling of the hilly terrain has been necessary to provide suitable building sites, resulting in up to tens of meters of engineered cuts and fills at some locations.

1.11 GROUNDWATER

The groundwater elevation map of Berkeley Lab (Figure 1-6) shows that the water table approximately mirrors surface topography, such that groundwater flow in the western portion of Berkeley Lab is generally westwards, whereas flow in the remainder of the site is generally southwards. The depth to groundwater varies from approximately 0 to 30 m (98 ft) below the surface. In some areas, due to the subsurface geometry and physical characteristics of the different geologic units, groundwater flow directions vary from the general trends presented on the groundwater elevation map.

Groundwater is a concern at LBNL because of its potential effect on slope stability and on the underground movement of contaminants (see Section 4.4). Berkeley Lab has carried out a successful program of slope stabilization to reduce the risk of property damage caused by soil movement. This program includes construction of subsurface drain lines (hydraugers), vegetation cover, and soil retention structures.

1.12 SEISMICITY

The active Hayward Fault, a branch of the San Andreas Fault System, runs from northwest to southeast along the base of the hills at the western boundary of Berkeley Lab. The inactive Wildcat Fault traverses the site from north to south along the canyon at LBNL's eastern edge.

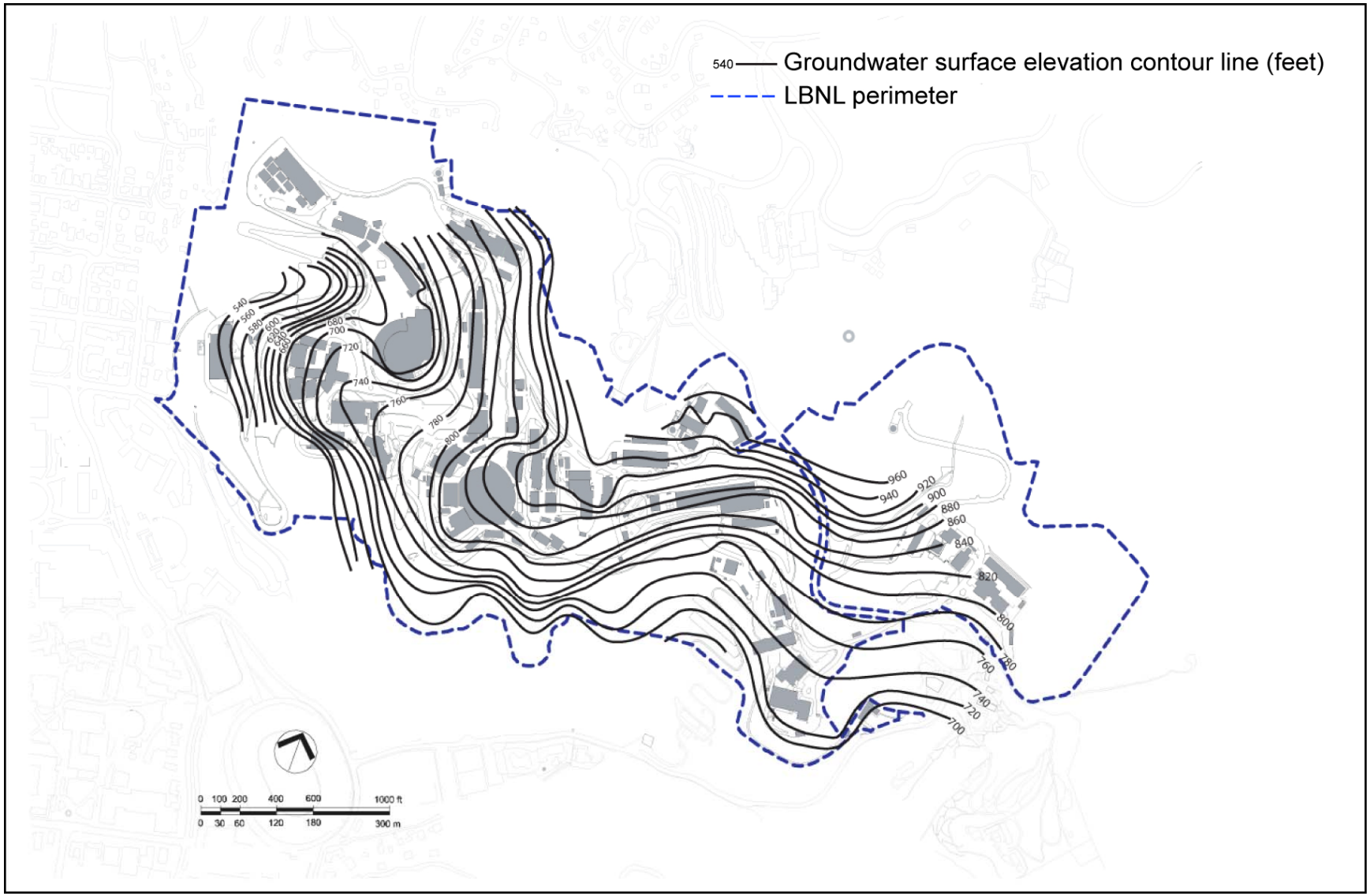


Figure 1-6 Groundwater Elevation Map

2 Environmental Management System

Berkeley Lab's Molecular Foundry Building has been awarded a U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) gold certification

2.1 SUMMARY

To continually improve environmental stewardship at Berkeley Lab, an environmental management system (EMS) provides a systematic approach to ensuring that environmental activities are both well-managed and provide business value by addressing regulatory compliance, program performance, and cost-effectiveness of activities.

LBNL's EMS begins with a broad-based environmental policy that commits Berkeley Lab to:

- Complying with applicable environmental, public health, and resource conservation laws and regulations
- Preventing pollution, minimizing waste, and conserving natural resources
- Correcting environmental hazards and cleaning up existing environmental problems
- Continually improving LBNL's environmental performance while maintaining operational capability
- Sustaining Berkeley Lab's overall mission.

LBNL's approach is built around a framework that includes all eighteen elements of the International Organization for Standardization's (ISO) International Standard 14001: 2004E *Environmental Management Systems--- Requirements with Guidance for Use,*[1] though it does not include ISO 14001 certification of the EMS. Certification is not required and does not provide sufficient business value to Berkeley Lab. However, an external audit of the EMS by an accredited auditor is required every three years, with the next audit due before June 2012.

Berkeley Lab has established what it refers to as the EMS Core Team, comprised of representatives from the Environment, Health, and Safety (EH&S), Facilities, and Procurement organizations, whose task is to complete the annual cycle of planning, implementing, evaluating, and improving processes that help LBNL carry out its environmental policy. In 2010, environmental aspects were identified and their impacts to the environment were evaluated. Environmental aspects are activities or services that may produce a change to the environment. Objectives and targets were developed or updated for each aspect that was determined to have a significant impact. Environmental Management Programs (EMPs) were prepared or updated to document actions necessary for reducing identified environmental impacts. A review of the EMS by senior management representatives for each of these organizations was conducted to provide feedback needed for continual improvement of the system.

2.2 BACKGROUND

In early 2007, EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*,[2] established the policy that federal agencies:

- Use EMS as the primary management approach for addressing environmental aspects of internal agency operations and activities, including environmental aspects of energy and transportation functions
- Establish agency objectives and targets to ensure implementation of this order
- Collect, analyze, and report information to measure performance with implementation of this Executive Order.

In the fall of 2009, EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance,*[3] expanded the policy by establishing GHG emission reductions as an overarching, integrating performance metric for all federal agencies, while leaving the goals and requirements of EO 13423 either in place or extending them to the end of FY20.

DOE's response to this pair of Executive Orders was two-fold. Initially, the agency approved DOE Order 450.1A, *Environmental Protection Program*, [4] and DOE Order 430.2B*, Departmental Energy, Renewable Energy and Transportation Management,*[5] as the primary means of achieving the provisions of EO 13423. DOE also updated Department of Energy Acquisition Regulation clauses to integrate recycled materials into the procurement and acquisition process. Specifically, EO 13423 requires that all federal agencies procure only U.S. EPA-listed items in various product categories that contain minimum amounts of recycled materials, unless a product is not available competitively within a reasonable time frame, does not meet appropriate performance standards, or is only available at an unreasonable price.

DOE Order 450.1A mandated the development of an EMS to implement sustainable environmental stewardship practices that:

- Protect the air, water, land, and other natural and cultural resources potentially impacted by facility operations
- Meet or exceed applicable environmental, public health, and resource protection laws and regulations
- Implement cost-effective business practices.

Berkeley Lab's EMS program is documented in the *Environmental Management System Plan.*[6] This plan was revised in early 2009 to address the new requirements of the then recently-approved DOE Order 450.1A. The EMS Plan and related documentation are found on LBNL's A-Z Index (http://www.lbl.gov/lab-index/) as *Environmental Management System* under "E".

DOE Order 430.2B mandated an energy management program that considers energy use and renewable energy, water, new and renovated buildings, and vehicle fleet activities. The Order incorporates the provisions of the *Energy Policy Act of 2005*[7] and the *Energy Independence and Security Act of 2007*.[8]

These DOE Orders and associated policies establish goals and sustainable stewardship practices that are protective of environmental, natural, and cultural resources, and take a life cycle approach that considers aspects such as:

- Acquisition and use of environmentally preferable products
- Electronics stewardship
- Energy conservation, energy efficiency, and renewable energy
- Pollution prevention, with emphasis on toxic and hazardous chemical and material reduction
- Procurement of efficient energy- and water-consuming materials and equipment
- Recycling and reuse
- Sustainable and high-performance building design
- Transportation and fleet management
- Water conservation.

In light of the signing of EO 13514, DOE needed to make changes to these two key Orders and associated policies. Change came in the from of two responses. The first response was to establish short-term measures for its contractors to meet GHG reporting requirements. These measures include development of an agency-level *Strategic Sustainability Performance Plan,*[9] which in turn requires contractor sites to develop a sustainability plan specific to its operations. Berkeley Lab finalized its initial *LBNL Site Sustainability Plan for FY 2011*[10] in December 2010. The plan sets performance goals in the following ten areas:

- Scope 1 & 2 GHG emissions reduction
- Scope 3 GHG emissions reduction
- Comprehensive GHG inventory
- High-performance sustainable design
- Regional and local planning
- Water use efficiency and management
- Pollution prevention
- Sustainable acquisition
- Electronic stewardship and data centers
- Site innovation.

This plan can be found on the "sustainLBL" website (http://www.lbl.gov/sustainlbl/) under the "What the Lab is Doing" tab.

A second response during the year by DOE to this new EO was to draft DOE Order 436.1, *Departmental Sustainability*, which consolidates Orders 430.2B and 450.1A. Approval of this new Order occurred in May 2011. This streamlined Order is less prescriptive than Order 450.1A, which previously set requirements for a site's EMS. The new requirements state that a site must develop and implement an EMS that is certified to or conforms with the ISO 14001:2004 standard and that site sustainability goals must be intergrated into the EMS. Because LBNL's EMS had previously conformed to these expectations, little change is expected in EMS implementation.

2.3 INTEGRATION OF EMS INTO ISMS

As mandated in DOE Order 450.1A, Berkeley Lab's EMS is integrated into the facility's existing Integrated Safety Management System (ISMS), which is described in the LBNL *Integrated Environment, Health and Safety Management Plan.*[11] To the extent that it is practical, existing ISMS processes are used to support environmental performance improvement. In other cases, new processes have been developed to support the EMS, and these are integrated with the ISMS. This approach allows LBNL to develop an EMS that is cost-effective and to focus resources on those activities with the highest potential environmental benefits.

Both the EMS and ISMS strive for continual improvement through a four-step plan-do-check-act cycle (see Figure 2-1). This cycle calls for defining the scope and purpose of the system, followed by a planning *(plan)* step to develop programs and procedures that must then be implemented *(do)*. Once implemented, programs must be assessed *(check)* and any problems corrected *(act)* to improve the effectiveness of the management system and to achieve improved environment, safety, and health performance. Table 2-1 shows the parallels between the four EMS top-level elements and ISMS core functions.

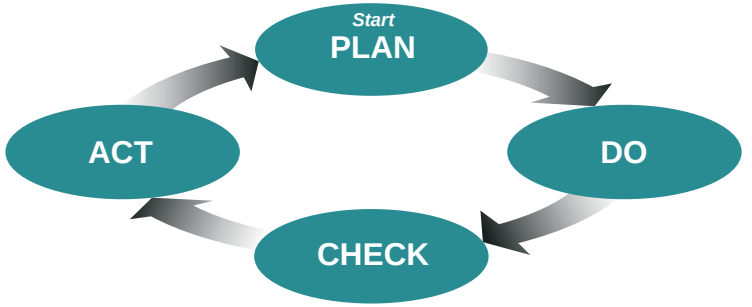


Figure 2-1 Cycle of Activities That Are Performed to Achieve EMS Goals

Table 2-1 EMS Top-Level Elements and Corresponding ISMS Core Functions

Environmental Management System		Integrated Safety Management System
PLAN	Planning	Define Work and Analyze Hazards
DO	Implementation and Operation	Develop & Implement Hazard Controls
CHECK	Checking and Corrective Action	Provide Feedback and Continuous Improvement
ACT	Management Review	Annual ISMS Review

2.4 IMPLEMENTATION

The following six areas form the fundamental building blocks for the implementation of LBNL's EMS program:

1. EMS Core Team
2. Environmental aspects
3. Environmental Management Programs (EMPs)
4. Training
5. Appraisals
6. Management review.

2.4.1 EMS Core Team

The Core Team is tasked with implementing and maintaining LBNL's EMS, with its primary objectives of managing environmental compliance matters and reducing environmental impacts over time. As in the previous year, the Core Team consisted of key representatives from the EH&S, Facilities, and Procurement organizations that were most knowledgeable of environmental management concerns. The team was led by a representative of the EH&S organization. A representative from Berkeley Lab's Public Affairs Office and one from the DOE Berkeley Site Office also attended the meetings to maintain an operational awareness of activities. The primary functions of the Core Team were the following:

- Identify environmental aspects
- Determine significant impacts
- Develop objectives and targets for the significant aspects
- Prepare and implement the EMPs
- Evaluate all EMPs annually
- Coordinate internal assessments of the EMS
- Review performance results
- Prepare recommendations to management to improve the EMS
- Coordinate the annual management review of the EMS
- Coordinate internal communications about the EMS.

2.4.2 Environmental Aspects

The Core Team reviewed the list of identified environmental aspects, whether adverse or beneficial. This review included a significance determination of each aspect's potential impact, using the following factors to shape its decisions:

- Cost
- Duration
- Effect on Berkeley Lab's mission
- Effect on public image
- Potential for improvement
- Potential legal exposure
- Probability of occurrence
- Severity of impacts.

Each aspect was given a numeric rating based on a three-tiered scoring system: high (3), medium (2), and low (1). Average scores and overall ratings for each aspect provided a starting point for the significance determination. Before a final significance determination was made, the Core Team members discussed and evaluated each activity and associated impacts.

2.4.3 Environmental Management Programs

EMPs are prepared for each significant aspect. An EMP for GHG emissions was added in 2010, increasing the number of activities determined to be significant to eight. Objectives and targets for reducing environmental impacts were re-evaluated for each of the following activities:

- Diesel particulate matter air emissions
- Energy use
- GHG emissions
- Petroleum use
- Procurement of goods and services
- Traffic congestion
- Solid waste diversion
- Water use.

Each EMP also established strategies and actions needed to achieve the objectives and targets; developed procedures, metrics, or techniques; and set up schedules. Each EMP is typically led by a member of the Core Team to coordinate actions and monitor the performance of each EMP, though a subject matter expert can also perform this role. Table 2-2 summarizes the EMPs active during 2010.

2.4.4 Training

Training is targeted and graded, commensurate with EMS roles and responsibilities. In order of increasing rigor, the following four levels of training were maintained during the year:

- General EMS awareness
- Comprehensive EMS awareness

Table 2-2 Environmental Management Programs for 2010

Aspect/Activity	Objective(s)	Target(s)
Diesel Particulate Matter (DPM) Air Emissions	Implement alternatives for reducing DPM emissions from mobile and stationary sources	Reduce DPM emissions 5% per year relative to a 2005 baseline year.
Energy Use	Implement sustainable practices to achieve energy efficiency	Reduce energy use intensity 30% by the end of FY15, including a minimum cumulative reduction of 15% by the end of FY10 relative to the FY03 baseline year.
GHG Emissions	Reduce GHG emissions from broad range of activities	Reduce Scopes 1 and 2 GHG emissions 28% and selected Scope 3 emissions 13% by end of FY20, relative to FY08 baseline.
Petroleum Use	Reduce vehicle fleet petroleum consumption	Reduce fleet's annual petroleum consumption by 2% annually using FY05 fleet fuel consumption as a baseline.
Procurement of Goods and Services	Increase procurement of Energy Star Products and Recycled Content Products	Increase procurements of Recycled Content Products 5% each year using FY05 as the baseline year.
Solid Waste Generation (Diversion)	Increase diversion of solid waste	Increase solid waste diversion by 5% by the end of FY10 relative to the previous fiscal year.
Traffic Congestion	Reduce LBNL commute traffic through Transportation Demand Management	Optimize parking; facilitate/promote non-single-occupant vehicle commuting; enhance shuttle bus operations; plan for off-site construction truck trips within the limits of the Long Range Development Plan's Environmental Impact Report.
Water Use	Implement sustainable practices to reduce water use	Reduce water consumption intensity 16% by the end of FY15, maintaining savings of at least 17% by end of FY10, relative to the FY07 baseline year.

- EMS implementation
- EMS auditor.

General EMS awareness training lasts approximately one hour and is often tailored to the individual, such as senior management or staff involved in implementing the EMS. General EMS awareness and its integration with safety and ISMS principles is also included in course EHS 0010, *Introduction to EH&S at LBNL*, which is a requirement for all newcomers to LBNL. In contrast, EMS implementation and auditor training are multi-day courses taught by professional organizations and are generally reserved for the EMS professional. In between these levels is comprehensive EMS awareness training, which targets the EMS core team members to assist them in carrying out the responsibilities of their role in the EMS.

2.4.5 Appraisals

The approval of DOE Order 450.1A[12] in June 2008 meant that a site's environmental management system needed to be "fully implemented" by June 30, 2009. Fully implemented meant having the management system subjected to a formal audit by a qualified external party, addressing any findings, and having DOE then recognize that the system conformed to requirements.

The successful completion of the external audit and DOE's concurrence that the management system was fully implemented was reported in last year's *Site Environmental Report*.[13] The next external audit is due by June 2012. Approval of DOE Order 436.1 did not change the "fully implemented" criteria or schedule.

There was an internal review of the EMS in September 2010 to satisfy periodic program assessment requirements of the Technical Assurance Program that is administered by the Lab's Office of Contactor Assurance. There were no corrective actions identified by this assessment.

2.4.6 Management Review

The status of the EMS is reviewed annually by Berkeley Lab's senior management. Based on this review, senior management may determine that changes are needed in the EMS program. Factors such as improved assessment methodologies or major changes to the facility's mission, products, and processes are considered in determining the need for changes. The review in 2010 included senior management representatives from EH&S and the Office of Chief Financial Officer divisions. Topics of discussion included a review of the recommendations from the previous year, a summary of events from the past year, including activities and accomplishments affecting EMP performance, and a look ahead to the projected emphasis of the management system for the upcoming year.

Highlights from the review included:

- Preparation of the GHG inventory to be used as the reference baseline for tracking GHG reductions required by EO 13514.
- Expansion of the waste diversion program to additional buildings around the site.
- Partnership between LBNL and Dominican University of California's GreenMBA program. Students in this program prepared outreach materials that summarized accomplishments of the environmental management programs, such as energy savings and reduced risk from air emissions.
- Creation of the "sustainLBL" website as a collaborative effort between EH&S, Facilities, and Procurement to more easily distribute information on environmental management system and sustainability issues to the LBNL community.

The sole recommendation coming out of the management review was to hold the review earlier in the fiscal year. This would provide senior management greater flexibility to act on an activity within the same fiscal year of the review.

A second reason is that the fiscal year-end close is one of the most hectic times of the year.

2.4.7 Environmental Management Performance

As part of its annual rating of the effectiveness of LBNL's performance, DOE evaluates Berkeley Lab's progress in completing projects designed to minimize waste, reduce emissions, and/or conserve resources.

In FY10, Berkeley Lab was given a B+ rating for its performance of environmental measures. This included achieving the highest or "green" rating within DOE's eight EMS scorecard metrics for:

1. Environmental aspects
2. Sustainable practices (e.g., use of renewable energy, electronics stewardship, sustainable acquisition)
3. Objectives, targets, and programs
4. Environmental training
5. Operational controls
6. Contracts and concessionaire agreements
7. Evaluation of compliance with regulatory requirements
8. Management review.

In addition, LBNL completed a variety of environmental improvement projects. A partial list of projects includes:

- Completed phase III of the nanomaterials monitoring pilot project
- Purchased one new diesel generator, replaced one old diesel generator, and installed a diesel particulate filter on an existing generator
- Modernized the bus fleet by an average of almost seven years as a condition of contracting out the shuttle bus service
- Expanded the fleet of GEMs vehicles to 46 by acquiring 29 in FY10
- Upgraded the transformers at the Grizzly Peak Substation with more efficient units that use between 5% and 10% less electricity
- Implemented a new waste diversion program at Building 90 that includes collection of compostable materials
- Used a mini-grant award from StopWaste.org to acquire additional bins for composting and recycling materials
- Participated in BAAQMD's and 511.org's *Great Race for Clean Air*; promoted participation with TABL announ*cements*.

*For further inf*ormation on performance measures and LBNL's ratings for this year, please see Section 3.5, Performance Measures.

3 Environmental Program Summary

Lawn area between Building 25 and Building 4

3.1 INTRODUCTION

This chapter provides an overview of Berkeley Lab's environmental protection program, reviews the status of various compliance programs and activities, and presents environmental performance measures in key areas for 2010.

To continually improve environmental performance, LBNL implements a systematic approach to achieving environmental performance goals at the site via an EMS, as required by EO 13423 and EO 13514.[1] The EMS is integrated with Berkeley Lab's existing ISMS per DOE Order 450.1A.[2] For details on the EMS, see Chapter 2.

3.2 OVERVIEW OF ENVIRONMENTAL RESPONSIBILITIES

To provide the highest degree of protection for the public and the environment, Berkeley Lab applies the principles of integrated safety management to LBNL's activities. This involves the performance of five core functions.[3]

- **Work Planning.** Clear definition of the tasks that are to be accomplished as part of any given activity.
- **Hazard and Risk Analysis.** Analysis and determination of the hazards and risks associated with any activity; in particular, risks to employees, the public, and the environment.
- **Establishment of Controls.** Controls that are sufficient to reduce the risks associated with any activity to acceptable levels. Acceptable levels are determined by responsible line management, but are always in conformance with all applicable laws and the set of ES&H Standards (formerly Work Smart Standards).
- **Work Performance.** Conduct of the tasks to accomplish the activity in accordance with the established controls.
- **Feedback and Improvement.** Implementation of a continuous improvement cycle for the activity, including incorporation of employee suggestions, lessons learned, and employee and community outreach, as appropriate.

The EH&S Division at Berkeley Lab is responsible for administering environmental protection and compliance programs at the site. The organizational structure of EH&S as of the end of 2010 is shown in Figure 3-1.

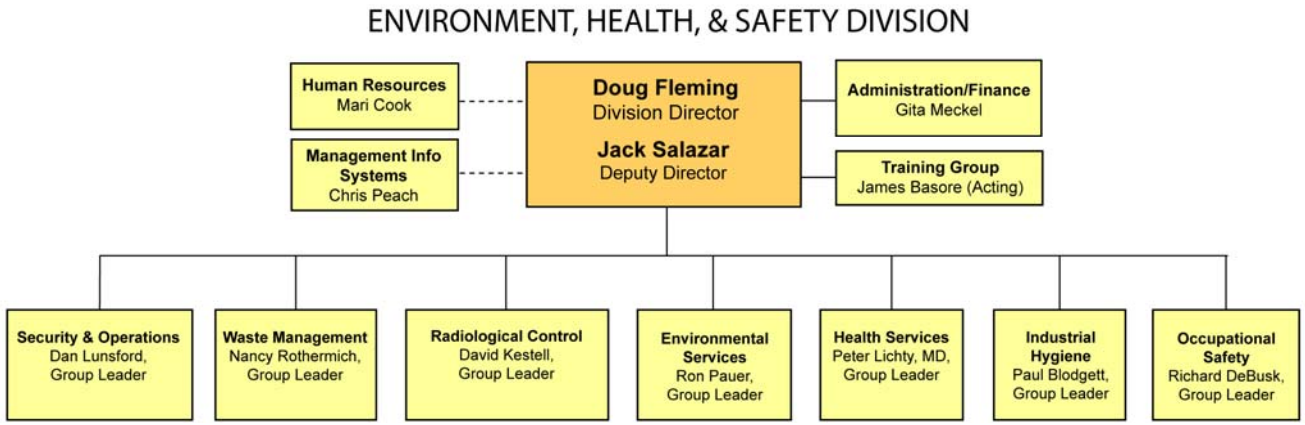


Figure 3-1 Berkeley Lab Environment, Health, and Safety Division Organization in 2010

Environmental protection programs are largely administered by two EH&S organizations:

- The **Environmental Services Group (ESG)** oversees site-wide air and water quality compliance activities, provides technical assistance to LBNL staff, and manages environmental remediation activities including sampling. These programs include environmental monitoring activities that provide information critical to demonstrating compliance and making programmatic decisions. (For monitoring result summaries, see Chapter 4.)
- The **Waste Management Group (WMG)** manages hazardous, medical, radioactive, mixed (hazardous and radioactive), and universal waste generated at Berkeley Lab.

3.3 PROGRAM SUMMARY

The following sections discuss environmental permits, audits, inspections, and DOE-reportable environmental incidents at Berkeley Lab for 2010.

3.3.1 Summary of Environmental Permits

Some Berkeley Lab activities require operating permits from environmental regulatory agencies. Table 3-1 summarizes, by area of environmental activity, the 20 active permits held by LBNL at the end of the year.

3.3.2 Summary of Audits and Inspections

The agencies that regulate the environmental programs at Berkeley Lab periodically conduct inspections. Table 3-2 lists the inspections by these agencies that occurred at Berkeley Lab during 2010. Table 3-2 includes self-monitoring inspections conducted by Berkeley Lab that are required by EBMUD wastewater discharge permits because these activities expose LBNL to potential regulatory violations. A total of 24 inspections were conducted during 2010. Eight violation notices resulted from these inspections.

Table 3-1 Environmental Permits Held by Berkeley Lab at the End of 2010

Type of Permit	Issuing Agency	Description	Number of Permits	Section for More Information
Air quality	BAAQMD[a]	Various activities with emissions to air	3	3.4.1.2
Hazardous waste	DTSC[b]	Hazardous Waste Handling Facility operations	1	3.4.6.1
	COB[c]	Fixed treatment units (5)	1	3.4.6.1
Underground storage tanks	COB[c]	Underground storage tanks containing petroleum products	6	3.4.6.4
Wastewater	EBMUD[d]	Sitewide and operation-specific wastewater discharges to sanitary sewer	4	3.4.9.1
	CCCSD[e]	Wastewater discharges to sanitary sewer at Joint Genome Institute in Walnut Creek	1	3.4.9.1
Stormwater	SWRCB[f]	Sitewide & construction stormwater discharges	4	3.4.9.2

[a] Bay Area Air Quality Management District
[b] Department of Toxic Substances Control
[c] City of Berkeley
[d] East Bay Municipal Utility District
[e] Central Contra Costa Sanitary District
[f] State Water Resources Control Board

One violation, from Alameda County, concerned discrepancies within the Hazardous Materials Business Plan for the Joint BioEnergy Institute (JBEI). Another violation, from DTSC, was based on a citizen complaint and is being contested by LBNL. The majority of the alleged violations stem from a June 23rd U.S. EPA and City of Berkeley (COB) joint one-day inspection of various hazardous materials/hazardous waste activities. The inspection resulted in six

Table 3-2 Environmental Audits, Inspections, and Appraisals in 2010

Organization	Inspection Title	Start Date	Violations
Alameda County	Hazardous Materials Management	September 7	1
BAAQMD	Gasoline Dispensing	February 24	0
COB	Tiered permit units and hazardous waste generator areas	June 17/18	0
	Underground storage tanks	November 9	0
U.S. EPA (with COB)	Hazardous materials/hazardous waste	June 23	0[a] (6[b])
CCCHS[c]	Hazardous waste	August 31	0[d]
DTSC	Response to citizen complaint	October 7	1[e]
EBMUD	Wastewater monitoring inspection at Hearst and Strawberry outfalls	February 19 August 26	0 0
	Wastewater monitoring inspection at B77 Fixed Treatment Unit	April 16 February 26 December 10	0 0 0
	Wastewater monitoring inspection at groundwater treatment units	February 25	0
LBNL	EBMUD self-monitoring inspections at Hearst and Strawberry outfalls	March 23 September 15	0 0
	EBMUD self-monitoring inspections at B77 Fixed Treatment Unit	February 17 May 11 December 16	0 0 0
	EBMUD self-monitoring inspections at B25 Fixed Treatment Unit	February 19 May 13	0 0
	EBMUD self-monitoring inspections at groundwater treatment units	February 9 May 12 August 12 October 13	0 0 0 0

[a] No report yet submitted to LBNL from the U.S. EPA for this inspection.
[b] Includes one contested violation and two violations corrected at the time of inspection.
[c] Contra Costa County Health Services
[d] Initial inspection identified a violation that was subsequently dismissed.
[e] Contested

violations noted by the COB, and required completion of a DOE Occurrence Report. See Section 3.3.3 below for further details of all violations.

3.3.3 Summary of DOE-Reportable Environmental Incidents

In 2010, seven environmental incidents resulted in submittal of Occurrence Reports under the DOE occurrence-reporting program used to track incidents across the DOE complex.[4] Of these, three (EHS-10-3, OPER-10-18, and PBD-10-13) were the result of alleged violations observed during a regulatory inspection in 2010, and one of which was based on a citizen complaint. The other four were results of LBNL-observed incidents requiring regulatory notification. Brief descriptions of these seven incidents are given below, along with one (EHS-10-2), that required reporting in 2010 but was the result of an inspection conducted in 2009.

EHS-10-1: On 4/22/2010, a drained electrical transformer was transported off the LBNL site by a subcontractor driver who did not possess evidence of hazardous materials endorsement for his driver's license. LBNL has contacted DTSC to clarify the regulatory status of the drained transformers.

EHS-10-2: On 04/28/2010, LBNL received a U.S. EPA inspection report for an inspection conducted in May of 2009. This report cited two items as "potential RCRA violations." There were no hazard exposure or injuries involved. This was presented in the 2009 SER.

EHS-10-3: On 06/24/2010, LBNL received a Hazardous Materials Inspection and Violation Report regarding the COB Certified Unified Program Agency (CUPA) inspection conducted on June 23, 2010 in conjunction with an inspection conducted by the U.S. EPA. The COB report cited six violations. Of these, LBNL contested one, and two were corrected at the time of the inspection. The other three cited violations were administrative in nature and are described below:

1. Failure to use a registered transporter for a transformer with <2 parts per million PCBs
2. No record of a weekly inspection for a WAA
3. A lead gel cell battery was not properly contained or labeled as universal waste.

To date, no report from the U.S. EPA has been received for their parallel inspection. No injuries or fines from an outside agency resulted from either inspection.

OPER-10-12: On 08/03/2010, about 200 gallons of cooling tower water were released into a nearby storm drain. The cooling tower water consisted of normal domestic drinking water with additional chlorine-based chemical to kill micro-organisms. This release was reported by LBNL to the California Emergency Management Agency, Regional Water Quality Control Board (RWQCB), and the COB.

OPER-10-13: On 8/25/2010, a domestic water discharge of about 16 gpm was found going into the storm drain behind Building 43. The water was being used to cool two compressors. Chlorine neutralization tablets were laid out. However, this appeared inadequate for the flow, based on reports from UC Berkeley EH&S personnel, who found trace levels of chlorine/chloramine and abnormal levels of sediment in Strawberry Creek. Record high heat in the Bay Area had caused the compressors to switch to emergency domestic water cooling and discharge. LBNL reported the domestic water release to the California Emergency Management Agency, the RWQCB, and the COB. By the next morning, the treated water system had been stabilized. The compressors were then returned to normal operations with a closed-loop treated water cooling system.

OPER-10-16: On 09/24/2010, water was discovered leaking from underneath a roadway leading to B85, and had flowed into a storm drain. Once the source of the leak had been identified, the pipe which supplies water to B85 was shut off. Because of the high sediment content and potential chlorine/chloramines contamination, the water release was reported to four external regulatory agencies: the California Emergency Management Agency, the RWQCB, the COB, and the California Department of Fish and Game.

OPER-10-18: On 10/07/2010, as a result of a citizen complaint, LBNL received a Summary of Violations from the DTSC, California Environmental Protection Agency. The Summary cited a violation of 40 Code of Federal Regulations (CFR) section 261.2(f). It indicated that the violation occurred as a result of LBNL relinquishing used shielding material (lead bricks) from the Building 51 Bevatron demolition without appropriate information demonstrating how or if it would be recycled. LBNL is contesting the violation.

PBD-10-3: On 09/07/2010, the JBEI received a Notice to Comply from the Alameda County Department of Environmental Health. An unannounced inspection of the JBEI Emeryville site on that date included a review of the facility's Hazardous Materials Business Plan (HMBP). The Notice to Comply cited discrepancies in some information in the HMBP, and noted that the associated site map needs to be updated to reflect the correct information. JBEI has undertaken corrective actions to demonstrate compliance to the agency, which has determined that no follow-up inspection is necessary.

3.4 COMPLIANCE PROGRAMS

The following sections provide individual summaries of the environmental compliance programs at Berkeley Lab.

3.4.1 Clean Air Act

The Clean Air Act[5] is the key statutory reference for federal, state, and local air pollution control programs. It classifies air pollutants into these main categories:

- Criteria air pollutants (e.g., carbon monoxide, nitrogen oxides, particulate matter)
- Hazardous air pollutants (e.g., radionuclides, air toxics)
- Ozone-depleting substances (e.g., chlorofluorocarbons or Freons).

The State of California's air pollution control program[6] gives it additional powers to regulate sources of air emissions.

Berkeley Lab divides its air quality protection and compliance activities into two categories: radiological (see Section 3.4.1.1) and nonradiological (see Section 3.4.1.2).

3.4.1.1 Radiological

Radionuclides released to the atmosphere from LBNL research activities must adhere to *National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities* regulations,[7] as well as sections of DOE Order 5400.5, *Radiation Protection of the Public and the Environment.*[8] U.S. EPA administers the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations (under 40 CFR Part 61), which limit the dose to the public from LBNL's airborne radionuclide emissions to 0.10 mSv/yr (10 mrem/yr). Berkeley Lab documents its NESHAP review and compliance in its annual *Radionuclide Air Emission Report.*[9]

3.4.1.2 Nonradiological

The BAAQMD implements federal and state air quality requirements for most air emission activities that are not addressed by NESHAP regulations.

At the end of 2010, Berkeley Lab held 3 operating permits issued by the BAAQMD covering 32 emission sources.[10] Two of these operating permits cover activities located at the LBNL site, for 28 and 2 emission sources, respectively. The other operating permit covers two emission sources at the Production Genomics Facility in Walnut Creek, California. This facility is part of the Joint Genome Institute (JGI), a collaboration involving Berkeley Lab, Lawrence Livermore National Laboratory, and Los Alamos National Laboratory research groups.

For the LBNL site, one emission source was closed and permanently removed this year, and no longer requires BAAQMD permitting. This closed source, a former soil vapor extraction system located near Building 7E (BAAQMD Source 189), was originally installed and permitted in 1998. One new emergency generator (BAAQMD Source 221) was installed and permitted at Building 37 in support of the Advanced Light Source's new User Support Building (Building 15). One diesel particulate filter was added to the emergency generator at Building 72. One existing emergency generator (BAAQMD Source 217) was replaced with a new clean diesel emergency generator at Building 74. The new BAAQMD Source number for this emergency generator is 222, replacing BAAQMD Source 217. No other new emission sources were permitted during the year at the Walnut Creek site.

For a list of active operating permits, see Table 3-3. Operating permits are renewed annually, at which time the BAAQMD also requests information required by the state's *Air Toxics "Hot Spots" Information and Assessment Act of 1987.*[11] While submitting annual update information for the BAAQMD operating permits, Berkeley Lab also submits its site-wide adhesive and sealant usage under the BAAQMD-approved alternative recordkeeping agreement

Table 3-3 Air Emission Sources Permitted by BAAQMD at the End of 2010

BAAQMD Category	Description (# of emission sources)	Building	Abatement Type
Combustion equipment	Standby emergency generators (4)	64, 66, 67, 70	Catalytic converter
	Standby emergency generators (3)	48, 50A, 72	Diesel particulate filter
	Standby emergency generators (17)	Various[a]	None
	Standby emergency generators (2)	JGI [b]	None
Gasoline dispensing	Fueling stations (2): unleaded and E85	76	Vapor recovery
Surface coating and painting	Paint spray booth (1	77	Dry filter
Surface preparation and cleaning	Sandblast booth (1)	77	Baghouse
	Wipe-cleaning (1)	Sitewide	None
Miscellaneous	Soil-vapor extraction systems (1)	58	Activated carbon

[a] Individual generators located at Buildings 2, 37 (2), 50B, 55, 62, 64, 70A, 74, 75, 77, 84B, and 85, plus four portable units

[b] Two generators located at the Joint Genome Institute in Walnut Creek, California

for compliance with Regulation 8, Rule 51: Adhesive and Sealant Products. Activities covered by permits are subject to periodic inspection. BAAQMD performed one on-site inspection this year at the gasoline dispensing facility. No findings or violations were noted, and the facility was found to be in compliance with all BAAQMD regulations.

Berkeley Lab continues to operate its E85-fuel dispensing facility at the Building 76 Motor Pool. E85 fuel is a mixture of 85% ethanol and 15% unleaded gasoline. Federal mandates require that Berkeley Lab both increase the percentage of vehicles using alternative fuels and decrease the amount of petroleum used according to a given time schedule.

Berkeley Lab facilities do not emit GHG in quantities exceeding either U.S. EPA or California reporting levels. However, EO 13514 requires Berkeley Lab to report its GHG emissions through DOE, which Berkeley Lab did in FY10 and will continue to do annually.

3.4.2 Comprehensive Environmental Response, Compensation, and Liability Act

The *Comprehensive Environmental Response, Compensation, and Liability Act* of 1980 (CERCLA),[12] popularly called "Superfund," authorizes the U.S. EPA to manage the cleanup of abandoned or uncontrolled hazardous waste sites. According to CERCLA, the National Response Center must receive immediate notification of releases of hazardous substances in quantities that are equal to or greater than the Reportable Quantities of designated chemicals in the CERCLA regulation. In 2010, no releases occurred that were reportable under CERCLA, and Berkeley Lab conducted no remedial activities covered by CERCLA.

3.4.3 Emergency Planning and Community Right-to-Know Act

The *Emergency Planning and Community Right-to-Know Act* (EPCRA)[13] was passed in 1986 as Title III of the *Superfund Amendments and Reauthorization Act* (SARA). The Act establishes requirements for emergency planning, notification, and reporting. In California, the requirements of SARA Title III are incorporated into the state's *Hazardous Materials Release Response Plans and Inventory Law*.[14] Berkeley Lab activities addressing these requirements are summarized in Sections 3.4.3.1 through 3.4.3.3.

3.4.3.1 Toxic Release Inventory

Under EO 13148,[15] DOE is required to evaluate its facilities against the Toxic Release Inventory (TRI) reporting requirements of EPCRA without regard to Standard Industrial Classification (SIC) code. TRI reporting consists of two steps. First, Berkeley Lab determines chemical usage, and then, if threshold quantities are exceeded, DOE submits U.S. EPA Form R.

Berkeley Lab determined that no chemical usage in 2010 exceeded the TRI criterion of 4,536 kilograms (kg) (10,000 pounds [lb]) for a listed substance and that DOE was therefore not required to submit a Form R on behalf of LBNL. Table 3-4 shows the highest usage quantities of the chemicals from LBNL's assessments over the past several years.

Table 3-4 Trends in Highest Quantities of EPCRA Toxic Release Inventory Reporting

Substance	Quantity (in kilograms[a])						
	2004	2005	2006	2007	2008	2009	2010
Chlorofluorocarbons	72	126	123	518	95	78	68
Methanol	206	129	165	63	69	82	67
Nitric acid	511	466	403	90	303	279	269
1,1,1-trichloroethane	<1	0	<1	<1	<1	<1	<1

[a] 1 kg = 2.2 lb

3.4.3.2 Hazardous Materials Business Plan

The COB is the local administering agency for certain hazardous materials regulations that fall under state law. Berkeley Lab voluntarily submits an annual *Hazardous Materials Business Plan* (HMBP)[16] to the COB, although, as a federal facility, it is exempt from such regulations.

The 2010 HMBP included a list of all hazardous materials present in amounts exceeding the state's aggregate threshold quantities (i.e., 208 liters [L] [55 gallons (gal)] for liquids, 227 kg [500 lb] for solids, and 5.7 cubic meters [m^3] [200 cubic feet] for compressed gases) per building. The plan included a site map as well as summaries of emergency plans, procedures, and training. In addition, the HMBP included permit renewals for fixed treatment units (FTUs). For 2010, an HMBP was also filed with Alameda County pertaining to the research activities associated with the JBEI, located in Emeryville. The level of information submitted for this HMBP was consistent with that provided in the HMBP for the main site.

3.4.3.3 Risk Management and Prevention Plan

The COB requires a Risk Management and Prevention Plan for operations using acutely hazardous materials above certain thresholds established in 40 CFR Part 355. Berkeley Lab does not have any operations that contain acutely hazardous materials above the threshold quantities, and therefore no such plan is required for the site.

3.4.4 Federal Insecticide, Fungicide, and Rodenticide Act

Passed by Congress in 1972, the *Federal Insecticide, Fungicide, and Rodenticide Act*[17] restricts the registration, sale, use, and disposal of pesticides. Pesticides, including insecticides and herbicides, are applied at the site by licensed contractors. LBNL chips and mulches green waste to minimize the use of herbicides and to reduce solid waste. The mulch generated is used on-site for weed screening and landscaping, and to control erosion. LBNL staff may occasionally apply very small amounts of herbicides (for example, Roundup) to weeds, such as poison oak, that are otherwise difficult to control.

3.4.5 Toxic Substances Control Act

The objective of the *Toxic Substances Control Act* (TSCA)[18] is to minimize the exposure of humans and the environment to chemicals found in manufacturing, processing, commercial distribution, and disposal activities. TSCA establishes a protocol for evaluating chemicals before they are introduced into the marketplace and controlling their use once they are

approved for manufacturing. TSCA regulations are administered by the U.S. EPA.

Polychlorinated biphenyls (PCBs) are the principal substances at Berkeley Lab currently affected by the TSCA regulations. Since the TSCA program began, LBNL has removed all TSCA-regulated PCB transformers (PCB concentrations greater than 500 parts per million). The remaining equipment containing TSCA-regulated PCBs consists of four large low-voltage capacitors. These capacitors remain in use, containing an estimated 170 kg (375 lb) of regulated PCB dielectric fluid. Because the small amount of PCBs is below reporting thresholds, the site is not required to prepare an annual PCB report for the U.S. EPA.

3.4.6 Resource Conservation and Recovery Act

The *Resource Conservation and Recovery Act* (RCRA)[19] is an amendment to the earlier Solid Waste Disposal Act (SWDA) of 1965, and was enacted to create a management system that would regulate waste from "cradle to grave." In 1984, the Hazardous and Solid Wastes Amendments were added to the SWDA to reduce or eliminate the generation and disposal of hazardous wastes, and between 1984 and 1988, RCRA was expanded further to regulate underground storage tanks (USTs) and other leaking waste-storage facilities. The primary goals of RCRA are:

- To protect the public from harm caused by waste disposal
- To encourage reuse, reduction, and recycling
- To clean up spilled or improperly stored wastes.

RCRA applies in three primary areas of Berkeley Lab operations: treatment and storage of hazardous waste (including the hazardous portion of mixed waste), cleanup of historical releases of chemicals to the environment, and operation of USTs.

3.4.6.1 Hazardous Waste

In California, the DTSC administers the RCRA hazardous waste program. The California program incorporates the provisions of both the federal and state hazardous waste laws.[20] The state program includes both permitting and enforcement elements.

The state's permitting program for hazardous waste treatment and storage facilities consists of five tiers, shown in the following list in decreasing order of regulatory complexity:

- Full permit
- Standardized permit
- Permit-by-rule
- Conditional authorization
- Conditional exemption.

The state oversees the "full permit" and the "standardized permit" tiers; at Berkeley Lab, the other three tiers have been delegated to the COB for oversight under California's CUPA program.

Berkeley Lab's Hazardous Waste Handling Facility (HWHF) operates under the "full permit" tier of the state's program. A full permit is also known as a RCRA Part B permit. The current permit for the HWHF[21] became effective on July 31, 2007. The permit authorizes storage and treatment of certain hazardous and mixed wastes at the HWHF. Authorized treatment includes neutralization, consolidation, solidification, filtration, precipitation, phase separation, ultraviolet (UV) ozone and UV peroxide oxidation, reduction of Class 1–3 oxidizers, air or steam stripping, absorption, adsorption, ion exchange, metallic exchange, evaporation, distillation electrowinning, rinsing of empty containers, mixing of multicomponent resins, and desensitization. Of these, only neutralization of mixed waste was performed in 2010.

Berkeley Lab has an additional hazardous waste permit to operate six fixed treatment units (FTUs).[22] The type and location of each unit are listed in Table 3-5. These treatment units operate independently of the HWHF. Three of these FTUs are authorized to operate under the "conditional authorization" tier and the remaining three are authorized to operate under the "permit-by-rule" tier. The type of treatment determines which tier applies. The COB requests renewal of this permit each year. The FTU permit was renewed in April 2010. The Building 25 FTU (FTU 002) was closed and removed by October 1, 2010.

Berkeley Lab's waste management program also sends hazardous, universal, mixed, medical, and radioactive waste generated at LBNL off-site for disposal. Disposal of medical waste is managed in accordance with the state's *Medical Waste Management Act*[23] (see Section 3.4.6.2). Low-level radioactive waste is managed in accordance with DOE Orders. Mixed waste is managed in accordance with the *Mixed Waste Site Treatment Plan*[24] and is subject to both California Environmental Protection Agency regulations and DOE Orders.

Waste management permits and regulations require Berkeley Lab to prepare several reports for the year:

- *The Biennial Hazardous Waste Report*,[25] prepared for EPA, contains facility treatment and disposal information for all hazardous waste activities (including the hazardous waste portion of mixed waste) at LBNL during the reporting year.
- *The Annual Report of Waste Generation and Pollution Prevention Progress*,[26] prepared for DOE, contains information on waste generated during the reporting year.

In October 1995, DTSC approved LBNL's *Mixed Waste Site Treatment Plan*,[27] which documents the procedures and conditions used by Berkeley Lab to manage its mixed-waste streams. LBNL prepares an annual report that quantifies the amount of mixed waste in storage at the end of the reporting period. This update is prepared in October for the previous fiscal year, October 1 to September 30.

3.4.6.2 Medical Waste

Although not regulated under RCRA, medical waste is included here as hazardous waste which is also administered under the Berkeley Lab Waste Management Program.

In California, the state's *Medical Waste Management Act*[28] contains requirements designed to ensure the proper storage, treatment, and disposal of medical

Table 3-5 Fixed Treatment Units Subject to the State's Tiered Permitting Program

FTU	Building	Treatment Description	Permit Tier	Wastewater Volume Treated (Gallons/Year)
002	25	Metals precipitation and acid neutralization	Permit-by-rule	4,272
003	76	Oil/water separation	Conditional authorization	9,684
004	70A/70F	Acid neutralization	Conditional authorization	807,160
005	2	Acid neutralization	Conditional authorization	96,510
006	77	Metals precipitation and acid neutralization	Permit-by-rule	19,366
007	67	Acid and alkaline neutralization	Permit-by-rule	16,007

waste. The state program is administered by the California Department of Public Health (CDPH).

Medical waste includes biohazardous waste (e.g., blood and blood-contaminated materials) and "sharps" waste (e.g., needles) produced in the following activities:

- Research relevant to the diagnosis, treatment, or immunization of human beings or animals
- Diagnosis, treatment, or immunization of humans or animals
- Production of biological products used in medicine.

LBNL generates medical waste and biohazardous waste at about 150 different locations distributed over 15 buildings, including three off-site buildings. Berkeley Lab does not treat any solid medical or biohazardous waste; it is treated at off-site vendor facilities, using either incineration or steam sterilization.

Berkeley Lab produced 19,136 kg (42,187 lb) of solid medical and biohazardous waste in 2010. Under the state's program, LBNL is considered a large-quantity generator because it generates more than 91 kg (200 lb) of medical waste each month. All large-quantity generators must register with the CDPH and are subject to periodic inspections. CDPH did not inspect the Berkeley Lab in 2010.

3.4.6.3 Corrective Action Program

Berkeley Lab is currently in the final phase of the RCRA CAP, the Corrective Measures Implementation (CMI) phase. The purpose of the CMI phase is to design, construct, operate, maintain, and monitor the corrective measures (cleanup activities) recommended by LBNL in the *Corrective Measures Study Report*. [29] These measures were approved by the DTSC,[30] and are intended to reduce or eliminate the potentially adverse effects to human health or the environment caused by past releases of chemicals to soil and groundwater at Berkeley Lab.

The corrective measures required for contaminated soil have been completed. The corrective measures required for nine areas of groundwater contamination have been constructed and are operational. These consist of *in situ* soil flushing, groundwater capture and treatment, subsurface injection of Hydrogen Release Compound® (HRC), and monitored natural attenuation (MNA).

In situ soil flushing is the injection of clean water into, and concurrent extraction of contaminated groundwater from, the subsurface. Groundwater capture involves extraction of groundwater in the downgradient portions of groundwater contaminant plumes to minimize further migration of the plumes. The extracted water from soil flushing and groundwater capture is treated on-site using granular activated carbon (GAC) treatment systems before being either reinjected for flushing or discharged to the sanitary sewer system. HRC is an environmentally safe polylactate ester formulate that is used to enhance the natural biodegradation of volatile organic compounds (VOCs) (enhanced bioremediation), and has been injected at regular intervals into some contaminant plume source areas. MNA refers to the reliance on natural attenuation processes within the context of a carefully controlled and monitored site cleanup approach to achieve site-specific remediation objectives. A more detailed description of the specific corrective measures pertaining to each of the groundwater contaminant plumes is given in Section 4.4.

As part of the CMI phase, LBNL has prepared a *Soil Management Plan* [31] and a *Groundwater Monitoring and Management Plan*.[32] These management plans describe the nature and extent of the contamination and the institutional controls required to reduce potential risk from exposure to the contaminants. The *Groundwater Monitoring and Management Plan* also provides the requirements

for ongoing groundwater and surface water monitoring. These documents, as well as other RCRA CAP documents prepared by Berkeley Lab, are available for public review at www.lbl.gov/ehs/erp/html/documents.shtml and at the main branch of the Berkeley Public Library.

Berkeley Lab maintains a proactive approach in interacting with stakeholders in the RCRA CAP, including the DTSC, the RWQCB, and the COB.

3.4.6.4 Underground Storage Tanks

In the early 1980s, California addressed the problem of groundwater contamination from leaking USTs through a rigorous regulatory and remediation program.[33] The state program for USTs that contain hazardous materials addresses permitting, construction, design, monitoring, record-keeping, inspection, accidental releases, financial responsibility, and tank closure. The state's program satisfies the provisions of the federal RCRA requirements.[34] The COB is the local administering agency for UST regulations that apply to Berkeley Lab.

Two Berkeley Lab employees have passed the State of California exam to become a UST Designated Operator. These two employees are responsible for conducting monthly inspections of the UST systems; these inspections supplement the daily inspections conducted by other facility employees. The UST Designated Operators also provide annual training to the employees that conduct the daily UST inspections.

At the end of 2010, six permitted USTs were in operation at Berkeley Lab (see Table 3-6 and Figure 3-2). The tanks contain either diesel fuel or unleaded gasoline. LBNL has removed nine USTs since 1993 and properly closed each UST site.

On November 9, 2010, leak-detection monitors were tested and recertified for all UST systems. On the same date, all product piping (pressure and suction) was pressure-tested for the UST systems. All piping passed the pressure tests. In addition, every spill bucket at the fill port of each UST was tested for leaks. All spill buckets were found free of leaks. During the November 9th testing, the COB conducted its annual inspection of Berkeley Lab's USTs and found no violations.

Table 3-6 Underground Storage Tank Operating Permits from the City of Berkeley

Registration Tank ID Number	Building	Stored Material	Capacity in Liters (Gallons)		Construction	Year Installed
Fiberglass tanks, double-walled						
TK-3-2	2	Diesel	15,200	(4,000)	Fiberglass	1988
TK-4-2	2	Diesel	3,800	(1,000)	Fiberglass	1988
TK-1-85	85	Diesel	9,500	(2,500)	Fiberglass	1995
Steel tanks, double-walled, with fiberglass-reinforced plastic corrosion protection						
TK-1-55	55	Diesel	3,800	(1,000)	Glasteel	1986
TK-5-76	76	Unleaded gasoline	38,000	(10,000)	Glasteel	1990
TK-6-76	76	Diesel	38,000	(10,000)	Glasteel	1990

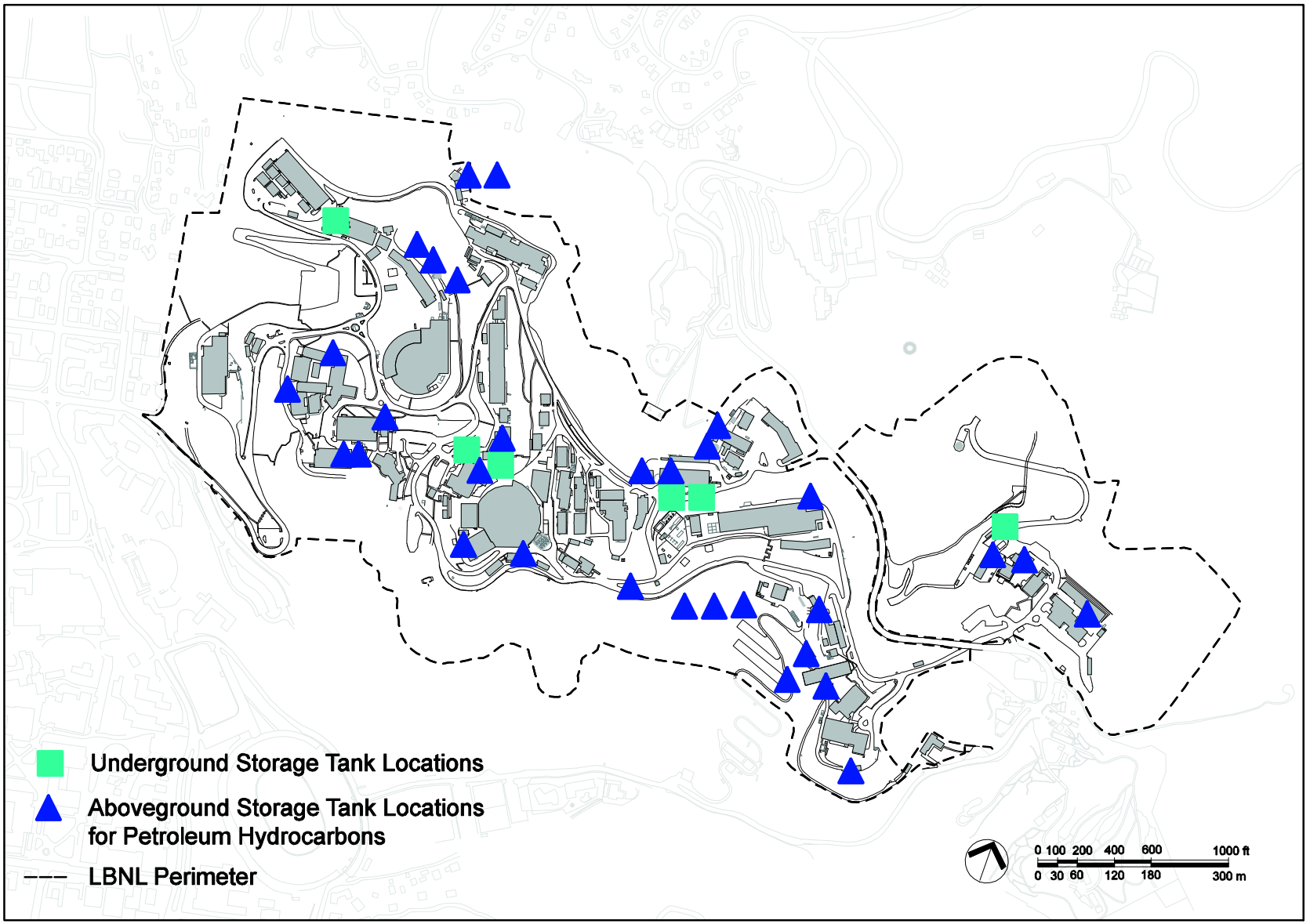


Figure 3-2 Aboveground and Underground Storage Tank Locations at the End of Calendar Year 2010

3.4.7 Hazardous Waste Source Reduction and Management Review Act

The California State Legislature passed the *Hazardous Waste Source Reduction and Management Review Act* [35] in 1989. With an emphasis on minimizing waste and preventing pollution, the Act has the following goals:

- Reduce hazardous waste at its source
- Encourage recycling wherever source reduction is infeasible or impractical
- Manage hazardous waste in an environmentally safe manner and minimize present and future threats to health and the environment if it is infeasible to reduce or recycle
- Document hazardous waste management information and make that information available to state and local governments.

Every four years, Berkeley Lab prepares a two-part report in compliance with this Act: the *Source Reduction Evaluation Review Plan and Plan Summary* [36] and the *Hazardous Waste Management Report Summary*.[37] The last report was compiled in 2007 and submitted to the DOE Livermore Site Office as part of the DOE-wide report.

3.4.8 Pollution Prevention Act of 1990

The *Pollution Prevention Act of 1990* [38] declares that source reduction is a national policy and directs U.S. EPA to study and encourage source reduction policies. Berkeley Lab's levels of pollution are below the *de minimis* thresholds identified in the Act, and therefore it is not subject to the Act's reporting requirements.

3.4.9 Clean Water Act

The *Clean Water Act* (CWA)[39] regulates the discharge of pollutants from both point and nonpoint sources to the waters of the United States, using various means; these include development of pollutant discharge standards and limitations, and also a permit and licensing system to enforce the standards. California is authorized by U.S. EPA to administer the principal components of the federal water quality management program.

Additionally, the *California Porter-Cologne Water Quality Control Act* [40] established a comprehensive statewide system for regulating water use. This 1969 act provides for a three-tiered system of regulatory oversight and enforcement: the SWRCB, the nine RWQCBs, and local governments.

For the Berkeley Lab main site, the regional regulatory agency is the San Francisco Bay RWQCB. The local agencies are (1) the cities of Berkeley and Oakland for stormwater and (2) EBMUD for drinking water supply and wastewater discharges. CCCSD is responsible for regulatory oversight of both wastewater and stormwater discharges from the JGI, which is in Walnut Creek.

3.4.9.1 Wastewater

Berkeley Lab has three wastewater discharge permits[41] issued by EBMUD for the following activities:

- General sitewide wastewater discharge
- Treatment unit discharge of rinse water from the metal finishing operations in Buildings 25 and 77
- Treatment system discharge of groundwater from hydraugers and groundwater monitoring wells.

In 2007, EBMUD renewed the wastewater discharge permits through 2012. The permits incorporate standard terms and conditions, individual discharge limits, and provisions, as well as monitoring and reporting requirements. Under each permit, Berkeley Lab submits periodic self-monitoring reports. The number of reports and their timing depend on the individual permit. No

wastewater discharge limits were exceeded in 2010. (For more information regarding the results of LBNL's annual wastewater self-monitoring program, see Chapter 4.)

EBMUD inspects the site's sanitary sewer discharge activities without prior notice; the inspections include the collection and analysis of wastewater samples. The agency conducted inspections on five separate occasions throughout the year. Table 3-2 lists these inspections, which were routine sample collections. No violations resulted from these inspections.

In 2010, Berkeley Lab retained AECOM Technical Services, Inc. (AECOM) to assist with the closure of the Building 25 Fixed Treatment Unit, FTU 002, a Permit-by-Rule FTU. Between September 20, 2010 and October 1, 2010, AECOM's subcontractor, NRC Environmental Services, conducted the Building 25, FTU 002, decontamination and removal activities in accordance with the Closure Plan prepared by Weiss Associates dated October 9, 2006. On October 11, 2010, following the treatment unit's removal, AECOM implemented the soil sampling program outlined in the Closure Plan. The closure certification report, prepared by AECOM, provided a summary of the closure activities and independent certification of the FTU closure completion. The closure certification report was submitted to the COB's Toxics Management Division on January 24, 2011.

The EBMUD wastewater discharge permit for Buildings 25 and 77 requires that each facility maintain a *Toxic Organics Management Plan* and a *Slug Discharge Plan*. In 2007, the requirements of these two EBMUD plans were incorporated into each facility's *Activity Hazard Document* (AHD) for operations. Each AHD outlines facility management practices designed to eliminate the accidental release of toxic organics or any other pollutant to the sanitary sewers or external environment by emphasizing secondary containment and other appropriate spill prevention practices. The AHDs for metal finishing areas at Buildings 25 and 77 also include emergency response procedures.

To meet the requirements of EBMUD's *Slug Discharge Plan,* Berkeley Lab maintains emergency response procedures for areas where spills are most likely to occur. Berkeley Lab has prepared operation-specific response procedures for the following activities: Buildings 25 and 77 metal finishing, Building 76 vehicle fueling, and Buildings 2, 67, and 70A research projects.

Berkeley Lab also holds a *Class III Industrial User Permit* [42] issued on January 1, 2006 by CCCSD for general wastewater discharged at the JGI in Walnut Creek. The permit remained in effect through December 31, 2008, and was reissued on January 1, 2009, with validity through December 31, 2011. It contains requirements for inspecting and reporting on operations, but no monitoring requirements.

3.4.9.2 Stormwater

Berkeley Lab's stormwater releases are permitted under the California-wide *General Permit for Storm Water Associated with Industrial Activity* (or General Permit).[43] The General Permit is issued by the SWRCB, but administered and enforced by the RWQCB and the COB. Under this permit, Berkeley Lab has implemented a *Storm Water Pollution Prevention Plan* (SWPPP)[44] and an *Alternative Storm Water Monitoring Program* (ASWMP).[45] The purpose of the SWPPP is to identify sources of pollution that could affect the quality of stormwater discharges, and to describe and ensure the implementation of practices to reduce pollutants in these discharges. The ASWMP describes the rationale for sampling, sampling locations, and analytical parameters (radiological and nonradiological). Together, these documents represent LBNL's plan and procedures for identifying, monitoring, and reducing pollutants in its stormwater discharges.

The General Permit requires submittal of an annual report on stormwater activities by July 1 of each year. Berkeley Lab transmitted its annual report to the RWQCB and the COB in June.[46] No regulatory concerns were raised by either agency regarding the annual report. The report was also issued to the California Sportfishing Protection Alliance and the Strawberry Canyon Stewardship Council under the terms of a settlement agreement following a lawsuit in April of 2008 regarding prior stormwater monitoring data. The lawsuit had raised issues regarding detections of certain pollutants above established water quality benchmarks during some sampling events, and claimed that best management practices installed after data validation were not effective. According to the General Permit, the water quality benchmarks are guideline values, not effluent permit limits. LBNL started monitoring at specific industrial locations in early 2009 under the terms of the settlement agreement. (For a summary of sampling locations and stormwater monitoring results, see Chapter 4).

Stormwater releases from construction activity disturbing one or more acres of soil are regulated under the California-wide *General Permit for Stormwater Discharges Associated with Construction and Land-Disturbance Activities*.[47] During 2010, Berkeley Lab started three construction projects which disturbed more than one acre of soil, and thus held three stormwater construction permits.

1. *Building 51 and Bevatron Demolition Project.* The purpose of this project is to clear the site to make it available for future construction. To accomplish this, the building, its contents, and the foundation will be completely removed, and the subsurface soil characterized to potentially identify appropriate remediation.
2. *Seismic Life Safety, Modernization, and Replacement of General Purpose Buildings, Phase II Project* (a.k.a. *Seismic Phase II project*). This project aims to provide seismically safe facilities for scientific research and involves demolishing several older buildings (Buildings 25/25B, 25A, 40, 41, 52, 52A, and five trailers associated with Building 71) and replacing the Building 25/25B demolished space with a new facility that would be built to higher seismic safety standards. In addition, internal demolition and modernization of Building 74 and seismic strengthening of a geotechnical condition at Building 85 is part of the Seismic Phase II project.
3. *Old Town Demolition and Environmental Restoration Project.* Depending on the level of funding, up to 14 buildings may be decontaminated and demolished, including Buildings 4, 5, 7, 7C, 14, 16, 25A, 40, 41, 44, 44A, 44B, 52, and 52A. Beyond the demolition of up to 14 buildings, subsurface investigation will be carried out to identify past releases of contamination underneath and within the vicinity of the buildings. Appropriate remedial actions would be used to remediate newly identified sites.

3.4.9.3 Aboveground Storage Tanks

Aboveground storage tanks (ASTs) also fall under the authority of the CWA.[48] The CWA and the state's *Aboveground Petroleum Storage Act* [49] outline the regulatory requirements for ASTs. Under the authority of the CWA, a *Spill Prevention, Control, and Countermeasure* (SPCC) *Plan* [50] is required for petroleum-containing tanks, both aboveground and underground. Berkeley Lab maintains an SPCC Plan with the goal of preventing and, if needed, mitigating spills or leaks from petroleum-containing tanks. ASTs are provided with secondary containment or spill kits to capture any potential leaks. The locations of the 31 ASTs are shown in Figure 3-2. In addition, at the JGI, a 15,142-L (4,000-gal) AST supports an engine generator. The JGI maintains a separate SPCC Plan [51] for this AST.

In 2010, one AST located at Building 75 was replaced with a 275-gal AST and a new 378-gal AST was located at Building 37 as a belly tank for an engine generator that supplies back-up power to Building 15. Also in 2010, a small

engine generator with a 55-gal AST was removed from the Building 10 area during the construction of Building 15.

Nonpetroleum (i.e., chemical or hazardous) ASTs consist of FTU tanks, storage drums at Waste Accumulation Areas (WAAs), and storage drums at product distribution areas. FTU operators inspect FTU tanks each operating day. EH&S staff inspect WAAs weekly.

The E85-fuel dispensing-station tank (located at Building 76) supports approximately 70 alternative-fuel vehicles. The use of 85%-ethanol fuel is one of LBNL's strategies for reducing petroleum usage by its fleet of vehicles.

3.4.10 Safe Drinking Water Act

The *Safe Drinking Water Act* [52] and amendments established requirements to protect underground sources of drinking water and set primary drinking water standards for public water systems. Berkeley Lab has no drinking water wells on-site. The drinking water provided to the site comes from the EBMUD supply and distribution system. EBMUD water is tested for compliance with state and federal drinking water standards. Berkeley Lab has taken measures to protect its distribution system for its drinking water supply by installing backflow-prevention devices on main supply lines throughout the site.

EBMUD currently uses chloramine for disinfection of the drinking water supply. Although chloramine improves the water supply for human consumption, it is toxic to fish and other aquatic organisms. To prevent toxic effects to organisms involved in laboratory research, researchers have instituted measures to neutralize the chloramine to provide water in which these organisms can safely exist.

Additionally, to prevent toxic effects to organisms living in neighboring creeks, Berkeley Lab has programs to prevent drinking water from being discharged to its storm drains. When responding to waterline breaks and when testing and flushing fire hydrants, steps are taken to neutralize the chloramine before the water reaches the storm drain system.

3.4.11 National Environmental Policy Act and California Environmental Quality Act

LBNL staff provides information and technical support to enable DOE and UC to determine whether proposed actions at Berkeley Lab will have a significant effect on the environment, as required by the *National Environmental Policy Act of 1969* (NEPA)[53] and the *California Environmental Quality Act of 1970* (CEQA).[54]

In 2010, DOE conducted the following NEPA reviews of proposed major Federal Actions at Berkeley Lab:

- Environmental Assessment and Finding of No Significant Impact (FONSI) for Seismic Life Safety, Modernization, and Replacement of General Purpose Buildings, Phase 2b
- Draft Environmental Assessment for Computational Research and Theory Facility Project.

In 2010, UC conducted the following major CEQA reviews:

- Environmental Assessment and FONSI for Seismic Life Safety, Modernization, and Replacement of General Purpose Buildings, Phase 2b Environmental Impact Report
- Environmental Impact Report for the Solar Energy Research Center.

In 2010, several projects were categorically excluded from further NEPA and CEQA review, and approximately 1,000 projects -- mostly research activities and proposals -- were found to be covered under existing categorical exclusions and exemptions. NEPA categorical exclusions are posted at http://www.bso.sc.doe.gov/html/NEPA_categorical_exclusion_documents.html.

3.4.12 Federal Endangered Species Act

The *Federal Endangered Species Act* [55] requires that activities taking place at Berkeley Lab on federally controlled property, or using federal permission or funding, undergo a screening process or the NEPA process to determine whether federally listed or proposed species may be present or affected by the action. No compliance activities were required in 2010. However, in accordance with the 2006 *Long Range Development Plan Environmental Impact Report* mitigation measures, several project-specific bat and raptor surveys were carried out prior to tree removals or disturbance in 2010, and Alameda whipsnake (identification and avoidance) training was carried out for numerous project construction teams.

3.4.13 California Endangered Species Act

The *California Endangered Species Act* [56] requires that activities taking place at Berkeley Lab on UC Regents land, or using UC Regents or state permission or funding, undergo a screening process or the CEQA process to determine whether state-listed or proposed species may be present or affected by the action. No compliance activities were required in 2010. (See Section 3.4.12 above regarding bird, raptor, and Alameda whipsnake mitigation activities carried out in 2010.)

3.4.14 National Historic Preservation Act

The *National Historic Preservation Act* [57] provides for a National Register of Historic Places, which lists buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance. In the past few years, Berkeley Lab has inventoried most of its buildings using qualified historians in consultation with the State Historic Preservation Officer to determine whether those assets at Berkeley Lab are eligible for listing on the National Register. In 2009, Berkeley Lab began a process to develop a Cultural Resources Management Program (CRMP) to further comply with the National Historical Preservation Act and DOE policy. The CRMP is expected to be completed in 2011.

3.4.15 Migratory Bird Treaty Act

The *Migratory Bird Treaty Act* [58] legislates that actions and projects undertaken at Berkeley Lab must undergo appropriate NEPA and CEQA review, which includes assessment of biological impacts, to determine whether species subject to the provisions of the *Migratory Bird Treaty Act* would be affected. No compliance activities were required in 2010.

3.5 PERFORMANCE MEASURES

Since 1994, Berkeley Lab, DOE, and the University of California Office of the President (UCOP) have annually used a rating system to measure the effectiveness of LBNL's performance, including the performance of its environmental programs. These performance measures have been integrated directly into the operating contract for Berkeley Lab. Possible ratings include letter grades ranging from A+ to F. For FY10 there were three performance measures that included environmental components. These were:

1. Provide a work environment that protects workers and the environment
2. Provide efficient and effective implementation of integrated safety, health, and environment management
3. Provide efficient and effective waste management, minimization, and pollution prevention.

Berkeley Lab achieved ratings of A-, B, and B+, respectively, for these three measures.

LBNL continued to effectively implement its Environmental Management System (EMS) and achieved DOE's highest or "green" rating within its EMS

scorecard metrics. The DOE EMS scorecard evaluates the following seven metrics:

1. Identification and evaluation of environmental aspects
2. Identification, review, and update of goals, objectives, and targets
3. Establishment of effective operational controls
4. Establishment of environmental training requirements and implementation of training
5. Inclusion of EMS requirements in appropriate contracts
6. Establishment of a formal audit process and conduct of an audit
7. Performance of a senior management review of the EMS program.

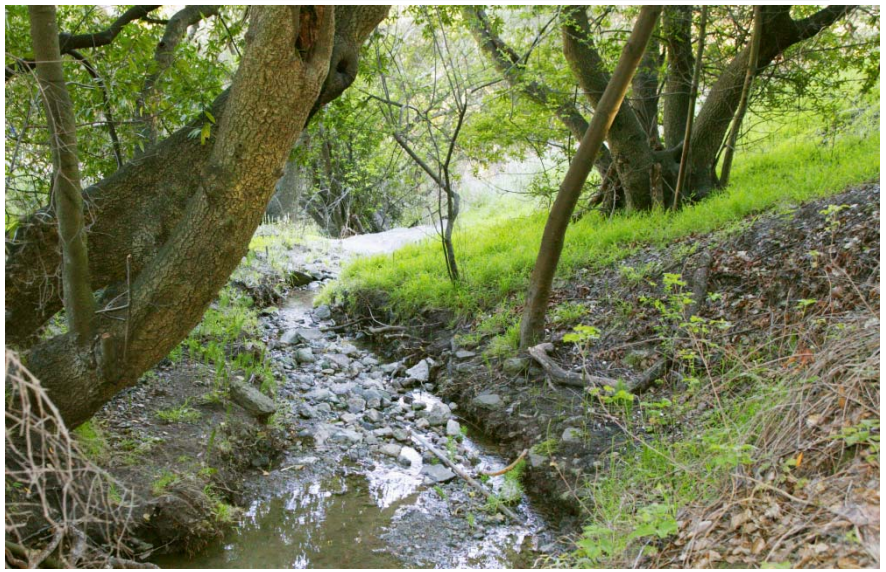
Demonstrating an effective EMS program, LBNL completed the following environmental projects in FY10:

1. Developed the "sustainLBL" website
2. Hosted a fair at the Cafeteria Green to celebrate the 40th anniversary of Earth Day that included almost 20 display booths
3. Completed phase III of the nanomaterials monitoring pilot project
4. Collaborated with students from Dominican University's Green MBA program to prepare promotional material on Berkeley Lab's recent environmental and sustainability accomplishments
5. Corrected the baseline water use intensity value and received DOE approval for its use in annual reporting
6. Purchased one new diesel generator, replaced one old diesel generator, and installed a diesel particulate filter on an existing generator
7. Modernized the bus fleet by an average of almost seven years as a condition of contracting out the shuttle bus service
8. Secured renewable energy credits of at least 7.5% of total LBNL facilities' electric power and thermal energy use in FY10 and beyond
9. Established a new program to track and report site-wide GHG emissions
10. Prepared an initial baseline GHG inventory for LBNL, establishing tools for use in upcoming annual reporting to DOE
11. Expanded the fleet of GEMs vehicles to 46 by acquiring 29 additional vehicles in FY10
12. Upgraded the transformers at the Grizzly Peak Substation with more efficient units that use between 5% and 10% less electricity
13. Exceeded the 95% target for energy-efficient computer systems and monitors, achieving at least an Electronic Product Environmental Assessment Tool "Bronze" rating
14. Implemented a new waste diversion program at Building 90 that includes collection of compostable materials
15. Updated the Facilities design guideline on construction waste management to include a goal of a 75% diversion rate for non-hazardous, non-radioactive materials associated with construction and demolition projects
16. Used a $5,000 mini-grant from StopWaste.org to acquire additional bins for composting and recycling materials
17. Participated in BAAQMD's and 511.org's *Great Race for Clean Air* and promoted participation with TABL announcements

18. Partnered with Zimride to allow employees alternatives to solo commuting
19. Conducted a survey of local resident employees to help evaluate expanding shuttle routes.

For further details on LBNL's Environmental Management System, see Chapter 2. For more information on performance measures, go to Berkeley Lab's Office of Institutional Assurance home page at http://www.lbl.gov/DIR/OIA/OCA/Contract-Performance/contract-measures.html.

4 Environmental Monitoring



Chicken Creek below the Berkeley Lab site

4.1 INTRODUCTION

The Berkeley Lab environmental monitoring program assesses whether LBNL's emissions are impacting the health of the public or the environment. The program is important for environmental stewardship and for demonstrating compliance with requirements imposed by federal, state, and local agencies. The program also confirms adherence to DOE environmental protection policies and supports environmental management decisions.

This chapter presents summaries of the 2010 monitoring results for the following categories:

- Stack and ambient air
- Surface water and wastewater
- Groundwater
- Soil and sediment
- Vegetation and foodstuffs
- Penetrating radiation.

A comprehensive *Environmental Monitoring Plan*[1] prepared by Berkeley Lab provides the basis and current scope for each of these monitoring programs. This plan is updated periodically; the most recent revision was completed in September 2009.

All of the individual sample results are presented in Volume II of this *Site Environmental Report*. Additional details on groundwater investigations and results are included in Environmental Restoration Program reports, which are available at the COB main public library and at www.lbl.gov/ehs/erp.

4.2 AIR QUALITY

Berkeley Lab's air monitoring program is designed to measure the impacts from radiological air emissions. The program meets the U.S. EPA and DOE requirements, which are contained in the following references:

- 40 CFR Part 61, Subpart H (*National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities*)[2]
- DOE Order 5400.5 (*Radiation Protection of the Public and the Environment*).[3]

This program consists of two elements: exhaust emissions monitoring and ambient air surveillance. Exhaust emissions monitoring measures contaminants in building exhaust systems (e.g., stacks). Ambient air surveillance measures contaminants in the outdoor environment. The number and placement of monitoring stations, as well as the substances collected and their collection frequencies, are routinely reviewed to address changes in LBNL operations or external requirements.

4.2.1 Exhaust Emissions Monitoring Results

Berkeley Lab uses various radionuclides in its radiochemical and biomedical research programs. Charged particle accelerators also generate radioactive materials. These operations result in small amounts of airborne radionuclides, which are typically emitted through building exhaust systems.

Berkeley Lab must evaluate the potential for radionuclide emissions from laboratories where radionuclides are used. If the potential emissions exceed the U.S. EPA-approved threshold, LBNL must measure emissions by sampling or monitoring stacks through which emissions are released. *Sampling* means collecting radionuclides on a filter and analyzing the filters at an analytical laboratory; *monitoring* means continuously measuring radionuclides in real time.

LBNL measures stack emissions in accordance with an approach approved by U.S. EPA Region 9 (Table 4-1). Based on this approval, only Category 3 and 4 measurements are required because all sources have potential doses that are less than 0.001 mSv/yr (0.1 mrem/yr). However, Berkeley Lab may monitor or sample some stacks more frequently than required by U.S. EPA. Exercising this option, Berkeley Lab collected monthly samples from five stacks and performed real-time monitoring at four stacks (one of which was also sampled monthly) in addition to collecting samples quarterly from four stacks. Sampling and monitoring locations are shown in Figure 4-1.

Stack exhaust samples were analyzed for five radiological parameters: gross alpha, gross beta, carbon-14, iodine-125, and tritium. Real-time stack monitoring systems measured for alpha emitters and positron emitters. In 2010, as in past years, the positron emitter fluorine-18 (half-life of 1.8 hrs) was the predominant radionuclide emitted and accounted for more than 99% of the emitted activity. The Building 56 accelerator was the main source of fluorine-18 emissions (7.03×10^{10} becquerels [Bq] [1.9 curies (Ci)]). Additional details on stack emissions are available in LBNL's annual *Radionuclide Air Emission Report*,[4] which is submitted to U.S. EPA. For information on the projected dose from all radionuclide emissions, see Chapter 5.

Table 4-1 U.S. EPA-Approved Radionuclide Emissions Measurement Approach

Category	Annual Effective Dose Equivalent[a] (mSv/yr)[b]	Requirements
Noncompliant	AEDE ≥ 0.1	Reduction or relocation of the source and reevaluation before authorization
1	0.1 > AEDE ≥ 0. 01	Continuous sampling with weekly collection and real-time monitoring for short-lived radionuclides
2	0.01 > AEDE ≥ 0.001	Continuous sampling with monthly collection or real-time monitoring for short-lived radionuclides
3	0.001 > AEDE ≥ 0.0001	Periodic sampling 25% of the year
4	0.0001 > AEDE	Potential dose evaluation before project starts and when project changes; no sampling or monitoring required

[a] AEDE – annual effective dose equivalent
[b] 1 mSv = 100 mrem

4.2.2 Ambient Air Monitoring Results

The objective of the ambient air monitoring program is to determine the environmental levels of two general classes of radionuclides, alpha and beta emitters.

The network consists of three sites on the main grounds of LBNL and a fourth off-site location. All locations were chosen based on historical wind patterns and current site activities. One of the sites also includes a second sampler for quality control (QC) purposes. Figure 4-2 shows the sampling locations.

Table 4-2 summarizes gross alpha and beta sample results from the sampling network. While DOE Order 5400.5[5] does not provide ambient air thresholds for either parameter, all results were near or below the analytical detection limits. This observation is consistent with results from prior years across the network.

4.3 SURFACE WATER AND WASTEWATER

This section summarizes the monitoring results for surface water (rainwater, creeks, and stormwater) and wastewater.

4.3.1 Surface Water Program

Berkeley Lab lies within the Blackberry Canyon and Strawberry Canyon subwatersheds of the Strawberry Creek watershed. There are two main creeks in these watersheds, the South Fork of Strawberry Creek (in Strawberry Canyon) and the North Fork of Strawberry Creek (in Blackberry Canyon). Both creeks join below Berkeley Lab on the UC Berkeley campus.

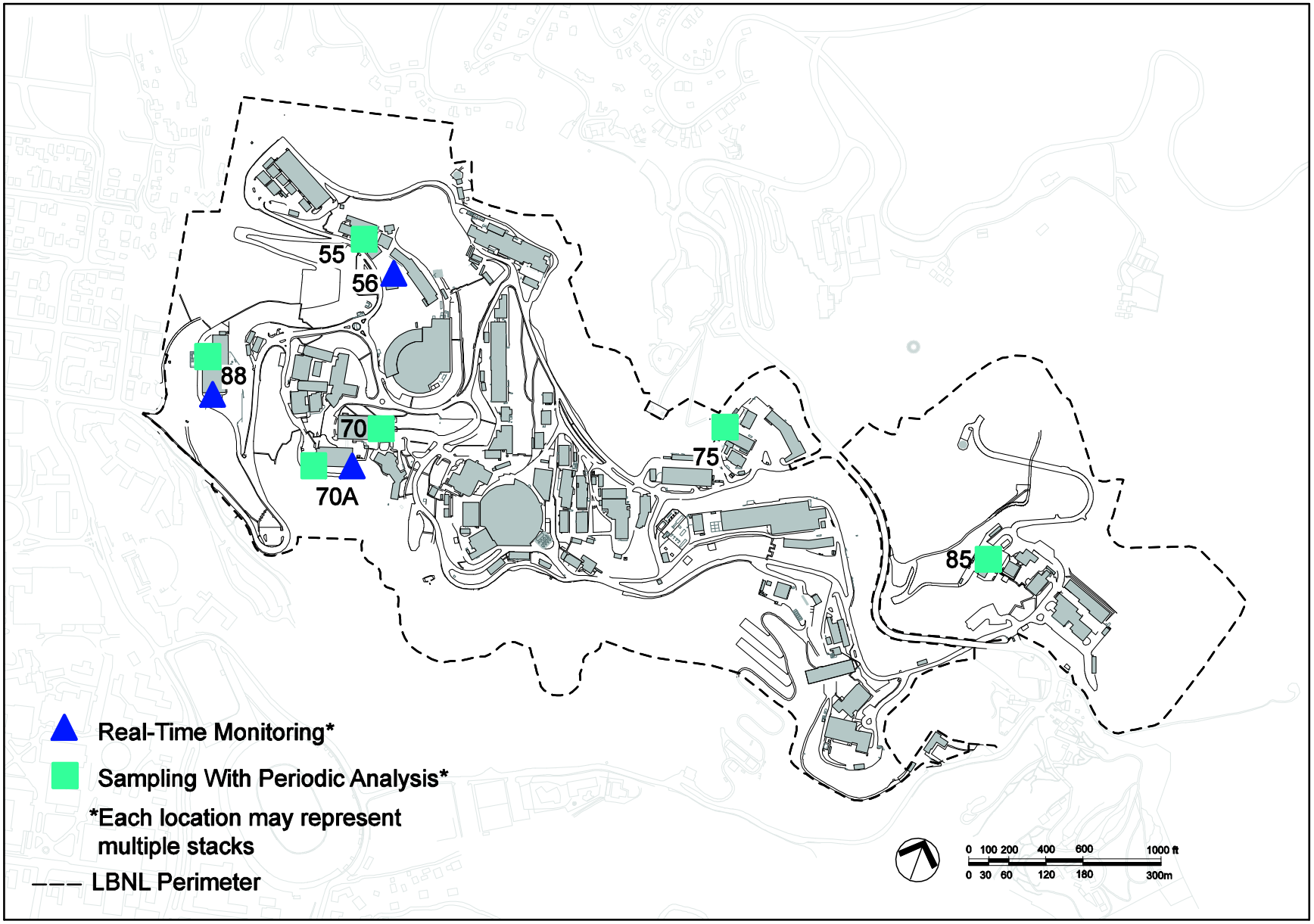


Figure 4-1 Locations of Building Exhaust Sampling and Monitoring

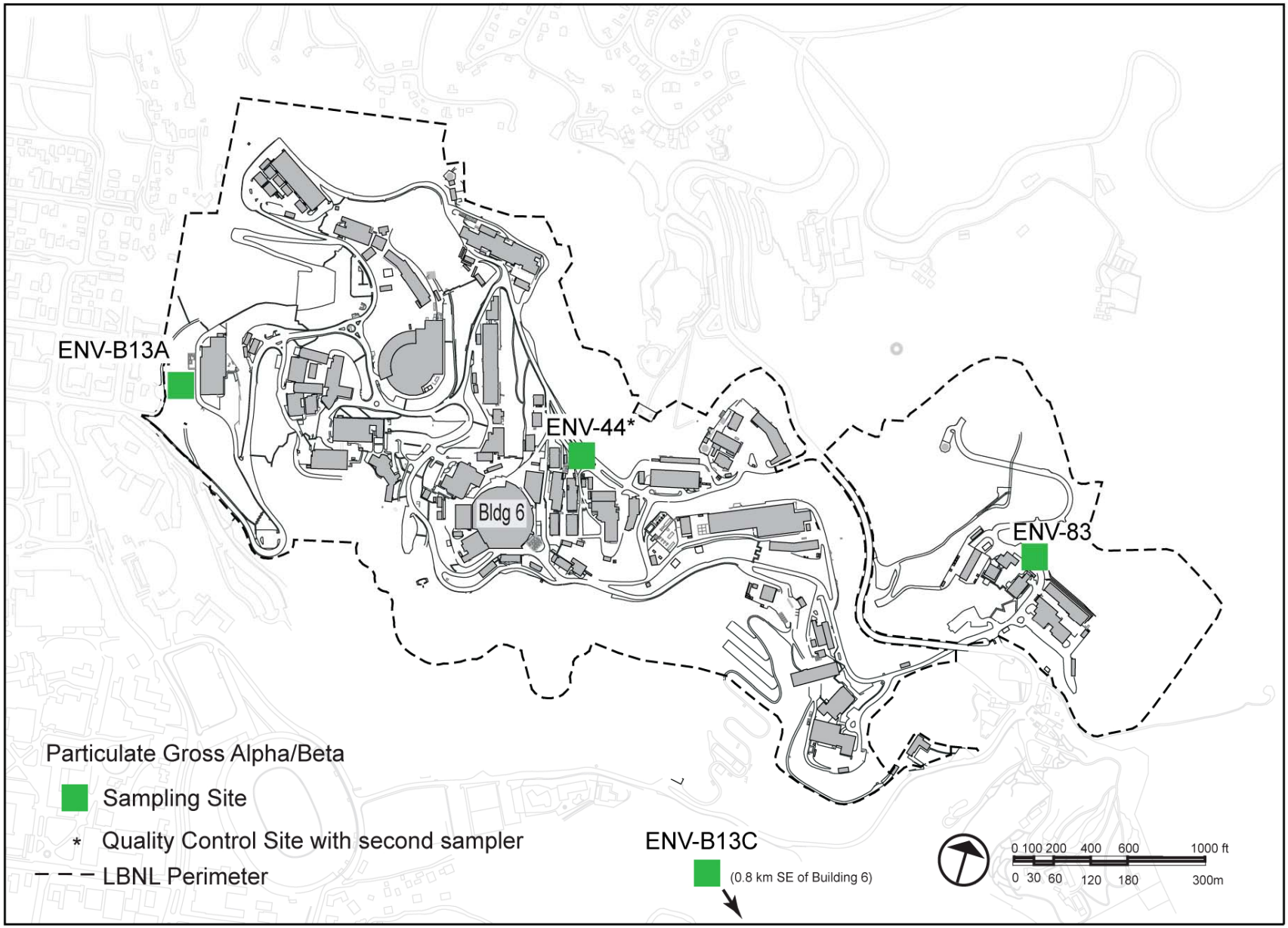


Figure 4-2 Ambient Air Monitoring Network Sampling Locations

Table 4-2 Summary of Alpha and Beta Radiation Results for Ambient Air Samples

Analyte	Station ID	Number of Samples	Mean (Bq/m^3)[a]	Median (Bq/m^3)	Maximum (Bq/m^3)
Alpha	ENV-B13A	12	5.0×10^{-5}	3.9×10^{-5}	1.2×10^{-4}
	ENV- B13C[b]	12	5.2×10^{-5}	4.8×10^{-5}	1.2×10^{-4}
	ENV-44	12	4.8×10^{-5}	3.4×10^{-5}	1.1×10^{-4}
	ENV-83	12	4.9×10^{-5}	3.6×10^{-5}	1.1×10^{-4}
Beta	ENV-B13A	12	4.0×10^{-4}	3.3×10^{-4}	6.7×10^{-4}
	ENV-B13C[b]	12	4.3×10^{-4}	3.2×10^{-4}	8.3×10^{-4}
	ENV-44	12	3.9×10^{-4}	3.1×10^{-4}	6.9×10^{-4}
	ENV-83	12	4.0×10^{-4}	3.2×10^{-4}	6.9×10^{-4}

[a] 1 Bq = 27 pCi.

[b] Station ENV-B13C provides local background data for alpha and beta radiation in ambient air particulates.

Surface water monitoring for 2010 included rainwater, creeks, and stormwater. Rainwater and creeks are monitored primarily for alpha and beta emitters and tritium, based on DOE Order 5400.5,[6] which prescribes monitoring requirements for radioisotopes. Creek water is also monitored for nonradiological analytes in an ongoing effort to characterize and manage LBNL's overall impact on the environment. Stormwater monitoring is a condition of the California-wide General Permit[7] and includes monitoring for metals and other constituents.

Although LBNL surface waters are not used as a public drinking water supply, Berkeley Lab takes the conservative approach of evaluating creek water results against drinking water standards. The federal and state maximum contaminant levels for alpha and beta radioactivity in drinking water are 0.6 Bq/L (15 picocuries per liter [pCi/L]) and 1.9 Bq/L (50 pCi/L), respectively)[8, 9] The federal and state limit for tritium in drinking water is 740 Bq/L (20,000 pCi/L)[10, 11] LBNL also uses the water quality objectives stated in the *Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan)*[12] for comparison purposes.

4.3.1.1 Rainwater Sampling Results

Measurable rainfall occurred during January through June and October through December. Sampling is performed at the site of the meteorological tower (ENV-44) ambient air sampling station near Building 44 (see Figure 4-3), with monthly composite samples analyzed for gross alpha, gross beta, and tritium activity.

Monthly composite sample results from this location were consistent with historical values and were below drinking water standards. All sample results for alpha and beta were below or near detection limits. No tritium activity was detected in any of the samples.

4.3.1.2 Creeks Sampling Results

The flow in many of the creeks of the Strawberry Creek watershed varies in intensity throughout the year. To track any seasonal variation in water quality, a set of creek samples is collected semi-annually from the following creeks: North Fork Strawberry Creek, Chicken Creek (two locations), Botanical Garden Creek, Cafeteria Creek, No-Name Creek, Ravine Creek, Ten-Inch Creek, Winter Creek, and an off-site creek located in Tilden Regional Parks, Wildcat Creek. All samples were analyzed for metals and VOCs. Figure 4-3 shows all creek sampling locations. No VOCs were detected in any of the creek samples, except for chloroform in Upper Botanical Garden Creek on August 31, 2010. This is assumed to have originated from an off-site domestic water line break. Metals detected were aluminum, arsenic, barium, copper, iron, lead, magnesium, selenium, vanadium, and zinc. Their concentrations were within historical levels for LBNL, well below the water quality objectives listed in the *Basin Plan*,[13] and well below the drinking water standard.

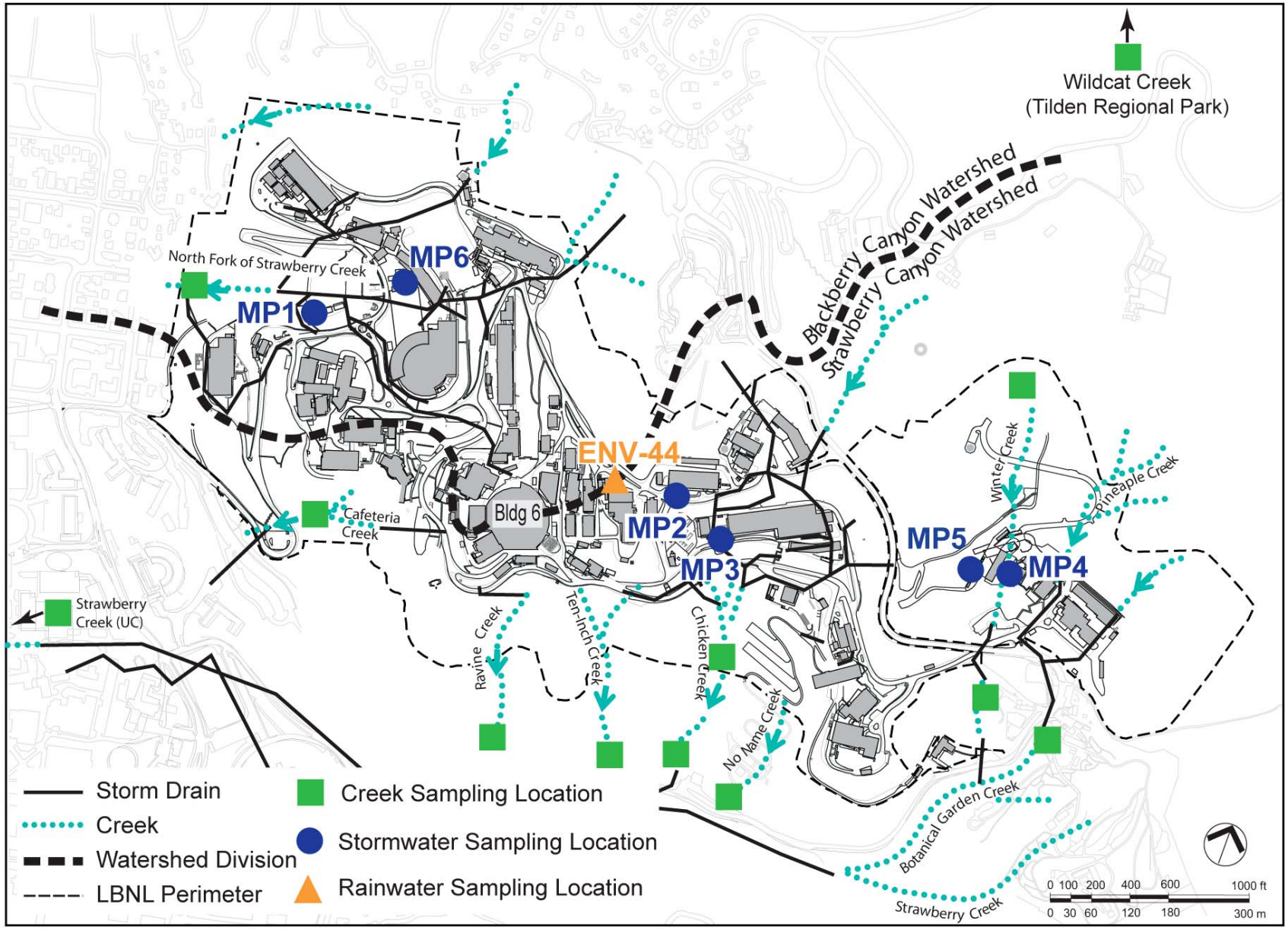


Figure 4-3 Creek, Rainwater, and Stormwater Sampling Locations

Samples with a different set of parameters are also collected from a subset of the above-mentioned creeks. Two sets of samples were collected in 2010 from Chicken Creek, the North Fork of Strawberry Creek, and Wildcat Creek. At Winter Creek, only one set of samples was collected in August 2010 because there was no flow. All samples were analyzed for gross alpha, gross beta, gamma by spectroscopy, and tritium. To provide additional data about the identity of the alpha- and beta-emitting radionuclides measured, the samples were analyzed by gamma spectroscopy for actinium-228, cesium-137, lead-214, potassium-40, radium-226 (by two methods), and uranium-238. In addition, samples were analyzed for chemical oxygen demand (COD), pH, specific conductance, total suspended solids (TSS), and nitrate plus nitrite.

Results indicate that low levels of a naturally occurring alpha- and beta-emitting radionuclide were detected in Chicken Creek and the North Fork of Strawberry Creek, and low levels of beta-emitting radionuclides were also detected at the Winter Creek influent. At Chicken Creek, radium-226, a naturally occurring radionuclide whose decay products emit both alpha and beta radiation, was the only detected radionuclide. Radium-226 was measured at Chicken Creek at levels consistent with the gross alpha and gross beta measurements, which were less than the federal and state maximum contaminant levels. Radium-226 was also detected at low levels at the off-site location of Wildcat Creek.

Of the twenty samples taken for tritium analysis, three samples, one at 11 Bq (310 pCi/L), and one at 7 Bq (190 pCi/L), with a duplicate sample at 8.1 Bq (220 pCi/L), were found slightly above the minimum detectable activity (MDA), but significantly below federal and state requirements.

Results indicate that concentrations in all samples analyzed for COD, pH, specific conductance, TSS, and nitrate plus nitrite were within historical levels for LBNL.

4.3.1.3 Stormwater Sampling Results

Under the terms of California's General Permit, sampling must take place at least twice each stormwater year (i.e., October through the following September) under specific conditions. Berkeley Lab's ASWMP[14] describes the rationale for sampling, sampling locations (see Figure 4-3 for the six sampling locations), and analytical parameters for each specific industrial activity. The General Permit also requires visual observation of one storm each month and visual observation of authorized and unauthorized non-stormwater discharges once each quarter.

The ASWMP has been prepared to determine pollutant contributions from regulated activities at LBNL more specific to industrial activity, and thus a more reliable basis for evaluating the performance and effectiveness of Best Management Practices (BMPs), as described in LBNL's SWPPP.[15] The monitoring program that has historically been implemented at LBNL focused on larger drainage areas within the site, so that monitoring results have reflected the combined runoff from regulated and non-regulated areas. The ASWMP is specifically designed to focus on the areas of industrial activity, which represent the only potential sources of pollutants that are specifically regulated under the General Permit. Berkeley Lab is regulated by the General Permit for industrial activities that fall under the following SIC Codes:

- 3499 – Fabricated Metal Products, Not Elsewhere Classified
- 4173 – Terminal and Service Facilities for Motor Vehicle Passenger Transportation
- 4953 – Hazardous Waste Treatment Storage or Disposal
- 5093 – Scrap Recycling Facility.

Stormwater sampling in 2010 was performed at the following five areas with regulated industrial activities (as shown in Figure 4-3): Note that one area, the HWHF, has two sampling locations.

1. Blackberry Parking Lot, (previous bus parking and storage industrial area (MP 1)
2. Building 76, Fuel Dispensing (MP 2)
3. Building 77 & 79, Metal Fabrication, Storage, and Scrap Recycling (MP 3)
4. Building 85, HWHF (MP 4, lower yard, and MP 5, upper yard)
5. Building 64, Bus Parking Lot (MP 6).

The General Permit requires the analysis of at least four parameters for stormwater samples at each monitoring location.

1. TSS
2. pH
3. Specific conductivity
4. Total oil and grease.

Based on the SIC codes for specific industrial activities conducted at LBNL, additional sector-required analyses are specified in the General Permit monitoring program, as shown in Table 4-3. Note that MP 1 and MP 6 do not fall under a specific SIC code that requires sampling for additional parameters; however, because they are areas of former transportation activities, it was deemed appropriate to include them in the ASWMP as areas to be sampled for the standard four parameters.

Sampling results for stormwater are compared to the Multi-Sector General Permit (MSGP) benchmark guidelines for industrial activities. It should be noted that the current General Permit does not include benchmark values; however, the draft version of the future General Permit does include very similar benchmark guidelines, hence the use of those particular benchmarks.

TSS, COD, oil and grease, cyanide, ammonia, and nitrate plus nitrite results were all below benchmark guidelines. The pH was within the acceptable range of 6 to 9 standard pH units at all the locations. While the MSGP does not list a benchmark value for specific conductance, other sources set this value at less than 200 µmhos/cm; all stormwater samples collected in 2010 were below this guideline.

Table 4-3 Additional Sector-Required Analyses from the General Permit

SIC Code	Sampling Locations	Parameters
3499 – Fabricated Metal Products	MP 3	Aluminum, iron, nitrite and nitrate as nitrogen, zinc
4173 – Terminal and Service Facilities for Motor Vehicle Passenger Transportation	MP 2	No additional parameters listed
4953 – Hazardous Waste Treatment, Storage, or Disposal	MP 4, MP 5	Ammonia, arsenic, cadmium, COD, cyanide, lead, magnesium, mercury, selenium, silver
5093 – Scrap Recycling Facility	MP 3	Aluminum, COD, copper, iron, lead, zinc

After additional oil absorbent pads were inserted in the drain inlets, oil and grease values dropped to below detectable limits at all sampling site locations in subsequent storm sampling events.

Aluminum was seen above the benchmark at the metal fabrication and salvage yard (MP 3). While continuing improvements have been made at the yard to reduce and cover the amount of stored material present, as well as increasing cleaning of the yard, further improvements are needed to reduce aluminum in stormwater runoff at this location. Zinc was also detected at the

metal fabrication and salvage yard (MP 3), despite the temporary covering of all galvanized fabricated materials. Studies to determine the source of the zinc indicated that it is largely in the dissolved phase, and that galvanized roofing materials and worn forklift truck tires are used on the yard that contain zinc.

Copper was also detected at the metal fabrication and salvage yard, and it was determined that the likely source was copper pipes that are used to funnel rain from the roof of neighboring buildings onto the yard. Iron was also detected in the MP 3 runoff; further BMPs will be implemented to reduce these values to below guidelines. While lead has been detected, all results have been below MSGP benchmarks.

Magnesium was detected at the upper and lower yard of the HWHF (locations MP 4 and MP 5, respectively). This was traced to aerial deposition of soil particles on the concrete surface. The surrounding soils have been found to contain a significant amount of magnesium. Mercury, selenium, and silver were all below detection limits.

4.3.2 Wastewater Discharge Program

Berkeley Lab's sanitary sewer system is based on gravity flow. The point of water discharge is from either Hearst or Strawberry Monitoring Station, and depends on which part of LBNL the water is coming from (see Figure 4-4).

- Hearst Station, located at the head of Hearst Avenue below the western edge of Berkeley Lab, monitors discharges from the western and northern portions of the site. The monitoring site is located at a point immediately before the connection of LBNL's sanitary sewer system with the COB's sewer main.
- Strawberry Station is located next to Centennial Drive in Strawberry Canyon and monitors discharges from the eastern and southern parts of LBNL. Downstream from the monitoring station, the discharge system first ties into University-owned piping and then into the COB system. Because of the design of the network, the Strawberry Monitoring Station also receives effluent from several UC Berkeley campus facilities that are located above LBNL and are separate from the main UC Berkeley campus: the LHS, Space Sciences Laboratory, Mathematical Sciences Research Institute, Animal Research Facility, and Botanical Garden.

Berkeley Lab has three wastewater discharge permits issued by EBMUD: one for general sitewide discharges, one for the metal finishing operations found in Buildings 25 and 77, and one for the discharge of treated groundwater at seven locations. EBMUD is the local Publicly Owned Treatment Works that regulates all industrial and sanitary discharges to its treatment facilities. The operations at Building 25 ceased in September 2010 and the treatment unit was removed by October 1, 2010.

In June 2010, Berkeley Lab received a special discharge permit from EBMUD to discharge groundwater to the sanitary sewer in support of a research project studying the Wildcat Canyon fault line located near Building 85. Approximately 20 gallons of groundwater were discharged to the sanitary sewer under this special discharge permit during 2010. The permit was originally scheduled to expire in July 2011. LBNL has requested and expects to receive an extension to August 2012 from EBMUD.

Berkeley Lab's wastewater discharge permits require periodic monitoring for various parameters as specified by EBMUD. Self-monitoring of wastewater discharges within Berkeley Lab occurs at the wastewater treatment systems located at Buildings 25 and 77 and at groundwater treatment systems, according to the terms of their respective EBMUD permits.[16] In addition, EBMUD performs unannounced monitoring of wastewater discharges. For 2010, all sampling results for the EBMUD permits were below discharge limits.

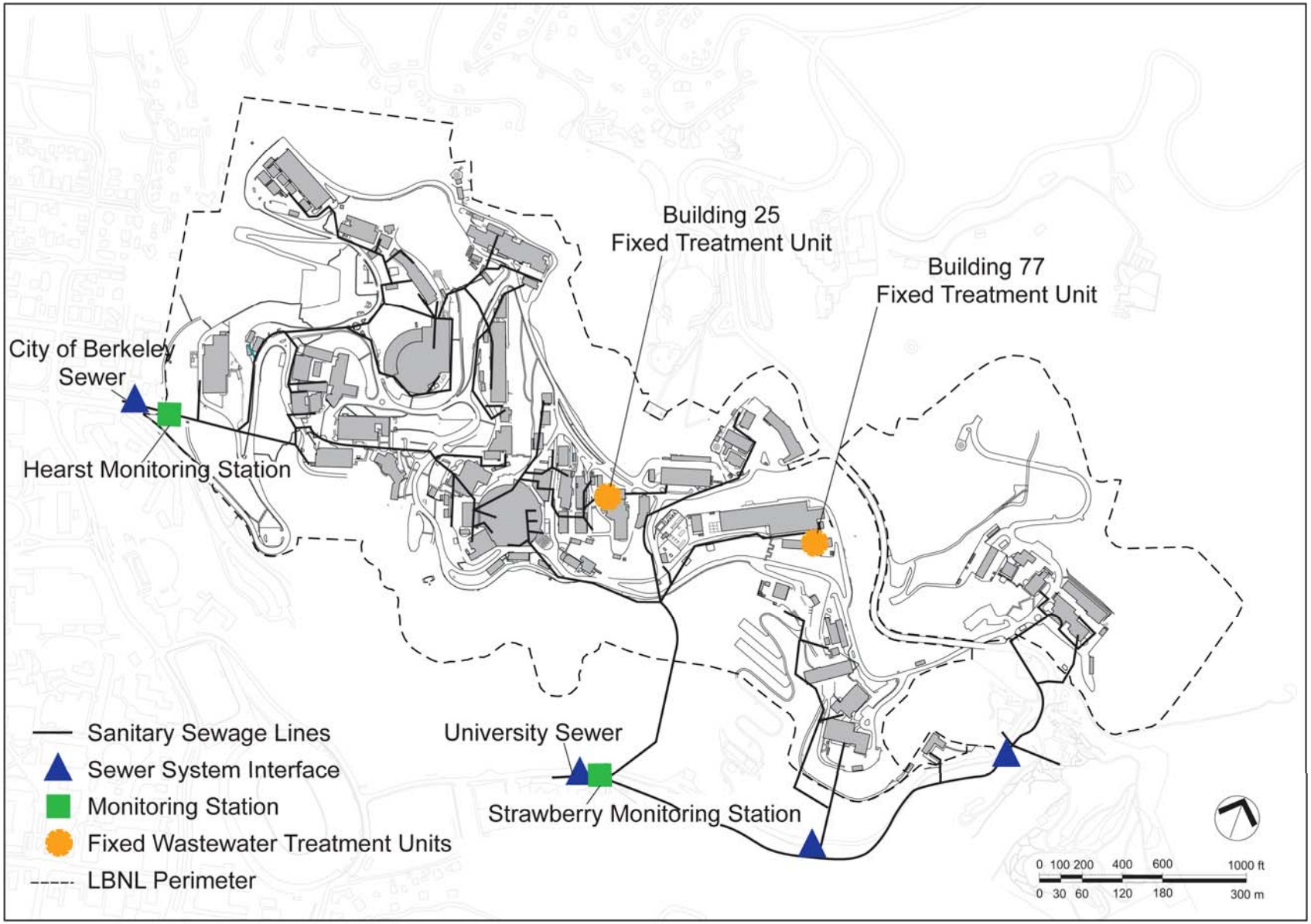


Figure 4-4 Sanitary Sewer System

4.3.2.1 Hearst and Strawberry Sewer Outfalls

Nonradiological monitoring of sitewide samples collected at the Hearst and Strawberry monitoring stations includes analyses for pH, total identifiable chlorinated hydrocarbons, TSS, and COD, with additional analyses for metals. Total flow is also measured and recorded. In 2010, Berkeley Lab discharged approximately 49,000 m^3 (13.04 million gal) through Hearst Sewer and 81,000 m^3 (21.3 million gal) through Strawberry Sewer.

Radiological monitoring is required by DOE Order 5400.5[17] and guidance,[18] and verifies compliance with radiological limits under the California Code of Regulations (CCR),[19] cited in the EBMUD wastewater discharge permit.[20] California regulations now incorporate by reference the applicable federal Nuclear Regulatory Commission regulations[21] and associated discharge limits.

Analyses are performed by a state-certified external laboratory. Results are compared against the discharge limits for each parameter given in the permits, and self-monitoring reports are submitted to EBMUD in compliance with permit requirements. Annually, Berkeley Lab submits a certification to EBMUD that its discharge is in compliance with the permit's radioactive limits.

4.3.2.1.1 Nonradiological Monitoring Results

Berkeley Lab collected two nonradiological samples from both the Hearst and Strawberry outfalls as part of self-monitoring during 2010. All results were well within discharge limits, as were all measurements made by EBMUD in its two independent sampling events.

No chlorinated hydrocarbons were detected except chloroform (which is present in EBMUD supply water). According to the permit, the pH level must be equal to or greater than 5.5; all results were well above this value. TSS and COD have no discharge limits and are measured to determine wastewater strength, which forms the basis for the costs charged by EBMUD to LBNL for wastewater treatment.

4.3.2.1.2 Radiological Monitoring Results

The Hearst and Strawberry sewer outfalls are sampled every half-hour using automatic equipment. Every four weeks, composite samples are collected at both locations and submitted to a state-certified laboratory for analysis of gross alpha radiation, gross beta radiation, iodine-125, tritium, phosphorus-32, sulfur-35, and carbon-14. Periodically, split samples are analyzed for QC purposes.

The federal[22] and state[23] regulatory limits for radioisotopes in wastewater are based on total amounts released per year. For tritium, this limit is 1.9×10^{11} Bq (5 Ci); and for carbon-14 the limit is 3.7×10^{10} Bq (1 Ci). The annual limit for all other radioisotopes is a combined 3.7×10^{10} Bq (1 Ci).

All results for gross alpha, carbon-14, iodine-125, phosphorus-32, sulfur-35, and tritium samples collected at the Hearst and Strawberry Monitoring Stations were below the MDA.

Positive results for gross beta were found. For gross beta results, the highest result was 0.63 Bq (17.6 pCi/L), which is below the federal and state requirements for drinking water and far below the EBMUD discharge limit for all radioisotopes.

Annual discharges are estimated by multiplying the activity found by the volume discharged during the monitoring period. In the case of tritium, activities below the MDA were totaled to give an estimated annual discharge of zero Bq (zero Ci) or 0% of the discharge limit. Activities below the MDA were also totaled for carbon-14 to give an estimated annual discharge of zero Bq (zero Ci) or 0% of the discharge limit. The estimated annual discharge for all other radioisotopes (gross alpha, gross beta, iodine-125, phosphorus-32,

sulfur-35) combined was 3.55×10^7 Bq (9.58×10^{-4} Ci) or 0.096% of the discharge limit.

4.3.2.2 Building 25 Photo Fabrication Shop Wastewater

The Photo Fabrication Shop in Building 25 manufactures electronic circuit boards and screen-print nomenclature on panels, and the shop performs chemical milling, to support the needs of Berkeley Lab research and operations activities. Wastewater containing metals and acids from these activities is routed to an FTU before discharge to the sanitary sewer. The Building 25 FTU treats wastewater in batches rather than continuously.

The two self-monitoring events performed by Berkeley Lab yielded daily maximum and monthly average results well below EBMUD discharge limits.[24] As noted in Chapter 3 and Section 4.3.2, the Building 25 FTU began closure on September 20, 2010 and was completely removed by October 1, 2010.

4.3.2.3 Building 77 Ultra-High Vacuum Cleaning Facility Wastewater

The Ultra-High Vacuum Cleaning Facility (UHVCF) at Building 77 cleans various types of metal parts used in research and support activities at Berkeley Lab. Cleaning activities include passivating, acid and alkaline cleaning, and ultrasonic cleaning. Acid and alkaline rinse waters that contain metals from UHVCF operations are routed to an approximately 230 L/minute (L/min) (60 gal/min) FTU.

All sampling performed by Berkeley Lab and EBMUD—three self-monitoring events and three sampling events by EBMUD—yielded results well within permitted limits.

The Building 77 EBMUD permit is currently combined with the Building 25 permit. Instead of monitoring for chlorinated hydrocarbons, LBNL submits a *Total Toxic Organics Compliance Report* twice per year; which certifies that Buildings 25 and 77 are not discharging chlorinated hydrocarbons or other toxic organic compounds to the FTU and to the sanitary sewer.

4.3.2.4 Treated Hydrauger and Extraction Well Discharge

Since 1993, EBMUD has permitted Berkeley Lab to discharge treated groundwater to the sanitary sewer at seven locations.

The EBMUD permit[25] allows for discharge of treated groundwater from certain hydraugers (subsurface drains) and extraction wells, and also from well sampling and development activities.

The treatment process consists of passing the contaminated groundwater through a two-stage carbon-drum adsorption system. Samples of the treated water are collected bi-monthly and analyzed for VOCs using U.S. EPA-approved methods to document that discharge limits have not been exceeded. All treated groundwater discharged under the permit is routed through the Hearst Sewer. One of the conditions for this discharge is the submittal of a semiannual report that provides information on the volumes treated and discharged, as well as analytical results for samples collected each quarter from the treated water. (For further discussion of groundwater monitoring and treatment, see Section 4.4).

4.4 GROUNDWATER

This section reviews the Berkeley Lab groundwater monitoring program (emphasizing 2010 results) and provides a summary discussion of site groundwater contaminant plumes and the corrective measures applied to each of those plumes. More detailed information on the program is provided in the Environmental Restoration Program Quarterly Progress Reports, which contain all site groundwater monitoring data, site maps showing monitoring well locations and contaminant concentrations, and graphs showing changes in contaminant concentrations over time. These reports are available for

public review at www.lbl.gov/ehs/erp/html/documents.shtml and at the main branch of the Berkeley Public Library.

Berkeley Lab is currently in the CMI phase of the RCRA CAP. The objectives of groundwater monitoring during this phase are to: (1) evaluate the continued effectiveness of the corrective measures that have been implemented for cleanup of contaminated groundwater; (2) document that site groundwater plumes are stable or attenuating and are not migrating offsite; and (3) monitor progress toward attaining the long-term goal of restoring all groundwater at the site to drinking water standards, if practicable. Although drinking water standards are a long-term goal, it should be noted that groundwater at Berkeley Lab is not used for domestic, irrigation, or industrial purposes and drinking water is supplied by EBMUD.

4.4.1 Groundwater Monitoring Results

The groundwater monitoring network at Berkeley Lab consists of more than 230 wells, with 16 of the wells located close to the site boundary and one well located offsite (see Figure 4-5). LBNL's groundwater monitoring wells are sampled for VOCs, metals, and/or tritium in accordance with a schedule approved by the RWQCB. Selected wells are also monitored for other potential contaminants.

Except for a single well, MWP-7, in which trichloroethylene (TCE) was detected at a concentration well below the drinking water standard,[26] no tritium or VOCs were detected in any of the perimeter or off-site wells in 2010. Sitewide VOC and tritium results are discussed in detail in Section 4.4.2. The only metal detected in 2010 at a concentration above both the drinking water standard and the statistically estimated Berkeley Lab background level[27] was arsenic in one well. No plumes are associated with this metal, and it is likely to be naturally occurring. The elevated arsenic concentration is attributed to the relatively high natural concentration of this metal in certain sedimentary rock types at Berkeley Lab. In addition, molybdenum, which has no drinking water standard, was detected above the upper estimate of background in five wells.

4.4.2 Groundwater Contaminant Plumes

VOC Plumes: Based on groundwater monitoring results, six principal VOC groundwater contaminant plumes have been identified at Berkeley Lab (Old Town, Building 51/64, Building 51L, Building 71B, Building 69A, and Building 76 plumes). In addition, VOC-contaminated groundwater is present in two other localized areas (Building 75/75A and Building 77 areas). The primary contaminants associated with the plumes and localized areas of groundwater contamination are halogenated VOCs that were used as cleaning solvents and their associated degradation products. Past releases associated with the use of these solvents were the source of the groundwater contamination. Over the past several decades, LBNL has improved control systems and practices to prevent spills and unwanted releases.

Concentrations of VOCs in most of the plume locations and in the Building 77 area have been decreasing; however, except for the Building 77 area, VOC concentrations still remain above the drinking water standard.

Tritium Plume: A plume of tritium-contaminated groundwater extends southward from the Building 75 area. The source of the contamination was the former National Tritium Labeling Facility (NTLF), which ceased operation in 2001. The magnitude and lateral extent of the tritium plume have been decreasing since closure of the NTLF, with concentrations of tritium below the drinking water standard of 740 Bq/L (20,000 pCi/L)[28, 29] in all wells since February 2005.

Petroleum Hydrocarbon Plumes: Two petroleum hydrocarbon plumes associated with former USTs are present at the site. One is located at Building 74 and the other near Building 6. Petroleum hydrocarbons have also been detected in the groundwater at a former UST site south of Building 76.

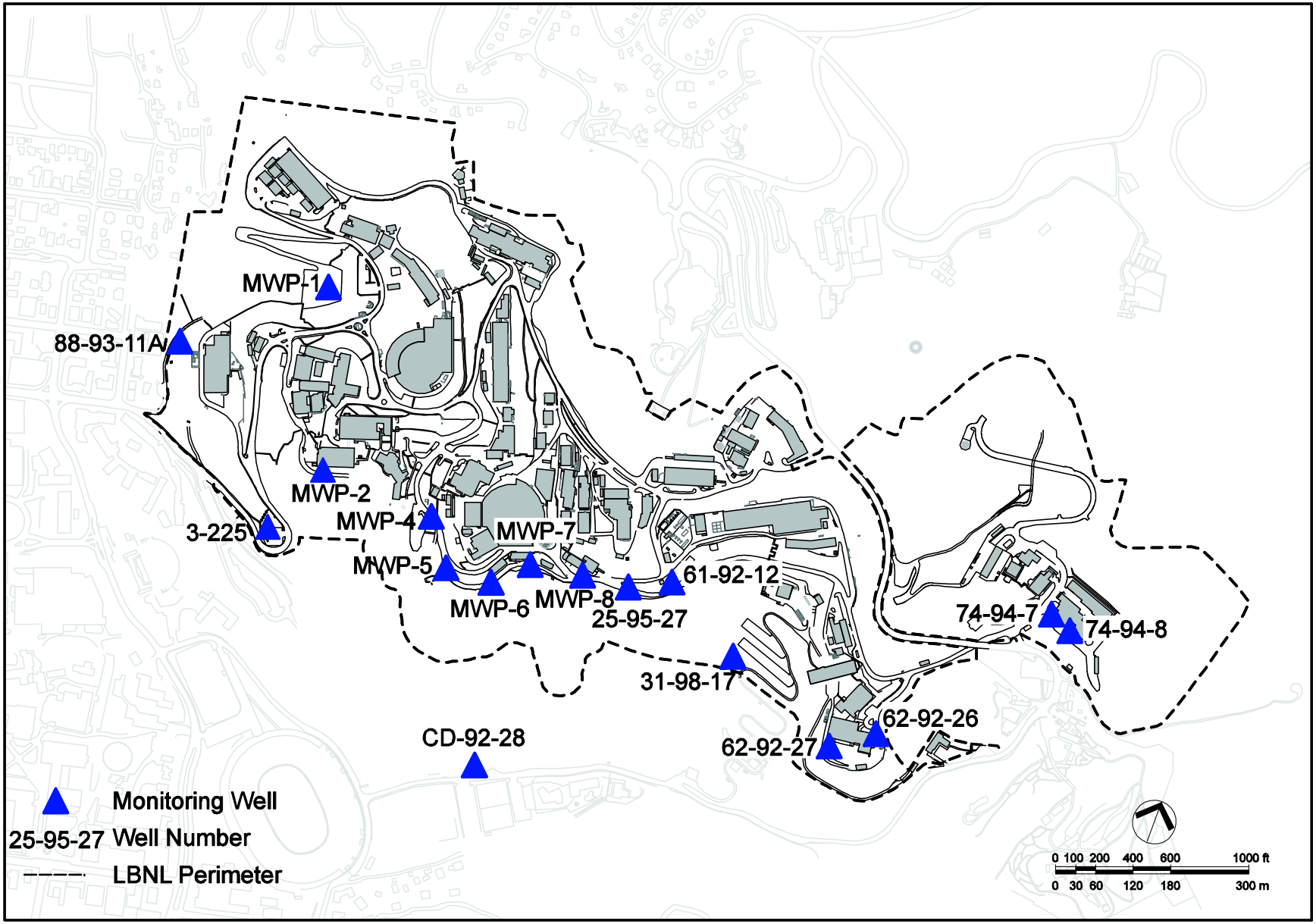


Figure 4-5 Approximate Locations of Monitoring Wells Closest to the Berkeley Lab Property Line

The locations of the plumes and the extent of groundwater with contaminant concentrations exceeding the drinking water standard in September 2010 are shown on Figure 4-6.

The plumes are discussed in more detail in the following subsections.

4.4.2.1 Old Town VOC Plume—Building 7 Lobe

The Old Town VOC plume is a broad, multi-lobed plume that underlies much of the central portion of Berkeley Lab known as "Old Town." The geometry and distribution of chemicals in the plume indicate that it consists of three coalescing lobes (Building 7, Building 25A, and Building 52 lobes) that were originally discrete plumes derived from distinct sources.

The Building 7 lobe extends northwestward from the northwest corner of Building 7 to the parking area downslope from Building 58. The principal constituents of the Building 7 lobe are tetrachloroethylene (PCE) and carbon tetrachloride, and their associated degradation products (e.g., TCE; 1,1-dichloroethylene (DCE); cis-1,2-DCE; and vinyl chloride).

A number of interim corrective measures were instituted in prior years for the Building 7 lobe, including excavation of contaminated soil from the source area, removal of a sump that was the source of the groundwater contamination, and installation of several groundwater extraction trenches to control plume migration.

The final corrective measures for the Building 7 lobe consisted of excavation and off-site disposal of contaminated soil remaining in the source area, *in situ* soil flushing and groundwater capture, and MNA. Excavation of the source area soil was completed in 2006. The *in situ* soil-flushing and groundwater capture system consists of three groundwater extraction trenches and numerous groundwater extraction and injection wells. This system is designed to flush contaminants from the subsurface and control the migration of contaminated groundwater.

The source removal, together with *in situ* soil flushing and groundwater capture, has significantly reduced VOC concentrations through much of the Building 7 lobe area, with the annual average concentration of total VOCs in representative source and core area wells declining from approximately 20,000 micrograms per liter (µg/L) in 2002 to less than 1,000 µg/L in 2010. The maximum concentration of total VOCs detected in 2010 was 6,360 µg/L, which primarily consisted of PCE (3,190 µg/L) and TCE (2,980 µg/L).

4.4.2.2 Old Town VOC Plume—Building 25A Lobe

The Building 25A lobe of the Old Town VOC plume encompasses two subplumes of groundwater contamination. The main Building 25A subplume extends from the western portion of Building 25A westward to the eastern edge of Building 6. The Building 25 subplume is located south of Building 25. The principal constituents of the Building 25A subplume are TCE and its degradation products (e.g., 1,1-DCE and cis-1,2-DCE). The principal constituents of the Building 25 subplume are TCE and carbon tetrachloride.

The final corrective measure for the Building 25A lobe consists of *in situ* soil flushing. Since flushing was started in 2002, the annual average concentration of total VOCs in representative wells in the Building 25A subplume source and core area has declined from approximately 200 µg/L to less than 60 µg/L in 2010. Significant declines in the concentrations of VOCs have also been observed in the Building 25 subplume since the initiation of soil flushing in the subplume source area in April 2006. Concentrations of VOCs in groundwater samples collected south of Building 25 remained below the drinking water standard in 2010.

4.4.2.3 Old Town VOC Plume - Building 52 Lobe

The Building 52 lobe of the Old Town VOC plume extends northwest from the area east of Building 52 to the east edge of Building 46, where the contaminated groundwater is captured by a subdrain that was installed in the

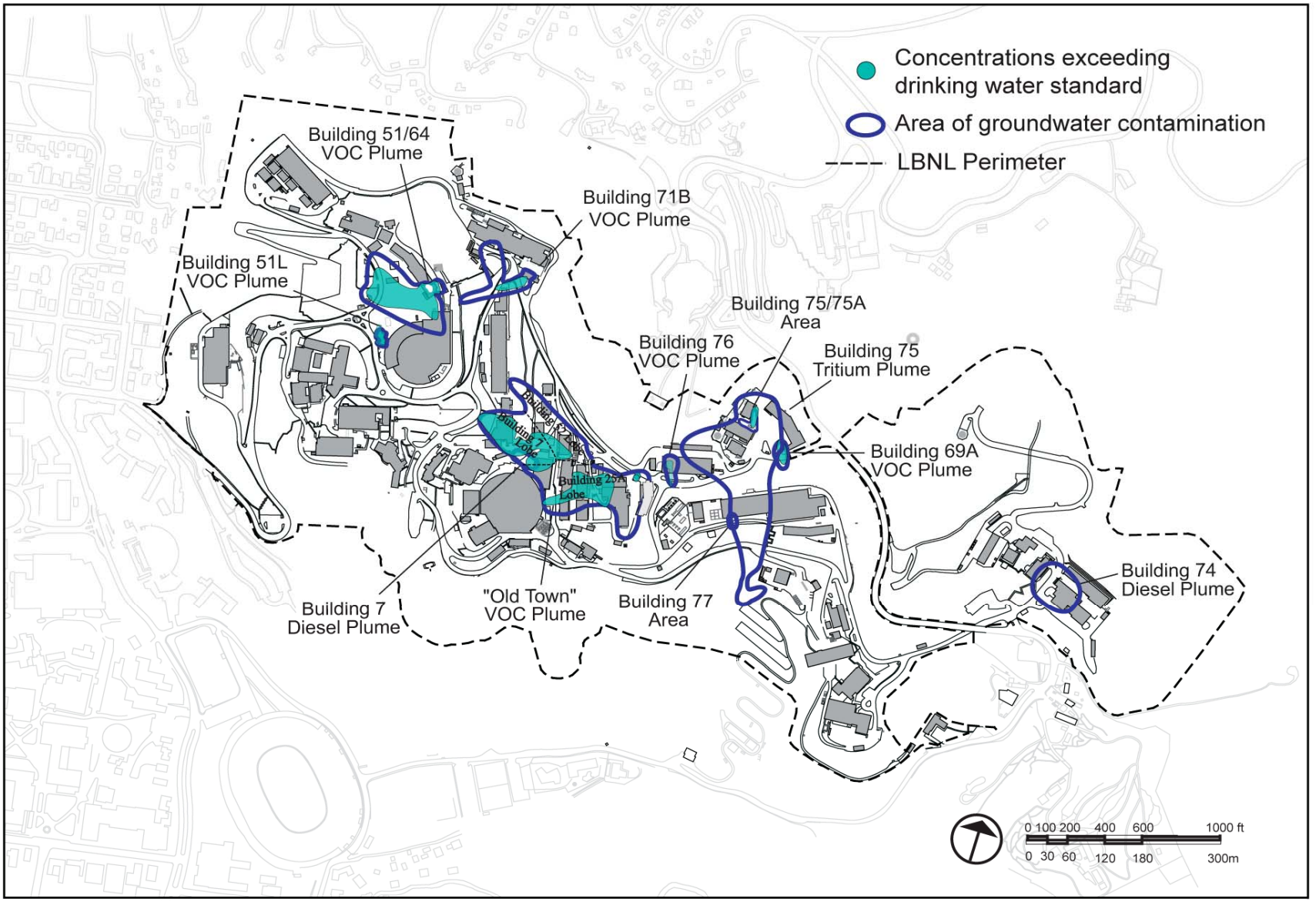


Figure 4-6 Locations of Plumes and Extent of Groundwater Contamination Above Drinking Water Standards (September 2010)

1950s as a landslide mitigation measure. The principal lobe constituents are PCE and carbon tetrachloride, and their associated degradation products (e.g., TCE; 1,1-DCE; cis-1,2-DCE; and chloroform).

The final corrective measures for the Building 52 lobe consist of *in situ* soil flushing and the continued capture of groundwater at the Building 46 subdrain. Since flushing was started in 2003, the annual average concentration of total VOCs in representative Building 52 lobe source and core area wells has declined from more than 100 µg/L to less than 5 µg/L in 2010, with concentrations of individual VOCs declining to less than the drinking water standards throughout most of the lobe area.

4.4.2.4 Building 51/64 VOC Plume

The Building 51/64 VOC plume extends south and west from the southeast corner of Building 64 beneath the former location of Building 51B. The principal plume constituents are 1,1-dichloroethane (DCA), TCE, and PCE and their associated degradation products (e.g., 1,1-DCE; cis-1,2-DCE; and vinyl chloride).

In 2000, contaminated soil was excavated from the source area of the plume as an interim corrective measure. The final corrective measures for the Building 51/64 VOC plume consist of *in situ* soil flushing, MNA, and the continued collection and treatment of water from the Building 51 subdrain system. In addition, HRC has been injected into the subsurface in the downgradient plume area. As a result of these interim and final corrective measures, the maximum concentration of total VOCs in groundwater in the source area has declined from more than 700,000 µg/L to approximately 200 µg/L in 2010. Since *in situ* soil flushing was started in 2003, the annual average concentration of total VOCs detected in representative source and core area wells has declined from more than 4,000 µg/L to less than 100 µg/L. It should be noted that total VOCs (primarily 1,1-DCA) were detected at a concentration of 1,439 µg/L in 2010 in a groundwater sample collected from a multiport well in the source area. This well is constructed with short, approximately 1-foot, screened intervals to target specific permeable zones within the bedrock and is therefore not representative of the water-bearing unit as a whole.

4.4.2.5 Building 51L VOC Plume

The Building 51L VOC plume is located beneath the area where Building 51L was formerly located. The principal plume constituent is TCE and its associated degradation products (e.g., cis-1,2-DCE).

The final corrective measure for the Building 51L VOC plume was excavation and off-site disposal of contaminated source area soil. The corrective measure was completed at the end of 2006. Prior to completion of the corrective measure, halogenated VOCs were detected at concentrations above 1,000 µg/L in wells monitoring the plume. Groundwater extraction well EW51L-06-1 was installed in the backfilled corrective measure excavation. The maximum concentration of total VOCs detected in EW51L-06-1 in 2010 was 22 µg/L. The maximum concentration of total VOCs (primarily TCE) detected in the Building 51L area in 2010 was 551 µg/L.

4.4.2.6 Building 71B VOC Plume

The Building 71B VOC plume extends southwest from Building 71B towards the Building 51/64 area. The principal plume constituents are TCE and PCE, and their associated degradation products (e.g., cis-1,2-DCE). Between 2000 and 2004, highly contaminated soil was excavated from the plume source area as an interim corrective measure.

The final corrective measures for the Building 71B VOC plume consist of *in situ* soil flushing with the injection of HRC, and continued collection and treatment of contaminated effluent from the hydraugers that drain groundwater from the slope west of Building 46A. Since flushing was started in 2004, the annual average concentration of total VOCs in source area wells

has declined from more than 300 µg/L to less than 50 µg/L in 2010. The maximum concentration of total VOCs detected has declined from more than 6,000 µg/L to less than 400 µg/L in 2010.

4.4.2.7 Building 69A VOC Plume

The Building 69A VOC plume is located west of Building 69A. The principal plume constituents are cis-1,2-DCE and vinyl chloride.

The final corrective measure for the Building 69A VOC plume is MNA. In addition, HRC was injected into the subsurface in 2006 and 2007 to enhance the natural degradation processes. The maximum concentration of total VOCs (primarily cis-1,2-DCE) detected in 2010 was 17 µg/L.

4.4.2.8 Building 76 VOC Plume

The Building 76 VOC plume extends approximately 100 feet southwards from the motor-pool area on the south side of Building 76. The principal plume constituent is TCE and its degradation products (e.g., cis-1,2-DCE). The maximum concentration of total VOCs detected in groundwater samples collected in 2010 was 16 µg/L. No corrective measures are required for the Building 76 plume.

4.4.2.9 Tritium Plume

The Building 75 tritium plume extends southwards from Building 75 toward Chicken Creek. In addition, low concentrations of tritium have been detected in a few monitoring wells in the Building 71B area. The source of the tritium was the former NTLF at Building 75. The maximum concentration of tritium detected in Building 75 tritium plume groundwater in 2010 was 522 Bq/L (14,100 pCi/L), which is below the drinking water standard of 740 Bq/L (20,000 pCi/L). Concentrations of tritium have been declining in almost all wells monitoring the plume since closure of the NTLF in December 2001, with a concurrent reduction in the lateral extent of the plume. Tritium was detected at a maximum concentration of 13.7 Bq/L (370 pCi/L) in the Building 71B area in 2010.

4.4.2.10 Petroleum Hydrocarbon Plumes

Petroleum hydrocarbon-contaminated groundwater has been historically detected in three areas where USTs formerly were located: north of Building 6, near Building 74, and south of Building 76. In 2010, petroleum hydrocarbons were detected at maximum concentrations of 160 µg/L in the groundwater south of Building 76 and 280 µg/L in the groundwater near Building 74. Petroleum hydrocarbons were not detected in the groundwater north of Building 6. No aromatic VOCs, including BTEX components (i.e., benzene, toluene, ethylbenzene, xylenes), have been detected in the groundwater at any of these UST sites since 2003.

4.4.3 Treatment Systems

As described above, Berkeley Lab is using collection trenches and subdrains to control the migration of groundwater plumes. Eleven GAC systems were operated in 2010 to treat the extracted groundwater. The treated water is mainly reinjected into the subsurface for *in situ* soil-flushing purposes. Excess water is released to the sanitary sewer in accordance with Berkeley Lab's treated groundwater discharge permit from EBMUD.[30]

The total volume of contaminated groundwater treated by these systems during the year was about 53,000 m^3 (14 million gal). From 1991 through the end of 2010, more than 443,000 m^3 (117,000,000 gal) of contaminated groundwater have been extracted, treated, and mostly reinjected into the subsurface for *in situ* soil-flushing purposes.

4.5 SOIL AND SEDIMENT

This section summarizes the monitoring results for soil and sediment samples.

4.5.1 Soil Sampling Results

Soil samples obtained from the top 2 to 5 cm (1 to 2 in) of surface soils were collected from three locations on the LBNL site and one off-site environmental monitoring station (see Figure 4-7). Samples were analyzed for gross alpha and gross beta radiation, gamma emitters, tritium, moisture content, pH, and 15 individual metals.

For radioisotope analysis, the alpha, beta, and gamma emitter results were similar to background levels of naturally occurring radioisotopes commonly found in soils. Tritium measurements at each of the sampling locations were at or below detection limits.

For non-radioisotope analysis, measurements of pH and moisture content at each of the sampling locations were within the typical range for soils. With the exception of lead and vanadium, the metals results were within established Berkeley Lab soil background levels[31] or levels commonly found in California soils.

For lead, the off-site sampling location was at 64 milligrams per kilogram (mg/kg), which is slightly above the established Berkeley Lab soil background concentration of 57 mg/kg, but well below the U.S. EPA's industrial preliminary remediation goal of 800 mg/kg. For vanadium, one LBNL sampling location was at 92 mg/kg, which is slightly above the established Berkeley Lab soil background concentration of 90 mg/kg, but well below the U.S. EPA's industrial preliminary remediation goal of 550 mg/kg.

4.5.2 Sediment Sampling Results

Sediment samples were collected in the creek beds of the North Fork of Strawberry Creek and Chicken Creek on the LBNL site and at one off-site location at Wildcat Creek in Tilden Regional Park in Berkeley (see Figure 4-7). Due to limited sediment availability, several grab samples from the general sampling area of each location were composited and analyzed. Samples were analyzed for gross alpha, gross beta, and gamma emitters, tritium, 15 individual metals, pH, moisture content, and petroleum hydrocarbons (diesel and oil/grease).

For radioisotope analysis, the levels of alpha, beta, and gamma emitters were within background levels of naturally occurring radioisotopes commonly found in sediments. Tritium measurements at each of the sampling locations were at or below detection limits.

For non-radioisotope analysis, measurements of pH and moisture content at each of the sampling locations were within the typical range for soils. Petroleum hydrocarbons (diesel and oil/grease) were within the historical values typically found at the Berkeley Lab site over the past five years. With the exception of zinc, the metals results were within either the established Berkeley Lab soil background levels or levels commonly found in California soils.

For zinc, one LBNL sampling location was at 170 mg/kg, which is slightly above the established Berkeley Lab soil background concentration of 140 mg/kg, but well below the U.S. EPA's industrial preliminary remediation goal of 23,000 mg/kg.

4.6 VEGETATION AND FOODSTUFFS

Sampling and analysis of vegetation and foodstuffs can provide information regarding the presence, transport, and distribution of radioactive emissions in the environment. This information can be used to detect and evaluate changes in environmental radioactivity resulting from Berkeley Lab activities and to calculate potential human doses that would occur from consuming vegetation and foodstuffs.

Due to historical air emissions from the former NTLF Hillside Stack, vegetation near that site contains measurable concentrations of tritium. Since the closure of the NTLF in December of 2001, tritium emissions from

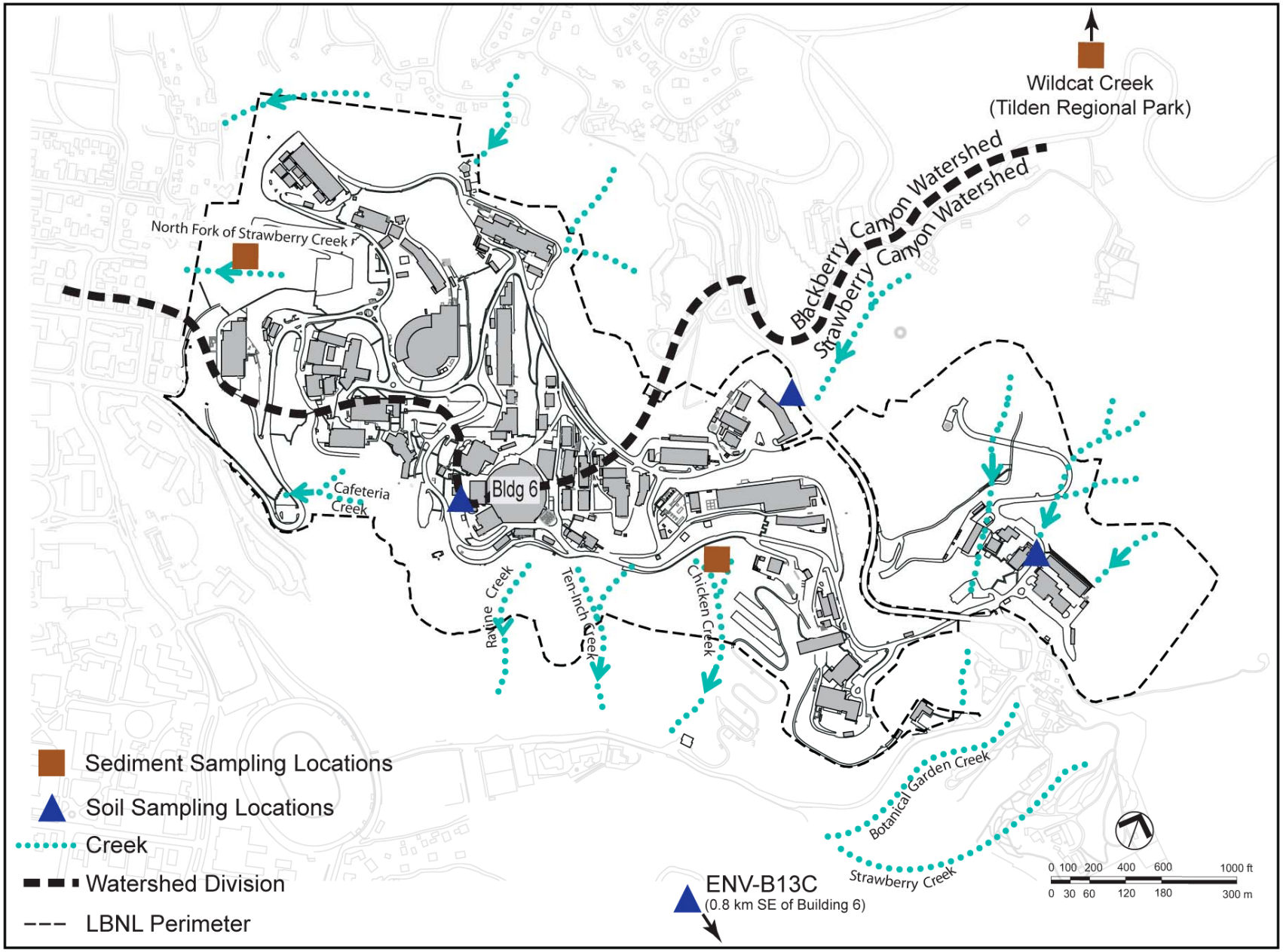


Figure 4-7 Soil and Sediment Sampling Sites

Berkeley Lab have decreased sharply and tritium concentrations in vegetation have decreased as well, albeit more slowly. To document changes in the concentrations of tritium in the local vegetation, Berkeley Lab routinely samples this vegetation at least every five years. In 2010, 33 vegetation samples were collected for this purpose.

Tritium in vegetation occurs in two chemical forms – organically bound tritium (OBT) and tissue-free water tritium (TFWT). Berkeley Lab analyzes vegetation for both forms.

Table 4-4 and Table 4-5 show the decrease in tritium in wood, duff, and leaves at three locations near the former NTLF stack over the past ten years.

Table 4-4 Results of Routine Vegetation Sampling for OBT

Year	Medium Sampled		
	Duff	Leaves	Wood
Organically bound tritium in vegetation at 27.5 m north-northwest of former NTLF Hillside Stack			
2001	4.4 Bq/g (120 pCi/g)	1.1 Bq/g (29 pCi/g)	0.20 Bq/g (5.4 pCi/g)
2005	3.1 Bq/g (85 pCi/g)	<0.20 Bq/g (<5.3 pCi/g)	<0.19 Bq/g (<5.2 pCi/g)
2010	0.47 Bq/g (13 pCi/g)	<0.19 Bq/g (<5.1 pCi/g)	<0.14 Bq/g (<3.7 pCi/g)
Organically bound tritium in vegetation at 45 m north of former NTLF Hillside Stack			
2001	2.9 Bq/g (4.6 pCi/g)	1.5 Bq/g (40 pCi/g)	<0.15 Bq/g (<4 pCi/g)
2005	1 Bq/g (0.13 pCi/g)	<0.18 Bq/g (<4.9 pCi/g)	<0.21 Bq/g (<5.8 pCi/g)
2010	0.79 Bq/g (0.09 pCi/g)	<0.19 Bq/g (<5.1 pCi/g)	<0.18 Bq/g (<4.8 pCi/g)
Organically bound tritium in vegetation at 103 m west-northwest of former NTLF Hillside Stack			
2001	0.46 Bq/g (12 pCi/g)	0.93 Bq/g (25 pCi/g)	<0.15 Bq/g (<4 pCi/g)
2005	<0.20 Bq/g (<5.3 pCi/g)	<0.18 Bq/g (<4.8 pCi/g)	<0.20 Bq/g (<5.5 pCi/g)
2010	<0.16 Bq/g (<4.3 pCi/g)	<0.16 Bq/g (<4.2 pCi/g)	<0.1 Bq/g (<2.7 pCi/g)

Table 4-5 Results of Routine Vegetation Sampling for TFWT

Year	Medium Sampled		
	Duff	Leaves	Wood
Tissue-free water tritium in vegetation at 27.5 m north-northwest of former NTLF Hillside Stack			
2001	0.34 Bq/g (9.3 pCi/g)	0.33 Bq/g (9.0 pCi/g)	0.32 Bq/g (8.7 pCi/g)
2005	0.015 Bq/g (0.41 pCi/g)	0.08 Bq/g (2.2 pCi/g)	0.21 Bq/g (5.8 pCi/g)
2010	0.0044 Bq/g (0.12 pCi/g)	0.041 Bq/g (1.1 pCi/g)	0.071 Bq/g (1.9 pCi/g)
Tissue-free water tritium in vegetation at 45 m north of former NTLF Hillside Stack			
2001	0.17 Bq/g (4.6 pCi/g)	0.19 Bq/g (5.0 pCi/g)	0.17 Bq/g (4.5 pCi/g)
2005	0.0047 Bq/g (0.13 pCi/g)	0.057 Bq/g (1.5 pCi/g)	0.08 Bq/g (2.3 pCi/g)
2010	0.0033 Bq/g (0.09 pCi/g)	0.018 Bq/g (0.49 pCi/g)	0.034 Bq/g (0.92 pCi/g)
Tissue-free water tritium in vegetation at 103 m west-northwest of former NTLF Hillside Stack			
2001	0.05 Bq/g (1.4 pCi/g)	0.048 Bq/g (1.3 pCi/g)	0.23 Bq/g (0.62 pCi/g)
2005	<0.0028 Bq/g (<0.075 pCi/g)	<0.0033 Bq/g (<0.09 pCi/g)	0.0055 Bq/g (0.15 pCi/g)
2010	<0.0034 Bq/g (<0.093 pCi/g)	0.0042 Bq/g (0.11 pCi/g)	0.0061 Bq/g (0.16 pCi/g)

Results of sampling at other locations farther from the former NTLF stack were very near or below the detection limit and are provided in Volume II.

Berkeley Lab also samples trees for tritium for landscape management, because only trees with tritium levels indistinguishable from background are removed from the LBNL site and released to the public. In 2010, one tree near Building 76K (about 90 m [295 feet] south-southwest of the former NTLF Hillside Stack) was sampled for this purpose. The samples were analyzed at a commercial laboratory for OBT and TFWT, and the tree was found to have measurable tritium, as shown in Table 4-6. Based on these

results, the tree was not removed from the Berkeley Lab site. Instead it was chipped and the chips were left where the tree had stood or were spread on the hillside near the location of the former NTLF stack.

Table 4-6 Results of Landscape Management Sampling

Sample Description	Result (Bq/g)	MDA (Bq/g)	Result (pCi/g)	MDA (pCi/g)
Organically Bound Tritium				
B76K Tree A—Chip	0.24	0.11	6.5	3.0
B76K Tree A—Chip (Split)	0.14	0.11	3.9	3.0
Tissue Free Water Tritium				
B76K Tree A—Chip	0.0019	0.0018	0.052	0.049
B76K Tree A—Chip (Split)	0.0024	0.002	0.065	0.055

4.7 PENETRATING RADIATION MONITORING

Radiation-producing machines (e.g., accelerators, x-ray machines, irradiators) and various radionuclides are used at Berkeley Lab for high-energy particle studies and biomedical research. Accelerator and irradiator operations at the site are the primary contributors of penetrating radiation.

When operating, accelerators may produce both gamma radiation and neutrons. To detect gamma radiation and neutrons from accelerator operations, Berkeley Lab places radiation-detection equipment at environmental monitoring stations near the site's primary research accelerators, which include the Advanced Light Source (Building 6), Biomedical Isotope Facility (Building 56), and 88-Inch Cyclotron (Building 88). The LOASIS Project (Building 71) is an experimental, laser-driven accelerator that does not produce measurable gamma or neutron radiation outside the building; nonetheless, penetrating radiation near this accelerator is passively monitored, as discussed below.

Berkeley Lab uses two methods to determine the environmental radiological impact from accelerator operations:

- Real-time monitors that continuously detect and record gamma radiation and neutron doses
- Passive detectors called "optically stimulated luminescence dosimeters," which by laboratory analysis provide an average dose over time from gamma radiation.

The locations of real-time monitors and dosimeters are shown in Figure 4-8. Results of both measurement methods are given in terms of dose and are provided in Section 5.2.

Irradiators at Berkeley Lab produce only gamma radiation. Used for radiobiological and radiophysics research, a gamma irradiator that uses sealed cobalt-60 sources is housed at Berkeley Lab in Building 74; the irradiator is in a massive interlocked structure that is covered with reinforced concrete. In December 2008, this irradiator was removed from service, and it is not currently authorized for use. While the irradiator was in use, routine surveys confirmed that the maximum gamma radiation doses at one m (3.3 ft) from the outside walls or ceiling of the building were indistinguishable from background levels (0.002 mSv per hour [mSv/hr]) [0.2 mrem/hr]).

Berkeley Lab also uses other, smaller, well-shielded gamma irradiators, neutron generators, and x-ray machines that pose considerably less potential for environmental impact than does the Building 74 irradiator. These smaller radiation-producing machines do not measurably increase the dose to the public.

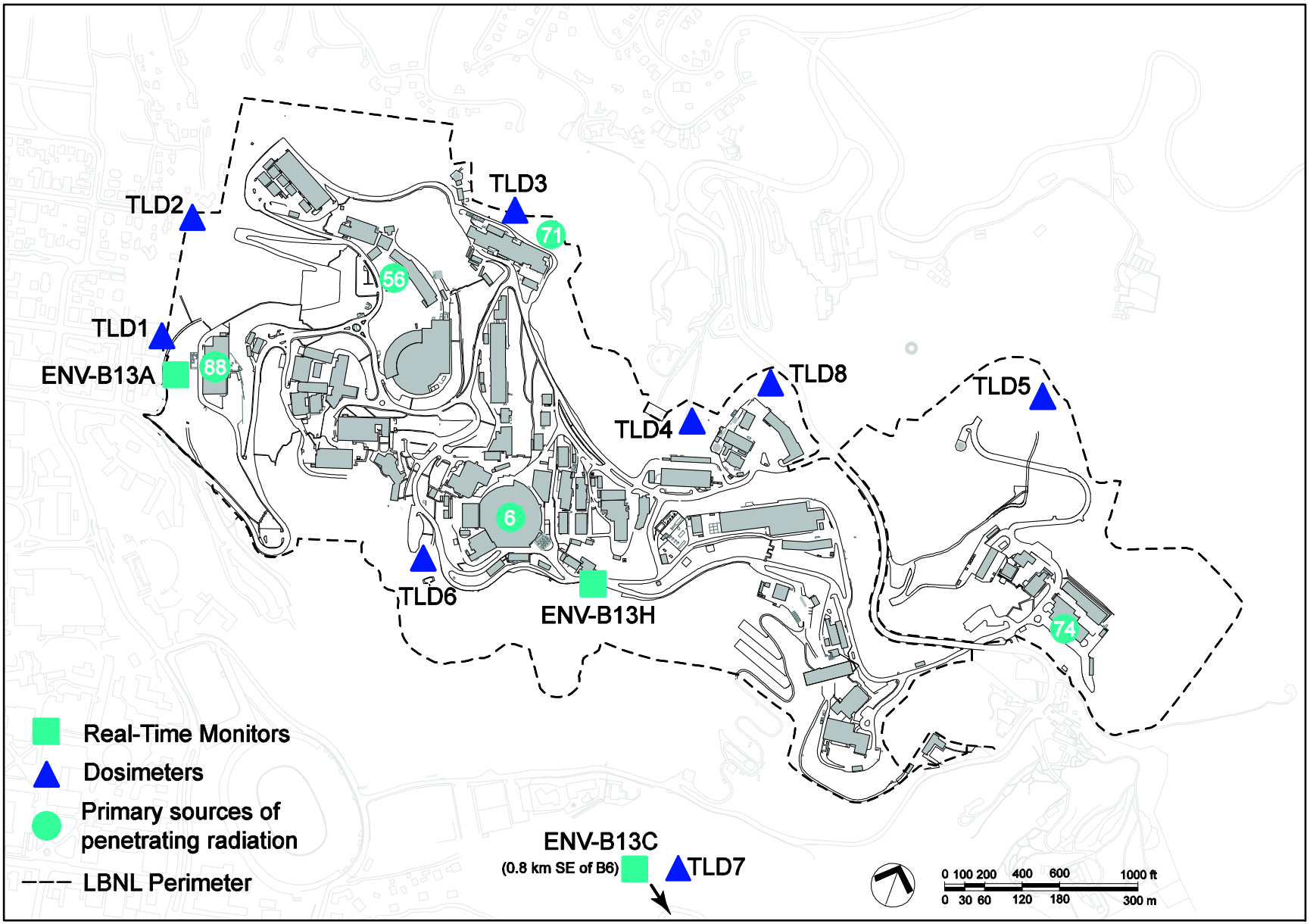


Figure 4-8 Environmental Penetrating Radiation Monitoring Stations

5 Radiological Dose Assessment

West side of the Advanced Light Source Facility

5.1 BACKGROUND

Earlier chapters refer to monitoring and sampling results in terms of concentrations of a substance. An exposure to concentrations of a substance over a period of time is referred to as "dose." Because doses are calculated rather than measured, they represent potential or estimated, instead of actual, doses. This chapter presents the estimated dose results from Berkeley Lab's penetrating radiation and airborne radionuclide monitoring programs. These doses include all known radionuclides released in significant quantities from Berkeley Lab. Doses to nearby individual members of the public are calculated, as well as population doses to people in the surrounding region extending 80 km (50 mi) from the site. Within this area, the population is about 6,615,000.[1] The doses projected from each monitoring program are presented separately before they are cumulatively evaluated to summarize the overall impact of LBNL's radiological activities on members of the public. Additionally, the radiological impact of Berkeley Lab's operations on local animals and plants is discussed.

To minimize radiological impacts to the environment and the public, Berkeley Lab manages its programs so that radioactive emissions and external exposures are as low as reasonably achievable (ALARA). LBNL's Environmental ALARA Program ensures that a screening (qualitative) review is performed on activities that could result in a dose to the public or the environment. Potential doses from activities that may generate airborne radionuclides are estimated through the NESHAP[2] process (discussed in Section 3.4.1.1 and Section 4.2.1). If the potential for a public dose is greater than 0.01 mSv (1 mrem) to an individual or 0.1 person-Sv (10 person-rem) to a population, an in-depth quantitative review is required. No quantitative reviews were required or performed in 2010.

5.2 DOSE FROM PENETRATING RADIATION

As discussed in Section 4.7, penetrating radiation from Berkeley Lab operations is measured by real-time monitors and dosimeters. Results of penetrating radiation measurements indicate that the maximum dose from gamma and neutron radiation (which is from the 88-Inch Cyclotron) to a person at the nearest residence (about 110 m [360 feet] away) was 1.2×10^{-3} mSv (0.12 mrem), and the population dose to people in the surrounding region that extends 80 km (50 mi) from the site was 6.8×10^{-4} person-Sv (6.8×10^{-2} person-rem).

5.3 DOSE FROM DISPERSIBLE AIRBORNE RADIONUCLIDES

Dose due to dispersible contaminants represents the time-weighted exposure to a concentration of a substance, whether the contaminant is inhaled in air, ingested in drink or food, or absorbed through skin contact with soil or other environmental media. Dispersible radionuclides originate as emissions from building exhaust points generally located on rooftops, as discussed in Section 4.2.1. Once emitted, these radionuclides may affect any of several environmental media: air, water, soil, plants, and animals. Each of these media represents a possible pathway of exposure affecting human dose.

Dose to an individual and the population is determined using computer dispersion models. The NESHAP regulation[3] requires that any facility that releases airborne radionuclides assess the impact of such releases using a computer program approved by the U.S. EPA. Berkeley Lab satisfies this requirement with the use of the U.S. EPA-approved programs CAP88-PC and COMPLY.[4] Details of dose calculations from dispersible airborne radionuclides are included in LBNL's annual NESHAP report,[5] available at www.lbl.gov/ehs/esg/Reports/tableforreports.shtml and at the main branch of the Berkeley Public Library.

The maximally exposed individual (MEI) to airborne emissions from the main LBNL site was determined to be a hypothetical person residing at the Lawrence Hall of Science. The maximum possible dose to the MEI from airborne radionuclides for 2010 was about 7.3×10^{-5} mSv (0.0073 mrem). This value is about 0.07% of the DOE and U.S. EPA annual limit for airborne radionuclides (0.10 mSv/yr [10 mrem/yr]).[6,7]

As with penetrating radiation, the population dose from airborne radionuclides to the surrounding population is estimated for a region that extends from the site for 80 km (50 mi). The estimated population dose from all airborne emissions from the LBNL main site for the year was 1.5×10^{-3} person-Sv (0.15 person-rem).

5.4 TOTAL DOSE TO THE PUBLIC

The total radiological impact to the public from penetrating radiation and airborne radionuclides is well below applicable standards and local background radiation levels. As presented in Figure 5-1, the maximum effective dose equivalent from penetrating radiation and airborne radionuclides from Berkeley Lab operations to an individual residing near LBNL in 2010 was about 1.3 x 10^{-3} mSv/yr (0.13 mrem/yr), primarily from gamma radiation from the 88-Inch Cyclotron. This value is approximately 0.04% of the average United States natural background radiation dose[8] (3.1 mSv/yr [310 mrem/yr]) and about 0.1% of the DOE annual limit from all sources (1.0 mSv/yr [100 mrem/yr]).[9]

The total estimated dose to the population within 80 km (50 mi) of Berkeley Lab from penetrating radiation and airborne radionuclides emitted by laboratory operations was 2.2×10^{-3} person-Sv (0.22 person-rem) for the same period. From natural background airborne radionuclides alone, this same population receives an estimated dose of 12,000 person-Sv (1,200,000 person-rem) each year.[10] The dose to the population from Berkeley Lab is about 0.00002% of the background level, or about five million times lower than background level.

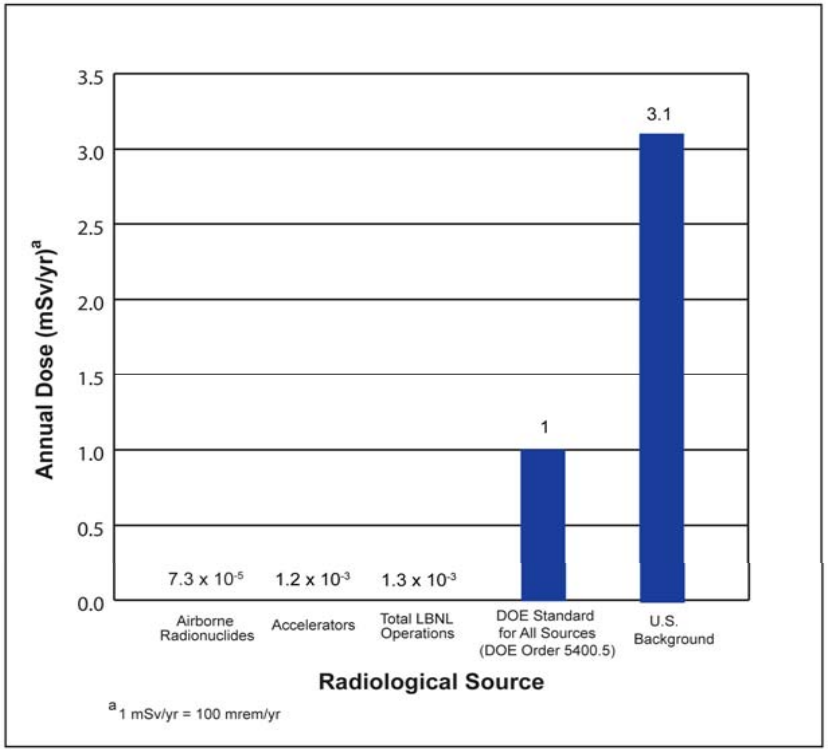


Figure 5-1 Comparison of Radiological Dose Impacts for 2010

5.5 DOSE TO ANIMALS AND PLANTS

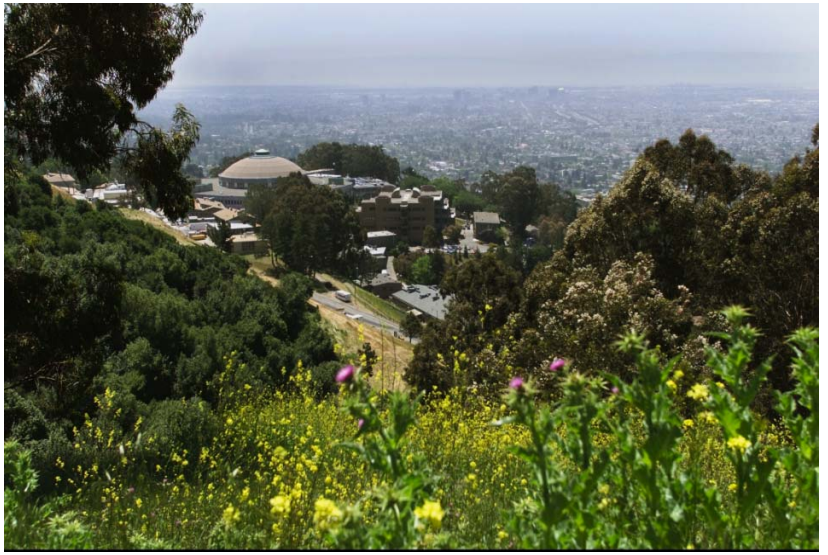
Liquid and airborne emissions may have pathways to animals and plants in addition to their pathways to humans. DOE requires that aquatic organisms be protected by limiting their radiation doses to one rad/day (0.01 gray per day [Gy/day]).[11] In addition, international recommendations suggest that doses to terrestrial animals should be limited to less than 0.1 rad/day (0.001 Gy/day),

and doses to terrestrial plants should be limited to one rad/day (0.01 Gy/day).[12]

Several sources of exposure were considered, including animal ingestion of vegetation, water, and soil; animal inhalation of soil; plant uptake of water; and external exposure of animals and plants to radionuclides in water, soil, and sediment. Creek water, soil, and sediment samples were collected and analyzed for several radionuclides, including alpha-emitting radionuclides, tritium and other beta-emitting radionuclides, and gamma-emitting radionuclides.

These radionuclides were measured at levels similar to natural background levels, or well below standards. Sample results are provided in Volume II and were evaluated using the DOE-endorsed computer model RESRAD-BIOTA.[13] Both terrestrial and aquatic systems passed the "general screening process" (described in a DOE-approved technical standard),[14] which means that doses calculated are less than biota dose limits. This confirms that Berkeley Lab is in compliance with DOE requirements to limit radiation doses to aquatic organisms to one rad/day (0.01 Gy/day). It also shows that LBNL is well within international recommendations for limiting dose to terrestrial plants and animals.

6 Quality Assurance



View of Berkeley Lab from the hills above

6.1 OVERVIEW

Berkeley Lab's QA policy is documented in the *Operating and Quality Management Plan* (OQMP).[1] The OQMP consists of a set of operating principles used to support internal organizations in achieving consistent, safe, and high-quality performance in their work activities. OQMP principles are applied to individual programs through a graded approach, with consideration given to factors such as environmental, health, and safety consequences.

In addition to the OQMP, the monitoring and sampling activities and results presented in this report were conducted in accordance with Berkeley Lab's *Environmental Monitoring Plan*[2] and applicable DOE[3] and U.S. EPA[4] guidance. A Quality Assurance Project Plan is developed and implemented when special QA and QC requirements are necessary for environmental monitoring (such as for the NESHAP stack monitoring program).

The on-site and external analytical laboratories are all certified through California's Environmental Laboratory Accreditation Program (ELAP)[5] by having demonstrated the capability to analyze samples for environmental monitoring using approved testing methods. Both types of laboratories must meet demanding QA and QC specifications and certifications[6] that were established to define, monitor, and document laboratory performance. The QA and QC data provided by these laboratories are incorporated into Berkeley Lab's processes performed to assess data quality. For 2010, six external analytical laboratories were available for use.

Each set of data (batch) received from the analytical laboratory is systematically evaluated and compared to established data-quality objectives before the results can be authenticated and accepted into the environmental monitoring database. Categories of data quality objectives include accuracy, precision, representativeness, comparability, and completeness. When possible, quantitative criteria are used to define and assess data quality.

In addition to the ELAP certification, the DOE Consolidated Audit Program (DOECAP) annually audits external analytical laboratories supporting DOE facilities, including those working with Berkeley Lab. In general, DOECAP audits are two to three days in length, with five or more auditors participating in the audit. A member of DOE or a DOE contractor representative, trained as a Nuclear Quality Assurance lead auditor, heads the DOECAP audit team. Other team members come from across the DOE complex and add a wealth of experience. Typically, Berkeley Lab sends two representatives to participate in DOECAP audits of Berkeley Lab's external analytical laboratory locations. The team audits each of the following six areas that pertain to the services provided by the particular external analytical laboratory:

- QA management systems and general laboratory practices
- Organic analyses
- Inorganic and wet chemistry analyses
- Radiochemical analyses
- Laboratory information management systems and electronic deliverables
- Hazardous and radioactive materials management.

The DOECAP laboratory audits also include a review of the external analytical laboratory's performance in proficiency testing required by California ELAP. None of the external laboratories had a major deficiency found during an audit. Any minor deficiencies identified in the audits were followed by corrective action plans and were tracked to closure.

In addition, external oversight of Berkeley Lab programs is performed through the DOE *Operational Awareness Program.*[7] Operational awareness activities are ongoing and include field orientation, meetings, audits, workshops, document and information system reviews, and day-to-day

communications. DOE criteria for performance evaluation include (1) federal, state, and local regulations with general applicability to DOE facilities and (2) applicable DOE requirements. This program enables DOE to directly oversee Berkeley Lab programs and assess performance.

6.2 PROFILE OF ENVIRONMENTAL MONITORING SAMPLES AND RESULTS

Berkeley Lab's environmental monitoring program collected approximately 2,876 individual samples (air, sediment, soil, and water) throughout the year; the samples generated approximately 106,855 analytical results.

Samples collected by these programs were obtained from 761 different locations on or surrounding the Berkeley Lab site. Individual data results for all environmental monitoring programs are presented in Volume II. Detailed discussion of sampling conducted by the Environmental Restoration Program can be found at www.lbl.gov/ehs/erp/html/documents.shtml and at the main branch of the Berkeley Public Library.

6.3 SPLIT AND DUPLICATE RESULTS FROM ENVIRONMENTAL MONITORING

An essential activity undertaken to measure the quality of environmental monitoring results is the regular collection and analysis of split and duplicate samples collected in the field. In 2010, a total of 37 split and 114 duplicate samples from all programs were collected for either radiological or nonradiological (or both) analyses, leading to 201 and 2,343 analytical results, respectively. Additionally, there were 268 blank samples submitted for QA purposes. Blank samples are useful because they can identify contamination that was obtained outside of the sampling period.

Berkeley Lab uses the metrics of relative percent difference and relative error ratio to determine whether paired results (split-sample; duplicate-sample) are within control limits. Relative percent difference is defined as the absolute value of the difference between two results divided by the mean of the two results. Relative error ratio is defined as the absolute value of the difference between two results divided by the sum of the analytical error of the two results. Relative percent difference is determined in all cases; relative error ratio is applicable only to radiological analyses where analytical error is determined.

When the primary sample and the split or duplicate sample results are below analytical detection limits, results from these tests are not meaningful. When QA pair results are outside of control limits, an investigation is performed to determine the cause of the discrepancy.

6.4 QUALITY CONTROL RESULTS FROM ANALYTICAL LABORATORIES

Analytical laboratories routinely perform QC tests to assess the quality and validity of their sample results. These tests are run with each batch of environmental samples submitted by Berkeley Lab. The same relative percent difference and relative error ratio metrics are used to evaluate these control sample results, with the relative error ratio test applicable only to radiological analyses.

Six analytical laboratories performed 2,259 radiological and nonradiological QC analyses to coincide with batches of samples submitted to Berkeley Lab. These QC analyses include various types of blank, replicate (also referred to as duplicate), matrix spike, and laboratory control samples. Table 6-1 shows the breadth and diversity of this program.

Table 6-1 Summary of Quality Control Testing Performed by Analytical Laboratories in 2010

Program	Sample Batches	QC Analysis	Laboratories Involved	Radiological[a]	Non-radiological[b]
Ambient air	23	57	2	X	
Stack air	93	270	3	X	
Rainwater	20	80	3	X	
Stormwater and creeks	86	244	6	X	X
Wastewater	133	569	6	X	X
Groundwater	172	956	4	X	X
Sediment	14	46	5	X	X
Soil	12	37	5	X	X

[a] An "X" in this column denotes that the program tests for radiological substances.

[b] An "X" in this column denotes that the program tests for non-radiological substances.

In addition to the relative percent difference and relative error ratio tests, lower and upper control limits are established for each analyte and for each type of QC test. As with split and duplicate QA, when QC results are outside of established criteria, an investigation is performed to determine the cause of the discrepancy.

Acronyms and Abbreviations

AECOM	AECOM Technical Services, Inc.
AEDE	annual effective dose equivalent
AHD	Activity Hazard Document
ALARA	as low as reasonably achievable
AST	aboveground storage tank
ASWMP	Alternative Stormwater Monitoring Plan
BAAQMD	Bay Area Air Quality Management District
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
Berkeley Lab	Ernest Orlando Lawrence Berkeley National Laboratory
BMP	Best Management Practice
Bq	becquerel
BTEX	benzene, toluene, ethylbenzene, xylenes
C	Celsius
CAP	Corrective Action Program
CCCHS	Contra Costa County Health Services
CCCSD	Central Contra Costa Sanitary District
CCR	California Code of Regulations
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
Ci	curie
cm	centimeter
CMI	Corrective Measures Implementation

COB	City of Berkeley
COD	chemical oxygen demand
CRMP	Cultural Resources Management Program
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CY	calendar year (January 1–December 31)
DCA	dichloroethane
DCE	dichloroethylene
DOE	United States Department of Energy
DOECAP	DOE Consolidated Audit Program
DPH	Department of Public Health
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EBMUD	East Bay Municipal Utility District
EH&S	Environment, Health, and Safety Division at Berkeley Lab
ELAP	Environmental Laboratory Accreditation Program
EMP	Environmental Management Program
EMS	Environmental Management System
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ESG	Environmental Services Group
F	Fahrenheit
FEIR	Final Environmental Impact Report
FONSI	Finding of No Significant Impact
ft	foot/feet
FTU	fixed treatment unit
FY	fiscal year (October 1 – September 30)
GAC	granular activated carbon
gal	gallon(s)
General Permit	General Permit for Storm Water Discharges Associated with Industrial Activity
GHG	greenhouse gas
Gy	gray (measure of radiation in SI)
HMBP	Hazardous Materials Business Plan
hr	hour
HRC	Hydrogen Release Compound
HWHF	Hazardous Waste Handling Facility
ILA	industrial, landscaping, and agricultural
in	inch
ISM	Integrated Safety Management
ISMS	Integrated Safety Management System
ISO	International Organization for Standardization
JBEI	Joint BioEnergy Institute
JGI	Joint Genome Institute
kg	kilogram
km	kilometer
L	liter
lb	pound
LBNL	Lawrence Berkeley National Laboratory
LHS	Lawrence Hall of Science
LRDP	Long Range Development Plan
m	meter
m^3	cubic meter
MDA	minimum detectable activity
MEI	maximally exposed individual
µg	microgram

mg/kg	milligrams per kilogram
mi	mile
MNA	monitored natural attenuation
mrem	millirem
MSGP	Multi-Sector General Permit
mSv	millisievert
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NTLF	National Tritium Labeling Facility
OBT	organically bound tritium
OQMP	Operating and Quality Management Plan
PCB	polychlorinated biphenyl
PCE	perchloroethylene (tetrachloroethylene)
pCi	picocurie (one trillionth of a curie)
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
rem	roentgen equivalent man (mrem = 1×10^{-3} rem)
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SI	Système Internationale or International System of Units (the metric system)
SIC	Standard Industrial Classification
SPCC	Spill Prevention, Control, and Countermeasure
Sv	sievert (mSv = 1×10^{-3} Sv)
SWDA	Solid Waste Disposal Act
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCE	trichloroethylene
TFWT	tissue-free water tritium
TRI	Toxic Release Inventory
TSCA	Toxic Substances Control Act
TSS	total suspended solids
UC	University of California
UCOP	University of California Office of the President
UHVCF	Ultra-High Vacuum Cleaning Facility
U.S. EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
UV	ultraviolet
VOC	volatile organic compound
WAA	Waste Accumulation Area
Web	World Wide Web
WMG	Waste Management Group
yr	year

Glossary

accuracy

The degree of agreement between a measurement and the true value of the quantity measured.

air particulates

Airborne particles that include dust, dirt, and other pollutants occurring as particles, as well as any pollutants associated with or carried on the dust or dirt.

alpha particle

A charged particle comprising two protons and two neutrons, which is emitted during decay of certain radioactive atoms. Alpha particles are stopped by several centimeters of air or a sheet of paper.

ambient air

The surrounding atmosphere, usually the outside air, as it exists around people, plants, and structures. It does not include the air next to emission sources.

analyte

The subject of a sample analysis.

background radiation

Ionizing radiation from sources other than LBNL. Background may include cosmic radiation; external penetrating radiation from naturally occurring radioactivity in the earth (terrestrial radiation), air, and water; and internal radiation from naturally occurring radioactive elements in the human body.

becquerel

The International System (SI) unit of radioactive decay equal to one disintegration per second.

beta particle

A charged particle, identical to the electron that is emitted during decay of certain radioactive atoms. Most beta particles are stopped by less than 0.6 centimeter of aluminum.

contaminant

Any hazardous or radioactive material present in an environmental medium such as air, water, or vegetation. See also pollutant.

cosmic radiation

High-energy particulate and electromagnetic radiation that originates outside the earth's atmosphere. Cosmic radiation is part of natural background radiation.

curie

Unit of radioactive decay equal to 2.22×10^{12} disintegrations per minute (conventional units).

de minimis

A level that is considered to be insignificant and does not need to be addressed or controlled.

detection limit

The lowest concentration of an analyte that can reliably be distinguished from a zero concentration.[1]

discharge

The release of a liquid or pollutant to the environment or to a system (usually of pipes) for disposal.

dose

The quantity of radiation energy absorbed by a human, animal, or vegetation. Dose to humans is also called effective dose equivalent (measured in the SI units of sieverts or conventional units of rem), which takes into account the type of radiation and the parts of the body exposed. Dose to animals and vegetation is also called absorbed dose (measured in the SI units of grays or conventional units of rad), which is the energy deposited per unit of mass.

dose, population

The sum of the radiation doses to individuals of a population. It is expressed in units of person-sievert (SI unit) or person-rem (conventional unit). For example, if 1,000 people each received a radiation dose of one sievert, their population dose would be 1,000 person-sievert.

dosimeter

A portable detection device for measuring the total accumulated dose from ionizing radiation. See also optically stimulated luminescence dosimeter.

downgradient

In the direction of groundwater flow.

duplicate sample

A sample that is equivalent to a routine sample and is analyzed to evaluate sampling or analytical precision.

effective dose equivalent

Abbreviated EDE, it is the sum of the products of the dose equivalent received by specified tissues of the body and a tissue-specific weighting factor. This sum is a risk-equivalent value and can be used to estimate the health risk of the exposed individual. The tissue-specific weighting factor represents the fraction of the total health risk resulting from uniform whole-body irradiation that would be contributed by that particular tissue. The EDE includes the committed EDE from internal deposition of radionuclides and the EDE due to penetrating radiation from sources external to the body. EDE is expressed in units of sievert (SI unit) or rem (conventional unit). See dose.

effluent

A liquid waste discharged to the environment.

emission

A release of air to the environment that contains gaseous or particulate matter having one or more contaminants.

gamma radiation

Short-wavelength electromagnetic radiation of nuclear origin that has no mass or charge. Because of its short wavelength (high energy), gamma radiation can cause ionization. Other electromagnetic radiation, such as microwaves, visible light, and radio waves, has longer wavelengths (lower energy) and cannot cause ionization.

gray

The gray is the International System (SI) unit for absorbed dose. One gray is an absorbed radiation dose of one joule per kilogram.

greenhouse gas

Any of the atmospheric gases that contribute to the greenhouse effect. The greenhouse effect is a phenomenon whereby the earth's atmosphere traps solar radiation, caused by the presence in the atmosphere of gases such as carbon dioxide, water vapor, and methane that allow incoming sunlight to pass through but absorb heat radiated back from the earth's surface.

groundwater

Water below the land surface in a zone of saturation.

half-life, radioactive

The time required for the activity of a radioactive substance to decrease to half its value by inherent radioactive decay. After two half-lives, one-fourth of the original activity remains ($1/2 \times 1/2$); after three half-lives, one-eighth of the original activity remains ($1/2 \times 1/2 \times 1/2$); and so on.

hazardous waste

Waste exhibiting any of the following characteristics: ignitability, corrosivity, reactivity, or EP-toxicity (yielding toxic constituents in a leaching test). Because of its concentration, quantity, or physical or chemical characteristics, it may (1) cause or significantly contribute to an increase in mortality rates or cases of serious irreversible illness or (2) pose a substantial present or potential threat to human health or the environment when improperly treated, stored, transported, disposed of, or handled.

hydrauger

A subhorizontal drain used to extract groundwater for slope stability purposes.

low-level radioactive waste

Waste containing radioactivity that is not classified as high-level waste, transuranic (TRU) waste, spent nuclear fuel, by-product material (as defined in Section 1 1e(2) of the Atomic Energy Act of 1954, as amended), or naturally occurring radioactive material.

millirem

A common unit for reporting human radiation dose. One millirem is one thousandth (10^{-3}) of a rem. See rem.

mixed waste

Any radioactive waste that is also a U.S. EPA-regulated hazardous waste.

nuclide

A species of atom characterized by what constitutes the nucleus, which is specified by the number of protons, number of neutrons, and energy content; or, alternatively, by the atomic number, mass number, and atomic mass. To be regarded as a distinct nuclide, the atom must be able to exist for a measurable length of time.

optically stimulated luminescence dosimeter

A type of dosimeter. After being exposed to radiation, the material in the dosimeter luminesces on being stimulated by laser light. The amount of light that the material emits is proportional to the amount of radiation absorbed (dose). See also dosimeter.

organic compound

A chemical whose primary constituents are carbon and hydrogen.

Part B permit

The second, narrative section submitted by generators in the RCRA permitting process. It details the procedures followed at a facility to protect human health and the environment.

person-rem

See dose, population.

person-sievert

See dose, population.

pH

A measure of hydrogen ion concentration in an aqueous solution. Acidic solutions have a pH less than 7; basic solutions have a pH greater than 7; and neutral solutions have a pH of 7.

plume

A volume of a substance that moves from its source to places farther away from the source. Plumes can be described by the volume of air or water they occupy and the direction they move. For example, a plume can be a column of smoke from a chimney or a substance moving with groundwater.[2]

pollutant

Any hazardous or radioactive material present in an environmental medium such as air, water, or vegetation. See also contaminant.

positron

A particle that is equal in mass to the electron but opposite in charge. A positively charged beta particle.[3]

practical quantification limit

The lowest concentration that can be reliably and consistently measured within specified limits of precision and accuracy.

precision

The degree of agreement between measurements of the same quantity.

priority pollutants

A set of organic and inorganic chemicals identified by U.S. EPA as indicators of environmental contamination.

rad

The conventional unit of absorbed dose from ionizing radiation, commonly used for dose to animals and vegetation.

radiation protection standard

Limits on radiation exposure regarded as necessary for protection of public health. These standards are based on acceptable levels of risk to individuals.

radiation

Electromagnetic energy in the form of waves or particles.

radioactivity

The property or characteristic of a nucleus of an atom to spontaneously disintegrate, accompanied by the emission of energy in the form of radiation.

radiological

Arising from radiation or radioactive materials.

radionuclide

An unstable nuclide. See nuclide and radioactivity.

rem

Acronym for "roentgen equivalent man." A unit of ionizing radiation, equal to the amount of radiation needed to produce the same biological effect to humans as one rad of high-voltage x-rays. It is the product of the absorbed dose, quality factor, distribution factor, and other necessary modifying factors. It describes the effectiveness of various types of radiation in producing biological effects.

remediation

The process of improving a contaminated area to a noncontaminated or safe condition.

sievert

The SI unit of effective dose equivalent in humans. It is the product of the absorbed dose, quality factor, distribution factor, and other necessary modifying factors. It describes the effectiveness of various types of radiation to produce biological effects. One sievert equals 100 rem.

source

Any operation or equipment that produces, discharges, and/or emits pollutants (e.g., pipe, ditch, well, or stack), or the location where a pollutant was released to the environment.

split sample

A single well-mixed sample that is divided into parts for analysis and comparison of results.

terrestrial

Pertaining to or deriving from the earth.

terrestrial radiation

Radiation emitted by naturally occurring radionuclides, such as potassium-40; the natural decay chains of uranium-235, uranium-238, thorium-232, or cosmic ray-induced radionuclides in the soil.

tritium

A radionuclide of hydrogen with a half-life of 12.3 years, which decays by emitting a low-energy beta particle.

universal waste

Hazardous wastes that are more common and pose a lower risk to people and the environment than other hazardous wastes. Some examples of universal waste are mercury thermostats, batteries, fluorescent lamps, cathode ray tubes, and consumer electronic devices.[4]

wind rose

Meteorological diagram that depicts the distribution of wind direction over a period of time.

Table G-1 Prefixes used with SI (metric) units

Prefix	Factor	Symbol
exa	1,000,000,000,000,000,000 =10^{18}	E
peta	1,000,000,000,000,000 =10^{15}	P
tera	1,000,000,000,000 = 10^{12}	T
giga	1,000,000,000 =10^{9}	G
mega	1,000,000 =10^{6}	M
kilo	1,000 =10^{3}	k
hecto	100 = 10^{2}	
deka	10 =10^{1}	da[a]
deci	0.1 =10^{-1}	d[a]
centi	.01 = 10^{-2}	c[a]
milli	0.001 =10^{-3}	m
micro	0.000001 =10^{-6}	µ
nano	0.000000001 =10^{-9}	n
pico	0.000000000001 =10^{-12}	p
femto	0.000000000000001 =10^{-15}	f
atto	0.000000000000000001 =10^{-18}	A

[a] Avoid where practical.

Table G-2 Conversion Factors for Selected SI (Metric) Units

To Convert SI Unit	To U.S. Conventional Unit	Multiply By
Area		
square centimeters	square inches	0.155
square meters	square feet	10.764
square kilometers	square miles	0.3861
hectares	acres	2.471
Concentration		
milligrams per kilogram	parts per million	1
milligrams per liter	parts per million	1
Length		
centimeters	inches	0.3937
meters	feet	3.281
kilometers	miles	0.6214
Mass		
grams	ounces	0.03527
kilograms	pounds	2.2046
kilograms	ton	0.00110
Pressure		
pascal	pounds per square foot	0.000145
Radiation		
becquerel	curie	2.7×10^{-11}
becquerel	picocurie	27.0
gray	rad	100
sievert	rem	100
coulomb per kilogram	roentgen	3,876
Temperature		
degrees Celsius	degrees Fahrenheit	1.8, then add 32
Velocity		
meters per second	miles per hour	2.237
Volume		
cubic meters	cubic feet	35.315
liters	gallons	0.2642

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Site Environmental Report for 2010

Volume II

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Ernest Orlando Lawrence Berkeley National Laboratory

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Appendix
Monitoring Data

Volume II of the *Site Environmental Report for 2010* is provided by Ernest Orlando Lawrence Berkeley National Laboratory as a supplemental appendix to Volume I, which contains the body of the report. Volume II contains the environmental monitoring and sampling data used to generate summary results of routine and nonroutine sampling at the Laboratory (except for groundwater sampling data, which may be found in the reports referred to in Chapter 4 of Volume I).

The results from sample collections are more comprehensive in Volume II than in Volume I: for completeness, all results from sample collections that began or ended in calendar year (CY) 2010 are included in this volume. However, the samples representing CY 2009 data have not been used in the summary results that are reported in Volume I. (For example, although ambient air samples collected on January 5, 2010, are presented in Volume II, they represent December 2009 data and are not included in Table 4-2 in Volume I.)

When appropriate, sampling results are reported in both conventional and International System (SI) units. For some results, the rounding procedure used in data reporting may result in apparent differences between the numbers reported in SI and conventional units. (For example, stack air tritium results reported as < 1.5 Bq/m^3 are shown variously as < 39 and < 41 pCi/m^3. Both of these results are rounded correctly to two significant digits.)

The list below links the Volume II data sections with corresponding summary results presented in Volume I:

Collection	Volume II section	Volume I Section
Stack Air	SA	4.2.1
Ambient Air	AA	4.2.2
Rainwater	RW	4.3.1.1
Creeks	CR	4.3.1.2
Stormwater	SW	4.3.1.3
Sewer	SE	4.3.2.1.1–4.3.2.1.2
Fixed Treatment Units	FT	4.3.2.2–4.3.2.3
Groundwater Treatment	GT	4.3.2.4, 4.4
Soil	SO	4.5.1
Sediment	SD	4.5.2
Vegetation	VT	4.6

The results listed in Volume II identify sampling locations with a station identifier code. The following table cross-references these codes with a more meaningful and descriptive label:

Location code	Description of sampling location	Volume II section
25 FTU	Building 25 fixed treatment unit	Fixed Treatment Units
55-128	Building 55, Room 128	Stack Air
55-128 Backup	Building 55, Room 128 inline backup sample (55-128 Backup results are added to 55-128 results to represent total emissions from the location)	Stack Air
55-128-COL	Duplicate sampler collocated with 55-128 stack air sampler	Stack Air
55-128-COL Backup	2nd inline filter at 55-128-COL sampler (collocated with 55-128 stack air sampler)	Stack Air
70-147A	Building 70, Room 147A Berkeley box manifold	Stack Air
70A-1129H	Building 70A, Room 1129 hood	Stack Air
70A-1129P	Building 70A, Room 1129 pressurized box manifold	Stack Air
75-127-H	Building 75, Room 127 hood	Stack Air
77 FTU	Building 77 fixed treatment unit	Fixed Treatment Units
85 Glovebox	Building 85 (HWHF) penthouse glovebox	Stack Air
85 Hood	Building 85 (HWHF) penthouse hood	Stack Air
B25A Treatment System	location PSP #8 in EBMUD report	Groundwater Treatment
B46 Treatment System	location PSP #3 in EBMUD report	Groundwater Treatment
B51 Fire Trail Treatment System	location PSP #2 in EBMUD report	Groundwater Treatment
B51 MG Rm Basement Treatment System	location PSP #4 in EBMUD report	Groundwater Treatment
B51L Treatment System	location PSP #7 in EBMUD report	Groundwater Treatment
B53 Treatment System		Groundwater Treatment
B6 Treatment System	location PSP #6 in EBMUD report	Groundwater Treatment
B7 Coll Trench Treatment System	location PSP #5 in EBMUD report	Groundwater Treatment
B76K Tree A-Chip	Eucalyptus on the north side of Building 76K	Vegetation
B88 Cave 0	Building 88, Cave zero	Stack Air
B88-135H	Building 88, Room 135 hood	Stack Air
Building 69	North side of Building 69	Soil
Building 80	West side of Building 80	Soil
Building 85	Northeast of Building 85	Soil
Cafeteria Creek	Cafeteria Creek	Creeks
Chicken Creek	Chicken Creek	Creeks; Sediment

Location code	Description of sampling location	Volume II section
Chicken Creek—Downstream	Chicken Creek downstream of routine monitoring site	Creeks
Chicken Creek—Upstream	Chicken Creek upstream of routine monitoring site	Creeks
E190-Chip	Eucalyptus tree 190 m E of NTLF Hillside stack, Chip	Vegetation
E190-Duff	Eucalyptus tree 190 m E of NTLF Hillside stack, Duff	Vegetation
E190-Leaf	Eucalyptus tree 190 m E of NTLF Hillside stack, Leaf	Vegetation
ENV-44	North of Building 44	Ambient Air; Rainwater
ENV-44-COL	Duplicate sampler collocated with ENV-44	Ambient Air
ENV-83	East of Building 83	Ambient Air
ENV-B13A	Sampling shelter west of Building 88	Ambient Air
ENV-B13C	Background sampling shelter off Panoramic Way	Ambient Air; Soil
Equipment Blank	Blank sample	Creeks
ESE240-Chip	Eucalyptus tree 240 m ESE of NTLF Hillside stack, Chip	Vegetation
ESE240-Duff	Eucalyptus tree 240 m ESE of NTLF Hillside stack, Duff	Vegetation
ESE240-Leaf	Eucalyptus tree 240 m ESE of NTLF Hillside stack, Leaf	Vegetation
ESE255-Chip	Eucalyptus tree 255 m ESE of NTLF Hillside stack, Chip	Vegetation
ESE255-Duff	Eucalyptus tree 255 m ESE of NTLF Hillside stack, Duff	Vegetation
ESE255-Leaf	Eucalyptus tree 255 m ESE of NTLF Hillside stack, Leaf	Vegetation
ESE280-Chip	Eucalyptus tree 280 m ESE of NTLF Hillside stack, Chip	Vegetation
ESE280-Duff	Eucalyptus tree 280 m ESE of NTLF Hillside stack, Duff	Vegetation
ESE280-Leaf	Eucalyptus tree 280 m ESE of NTLF Hillside stack, Leaf	Vegetation
ESE310-Chip	Eucalyptus tree 310 m ESE of NTLF Hillside stack, Chip	Vegetation
ESE310-Duff	Eucalyptus tree 310 m ESE of NTLF Hillside stack, Duff	Vegetation
ESE310-Leaf	Eucalyptus tree 310 m ESE of NTLF Hillside stack, Leaf	Vegetation
Hearst Sewer	Hearst sewer station	Sewer
Lot Blank	Blank filter from same lot as submitted samples	Ambient Air; Stack Air

Location code	Description of sampling location	Volume II section
MP1	ASWMP (Alternative Storm Water Monitoring Plan) Sampling Site, Blackberry Parking Lot	Stormwater
MP2	ASWMP Sampling Site, B76 Motorpool	Stormwater
MP3	ASWMP Sampling Site, B77 Metal Rack	Stormwater
MP4	ASWMP Sampling Site, B85 Lower Yard	Stormwater
MP5	ASWMP Sampling Site, B85 Upper Yard	Stormwater
MP6	ASWMP Sampling Site, B64 Bus Parking	Stormwater
NEE10-Chip	Tilden park, near intersection of Golf Course & Redwood trails	Vegetation
NEE10-Duff	Tilden park, near intersection of Golf Course & Redwood trails	Vegetation
NEE10-Leaf	Tilden park, near intersection of Golf Course & Redwood trails	Vegetation
N. Fork Strawberry Creek	North Fork of Strawberry Creek outlet near western boundary of site	Creeks; Sediment
N. Fork Strawberry Creek—Downstream	North Fork of Strawberry Creek downstream of routine monitoring site	Creeks
NNN5-Chip	Eucalyptus Grove at LHS, 48M from stack	Vegetation
NNN5-Duff	Eucalyptus Grove at LHS, 48M from stack	Vegetation
NNN5-Leaf	Eucalyptus Grove at LHS, 48M from stack	Vegetation
NNW1-Chip	Eucalyptus Grove at LHS, 30M from stack	Vegetation
NNW1-Duff	Eucalyptus Grove at LHS, 30M from stack	Vegetation
NNW1-Leaf	Eucalyptus Grove at LHS, 30M from stack	Vegetation
No Name Creek	No Name Creek	Creeks
Ravine Creek	Ravine Creek	Creeks
SE215-Chip	Eucalyptus tree 215 m SE of NTLF Hillside stack	Vegetation
SE215-Duff	Eucalyptus tree 215 m SE of NTLF Hillside stack	Vegetation
SE215-Leaf	Eucalyptus tree 215 m SE of NTLF Hillside stack	Vegetation
Strawberry Sewer	Strawberry sewer station	Sewer
Ten-Inch Creek	Ten-Inch Creek	Creeks
Travel Blank	Blank sample prepared before field collections and carried by the sample technician during collection activities	Ambient Air; Rainwater; Fixed Treatment Units; Sewer; Stack Air
Trip Blank	Blank for VOCs	Groundwater
Upper Botanical Garden Creek	Former name of Botanical Garden Creek	Creeks
Wildcat Creek	Offsite at the end of Brook Road inside Tilden Regional Park	Creeks; Sediment
Winter Creek	Offsite in the UC Botanical Garden's Redwood Grove Amphitheatre	Creeks

Location code	Description of sampling location	Volume II section
Winter Creek Influent	Creek sampling at northeast end of the LBNL boundary line next to B85 water tower	Creeks
WNW360-Chip	Bay Laurel 360m WNW of Hillside Stack	Vegetation
WNW360-Duff	Bay Laurel 360m WNW of Hillside Stack	Vegetation
WNW360-Leaf	Bay Laurel 360m WNW of Hillside Stack	Vegetation
WNW4-Chip	UCB antenna near LHS	Vegetation
WNW4-Duff	UCB antenna near LHS	Vegetation
WNW4-Leaf	UCB antenna near LHS	Vegetation

The following units are used in Volume II:

Unit	Description	Pertains to:
%	Percent	Moisture content of sample
µg/L	Micrograms per liter	Concentration of analyte (nonradioactive) in liquid
µmhos/cm	Micromhos per centimeter	Specific conductance in liquid
Bq/g	Becquerels per gram	Activity of analyte (radioactive) in solid
Bq/L	Becquerels per liter	Activity of analyte (radioactive) in liquid
Bq/m^3	Becquerels per cubic meter	Activity of analyte (radioactive) in air
Bq/S	Becquerels per sample	Activity of analyte (radioactive) in blank samples
mg/L	Milligrams per liter	Concentration of analyte (nonradioactive) in liquid
mg/kg	Milligrams per kilogram	Concentration of analyte (nonradioactive) in solid
pCi/g	Picocuries per gram	Activity of analyte (radioactive) in solid
pCi/L	Picocuries per liter	Activity of analyte (radioactive) in liquid
pCi/m^3	Picocuries per cubic meter	Activity of analyte (radioactive) in air
pCi/S	Picocuries per sample	Activity of analyte (radioactive) in blank samples
S.U.	Standard units	pH measurement

Results Below the Detection Limit

Nonradiological results that cannot be quantified (because they are below the detection limit of the analysis) are reported as less than the reporting limit (for example, "< 10 µg/L"). Radiological results that cannot be quantified are generally reported as less than the minimum detectable activity (MDA) (for example, "< 0.15 Bq/L"). When the MDA is not available, the reporting limit is used. Reporting limits are typically constant among sample results for a particular analyte, but MDAs can vary among sample results for any one analyte.

Carbon-14		S.I.		Conventional		QC Type
Location*	**Collection Date**	**Result†**	**Units**	**Result†**	**Units**	
85 Glovebox	2/2/2010	< 0.89	Bq/m^3	< 24	pCi/m^3	Sample
	5/4/2010	< 3.1	Bq/m^3	< 83	pCi/m^3	Sample
	5/4/2010	< 2.7	Bq/m^3	< 74	pCi/m^3	Split
	8/10/2010	< 1.3	Bq/m^3	< 35	pCi/m^3	Sample
	11/2/2010	< 1.6	Bq/m^3	< 44	pCi/m^3	Sample
85 Hood	2/2/2010	< 0.92	Bq/m^3	< 25	pCi/m^3	Sample
	5/4/2010	< 3.1	Bq/m^3	< 83	pCi/m^3	Sample
	5/4/2010	< 2.6	Bq/m^3	< 70	pCi/m^3	Split
	6/1/2010	< 2.1	Bq/m^3	< 56	pCi/m^3	Sample
	7/7/2010	< 1.2	Bq/m^3	< 32	pCi/m^3	Sample
	8/10/2010	< 1.3	Bq/m^3	< 35	pCi/m^3	Sample
	9/8/2010	< 1.5	Bq/m^3	< 40	pCi/m^3	Sample
	10/5/2010	< 1.7	Bq/m^3	< 45	pCi/m^3	Sample
	11/2/2010	< 1.7	Bq/m^3	< 45	pCi/m^3	Sample
	12/8/2010	< 1.2	Bq/m^3	< 32	pCi/m^3	Sample
	1/5/2011	< 1.7	Bq/m^3	< 45	pCi/m^3	Sample
Travel Blank	2/2/2010	< 0.93	Bq/S	< 25	pCi/S	Blank
	5/4/2010	< 2.6	Bq/S	< 70	pCi/S	Blank
	6/1/2010	< 1.6	Bq/S	< 43	pCi/S	Blank
	7/7/2010	< 1.6	Bq/S	< 44	pCi/S	Blank
	8/10/2010	< 1.7	Bq/S	< 46	pCi/S	Blank
	9/8/2010	< 1.7	Bq/S	< 45	pCi/S	Blank
	10/5/2010	< 1.7	Bq/S	< 45	pCi/S	Blank
	11/2/2010	< 1.7	Bq/S	< 47	pCi/S	Blank
	12/8/2010	< 1.6	Bq/S	< 44	pCi/S	Blank
	1/5/2011	< 1.7	Bq/S	< 45	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Alpha		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
55-128	2/2/2010	< 0.000099	Bq/m^3	< 0.0027	pCi/m^3	Sample
	3/2/2010	< 0.000095	Bq/m^3	< 0.0026	pCi/m^3	Sample
	4/6/2010	< 0.000049	Bq/m^3	< 0.0013	pCi/m^3	Sample
	5/4/2010	< 0.000068	Bq/m^3	< 0.0018	pCi/m^3	Sample
	6/8/2010	< 0.000066	Bq/m^3	< 0.0018	pCi/m^3	Sample
	7/6/2010	< 0.000065	Bq/m^3	< 0.0018	pCi/m^3	Sample
	8/3/2010	< 0.000071	Bq/m^3	< 0.0019	pCi/m^3	Sample
	9/7/2010	< 0.00011	Bq/m^3	< 0.0029	pCi/m^3	Sample
	10/5/2010	< 0.00011	Bq/m^3	< 0.003	pCi/m^3	Sample
	11/2/2010	< 0.000077	Bq/m^3	< 0.0021	pCi/m^3	Sample
	12/8/2010	< 0.000059	Bq/m^3	< 0.0016	pCi/m^3	Sample
	1/4/2011	< 0.000077	Bq/m^3	< 0.0021	pCi/m^3	Sample
55-128-COL	2/2/2010	< 0.000041	Bq/m^3	< 0.0011	pCi/m^3	Dup
	3/2/2010	0.000033	Bq/m^3	0.00088	pCi/m^3	Dup
	4/6/2010	0.000048	Bq/m^3	0.0013	pCi/m^3	Dup
	5/4/2010	0.000069	Bq/m^3	0.0019	pCi/m^3	Dup
	6/8/2010	0.000075	Bq/m^3	0.002	pCi/m^3	Dup
	7/6/2010	0.000051	Bq/m^3	0.0014	pCi/m^3	Dup
	8/3/2010	0.000043	Bq/m^3	0.0012	pCi/m^3	Dup
	9/7/2010	0.000028	Bq/m^3	0.00075	pCi/m^3	Dup
	10/5/2010	0.000035	Bq/m^3	0.00094	pCi/m^3	Dup
	11/2/2010	0.00013	Bq/m^3	0.0036	pCi/m^3	Dup
	12/8/2010	< 0.000025	Bq/m^3	< 0.00067	pCi/m^3	Dup
	1/4/2011	< 0.000022	Bq/m^3	< 0.00058	pCi/m^3	Dup
70-147A	2/3/2010	< 0.000095	Bq/m^3	< 0.0026	pCi/m^3	Sample
	3/2/2010	< 0.000099	Bq/m^3	< 0.0027	pCi/m^3	Sample
	4/6/2010	0.000074	Bq/m^3	0.002	pCi/m^3	Sample
	5/4/2010	< 0.000065	Bq/m^3	< 0.0018	pCi/m^3	Sample
	6/8/2010	< 0.000066	Bq/m^3	< 0.0018	pCi/m^3	Sample
	7/6/2010	< 0.000069	Bq/m^3	< 0.0019	pCi/m^3	Sample
	8/3/2010	< 0.000072	Bq/m^3	< 0.0019	pCi/m^3	Sample
	9/7/2010	< 0.00011	Bq/m^3	< 0.0029	pCi/m^3	Sample
	10/6/2010	< 0.00011	Bq/m^3	< 0.003	pCi/m^3	Sample
	11/2/2010	< 0.000086	Bq/m^3	< 0.0023	pCi/m^3	Sample
	12/8/2010	0.00008	Bq/m^3	0.0022	pCi/m^3	Sample
	1/4/2011	< 0.000078	Bq/m^3	< 0.0021	pCi/m^3	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Alpha		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
70A-1129H	2/3/2010	< 0.000096	Bq/m^3	< 0.0026	pCi/m^3	Sample
	3/2/2010	< 0.000095	Bq/m^3	< 0.0026	pCi/m^3	Sample
	4/6/2010	< 0.000047	Bq/m^3	< 0.0013	pCi/m^3	Sample
	5/4/2010	< 0.000066	Bq/m^3	< 0.0018	pCi/m^3	Sample
	6/8/2010	< 0.000066	Bq/m^3	< 0.0018	pCi/m^3	Sample
	7/6/2010	< 0.000068	Bq/m^3	< 0.0018	pCi/m^3	Sample
	8/3/2010	< 0.00007	Bq/m^3	< 0.0019	pCi/m^3	Sample
	9/7/2010	< 0.00011	Bq/m^3	< 0.0029	pCi/m^3	Sample
	10/6/2010	< 0.00011	Bq/m^3	< 0.003	pCi/m^3	Sample
	11/2/2010	< 0.000086	Bq/m^3	< 0.0023	pCi/m^3	Sample
	12/8/2010	< 0.00006	Bq/m^3	< 0.0016	pCi/m^3	Sample
	1/4/2011	< 0.000079	Bq/m^3	< 0.0021	pCi/m^3	Sample
70A-1129P	2/3/2010	< 0.000098	Bq/m^3	< 0.0027	pCi/m^3	Sample
	3/2/2010	< 0.000096	Bq/m^3	< 0.0026	pCi/m^3	Sample
	4/6/2010	< 0.000048	Bq/m^3	< 0.0013	pCi/m^3	Sample
	5/4/2010	< 0.000069	Bq/m^3	< 0.0019	pCi/m^3	Sample
	6/8/2010	< 0.000064	Bq/m^3	< 0.0017	pCi/m^3	Sample
	7/6/2010	< 0.000066	Bq/m^3	< 0.0018	pCi/m^3	Sample
	8/3/2010	< 0.000071	Bq/m^3	< 0.0019	pCi/m^3	Sample
	9/7/2010	< 0.0001	Bq/m^3	< 0.0028	pCi/m^3	Sample
	10/6/2010	< 0.00011	Bq/m^3	< 0.0029	pCi/m^3	Sample
	11/2/2010	< 0.000086	Bq/m^3	< 0.0023	pCi/m^3	Sample
	12/8/2010	< 0.000058	Bq/m^3	< 0.0016	pCi/m^3	Sample
	1/4/2011	< 0.000083	Bq/m^3	< 0.0022	pCi/m^3	Sample
75-127-H	2/3/2010	< 0.000097	Bq/m^3	< 0.0026	pCi/m^3	Sample
	3/2/2010	< 0.000095	Bq/m^3	< 0.0026	pCi/m^3	Sample
	4/6/2010	< 0.000046	Bq/m^3	< 0.0013	pCi/m^3	Sample
	5/4/2010	< 0.000068	Bq/m^3	< 0.0018	pCi/m^3	Sample
	6/8/2010	< 0.000066	Bq/m^3	< 0.0018	pCi/m^3	Sample
	7/6/2010	< 0.000071	Bq/m^3	< 0.0019	pCi/m^3	Sample
	8/3/2010	< 0.000073	Bq/m^3	< 0.002	pCi/m^3	Sample
	9/7/2010	< 0.0001	Bq/m^3	< 0.0028	pCi/m^3	Sample
	10/6/2010	< 0.00011	Bq/m^3	< 0.003	pCi/m^3	Sample
	11/2/2010	< 0.000085	Bq/m^3	< 0.0023	pCi/m^3	Sample
	12/8/2010	< 0.000059	Bq/m^3	< 0.0016	pCi/m^3	Sample
	1/4/2011	< 0.00008	Bq/m^3	< 0.0022	pCi/m^3	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Alpha		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
85 Glovebox	2/2/2010	< 0.000097	Bq/m^3	< 0.0026	pCi/m^3	Sample
	5/4/2010	< 0.000065	Bq/m^3	< 0.0018	pCi/m^3	Sample
	8/10/2010	< 0.000077	Bq/m^3	< 0.0021	pCi/m^3	Sample
	11/2/2010	< 0.000082	Bq/m^3	< 0.0022	pCi/m^3	Sample
85 Hood	2/2/2010	< 0.000058	Bq/m^3	< 0.0016	pCi/m^3	Sample
	5/4/2010	< 0.000069	Bq/m^3	< 0.0019	pCi/m^3	Sample
	8/10/2010	< 0.000077	Bq/m^3	< 0.0021	pCi/m^3	Sample
	11/2/2010	< 0.000079	Bq/m^3	< 0.0021	pCi/m^3	Sample
B88 Cave 0	2/2/2010	< 0.000096	Bq/m^3	< 0.0026	pCi/m^3	Sample
	5/4/2010	< 0.000069	Bq/m^3	< 0.0019	pCi/m^3	Sample
	8/10/2010	< 0.000076	Bq/m^3	< 0.0021	pCi/m^3	Sample
	11/2/2010	< 0.000083	Bq/m^3	< 0.0022	pCi/m^3	Sample
B88-135H	2/2/2010	< 0.000098	Bq/m^3	< 0.0026	pCi/m^3	Sample
	5/4/2010	< 0.000068	Bq/m^3	< 0.0018	pCi/m^3	Sample
	8/10/2010	< 0.000077	Bq/m^3	< 0.0021	pCi/m^3	Sample
	11/2/2010	< 0.000084	Bq/m^3	< 0.0023	pCi/m^3	Sample
Lot Blank	2/2/2010	< 0.047	Bq/S	< 1.3	pCi/S	Blank
	2/2/2010	< 0.014	Bq/S	< 0.37	pCi/S	Blank
	3/2/2010	< 0.0089	Bq/S	< 0.24	pCi/S	Blank
	3/2/2010	< 0.045	Bq/S	< 1.2	pCi/S	Blank
	4/6/2010	0.029	Bq/S	0.77	pCi/S	Blank
	4/6/2010	< 0.03	Bq/S	< 0.8	pCi/S	Blank
	5/4/2010	< 0.035	Bq/S	< 0.95	pCi/S	Blank
	5/4/2010	0.037	Bq/S	0.99	pCi/S	Blank
	6/8/2010	0.048	Bq/S	1.3	pCi/S	Blank
	6/8/2010	< 0.039	Bq/S	< 1.1	pCi/S	Blank
	7/6/2010	0.028	Bq/S	0.75	pCi/S	Blank
	7/6/2010	< 0.034	Bq/S	< 0.93	pCi/S	Blank
	8/3/2010	< 0.034	Bq/S	< 0.92	pCi/S	Blank
	8/3/2010	0.021	Bq/S	0.57	pCi/S	Blank
	8/10/2010	< 0.049	Bq/S	< 1.3	pCi/S	Blank
	9/7/2010	< 0.066	Bq/S	< 1.8	pCi/S	Blank
	9/7/2010	0.013	Bq/S	0.35	pCi/S	Blank
	10/5/2010	< 0.057	Bq/S	< 1.6	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Alpha		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
Lot Blank (cont.)	10/5/2010	< 0.0093	Bq/S	< 0.25	pCi/S	Blank
	11/2/2010	< 0.04	Bq/S	< 1.1	pCi/S	Blank
	11/2/2010	0.031	Bq/S	0.83	pCi/S	Blank
	12/8/2010	< 0.017	Bq/S	< 0.45	pCi/S	Blank
	12/8/2010	< 0.039	Bq/S	< 1	pCi/S	Blank
	1/4/2011	< 0.01	Bq/S	< 0.27	pCi/S	Blank
	1/4/2011	< 0.038	Bq/S	< 1	pCi/S	Blank
Travel Blank	2/2/2010	< 0.0099	Bq/S	< 0.27	pCi/S	Blank
	2/2/2010	< 0.05	Bq/S	< 1.3	pCi/S	Blank
	3/2/2010	< 0.011	Bq/S	< 0.29	pCi/S	Blank
	3/2/2010	< 0.047	Bq/S	< 1.3	pCi/S	Blank
	4/6/2010	0.014	Bq/S	0.37	pCi/S	Blank
	4/6/2010	< 0.029	Bq/S	< 0.79	pCi/S	Blank
	5/4/2010	< 0.033	Bq/S	< 0.89	pCi/S	Blank
	5/4/2010	0.032	Bq/S	0.87	pCi/S	Blank
	6/8/2010	< 0.042	Bq/S	< 1.1	pCi/S	Blank
	6/8/2010	0.049	Bq/S	1.3	pCi/S	Blank
	7/6/2010	< 0.034	Bq/S	< 0.92	pCi/S	Blank
	7/6/2010	0.02	Bq/S	0.54	pCi/S	Blank
	8/3/2010	< 0.034	Bq/S	< 0.93	pCi/S	Blank
	8/3/2010	0.013	Bq/S	0.35	pCi/S	Blank
	8/10/2010	< 0.046	Bq/S	< 1.2	pCi/S	Blank
	9/7/2010	< 0.011	Bq/S	< 0.3	pCi/S	Blank
	9/7/2010	< 0.066	Bq/S	< 1.8	pCi/S	Blank
	10/5/2010	< 0.0098	Bq/S	< 0.26	pCi/S	Blank
	10/5/2010	< 0.056	Bq/S	< 1.5	pCi/S	Blank
	11/2/2010	< 0.041	Bq/S	< 1.1	pCi/S	Blank
	11/2/2010	0.039	Bq/S	1.1	pCi/S	Blank
	12/8/2010	< 0.012	Bq/S	< 0.32	pCi/S	Blank
	12/8/2010	< 0.041	Bq/S	< 1.1	pCi/S	Blank
	1/4/2011	< 0.037	Bq/S	< 1	pCi/S	Blank
	1/4/2011	< 0.009	Bq/S	< 0.24	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Beta		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
55-128	2/2/2010	0.00038	Bq/m^3	0.01	pCi/m^3	Sample
	3/2/2010	< 0.00013	Bq/m^3	< 0.0035	pCi/m^3	Sample
	4/6/2010	0.00014	Bq/m^3	0.0038	pCi/m^3	Sample
	5/4/2010	< 0.00011	Bq/m^3	< 0.003	pCi/m^3	Sample
	6/8/2010	< 0.000088	Bq/m^3	< 0.0024	pCi/m^3	Sample
	7/6/2010	< 0.00012	Bq/m^3	< 0.0032	pCi/m^3	Sample
	8/3/2010	0.00015	Bq/m^3	0.004	pCi/m^3	Sample
	9/7/2010	0.00016	Bq/m^3	0.0045	pCi/m^3	Sample
	10/5/2010	0.00029	Bq/m^3	0.0078	pCi/m^3	Sample
	11/2/2010	0.0002	Bq/m^3	0.0055	pCi/m^3	Sample
	12/8/2010	0.0002	Bq/m^3	0.0054	pCi/m^3	Sample
	1/4/2011	0.00019	Bq/m^3	0.0051	pCi/m^3	Sample
55-128-COL	2/2/2010	0.00028	Bq/m^3	0.0075	pCi/m^3	Dup
	3/2/2010	< 0.000026	Bq/m^3	< 0.00069	pCi/m^3	Dup
	4/6/2010	< 0.000023	Bq/m^3	< 0.00061	pCi/m^3	Dup
	5/4/2010	< 0.000033	Bq/m^3	< 0.0009	pCi/m^3	Dup
	6/8/2010	0.00012	Bq/m^3	0.0031	pCi/m^3	Dup
	7/6/2010	0.00011	Bq/m^3	0.0031	pCi/m^3	Dup
	8/3/2010	0.00013	Bq/m^3	0.0036	pCi/m^3	Dup
	9/7/2010	0.000084	Bq/m^3	0.0023	pCi/m^3	Dup
	10/5/2010	0.00019	Bq/m^3	0.005	pCi/m^3	Dup
	11/2/2010	0.00013	Bq/m^3	0.0034	pCi/m^3	Dup
	12/8/2010	0.000065	Bq/m^3	0.0018	pCi/m^3	Dup
	1/4/2011	0.000097	Bq/m^3	0.0026	pCi/m^3	Dup
70-147A	2/3/2010	0.00014	Bq/m^3	0.0038	pCi/m^3	Sample
	3/2/2010	0.00016	Bq/m^3	0.0043	pCi/m^3	Sample
	4/6/2010	0.00016	Bq/m^3	0.0043	pCi/m^3	Sample
	5/4/2010	0.00017	Bq/m^3	0.0047	pCi/m^3	Sample
	6/8/2010	0.00011	Bq/m^3	0.0031	pCi/m^3	Sample
	7/6/2010	< 0.00012	Bq/m^3	< 0.0034	pCi/m^3	Sample
	8/3/2010	< 0.00015	Bq/m^3	< 0.004	pCi/m^3	Sample
	9/7/2010	0.00012	Bq/m^3	0.0033	pCi/m^3	Sample
	10/6/2010	0.00029	Bq/m^3	0.0078	pCi/m^3	Sample
	11/2/2010	0.0003	Bq/m^3	0.0081	pCi/m^3	Sample
	12/8/2010	0.00027	Bq/m^3	0.0072	pCi/m^3	Sample
	1/4/2011	0.00015	Bq/m^3	0.0041	pCi/m^3	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Beta		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
70A-1129H	2/3/2010	0.00017	Bq/m^3	0.0046	pCi/m^3	Sample
	3/2/2010	< 0.00013	Bq/m^3	< 0.0034	pCi/m^3	Sample
	4/6/2010	< 0.000091	Bq/m^3	< 0.0025	pCi/m^3	Sample
	5/4/2010	< 0.00011	Bq/m^3	< 0.0029	pCi/m^3	Sample
	6/8/2010	< 0.000086	Bq/m^3	< 0.0023	pCi/m^3	Sample
	7/6/2010	< 0.00012	Bq/m^3	< 0.0033	pCi/m^3	Sample
	8/3/2010	< 0.00014	Bq/m^3	< 0.0039	pCi/m^3	Sample
	9/7/2010	< 0.00012	Bq/m^3	< 0.0034	pCi/m^3	Sample
	10/6/2010	0.00019	Bq/m^3	0.0052	pCi/m^3	Sample
	11/2/2010	< 0.00013	Bq/m^3	< 0.0034	pCi/m^3	Sample
	12/8/2010	0.00016	Bq/m^3	0.0042	pCi/m^3	Sample
	1/4/2011	< 0.00013	Bq/m^3	< 0.0034	pCi/m^3	Sample
70A-1129P	2/3/2010	< 0.00013	Bq/m^3	< 0.0034	pCi/m^3	Sample
	3/2/2010	< 0.00013	Bq/m^3	< 0.0035	pCi/m^3	Sample
	4/6/2010	< 0.000093	Bq/m^3	< 0.0025	pCi/m^3	Sample
	5/4/2010	< 0.00011	Bq/m^3	< 0.003	pCi/m^3	Sample
	6/8/2010	< 0.000088	Bq/m^3	< 0.0024	pCi/m^3	Sample
	7/6/2010	< 0.00012	Bq/m^3	< 0.0032	pCi/m^3	Sample
	8/3/2010	< 0.00014	Bq/m^3	< 0.0039	pCi/m^3	Sample
	9/7/2010	< 0.00012	Bq/m^3	< 0.0033	pCi/m^3	Sample
	10/6/2010	< 0.00015	Bq/m^3	< 0.004	pCi/m^3	Sample
	11/2/2010	< 0.00012	Bq/m^3	< 0.0032	pCi/m^3	Sample
	12/8/2010	< 0.000088	Bq/m^3	< 0.0024	pCi/m^3	Sample
	1/4/2011	< 0.00013	Bq/m^3	< 0.0035	pCi/m^3	Sample
75-127-H	2/3/2010	< 0.00012	Bq/m^3	< 0.0032	pCi/m^3	Sample
	3/2/2010	< 0.00012	Bq/m^3	< 0.0033	pCi/m^3	Sample
	4/6/2010	< 0.000095	Bq/m^3	< 0.0026	pCi/m^3	Sample
	5/4/2010	< 0.00011	Bq/m^3	< 0.003	pCi/m^3	Sample
	6/8/2010	< 0.000091	Bq/m^3	< 0.0025	pCi/m^3	Sample
	7/6/2010	< 0.00013	Bq/m^3	< 0.0035	pCi/m^3	Sample
	8/3/2010	< 0.00014	Bq/m^3	< 0.0037	pCi/m^3	Sample
	9/7/2010	< 0.00012	Bq/m^3	< 0.0032	pCi/m^3	Sample
	10/6/2010	< 0.00016	Bq/m^3	< 0.0042	pCi/m^3	Sample
	11/2/2010	< 0.00012	Bq/m^3	< 0.0033	pCi/m^3	Sample
	12/8/2010	< 0.000089	Bq/m^3	< 0.0024	pCi/m^3	Sample
	1/4/2011	< 0.00013	Bq/m^3	< 0.0034	pCi/m^3	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Beta		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
85 Glovebox	2/2/2010	< 0.00011	Bq/m^3	< 0.003	pCi/m^3	Sample
	5/4/2010	< 0.00011	Bq/m^3	< 0.003	pCi/m^3	Sample
	8/10/2010	< 0.0001	Bq/m^3	< 0.0028	pCi/m^3	Sample
	11/2/2010	< 0.00012	Bq/m^3	< 0.0032	pCi/m^3	Sample
85 Hood	2/2/2010	< 0.000073	Bq/m^3	< 0.002	pCi/m^3	Sample
	5/4/2010	< 0.00012	Bq/m^3	< 0.0032	pCi/m^3	Sample
	8/10/2010	< 0.0001	Bq/m^3	< 0.0028	pCi/m^3	Sample
	11/2/2010	< 0.00012	Bq/m^3	< 0.0033	pCi/m^3	Sample
B88 Cave 0	2/2/2010	0.00045	Bq/m^3	0.012	pCi/m^3	Sample
	5/4/2010	0.00023	Bq/m^3	0.0063	pCi/m^3	Sample
	8/10/2010	0.00016	Bq/m^3	0.0044	pCi/m^3	Sample
	11/2/2010	0.00041	Bq/m^3	0.011	pCi/m^3	Sample
B88-135H	2/2/2010	< 0.00012	Bq/m^3	< 0.0033	pCi/m^3	Sample
	5/4/2010	< 0.00011	Bq/m^3	< 0.0031	pCi/m^3	Sample
	8/10/2010	< 0.0001	Bq/m^3	< 0.0028	pCi/m^3	Sample
	11/2/2010	< 0.00013	Bq/m^3	< 0.0034	pCi/m^3	Sample
Lot Blank	2/2/2010	< 0.015	Bq/S	< 0.41	pCi/S	Blank
	2/2/2010	< 0.06	Bq/S	< 1.6	pCi/S	Blank
	3/2/2010	< 0.011	Bq/S	< 0.28	pCi/S	Blank
	3/2/2010	< 0.06	Bq/S	< 1.6	pCi/S	Blank
	4/6/2010	< 0.012	Bq/S	< 0.34	pCi/S	Blank
	4/6/2010	< 0.059	Bq/S	< 1.6	pCi/S	Blank
	5/4/2010	< 0.02	Bq/S	< 0.55	pCi/S	Blank
	5/4/2010	< 0.057	Bq/S	< 1.5	pCi/S	Blank
	6/8/2010	< 0.055	Bq/S	< 1.5	pCi/S	Blank
	6/8/2010	0.055	Bq/S	1.5	pCi/S	Blank
	7/6/2010	< 0.064	Bq/S	< 1.7	pCi/S	Blank
	7/6/2010	0.025	Bq/S	0.68	pCi/S	Blank
	8/3/2010	< 0.064	Bq/S	< 1.7	pCi/S	Blank
	8/3/2010	< 0.012	Bq/S	< 0.33	pCi/S	Blank
	8/10/2010	< 0.061	Bq/S	< 1.7	pCi/S	Blank
	9/7/2010	< 0.015	Bq/S	< 0.42	pCi/S	Blank
	9/7/2010	< 0.078	Bq/S	< 2.1	pCi/S	Blank
	10/5/2010	< 0.077	Bq/S	< 2.1	pCi/S	Blank
	10/5/2010	< 0.017	Bq/S	< 0.46	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Beta		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
Lot Blank (cont.)	11/2/2010	< 0.01	Bq/S	< 0.28	pCi/S	Blank
	11/2/2010	< 0.061	Bq/S	< 1.6	pCi/S	Blank
	12/8/2010	< 0.017	Bq/S	< 0.46	pCi/S	Blank
	12/8/2010	< 0.06	Bq/S	< 1.6	pCi/S	Blank
	1/4/2011	< 0.014	Bq/S	< 0.37	pCi/S	Blank
	1/4/2011	< 0.062	Bq/S	< 1.7	pCi/S	Blank
Travel Blank	2/2/2010	< 0.06	Bq/S	< 1.6	pCi/S	Blank
	2/2/2010	< 0.012	Bq/S	< 0.32	pCi/S	Blank
	3/2/2010	< 0.063	Bq/S	< 1.7	pCi/S	Blank
	3/2/2010	< 0.011	Bq/S	< 0.3	pCi/S	Blank
	4/6/2010	< 0.059	Bq/S	< 1.6	pCi/S	Blank
	4/6/2010	< 0.012	Bq/S	< 0.33	pCi/S	Blank
	5/4/2010	< 0.056	Bq/S	< 1.5	pCi/S	Blank
	5/4/2010	< 0.017	Bq/S	< 0.46	pCi/S	Blank
	6/8/2010	< 0.056	Bq/S	< 1.5	pCi/S	Blank
	6/8/2010	0.029	Bq/S	0.78	pCi/S	Blank
	7/6/2010	< 0.063	Bq/S	< 1.7	pCi/S	Blank
	7/6/2010	0.035	Bq/S	0.94	pCi/S	Blank
	8/3/2010	< 0.014	Bq/S	< 0.38	pCi/S	Blank
	8/3/2010	< 0.068	Bq/S	< 1.8	pCi/S	Blank
	8/10/2010	< 0.058	Bq/S	< 1.6	pCi/S	Blank
	9/7/2010	< 0.012	Bq/S	< 0.33	pCi/S	Blank
	9/7/2010	< 0.081	Bq/S	< 2.2	pCi/S	Blank
	10/5/2010	< 0.016	Bq/S	< 0.43	pCi/S	Blank
	10/5/2010	< 0.081	Bq/S	< 2.2	pCi/S	Blank
	11/2/2010	< 0.015	Bq/S	< 0.42	pCi/S	Blank
	11/2/2010	< 0.06	Bq/S	< 1.6	pCi/S	Blank
	12/8/2010	< 0.011	Bq/S	< 0.31	pCi/S	Blank
	12/8/2010	< 0.061	Bq/S	< 1.6	pCi/S	Blank
	1/4/2011	< 0.012	Bq/S	< 0.34	pCi/S	Blank
	1/4/2011	< 0.062	Bq/S	< 1.7	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Iodine-125		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
55-128	2/2/2010	< 0.000025	Bq/m^3	< 0.00068	pCi/m^3	Sample
	3/2/2010	< 0.000044	Bq/m^3	< 0.0012	pCi/m^3	Sample
	4/6/2010	< 0.000011	Bq/m^3	< 0.0003	pCi/m^3	Sample
	5/4/2010	< 0.000082	Bq/m^3	< 0.0022	pCi/m^3	Sample
	6/8/2010	< 0.000041	Bq/m^3	< 0.0011	pCi/m^3	Sample
	7/6/2010	< 0.000032	Bq/m^3	< 0.00086	pCi/m^3	Sample
	9/7/2010	< 0.000049	Bq/m^3	< 0.0013	pCi/m^3	Sample
	10/5/2010	< 0.000046	Bq/m^3	< 0.0012	pCi/m^3	Sample
	11/2/2010	< 0.00013	Bq/m^3	< 0.0036	pCi/m^3	Sample
	12/8/2010	< 0.000032	Bq/m^3	< 0.00087	pCi/m^3	Sample
	1/4/2011	< 0.000046	Bq/m^3	< 0.0013	pCi/m^3	Sample
55-128 Backup	2/2/2010	< 0.00002	Bq/m^3	< 0.00054	pCi/m^3	Sample
	3/2/2010	< 0.000024	Bq/m^3	< 0.00064	pCi/m^3	Sample
	4/6/2010	< 0.000036	Bq/m^3	< 0.00098	pCi/m^3	Sample
	5/4/2010	< 0.000079	Bq/m^3	< 0.0021	pCi/m^3	Sample
	6/8/2010	< 0.000026	Bq/m^3	< 0.00069	pCi/m^3	Sample
	7/6/2010	< 0.000044	Bq/m^3	< 0.0012	pCi/m^3	Sample
	9/7/2010	< 0.000061	Bq/m^3	< 0.0016	pCi/m^3	Sample
	10/5/2010	< 0.000078	Bq/m^3	< 0.0021	pCi/m^3	Sample
	11/2/2010	< 0.000066	Bq/m^3	< 0.0018	pCi/m^3	Sample
	12/8/2010	< 0.000027	Bq/m^3	< 0.00073	pCi/m^3	Sample
	1/4/2011	< 0.000042	Bq/m^3	< 0.0011	pCi/m^3	Sample
55-128-COL	2/2/2010	< 0.00021	Bq/m^3	< 0.0057	pCi/m^3	Dup
	3/2/2010	< 0.00027	Bq/m^3	< 0.0072	pCi/m^3	Dup
	4/6/2010	< 0.0025	Bq/m^3	< 0.068	pCi/m^3	Dup
	5/4/2010	< 0.00022	Bq/m^3	< 0.0059	pCi/m^3	Dup
	6/8/2010	< 0.00017	Bq/m^3	< 0.0047	pCi/m^3	Dup
	7/6/2010	< 0.00018	Bq/m^3	< 0.0048	pCi/m^3	Dup
	8/3/2010	< 0.00021	Bq/m^3	< 0.0056	pCi/m^3	Dup
	9/7/2010	< 0.00021	Bq/m^3	< 0.0058	pCi/m^3	Dup
	10/5/2010	< 0.00022	Bq/m^3	< 0.0061	pCi/m^3	Dup
	11/2/2010	< 0.00024	Bq/m^3	< 0.0066	pCi/m^3	Dup
	12/8/2010	< 0.00019	Bq/m^3	< 0.0052	pCi/m^3	Dup
	1/4/2011	< 0.00022	Bq/m^3	< 0.0058	pCi/m^3	Dup

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Iodine-125		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
55-128-COL Backup	2/2/2010	< 0.00022	Bq/m^3	< 0.0058	pCi/m^3	Dup
	3/2/2010	< 0.00022	Bq/m^3	< 0.0058	pCi/m^3	Dup
	4/6/2010	< 0.0003	Bq/m^3	< 0.0081	pCi/m^3	Dup
	5/4/2010	< 0.00023	Bq/m^3	< 0.0063	pCi/m^3	Dup
	6/8/2010	< 0.00021	Bq/m^3	< 0.0057	pCi/m^3	Dup
	7/6/2010	< 0.00019	Bq/m^3	< 0.0052	pCi/m^3	Dup
	8/3/2010	< 0.0002	Bq/m^3	< 0.0054	pCi/m^3	Dup
	9/7/2010	< 0.00021	Bq/m^3	< 0.0056	pCi/m^3	Dup
	10/5/2010	< 0.00026	Bq/m^3	< 0.0071	pCi/m^3	Dup
	11/2/2010	< 0.00025	Bq/m^3	< 0.0068	pCi/m^3	Dup
	12/8/2010	< 0.00018	Bq/m^3	< 0.0049	pCi/m^3	Dup
	1/4/2011	< 0.0002	Bq/m^3	< 0.0055	pCi/m^3	Dup
85 Glovebox	2/2/2010	< 0.000028	Bq/m^3	< 0.00075	pCi/m^3	Sample
	5/4/2010	< 0.000078	Bq/m^3	< 0.0021	pCi/m^3	Sample
	8/10/2010	< 0.000028	Bq/m^3	< 0.00076	pCi/m^3	Sample
	11/2/2010	< 0.000065	Bq/m^3	< 0.0017	pCi/m^3	Sample
85 Hood	2/2/2010	< 0.0000063	Bq/m^3	< 0.00017	pCi/m^3	Sample
	5/4/2010	< 0.000078	Bq/m^3	< 0.0021	pCi/m^3	Sample
	8/10/2010	< 0.000033	Bq/m^3	< 0.00089	pCi/m^3	Sample
	11/2/2010	< 0.000078	Bq/m^3	< 0.0021	pCi/m^3	Sample
Travel Blank	2/2/2010	< 0.091	Bq/S	< 2.5	pCi/S	Blank
	2/2/2010	< 0.017	Bq/S	< 0.45	pCi/S	Blank
	3/2/2010	< 0.026	Bq/S	< 0.69	pCi/S	Blank
	3/2/2010	< 0.096	Bq/S	< 2.6	pCi/S	Blank
	4/6/2010	< 1.4	Bq/S	< 38	pCi/S	Blank
	4/6/2010	< 0.011	Bq/S	< 0.3	pCi/S	Blank
	5/4/2010	< 0.034	Bq/S	< 0.91	pCi/S	Blank
	5/4/2010	< 0.1	Bq/S	< 2.7	pCi/S	Blank
	6/8/2010	< 0.018	Bq/S	< 0.5	pCi/S	Blank
	6/8/2010	< 0.064	Bq/S	< 1.7	pCi/S	Blank
	7/6/2010	< 0.023	Bq/S	< 0.63	pCi/S	Blank
	7/6/2010	< 0.09	Bq/S	< 2.4	pCi/S	Blank
	8/3/2010	< 0.11	Bq/S	< 2.9	pCi/S	Blank
	8/3/2010	< 0.038	Bq/S	< 1	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Iodine-125		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
Travel Blank (cont.)	8/10/2010	< 0.037	Bq/S	< 0.99	pCi/S	Blank
	9/7/2010	< 0.021	Bq/S	< 0.58	pCi/S	Blank
	9/7/2010	< 0.12	Bq/S	< 3.3	pCi/S	Blank
	10/5/2010	< 0.02	Bq/S	< 0.53	pCi/S	Blank
	10/5/2010	< 0.1	Bq/S	< 2.7	pCi/S	Blank
	11/2/2010	< 0.1	Bq/S	< 2.8	pCi/S	Blank
	11/2/2010	< 0.056	Bq/S	< 1.5	pCi/S	Blank
	12/8/2010	< 0.018	Bq/S	< 0.49	pCi/S	Blank
	12/8/2010	< 0.081	Bq/S	< 2.2	pCi/S	Blank
	1/4/2011	< 0.09	Bq/S	< 2.4	pCi/S	Blank
	1/4/2011	< 0.017	Bq/S	< 0.47	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Tritium		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
85 Glovebox	2/2/2010	< 0.17	Bq/m^3	< 4.6	pCi/m^3	Sample
	5/4/2010	< 0.24	Bq/m^3	< 6.5	pCi/m^3	Sample
	5/4/2010	< 0.38	Bq/m^3	< 10	pCi/m^3	Split
	8/10/2010	< 0.22	Bq/m^3	< 6	pCi/m^3	Sample
	11/2/2010	< 0.092	Bq/m^3	< 2.5	pCi/m^3	Sample
85 Hood	2/2/2010	< 0.16	Bq/m^3	< 4.3	pCi/m^3	Sample
	5/4/2010	< 0.21	Bq/m^3	< 5.7	pCi/m^3	Sample
	5/4/2010	< 0.45	Bq/m^3	< 12	pCi/m^3	Split
	6/1/2010	< 0.19	Bq/m^3	< 5.2	pCi/m^3	Sample
	7/7/2010	0.4	Bq/m^3	11	pCi/m^3	Sample
	8/10/2010	0.45	Bq/m^3	12	pCi/m^3	Sample
	9/8/2010	1.1	Bq/m^3	29	pCi/m^3	Sample
	10/5/2010	< 0.12	Bq/m^3	< 3.1	pCi/m^3	Sample
	11/2/2010	0.27	Bq/m^3	7.2	pCi/m^3	Sample
	12/8/2010	< 0.38	Bq/m^3	< 10	pCi/m^3	Sample
	1/5/2011	< 0.26	Bq/m^3	< 6.9	pCi/m^3	Sample
Travel Blank	2/2/2010	< 0.2	Bq/S	< 5.4	pCi/S	Blank
	5/4/2010	< 0.36	Bq/S	< 9.8	pCi/S	Blank
	5/4/2010	< 0.24	Bq/S	< 6.5	pCi/S	Blank
	6/1/2010	< 0.18	Bq/S	< 4.8	pCi/S	Blank
	7/7/2010	< 0.15	Bq/S	< 4	pCi/S	Blank
	8/10/2010	< 0.35	Bq/S	< 9.3	pCi/S	Blank
	9/8/2010	< 0.24	Bq/S	< 6.5	pCi/S	Blank
	10/5/2010	< 0.16	Bq/S	< 4.4	pCi/S	Blank
	11/2/2010	< 0.11	Bq/S	< 2.9	pCi/S	Blank
	12/8/2010	< 1.1	Bq/S	< 30	pCi/S	Blank
	1/5/2011	< 0.3	Bq/S	< 8.1	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Alpha		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
ENV-44	2/2/2010	0.000075	Bq/m^3	0.002	pCi/m^3	Sample
	3/1/2010	0.000032	Bq/m^3	0.00086	pCi/m^3	Sample
	4/5/2010	0.000027	Bq/m^3	0.00073	pCi/m^3	Sample
	5/3/2010	0.000041	Bq/m^3	0.0011	pCi/m^3	Sample
	6/7/2010	0.000035	Bq/m^3	0.00096	pCi/m^3	Sample
	7/20/2010	0.000029	Bq/m^3	0.00077	pCi/m^3	Sample
	8/3/2010	0.000026	Bq/m^3	0.00069	pCi/m^3	Sample
	9/13/2010	0.000024	Bq/m^3	0.00064	pCi/m^3	Sample
	10/4/2010	0.000087	Bq/m^3	0.0023	pCi/m^3	Sample
	11/1/2010	0.00011	Bq/m^3	0.003	pCi/m^3	Sample
	12/6/2010	0.000076	Bq/m^3	0.0021	pCi/m^3	Sample
	1/4/2011	0.000014	Bq/m^3	0.00038	pCi/m^3	Sample
ENV-44-COL	2/2/2010	0.000054	Bq/m^3	0.0015	pCi/m^3	Dup
	3/1/2010	0.000029	Bq/m^3	0.00078	pCi/m^3	Dup
	4/5/2010	0.00002	Bq/m^3	0.00054	pCi/m^3	Dup
	5/3/2010	0.000023	Bq/m^3	0.00061	pCi/m^3	Dup
	6/7/2010	< 0.000017	Bq/m^3	< 0.00047	pCi/m^3	Dup
	7/20/2010	0.000017	Bq/m^3	0.00046	pCi/m^3	Dup
	8/3/2010	0.000033	Bq/m^3	0.00088	pCi/m^3	Dup
	9/13/2010	0.000026	Bq/m^3	0.00069	pCi/m^3	Dup
	10/4/2010	< 0.000046	Bq/m^3	< 0.0013	pCi/m^3	Dup
	11/1/2010	0.000059	Bq/m^3	0.0016	pCi/m^3	Dup
	12/6/2010	0.00007	Bq/m^3	0.0019	pCi/m^3	Dup
	1/4/2011	0.000028	Bq/m^3	0.00075	pCi/m^3	Dup
ENV-83	2/2/2010	0.000069	Bq/m^3	0.0019	pCi/m^3	Sample
	3/1/2010	0.000027	Bq/m^3	0.00074	pCi/m^3	Sample
	4/5/2010	0.000036	Bq/m^3	0.00096	pCi/m^3	Sample
	5/3/2010	0.000035	Bq/m^3	0.00095	pCi/m^3	Sample
	6/7/2010	0.000045	Bq/m^3	0.0012	pCi/m^3	Sample
	7/20/2010	0.000032	Bq/m^3	0.00086	pCi/m^3	Sample
	8/3/2010	0.000033	Bq/m^3	0.00088	pCi/m^3	Sample
	9/13/2010	0.000032	Bq/m^3	0.00086	pCi/m^3	Sample
	10/4/2010	0.000092	Bq/m^3	0.0025	pCi/m^3	Sample
	11/1/2010	0.00011	Bq/m^3	0.0031	pCi/m^3	Sample
	12/6/2010	0.00006	Bq/m^3	0.0016	pCi/m^3	Sample
	1/4/2011	0.000011	Bq/m^3	0.00029	pCi/m^3	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Alpha		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
ENV-B13A	2/2/2010	0.000071	Bq/m^3	0.0019	pCi/m^3	Sample
	3/1/2010	0.000029	Bq/m^3	0.00078	pCi/m^3	Sample
	4/5/2010	0.000029	Bq/m^3	0.00079	pCi/m^3	Sample
	5/3/2010	0.000048	Bq/m^3	0.0013	pCi/m^3	Sample
	6/7/2010	0.000039	Bq/m^3	0.001	pCi/m^3	Sample
	7/20/2010	0.000025	Bq/m^3	0.00067	pCi/m^3	Sample
	8/3/2010	0.000038	Bq/m^3	0.001	pCi/m^3	Sample
	9/13/2010	0.000028	Bq/m^3	0.00075	pCi/m^3	Sample
	10/4/2010	0.000085	Bq/m^3	0.0023	pCi/m^3	Sample
	11/1/2010	0.00012	Bq/m^3	0.0033	pCi/m^3	Sample
	12/6/2010	0.000069	Bq/m^3	0.0019	pCi/m^3	Sample
	1/4/2011	0.000013	Bq/m^3	0.00035	pCi/m^3	Sample
ENV-B13C	2/2/2010	0.000059	Bq/m^3	0.0016	pCi/m^3	Sample
	3/1/2010	0.000031	Bq/m^3	0.00085	pCi/m^3	Sample
	4/5/2010	0.000032	Bq/m^3	0.00088	pCi/m^3	Sample
	5/3/2010	0.000043	Bq/m^3	0.0012	pCi/m^3	Sample
	6/7/2010	0.000052	Bq/m^3	0.0014	pCi/m^3	Sample
	7/20/2010	0.000029	Bq/m^3	0.00079	pCi/m^3	Sample
	8/3/2010	0.000052	Bq/m^3	0.0014	pCi/m^3	Sample
	9/13/2010	0.000031	Bq/m^3	0.00084	pCi/m^3	Sample
	10/4/2010	0.000099	Bq/m^3	0.0027	pCi/m^3	Sample
	11/1/2010	0.00012	Bq/m^3	0.0032	pCi/m^3	Sample
	12/6/2010	0.000071	Bq/m^3	0.0019	pCi/m^3	Sample
	1/4/2011	0.0000056	Bq/m^3	0.00015	pCi/m^3	Sample
Lot Blank	2/2/2010	< 0.03	Bq/S	< 0.81	pCi/S	Blank
	2/2/2010	< 0.012	Bq/S	< 0.33	pCi/S	Blank
	3/1/2010	< 0.032	Bq/S	< 0.87	pCi/S	Blank
	3/1/2010	< 0.015	Bq/S	< 0.4	pCi/S	Blank
	4/5/2010	< 0.036	Bq/S	< 0.96	pCi/S	Blank
	4/5/2010	< 0.01	Bq/S	< 0.28	pCi/S	Blank
	5/3/2010	< 0.012	Bq/S	< 0.32	pCi/S	Blank
	5/3/2010	< 0.036	Bq/S	< 0.97	pCi/S	Blank
	6/7/2010	< 0.013	Bq/S	< 0.35	pCi/S	Blank
	6/7/2010	< 0.04	Bq/S	< 1.1	pCi/S	Blank
	7/20/2010	0.017	Bq/S	0.46	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Alpha		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
Lot Blank (cont.)	7/20/2010	< 0.031	Bq/S	< 0.83	pCi/S	Blank
	8/3/2010	< 0.015	Bq/S	< 0.41	pCi/S	Blank
	8/3/2010	< 0.031	Bq/S	< 0.83	pCi/S	Blank
	9/13/2010	< 0.0091	Bq/S	< 0.25	pCi/S	Blank
	9/13/2010	< 0.049	Bq/S	< 1.3	pCi/S	Blank
	10/4/2010	< 0.065	Bq/S	< 1.8	pCi/S	Blank
	10/4/2010	< 0.013	Bq/S	< 0.35	pCi/S	Blank
	11/1/2010	< 0.034	Bq/S	< 0.91	pCi/S	Blank
	11/1/2010	< 0.01	Bq/S	< 0.27	pCi/S	Blank
	12/6/2010	< 0.04	Bq/S	< 1.1	pCi/S	Blank
	12/6/2010	< 0.012	Bq/S	< 0.33	pCi/S	Blank
	1/4/2011	< 0.036	Bq/S	< 0.98	pCi/S	Blank
	1/4/2011	< 0.012	Bq/S	< 0.33	pCi/S	Blank
Travel Blank	2/2/2010	< 0.015	Bq/S	< 0.41	pCi/S	Blank
	2/2/2010	< 0.029	Bq/S	< 0.79	pCi/S	Blank
	3/1/2010	< 0.01	Bq/S	< 0.28	pCi/S	Blank
	3/1/2010	< 0.034	Bq/S	< 0.92	pCi/S	Blank
	4/5/2010	< 0.011	Bq/S	< 0.3	pCi/S	Blank
	4/5/2010	< 0.037	Bq/S	< 1	pCi/S	Blank
	5/3/2010	< 0.037	Bq/S	< 0.99	pCi/S	Blank
	5/3/2010	< 0.0096	Bq/S	< 0.26	pCi/S	Blank
	6/7/2010	< 0.037	Bq/S	< 0.99	pCi/S	Blank
	6/7/2010	0.016	Bq/S	0.43	pCi/S	Blank
	7/20/2010	< 0.03	Bq/S	< 0.81	pCi/S	Blank
	7/20/2010	< 0.013	Bq/S	< 0.36	pCi/S	Blank
	8/3/2010	< 0.028	Bq/S	< 0.75	pCi/S	Blank
	8/3/2010	< 0.013	Bq/S	< 0.34	pCi/S	Blank
	9/13/2010	< 0.012	Bq/S	< 0.31	pCi/S	Blank
	9/13/2010	< 0.051	Bq/S	< 1.4	pCi/S	Blank
	10/4/2010	< 0.063	Bq/S	< 1.7	pCi/S	Blank
	10/4/2010	< 0.012	Bq/S	< 0.32	pCi/S	Blank
	11/1/2010	0.011	Bq/S	0.29	pCi/S	Blank
	11/1/2010	< 0.032	Bq/S	< 0.86	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Alpha		S.I.		Conventional		QC Type
Location*	**Collection Date**	**Result†**	**Units**	**Result†**	**Units**	
Travel Blank (cont.)	12/6/2010	< 0.039	Bq/S	< 1	pCi/S	Blank
	12/6/2010	< 0.016	Bq/S	< 0.42	pCi/S	Blank
	1/4/2011	< 0.037	Bq/S	< 0.99	pCi/S	Blank
	1/4/2011	< 0.011	Bq/S	< 0.29	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Beta		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
ENV-44	2/2/2010	0.00067	Bq/m^3	0.018	pCi/m^3	Sample
	3/1/2010	0.00032	Bq/m^3	0.0087	pCi/m^3	Sample
	4/5/2010	0.00031	Bq/m^3	0.0083	pCi/m^3	Sample
	5/3/2010	0.00031	Bq/m^3	0.0083	pCi/m^3	Sample
	6/7/2010	0.00021	Bq/m^3	0.0057	pCi/m^3	Sample
	7/20/2010	0.00018	Bq/m^3	0.005	pCi/m^3	Sample
	8/3/2010	0.00023	Bq/m^3	0.0062	pCi/m^3	Sample
	9/13/2010	0.00029	Bq/m^3	0.0079	pCi/m^3	Sample
	10/4/2010	0.00069	Bq/m^3	0.019	pCi/m^3	Sample
	11/1/2010	0.00059	Bq/m^3	0.016	pCi/m^3	Sample
	12/6/2010	0.0006	Bq/m^3	0.016	pCi/m^3	Sample
	1/4/2011	0.00029	Bq/m^3	0.0079	pCi/m^3	Sample
ENV-44-COL	2/2/2010	0.00059	Bq/m^3	0.016	pCi/m^3	Dup
	3/1/2010	0.00029	Bq/m^3	0.0078	pCi/m^3	Dup
	4/5/2010	0.00032	Bq/m^3	0.0086	pCi/m^3	Dup
	5/3/2010	0.00032	Bq/m^3	0.0088	pCi/m^3	Dup
	6/7/2010	0.00021	Bq/m^3	0.0058	pCi/m^3	Dup
	7/20/2010	0.00014	Bq/m^3	0.0038	pCi/m^3	Dup
	8/3/2010	0.00021	Bq/m^3	0.0056	pCi/m^3	Dup
	9/13/2010	0.00026	Bq/m^3	0.0069	pCi/m^3	Dup
	10/4/2010	0.00078	Bq/m^3	0.021	pCi/m^3	Dup
	11/1/2010	0.00069	Bq/m^3	0.019	pCi/m^3	Dup
	12/6/2010	0.00051	Bq/m^3	0.014	pCi/m^3	Dup
	1/4/2011	0.00032	Bq/m^3	0.0088	pCi/m^3	Dup
ENV-83	2/2/2010	0.00061	Bq/m^3	0.016	pCi/m^3	Sample
	3/1/2010	0.00033	Bq/m^3	0.0089	pCi/m^3	Sample
	4/5/2010	0.00031	Bq/m^3	0.0085	pCi/m^3	Sample
	5/3/2010	0.00036	Bq/m^3	0.0098	pCi/m^3	Sample
	6/7/2010	0.00024	Bq/m^3	0.0064	pCi/m^3	Sample
	7/20/2010	0.0002	Bq/m^3	0.0053	pCi/m^3	Sample
	8/3/2010	0.00025	Bq/m^3	0.0069	pCi/m^3	Sample
	9/13/2010	0.00025	Bq/m^3	0.0068	pCi/m^3	Sample
	10/4/2010	0.00069	Bq/m^3	0.019	pCi/m^3	Sample
	11/1/2010	0.00068	Bq/m^3	0.018	pCi/m^3	Sample
	12/6/2010	0.00056	Bq/m^3	0.015	pCi/m^3	Sample
	1/4/2011	0.00028	Bq/m^3	0.0077	pCi/m^3	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Beta		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
ENV-B13A	2/2/2010	0.00064	Bq/m^3	0.017	pCi/m^3	Sample
	3/1/2010	0.0003	Bq/m^3	0.0082	pCi/m^3	Sample
	4/5/2010	0.00033	Bq/m^3	0.0089	pCi/m^3	Sample
	5/3/2010	0.00033	Bq/m^3	0.0089	pCi/m^3	Sample
	6/7/2010	0.00021	Bq/m^3	0.0056	pCi/m^3	Sample
	7/20/2010	0.0002	Bq/m^3	0.0053	pCi/m^3	Sample
	8/3/2010	0.00027	Bq/m^3	0.0072	pCi/m^3	Sample
	9/13/2010	0.00031	Bq/m^3	0.0085	pCi/m^3	Sample
	10/4/2010	0.00067	Bq/m^3	0.018	pCi/m^3	Sample
	11/1/2010	0.00064	Bq/m^3	0.017	pCi/m^3	Sample
	12/6/2010	0.00061	Bq/m^3	0.016	pCi/m^3	Sample
	1/4/2011	0.00032	Bq/m^3	0.0086	pCi/m^3	Sample
ENV-B13C	2/2/2010	0.00083	Bq/m^3	0.022	pCi/m^3	Sample
	3/1/2010	0.00031	Bq/m^3	0.0084	pCi/m^3	Sample
	4/5/2010	0.00031	Bq/m^3	0.0083	pCi/m^3	Sample
	5/3/2010	0.00033	Bq/m^3	0.009	pCi/m^3	Sample
	6/7/2010	0.00024	Bq/m^3	0.0064	pCi/m^3	Sample
	7/20/2010	0.00022	Bq/m^3	0.006	pCi/m^3	Sample
	8/3/2010	0.00024	Bq/m^3	0.0065	pCi/m^3	Sample
	9/13/2010	0.00032	Bq/m^3	0.0088	pCi/m^3	Sample
	10/4/2010	0.00076	Bq/m^3	0.021	pCi/m^3	Sample
	11/1/2010	0.00071	Bq/m^3	0.019	pCi/m^3	Sample
	12/6/2010	0.00059	Bq/m^3	0.016	pCi/m^3	Sample
	1/4/2011	0.0003	Bq/m^3	0.008	pCi/m^3	Sample
Lot Blank	2/2/2010	0.056	Bq/S	1.5	pCi/S	Blank
	2/2/2010	< 0.075	Bq/S	< 2	pCi/S	Blank
	3/1/2010	< 0.015	Bq/S	< 0.4	pCi/S	Blank
	3/1/2010	< 0.074	Bq/S	< 2	pCi/S	Blank
	4/5/2010	< 0.07	Bq/S	< 1.9	pCi/S	Blank
	4/5/2010	< 0.013	Bq/S	< 0.36	pCi/S	Blank
	5/3/2010	< 0.019	Bq/S	< 0.51	pCi/S	Blank
	5/3/2010	< 0.078	Bq/S	< 2.1	pCi/S	Blank
	6/7/2010	< 0.074	Bq/S	< 2	pCi/S	Blank
	6/7/2010	0.091	Bq/S	2.4	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Beta		S.I.		Conventional		QC Type
Location*	Collection Date	Result†	Units	Result†	Units	
Lot Blank (cont.)	7/20/2010	0.11	Bq/S	2.8	pCi/S	Blank
	7/20/2010	< 0.07	Bq/S	< 1.9	pCi/S	Blank
	8/3/2010	< 0.013	Bq/S	< 0.36	pCi/S	Blank
	8/3/2010	< 0.078	Bq/S	< 2.1	pCi/S	Blank
	9/13/2010	0.048	Bq/S	1.3	pCi/S	Blank
	9/13/2010	< 0.11	Bq/S	< 3	pCi/S	Blank
	10/4/2010	< 0.096	Bq/S	< 2.6	pCi/S	Blank
	10/4/2010	0.039	Bq/S	1	pCi/S	Blank
	11/1/2010	< 0.012	Bq/S	< 0.32	pCi/S	Blank
	11/1/2010	< 0.071	Bq/S	< 1.9	pCi/S	Blank
	12/6/2010	0.052	Bq/S	1.4	pCi/S	Blank
	12/6/2010	< 0.071	Bq/S	< 1.9	pCi/S	Blank
	1/4/2011	< 0.071	Bq/S	< 1.9	pCi/S	Blank
	1/4/2011	0.045	Bq/S	1.2	pCi/S	Blank
Travel Blank	2/2/2010	0.05	Bq/S	1.4	pCi/S	Blank
	2/2/2010	< 0.071	Bq/S	< 1.9	pCi/S	Blank
	3/1/2010	< 0.078	Bq/S	< 2.1	pCi/S	Blank
	3/1/2010	< 0.013	Bq/S	< 0.34	pCi/S	Blank
	4/5/2010	< 0.07	Bq/S	< 1.9	pCi/S	Blank
	4/5/2010	< 0.011	Bq/S	< 0.31	pCi/S	Blank
	5/3/2010	0.021	Bq/S	0.57	pCi/S	Blank
	5/3/2010	< 0.078	Bq/S	< 2.1	pCi/S	Blank
	6/7/2010	0.11	Bq/S	3	pCi/S	Blank
	6/7/2010	< 0.07	Bq/S	< 1.9	pCi/S	Blank
	7/20/2010	0.08	Bq/S	2.2	pCi/S	Blank
	7/20/2010	< 0.069	Bq/S	< 1.8	pCi/S	Blank
	8/3/2010	< 0.013	Bq/S	< 0.34	pCi/S	Blank
	8/3/2010	< 0.072	Bq/S	< 2	pCi/S	Blank
	9/13/2010	0.038	Bq/S	1	pCi/S	Blank
	9/13/2010	< 0.11	Bq/S	< 3	pCi/S	Blank
	10/4/2010	< 0.093	Bq/S	< 2.5	pCi/S	Blank
	10/4/2010	0.047	Bq/S	1.3	pCi/S	Blank
	11/1/2010	< 0.012	Bq/S	< 0.33	pCi/S	Blank
	11/1/2010	< 0.069	Bq/S	< 1.8	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Gross Beta		S.I.		Conventional		QC Type
Location*	**Collection Date**	**Result†**	**Units**	**Result†**	**Units**	
Travel Blank (cont.)	12/6/2010	0.025	Bq/S	0.67	pCi/S	Blank
	12/6/2010	< 0.07	Bq/S	< 1.9	pCi/S	Blank
	1/4/2011	0.039	Bq/S	1.1	pCi/S	Blank
	1/4/2011	< 0.069	Bq/S	< 1.9	pCi/S	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Gross alpha	ENV-44	1/29/2010	< 0.046	Bq/L	< 1.2	pCi/L	Sample
		2/26/2010	< 0.07	Bq/L	< 1.9	pCi/L	Sample
		2/26/2010	< 0.061	Bq/L	< 1.6	pCi/L	Split
		3/31/2010	< 0.054	Bq/L	< 1.5	pCi/L	Sample
		4/30/2010	0.047	Bq/L	1.3	pCi/L	Sample
		5/27/2010	< 0.073	Bq/L	< 2	pCi/L	Sample
		6/23/2010	< 0.055	Bq/L	< 1.5	pCi/L	Sample
		10/29/2010	0.11	Bq/L	3	pCi/L	Sample
		11/30/2010	< 0.087	Bq/L	< 2.4	pCi/L	Sample
		12/21/2010	< 0.041	Bq/L	< 1.1	pCi/L	Sample
	Travel Blank	2/26/2010	< 0.055	Bq/L	< 1.5	pCi/L	Blank
		2/26/2010	< 0.05	Bq/L	< 1.4	pCi/L	Blank
Gross beta	ENV-44	1/29/2010	< 0.092	Bq/L	< 2.5	pCi/L	Sample
		2/26/2010	< 0.069	Bq/L	< 1.8	pCi/L	Sample
		2/26/2010	< 0.093	Bq/L	< 2.5	pCi/L	Split
		3/31/2010	< 0.057	Bq/L	< 1.5	pCi/L	Sample
		4/30/2010	< 0.071	Bq/L	< 1.9	pCi/L	Sample
		5/27/2010	< 0.091	Bq/L	< 2.4	pCi/L	Sample
		6/23/2010	< 0.1	Bq/L	< 2.7	pCi/L	Sample
		10/29/2010	0.066	Bq/L	1.8	pCi/L	Sample
		11/30/2010	< 0.063	Bq/L	< 1.7	pCi/L	Sample
		12/21/2010	< 0.052	Bq/L	< 1.4	pCi/L	Sample
	Travel Blank	2/26/2010	< 0.099	Bq/L	< 2.7	pCi/L	Blank
		2/26/2010	< 0.089	Bq/L	< 2.4	pCi/L	Blank
Tritium	ENV-44	1/29/2010	< 6	Bq/L	< 160	pCi/L	Sample
		2/26/2010	< 5.5	Bq/L	< 150	pCi/L	Sample
		2/26/2010	< 8.1	Bq/L	< 220	pCi/L	Split
		3/31/2010	< 6.1	Bq/L	< 160	pCi/L	Sample
		4/30/2010	< 6.1	Bq/L	< 160	pCi/L	Sample
		5/27/2010	< 5.5	Bq/L	< 150	pCi/L	Sample
		6/23/2010	< 5.8	Bq/L	< 160	pCi/L	Sample
		10/29/2010	< 5.7	Bq/L	< 150	pCi/L	Sample
		11/30/2010	< 5.1	Bq/L	< 140	pCi/L	Sample
		12/21/2010	< 6	Bq/L	< 160	pCi/L	Sample
	Travel Blank	2/26/2010	< 5.4	Bq/L	< 150	pCi/L	Blank
		2/26/2010	< 8.1	Bq/L	< 220	pCi/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Actinium 228	Chicken Creek	3/17/2010	< 0.63	Bq/L	< 17	pCi/L	Sample
		3/17/2010	< 0.54	Bq/L	< 15	pCi/L	Dup
		8/30/2010	< 0.53	Bq/L	< 14	pCi/L	Sample
		8/30/2010	< 2.2	Bq/L	< 61	pCi/L	Dup
	Equipment Blank	3/17/2010	< 0.59	Bq/L	< 16	pCi/L	Blank
	N. Fork Strawberry Creek	3/17/2010	< 0.66	Bq/L	< 18	pCi/L	Sample
		8/30/2010	< 0.76	Bq/L	< 20	pCi/L	Sample
	Wildcat Creek	3/17/2010	< 0.54	Bq/L	< 15	pCi/L	Sample
		8/30/2010	< 0.74	Bq/L	< 20	pCi/L	Sample
	Winter Creek Influent	3/17/2010	< 0.72	Bq/L	< 19	pCi/L	Sample
Cesium 137	Chicken Creek	3/17/2010	< 0.15	Bq/L	< 3.9	pCi/L	Sample
		3/17/2010	< 0.14	Bq/L	< 3.8	pCi/L	Dup
		8/30/2010	< 0.17	Bq/L	< 4.6	pCi/L	Sample
		8/30/2010	< 0.67	Bq/L	< 18	pCi/L	Dup
	Equipment Blank	3/17/2010	< 0.13	Bq/L	< 3.6	pCi/L	Blank
	N. Fork Strawberry Creek	3/17/2010	< 0.15	Bq/L	< 4	pCi/L	Sample
		8/30/2010	< 0.17	Bq/L	< 4.5	pCi/L	Sample
	Wildcat Creek	3/17/2010	< 0.13	Bq/L	< 3.6	pCi/L	Sample
		8/30/2010	< 0.17	Bq/L	< 4.5	pCi/L	Sample
	Winter Creek Influent	3/17/2010	< 0.19	Bq/L	< 5.2	pCi/L	Sample
Gross alpha	Chicken Creek	3/17/2010	0.11	Bq/L	3	pCi/L	Sample
		3/17/2010	0.081	Bq/L	2.2	pCi/L	Dup
		8/30/2010	< 0.062	Bq/L	< 1.7	pCi/L	Sample
		8/30/2010	0.34	Bq/L	9.1	pCi/L	Dup
	Equipment Blank	3/17/2010	< 0.066	Bq/L	< 1.8	pCi/L	Blank
		3/17/2010	< 0.053	Bq/L	< 1.4	pCi/L	Blank
	N. Fork Strawberry Creek	3/17/2010	0.088	Bq/L	2.4	pCi/L	Sample
		8/30/2010	< 0.062	Bq/L	< 1.7	pCi/L	Sample
	Wildcat Creek	3/17/2010	< 0.073	Bq/L	< 2	pCi/L	Sample
		8/30/2010	< 0.096	Bq/L	< 2.6	pCi/L	Sample
	Winter Creek Influent	3/17/2010	< 0.069	Bq/L	< 1.8	pCi/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Gross beta	Chicken Creek	3/17/2010	0.12	Bq/L	3.2	pCi/L	Sample
		3/17/2010	< 0.093	Bq/L	< 2.5	pCi/L	Dup
		8/30/2010	< 0.081	Bq/L	< 2.2	pCi/L	Sample
		8/30/2010	0.34	Bq/L	9.1	pCi/L	Dup
	Equipment Blank	3/17/2010	< 0.089	Bq/L	< 2.4	pCi/L	Blank
		3/17/2010	0.083	Bq/L	2.2	pCi/L	Blank
	N. Fork Strawberry Creek	3/17/2010	< 0.052	Bq/L	< 1.4	pCi/L	Sample
		8/30/2010	< 0.065	Bq/L	< 1.8	pCi/L	Sample
	Wildcat Creek	3/17/2010	< 0.059	Bq/L	< 1.6	pCi/L	Sample
		8/30/2010	< 0.069	Bq/L	< 1.9	pCi/L	Sample
	Winter Creek Influent	3/17/2010	0.061	Bq/L	1.6	pCi/L	Sample
Lead 214	Chicken Creek	3/17/2010	< 0.32	Bq/L	< 8.7	pCi/L	Sample
		3/17/2010	< 0.31	Bq/L	< 8.5	pCi/L	Dup
		8/30/2010	< 0.48	Bq/L	< 13	pCi/L	Sample
		8/30/2010	< 0.56	Bq/L	< 15	pCi/L	Dup
	Equipment Blank	3/17/2010	< 0.31	Bq/L	< 8.3	pCi/L	Blank
	N. Fork Strawberry Creek	3/17/2010	< 0.35	Bq/L	< 9.4	pCi/L	Sample
		8/30/2010	< 0.41	Bq/L	< 11	pCi/L	Sample
	Wildcat Creek	3/17/2010	< 0.29	Bq/L	< 7.8	pCi/L	Sample
		8/30/2010	< 0.54	Bq/L	< 15	pCi/L	Sample
	Winter Creek Influent	3/17/2010	< 0.37	Bq/L	< 10	pCi/L	Sample
Potassium 40	Chicken Creek	3/17/2010	< 2.1	Bq/L	< 56	pCi/L	Sample
		3/17/2010	< 1.2	Bq/L	< 33	pCi/L	Dup
		8/30/2010	< 2.1	Bq/L	< 58	pCi/L	Sample
		8/30/2010	< 4.3	Bq/L	< 120	pCi/L	Dup
	Equipment Blank	3/17/2010	< 1.7	Bq/L	< 46	pCi/L	Blank
	N. Fork Strawberry Creek	3/17/2010	< 2.2	Bq/L	< 61	pCi/L	Sample
		8/30/2010	< 2.8	Bq/L	< 77	pCi/L	Sample
	Wildcat Creek	3/17/2010	< 2	Bq/L	< 53	pCi/L	Sample
		8/30/2010	< 1.7	Bq/L	< 47	pCi/L	Sample
	Winter Creek Influent	3/17/2010	< 2	Bq/L	< 53	pCi/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Radium 226	Chicken Creek	3/17/2010	< 4.2	Bq/L	< 110	pCi/L	Sample
		3/17/2010	< 3	Bq/L	< 80	pCi/L	Dup
		8/30/2010	< 4.3	Bq/L	< 120	pCi/L	Sample
		8/30/2010	0.0083	Bq/L	0.22	pCi/L	Sample
		8/30/2010	0.44	Bq/L	12	pCi/L	Dup
		8/30/2010	< 0.024	Bq/L	< 0.64	pCi/L	Dup
	Equipment Blank	3/17/2010	< 3.7	Bq/L	< 100	pCi/L	Blank
	N. Fork Strawberry Creek	3/17/2010	< 3.5	Bq/L	< 95	pCi/L	Sample
		8/30/2010	< 0.0074	Bq/L	< 0.2	pCi/L	Sample
		8/30/2010	< 4.4	Bq/L	< 120	pCi/L	Sample
	Wildcat Creek	3/17/2010	< 3.4	Bq/L	< 91	pCi/L	Sample
		8/30/2010	0.01	Bq/L	0.27	pCi/L	Sample
		8/30/2010	< 4.2	Bq/L	< 110	pCi/L	Sample
	Winter Creek Influent	3/17/2010	< 3.1	Bq/L	< 83	pCi/L	Sample
Tritium	Chicken Creek	3/17/2010	7	Bq/L	190	pCi/L	Sample
		3/17/2010	8.1	Bq/L	220	pCi/L	Dup
		8/30/2010	< 6.6	Bq/L	< 180	pCi/L	Sample
		8/30/2010	9.3	Bq/L	250	pCi/L	Dup
	Chicken Creek Downstream	2/16/2010	11	Bq/L	310	pCi/L	Sample
		2/16/2010	< 6.1	Bq/L	< 160	pCi/L	Sample
		8/31/2010	< 6.4	Bq/L	< 170	pCi/L	Sample
	Chicken Creek Upstream	2/16/2010	< 5.5	Bq/L	< 150	pCi/L	Sample
		2/16/2010	< 6.1	Bq/L	< 160	pCi/L	Sample
		8/31/2010	< 6.6	Bq/L	< 180	pCi/L	Sample
	Equipment Blank	3/17/2010	< 6.1	Bq/L	< 160	pCi/L	Blank
		3/17/2010	< 7.8	Bq/L	< 210	pCi/L	Blank
	N. Fork Strawberry Creek	3/17/2010	< 6	Bq/L	< 160	pCi/L	Sample
		8/30/2010	< 6.6	Bq/L	< 180	pCi/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 5.5	Bq/L	< 150	pCi/L	Sample
		2/16/2010	< 6.2	Bq/L	< 170	pCi/L	Sample
		8/31/2010	< 6.6	Bq/L	< 180	pCi/L	Sample
	Wildcat Creek	3/17/2010	< 6.2	Bq/L	< 170	pCi/L	Sample
		8/30/2010	< 6.6	Bq/L	< 180	pCi/L	Sample
	Winter Creek Influent	3/17/2010	< 6.1	Bq/L	< 160	pCi/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Uranium 238	Chicken Creek	3/17/2010	< 12	Bq/L	< 320	pCi/L	Sample
		3/17/2010	< 7.8	Bq/L	< 210	pCi/L	Dup
		8/30/2010	< 7.3	Bq/L	< 200	pCi/L	Sample
		8/30/2010	< 59	Bq/L	< 1600	pCi/L	Dup
	Equipment Blank	3/17/2010	< 8.1	Bq/L	< 220	pCi/L	Blank
	N. Fork Strawberry Creek	3/17/2010	< 9.7	Bq/L	< 260	pCi/L	Sample
		8/30/2010	< 8.7	Bq/L	< 230	pCi/L	Sample
	Wildcat Creek	3/17/2010	< 6.1	Bq/L	< 160	pCi/L	Sample
		8/30/2010	< 8.8	Bq/L	< 240	pCi/L	Sample
	Winter Creek Influent	3/17/2010	< 3.2	Bq/L	< 86	pCi/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

General Indicator Parameters		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Chemical Oxygen Demand	Chicken Creek	3/17/2010	< 25	mg/L	Sample
		3/17/2010	11	mg/L	Dup
		8/30/2010	< 25	mg/L	Sample
		8/30/2010	10	mg/L	Dup
	N. Fork Strawberry Creek	3/17/2010	< 25	mg/L	Sample
		8/30/2010	< 25	mg/L	Sample
	Wildcat Creek	3/17/2010	25	mg/L	Sample
		8/30/2010	< 25	mg/L	Sample
	Winter Creek Influent	3/17/2010	< 25	mg/L	Sample
pH	Chicken Creek	3/17/2010	8.05	S.U.	Sample
		3/17/2010	8.09	S.U.	Dup
		8/30/2010	8.2	S.U.	Sample
		8/30/2010	8.2	S.U.	Dup
	N. Fork Strawberry Creek	3/17/2010	8.18	S.U.	Sample
		8/30/2010	8.4	S.U.	Sample
	Wildcat Creek	3/17/2010	8.05	S.U.	Sample
		8/30/2010	8.1	S.U.	Sample
	Winter Creek Influent	3/17/2010	7.46	S.U.	Sample
Specific Conductance	Chicken Creek	3/18/2010	946	umhos/cm	Sample
		3/18/2010	941	umhos/cm	Dup
		8/30/2010	736	umhos/cm	Sample
		8/30/2010	747	umhos/cm	Dup
	N. Fork Strawberry Creek	3/18/2010	586	umhos/cm	Sample
		8/30/2010	373	umhos/cm	Sample
	Wildcat Creek	3/18/2010	302	umhos/cm	Sample
		8/30/2010	559	umhos/cm	Sample
	Winter Creek Influent	3.18/10	703	umhos/cm	Sample
Total suspended solids (TSS)	Chicken Creek	3/17/2010	25	mg/L	Sample
		3/17/2010	31	mg/L	Dup
		8/30/2010	25	mg/L	Sample
		8/30/2010	120	mg/L	Dup
	N. Fork Strawberry Creek	3/17/2010	3.4	mg/L	Sample
		8/30/2010	18	mg/L	Sample
	Wildcat Creek	3/17/2010	0.5	mg/L	Sample
		8/30/2010	5.8	mg/L	Sample
	Winter Creek Influent	3/17/2010	11	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Aluminum	Chicken Creek	3/17/2010	1.2	mg/L	Sample
		3/17/2010	0.34	mg/L	Dup
		8/30/2010	1.8	mg/L	Sample
		8/30/2010	1.7	mg/L	Dup
	Equipment Blank	3/17/2010	< 0.05	mg/L	Blank
		3/17/2010	< 0.05	mg/L	Blank
	N. Fork Strawberry Creek	3/17/2010	0.1	mg/L	Sample
		8/30/2010	0.096	mg/L	Sample
	Wildcat Creek	3/17/2010	1.1	mg/L	Sample
		8/30/2010	0.39	mg/L	Sample
	Winter Creek Influent	3/17/2010	1.1	mg/L	Sample
Antimony (Filtered)	Cafeteria Creek	2/16/2010	< 0.002	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.002	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.002	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.002	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
	No Name Creek	2/16/2010	< 0.002	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
	Ravine Creek	2/16/2010	0.0031	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.002	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.002	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
	Winter Creek	2/17/2010	< 0.002	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
Arsenic (Filtered)	Cafeteria Creek	2/16/2010	< 0.002	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.002	mg/L	Sample
		8/31/2010	0.0027	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.002	mg/L	Sample
		8/31/2010	0.0027	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.002	mg/L	Sample
		8/31/2010	0.0021	mg/L	Sample
	No Name Creek	2/16/2010	0.002	mg/L	Sample
		8/31/2010	0.0023	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Arsenic (Filtered) (cont.)	Ravine Creek	2/16/2010	< 0.002	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.002	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.002	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
	Winter Creek	2/17/2010	< 0.002	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
Barium (Filtered)	Cafeteria Creek	2/16/2010	0.096	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	0.15	mg/L	Sample
		8/31/2010	0.096	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	0.096	mg/L	Sample
		8/31/2010	0.054	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	0.081	mg/L	Sample
		8/31/2010	0.044	mg/L	Sample
	No Name Creek	2/16/2010	0.092	mg/L	Sample
		8/31/2010	0.049	mg/L	Sample
	Ravine Creek	2/16/2010	0.12	mg/L	Sample
	Ten Inch Creek	2/16/2010	0.077	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	0.055	mg/L	Sample
		8/31/2010	0.017	mg/L	Sample
	Winter Creek	2/17/2010	0.091	mg/L	Sample
		8/31/2010	0.07	mg/L	Sample
Beryllium (Filtered)	Cafeteria Creek	2/16/2010	< 0.001	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	No Name Creek	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.001	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.001	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	Winter Creek	2/17/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	Location*				
Cadmium (Filtered)	Cafeteria Creek	2/16/2010	< 0.001	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	No Name Creek	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.001	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.001	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	Winter Creek	2/17/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
Chromium (Filtered)	Cafeteria Creek	2/16/2010	< 0.01	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	No Name Creek	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.01	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.01	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Winter Creek	2/17/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
Cobalt (Filtered)	Cafeteria Creek	2/16/2010	< 0.05	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.05	mg/L	Sample
		8/31/2010	< 0.05	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.05	mg/L	Sample
		8/31/2010	< 0.05	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Cobalt (Filtered) (cont.)	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.05	mg/L	Sample
		8/31/2010	< 0.05	mg/L	Sample
	No Name Creek	2/16/2010	< 0.05	mg/L	Sample
		8/31/2010	< 0.05	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.05	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.05	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.05	mg/L	Sample
		8/31/2010	< 0.05	mg/L	Sample
	Winter Creek	2/17/2010	< 0.05	mg/L	Sample
		8/31/2010	< 0.05	mg/L	Sample
Copper	Chicken Creek	3/17/2010	0.006	mg/L	Sample
		3/17/2010	< 0.005	mg/L	Dup
		8/30/2010	0.0044	mg/L	Sample
		8/30/2010	< 0.005	mg/L	Dup
	Equipment Blank	3/17/2010	< 0.005	mg/L	Blank
		3/17/2010	< 0.002	mg/L	Blank
	N. Fork Strawberry Creek	3/17/2010	< 0.002	mg/L	Sample
		8/30/2010	< 0.002	mg/L	Sample
	Wildcat Creek	3/17/2010	0.0022	mg/L	Sample
		8/30/2010	< 0.002	mg/L	Sample
	Winter Creek Influent	3/17/2010	0.0026	mg/L	Sample
Copper (Filtered)	Cafeteria Creek	2/16/2010	< 0.01	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	No Name Creek	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.01	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.01	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Winter Creek	2/17/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Iron	Chicken Creek	3/17/2010	1.2	mg/L	Sample
		3/17/2010	0.37	mg/L	Dup
		8/30/2010	1.6	mg/L	Sample
		8/30/2010	1.6	mg/L	Dup
	Equipment Blank	3/17/2010	< 0.05	mg/L	Blank
		3/17/2010	< 0.05	mg/L	Blank
	N. Fork Strawberry Creek	3/17/2010	0.12	mg/L	Sample
		8/30/2010	0.096	mg/L	Sample
	Wildcat Creek	3/17/2010	1	mg/L	Sample
		8/30/2010	0.58	mg/L	Sample
	Winter Creek Influent	3/17/2010	1.2	mg/L	Sample
Lead	Chicken Creek	3/17/2010	0.0016	mg/L	Sample
		3/17/2010	< 0.005	mg/L	Dup
		8/30/2010	0.0023	mg/L	Sample
		8/30/2010	< 0.005	mg/L	Dup
	Equipment Blank	3/17/2010	< 0.001	mg/L	Blank
		3/17/2010	< 0.005	mg/L	Blank
	N. Fork Strawberry Creek	3/17/2010	< 0.001	mg/L	Sample
		8/30/2010	< 0.05	mg/L	Sample
	Wildcat Creek	3/17/2010	< 0.001	mg/L	Sample
		8/30/2010	< 0.001	mg/L	Sample
	Winter Creek Influent	3/17/2010	< 0.001	mg/L	Sample
Lead (Filtered)	Cafeteria Creek	2/16/2010	< 0.001	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	No Name Creek	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.001	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.001	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	Winter Creek	2/17/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Magnesium	Chicken Creek	3/17/2010	46	mg/L	Sample
		3/17/2010	41	mg/L	Dup
		8/30/2010	37	mg/L	Sample
		8/30/2010	34	mg/L	Dup
	Equipment Blank	3/17/2010	< 0.05	mg/L	Blank
		3/17/2010	< 0.05	mg/L	Blank
	N. Fork Strawberry Creek	3/17/2010	27	mg/L	Sample
		8/30/2010	16	mg/L	Sample
	Wildcat Creek	3/17/2010	15	mg/L	Sample
		8/30/2010	26	mg/L	Sample
	Winter Creek Influent	3/17/2010	33	mg/L	Sample
Mercury	Chicken Creek	3/17/2010	< 0.0002	mg/L	Sample
		3/17/2010	< 0.0002	mg/L	Dup
		8/30/2010	< 0.0002	mg/L	Sample
		8/30/2010	< 0.0002	mg/L	Dup
	Equipment Blank	3/17/2010	< 0.0002	mg/L	Blank
		3/17/2010	< 0.0002	mg/L	Blank
	N. Fork Strawberry Creek	3/17/2010	< 0.0002	mg/L	Sample
		8/30/2010	< 0.0002	mg/L	Sample
	Wildcat Creek	3/17/2010	< 0.0002	mg/L	Sample
		8/30/2010	< 0.0002	mg/L	Sample
	Winter Creek Influent	3/17/2010	< 0.0002	mg/L	Sample
Mercury (Filtered)	Cafeteria Creek	2/16/2010	< 0.0002	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.0002	mg/L	Sample
		8/31/2010	< 0.0002	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.0002	mg/L	Sample
		8/31/2010	< 0.0002	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.0002	mg/L	Sample
		8/31/2010	< 0.0002	mg/L	Sample
	No Name Creek	2/16/2010	< 0.0002	mg/L	Sample
		8/31/2010	< 0.0002	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.0002	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.0002	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.0002	mg/L	Sample
		8/31/2010	< 0.0002	mg/L	Sample
	Winter Creek	2/17/2010	< 0.0002	mg/L	Sample
		8/31/2010	< 0.0002	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	Location*				
Molybdenum (Filtered)	Cafeteria Creek	2/16/2010	< 0.05	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.05	mg/L	Sample
		8/31/2010	< 0.05	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.05	mg/L	Sample
		8/31/2010	< 0.05	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.05	mg/L	Sample
		8/31/2010	< 0.05	mg/L	Sample
	No Name Creek	2/16/2010	< 0.05	mg/L	Sample
		8/31/2010	< 0.05	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.05	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.05	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.05	mg/L	Sample
		8/31/2010	< 0.05	mg/L	Sample
	Winter Creek	2/17/2010	< 0.05	mg/L	Sample
		8/31/2010	< 0.05	mg/L	Sample
Nickel (Filtered)	Cafeteria Creek	2/16/2010	< 0.01	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	No Name Creek	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.01	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.01	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Winter Creek	2/17/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
Selenium (Filtered)	Cafeteria Creek	2/16/2010	< 0.002	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.002	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	0.0037	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.002	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Selenium (Filtered) (cont.)	No Name Creek	2/16/2010	< 0.002	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.002	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.002	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	0.0044	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
	Winter Creek	2/17/2010	0.0021	mg/L	Sample
		8/31/2010	< 0.002	mg/L	Sample
Silver (Filtered)	Cafeteria Creek	2/16/2010	< 0.01	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	No Name Creek	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.01	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.01	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Winter Creek	2/17/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
Thallium (Filtered)	Cafeteria Creek	2/16/2010	< 0.001	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	No Name Creek	2/16/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.001	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.001	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Thallium (Filtered) (cont.)	Upper Botanical Garden Creek	2/17/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
	Winter Creek	2/17/2010	< 0.001	mg/L	Sample
		8/31/2010	< 0.001	mg/L	Sample
Vanadium (Filtered)	Cafeteria Creek	2/16/2010	< 0.01	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	0.017	mg/L	Sample
		8/31/2010	0.023	mg/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	0.013	mg/L	Sample
		8/31/2010	0.013	mg/L	Sample
	No Name Creek	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.01	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.01	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Winter Creek	2/17/2010	0.013	mg/L	Sample
		8/31/2010	0.011	mg/L	Sample
Zinc	Chicken Creek	3/17/2010	< 0.05	mg/L	Sample
		3/17/2010	< 0.05	mg/L	Dup
		8/30/2010	< 0.05	mg/L	Sample
		8/30/2010	< 0.05	mg/L	Dup
	Equipment Blank	3/17/2010	< 0.05	mg/L	Blank
		3/17/2010	< 0.05	mg/L	Blank
	N. Fork Strawberry Creek	3/17/2010	< 0.05	mg/L	Sample
		8/30/2010	< 0.05	mg/L	Sample
	Wildcat Creek	3/17/2010	< 0.05	mg/L	Sample
		8/30/2010	< 0.05	mg/L	Sample
	Winter Creek Influent	3/17/2010	< 0.05	mg/L	Sample
Zinc (Filtered)	Cafeteria Creek	2/16/2010	0.026	mg/L	Sample
	Chicken Creek Downstream	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	0.011	mg/L	Sample
	Chicken Creek Upstream	2/16/2010	0.033	mg/L	Sample
		8/31/2010	0.016	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Zinc (Filtered) (cont.)	N. Fork Strawberry Creek Downstream	2/16/2010	0.011	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	No Name Creek	2/16/2010	< 0.01	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Ravine Creek	2/16/2010	< 0.01	mg/L	Sample
	Ten Inch Creek	2/16/2010	< 0.01	mg/L	Sample
	Upper Botanical Garden Creek	2/17/2010	0.022	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample
	Winter Creek	2/17/2010	0.011	mg/L	Sample
		8/31/2010	< 0.01	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Nutrients		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Nitrate plus Nitrite (as N)	Chicken Creek	3/17/2010	0.27	mg/L	Sample
		3/17/2010	0.29	mg/L	Dup
		8/30/2010	0.11	mg/L	Sample
		8/30/2010	0.11	mg/L	Dup
	Equipment Blank	3/17/2010	< 0.1	mg/L	Blank
		3/17/2010	< 0.1	mg/L	Blank
	N. Fork Strawberry Creek	3/17/2010	0.49	mg/L	Sample
		8/30/2010	0.45	mg/L	Sample
	Wildcat Creek	3/17/2010	0.34	mg/L	Sample
		8/30/2010	0.23	mg/L	Sample
	Winter Creek Influent	3/17/2010	< 0.1	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,1,1,2-Tetrachloroethane	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
1,1,1-Trichloroethane	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
1,1,2,2-Tetrachloroethane	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,1,2,2-Tetrachloroethane (cont.)	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
1,1,2-Trichloroethane	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
1,1-Dichloroethane	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,1-Dichloroethane (cont.)	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
1,1-Dichloroethene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
1,1-Dichloropropene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
1,2,3-Trichlorobenzene	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,2,3-Trichlorobenzene (cont.)	No Name Creek	2/16/2010	< 2	ug/L	Sample
	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample
1,2,3-Trichloropropane	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
1,2,4-Trichlorobenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
1,2,4-Trimethylbenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,2,4-Trimethylbenzene (cont.)	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
1,2-Dibromo-3-chloropropane	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 2	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 2	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 2	ug/L	Sample
	No Name Creek	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 2	ug/L	Sample
	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
		8/31/2010	< 2	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample
		8/31/2010	< 2	ug/L	Sample
1,2-Dichlorobenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,2-Dichloroethane	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
1,2-Dichloroethene (total)	Chicken Creek Downstream	8/31/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	8/31/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	8/31/2010	< 1	ug/L	Sample
	No Name Creek	8/31/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	8/31/2010	< 1	ug/L	Sample
	Winter Creek	8/31/2010	< 1	ug/L	Sample
1,2-Dichloropropane	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,2-Dichloropropane (cont.)	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
1,3,5-Trimethylbenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
1,3-Dichlorobenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
1,3-Dichloropropane	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,3-Dichloropropane (cont.)	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
1,4-Dichlorobenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
2,2-Dichloropropane	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
2-Butanone	Chicken Creek Downstream	8/31/2010	< 10	ug/L	Sample
	Chicken Creek Upstream	8/31/2010	< 10	ug/L	Sample
	N. Fork Strawberry Creek Downstream	8/31/2010	< 10	ug/L	Sample
	No Name Creek	8/31/2010	< 10	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	Location*				
2-Butanone	Upper Botanical Garden Creek	8/31/2010	< 10	ug/L	Sample
(cont.)	Winter Creek	8/31/2010	< 10	ug/L	Sample
2-Chlorotoluene	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 2	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample
	No Name Creek	2/16/2010	< 2	ug/L	Sample
	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample
2-Hexanone	Chicken Creek Downstream	8/31/2010	< 10	ug/L	Sample
	Chicken Creek Upstream	8/31/2010	< 10	ug/L	Sample
	N. Fork Strawberry Creek Downstream	8/31/2010	< 10	ug/L	Sample
	No Name Creek	8/31/2010	< 10	ug/L	Sample
	Upper Botanical Garden Creek	8/31/2010	< 10	ug/L	Sample
	Winter Creek	8/31/2010	< 10	ug/L	Sample
4-Chlorotoluene	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 2	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample
	No Name Creek	2/16/2010	< 2	ug/L	Sample
	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
4-Methyl-2-pentanone	Chicken Creek Downstream	8/31/2010	< 10	ug/L	Sample
	Chicken Creek Upstream	8/31/2010	< 10	ug/L	Sample
	N. Fork Strawberry Creek Downstream	8/31/2010	< 10	ug/L	Sample
	No Name Creek	8/31/2010	< 10	ug/L	Sample
	Upper Botanical Garden Creek	8/31/2010	< 10	ug/L	Sample
	Winter Creek	8/31/2010	< 10	ug/L	Sample
Acetone	Chicken Creek Downstream	8/31/2010	< 10	ug/L	Sample
	Chicken Creek Upstream	8/31/2010	< 10	ug/L	Sample
	N. Fork Strawberry Creek Downstream	8/31/2010	< 10	ug/L	Sample
	No Name Creek	8/31/2010	< 10	ug/L	Sample
	Upper Botanical Garden Creek	8/31/2010	< 10	ug/L	Sample
	Winter Creek	8/31/2010	< 10	ug/L	Sample
Benzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
Bromobenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Bromobenzene (cont.)	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
Bromochloromethane	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 2	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample
	No Name Creek	2/16/2010	< 2	ug/L	Sample
	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample
Bromodichloromethane	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Bromoform	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
Bromomethane	Cafeteria Creek	2/16/2010	< 10	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 10	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 10	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 10	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 10	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 10	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 10	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 10	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 10	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
Carbon disulfide	Chicken Creek Downstream	8/31/2010	< 5	ug/L	Sample
	Chicken Creek Upstream	8/31/2010	< 5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	8/31/2010	< 5	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Carbon disulfide (cont.)	No Name Creek	8/31/2010	< 5	ug/L	Sample
	Upper Botanical Garden Creek	8/31/2010	< 5	ug/L	Sample
	Winter Creek	8/31/2010	< 5	ug/L	Sample
Carbon tetrachloride	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
Chlorobenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Chlorodifluoromethane	Cafeteria Creek	2/16/2010	< 30	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 30	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 30	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 30	ug/L	Sample
	No Name Creek	2/16/2010	< 30	ug/L	Sample
	Ravine Creek	2/16/2010	< 30	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 30	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 30	ug/L	Sample
	Winter Creek	2/17/2010	< 30	ug/L	Sample
Chloroethane	Cafeteria Creek	2/16/2010	< 30	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 30	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 30	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 30	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 30	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 30	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 30	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 30	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 30	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
Chloroform	Cafeteria Creek	2/16/2010	< 3	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 3	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 3	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 3	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 3	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Chloroform (cont.)	Ravine Creek	2/16/2010	< 3	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 3	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 3	ug/L	Sample
		8/31/2010	1.5	ug/L	Sample
	Winter Creek	2/17/2010	< 3	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
Chloromethane	Cafeteria Creek	2/16/2010	< 10	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 10	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 10	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 10	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 10	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 10	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 10	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 10	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 10	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
cis-1,2-Dichloroethene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
cis-1,3-Dichloropropene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
Dibromochloromethane	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
Dibromomethane	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Dibromomethane (cont.)	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
Dichlorodifluoromethane	Cafeteria Creek	2/16/2010	< 3	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 3	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 3	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 3	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 3	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 3	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 3	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 3	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 3	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
Dichlorotrifluoroethane	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Ethanol	Chicken Creek Downstream	8/31/2010	< 2000	ug/L	Sample
	Chicken Creek Upstream	8/31/2010	< 2000	ug/L	Sample
	N. Fork Strawberry Creek Downstream	8/31/2010	< 2000	ug/L	Sample
	No Name Creek	8/31/2010	< 2000	ug/L	Sample
	Upper Botanical Garden Creek	8/31/2010	< 2000	ug/L	Sample
	Winter Creek	8/31/2010	< 2000	ug/L	Sample
Ethylbenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
Ethylene Dibromide	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 2	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample
	No Name Creek	2/16/2010	< 2	ug/L	Sample
	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Freon 113	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 2	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 2	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 2	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 2	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 2	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 2	ug/L	Sample
Hexachlorobutadiene	Cafeteria Creek	2/16/2010	< 3	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 3	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 3	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 3	ug/L	Sample
	No Name Creek	2/16/2010	< 3	ug/L	Sample
	Ravine Creek	2/16/2010	< 3	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 3	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 3	ug/L	Sample
	Winter Creek	2/17/2010	< 3	ug/L	Sample
Isopropylbenzene	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 2	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample
	No Name Creek	2/16/2010	< 2	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Isopropylbenzene (cont.)	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample
Methylene chloride	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 10	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 10	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 10	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 10	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 10	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 10	ug/L	Sample
Naphthalene	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 2	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample
	No Name Creek	2/16/2010	< 2	ug/L	Sample
	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample
n-Butylbenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
n-Butylbenzene (cont.)	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
n-Propylbenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
p-Isopropyl toluene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
sec-Butylbenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
sec-Butylbenzene (cont.)	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
Styrene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
tert-Butylbenzene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Tetrachloroethene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
Toluene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
Total xylene isomers	Cafeteria Creek	2/16/2010	< 2	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Total xylene isomers (cont.)	N. Fork Strawberry Creek Downstream	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	No Name Creek	2/16/2010	< 2	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Ravine Creek	2/16/2010	< 2	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 2	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 2	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
	Winter Creek	2/17/2010	< 2	ug/L	Sample
		8/31/2010	< 1	ug/L	Sample
trans-1,2-Dichloroethene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
trans-1,3-Dichloropropene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
trans-1,3-Dichloropropene (cont.)	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
Trichloroethene	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
Trichlorofluoromethane	Chicken Creek Downstream	8/31/2010	< 1	ug/L	Sample
	Chicken Creek Upstream	8/31/2010	< 1	ug/L	Sample
	N. Fork Strawberry Creek Downstream	8/31/2010	< 1	ug/L	Sample
	No Name Creek	8/31/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	8/31/2010	< 1	ug/L	Sample
	Winter Creek	8/31/2010	< 1	ug/L	Sample
Vinyl acetate	Chicken Creek Downstream	8/31/2010	< 20	ug/L	Sample
	Chicken Creek Upstream	8/31/2010	< 20	ug/L	Sample
	N. Fork Strawberry Creek Downstream	8/31/2010	< 20	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Vinyl acetate (cont.)	No Name Creek	8/31/2010	< 20	ug/L	Sample
	Upper Botanical Garden Creek	8/31/2010	< 20	ug/L	Sample
	Winter Creek	8/31/2010	< 20	ug/L	Sample
Vinyl chloride	Cafeteria Creek	2/16/2010	< 1	ug/L	Sample
	Chicken Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Chicken Creek Upstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	N. Fork Strawberry Creek Downstream	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	No Name Creek	2/16/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Ravine Creek	2/16/2010	< 1	ug/L	Sample
	Ten Inch Creek	2/16/2010	< 1	ug/L	Sample
	Upper Botanical Garden Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample
	Winter Creek	2/17/2010	< 1	ug/L	Sample
		8/31/2010	< 0.5	ug/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

General Indicator Parameters		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Chemical Oxygen Demand	MP3	5/10/2010	63	mg/L	Sample
		5/10/2010	55	mg/L	Dup
		11/19/2010	29	mg/L	Sample
	MP4	5/10/2010	50	mg/L	Sample
		11/19/2010	10	mg/L	Sample
	MP5	5/10/2010	30	mg/L	Sample
		11/19/2010	13	mg/L	Sample
Cyanide	MP4	5/10/2010	< 0.005	mg/L	Sample
		11/19/2010	< 0.02	mg/L	Sample
	MP5	5/10/2010	< 0.005	mg/L	Sample
		11/19/2010	< 0.02	mg/L	Sample
pH	MP 1	5/10/2010	8.36	S.U.	Sample
		11/19/2010	7.38	S.U.	Sample
	MP 2	5/10/2010	6.68	S.U.	Sample
		11/19/2010	7.2	S.U.	Sample
	MP 3	5/10/2010	6.78	S.U.	Sample
		5/10/2010	6.63	S.U.	Dup
		11/19/2010	7.35	S.U.	Sample
	MP 4	5/10/2010	6.6	S.U.	Sample
		11/19/2010	7.6	S.U.	Sample
	MP 5	5/10/2010	6.86	S.U.	Sample
		11/19/2010	7.25	S.U.	Sample
	MP 6	5/10/2010	7.17	S.U.	Sample
		11/19/2010	7.05	S.U.	Sample
Specific Conductance	MP1	5/10/2010	63	µmhos/cm	Sample
		11/19/2010	30	µmhos/cm	Sample
	MP2	5/10/2010	170	µmhos/cm	Sample
		11/19/2010	140	µmhos/cm	Sample
	MP3	5/10/2010	50	µmhos/cm	Sample
		5/10/2010	50	µmhos/cm	Dup
		11/19/2010	42	µmhos/cm	Sample
	MP4	5/10/2010	29	µmhos/cm	Sample
		11/19/2010	11	µmhos/cm	Sample
	MP5	5/10/2010	20	µmhos/cm	Sample
		11/19/2010	15	µmhos/cm	Sample
	MP6	5/10/2010	98	µmhos/cm	Sample
		11/19/2010	32	µmhos/cm	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

General Indicator Parameters		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Total suspended solids (TSS)	MP1	5/10/2010	98	mg/L	Sample
		11/19/2010	5	mg/L	Sample
	MP2	5/10/2010	31	mg/L	Sample
		11/19/2010	27	mg/L	Sample
	MP3	5/10/2010	38	mg/L	Sample
		5/10/2010	28	mg/L	Dup
		11/19/2010	15	mg/L	Sample
	MP4	5/10/2010	10	mg/L	Sample
		11/19/2010	21	mg/L	Sample
	MP5	5/10/2010	9	mg/L	Sample
		11/19/2010	6	mg/L	Sample
	MP6	5/10/2010	84	mg/L	Sample
		11/19/2010	< 1	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Aluminum	MP3	5/10/2010	0.52	mg/L	Sample
		5/10/2010	0.9	mg/L	Dup
		11/19/2010	0.93	mg/L	Sample
Arsenic	MP4	5/10/2010	< 0.05	mg/L	Sample
		11/19/2010	< 0.05	mg/L	Sample
	MP5	5/10/2010	< 0.05	mg/L	Sample
		11/19/2010	< 0.05	mg/L	Sample
Cadmium	MP4	5/10/2010	< 0.01	mg/L	Sample
		11/19/2010	< 0.01	mg/L	Sample
	MP5	5/10/2010	< 0.01	mg/L	Sample
		11/19/2010	< 0.01	mg/L	Sample
Copper	MP3	5/10/2010	0.1	mg/L	Sample
		5/10/2010	0.11	mg/L	Dup
		11/19/2010	0.029	mg/L	Sample
Iron	MP3	5/10/2010	0.78	mg/L	Sample
		5/10/2010	1.8	mg/L	Dup
		11/19/2010	1.1	mg/L	Sample
Lead	MP3	5/10/2010	0.023	mg/L	Sample
		5/10/2010	0.019	mg/L	Dup
		11/19/2010	0.0081	mg/L	Sample
	MP4	5/10/2010	< 0.05	mg/L	Sample
		11/19/2010	< 0.05	mg/L	Sample
	MP5	5/10/2010	< 0.05	mg/L	Sample
		11/19/2010	< 0.05	mg/L	Sample
Magnesium	MP4	5/10/2010	0.45	mg/L	Sample
		11/19/2010	0.12	mg/L	Sample
	MP5	5/10/2010	0.35	mg/L	Sample
		11/19/2010	0.2	mg/L	Sample
Mercury	MP4	5/10/2010	< 0.0002	mg/L	Sample
		11/19/2010	< 0.0002	mg/L	Sample
	MP5	5/10/2010	< 0.0002	mg/L	Sample
		11/19/2010	< 0.0002	mg/L	Sample
Selenium	MP4	5/10/2010	< 0.05	mg/L	Sample
		11/19/2010	< 0.05	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Selenium (cont.)	MP5	5/10/2010	< 0.05	mg/L	Sample
		11/19/2010	< 0.05	mg/L	Sample
Silver	MP4	5/10/2010	< 0.01	mg/L	Sample
		11/19/2010	< 0.01	mg/L	Sample
	MP5	5/10/2010	< 0.01	mg/L	Sample
		11/19/2010	< 0.01	mg/L	Sample
Zinc	MP3	5/10/2010	0.4	mg/L	Sample
		5/10/2010	0.47	mg/L	Dup
		11/19/2010	0.18	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Nutrients		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Ammonia Nitrogen (as N)	MP4	5/10/2010	0.28	mg/L	Sample
		11/19/2010	0.45	mg/L	Sample
	MP5	5/10/2010	0.19	mg/L	Sample
		11/19/2010	0.38	mg/L	Sample
Nitrate plus Nitrite (as N)	MP3	5/10/2010	0.21	mg/L	Sample
		5/10/2010	0.19	mg/L	Dup
		11/19/2010	0.35	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Petroleum Hydrocarbons		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Oil and Grease	MP1	5/10/2010	14	mg/L	Sample
		11/19/2010	11	mg/L	Sample
	MP2	5/10/2010	12	mg/L	Sample
		11/19/2010	9.1	mg/L	Sample
	MP3	5/10/2010	6.3	mg/L	Sample
		5/10/2010	< 5	mg/L	Dup
		11/19/2010	7.2	mg/L	Sample
	MP4	5/10/2010	4.9	mg/L	Sample
		11/19/2010	7.3	mg/L	Sample
	MP5	5/10/2010	7.3	mg/L	Sample
		11/19/2010	10	mg/L	Sample
	MP6	5/10/2010	8.8	mg/L	Sample
		11/19/2010	7.8	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Carbon 14	Hearst Sewer	2/8/2010	< 1.7	Bq/L	< 45	pCi/L	Sample
		3/8/2010	< 2.4	Bq/L	< 66	pCi/L	Sample
		4/5/2010	< 2.6	Bq/L	< 71	pCi/L	Sample
		5/3/2010	< 2.5	Bq/L	< 66	pCi/L	Sample
		6/7/2010	< 2.8	Bq/L	< 74	pCi/L	Sample
		6/7/2010	< 1.9	Bq/L	< 51	pCi/L	Split
		6/28/2010	< 2.5	Bq/L	< 68	pCi/L	Sample
		7/26/2010	< 2.4	Bq/L	< 64	pCi/L	Sample
		8/23/2010	< 2.8	Bq/L	< 74	pCi/L	Sample
		9/22/2010	< 2.2	Bq/L	< 59	pCi/L	Sample
		10/18/2010	< 2.5	Bq/L	< 67	pCi/L	Sample
		11/15/2010	< 2.7	Bq/L	< 73	pCi/L	Sample
		12/13/2010	< 2.8	Bq/L	< 74	pCi/L	Sample
		1/10/2011	< 2.8	Bq/L	< 74	pCi/L	Sample
	Strawberry Sewer	2/8/2010	< 1.6	Bq/L	< 44	pCi/L	Sample
		3/8/2010	< 2.4	Bq/L	< 65	pCi/L	Sample
		4/5/2010	< 2.6	Bq/L	< 70	pCi/L	Sample
		5/3/2010	< 2.5	Bq/L	< 66	pCi/L	Sample
		6/7/2010	< 2.7	Bq/L	< 74	pCi/L	Sample
		6/28/2010	< 2.5	Bq/L	< 68	pCi/L	Sample
		7/26/2010	< 2.4	Bq/L	< 64	pCi/L	Sample
		8/23/2010	< 2.8	Bq/L	< 74	pCi/L	Sample
		9/22/2010	< 2.2	Bq/L	< 59	pCi/L	Sample
		9/22/2010	< 1.6	Bq/L	< 44	pCi/L	Split
		10/18/2010	< 2.5	Bq/L	< 67	pCi/L	Sample
		11/15/2010	< 2.7	Bq/L	< 73	pCi/L	Sample
		12/13/2010	< 2.8	Bq/L	< 75	pCi/L	Sample
		1/10/2011	< 2.8	Bq/L	< 74	pCi/L	Sample
Gross alpha	Hearst Sewer	2/8/2010	< 0.073	Bq/L	< 2	pCi/L	Sample
		3/8/2010	< 0.06	Bq/L	< 1.6	pCi/L	Sample
		4/5/2010	< 0.059	Bq/L	< 1.6	pCi/L	Sample
		5/3/2010	< 0.048	Bq/L	< 1.3	pCi/L	Sample
		6/7/2010	< 0.068	Bq/L	< 1.8	pCi/L	Sample
		6/7/2010	< 0.047	Bq/L	< 1.3	pCi/L	Split

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Gross alpha (cont.)	Hearst Sewer (cont.)	6/28/2010	< 0.069	Bq/L	< 1.9	pCi/L	Sample
		7/26/2010	< 0.072	Bq/L	< 2	pCi/L	Sample
		8/23/2010	< 0.088	Bq/L	< 2.4	pCi/L	Sample
		9/22/2010	< 0.066	Bq/L	< 1.8	pCi/L	Sample
		10/18/2010	< 0.07	Bq/L	< 1.9	pCi/L	Sample
		11/15/2010	< 0.066	Bq/L	< 1.8	pCi/L	Sample
		12/13/2010	< 0.074	Bq/L	< 2	pCi/L	Sample
		1/10/2011	< 0.062	Bq/L	< 1.7	pCi/L	Sample
	Strawberry Sewer	2/8/2010	< 0.063	Bq/L	< 1.7	pCi/L	Sample
		3/8/2010	< 0.059	Bq/L	< 1.6	pCi/L	Sample
		4/5/2010	< 0.058	Bq/L	< 1.6	pCi/L	Sample
		5/3/2010	< 0.059	Bq/L	< 1.6	pCi/L	Sample
		6/7/2010	< 0.071	Bq/L	< 1.9	pCi/L	Sample
		6/28/2010	< 0.068	Bq/L	< 1.8	pCi/L	Sample
		7/26/2010	< 0.073	Bq/L	< 2	pCi/L	Sample
		8/23/2010	< 0.073	Bq/L	< 2	pCi/L	Sample
		9/22/2010	< 0.07	Bq/L	< 1.9	pCi/L	Sample
		9/22/2010	< 0.041	Bq/L	< 1.1	pCi/L	Split
		10/18/2010	< 0.072	Bq/L	< 2	pCi/L	Sample
		11/15/2010	< 0.066	Bq/L	< 1.8	pCi/L	Sample
		12/13/2010	< 0.066	Bq/L	< 1.8	pCi/L	Sample
		1/10/2011	< 0.071	Bq/L	< 1.9	pCi/L	Sample
Gross beta	Hearst Sewer	2/8/2010	0.35	Bq/L	9.3	pCi/L	Sample
		3/8/2010	0.34	Bq/L	9.1	pCi/L	Sample
		4/5/2010	0.51	Bq/L	14	pCi/L	Sample
		5/3/2010	0.56	Bq/L	15	pCi/L	Sample
		6/7/2010	0.53	Bq/L	14	pCi/L	Sample
		6/7/2010	0.62	Bq/L	17	pCi/L	Split
		6/28/2010	0.51	Bq/L	14	pCi/L	Sample
		7/26/2010	0.52	Bq/L	14	pCi/L	Sample
		8/23/2010	0.5	Bq/L	13	pCi/L	Sample
		9/22/2010	0.57	Bq/L	15	pCi/L	Sample
		10/18/2010	0.47	Bq/L	13	pCi/L	Sample
		11/15/2010	0.57	Bq/L	15	pCi/L	Sample
		12/13/2010	0.63	Bq/L	17	pCi/L	Sample
		1/10/2011	0.49	Bq/L	13	pCi/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Gross beta (cont.)	Strawberry Sewer	2/8/2010	< 0.093	Bq/L	< 2.5	pCi/L	Sample
		3/8/2010	0.35	Bq/L	9.5	pCi/L	Sample
		4/5/2010	0.11	Bq/L	3	pCi/L	Sample
		5/3/2010	0.35	Bq/L	9.4	pCi/L	Sample
		6/7/2010	0.13	Bq/L	3.6	pCi/L	Sample
		6/28/2010	0.24	Bq/L	6.6	pCi/L	Sample
		7/26/2010	0.38	Bq/L	10	pCi/L	Sample
		8/23/2010	0.35	Bq/L	9.5	pCi/L	Sample
		9/22/2010	0.21	Bq/L	5.6	pCi/L	Sample
		9/22/2010	0.23	Bq/L	6.1	pCi/L	Split
		10/18/2010	0.11	Bq/L	3	pCi/L	Sample
		11/15/2010	0.4	Bq/L	11	pCi/L	Sample
		12/13/2010	0.25	Bq/L	6.8	pCi/L	Sample
		1/10/2011	0.25	Bq/L	6.9	pCi/L	Sample
Iodine-125	Hearst Sewer	2/8/2010	< 0.13	Bq/L	< 3.5	pCi/L	Sample
		3/8/2010	< 0.11	Bq/L	< 3	pCi/L	Sample
		4/5/2010	< 0.34	Bq/L	< 9	pCi/L	Sample
		5/3/2010	< 0.74	Bq/L	< 20	pCi/L	Sample
		6/7/2010	< 0.13	Bq/L	< 3.6	pCi/L	Sample
		6/7/2010	< 0.7	Bq/L	< 19	pCi/L	Split
		6/28/2010	< 0.43	Bq/L	< 12	pCi/L	Sample
		7/26/2010	< 0.28	Bq/L	< 7.6	pCi/L	Sample
		8/23/2010	< 0.35	Bq/L	< 9.6	pCi/L	Sample
		9/22/2010	< 0.31	Bq/L	< 8.4	pCi/L	Sample
		10/18/2010	< 0.8	Bq/L	< 22	pCi/L	Sample
		11/15/2010	< 0.4	Bq/L	< 11	pCi/L	Sample
		12/13/2010	< 0.35	Bq/L	< 9.5	pCi/L	Sample
		1/10/2011	< 0.67	Bq/L	< 18	pCi/L	Sample
	Strawberry Sewer	2/8/2010	< 0.41	Bq/L	< 11	pCi/L	Sample
		3/8/2010	< 0.18	Bq/L	< 4.8	pCi/L	Sample
		4/5/2010	< 0	Bq/L	< 0	pCi/L	Sample
		5/3/2010	< 0.23	Bq/L	< 6.2	pCi/L	Sample
		6/7/2010	< 0	Bq/L	< 0	pCi/L	Sample
		6/28/2010	< 0.57	Bq/L	< 15	pCi/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Iodine-125 (cont.)	Strawberry Sewer (cont.)	7/26/2010	< 0.41	Bq/L	< 11	pCi/L	Sample
		8/23/2010	< 0.28	Bq/L	< 7.5	pCi/L	Sample
		9/22/2010	< 0.54	Bq/L	< 14	pCi/L	Sample
		9/22/2010	< 0.34	Bq/L	< 9.3	pCi/L	Split
		10/18/2010	< 0.32	Bq/L	< 8.6	pCi/L	Sample
		11/15/2010	< 0.49	Bq/L	< 13	pCi/L	Sample
		12/13/2010	< 0.46	Bq/L	< 12	pCi/L	Sample
		1/10/2011	< 0.6	Bq/L	< 16	pCi/L	Sample
Phosphorus 32	Hearst Sewer	2/8/2010	< 1.7	Bq/L	< 46	pCi/L	Sample
		3/8/2010	< 1.8	Bq/L	< 48	pCi/L	Sample
		4/5/2010	< 1.7	Bq/L	< 45	pCi/L	Sample
		5/3/2010	< 1.7	Bq/L	< 47	pCi/L	Sample
		6/7/2010	< 1.8	Bq/L	< 50	pCi/L	Sample
		6/7/2010	< 1.6	Bq/L	< 43	pCi/L	Split
		6/28/2010	< 1.6	Bq/L	< 43	pCi/L	Sample
		7/26/2010	< 1.8	Bq/L	< 49	pCi/L	Sample
		8/23/2010	< 1.5	Bq/L	< 42	pCi/L	Sample
		9/22/2010	< 1.7	Bq/L	< 46	pCi/L	Sample
		10/18/2010	< 1.7	Bq/L	< 46	pCi/L	Sample
		11/15/2010	< 1.9	Bq/L	< 51	pCi/L	Sample
		12/13/2010	< 1.7	Bq/L	< 47	pCi/L	Sample
		1/10/2011	< 1.7	Bq/L	< 46	pCi/L	Sample
	Strawberry Sewer	2/8/2010	< 1.7	Bq/L	< 46	pCi/L	Sample
		3/8/2010	< 1.8	Bq/L	< 49	pCi/L	Sample
		4/5/2010	< 1.7	Bq/L	< 45	pCi/L	Sample
		5/3/2010	< 1.7	Bq/L	< 47	pCi/L	Sample
		6/7/2010	< 1.8	Bq/L	< 50	pCi/L	Sample
		6/28/2010	< 1.6	Bq/L	< 43	pCi/L	Sample
		7/26/2010	< 1.8	Bq/L	< 49	pCi/L	Sample
		8/23/2010	< 1.5	Bq/L	< 42	pCi/L	Sample
		9/22/2010	< 1.7	Bq/L	< 46	pCi/L	Sample
		9/22/2010	< 1.7	Bq/L	< 46	pCi/L	Split
		10/18/2010	< 1.7	Bq/L	< 46	pCi/L	Sample
		11/15/2010	< 1.9	Bq/L	< 51	pCi/L	Sample
		12/13/2010	< 1.8	Bq/L	< 47	pCi/L	Sample
		1/10/2011	< 1.7	Bq/L	< 46	pCi/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Sulfur 35	Hearst Sewer	2/8/2010	< 0.4	Bq/L	< 11	pCi/L	Sample
		3/8/2010	< 0.43	Bq/L	< 12	pCi/L	Sample
		4/5/2010	< 0.39	Bq/L	< 11	pCi/L	Sample
		5/3/2010	< 0.47	Bq/L	< 13	pCi/L	Sample
		6/7/2010	< 0.35	Bq/L	< 9.6	pCi/L	Sample
		6/7/2010	< 0.36	Bq/L	< 9.8	pCi/L	Split
		6/28/2010	< 0.55	Bq/L	< 15	pCi/L	Sample
		7/26/2010	< 0.37	Bq/L	< 10	pCi/L	Sample
		8/23/2010	< 0.52	Bq/L	< 14	pCi/L	Sample
		9/22/2010	< 0.73	Bq/L	< 20	pCi/L	Sample
		10/18/2010	< 0.5	Bq/L	< 14	pCi/L	Sample
		11/15/2010	< 0.43	Bq/L	< 12	pCi/L	Sample
		12/13/2010	< 0.53	Bq/L	< 14	pCi/L	Sample
		1/10/2011	< 0.42	Bq/L	< 11	pCi/L	Sample
	Strawberry Sewer	2/8/2010	< 0.38	Bq/L	< 10	pCi/L	Sample
		3/8/2010	< 0.43	Bq/L	< 12	pCi/L	Sample
		4/5/2010	< 0.4	Bq/L	< 11	pCi/L	Sample
		5/3/2010	< 0.56	Bq/L	< 15	pCi/L	Sample
		6/7/2010	< 0.53	Bq/L	< 14	pCi/L	Sample
		6/28/2010	< 0.27	Bq/L	< 7.2	pCi/L	Sample
		7/26/2010	< 0.34	Bq/L	< 9.3	pCi/L	Sample
		8/23/2010	< 0.56	Bq/L	< 15	pCi/L	Sample
		9/22/2010	< 0.56	Bq/L	< 15	pCi/L	Sample
		9/22/2010	< 0.46	Bq/L	< 12	pCi/L	Split
		10/18/2010	< 0.54	Bq/L	< 15	pCi/L	Sample
		11/15/2010	< 0.56	Bq/L	< 15	pCi/L	Sample
		12/13/2010	< 0.56	Bq/L	< 15	pCi/L	Sample
		1/10/2011	< 0.45	Bq/L	< 12	pCi/L	Sample
Tritium	Hearst Sewer	2/8/2010	< 5.5	Bq/L	< 150	pCi/L	Sample
		3/8/2010	< 5.4	Bq/L	< 140	pCi/L	Sample
		4/5/2010	< 5.4	Bq/L	< 150	pCi/L	Sample
		5/3/2010	< 6	Bq/L	< 160	pCi/L	Sample
		6/7/2010	< 6.1	Bq/L	< 170	pCi/L	Sample
		6/7/2010	< 6.3	Bq/L	< 170	pCi/L	Split

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Tritium (cont.)	Hearst Sewer (cont.)	6/28/2010	< 5.7	Bq/L	< 150	pCi/L	Sample
		7/26/2010	< 6	Bq/L	< 160	pCi/L	Sample
		8/23/2010	< 6.1	Bq/L	< 160	pCi/L	Sample
		9/22/2010	< 5.3	Bq/L	< 140	pCi/L	Sample
		10/18/2010	< 6.2	Bq/L	< 170	pCi/L	Sample
		11/15/2010	< 5	Bq/L	< 130	pCi/L	Sample
		12/13/2010	< 6	Bq/L	< 160	pCi/L	Sample
		1/10/2011	< 11	Bq/L	< 300	pCi/L	Sample
	Strawberry Sewer	2/8/2010	< 5.4	Bq/L	< 150	pCi/L	Sample
		3/8/2010	< 5.3	Bq/L	< 140	pCi/L	Sample
		4/5/2010	< 5.5	Bq/L	< 150	pCi/L	Sample
		5/3/2010	< 6	Bq/L	< 160	pCi/L	Sample
		6/7/2010	< 6.1	Bq/L	< 170	pCi/L	Sample
		6/28/2010	< 5.8	Bq/L	< 160	pCi/L	Sample
		7/26/2010	< 6	Bq/L	< 160	pCi/L	Sample
		8/23/2010	< 6.3	Bq/L	< 170	pCi/L	Sample
		9/22/2010	< 5.4	Bq/L	< 150	pCi/L	Sample
		9/22/2010	< 8.1	Bq/L	< 220	pCi/L	Split
		10/18/2010	< 6.1	Bq/L	< 160	pCi/L	Sample
		11/15/2010	< 5.1	Bq/L	< 140	pCi/L	Sample
		12/13/2010	< 6.1	Bq/L	< 160	pCi/L	Sample
		1/10/2011	< 11	Bq/L	< 300	pCi/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

General Indicator Parameters		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Chemical Oxygen Demand (Filtered)	Hearst Sewer	3/23/2010	190	mg/L	Sample
		9/15/2010	210	mg/L	Sample
	Strawberry Sewer	3/23/2010	100	mg/L	Sample
		9/15/2010	< 25	mg/L	Sample
pH	Hearst Sewer	3/23/2010	8.7	S.U.	Sample
		9/15/2010	8.9	S.U.	Sample
	Strawberry Sewer	3/23/2010	8.44	S.U.	Sample
		9/15/2010	8.6	S.U.	Sample
Total suspended solids (TSS)	Hearst Sewer	3/23/2010	210	mg/L	Sample
		9/15/2010	320	mg/L	Sample
	Strawberry Sewer	3/23/2010	380	mg/L	Sample
		9/15/2010	140	mg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Cadmium	Hearst Sewer	3/23/2010	< 0.01	mg/L	Sample
		3/23/2010	< 0.01	mg/L	Split
	Strawberry Sewer	3/23/2010	< 0.01	mg/L	Sample
	Travel Blank	3/22/2010	< 0.01	mg/L	Blank
		3/22/2010	< 0.01	mg/L	Blank
Chromium	Hearst Sewer	3/23/2010	< 0.05	mg/L	Sample
		3/23/2010	< 0.05	mg/L	Split
	Strawberry Sewer	3/23/2010	< 0.05	mg/L	Sample
	Travel Blank	3/22/2010	< 0.05	mg/L	Blank
		3/22/2010	< 0.05	mg/L	Blank
Copper	Hearst Sewer	3/23/2010	0.057	mg/L	Sample
		3/23/2010	< 0.05	mg/L	Split
	Strawberry Sewer	3/23/2010	0.16	mg/L	Sample
	Travel Blank	3/22/2010	< 0.05	mg/L	Blank
		3/22/2010	< 0.05	mg/L	Blank
Lead	Hearst Sewer	3/23/2010	< 0.1	mg/L	Sample
		3/23/2010	< 0.1	mg/L	Split
	Strawberry Sewer	3/23/2010	< 0.1	mg/L	Sample
	Travel Blank	3/22/2010	< 0.1	mg/L	Blank
		3/22/2010	< 0.1	mg/L	Blank
Nickel	Hearst Sewer	3/23/2010	< 0.01	mg/L	Sample
		3/23/2010	< 0.1	mg/L	Split
	Strawberry Sewer	3/23/2010	< 0.01	mg/L	Sample
	Travel Blank	3/22/2010	< 0.1	mg/L	Blank
		3/22/2010	< 0.01	mg/L	Blank
Silver	Hearst Sewer	3/23/2010	< 0.05	mg/L	Sample
		3/23/2010	< 0.05	mg/L	Split
	Strawberry Sewer	3/23/2010	< 0.05	mg/L	Sample
	Travel Blank	3/22/2010	< 0.05	mg/L	Blank
		3/22/2010	< 0.05	mg/L	Blank
Zinc	Hearst Sewer	3/23/2010	0.18	mg/L	Sample
		3/23/2010	0.1	mg/L	Split
	Strawberry Sewer	3/23/2010	0.26	mg/L	Sample
	Travel Blank	3/22/2010	< 0.05	mg/L	Blank
		3/22/2010	< 0.05	mg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	Location*				
1,1,1-Trichloroethane	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
1,1,2,2-Tetrachloroethane	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
1,1,2-Trichloroethane	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
1,1-Dichloroethane	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,1-Dichloroethane (cont.)	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
1,1-Dichloroethene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
1,2-Dichlorobenzene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
1,2-Dichloroethane	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	Location*				
1,2-Dichloroethene (total)	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 2	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 2	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 2	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 2	µg/L	Blank
1,2-Dichloropropane	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
1,3-Dichlorobenzene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
1,4-Dichlorobenzene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,4-Dichlorobenzene (cont.)	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
2-Butanone	Hearst Sewer	3/22/2010	< 20	µg/L	Sample
		3/22/2010	< 20	µg/L	Split
		9/15/2010	< 20	µg/L	Sample
		9/15/2010	< 20	µg/L	Split
	Strawberry Sewer	3/22/2010	< 20	µg/L	Sample
		9/15/2010	< 20	µg/L	Sample
	Travel Blank	3/22/2010	< 20	µg/L	Blank
		3/22/2010	< 20	µg/L	Blank
		9/15/2010	< 20	µg/L	Blank
		9/15/2010	< 20	µg/L	Blank
2-Chloroethylvinylether	Hearst Sewer	3/22/2010	< 20	µg/L	Sample
		3/22/2010	< 20	µg/L	Split
		9/15/2010	< 20	µg/L	Sample
		9/15/2010	< 20	µg/L	Split
	Strawberry Sewer	3/22/2010	< 20	µg/L	Sample
		9/15/2010	< 20	µg/L	Sample
	Travel Blank	3/22/2010	< 20	µg/L	Blank
		3/22/2010	< 20	µg/L	Blank
		9/15/2010	< 20	µg/L	Blank
		9/15/2010	< 20	µg/L	Blank
2-Hexanone	Hearst Sewer	3/22/2010	< 20	µg/L	Sample
		3/22/2010	< 20	µg/L	Split
		9/15/2010	< 20	µg/L	Sample
		9/15/2010	< 20	µg/L	Split
	Strawberry Sewer	3/22/2010	< 20	µg/L	Sample
		9/15/2010	< 20	µg/L	Sample
	Travel Blank	3/22/2010	< 20	µg/L	Blank
		3/22/2010	< 20	µg/L	Blank
		9/15/2010	< 20	µg/L	Blank
		9/15/2010	< 20	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
4-Methyl-2-pentanone	Hearst Sewer	3/22/2010	< 20	µg/L	Sample
		3/22/2010	< 20	µg/L	Split
		9/15/2010	< 20	µg/L	Sample
		9/15/2010	< 20	µg/L	Split
	Strawberry Sewer	3/22/2010	< 20	µg/L	Sample
		9/15/2010	< 20	µg/L	Sample
	Travel Blank	3/22/2010	< 20	µg/L	Blank
		3/22/2010	< 20	µg/L	Blank
		9/15/2010	< 20	µg/L	Blank
		9/15/2010	< 20	µg/L	Blank
Acetone	Hearst Sewer	3/22/2010	35	µg/L	Sample
		3/22/2010	26	µg/L	Split
		9/15/2010	28	µg/L	Sample
		9/15/2010	25	µg/L	Split
	Strawberry Sewer	3/22/2010	63	µg/L	Sample
		9/15/2010	84	µg/L	Sample
	Travel Blank	3/22/2010	< 10	µg/L	Blank
		3/22/2010	< 10	µg/L	Blank
		9/15/2010	< 10	µg/L	Blank
		9/15/2010	< 10	µg/L	Blank
Benzene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
Bromodichloromethane	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Bromodichloromethane (cont.)	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
Bromoform	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
Bromomethane	Hearst Sewer	3/22/2010	< 2	µg/L	Sample
		3/22/2010	< 2	µg/L	Split
		9/15/2010	< 2	µg/L	Sample
		9/15/2010	< 2	µg/L	Split
	Strawberry Sewer	3/22/2010	< 2	µg/L	Sample
		9/15/2010	< 2	µg/L	Sample
	Travel Blank	3/22/2010	< 2	µg/L	Blank
		3/22/2010	< 2	µg/L	Blank
		9/15/2010	< 2	µg/L	Blank
		9/15/2010	< 2	µg/L	Blank
Carbon disulfide	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Carbon tetrachloride	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
Chlorobenzene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
Chloroethane	Hearst Sewer	3/22/2010	< 2	µg/L	Sample
		3/22/2010	< 2	µg/L	Split
		9/15/2010	< 2	µg/L	Sample
		9/15/2010	< 2	µg/L	Split
	Strawberry Sewer	3/22/2010	< 2	µg/L	Sample
		9/15/2010	< 2	µg/L	Sample
	Travel Blank	3/22/2010	< 2	µg/L	Blank
		3/22/2010	< 2	µg/L	Blank
		9/15/2010	< 2	µg/L	Blank
		9/15/2010	< 2	µg/L	Blank
Chloroform	Hearst Sewer	3/22/2010	0.014	mg/L	Sample
		3/22/2010	0.016	mg/L	Split
		9/15/2010	0.0068	mg/L	Sample
		9/15/2010	0.0074	mg/L	Split

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Chloroform (cont.)	Strawberry Sewer	3/22/2010	0.0019	mg/L	Sample
		9/15/2010	0.0034	mg/L	Sample
	Travel Blank	3/22/2010	< 0.001	mg/L	Blank
		3/22/2010	0.0015	mg/L	Blank
		9/15/2010	< 0.001	mg/L	Blank
		9/15/2010	0.0011	mg/L	Blank
Chloromethane	Hearst Sewer	3/22/2010	< 2	µg/L	Sample
		3/22/2010	< 2	µg/L	Split
		9/15/2010	< 2	µg/L	Sample
		9/15/2010	< 2	µg/L	Split
	Strawberry Sewer	3/22/2010	< 2	µg/L	Sample
		9/15/2010	< 2	µg/L	Sample
	Travel Blank	3/22/2010	< 2	µg/L	Blank
		3/22/2010	< 2	µg/L	Blank
		9/15/2010	< 2	µg/L	Blank
		9/15/2010	< 2	µg/L	Blank
cis-1,2-Dichloroethene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
cis-1,3-Dichloropropene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	Location*				
Dibromochloromethane	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
Dibromomethane	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
Dichlorodifluoromethane	Hearst Sewer	3/22/2010	< 2	µg/L	Sample
		3/22/2010	< 2	µg/L	Split
		9/15/2010	< 2	µg/L	Sample
		9/15/2010	< 2	µg/L	Split
	Strawberry Sewer	3/22/2010	< 2	µg/L	Sample
		9/15/2010	< 2	µg/L	Sample
	Travel Blank	3/22/2010	< 2	µg/L	Blank
		3/22/2010	< 2	µg/L	Blank
		9/15/2010	< 2	µg/L	Blank
		9/15/2010	< 2	µg/L	Blank
Ethylbenzene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Ethylbenzene (cont.)	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
Freon 113	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 2	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 2	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 2	µg/L	Blank
		9/15/2010	< 2	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
Methylene chloride	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 10	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 10	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 10	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 10	µg/L	Blank
Styrene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	Location*				
Tetrachloroethene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
Toluene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
Total xylene isomers	Hearst Sewer	3/22/2010	< 2	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 2	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 2	µg/L	Sample
		9/15/2010	< 2	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 2	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 2	µg/L	Blank
trans-1,2-Dichloroethene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	Location*				
trans-1,2-Dichloroethene (cont.)	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
trans-1,3-Dichloropropene	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
Trichloroethene	Hearst Sewer	3/22/2010	< 0.5	µg/L	Sample
		3/22/2010	< 0.5	µg/L	Split
		9/15/2010	< 0.5	µg/L	Sample
		9/15/2010	< 0.5	µg/L	Split
	Strawberry Sewer	3/22/2010	< 0.5	µg/L	Sample
		9/15/2010	< 0.5	µg/L	Sample
	Travel Blank	3/22/2010	< 0.5	µg/L	Blank
		3/22/2010	< 0.5	µg/L	Blank
		9/15/2010	< 0.5	µg/L	Blank
		9/15/2010	< 0.5	µg/L	Blank
Trichlorofluoromethane	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	1.1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Vinyl acetate	Hearst Sewer	3/22/2010	< 20	µg/L	Sample
		3/22/2010	< 10	µg/L	Split
		9/15/2010	< 20	µg/L	Sample
		9/15/2010	< 10	µg/L	Split
	Strawberry Sewer	3/22/2010	< 20	µg/L	Sample
		9/15/2010	< 20	µg/L	Sample
	Travel Blank	3/22/2010	< 10	µg/L	Blank
		3/22/2010	< 20	µg/L	Blank
		9/15/2010	< 10	µg/L	Blank
		9/15/2010	< 20	µg/L	Blank
Vinyl chloride	Hearst Sewer	3/22/2010	< 1	µg/L	Sample
		3/22/2010	< 1	µg/L	Split
		9/15/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Split
	Strawberry Sewer	3/22/2010	< 1	µg/L	Sample
		9/15/2010	< 1	µg/L	Sample
	Travel Blank	3/22/2010	< 1	µg/L	Blank
		3/22/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank
		9/15/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	Location*				
Cadmium	25 FTU	2/19/2010	< 0.01	mg/L	Sample
		5/13/2010	< 0.01	mg/L	Sample
	77 FTU	2/18/2010	< 0.01	mg/L	Sample
		2/18/2010	< 0.01	mg/L	Split
		5/11/2010	< 0.01	mg/L	Sample
		12/16/2010	< 0.01	mg/L	Sample
	Travel Blank	2/18/2010	< 0.01	mg/L	Blank
		2/18/2010	< 0.01	mg/L	Blank
Chromium	25 FTU	2/19/2010	< 0.05	mg/L	Sample
		5/13/2010	< 0.05	mg/L	Sample
	77 FTU	2/18/2010	< 0.05	mg/L	Sample
		2/18/2010	< 0.05	mg/L	Split
		5/11/2010	< 0.05	mg/L	Sample
		12/16/2010	< 0.05	mg/L	Sample
	Travel Blank	2/18/2010	< 0.05	mg/L	Blank
		2/18/2010	< 0.05	mg/L	Blank
Copper	25 FTU	2/19/2010	0.26	mg/L	Sample
		5/13/2010	0.23	mg/L	Sample
	77 FTU	2/18/2010	0.3	mg/L	Sample
		2/18/2010	0.39	mg/L	Split
		5/11/2010	0.4	mg/L	Sample
		12/16/2010	0.74	mg/L	Sample
	Travel Blank	2/18/2010	< 0.05	mg/L	Blank
		2/18/2010	< 0.05	mg/L	Blank
Lead	25 FTU	2/19/2010	< 0.1	mg/L	Sample
		5/13/2010	< 0.1	mg/L	Sample
	77 FTU	2/18/2010	< 0.1	mg/L	Sample
		2/18/2010	< 0.1	mg/L	Split
		5/11/2010	< 0.1	mg/L	Sample
		12/16/2010	< 0.01	mg/L	Sample
	Travel Blank	2/18/2010	< 0.1	mg/L	Blank
		2/18/2010	< 0.1	mg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	Location*				
Nickel	25 FTU	2/19/2010	< 0.1	mg/L	Sample
		5/13/2010	0.23	mg/L	Sample
	77 FTU	2/18/2010	0.1	mg/L	Sample
		2/18/2010	0.17	mg/L	Split
		5/11/2010	0.019	mg/L	Sample
		12/16/2010	0.073	mg/L	Sample
	Travel Blank	2/18/2010	< 0.1	mg/L	Blank
		2/18/2010	< 0.1	mg/L	Blank
Silver	25 FTU	2/19/2010	< 0.05	mg/L	Sample
		5/13/2010	< 0.05	mg/L	Sample
	77 FTU	2/18/2010	< 0.05	mg/L	Sample
		2/18/2010	< 0.05	mg/L	Split
		5/11/2010	< 0.05	mg/L	Sample
		12/16/2010	< 0.05	mg/L	Sample
	Travel Blank	2/18/2010	< 0.05	mg/L	Blank
		2/18/2010	< 0.05	mg/L	Blank
Zinc	25 FTU	2/19/2010	< 0.05	mg/L	Sample
		5/13/2010	< 0.05	mg/L	Sample
	77 FTU	2/18/2010	< 0.05	mg/L	Sample
		2/18/2010	0.063	mg/L	Split
		5/11/2010	< 0.05	mg/L	Sample
		12/16/2010	0.057	mg/L	Sample
	Travel Blank	2/18/2010	< 0.05	mg/L	Blank
		2/18/2010	< 0.05	mg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

General Indicator Parameters		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
pH	25 FTU	2/19/2010	8.1	S.U.	Sample
		5/13/2010	8.4	S.U.	Sample
	77 FTU	2/18/2010	7.7	S.U.	Sample
		5/11/2010	8.3	S.U.	Sample
		12/16/2010	7.7	S.U.	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,1,1-Trichloroethane	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,1,1-Trichloroethane (cont.)	Trip Blank	5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
1,1,2,2-Tetrachloroethane	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,1,2,2-Tetrachloroethane (cont.)	B7 Collection Trench Treatment System	8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
1,1,2-Trichloroethane	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,1,2-Trichloroethane (cont.)	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
1,1-Dichloroethane	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	2.1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,1-Dichloroethane (cont.)	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
1,1-Dichloroethene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,1-Dichloroethene (cont.)	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
1,2-Dichlorobenzene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,2-Dichlorobenzene (cont.)	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
1,2-Dichloroethane	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,2-Dichloroethane (cont.)	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
1,2-Dichloroethene (total)	B25A Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,2-Dichloroethene (total) (cont.)	B46 Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51L Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/29/2010	< 2	µg/L	Sample
	B6 Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 2	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 2	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 2	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 2	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 2	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 2	µg/L	Blank
		8/12/2010	< 2	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 2	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,2-Dichloropropane	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,2-Dichloropropane (cont.)	Trip Blank	5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
1,3-Dichlorobenzene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,3-Dichlorobenzene (cont.)	B7 Collection Trench Treatment System	8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
1,4-Dichlorobenzene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
1,4-Dichlorobenzene (cont.)	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
2-Butanone	B25A Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B46 Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B51L Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/29/2010	< 20	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
2-Butanone (cont.)	B6 Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 20	µg/L	Sample
		2/9/2010	< 20	µg/L	Dup
		5/12/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Dup
	B7 Coll Trench Treatment System	8/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Dup
		11/9/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Dup
	Trip Blank	2/9/2010	< 20	µg/L	Blank
		2/9/2010	< 20	µg/L	Blank
		5/12/2010	< 20	µg/L	Blank
		5/12/2010	< 20	µg/L	Blank
		8/12/2010	< 20	µg/L	Blank
		8/12/2010	< 20	µg/L	Blank
		11/9/2010	< 20	µg/L	Blank
		11/9/2010	< 20	µg/L	Blank
2-Chloroethylvinylether	B25A Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B46 Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
2-Chloroethylvinylether (cont.)	B51L Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/29/2010	< 20	µg/L	Sample
	B6 Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 20	µg/L	Sample
		2/9/2010	< 20	µg/L	Dup
		5/12/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Dup
		8/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Dup
		11/9/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Dup
	Trip Blank	2/9/2010	< 20	µg/L	Blank
		2/9/2010	< 20	µg/L	Blank
		5/12/2010	< 20	µg/L	Blank
		5/12/2010	< 20	µg/L	Blank
		8/12/2010	< 20	µg/L	Blank
		8/12/2010	< 20	µg/L	Blank
		11/9/2010	< 20	µg/L	Blank
		11/9/2010	< 20	µg/L	Blank
2-Hexanone	B25A Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B46 Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
2-Hexanone (cont.)	B51 MG Rm Basement Treatment	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B51L Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/29/2010	< 20	µg/L	Sample
	B6 Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 20	µg/L	Sample
		2/9/2010	< 20	µg/L	Dup
		5/12/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Dup
		8/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Dup
		11/9/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Dup
	Trip Blank	2/9/2010	< 20	µg/L	Blank
		2/9/2010	< 20	µg/L	Blank
		5/12/2010	< 20	µg/L	Blank
		5/12/2010	< 20	µg/L	Blank
		8/12/2010	< 20	µg/L	Blank
		8/12/2010	< 20	µg/L	Blank
		11/9/2010	< 20	µg/L	Blank
		11/9/2010	< 20	µg/L	Blank
4-Methyl-2-pentanone	B25A Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B46 Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
4-Methyl-2-pentanone (cont.)	B51 Fire Trail Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B51 MG Rm Basement Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B51L Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/29/2010	< 20	µg/L	Sample
	B6 Treatment System	2/9/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 20	µg/L	Sample
		2/9/2010	< 20	µg/L	Dup
		5/12/2010	< 20	µg/L	Sample
		5/12/2010	< 20	µg/L	Dup
		8/12/2010	< 20	µg/L	Sample
		8/12/2010	< 20	µg/L	Dup
		11/9/2010	< 20	µg/L	Sample
		11/9/2010	< 20	µg/L	Dup
	Trip Blank	2/9/2010	< 20	µg/L	Blank
		2/9/2010	< 20	µg/L	Blank
		5/12/2010	< 20	µg/L	Blank
		5/12/2010	< 20	µg/L	Blank
		8/12/2010	< 20	µg/L	Blank
		8/12/2010	< 20	µg/L	Blank
		11/9/2010	< 20	µg/L	Blank
		11/9/2010	< 20	µg/L	Blank
Acetone	B25A Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Acetone (cont.)	B46 Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B51L Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/29/2010	< 10	µg/L	Sample
	B6 Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 10	µg/L	Sample
		2/9/2010	< 10	µg/L	Dup
		5/12/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Dup
		8/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Dup
		11/9/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Dup
	Trip Blank	2/9/2010	< 10	µg/L	Blank
		2/9/2010	< 10	µg/L	Blank
		5/12/2010	< 10	µg/L	Blank
		5/12/2010	< 10	µg/L	Blank
		8/12/2010	< 10	µg/L	Blank
		8/12/2010	< 10	µg/L	Blank
		11/9/2010	< 10	µg/L	Blank
		11/9/2010	< 10	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Benzene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Benzene (cont.)	Trip Blank	5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Bromodichloromethane	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Bromodichloromethane (cont.)	B7 Collection Trench Treatment System	8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Bromoform	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Bromoform (cont.)	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Bromomethane	B25A Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B46 Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51L Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/29/2010	< 2	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Bromomethane (cont.)	B6 Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 2	µg/L	Sample
		2/9/2010	< 2	µg/L	Dup
		5/12/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Dup
		8/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Dup
		11/9/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Dup
	Trip Blank	2/9/2010	< 2	µg/L	Blank
		2/9/2010	< 2	µg/L	Blank
		5/12/2010	< 2	µg/L	Blank
		5/12/2010	< 2	µg/L	Blank
		8/12/2010	< 2	µg/L	Blank
		8/12/2010	< 2	µg/L	Blank
		11/9/2010	< 2	µg/L	Blank
		11/9/2010	< 2	µg/L	Blank
Carbon disulfide	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Carbon disulfide (cont.)	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Carbon tetrachloride	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Carbon tetrachloride (cont.)	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Chlorobenzene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Chlorobenzene (cont.)	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Chloroethane	B25A Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Chloroethane (cont.)	B46 Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51L Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/29/2010	< 2	µg/L	Sample
	B6 Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 2	µg/L	Sample
		2/9/2010	< 2	µg/L	Dup
		5/12/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Dup
		8/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Dup
		11/9/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Dup
	Trip Blank	2/9/2010	< 2	µg/L	Blank
		2/9/2010	< 2	µg/L	Blank
		5/12/2010	< 2	µg/L	Blank
		5/12/2010	< 2	µg/L	Blank
		8/12/2010	< 2	µg/L	Blank
		8/12/2010	< 2	µg/L	Blank
		11/9/2010	< 2	µg/L	Blank
		11/9/2010	< 2	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Chloroform	B25A Treatment System	2/9/2010	< 0.001	mg/L	Sample
		5/12/2010	< 0.001	mg/L	Sample
		8/12/2010	< 0.001	mg/L	Sample
		11/9/2010	< 0.001	mg/L	Sample
	B46 Treatment System	2/9/2010	< 0.001	mg/L	Sample
		5/12/2010	< 0.001	mg/L	Sample
		8/12/2010	< 0.001	mg/L	Sample
		11/9/2010	< 0.001	mg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 0.001	mg/L	Sample
		5/12/2010	< 0.001	mg/L	Sample
		8/12/2010	0.001	mg/L	Sample
		11/9/2010	< 0.001	mg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 0.001	mg/L	Sample
		5/12/2010	< 0.001	mg/L	Sample
		8/12/2010	< 0.001	mg/L	Sample
		11/9/2010	< 0.001	mg/L	Sample
	B51L Treatment System	2/9/2010	< 0.001	mg/L	Sample
		5/12/2010	< 0.001	mg/L	Sample
		8/12/2010	< 0.001	mg/L	Sample
		11/29/2010	< 0.001	mg/L	Sample
	B6 Treatment System	2/9/2010	< 0.001	mg/L	Sample
		5/12/2010	< 0.001	mg/L	Sample
		8/12/2010	< 0.001	mg/L	Sample
		11/9/2010	< 0.001	mg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 0.001	mg/L	Sample
		2/9/2010	< 0.001	mg/L	Dup
		5/12/2010	< 0.001	mg/L	Sample
		5/12/2010	< 0.001	mg/L	Dup
		8/12/2010	< 0.001	mg/L	Sample
		8/12/2010	< 0.001	mg/L	Dup
		11/9/2010	< 0.001	mg/L	Sample
		11/9/2010	< 0.001	mg/L	Dup
	Trip Blank	2/9/2010	< 0.001	mg/L	Blank
		2/9/2010	< 0.001	mg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Chloroform (cont.)	Trip Blank	5/12/2010	0.0015	mg/L	Blank
		5/12/2010	< 0.001	mg/L	Blank
		8/12/2010	0.0014	mg/L	Blank
		8/12/2010	< 0.001	mg/L	Blank
		11/9/2010	< 0.001	mg/L	Blank
		11/9/2010	< 0.001	mg/L	Blank
Chloromethane	B25A Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B46 Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51L Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/29/2010	< 2	µg/L	Sample
	B6 Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 2	µg/L	Sample
		2/9/2010	< 2	µg/L	Dup
		5/12/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Dup

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Chloromethane (cont.)	B7 Collection Trench Treatment System (cont.)	8/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Dup
		11/9/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Dup
	Trip Blank	2/9/2010	< 2	µg/L	Blank
		2/9/2010	< 2	µg/L	Blank
		5/12/2010	< 2	µg/L	Blank
		5/12/2010	< 2	µg/L	Blank
		8/12/2010	< 2	µg/L	Blank
		8/12/2010	< 2	µg/L	Blank
		11/9/2010	< 2	µg/L	Blank
		11/9/2010	< 2	µg/L	Blank
cis-1,2-Dichloroethene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
cis-1,2-Dichloroethene (cont.)	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
cis-1,3-Dichloropropene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
cis-1,3-Dichloropropene (cont.)	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Dibromochloromethane	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Dibromochloromethane (cont.)	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Dibromomethane	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Dibromomethane (cont.)	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Dichlorodifluoromethane	B25A Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B46 Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Dichlorodifluoromethane (cont.)	B51 Fire Trail Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51L Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/29/2010	< 2	µg/L	Sample
	B6 Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 2	µg/L	Sample
		2/9/2010	< 2	µg/L	Dup
		5/12/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Dup
		8/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Dup
		11/9/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Dup
	Trip Blank	2/9/2010	< 2	µg/L	Blank
		2/9/2010	< 2	µg/L	Blank
		5/12/2010	< 2	µg/L	Blank
		5/12/2010	< 2	µg/L	Blank
		8/12/2010	< 2	µg/L	Blank
		8/12/2010	< 2	µg/L	Blank
		11/9/2010	< 2	µg/L	Blank
		11/9/2010	< 2	µg/L	Blank
Ethylbenzene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Ethylbenzene (cont.)	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Freon 113	B25A Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B46 Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B51L Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/29/2010	< 2	µg/L	Sample
	B6 Treatment System	2/9/2010	< 2	µg/L	Sample
		5/12/2010	< 2	µg/L	Sample
		8/12/2010	< 2	µg/L	Sample
		11/9/2010	< 2	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 2	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 2	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 2	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 2	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 2	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Freon 113 (cont.)	Trip Blank (cont.)	5/12/2010	< 2	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 2	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 2	µg/L	Blank
Methylene chloride	B25A Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B46 Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B51L Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/29/2010	< 10	µg/L	Sample
	B6 Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 10	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 10	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Methylene chloride (cont.)	B7 Collection Trench Treatment System (cont.)	8/12/2010	< 10	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 10	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 10	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 10	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 10	µg/L	Blank
		11/9/2010	< 10	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Styrene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Styrene (cont.)	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Tetrachloroethene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Tetrachloroethene (cont.)	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Toluene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Toluene (cont.)	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Total xylene isomers	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Total xylene isomers (cont.)	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 2	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 2	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 2	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 2	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 2	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 2	µg/L	Blank
		8/12/2010	< 2	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 2	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
trans-1,2-Dichloroethene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
trans-1,2-Dichloroethene (cont.)	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
trans-1,3-Dichloropropene	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
trans-1,3-Dichloropropene (cont.)	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Trichloroethene	B25A Treatment System	2/9/2010	< 0.5	µg/L	Sample
		5/12/2010	< 0.5	µg/L	Sample
		8/12/2010	< 0.5	µg/L	Sample
		11/9/2010	< 0.5	µg/L	Sample
	B46 Treatment System	2/9/2010	< 0.5	µg/L	Sample
		5/12/2010	< 0.5	µg/L	Sample
		8/12/2010	< 0.5	µg/L	Sample
		11/9/2010	< 0.5	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 0.5	µg/L	Sample
		5/12/2010	< 0.5	µg/L	Sample
		8/12/2010	< 0.5	µg/L	Sample
		11/9/2010	< 0.5	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 0.5	µg/L	Sample
		5/12/2010	< 0.5	µg/L	Sample
		8/12/2010	< 0.5	µg/L	Sample
		11/9/2010	< 0.5	µg/L	Sample
	B51L Treatment System	2/9/2010	< 0.5	µg/L	Sample
		5/12/2010	< 0.5	µg/L	Sample
		8/12/2010	< 0.5	µg/L	Sample
		11/29/2010	< 0.5	µg/L	Sample
	B6 Treatment System	2/9/2010	< 0.5	µg/L	Sample
		5/12/2010	< 0.5	µg/L	Sample
		8/12/2010	< 0.5	µg/L	Sample
		11/9/2010	< 0.5	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 0.5	µg/L	Sample
		2/9/2010	< 0.5	µg/L	Dup
		5/12/2010	< 0.5	µg/L	Sample
		5/12/2010	< 0.5	µg/L	Dup
		8/12/2010	< 0.5	µg/L	Sample
		8/12/2010	< 0.5	µg/L	Dup
		11/9/2010	< 0.5	µg/L	Sample
		11/9/2010	< 0.5	µg/L	Dup
	Trip Blank	2/9/2010	< 0.5	µg/L	Blank
		2/9/2010	< 0.5	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Trichloroethene (cont.)	Trip Blank (cont.)	5/12/2010	< 0.5	µg/L	Blank
		5/12/2010	< 0.5	µg/L	Blank
		8/12/2010	< 0.5	µg/L	Blank
		8/12/2010	< 0.5	µg/L	Blank
		11/9/2010	< 0.5	µg/L	Blank
		11/9/2010	< 0.5	µg/L	Blank
Trichlorofluoromethane	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample
	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Trichlorofluoromethane (cont.)	B7 Collection Trench Treatment System (cont.)	8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	1.3	µg/L	Blank
		2/9/2010	2	µg/L	Blank
		5/12/2010	1.4	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	1.6	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
Vinyl acetate	B25A Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B46 Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample
	B51L Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/29/2010	< 10	µg/L	Sample
	B6 Treatment System	2/9/2010	< 10	µg/L	Sample
		5/12/2010	< 10	µg/L	Sample
		8/12/2010	< 10	µg/L	Sample
		11/9/2010	< 10	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Vinyl acetate (cont.)	B7 Collection Trench Treatment System	2/9/2010	< 10	µg/L	Sample
		2/9/2010	< 20	µg/L	Dup
		5/12/2010	< 10	µg/L	Sample
		5/12/2010	< 20	µg/L	Dup
		8/12/2010	< 10	µg/L	Sample
		8/12/2010	< 20	µg/L	Dup
		11/9/2010	< 10	µg/L	Sample
		11/9/2010	< 20	µg/L	Dup
	Trip Blank	2/9/2010	< 10	µg/L	Blank
		2/9/2010	< 20	µg/L	Blank
		5/12/2010	< 20	µg/L	Blank
		5/12/2010	< 10	µg/L	Blank
		8/12/2010	< 10	µg/L	Blank
		8/12/2010	< 20	µg/L	Blank
		11/9/2010	< 10	µg/L	Blank
		11/9/2010	< 20	µg/L	Blank
Vinyl chloride	B25A Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B46 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 Fire Trail Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51 MG Rm Basement Treatment	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B51L Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/29/2010	< 1	µg/L	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Volatile Organic Compounds		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Vinyl chloride (cont.)	B6 Treatment System	2/9/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Sample
	B7 Collection Trench Treatment System	2/9/2010	< 1	µg/L	Sample
		2/9/2010	< 1	µg/L	Dup
		5/12/2010	< 1	µg/L	Sample
		5/12/2010	< 1	µg/L	Dup
		8/12/2010	< 1	µg/L	Sample
		8/12/2010	< 1	µg/L	Dup
		11/9/2010	< 1	µg/L	Sample
		11/9/2010	< 1	µg/L	Dup
	Trip Blank	2/9/2010	< 1	µg/L	Blank
		2/9/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		5/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		8/12/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank
		11/9/2010	< 1	µg/L	Blank

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Actinium 228	Building 69	10/14/2010	0.017	Bq/g	0.47	pCi/g	Sample
	Building 80	10/14/2010	0.039	Bq/g	1	pCi/g	Sample
	Building 85	10/14/2010	0.025	Bq/g	0.67	pCi/g	Sample
		10/14/2010	0.023	Bq/g	0.63	pCi/g	Split
	ENV-B13C	10/14/2010	0.033	Bq/g	0.9	pCi/g	Sample
Cesium 137	Building 69	10/14/2010	< 0.00065	Bq/g	< 0.018	pCi/g	Sample
	Building 80	10/14/2010	< 0.00094	Bq/g	< 0.025	pCi/g	Sample
	Building 85	10/14/2010	< 0.00049	Bq/g	< 0.013	pCi/g	Sample
		10/14/2010	< 0.00076	Bq/g	< 0.021	pCi/g	Split
	ENV-B13C	10/14/2010	0.013	Bq/g	0.36	pCi/g	Sample
Gross alpha	Building 69	10/14/2010	0.25	Bq/g	6.8	pCi/g	Sample
	Building 80	10/14/2010	0.39	Bq/g	10	pCi/g	Sample
	Building 85	10/14/2010	0.23	Bq/g	6.2	pCi/g	Sample
		10/14/2010	0.089	Bq/g	2.4	pCi/g	Split
	ENV-B13C	10/14/2010	0.29	Bq/g	7.9	pCi/g	Sample
Gross beta	Building 69	10/14/2010	0.29	Bq/g	7.8	pCi/g	Sample
	Building 80	10/14/2010	0.85	Bq/g	23	pCi/g	Sample
	Building 85	10/14/2010	0.6	Bq/g	16	pCi/g	Sample
		10/14/2010	0.094	Bq/g	2.5	pCi/g	Split
	ENV-B13C	10/14/2010	0.86	Bq/g	23	pCi/g	Sample
Lead 214	Building 69	10/14/2010	0.015	Bq/g	0.41	pCi/g	Sample
	Building 80	10/14/2010	0.033	Bq/g	0.89	pCi/g	Sample
	Building 85	10/14/2010	0.025	Bq/g	0.67	pCi/g	Sample
		10/14/2010	< 0.0016	Bq/g	< 0.043	pCi/g	Split
	ENV-B13C	10/14/2010	0.031	Bq/g	0.85	pCi/g	Sample
Potassium 40	Building 69	10/14/2010	0.28	Bq/g	7.6	pCi/g	Sample
	Building 80	10/14/2010	0.67	Bq/g	18	pCi/g	Sample
	Building 85	10/14/2010	0.54	Bq/g	15	pCi/g	Sample
		10/14/2010	0.46	Bq/g	12	pCi/g	Split
	ENV-B13C	10/14/2010	0.66	Bq/g	18	pCi/g	Sample
Radium 226	Building 69	10/14/2010	0.013	Bq/g	0.35	pCi/g	Sample
	Building 80	10/14/2010	0.032	Bq/g	0.86	pCi/g	Sample
	Building 85	10/14/2010	0.022	Bq/g	0.6	pCi/g	Sample
		10/14/2010	0.021	Bq/g	0.57	pCi/g	Split
	ENV-B13C	10/14/2010	0.025	Bq/g	0.68	pCi/g	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Tritium	Building 69	10/14/2010	< 0.00044	Bq/g	< 0.012	pCi/g	Sample
	Building 80	10/14/2010	< 0.00048	Bq/g	< 0.013	pCi/g	Sample
	Building 85	10/14/2010	< 0.00042	Bq/g	< 0.011	pCi/g	Sample
		10/14/2010	< 0.0022	Bq/g	< 0.059	pCi/g	Split
	ENV-B13C	10/14/2010	< 0.00058	Bq/g	< 0.016	pCi/g	Sample
Uranium 238	Building 69	10/14/2010	0.019	Bq/g	0.51	pCi/g	Sample
	Building 80	10/14/2010	0.041	Bq/g	1.1	pCi/g	Sample
	Building 85	10/14/2010	< 0.022	Bq/g	< 0.59	pCi/g	Sample
		10/14/2010	< 0.077	Bq/g	< 2.1	pCi/g	Split
	ENV-B13C	10/14/2010	0.043	Bq/g	1.2	pCi/g	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

General Indicator Parameters		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Moisture by weight	Building 69	10/14/2010	4.7	%	Sample
	Building 80	10/14/2010	4.4	%	Sample
	Building 85	10/14/2010	3.9	%	Sample
		10/14/2010	2	%	Split
	ENV-B13C	10/14/2010	9.5	%	Sample
pH	Building 69	10/14/2010	7.1	S.U.	Sample
	Building 80	10/14/2010	7.1	S.U.	Sample
	Building 85	10/14/2010	7	S.U.	Sample
		10/14/2010	6.9	S.U.	Split
	ENV-B13C	10/14/2010	5.4	S.U.	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	Location*				
Aluminum	Building 69	10/14/2010	25000	mg/kg	Sample
	Building 80	10/14/2010	21000	mg/kg	Sample
	Building 85	10/14/2010	21000	mg/kg	Sample
		10/14/2010	20000	mg/kg	Split
	ENV-B13C	10/14/2010	12000	mg/kg	Sample
Arsenic	Building 69	10/14/2010	< 25	mg/kg	Sample
	Building 80	10/14/2010	< 25	mg/kg	Sample
	Building 85	10/14/2010	< 25	mg/kg	Sample
		10/14/2010	< 5	mg/kg	Split
	ENV-B13C	10/14/2010	< 25	mg/kg	Sample
Barium	Building 69	10/14/2010	120	mg/kg	Sample
	Building 80	10/14/2010	210	mg/kg	Sample
	Building 85	10/14/2010	110	mg/kg	Sample
		10/14/2010	89	mg/kg	Split
	ENV-B13C	10/14/2010	120	mg/kg	Sample
Boron	Building 69	10/14/2010	< 50	mg/kg	Sample
	Building 80	10/14/2010	< 50	mg/kg	Sample
	Building 85	10/14/2010	< 50	mg/kg	Sample
		10/14/2010	< 10	mg/kg	Split
	ENV-B13C	10/14/2010	< 50	mg/kg	Sample
Chromium	Building 69	10/14/2010	83	mg/kg	Sample
	Building 80	10/14/2010	< 50	mg/kg	Sample
	Building 85	10/14/2010	79	mg/kg	Sample
		10/14/2010	60	mg/kg	Split
	ENV-B13C	10/14/2010	< 50	mg/kg	Sample
Cobalt	Building 69	10/14/2010	< 50	mg/kg	Sample
	Building 80	10/14/2010	< 50	mg/kg	Sample
	Building 85	10/14/2010	< 50	mg/kg	Sample
		10/14/2010	16	mg/kg	Split
	ENV-B13C	10/14/2010	< 50	mg/kg	Sample
Copper	Building 69	10/14/2010	< 50	mg/kg	Sample
	Building 80	10/14/2010	50	mg/kg	Sample
	Building 85	10/14/2010	< 50	mg/kg	Sample
		10/14/2010	34	mg/kg	Split
	ENV-B13C	10/14/2010	< 50	mg/kg	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	Location*				
Iron	Building 69	10/14/2010	36000	mg/kg	Sample
	Building 80	10/14/2010	35000	mg/kg	Sample
	Building 85	10/14/2010	32000	mg/kg	Sample
		10/14/2010	29000	mg/kg	Split
	ENV-B13C	10/14/2010	21000	mg/kg	Sample
Lead	Building 69	10/14/2010	< 50	mg/kg	Sample
	Building 80	10/14/2010	< 50	mg/kg	Sample
	Building 85	10/14/2010	< 50	mg/kg	Sample
		10/14/2010	< 10	mg/kg	Split
	ENV-B13C	10/14/2010	64	mg/kg	Sample
Magnesium	Building 69	10/14/2010	13000	mg/kg	Sample
	Building 80	10/14/2010	11000	mg/kg	Sample
	Building 85	10/14/2010	14000	mg/kg	Sample
		10/14/2010	13000	mg/kg	Split
	ENV-B13C	10/14/2010	4000	mg/kg	Sample
Manganese	Building 69	10/14/2010	790	mg/kg	Sample
	Building 80	10/14/2010	930	mg/kg	Sample
	Building 85	10/14/2010	610	mg/kg	Sample
		10/14/2010	470	mg/kg	Split
	ENV-B13C	10/14/2010	420	mg/kg	Sample
Mercury	Building 69	10/14/2010	< 0.2	mg/kg	Sample
	Building 80	10/14/2010	< 0.2	mg/kg	Sample
	Building 85	10/14/2010	0.33	mg/kg	Sample
		10/14/2010	0.4	mg/kg	Split
	ENV-B13C	10/14/2010	< 0.2	mg/kg	Sample
Nickel	Building 69	10/14/2010	63	mg/kg	Sample
	Building 80	10/14/2010	< 50	mg/kg	Sample
	Building 85	10/14/2010	97	mg/kg	Sample
		10/14/2010	76	mg/kg	Split
	ENV-B13C	10/14/2010	< 50	mg/kg	Sample
Vanadium	Building 69	10/14/2010	92	mg/kg	Sample
	Building 80	10/14/2010	58	mg/kg	Sample
	Building 85	10/14/2010	73	mg/kg	Sample
		10/14/2010	51	mg/kg	Split
	ENV-B13C	10/14/2010	< 50	mg/kg	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	Location*				
Zinc	Building 69	10/14/2010	< 120	mg/kg	Sample
	Building 80	10/14/2010	< 120	mg/kg	Sample
	Building 85	10/14/2010	< 120	mg/kg	Sample
		10/14/2010	55	mg/kg	Split
	ENV-B13C	10/14/2010	< 120	mg/kg	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Actinium 228	Chicken Creek	10/13/2010	0.029	Bq/g	0.78	pCi/g	Sample
		10/13/2010	0.025	Bq/g	0.67	pCi/g	Split
	N. Fork Strawberry Creek	10/13/2010	0.036	Bq/g	0.96	pCi/g	Sample
	Wildcat Creek	10/13/2010	0.02	Bq/g	0.54	pCi/g	Sample
Cesium 137	Chicken Creek	10/13/2010	0.00091	Bq/g	0.025	pCi/g	Sample
		10/13/2010	< 0.00041	Bq/g	< 0.011	pCi/g	Split
	N. Fork Strawberry Creek	10/13/2010	< 0.00061	Bq/g	< 0.016	pCi/g	Sample
	Wildcat Creek	10/13/2010	< 0.00049	Bq/g	< 0.013	pCi/g	Sample
Gross alpha	Chicken Creek	10/13/2010	0.26	Bq/g	7.1	pCi/g	Sample
		10/13/2010	0.1	Bq/g	2.8	pCi/g	Split
	N. Fork Strawberry Creek	10/13/2010	0.42	Bq/g	11	pCi/g	Sample
	Wildcat Creek	10/13/2010	0.38	Bq/g	10	pCi/g	Sample
Gross beta	Chicken Creek	10/13/2010	0.5	Bq/g	14	pCi/g	Sample
		10/13/2010	0.11	Bq/g	2.8	pCi/g	Split
	N. Fork Strawberry Creek	10/13/2010	0.73	Bq/g	20	pCi/g	Sample
	Wildcat Creek	10/13/2010	0.33	Bq/g	9	pCi/g	Sample
Lead 214	Chicken Creek	10/13/2010	0.029	Bq/g	0.78	pCi/g	Sample
		10/13/2010	0.026	Bq/g	0.69	pCi/g	Split
	N. Fork Strawberry Creek	10/13/2010	0.025	Bq/g	0.68	pCi/g	Sample
	Wildcat Creek	10/13/2010	0.022	Bq/g	0.61	pCi/g	Sample
Potassium 40	Chicken Creek	10/13/2010	0.55	Bq/g	15	pCi/g	Sample
		10/13/2010	0.44	Bq/g	12	pCi/g	Split
	N. Fork Strawberry Creek	10/13/2010	0.56	Bq/g	15	pCi/g	Sample
	Wildcat Creek	10/13/2010	0.26	Bq/g	7	pCi/g	Sample
Radium 226	Chicken Creek	10/13/2010	0.024	Bq/g	0.65	pCi/g	Sample
		10/13/2010	0.022	Bq/g	0.58	pCi/g	Split
	N. Fork Strawberry Creek	10/13/2010	0.021	Bq/g	0.57	pCi/g	Sample
	Wildcat Creek	10/13/2010	0.017	Bq/g	0.47	pCi/g	Sample
Tritium	Chicken Creek	10/13/2010	0.0015	Bq/g	0.041	pCi/g	Sample
		10/13/2010	< 0.0078	Bq/g	< 0.21	pCi/g	Split

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Radiological Activity		Collection Date	S.I.		Conventional		QC Type
Analyte	Location*		Result†	Units	Result†	Units	
Tritium (cont.)	N. Fork Strawberry Creek	10/13/2010	< 0.0012	Bq/g	< 0.031	pCi/g	Sample
	Wildcat Creek	10/13/2010	< 0.0019	Bq/g	< 0.053	pCi/g	Sample
Uranium 238	Chicken Creek	10/13/2010	0.03	Bq/g	0.8	pCi/g	Sample
		10/13/2010	< 0.099	Bq/g	< 2.7	pCi/g	Split
	N. Fork Strawberry Creek	10/13/2010	0.043	Bq/g	1.2	pCi/g	Sample
	Wildcat Creek	10/13/2010	< 0.016	Bq/g	< 0.42	pCi/g	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

General Indicator Parameters		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Moisture by weight	Chicken Creek	10/13/2010	20	%	Sample
		10/13/2010	25	%	Split
	N. Fork Strawberry Creek	10/13/2010	21	%	Sample
	Wildcat Creek	10/13/2010	34	%	Sample
pH	Chicken Creek	10/13/2010	8	S.U.	Sample
		10/13/2010	7.3	S.U.	Split
	N. Fork Strawberry Creek	10/13/2010	7.9	S.U.	Sample
	Wildcat Creek	10/13/2010	8.1	S.U.	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	Location*				
Aluminum	Chicken Creek	10/13/2010	12000	mg/kg	Sample
		10/13/2010	12000	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	11000	mg/kg	Sample
	Wildcat Creek	10/13/2010	20000	mg/kg	Sample
Arsenic	Chicken Creek	10/13/2010	< 16	mg/kg	Sample
		10/13/2010	6.7	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	< 13	mg/kg	Sample
	Wildcat Creek	10/13/2010	< 25	mg/kg	Sample
Barium	Chicken Creek	10/13/2010	150	mg/kg	Sample
		10/13/2010	110	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	100	mg/kg	Sample
	Wildcat Creek	10/13/2010	170	mg/kg	Sample
Boron	Chicken Creek	10/13/2010	< 32	mg/kg	Sample
		10/13/2010	< 13	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	< 27	mg/kg	Sample
	Wildcat Creek	10/13/2010	< 50	mg/kg	Sample
Chromium	Chicken Creek	10/13/2010	38	mg/kg	Sample
		10/13/2010	28	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	57	mg/kg	Sample
	Wildcat Creek	10/13/2010	< 50	mg/kg	Sample
Cobalt	Chicken Creek	10/13/2010	< 32	mg/kg	Sample
		10/13/2010	< 13	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	< 27	mg/kg	Sample
	Wildcat Creek	10/13/2010	< 50	mg/kg	Sample
Copper	Chicken Creek	10/13/2010	< 32	mg/kg	Sample
		10/13/2010	20	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	< 27	mg/kg	Sample
	Wildcat Creek	10/13/2010	< 50	mg/kg	Sample
Iron	Chicken Creek	10/13/2010	21000	mg/kg	Sample
		10/13/2010	19000	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	22000	mg/kg	Sample
	Wildcat Creek	10/13/2010	26000	mg/kg	Sample
Lead	Chicken Creek	10/13/2010	< 32	mg/kg	Sample
	N. Fork Strawberry Creek	10/13/2010	< 27	mg/kg	Sample
	Wildcat Creek	10/13/2010	< 50	mg/kg	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Metals and Minerals		Collection Date	Result†	Units	QC Type
Analyte	**Location***				
Magnesium	Chicken Creek	10/13/2010	6900	mg/kg	Sample
		10/13/2010	8900	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	7000	mg/kg	Sample
	Wildcat Creek	10/13/2010	6200	mg/kg	Sample
Manganese	Chicken Creek	10/13/2010	1200	mg/kg	Sample
		10/13/2010	500	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	730	mg/kg	Sample
	Wildcat Creek	10/13/2010	500	mg/kg	Sample
Mercury	Chicken Creek	10/13/2010	< 0.2	mg/kg	Sample
		10/13/2010	< 0.3	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	0.31	mg/kg	Sample
	Wildcat Creek	10/13/2010	< 0.2	mg/kg	Sample
Nickel	Chicken Creek	10/13/2010	72	mg/kg	Sample
		10/13/2010	43	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	< 27	mg/kg	Sample
	Wildcat Creek	10/13/2010	< 50	mg/kg	Sample
Vanadium	Chicken Creek	10/13/2010	42	mg/kg	Sample
		10/13/2010	26	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	49	mg/kg	Sample
	Wildcat Creek	10/13/2010	50	mg/kg	Sample
Zinc	Chicken Creek	10/13/2010	130	mg/kg	Sample
		10/13/2010	100	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	170	mg/kg	Sample
	Wildcat Creek	10/13/2010	< 120	mg/kg	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Petroleum Hydrocarbons		Collection Date	Result†	Unints	QC Type
Analyte	**Location***				
Diesel Range Organics (C12-C24)	Chicken Creek	10/13/2010	< 10	mg/kg	Sample
	Chicken Creek	10/13/2010	< 66	mg/kg	Split
	N. Fork Strawberry Creek	10/13/2010	19	mg/kg	Sample
	Wildcat Creek	10/13/2010	< 2	mg/kg	Sample
Oil and Grease	Chicken Creek	10/13/2010	170	mg/kg	Sample
	N. Fork Strawberry Creek	10/13/2010	140	mg/kg	Sample
	Wildcat Creek	10/13/2010	< 50	mg/kg	Sample

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Tritium	Collection Date	S.I.		Conventional		QC Type
Location*		Result†	Units	Result†	Units	
Tissue-Free Water Tritium						
B76K Tree A - Chip	8/5/2010	0.0019	Bq/g	0.052	pCi/g	Sample
	8/5/2010	0.0024	Bq/g	0.065	pCi/g	Split
E190-Chip	9/16/2010	< 0.0031	Bq/g	< 0.083	pCi/g	Sample
E190-Duff	9/16/2010	< 0.003	Bq/g	< 0.082	pCi/g	Sample
E190-Leaf	9/16/2010	< 0.0044	Bq/g	< 0.12	pCi/g	Sample
ESE240-Chip	9/16/2010	< 0.0036	Bq/g	< 0.097	pCi/g	Sample
ESE240-Duff	9/16/2010	< 0.0057	Bq/g	< 0.15	pCi/g	Sample
ESE240-Leaf	9/16/2010	< 0.0048	Bq/g	< 0.13	pCi/g	Sample
ESE255-Chip	9/16/2010	< 0.0037	Bq/g	< 0.1	pCi/g	Sample
ESE255-Duff	9/16/2010	< 0.0034	Bq/g	< 0.091	pCi/g	Sample
ESE255-Leaf	9/16/2010	< 0.0043	Bq/g	< 0.12	pCi/g	Sample
ESE280-Chip	9/16/2010	< 0.0041	Bq/g	< 0.11	pCi/g	Sample
ESE280-Duff	9/16/2010	< 0.0031	Bq/g	< 0.083	pCi/g	Sample
ESE280-Leaf	9/16/2010	< 0.0046	Bq/g	< 0.12	pCi/g	Sample
ESE310-Chip	9/16/2010	< 0.0038	Bq/g	< 0.1	pCi/g	Sample
ESE310-Duff	9/16/2010	< 0.0029	Bq/g	< 0.079	pCi/g	Sample
ESE310-Leaf	9/16/2010	< 0.0043	Bq/g	< 0.12	pCi/g	Sample
NEE10-Chip	9/16/2010	< 0.0039	Bq/g	< 0.11	pCi/g	Sample
NEE10-Duff	9/16/2010	< 0.0032	Bq/g	< 0.087	pCi/g	Sample
NEE10-Leaf	9/16/2010	< 0.0042	Bq/g	< 0.11	pCi/g	Sample
NNN5-Chip	9/16/2010	0.034	Bq/g	0.92	pCi/g	Sample
	9/16/2010	0.031	Bq/g	0.83	pCi/g	Split
NNN5-Duff	9/16/2010	0.0033	Bq/g	0.09	pCi/g	Sample
	9/16/2010	< 0.003	Bq/g	< 0.08	pCi/g	Split
NNN5-Leaf	9/16/2010	0.018	Bq/g	0.49	pCi/g	Sample
	9/16/2010	0.018	Bq/g	0.48	pCi/g	Split
NNW1-Chip	9/16/2010	0.071	Bq/g	1.9	pCi/g	Sample
NNW1-Duff	9/16/2010	0.0044	Bq/g	0.12	pCi/g	Sample
NNW1-Leaf	9/16/2010	0.041	Bq/g	1.1	pCi/g	Sample
SE215-Chip	9/28/2010	< 0.0047	Bq/g	< 0.13	pCi/g	Sample
	9/28/2010	< 0.005	Bq/g	< 0.14	pCi/g	Split
SE215-Duff	9/28/2010	< 0.0033	Bq/g	< 0.09	pCi/g	Sample
	9/28/2010	< 0.0033	Bq/g	< 0.089	pCi/g	Split

* See the table beginning on page A-2 for descriptions of sampling locations

† See the discussion "Results Below the Detection Limit" on page A-6 for an explanation of the "<" flag.

Tritium	Collection Date	S.I.		Conventional		QC Type
Location*		Result†	Units	Result†	Units	
Tissue-Free Water Tritium (cont.)						
SE215-Leaf	9/28/2010	0.0096	Bq/g	0.26	pCi/g	Sample
	9/28/2010	0.0083	Bq/g	0.22	pCi/g	Split
WNW360-Chip	9/16/2010	< 0.0034	Bq/g	< 0.093	pCi/g	Sample
WNW360-Duff	9/16/2010	< 0.0038	Bq/g	< 0.1	pCi/g	Sample
WNW360-Leaf	9/16/2010	< 0.0053	Bq/g	< 0.14	pCi/g	Sample
WNW4-Chip	9/16/2010	0.0061	Bq/g	0.16	pCi/g	Sample
WNW4-Duff	9/16/2010	< 0.0034	Bq/g	< 0.093	pCi/g	Sample
WNW4-Leaf	9/16/2010	0.0042	Bq/g	0.11	pCi/g	Sample
Organically Bound Tritium						
B76K Tree A - Chip	8/5/2010	0.24	Bq/g	6.5	pCi/g	Sample
	8/5/2010	0.14	Bq/g	3.9	pCi/g	Split
E190-Chip	9/16/2010	< 0.18	Bq/g	< 4.9	pCi/g	Sample
E190-Duff	9/16/2010	< 0.2	Bq/g	< 5.4	pCi/g	Sample
E190-Leaf	9/16/2010	< 0.19	Bq/g	< 5.1	pCi/g	Sample
ESE240-Chip	9/16/2010	< 0.2	Bq/g	< 5.4	pCi/g	Sample
ESE240-Duff	9/16/2010	< 0.17	Bq/g	< 4.6	pCi/g	Sample
ESE240-Leaf	9/16/2010	< 0.19	Bq/g	< 5.2	pCi/g	Sample
ESE255-Chip	9/16/2010	< 0.19	Bq/g	< 5	pCi/g	Sample
ESE255-Duff	9/16/2010	< 0.19	Bq/g	< 5.2	pCi/g	Sample
ESE255-Leaf	9/16/2010	< 0.1	Bq/g	< 2.7	pCi/g	Sample
ESE280-Chip	9/16/2010	< 0.19	Bq/g	< 5.2	pCi/g	Sample
ESE280-Duff	9/16/2010	< 0.18	Bq/g	< 4.9	pCi/g	Sample
ESE280-Leaf	9/16/2010	< 0.2	Bq/g	< 5.3	pCi/g	Sample
ESE310-Chip	9/16/2010	< 0.17	Bq/g	< 4.7	pCi/g	Sample
ESE310-Duff	9/16/2010	< 0.2	Bq/g	< 5.4	pCi/g	Sample
ESE310-Leaf	9/16/2010	< 0.2	Bq/g	< 5.5	pCi/g	Sample
NEE10-Chip	9/16/2010	< 0.17	Bq/g	< 4.6	pCi/g	Sample
NEE10-Duff	9/16/2010	< 0.16	Bq/g	< 4.4	pCi/g	Sample
NEE10-Leaf	9/16/2010	< 0.17	Bq/g	< 4.7	pCi/g	Sample
NNN5-Chip	9/16/2010	< 0.18	Bq/g	< 4.8	pCi/g	Sample
	9/16/2010	< 0.18	Bq/g	< 4.9	pCi/g	Split
NNN5-Duff	9/16/2010	0.79	Bq/g	21	pCi/g	Sample
	9/16/2010	0.62	Bq/g	17	pCi/g	Split

* See the table beginning on page A-2 for descriptions of sampling locations

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Tritium	Collection Date	S.I.		Conventional		QC Type
Location*		Result†	Units	Result†	Units	
Organically Bound Tritium (cont.)						
NNN5-Leaf	9/16/2010	< 0.19	Bq/g	< 5.1	pCi/g	Sample
	9/16/2010	< 0.16	Bq/g	< 4.4	pCi/g	Split
NNW1-Chip	9/16/2010	< 0.14	Bq/g	< 3.7	pCi/g	Sample
NNW1-Duff	9/16/2010	0.47	Bq/g	13	pCi/g	Sample
NNW1-Leaf	9/16/2010	< 0.19	Bq/g	< 5.1	pCi/g	Sample
SE215-Chip	9/28/2010	< 0.19	Bq/g	< 5.2	pCi/g	Sample
	9/28/2010	< 0.19	Bq/g	< 5.2	pCi/g	Split
SE215-Duff	9/28/2010	< 0.22	Bq/g	< 6	pCi/g	Sample
	9/28/2010	< 0.17	Bq/g	< 4.5	pCi/g	Split
SE215-Leaf	9/28/2010	< 0.18	Bq/g	< 4.9	pCi/g	Sample
	9/28/2010	< 0.18	Bq/g	< 4.7	pCi/g	Split
WNW360-Chip	9/16/2010	< 0.17	Bq/g	< 4.7	pCi/g	Sample
WNW360-Duff	9/16/2010	< 0.17	Bq/g	< 4.6	pCi/g	Sample
WNW360-Leaf	9/16/2010	< 0.18	Bq/g	< 4.8	pCi/g	Sample
WNW4-Chip	9/16/2010	< 0.1	Bq/g	< 2.7	pCi/g	Sample
WNW4-Duff	9/16/2010	< 0.16	Bq/g	< 4.3	pCi/g	Sample
WNW4-Leaf	9/16/2010	< 0.16	Bq/g	< 4.2	pCi/g	Sample

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