



The Boeing Company
Santa Susana Field Laboratory
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148

Via FedEx

June 30, 2010

In reply refer to SHEA-110113

Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Attention: Mr. Peter Raftery

Subject: June 30, 2010 Quarterly Progress Report for March 13, 2010 through June 17, 2010 Activity
Final Interim Source Removal Action (ISRA) Work Plan submitted in response to California Water Code Section 13304 Order (NPDES No. CA0001309, CI No. 6027, SCP No. 1111, SITE ID No. 2040109)

Dear Mr. Raftery:

In the Final ISRA Work Plan, Boeing and NASA proposed to provide the Los Angeles Regional Water Quality Control Board (RWQCB) with quarterly progress reports until construction field work is complete (target spring 2012). This Quarterly Progress Report is submitted for the second quarter 2010. This report summarizes ISRA activities performed during the period of March 13, 2010 through June 17, 2010.

ISRA activities at the SSFL are being performed pursuant to a California Water Code Section 13304 Cleanup and Abatement Order (CAO) issued by RWQCB dated December 3, 2008. The CAO was issued by the RWQCB in order to achieve compliance with the Waste Discharge Requirements (WDR) for Outfalls 008 and 009 contained in Order No. R4-2004-0111, as amended by Orders No. R4-2006-0008, R4-2006-0036, and R4-2007-0055. The Final ISRA Work Plan was prepared and submitted to the RWQCB on May 1, 2009.

Per the RWQCB's request, Boeing provides monthly progress reports on the ISRA activities to the RWQCB Executive Officer. This quarterly progress report is a compilation of the monthly progress reports for the period of March 13, 2010 through June 17, 2010, which are attached to provide the complete list of ISRA activities performed during the period covered by this quarterly report.



Mr. P. Raftery, RWQCB (SHEA-110113)
June 30, 2010
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The ISRA Quarterly Reports are posted on the ISRA website at:

http://www.boeing.com/aboutus/environment/santa_susana/isra.html

In addition, performance monitoring inspections and surface water sampling were conducted during rain events in the fourth quarter 2009 and first quarter 2010, per the Performance Monitoring Plan that was approved by RWQCB on February 3, 2010. This quarterly report includes the memorandum summarizing the ISRA performance monitoring activities and results from the 2009-2010 rainy season.

If you have any questions or require anything further, please contact Lori Blair at 818-466-8741.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Tom Gallacher', written over a horizontal line.

Tom Gallacher
Director, Santa Susana Field Laboratory
Environment, Health, and Safety

LNB:bjc

Attachments:

- April 2010 Monthly Progress Report (March 13 – April 15, 2010)
- May 2010 Monthly Progress Report (April 16 – May 13, 2010)
- June 2010 Monthly Progress Report (May 14 – June 17, 2010)
- June 30, 2010 ISRA Performance Monitoring for Outfall 008 and 009 Watersheds,
2009-2010 Rainy Season

cc: Ms. Cassandra Owens, RWQCB
Mr. Allen Elliott, NASA,
Mr. Mark Malinowski, DTSC
Mr. Buck King, DTSC



Date: 4/16/2010 **No.:** SHEA-109864

To: Tracy Egoscue
Executive Office
LA Regional Water Quality Control
Board

From: Tom Gallacher
Director, Santa Susana Field Laboratory
Environment, Health & Safety

Subject: April 2010 Monthly Progress Report for March 13, 2010 - April 15, 2010 Activity
California Water Code Section 13304 Interim Source Removal Action Order (ISRA)
(NPDES No. CA0001309, CI No. 6027, SCP No. 1111, Site ID No. 2040109)

Per the Regional Water Board's request, Boeing, on behalf of Boeing and NASA, is providing the following Monthly Progress Report on the Interim Source Removal Action (ISRA) activities for the period of March 13, 2010 to April 15, 2010. In addition, a 30 day Look-Ahead is also provided.

Weekly team meetings have been held to track the ISRA activities since April 16, 2009. During this reporting period, the meeting participants have consisted of RWQCB staff, DTSC staff, Surface Water Expert Panel Members, Boeing, and NASA. For the period from mid-March to mid-April, the primary activities have been completing the Phase I (2009) ISRA Implementation Summary Report, performing additional data gap and source delineation sampling to support development of the 2010 ISRA Work Plan Addendum, and conducting Performance Monitoring inspections and sampling during rain events. In addition, inspections of BMPs at 2009 Outfall 008 and 009 ISRA excavation areas have been conducted weekly since the onset of the rainy season, per the ISRA SWPPP.

Completed Tasks –March 13, 2010 to April 15, 2010

- March 13, 2010 – April 9, 2010 – Continued additional data gap and source delineation sampling in Outfall 009 to support preparation of the 2010 Work Plan Addendum.
- March 13, 2010 – April 9, 2010 – Continued preparing Work Plan Addendum for 2010 ISRA implementation.
- March 13, 2010 – April 9, 2010 – Continued preparing the Biological Report for the 2010 ISRA implementation areas.
- March 13, 2010 – April 9, 2010 – Continued inspecting all ISRA areas during rain events per the SWPPP and obtained performance monitoring samples per the Performance Monitoring Plan.
- March 13, 2010 – March 31, 2010 – Continued preparing Phase I (2009) ISRA Implementation Summary Report.

April 2010 Monthly Progress Report for March 13, 2010 – April 15, 2010 Activity
(SHEA-109864)

- March 22, 2010 – Met with Ventura County to discuss grading permit for 2010 ISRA implementation areas (Boeing property).
- March 24, 2010 – Conducted pre-fieldwork site walk at ELV implementation areas.
- March 29 - 30, 2010 – Conducted preliminary staking of 2010 ISRA implementation areas (Boeing property).
- March 30, 2010 – Obtained approved profiles for ELV soil disposal at US Ecology Grand View, Idaho and US Ecology Beatty, Nevada
- March 31, 2010 – Submitted Quarterly Progress Report to RWQCB for ISRA activities conducted in the first quarter 2010.
- March 31, 2010 – April 9, 2010 – Began preparing Section 404 Permit Package.
- March 31, 2010 – April 9, 2010 – Began preparing Section 401 Notification.
- April 1, 2010 – Submitted the Phase I (2009) ISRA Implementation Summary Report to RWQCB.
- April 1 - 9, 2010 – Began preparing Ventura County grading permit application for 2010 ISRA implementation areas.
- March 29, 2010 - April 9, 2010 – Began planning waste characterization sampling for 2010 ISRA implementation areas (Boeing Property).
- April 5, 2010 – Conducted ISRA Performance Monitoring and SWPPP sampling and inspections during rain event.
- April 6, 2010 – Conducted oak tree inspection of 2010 ISRA implementation areas on Boeing and NASA property with Ventura County.
- April 6, 2010 – Conducted preparatory tasks prior to start of cleanup actions at ELV
- April 7, 2010 – Submitted Intent to Start cleanup actions at ELV to RWQCB and DTSC.
- April 13, 2010 – Surface Water Expert Panel on site at Santa Susana to review erosion control measures and plant establishment and growth at Outfall 008 ISRA areas and other areas on site.
- April 15, 2010 – In response to request from RWQCB, NASA and Boeing postponed cleanup actions at ELV

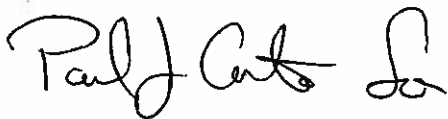
30-Day Look ahead – through May 9, 2010

- Boeing / NASA – Conduct additional step-out data gap and source delineation sampling in Outfall 009 to support preparation of the 2010 Work Plan Addendum.
- Boeing / NASA – Complete the Work Plan Addendum for 2010 ISRA implementation and submit to RWQCB.
- Boeing / NASA – Complete the Biological Report for the 2010 ISRA implementation areas.

April 2010 Monthly Progress Report for March 13, 2010 – April 15, 2010 Activity
(SHEA-109864)

- NASA – Conduct preliminary staking of 2010 ISRA implementation areas on NASA property.
- Boeing / NASA – Work with RWQCB and DTSC to forward ELV cleanup actions
- Boeing – Complete installation of a water supply system to the planted areas at Outfall 008 (near HVS-2) and at Outfall 009 culvert locations, per the Surface Water Expert Panel recommendations.
- Expert Panel – Recommend plant source (seed / commercial) for 2010 ISRA restoration activities.
- Surface Water Expert Panel – Prepare a schedule for the development of the 2010 ISRA field work restoration plan recommendations.
- Boeing – Continue inspecting all ISRA areas during rain events per the SWPPP and obtain performance monitoring samples per the Performance Monitoring Plan.
- Boeing / NASA – Continue reviewing permitting requirements for the 2010 ISRA implementation field work.
- Boeing – Complete Section 404 Permit Package and submit to ACOE.
- Boeing – Complete Section 401 Notification and submit to RWQCB.
- Boeing – Continue preparing Ventura County grading permit application for 2010 ISRA implementation areas.
- Boeing/NASA – Conduct waste characterization soil sampling for 2010 ISRA implementation.

Approved By:



Thomas D. Gallacher
Director, Santa Susana Field Laboratory
Environment, Health and Safety

LB:bjc

Distribution:

Mr. Peter Rafferty, RWQCB
Ms. Cassandra Owens, RWQCB
Mr. Buck King, DTSC
Mr. Allen Elliott, NASA
Mr. Steven Slaten, NASA



The Boeing Company

5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148

Date: 5/17/2010

No.: SHEA-109976

To: Sam Unger
Interim Executive Office
LA Regional Water Quality Control
Board

From: Tom Gallacher
Director, Santa Susana Field Laboratory
Environmental, Health & Safety

Subject: May 2010 Monthly Progress Report for April 16, 2010 - May 13, 2010 Activity
California Water Code Section 13304 Interim Source Removal Action Order (ISRA)
(NPDES No. CA0001309, CI No. 6027, SCP NO. 1111, Site ID No. 2040109)

Per the Regional Water Board's request, Boeing, on behalf of Boeing and NASA, is providing the following Monthly Progress Report on the Interim Source Removal Action (ISRA) activities for the period of April 16, 2010 to May 13, 2010. In addition, a 30 day Look-Ahead is also provided.

Weekly team meetings have been held to track the ISRA activities since April 16, 2009. During this reporting period, the meeting participants have consisted of RWQCB staff, DTSC staff, Surface Water Expert Panel Members, Boeing, and NASA. For the period from mid-April to mid-May, the primary activities have been completing the 2010 Work Plan Addendum, performing additional data gap and source delineation sampling to further refine ISRA areas presented in the 2010 Work Plan Addendum, performing waste characterization soil sampling at 2010 ISRA areas to support development of soil waste profiles, evaluating and presenting performance monitoring results with RWQCB staff, DTSC staff, and Surface Water Expert Panel members, and continuing preparation of Section 404, Section 401, and Ventura County grading permit applications. In addition, inspections of BMPs at 2009 Outfall 008 and 009 ISRA excavation areas were conducted weekly until the end of the rainy season on April 30th, per the ISRA SWPPP.

Completed Tasks – April 16, 2010 to May 13, 2010

- April 16, 2010 – May 13, 2010 – Continued preparing the Section 404 Permit Package.
- April 16, 2010 – May 13, 2010 – Continued preparing the Section 401 Notification.
- April 16, 2010 – May 13, 2010 – Continued preparing the Ventura County grading permit application and Ventura County oak tree permit application for 2010 ISRA implementation areas.
- April 16, 2010 – May 13, 2010 – Continued preparing the Biological Report for the 2010 ISRA implementation areas.

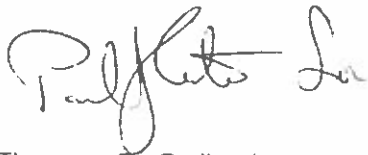
- April 16, 2010 – May 13, 2010 – Continued inspecting all ISRA areas during rain events and weekly during the rainy season, per the SWPPP and the Performance Monitoring Plan.
- April 16 – 30, 2010 – Conducted additional data gap and source delineation sampling in Outfall 009 to further delineate 2010 Boeing and NASA ISRA areas.
- April 21, 2010 – Conducted SWPPP inspections and Performance Monitoring inspections during rain event.
- April 26 – 30, 2010 – Conducted waste characterization soil sampling for 2010 ISRA implementation on Boeing property.
- April 30, 2010 – Completed the Work Plan Addendum for 2010 ISRA implementation and submitted to RWQCB and DTSC and posted on ISRA website.
- May 5, 2010 – Discussed performance Monitoring results with agencies
- May 6, 2010 – Conducted site reconnaissance of potential soil borrow areas for backfill source for 2010 ISRA areas.

30-Day Look ahead – through June 11, 2010

- Boeing / NASA – Respond to RWQCB/DTSC comments on the 2010 ISRA Work Plan Addendum
- Boeing – Complete the Section 404 Permit Package and submit to ACOE.
- Boeing – Complete the Section 401 Notification and submit to RWQCB.
- Boeing – Complete the Ventura County grading permit application and Ventura County oak tree permit application for 2010 ISRA implementation areas and submit to Ventura County.
- Boeing / NASA – Complete the Biological Report for the 2010 ISRA implementation areas.
- RWQCB – Review the Work Plan Addendum for 2010 ISRA implementation and provide comments.
- Ventura County – Review grading permit application and provide comments.
- Boeing – Revise Supporting Plans (Soil Management Plan, Transportation Plan, and Health and Safety Plan) for 2010 ISRA implementation activities and submit to RWQCB.
- Boeing – Prepare new Surface Water Pollution Prevention Plan (SWPPP) per the new regulations and submit to RWQCB.
- Boeing – Conduct additional data gap and source delineation sampling in Outfall 009, and conduct characterization sampling in the proposed Outfall 009 soil borrow areas.

- Boeing – Complete installation of a water supply system to the planted areas at Outfall 008 (near HVS-2) and at Outfall 009 culvert locations, per the Surface Water Expert Panel recommendations.
- Boeing – Contractor evaluation and selection for 2010 ISRA implementation: prepare Request for Proposal (RFP), submit RFP to contractors, and job walk.
- Boeing – Prepare waste profiles for 2010 ISRA areas (Boeing property) and submit to landfill.
- Boeing – Conduct final staking of 2010 ISRA areas (Boeing property), conduct utilities survey, and install BMPs.
- Boeing – Conduct pre-field topographic survey of 2010 ISRA areas.
- Boeing / RWQCB – Conduct site walk of 2010 ISRA areas.
- Surface Water Expert Panel – Begin development of recommendations for collecting performance monitoring RWQCB split samples.
- Surface Water Expert Panel – Begin to develop restoration plan for 2010 ISRA areas.
- Surface Water Expert Panel – Recommend plant source (seed / commercial) for 2010 ISRA restoration activities.
- Boeing – Begin preparing confirmation sampling plan for 2010 ISRA areas.
- Boeing – Continue inspecting all ISRA areas biweekly during the non-rainy season, per the SWPPP.

Approved By:



Thomas D. Gallacher
Director, Santa Susana Field Laboratory
Environment, Health and Safety

LNB:bjc

Distribution:

Peter Raftery, RWQCB
Cassandra Owens, RWQCB
Buck King, DTSC
Allen Elliott, NASA
Steven Slaten, NASA



The Boeing Company

5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148

Date: 6/17/2010

No.: SHEA-110093

To: Sam Unger
Interim Executive Officer
LA Regional Water Quality Control
Board

From: Tom Gallacher
Director, Santa Susana Field Lab
Environment, Health & Safety

Subject: June 2010 Monthly Progress Report for May 14, 2010 - June 17, 2010 Activity
California Water Code Section 13304 Interim Source Removal Action Order (ISRA)
(NPDES No. CA0001309, CI No. 6027, SCP NO. 1111, Site ID No. 2040109)

Per the Regional Water Board's request, Boeing, on behalf of Boeing and NASA, is providing the following Monthly Progress Report on the Interim Source Removal Action (ISRA) activities for the period of May 14, 2010 to June 17, 2010. In addition, a 30 day Look-Ahead is also provided.

Weekly team meetings have been held to track the ISRA activities since April 16, 2009. During this reporting period, the meeting participants have consisted of RWQCB staff, DTSC staff, Ventura County staff, Surface Water Expert Panel Members, Boeing, and NASA. For the period from mid-May to mid-June, the primary activities have been preparing permit packages (Section 404 permit, Section 401 notification, Ventura County grading permit, and Ventura County Oak Tree permit) and Supporting Plans (Soil Management Plan [SMP], Transportation Plan, Health and Safety Plan [HASP], and Storm Water Pollution Prevention Plan [SWPPP]) for 2010 implementation activities; preparing a biological survey report for 2010 ISRA areas; preparing a response to RWQCB and DTSC comments on the 2010 ISRA Work Plan Addendum; conducting additional data gap and source delineation sampling to further define ISRA areas presented in the 2010 Work plan Addendum; and initiating the contractor selection process for 2010 implementation activities. In addition, inspections of BMPs at Phase I (2009) Outfall 008 and 009 ISRA areas were conducted biweekly during the non-rainy season, per the ISRA SWPPP.

Completed Tasks – May 14, 2010 to June 17, 2010

- May 14, 2010 – June 17, 2010 – Surface Water Expert Panel performed work on a memorandum which presents a recommended protocol for agency split sample collection for confirmation soil samples and performance monitoring samples, and a recommendation of the appropriate level of laboratory report for performance monitoring sample validation needs.
- May 14, 2010 – June 17, 2010 – Continued preparing the Biological Report for 2010 ISRA areas.

- May 14, 2010 – Submitted the Ventura County grading permit application for 2010 ISRA areas.
- May 17, 2010 – Submitted the Section 404 Permit Package to the Army Corps of Engineers (ACOE).
- May 17, 2010 – Submitted the Section 401 Notification to the RWQCB.
- May 21, 2010 – Met with Ventura County to review grading permit application for 2010 ISRA areas.
- May 24, 2010 – June 17, 2010 – Performed work on the SWPPP for 2010 ISRA activities.
- May 24, 2010 – June 2, 2010 – Prepared a Request for Proposal (RFP) for contracting 2010 ISRA activities.
- May 24, 2010 – Met with Surface Water Expert Panel to discuss work planned in the Outfall 009 watershed for the Northern Drainage and ISRA projects, including soil removal and restoration plans.
- May 24, 2010 – June 9, 2010 – Conducted soil sampling, including additional data gap and source delineation sampling, and soil borrow area characterization sampling.
- May 25, 2010 – Conducted site walk of 2010 ISRA areas with RWQCB.
- May 25, 2010 – Completed installation of a water supply system to the planted areas at Outfall 008 (near HVS-2) and at Outfall 009 culvert locations, per the Surface Water Expert Panel recommendations.
- May 26, 2010 and June 8, 2010 – Inspected BMPs at Phase I (2009) ISRA areas during the non-rainy season (biweekly), per the SWPPP.
- May 31, 2010 – Submitted the SMP and Transportation Plan for 2010 ISRA activities to RWQCB.
- June 2, 2010 – Held contractor job walk of 2010 ISRA areas.
- June 2, 2010 – Conducted a pre-field topographic survey of 2010 and 2011 ISRA areas.
- June 4, 2010 – Submitted Oak Tree Permit Application to Ventura County for 2010 ISRA areas.
- June 10, 2010 – Submitted the HASP for 2010 ISRA activities to RWQCB.
- June 11, 2010 – Submitted Record Drawings to Ventura County to close-out the 2009 Grading Permit.
- June 14, 2010 – Submitted response to RWQCB and DTSC comments on the 2010 ISRA Work Plan Addendum to RWQCB.

30-Day Look ahead – through July 17, 2010

- Boeing – Submit Annual Certification of Compliance with 2009 ISRA SWPPP to RWQCB.
- Boeing/ NASA – Prepare Q2 2010 Quarterly Progress Report, including an appendix presenting Performance Monitoring sampling results from the 2009/2010 rainy season, and submit to RWQCB.
- RWQCB – Review 2010 ISRA Supporting Plans (SMP, Transportation Plan, HASP, and SWPPP) and provide comments.
- Boeing – Prepare response to RWQCB and DTSC comments on 2010 ISRA Supporting Plans (SMP, Transportation Plan, HASP, and SWPPP) and submit to RWQCB.
- RWQCB – Review the RTC on the 2010 ISRA Work Plan Addendum and provide approval for the 2010 ISRA Work Plan Addendum.
- ACOE – Review Section 404 permit package and provide approval.
- RWQCB – Review Section 401 Notification and provide confirmation.
- Ventura County – Complete review of the 2010 Grading Permit application and issue permit.
- Boeing/NASA – Select contractor for 2010 ISRA activities and conduct pre-construction meeting.
- NASA – Finalize the 2010 ISRA excavation areas based upon data gap sample results
- NASA – Initiate waste characterization sampling in finalized ISRA areas.
- Boeing – Collect additional waste characterization samples for 2010 ISRA areas.
- Boeing/NASA – Prepare confirmation sampling plan for 2010 ISRA areas and review with RWQCB.
- Boeing/NASA – Conduct final staking of 2010 ISRA areas, conduct utilities survey, and install BMPs.
- Boeing/NASA – Finalize the Biological Report for 2010 ISRA areas and submit to RWQCB.
- Boeing – Conduct pre-field biological survey and vegetation clearance at 2010 ISRA areas.
- Boeing – Notify community of implementation schedule.
- Surface Water Expert Panel – Finalize memorandum which presents a recommended protocol for agency split sample collection for confirmation soil samples and performance monitoring samples, and a recommendation of the appropriate level of laboratory report for performance monitoring sample validation needs.
- Boeing – Conduct final pre-field site walk of 2010 ISRA areas (Boeing property).

Mr. S. Unger, RWQCB (SHEA-110093)

June 18, 2010

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- Boeing – Begin planned excavation activities and confirmation soil sampling at 2010 ISRA areas (Boeing property).
- Surface Water Expert Panel – Develop restoration plan for 2010 ISRA areas.
- Surface Water Expert Panel – Recommend plant source (seed / commercial) for 2010 ISRA restoration activities.
- Boeing – Continue inspecting all ISRA areas biweekly during the non-rainy season, per the SWPPP.

Approved By:



Thomas D. Gallacher
Director, Santa Susana Field Laboratory
Environment, Health and Safety

LNB:bjc

Distribution:

Mr. Peter Rafferty, RWQCB

Ms. Cassandra Owens, RWQCB

Mr. Buck King, DTSC

Mr. Allen Elliott, NASA

Mr. Steven Slaten, NASA



BUILDING A BETTER WORLD

MEMORANDUM

TO: Art Lenox/Lori Blair, Boeing
Allen Elliott, NASA
DATE: June 30, 2010

CC: Randy Dean, CH2M HILL
REF: 1891614

FROM: Alex Fischl, MWH

SUBJECT: ISRA Performance Monitoring for Outfall 008 and 009 Watersheds, 2009-2010
Rainy Season

Introduction

This memorandum summarizes the performance monitoring activities and results from the 2009-2010 rainy season for the Interim Source Removal Action (ISRA) at the Santa Susana Field Laboratory (SSFL), Ventura County, California. The activities were conducted according to the ISRA Performance Monitoring Sampling and Analysis Plan (SAP) (MWH, 2010a), and involved the collection of surface water runoff samples both up- and downgradient of the twelve (12) ISRA areas completed in 2009 during Phase I ISRA activities (MWH, 2010b), as well as at four (4) of the culvert maintenance (CM) systems located along Area II Service Road in the Outfall 009 watershed.

As stated in the ISRA Performance Monitoring SAP, this performance monitoring program is designed to collect engineering performance data to assess whether ISRA constituents of concern (COCs) are contributing to surface water runoff following completion of remedial activities at ISRA areas, and is not meant to be a comprehensive study of ISRA COCs in surface water discharge within the Outfall 008 and 009 watersheds. In addition, this study is not an extension of the National Pollutant Discharge Elimination System (NPDES) program, and therefore, data collected as part of this study are not a measurement of NPDES compliance within the watersheds. However, since the engineering performance monitoring results are being collected to help assess contribution of ISRA COCs to surface water discharges from these two Outfalls following remedial activities, the overall effectiveness of the ISRA remedial activities will be assessed based on sampling performed pursuant to the requirements of the NPDES Permit for these Outfalls.

The study duration proposed in the ISRA Performance Monitoring SAP is two rainy seasons (i.e., performance monitoring for ISRA areas completed in 2009 will occur during the 2009-2010 and 2010-2011 rainy seasons). This memorandum summarizes the initial rainy season for the 12 ISRA areas completed in 2009 during Phase I ISRA implementation and 4 CM systems.

As discussed below, the data collected thus far as part of this performance monitoring program are limited by the relatively small number of up- and downgradient sample pairs collected during this first year of monitoring implementation due to limited surface water flows in many upgradient locations. The data obtained to date, however, suggests that the results are quite variable, which is expected due to the number of factors influencing surface water monitoring results in a watershed. These variables not only include natural factors, such as rainfall intensity, rainfall duration, surface water flow volumes and rates, and suspended sediment load, but also human factors, such as BMP maintenance, sample collection methodology, and laboratory analysis procedures.

To supplement both the ISRA performance and the NPDES monitoring programs, particle size distribution (PSD) data in surface water was collected beginning in February 2010. PSD analysis was performed on 33 ISRA performance monitoring samples as well as on 41 samples collected at additional locations within the Outfall 008 and 009 watersheds. PSD data are being evaluated to assess current and future BMP performance within these watersheds.

Performance Monitoring Locations

Phase I ISRA activities were completed during the early portion of the 2009-2010 rainy season and included excavation and restoration at ten ISRA areas in the Outfall 008 watershed and two ISRA areas in the Outfall 009 watershed (MWH, 2010b). Restoration at the 12 ISRA areas, which was completed in December 2009, consisted of excavation backfill, excavation recontouring, and installation of erosion control BMPs, including several containerized planting areas (with irrigation systems installed where necessary) and hydroseed mulch application. Performance monitoring was implemented at these 12 ISRA areas once the remedial action and site recontouring were completed and BMPs installed. However, restoration of the ISRA areas is ongoing and will be deemed complete once vegetation has been restored, which can require up to 3 years. Therefore, these performance monitoring results should be considered as having been collected during, rather than following, complete restoration.

The locations of the 10 ISRA areas in the Outfall 008 watershed, and the up- and downgradient performance monitoring inspection and sample locations are shown on Figure 1. Within Outfall 008, primary downgradient performance sample locations were identified to assess overall ISRA effectiveness of multiple ISRA areas and planting areas. Secondary performance sample locations are located downgradient of the individual remedial areas; samples collected from these locations were placed on hold at the laboratory and analyzed if primary sample results indicated the need to further assess downgradient effects. The locations of the two ISRA areas in the Outfall 009 watershed and the up- and downgradient performance monitoring inspection and sample locations are shown on Figure 2.

During the 2009-2010 rainy season, surface water runoff was also inspected and sampled at four CM systems in the Outfall 009 watershed, including CM-3, CM-8, CM-9, and CM-11, to assess the performance of culvert maintenance activities that have been implemented to help promote sediment retention and the potential removal of pollutants. CM activities performed at CM-8, CM-9, and CM-11 included soil removal where historical sample results indicate the culvert and/or associated drainage contain soil with ISRA COCs at concentrations greater than ISRA soil remediation goals (SRGs) (MWH, 2009). Performance monitoring was implemented at CM-3 to provide reference monitoring data for CM systems since the catchment basin associated with CM-3 has been minimally impacted by historical site activities and historical sample results indicate the culvert and associated drainage do not contain soil with ISRA COCs at concentrations greater than SRGs. CM-3 was selected over the other CMs systems that meet these characteristics because it receives runoff from a larger area, and is therefore the most likely to have flowing water. The locations of the four CM systems and the up- and downgradient performance monitoring inspection and sample locations are shown on Figures 3 and 4.

2009-2010 Rain Event Summary

The SSFL NPDES Permit definition of a discharge (rain) event is one that produces more than 0.1 inches of rainfall in a 24-hour period and must be preceded by at least 72 hours of dry weather. Eleven rain events occurred at SSFL during the 2009-2010 rainy season. The dates, rainfall quantity, average rainfall intensity, and maximum one hour rainfall intensity for each of these 11 rain events as recorded at a RWQCB approved weather station within Area IV, is provided below:

Rain Event	Total Rainfall (inches)	Average Intensity (inches/hour)	Maximum Intensity (inches/hour)
October 13-14, 2009 ^a	2.45	0.05	0.24
December 7-13, 2009	3.43	0.02	0.25
January 17-22, 2010	6.88	0.05	0.52
February 5-6, 2010	1.84	0.04	0.20
February 9, 2010	0.20	0.01	0.17
February 19, 2010	0.14	0.01	0.05
February 24, 2010	0.12	0.01	0.03
February 27, 2010	1.52	0.06	0.34
March 6, 2010	0.38	0.02	0.13
April 4-5, 2010	0.86	0.03	0.23
April 11-12, 2010	0.65	0.03	0.22
Non-Rain Event Total ^b	0.57	--	--
TOTAL	19.04	inches	

a - Rain event occurred prior to implementation of performance monitoring.

b - On the following 11 days, rainfall was measured but was either not considered a rain event per the NPDES Permit definition, or flow was not observed at the Outfalls: October 15, 2009, December 22, 2009, January 13, 23, 2010, February 20, 21, 2010, March 2, 3, 23, 2010, and April 1, 20, 2010.

During the 2009-2010 rainy season, the amount of rain received (19.04 inches) is slightly above the yearly rainfall for the SSFL (~18 inches/year for the period between 1960-2006) and the rain events are considered typical for the site. For comparison, the previous two rainy seasons were less than average, with rainfall amounts of 16.65 in 2007/2008 and 11.10 inches in 2008/2009. In addition, approximately 80% (14.60 inches) of the rainfall received during the 2009-2010 rainy season occurred during the first four rain events.

Performance Monitoring Inspections and Sampling

Performance monitoring inspections were implemented during the December 7-13, 2009 rain event, following completion of the Phase I ISRA Implementation, and continued through the completion of the 2009-2010 rainy season. Performance monitoring inspections were performed at the locations shown on Figures 1 through 4. Inspections were performed during daylight hours as soon as possible after the rain event began and at 24 hour intervals during extended rain events, per the ISRA Performance Monitoring SAP (MWH, 2010a).

SWPPP inspections were also performed during the 2009-2010 rainy season, and included an assessment of BMPs and surface water runoff conditions throughout the entire Outfall 008 and 009 watersheds. BMP improvements were made based on ISRA and SWPPP inspection observations throughout the watershed, however, there were three key observations from the following the highest rainfall event in January for which corrective actions were implemented that appeared to directly affect ISRA performance monitoring results (described in detail further below). These include:

- **HVS-2B-2:** Soil erosion was observed in the southern portion of ISRA area HVS-2B-2. The soil was stabilized with BMPs, including coco matting and riprap. BMP installation was completed on February 3, 2010.
- **Happy Valley Fire Road:** Soil erosion was observed along the unpaved Happy Valley Fire Road (Figure 1). The soil was stabilized with BMPs, including fiber rolls, hay bales, water bars, and gravel. BMP installation was completed on February 19, 2010.
- **CM-3:** Surface water was observed bypassing a silt fence and eroding soil between CM-3 and the road. The silt fence was repaired on February 1, 2010.

If during performance monitoring inspections sufficient surface water runoff was observed at a performance monitoring sample location, a performance monitoring sample was collected from the flowing surface water if the work could be performed safely (see below) following the procedures and sample frequency presented in the ISRA Performance Monitoring SAP (MWH, 2010a). During sample collection, every effort was made to collect representative surface water runoff and to minimize sediment disturbance. However, because the rain events varied in intensity and duration, it should be noted that the performance samples also represent a range of rainfall conditions and surface water flow rates. Performance monitoring samples collected during the 2009-2010 rainy season are listed in Table 1. The dates on which ISRA performance monitoring samples were collected are also listed next to the sample location on Figures 1 through 4. Graphs of rainfall in inches per hour for the 2009-2010 rain events during

which a performance monitoring sample was collected, along with the performance monitoring sample collection times, are included in Attachment 1.

Within the Outfall 008 watershed, performance monitoring samples were not collected from five of the planned locations during the 2009-2010 rainy season because flowing surface water was not present during inspections. The five locations include upgradient of HVS-1, upgradient of CYN-1, downgradient of HVS-2C, and downgradient of HVS-2B-1. Within the Outfall 009 watershed, performance monitoring samples were not collected up- and downgradient of A2LF-1 during the 2009-2010 rainy season because of the large flow volume in the Northern Drainage channel which prohibited safe access to the sampling locations. However, site inspections at the A2LF-1 performance monitoring locations will continue and performance monitoring samples will be collected when conditions permit.

Performance monitoring samples collected during the 2009-2010 rainy season included 31 primary samples and 8 RWQCB split samples¹ collected in the Outfall 008 watershed and 50 primary samples and 23 RWQCB split samples collected in the Outfall 009 watershed. Although there were more completed ISRA areas in the Outfall 008 watershed than the Outfall 009 watershed in 2009, fewer performance monitoring samples were collected from the Outfall 008 ISRA areas because those ISRA Areas were predominantly located in upland areas which have less surface water runoff than the performance monitoring areas in Outfall 009.

Seventeen of the primary samples and two of the RWQCB split samples collected in the Outfall 008 watershed were placed on hold and not subsequently analyzed because they monitored individual ISRA areas (as described in the ISRA Performance Monitoring SAP, samples downgradient of multiple ISRA areas were preferentially performed to gauge overall effectiveness of the remedial action). Two of the primary samples collected in the Outfall 009 watershed were not analyzed because they did not have an associated up- or downgradient sample collected for comparison. One of the RWQCB split samples collected in the Outfall 009 watershed was not analyzed; it was initially placed on hold as it was collected at a newly identified sample location, and only the primary sample was subsequently analyzed. In total for both the Outfall 008 and 009 areas, 62 primary samples and 28 RWQCB split samples were

¹ "Primary" samples are environmental samples submitted to the prime laboratory for analysis. "Split" samples are environmental samples submitted to a second laboratory for analysis, and serve as quality control samples for the program.

collected and analyzed from the 12 ISRA areas and 4 CM systems monitored during the 2009-2010 rainy season.

Field measurements of primary performance monitoring samples included turbidity, temperature, pH, and conductivity. Laboratory analysis of primary and split performance monitoring samples included ISRA COCs associated with the ISRA or CM areas, as described in the ISRA Performance Monitoring SAP (MWH, 2010a). The analytical suite for each sample is listed in Table 1, and consisted of one or more of the following:

- Total recoverable cadmium, copper, and lead by USEPA Method 200.8;
- Total recoverable mercury by USEPA Method 245.1;
- Dioxins² by USEPA Method 1613B; and
- Total suspended solids by USEPA Method 2540.

Performance Monitoring Sample Results

ISRA performance monitoring sample analytical results (including RWQCB split samples), field measurements, and rainfall event measurements from the 2009-2010 rainy season are presented in Tables 2A through 2G. Outfall 008 performance monitoring results are separated into two tables (Tables 2A and 2B) since there are two primary up- and downgradient evaluation areas, including the drainage associated with ISRA Areas DRG-1 and CYN-1, and the drainage associated with the remaining eight ISRA Areas located within Happy Valley. Outfall 009 performance monitoring results are presented in five tables (Tables 2C through 2G), one table for each monitored ISRA area or CM because each of these areas is a separate up- and downgradient evaluation area.

Performance monitoring sample results were compared to NPDES values to provide a context for evaluating possible contributions to NPDES samples at the outfalls. A graph of performance monitoring results versus sample collection date was created for each constituent detected above NPDES values at each up- and downgradient evaluation area. These graphs are included in Attachment 2. Laboratory reports for performance monitoring samples (primary and RWQCB splits) are included in Attachment 3.

² The term 'dioxins' as used in this technical memorandum represents both dioxins and furans. Dioxin sampling results represent the sum of 17 dioxin/furan congener data adjusted for toxicity, normalized to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD TEQ).

The following sections describe ISRA performance monitoring and NPDES sampling data for the Outfall 008 and 009 watersheds. A preliminary evaluation of the dataset as a whole by the Surface Water Expert Panel concluded the sampling results are variable and in some cases highly biased when primary and split performance monitoring data are statistically compared. Although no significant difference was observed for the TSS and dioxins results, possibly due their large variability, significant bias in the copper and lead results was indicated, with the primary sample results being significantly higher than the split data results. To address the large variability and bias between some of the primary and split performance monitoring sample results collected during the 2009/2010 rainy season, the Surface Water Expert Panel is further evaluating the ISRA performance monitoring data and field sampling protocols to develop revised sample collection procedures for future work. The revised sampling protocol will be provided to the RWQCB for review prior to implementation during the 2010-2011 rainy season.

Outfall 008. Within the Outfall 008 watershed, performance monitoring samples were analyzed for one or more of the Outfall 008 ISRA COCs, including copper, lead, and dioxins. Results are presented in Tables 2A and 2B. Outfall 008 NPDES sampling results for ISRA COCs collected during the fourth quarter 2009 and first quarter 2010 are presented in Table 3A. A complete set of Outfall 008 NPDES sampling results for these two quarters are reported in the NPDES Discharge Monitoring Reports (Boeing, 2010a and 2010b). As reported in the ISRA Phase I Implementation Report (MWH, 2010b), all sampled soil concentrations in the Outfall 008 watershed are less than or consistent with SRGs following completion of the 2009 ISRA excavation activities.

Below is a summary of the Outfall 008 performance monitoring and NPDES sample results for ISRA COCs collected during the 2009-2010 rainy season, and general trends observed in the results.

- Four (4) ISRA performance monitoring samples and three (3) Outfall 008 NPDES samples contained lead and/or dioxins above NPDES values³. In addition, copper was detected in one performance monitoring sample above the NPDES value.
- All of the Outfall 008 performance monitoring samples and Outfall 008 NPDES samples with results above NPDES values also contained elevated total suspended solids (TSS)

³ In this document, only primary sample results are included in the comparison totals. Split sample results are not individually discussed in the text of this technical memorandum since primary and split sample results were quite variable. Split sample results are presented in Tables 2A through 2G.

concentrations. However, it is worth noting that not all samples with higher TSS concentrations contained ISRA COCs greater than NPDES values.

- No performance monitoring sample results were detected above the NPDES values after two key erosion control measures were employed. As noted above, two observations from the SWPPP inspections within Outfall 008, soil erosion at HVS-2B-2 and the Happy Valley Fire Road resulted in corrective actions being taken that were completed by middle February.
- The performance monitoring and Outfall 008 NPDES sampling results above NPDES values are likely related to erosion of soils with concentrations near to and consistent with naturally occurring background levels, since remediation of elevated soil sources in this watershed was completed in 2009, and soil sampling results in the Outfall watershed showed concentrations of ISRA COCs below SRGs.

In addition to the Outfall 008 NPDES sample results exceeding NPDES values for ISRA COCs lead and dioxins as described above, gross alpha exceeded the NPDES value of 15 pCi/L in samples collected on January 18, 2010 (25.8 ± 5.5 pCi/L) and February 5-6, 2010 (20.5 ± 4.0 pCi/L). Gross alpha has not been detected in Outfall 008 NPDES samples prior to these two samples, nor in the three subsequent samples. As stated in the 1st quarter 2010 NPDES monitoring report, the gross alpha concentrations are believed associated with TSS consisting of native sediments and soils (Boeing, 2010b). The additional TSS detected in the surface water runoff is likely the result of the soil disturbance associated with ISRA activities and the soil erosion observed during SWPPP inspections within Outfall 008 as described above.

Outfall 009. Within the Outfall 009 watershed, performance monitoring samples were analyzed for one or more of the Outfall 009 ISRA COCs, including cadmium, copper, lead, mercury, and dioxins. Results are presented in Tables 2C through 2G. Outfall 009 NPDES sampling results for ISRA COCs collected during the fourth quarter 2009 and first quarter 2010 are presented in Table 3B. A complete set of Outfall 009 NPDES sampling results for these two quarters are reported in the NPDES Discharge Monitoring Reports (Boeing, 2010a and 2010b). Below is a summary of the Outfall 009 performance monitoring and NPDES sample results for ISRA COCs, and general trends observed in the results. As described in the 2010 ISRA Work Plan Addendum (MWH, 2010c), soil samples from the CM-3 and CM-8 drainages do not contain ISRA COCs at concentrations greater than SRGs, but soil concentrations above the SRGs are present upgradient of the A2LF-3, CM-9, and CM-11 locations. Therefore, these ISRA performance monitoring results are described separately below.

Performance Monitoring Results in Locations without ISRA COCs in Upgradient Soils

- Four (4) performance monitoring samples associated with CM-3 and CM-8, and six (6) Outfall 009 NPDES samples, contained lead and/or dioxins above NPDES values.
- In general, performance monitoring samples with results above NPDES values also contained higher concentrations of TSS.
- No performance monitoring sample results were detected above the NPDES values at CM-3 after January 19, 2010. This is likely due to repairing of a silt fence on February 1, 2010. As noted above, one observation from the SWPPP inspections within Outfall 009 that resulted in corrective action was soil erosion at CM-3.
- The CM-3 and CM-8 performance monitoring sampling results above NPDES values is likely related to erosion of soils with concentrations near to and consistent with naturally occurring background levels since soil sampling results in the upgradient drainages contain concentrations of ISRA COCs below SRGs.

Performance Monitoring Results in Locations with ISRA COCs in Upgradient Soils

- Sixteen (16) ISRA performance monitoring samples associated with A2LF-3, CM-9, and CM-11, and six (6) Outfall 009 NPDES samples contained lead and/or dioxins above NPDES values. Mercury was also detected during one sampling event at CM-9 above the NPDES value; these results are believed to be anomalies because mercury was not detected in other up- and downgradient samples from CM-9 during the 2009-2010 rainy season.
- In general, performance monitoring samples associated with A2LF-3, CM-9, and CM-11 with results above NPDES values contained lower concentrations of TSS (<50 mg/L), indicating that the upgradient sites were well stabilized with minimal erosion during rain events.
- Performance monitoring samples associated with A2LF-3, CM-9, and CM-11 and Outfall 009 NPDES samples with results above the NPDES benchmark values may be related to upgradient soil sources and/or erosion of naturally occurring soil concentrations as described by the Surface Water Expert Panel (Pitt, R., 2009 and SSFL Surface Water Expert Panel, 2010).

It is worth noting that downgradient performance monitoring samples from CM-1 and CM-4 may have been collected during where surface water runoff overflowed the weir boards, bypassing the installed filter media. This condition is suspected based on observed high-water lines after the storm peak. Also, at CM-9 there was a breach in the headwall of the culvert that allowed surface water flow to bypass the filter media. Both of these situations may affect the downgradient performance monitoring sampling results collected at these CMs.

As detailed in the 2010 ISRA Work Plan Addendum (MWH, 2010c), additional remediation / restoration actions will be performed in the Outfall 009 watershed as part of the ISRA program and the Northern Drainage activities under DTSC oversight. Additionally, surface water maintenance activities will continue, including removal of sediment behind culverts, and additional culvert maintenance or repair actions.

SUMMARY

Performance monitoring activities from the 2009-2010 rainy season consisted of surface water runoff inspections and sampling both up- and downgradient of the ten ISRA areas in Outfall 008 watershed, and two ISRA areas, and four CM systems in the Outfall 009 watershed. These activities were performed per the ISRA Performance Monitoring SAP (MWH, 2010a). The data collected during the 2009-2010 rainy season represents the first of the proposed two years of rainy season monitoring for these areas, as recommended in the ISRA Performance Monitoring SAP.

The overall effectiveness of the ISRA remedial activities will be based on compliance with the NPDES Permit at the outfall monitoring locations once restoration is complete (i.e., when revegetation is complete and the sites completely restored). Performance monitoring results described in this memorandum are to be used to preliminarily assess the contribution of ISRA COCs to surface water runoff following completion of remedial activities at ISRA areas.

As described above, lead and dioxin concentrations were periodically detected above NPDES values during both ISRA performance monitoring and NPDES monitoring, and copper and mercury each were detected above NPDES values in a single event at one location during the ISRA performance monitoring. Most detections above NPDES values occurred in the earliest storms of the rainy season prior to BMP corrective actions. Where soil sampling results are less than ISRA SRGs (which are near to or consistent with naturally occurring background levels), higher performance monitoring sampling results are associated with higher TSS concentrations. Higher TSS concentrations are, in turn, likely related to increased erosion following implementation of remedial activities while revegetation occurs (e.g., Outfall 008), or in other areas of erosion (e.g., CM-3 and CM-8). While 17 ISRA performance monitoring and 6 NPDES sampling results within the Outfall 008 and 009 watersheds were above their respective NPDES lead values (including both primary and split data), only six (6) lead results, ranging from 16 µg/L

to 55 µg/L, exceeded the drinking water standard of 15 µg/L. Also, it is worth noting that in some locations where soil sources of ISRA COCs are no longer present (e.g., existing soil samples results are less than or consistent with the SRGs in the Outfall 008 watershed), ISRA performance monitoring and NPDES Outfall sampling results sometimes still exceeded the NPDES values, indicating that naturally occurring soil concentrations can serve as sources of elevated surface water concentrations compared to the NPDES permit values. This observation is consistent with the white papers prepared by the Surface Water Expert Panel, which found that background soil levels of metals and dioxins from open space areas can exceed SSFL NPDES limits (Pitt, R., 2009 and SSFL Surface Water Expert Panel, 2010).

During the 2009-2010 rainy season, 62 ISRA performance samples were collected and analyzed from a total of 28 locations. While this dataset provides representative monitoring results for the monitored areas, it is limited for use in statistical testing by the relatively small number of up- and downgradient sample pairs collected during the first year of monitoring implementation due to lack of surface water flow in many upgradient locations. Interpretation of the first year's performance data is also constrained since the data represent 'in progress' restoration conditions as revegetation occurs, and because the results are quite variable. Sample variability is not unexpected given the number of factors influencing surface water monitoring results in a watershed, including not only natural factors, such as rainfall intensity, rainfall duration, surface water flow volumes and rates, and suspended sediment load, but also human factors, such as BMP maintenance, sample collection methodology, and laboratory analysis procedures. As described above, variability potentially caused by field sampling procedures is being evaluated by the Surface Water Expert Panel, and sampling protocols will be modified for use in future ISRA performance monitoring events.

Continued performance monitoring at the 12 ISRA areas and 4 CMs collection within Outfalls 008 and 009 during the 2010-2011 rainy season will increase the number of samples for data evaluation and assessment. Performance of inspections of the Outfall 008 and 009 watersheds prior to and during rain events to identify soil erosion features will continue and are critical in identifying BMP maintenance locations and implementing corrective actions in a timely manner to minimize the transportation of soil in surface water runoff. During the next rainy season, vegetation at the completed ISRA areas will be more restored, which will provide additional stabilization of soil during rain events and monitoring results that are reflective of final conditions.

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- SSFL Surface Water Expert Panel, 2010. Santa Susana Field Laboratory (SSFL) Stormwater Dioxin Background Report. Prepared for The Boeing Company (March 2010).

ATTACHMENTS

- Table 1 Sample Collection and Analysis Matrix
- Table 2 Performance Monitoring Sampling Results
- Table 3 NPDES Monitoring Sampling Results – Outfalls 008 and 009

- Figure 1 Outfall 008, ISRA Performance Monitoring Sample Locations
- Figure 2 Outfall 009 – A2LF-1, A2LF-3, ISRA Performance Monitoring Sample Locations
- Figure 3 Outfall 009 – CM-3, ISRA Performance Monitoring Sample Locations
- Figure 4 Outfall 009 – CM-8, CM-9, CM-11, ISRA Performance Monitoring Sample Locations

- Attachment 1 Rain Event Rainfall and Sampling Graphs
- Attachment 2 Performance Monitoring Results as Time Series
- Attachment 3 Laboratory Reports

TABLES

**TABLE 1
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON**

TABLE 1

**SURFACE WATER SAMPLE COLLECTION AND ANALYSIS MATRIX
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY**

Watershed	Object ID	Sample ID	Collection Date	Collection Time	Location	Position	Position Type	Sample Type	Matrix	Cadmium (Total Recoverable) (Method 200.8)	Copper (Total Recoverable) (Method 200.8)	Lead (Total Recoverable) (Method 200.8)	Mercury (Total Recoverable) (Method 245.1)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)	pH (Laboratory)
008	HZSW0007	HZSW0007S001	12/7/2009	12:53	HVS all	Downgradient	Primary	Primary	Water		X	X		X	X	
008	HZSW0010	HZSW0010S001	12/7/2009	10:57	HVS-3	Downgradient	Secondary	Primary	Water		H			H	H	
008	HZSW0016	HZSW0016S001	12/7/2009	11:55	HVS-2B-2	Downgradient	Secondary	Primary	Water		H	H			H	
008	HZSW0018	HZSW0018S001	12/7/2009	11:35	HVS-2A	Downgradient	Secondary	Primary	Water			H			H	
008	HZSW0003	HZSW0003S001	12/12/2009	10:43	CYN/DRG all	Downgradient	Primary	Primary	Water		X	X		X	X	
008	HZSW0003	HZSW0003S002	1/20/2010	11:26	CYN/DRG all	Downgradient	Primary	Primary	Water		X	X		X	X	
008	HZSW0004	HZSW0004S001	1/20/2010	11:46	DRG-1	Downgradient	Secondary	Primary	Water					H	H	
008	HZSW0007	HZSW0007S002	1/20/2010	9:20	HVS all	Downgradient	Primary	Primary	Water		X	X		X	X	
008	HZSW0009	HZSW0009S001	1/20/2010	11:05	HVS-1	Downgradient	Secondary	Primary	Water			H		H	H	
008	HZSW0010	HZSW0010S002	1/20/2010	8:59	HVS-3	Downgradient	Secondary	Primary	Water		H			H	H	
008	HZSW0016	HZSW0016S002	1/20/2010	9:15	HVS-2B-2	Downgradient	Secondary	Primary	Water		H	H			H	
008	HZSW0018	HZSW0018S002	1/20/2010	9:09	HVS-2A	Downgradient	Secondary	Primary	Water			H			H	
008	HZSW0005	HZSW0005S001	1/21/2010	9:27	DRG-1	Upgradient	Secondary	Primary	Water		H	H			H	
008	HZSW0011	HZSW0011S001	1/21/2010	11:08	HVS-3	Upgradient	Primary	Primary	Water		X			X	X	
008	HZSW0005	HZSW0005S002	1/22/2010	8:38	DRG-1	Upgradient	Primary	Primary	Water					H		
008	HZSW0012	HZSW0012S001	1/22/2010	12:16	HVS-2C	Upgradient	Primary	Primary	Water			X			X	
008	HZSW0014	HZSW0014S001	1/22/2010	11:19	HVS-2B-1, HVS-2B-2	Upgradient	Primary	Primary	Water		X	X			X	
008	HZSW0019	HZSW0019S001	1/22/2010	9:19	CYN-1	Downgradient	Secondary	Primary	Water		H	H			H	
008	HZSW0003	HZSW0003S003	2/5/2010	13:00	CYN/DRG all	Downgradient	Primary	Primary	Water		X	X		X	X	
008	HZSW0003	HZSW0003S003-RWQCB	2/5/2010	13:00	CYN/DRG all	Downgradient	Primary	RWQCB Split	Water		X	X		X	X	
008	HZSW0004	HZSW0004S002	2/6/2010	11:04	DRG-1	Downgradient	Secondary	Primary	Water					H	H	
008	HZSW0005	HZSW0005S003	2/6/2010	11:12	DRG-1	Upgradient	Primary	Primary	Water					X	X	
008	HZSW0005	HZSW0005S003-RWQCB	2/6/2010	11:12	DRG-1	Upgradient	Primary	RWQCB Split	Water					X	X	
008	HZSW0007	HZSW0007S003	2/6/2010	10:25	HVS all	Downgradient	Primary	Primary	Water		X	X		X	X	
008	HZSW0007	HZSW0007S003-RWQCB	2/6/2010	10:25	HVS all	Downgradient	Primary	RWQCB Split	Water		X	X		X	X	
008	HZSW0010	HZSW0010S003	2/6/2010	9:14	HVS-3	Downgradient	Secondary	Primary	Water		H			H	H	
008	HZSW0016	HZSW0016S003	2/6/2010	10:14	HVS-2B-2	Downgradient	Secondary	Primary	Water		H	H			H	
008	HZSW0017	HZSW0017S001	2/6/2010	9:44	HVS-2A	Upgradient	Primary	Primary	Water			X		X	X	
008	HZSW0017	HZSW0017S001-RWQCB	2/6/2010	9:44	HVS-2A	Upgradient	Primary	RWQCB Split	Water			X		X	X	
008	HZSW0018	HZSW0018S003	2/6/2010	10:00	HVS-2A	Downgradient	Secondary	Primary	Water			H			H	
008	HZSW0003	HZSW0003S004	2/27/2010	12:14	CYN/DRG all	Downgradient	Primary	Primary	Water		X	X		X	X	
008	HZSW0003	HZSW0003S004-RWQCB	2/27/2010	12:14	CYN/DRG all	Downgradient	Primary	RWQCB Split	Water		X	X		X	X	
008	HZSW0007	HZSW0007S004	2/27/2010	12:53	HVS all	Downgradient	Primary	Primary	Water		X	X		X	X	
008	HZSW0007	HZSW0007S004-RWQCB	2/27/2010	12:53	HVS all	Downgradient	Primary	RWQCB Split	Water		X	X		X	X	
008	HZSW0018	HZSW0018S004	2/27/2010	13:21	HVS-2A	Downgradient	Secondary	Primary	Water			H			H	
008	HZSW0018	HZSW0018S004-RWQCB	2/27/2010	13:21	HVS-2A	Downgradient	Secondary	RWQCB Split	Water			H			H	
008	HZSW0003	HZSW0003S005	3/7/2010	11:40	CYN/DRG all	Downgradient	Primary	Primary	Water		X	X		X	X	
008	HZSW0016	HZSW0016S004	4/5/2010	11:47	HVS-2B-2	Downgradient	Secondary	Primary	Water		H	H			H	H
008	HZSW0016	HZSW0016S004-RWQCB	4/5/2010	11:47	HVS-2B-2	Downgradient	Secondary	RWQCB Split	Water		H	H			H	H
009	A1SW0004	A1SW0004S001	12/11/2009	11:51	CM-9	Upgradient	Primary	Primary	Water	X	X	X	X		X	
009	A1SW0005	A1SW0005S001	12/11/2009	12:07	CM-9	Downgradient	Primary	Primary	Water	X	X	X	X		X	
009	A1SW0002	A1SW0002S001	12/13/2009	11:16	CM-8	Upgradient	Primary	Primary	Water			H			H	

TABLE 1
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON

SURFACE WATER SAMPLE COLLECTION AND ANALYSIS MATRIX
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Watershed	Object ID	Sample ID	Collection Date	Collection Time	Location	Position	Position Type	Sample Type	Matrix	Cadmium (Total Recoverable) (Method 200.8)	Copper (Total Recoverable) (Method 200.8)	Lead (Total Recoverable) (Method 200.8)	Mercury (Total Recoverable) (Method 245.1)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)	pH (Laboratory)
009	A1SW0004	A1SW0004S002	1/19/2010	9:00	CM-9	Upgradient	Primary	Primary	Water	X	X	X	X		X	
009	A1SW0005	A1SW0005S002	1/19/2010	9:29	CM-9	Downgradient	Primary	Primary	Water	X	X	X	X		X	
009	A2SW0001	A2SW0001S001	1/19/2010	13:29	A2LF-3/CM-1	Upgradient West	Primary	Primary	Water			X		X	X	
009	A2SW0002	A2SW0002S001	1/19/2010	13:31	A2LF-3/CM-1	Downgradient	Primary	Primary	Water			X		X	X	
009	LXSW0001	LXSW0001S001	1/19/2010	13:42	CM-3	Upgradient	Primary	Primary	Water	X	X	X	X	X	X	
009	LXSW0002	LXSW0002S001	1/19/2010	13:45	CM-3	Downgradient	Primary	Primary	Water	X	X	X	X	X	X	
009	A1SW0002	A1SW0002S002	1/20/2010	12:30	CM-8	Upgradient	Primary	Primary	Water			X			X	
009	A1SW0003	A1SW0003S001	1/20/2010	12:36	CM-8	Downgradient	Primary	Primary	Water			X			X	
009	A1SW0006	A1SW0006S001	1/20/2010	12:20	CM-11	Upgradient	Primary	Primary	Water					X	X	
009	A1SW0007	A1SW0007S001	1/20/2010	12:22	CM-11	Downgradient	Primary	Primary	Water					X	X	
009	A1SW0002	A1SW0002S003	2/5/2010	11:36	CM-8	Upgradient	Primary	Primary	Water			X			X	
009	A1SW0003	A1SW0003S002	2/5/2010	11:49	CM-8	Downgradient	Primary	Primary	Water			X			X	
009	A1SW0004	A1SW0004S003	2/5/2010	10:26	CM-9	Upgradient	Primary	Primary	Water	X	X	X	X		X	
009	A1SW0004	A1SW0004S003-RWQCB	2/5/2010	10:26	CM-9	Upgradient	Primary	RWQCB Split	Water	X	X	X	X		X	
009	A1SW0005	A1SW0005S003	2/5/2010	10:37	CM-9	Downgradient	Primary	Primary	Water	X	X	X	X		X	
009	A1SW0005	A1SW0005S003-RWQCB	2/5/2010	10:37	CM-9	Downgradient	Primary	RWQCB Split	Water	X	X	X	X		X	
009	A1SW0006	A1SW0006S002	2/5/2010	10:59	CM-11	Upgradient	Primary	Primary	Water					X	X	
009	A1SW0007	A1SW0007S002	2/5/2010	11:14	CM-11	Downgradient	Primary	Primary	Water					X	X	
009	A2SW0002	A2SW0002S002	2/5/2010	9:50	A2LF-3/CM-1	Downgradient	Primary	Primary	Water			X		X	X	
009	A2SW0002	A2SW0002S002-RWQCB	2/5/2010	9:50	A2LF-3/CM-1	Downgradient	Primary	RWQCB Split	Water			X		X	X	
009	A2SW0006	A2SW0006S001	2/5/2010	9:10	A2LF-3/CM-1	Upgradient East	Primary	Primary	Water			X		X	X	
009	A2SW0006	A2SW0006S001-RWQCB	2/5/2010	9:10	A2LF-3/CM-1	Upgradient East	Primary	RWQCB Split	Water			X		X	X	
009	A2SW0001	A2SW0001S002	2/6/2010	7:45	A2LF-3/CM-1	Upgradient West	Primary	Primary	Water			X		X	X	
009	A2SW0001	A2SW0001S002-RWQCB	2/6/2010	7:45	A2LF-3/CM-1	Upgradient West	Primary	RWQCB Split	Water			X		X	X	
009	LXSW0001	LXSW0001S002	2/6/2010	8:20	CM-3	Upgradient	Primary	Primary	Water	X	X	X	X	X	X	
009	LXSW0001	LXSW0001S002-RWQCB	2/6/2010	8:20	CM-3	Upgradient	Primary	RWQCB Split	Water	X	X	X	X	X	X	
009	LXSW0002	LXSW0002S002	2/6/2010	8:37	CM-3	Downgradient	Primary	Primary	Water	X	X	X	X	X	X	
009	A1SW0004	A1SW0004S004	2/20/2010	8:05	CM-9	Upgradient	Primary	Primary	Water	X	X	X	X		X	
009	A1SW0004	A1SW0004S004-RWQCB	2/20/2010	8:05	CM-9	Upgradient	Primary	RWQCB Split	Water	X	X	X	X		X	
009	A1SW0006	A1SW0006S003	2/20/2010	8:23	CM-11	Upgradient	Primary	Primary	Water					X	X	
009	A1SW0006	A1SW0006S003-RWQCB	2/20/2010	8:23	CM-11	Upgradient	Primary	RWQCB Split	Water					X	X	
009	A2SW0002	A2SW0002S003	2/20/2010	8:53	A2LF-3/CM-1	Downgradient	Primary	Primary	Water			X		X	X	
009	A2SW0002	A2SW0002S003-RWQCB	2/20/2010	8:53	A2LF-3/CM-1	Downgradient	Primary	RWQCB Split	Water			X		X	X	
009	A2SW0006	A2SW0006S002	2/20/2010	8:49	A2LF-3/CM-1	Upgradient East	Primary	Primary	Water			X		X	X	
009	A2SW0006	A2SW0006S002-RWQCB	2/20/2010	8:49	A2LF-3/CM-1	Upgradient East	Primary	RWQCB Split	Water			X		X	X	
009	A1SW0002	A1SW0002S004	2/27/2010	8:33	CM-8	Upgradient	Primary	Primary	Water			X			X	
009	A1SW0002	A1SW0002S004-RWQCB	2/27/2010	8:33	CM-8	Upgradient	Primary	RWQCB Split	Water			X			X	
009	A1SW0003	A1SW0003S003	2/27/2010	8:47	CM-8	Downgradient	Primary	Primary	Water			X			X	
009	A1SW0003	A1SW0003S003-RWQCB	2/27/2010	8:47	CM-8	Downgradient	Primary	RWQCB Split	Water			X			X	
009	A1SW0004	A1SW0004S005	2/27/2010	8:00	CM-9	Upgradient	Primary	Primary	Water	X	X	X	X		X	
009	A1SW0004	A1SW0004S005-RWQCB	2/27/2010	8:00	CM-9	Upgradient	Primary	RWQCB Split	Water	X	X	X	X		X	
009	A1SW0005	A1SW0005S004	2/27/2010	8:12	CM-9	Downgradient	Primary	Primary	Water	X	X	X	X		X	

**TABLE 1
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON**

TABLE 1

**SURFACE WATER SAMPLE COLLECTION AND ANALYSIS MATRIX
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY**

Watershed	Object ID	Sample ID	Collection Date	Collection Time	Location	Position	Position Type	Sample Type	Matrix	Cadmium (Total Recoverable) (Method 200.8)	Copper (Total Recoverable) (Method 200.8)	Lead (Total Recoverable) (Method 200.8)	Mercury (Total Recoverable) (Method 245.1)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)	pH (Laboratory)
009	A1SW0005	A1SW0005S004-RWQCB	2/27/2010	8:12	CM-9	Downgradient	Primary	RWQCB Split	Water	X	X	X	X		X	
009	A1SW0006	A1SW0006S004	2/27/2010	9:14	CM-11	Upgradient	Primary	Primary	Water					X	X	
009	A1SW0006	A1SW0006S004-RWQCB	2/27/2010	9:14	CM-11	Upgradient	Primary	RWQCB Split	Water					X	X	
009	A1SW0007	A1SW0007S003	2/27/2010	9:26	CM-11	Downgradient	Primary	Primary	Water					X	X	
009	A1SW0007	A1SW0007S003-RWQCB	2/27/2010	9:26	CM-11	Downgradient	Primary	RWQCB Split	Water					X	X	
009	A2SW0001	A2SW0001S003	2/27/2010	10:41	A2LF-3/CM-1	Upgradient West	Primary	Primary	Water			X		X	X	
009	A2SW0001	A2SW0001S003-RWQCB	2/27/2010	10:41	A2LF-3/CM-1	Upgradient West	Primary	RWQCB Split	Water			H		H	H	
009	A2SW0002	A2SW0002S004	2/27/2010	11:02	A2LF-3/CM-1	Downgradient	Primary	Primary	Water			X		X	X	
009	A2SW0002	A2SW0002S004-RWQCB	2/27/2010	11:02	A2LF-3/CM-1	Downgradient	Primary	RWQCB Split	Water			X		X	X	
009	A2SW0006	A2SW0006S003	2/27/2010	10:52	A2LF-3/CM-1	Upgradient East	Primary	Primary	Water			X		X	X	
009	A2SW0006	A2SW0006S003-RWQCB	2/27/2010	10:52	A2LF-3/CM-1	Upgradient East	Primary	RWQCB Split	Water			X		X	X	
009	LXSW0002	LXSW0002S003	2/27/2010	10:09	CM-3	Downgradient	Primary	Primary	Water	X	X	X	X	X	X	
009	LXSW0002	LXSW0002S003-RWQCB	2/27/2010	10:09	CM-3	Downgradient	Primary	RWQCB Split	Water	X	X	X	X	X	X	
009	A1SW0002	A1SW0002S005	3/7/2010	9:31	CM-8	Upgradient	Primary	Primary	Water			X			X	
009	A1SW0003	A1SW0003S004	3/7/2010	9:41	CM-8	Downgradient	Primary	Primary	Water			X			X	
009	A1SW0004	A1SW0004S006	3/7/2010	8:39	CM-9	Upgradient	Primary	Primary	Water	X	X	X	X		X	
009	A1SW0005	A1SW0005S005	3/7/2010	9:15	CM-9	Downgradient	Primary	Primary	Water	X	X	X	X		X	
009	A1SW0006	A1SW0006S005	3/7/2010	10:39	CM-11	Upgradient	Primary	Primary	Water					X	X	
009	A1SW0007	A1SW0007S004	3/7/2010	10:40	CM-11	Downgradient	Primary	Primary	Water					X	X	
009	A2SW0002	A2SW0002S005	3/7/2010	10:16	A2LF-3/CM-1	Downgradient	Primary	Primary	Water			X		X	X	
009	A2SW0006	A2SW0006S004	3/7/2010	9:59	A2LF-3/CM-1	Upgradient East	Primary	Primary	Water			X		X	X	
009	A1SW0004	A1SW0004S007	4/5/2010	10:56	CM-9	Upgradient	Primary	Primary	Water	X	X	X	X	X	X	
009	A1SW0004	A1SW0004S007-RWQCB	4/5/2010	10:56	CM-9	Upgradient	Primary	RWQCB Split	Water	X	X	X	X	X	X	
009	A2SW0001	A2SW0001S004	4/5/2010	9:52	A2LF-3/CM-1	Upgradient West	Primary	Primary	Water			X		X	X	X
009	A2SW0001	A2SW0001S004-RWQCB	4/5/2010	9:52	A2LF-3/CM-1	Upgradient West	Primary	RWQCB Split	Water			X		X	X	X
009	A2SW0002	A2SW0002S006	4/5/2010	10:09	A2LF-3/CM-1	Downgradient	Primary	Primary	Water			X		X	X	X
009	A2SW0002	A2SW0002S006-RWQCB	4/5/2010	10:09	A2LF-3/CM-1	Downgradient	Primary	RWQCB Split	Water			X		X	X	X
009	A1SW0004	A1SW0004S008	4/12/2010	7:56	CM-9	Upgradient	Primary	Primary	Water	H	H	H	H	H	H	

Notes:

X - Sample was analyzed.
H - Sample was collected and put on hold, and not analyzed.
RWQCB - Regional Water Quality Control Board

Sample Totals

008 Primary	31
008 Primary - On Hold	17
009 Primary	50
009 Primary - On Hold	2
Primary - Collected	81
Primary - On Hold	19
RWQCB Split - Collected	31
RWQCB Split - On Hold	3
Total Performance Monitoring	134

**TABLE 2A
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON**

TABLE 2A

**SURFACE WATER SAMPLE RESULTS - HAPPY VALLEY DRAINAGE
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY**

		Object Name:	HZSW0003	HZSW0003	HZSW0003	HZSW0003	HZSW0005	HZSW0005	HZSW0003	HZSW0003
		Sample Name:	HZSW0003S001	HZSW0003S002	HZSW0003S003	HZSW0003S003	HZSW0005S003	HZSW0005S003	HZSW0003S004	HZSW0003S004
		Sample Date:	12/12/2009	1/20/2010	2/5/2010	2/5/2010	2/6/2010	2/6/2010	2/27/2010	2/27/2010
		Sample Type:	Perf Mon	Perf Mon	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split
		Location:	DG (CYN, DRG)	DG (CYN, DRG)	DG (CYN, DRG)	DG (CYN, DRG)	UG (DRG)	UG (DRG)	DG (CYN, DRG)	DG (CYN, DRG)
		Rain Event:	December 7-13, 2009	January 17-22, 2010	February 5-6, 2010			February 27, 2010		
ANALYTE	UNITS	NPDES PERMIT LIMIT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
DIOXINS										
TCDD TEQ_NoDNQ	ug/L	2.80E-08	6.30E-09	ND	ND	ND	ND	6.78E-07	ND	ND
INORGANICS										
Copper	ug/L	14	2.4 *	13 *	19 *	4.2*	--	--	1.9 Ja*	1.6 *
Lead	ug/L	5.2	<0.20 *	14 *	19 *	6.3*	--	--	0.40 Ja*	0.36 *
MISCELLANEOUS										
Total Suspended Solids	mg/L	-/-	94 *	840 *	150 *	681*	5.0 J*	<10*	16 *	<10 *
FIELD MEASUREMENTS										
Conductivity	mS	-/-	0.181	0.244	0.232	--	0.109	--	0.124	--
Temperature	deg C	-/-	12.2	9.7	10.5	--	12.0	--	NR	--
pH	SU	6.5-8.5/-	7.09	7.35	6.96	--	7.10	--	7.40	--
Turbidity	NTU	-/-	100	163	>999	--	8	--	7	--
RAINFALL MEASUREMENTS										
Total - Pre-Sampling	in	-/-	2.44	4.04	0.63	0.63	1.73	1.73	1.33	1.33
Total - Rain Event	in	-/-	3.43	6.88	1.84	1.84	1.84	1.84	1.52	1.52
Intensity (Ave) - Pre-Sampling	in/hr	-/-	0.02	0.06	0.08	0.08	0.06	0.06	0.12	0.12
Intensity (Ave) - Rain Event	in/hr	-/-	0.02	0.05	0.04	0.04	0.04	0.04	0.06	0.06
Intensity (Max) - Pre-Sampling	in/hr	-/-	0.25	0.52	0.14	0.14	0.20	0.20	0.34	0.34
Intensity (Max) - Rain Event	in/hr	-/-	0.25	0.52	0.20	0.20	0.20	0.20	0.34	0.34

**TABLE 2B
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON**

TABLE 2B

**SURFACE WATER SAMPLE RESULTS - CYN-1/DRG-1 DRAINAGE
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY**

Object Name:		HZSW0007	HZSW0011	HZSW0012	HZSW0014	HZSW0007	HZSW0017	HZSW0017	HZSW0007	HZSW0007	HZSW0007	HZSW0007
Sample Name:		HZSW0007S001	HZSW0011S001	HZSW0012S001	HZSW0014S001	HZSW0007S002	HZSW0017S001	HZSW0017S001	HZSW0007S003	HZSW0007S003	HZSW0007S004	HZSW0007S004
Sample Date:		12/7/2009	1/21/2010	1/22/2010	1/22/2010	1/20/2010	2/6/2010	2/6/2010	2/6/2010	2/6/2010	2/27/2010	2/27/2010
Sample Type:		Perf Mon	Perf Mon	Perf Mon	Perf Mon	Perf Mon	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split
Location:		DG (All HVS)	UG (HVS-3)	UG (HVS-2C)	UG (HVS-2B)	DG (All HVS)	UG (HVS-2A,-2D)	UG (HVS-2A,-2D)	DG (All HVS)	DG (All HVS)	DG (All HVS)	DG (All HVS)
Rain Event:		December 7-13, 2009		January 17-22, 2010			February 5-6, 2010			February 27, 2010		
ANALYTE	UNITS	NPDES PERMIT LIMIT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
DIOXINS												
TCDD TEQ_NoDNQ	ug/L	2.80E-08	1.47E-08	ND	--	--	1.70E-08	ND	ND	ND	ND	1.80E-08
INORGANICS												
Copper	ug/L	14	13 *	2.4 *	--	5.2 B*	13 *	--	--	6.9 *	3.4*	6.9 *
Lead	ug/L	5.2	7.5 *	--	<0.20 *	1.8 B*	1.8 *	14 *	5.1*	3.1 *	0.83*	4.0 *
MISCELLANEOUS												
Total Suspended Solids	mg/L	-/-	270 *	6.0 Ja*	7.0 J*	61 *	140 *	76 *	536*	22 *	27*	320 *
FIELD MEASUREMENTS												
Conductivity	mS	-/-	0.464	0.100	0.086	0.148	0.506	0.061	--	0.248	--	0.235
Temperature	deg C	-/-	9.8	11.1	11.09	11.79	9.9	12.8	--	12.0	--	NR
pH	SU	6.5-8.5/-	7.11	6.15	6.44	6.12	7.30	6.34	--	7.28	--	7.48
Turbidity	NTU	-/-	175	2	2.02	71.4	142	210	--	50	--	100
RAINFALL MEASUREMENTS												
Total - Pre-Sampling	in	-/-	0.91	5.52	6.67	6.63	3.75	1.73	1.73	1.73	1.73	1.40
Total - Rain Event	in	-/-	3.43	6.88	6.88	6.88	6.88	1.84	1.84	1.84	1.84	1.52
Intensity (Ave) - Pre-Sampling	in/hr	-/-	0.07	0.06	0.06	0.06	0.05	0.06	0.06	0.06	0.06	0.12
Intensity (Ave) - Rain Event	in/hr	-/-	0.02	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.06
Intensity (Max) - Pre-Sampling	in/hr	-/-	0.17	0.52	0.52	0.52	0.52	0.20	0.20	0.20	0.20	0.34
Intensity (Max) - Rain Event	in/hr	-/-	0.25	0.52	0.52	0.52	0.52	0.20	0.20	0.20	0.20	0.34

TABLE 2C
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON

TABLE 2C

SURFACE WATER SAMPLE RESULTS - CM-3
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:	LXSW0001	LXSW0002	LXSW0001	LXSW0001	LXSW0002	LXSW0002	LXSW0002	
		Sample Name:	LXSW0001S001	LXSW0002S001	LXSW0001S002	LXSW0001S002	LXSW0002S002	LXSW0002S003	LXSW0002S003	
		Sample Date:	1/19/2010	1/19/2010	2/6/2010	2/6/2010	2/6/2010	2/27/2010	2/27/2010	
		Sample Type:	Perf Mon	Perf Mon	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon	Perf Mon Split	
		Location:	UG (CM-3)	DG (CM-3)	UG (CM-3)	UG (CM-3)	DG (CM-3)	DG (CM-3)	DG (CM-3)	
		Rain Event:	January 17-22, 2010			February 5-6, 2010		February 27, 2010		
ANALYTE	UNITS	NPDES PERMIT LIMIT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	
DIOXINS										
TCDD TEQ NoDNQ	ug/L	2.80E-08	1.40E-08	9.06E-07	ND	1.10E-08	ND	ND	ND	
INORGANICS										
Cadmium	ug/L	4	0.26 RL1, J*	0.91 RL1, Ja*	<0.10 *	<0.013 *	<0.10 *	<0.10 *	<0.013 *	
Copper	ug/L	14	7.5 *	12*	1.5 J*	1.2 *	1.4 J*	1.7 Ja*	1.7 *	
Lead	ug/L	5.2	16 *	27	1.0 *	0.64 *	0.25 J*	0.47 Ja*	0.47 *	
Mercury	ug/L	0.13	<0.10 H-1*	<0.10	<0.10 *	<0.5 *	<0.10 *	<0.10 *	<0.5 *	
MISC										
Total Suspended Solids	mg/L	-/-	39*	190*	10 *	22 *	2.0 J*	4.0 Ja*	19 *	
FIELD MEASUREMENTS										
Conductivity	mS	-/-	0.166	0.176	0.06	--	0.071	0.076	--	
Temperature	deg C	-/-	10.7	10.7	11.0	--	10.9	NR	--	
pH	SU	6.5-8.5/-	6.46	6.46	6.61	--	6.71	6.41	--	
Turbidity	NTU	-/-	349	605	260	--	3	7	--	
RAINFALL MEASUREMENTS										
Total - Pre-Sampling	in	-/-	3.44	3.44	1.70	1.70	1.71	1.31	1.31	
Total - Rain Event	in	-/-	6.88	6.88	1.84	1.84	1.84	1.52	1.52	
Intensity (Ave) - Pre-Sampling	in/hr	-/-	0.07	0.07	0.06	0.06	0.06	0.14	0.14	
Intensity (Ave) - Rain Event	in/hr	-/-	0.05	0.05	0.04	0.04	0.04	0.06	0.06	
Intensity (Max) - Pre-Sampling	in/hr	-/-	0.52	0.52	0.20	0.20	0.20	0.34	0.34	
Intensity (Max) - Rain Event	in/hr	-/-	0.52	0.52	0.20	0.20	0.20	0.34	0.34	

TABLE 2D
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON

TABLE 2D

SURFACE WATER SAMPLE RESULTS - CM-8
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:	A1SW0002	A1SW0003	A1SW0002	A1SW0003	A1SW0002	A1SW0002	A1SW0003	A1SW0003	A1SW0002	A1SW0003
		Sample Name:	A1SW0002S002	A1SW0003S001	A1SW0002S003	A1SW0003S002	A1SW0002S004	A1SW0002S004	A1SW0003S003	A1SW0003S003	A1SW0002S005	A1SW0003S004
		Sample Date:	1/20/2010	1/20/2010	2/5/2010	2/5/2010	2/27/2010	2/27/2010	2/27/2010	2/27/2010	3/7/2010	3/7/2010
		Sample Type:	Perf Mon	Perf Mon	Perf Mon	Perf Mon	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon
		Location:	UG (CM-8)	DG (CM-8)	UG (CM-8)	DG (CM-8)	UG (CM-8)	UG (CM-8)	DG (CM-8)	DG (CM-8)	UG (CM-8)	DG (CM-8)
		Rain Event:	January 17-22, 2010		February 5-6, 2010		February 27, 2010			March 6, 2010		
ANALYTE	UNITS	NPDES PERMIT LIMIT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
DIOXINS												
TCDD TEQ_NoDNQ	ug/L	2.80E-08	--	--	--	--	--	--	--	--	--	--
INORGANICS												
Cadmium	ug/L	4	--	--	--	--	--	--	--	--	--	--
Copper	ug/L	14	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	5.2	8.5 *	2.5 *	11 *	2.3 *	0.74 Ja*	0.52 *	3.1 *	2.4 *	1.1 *	<0.20 *
Mercury	ug/L	0.13	--	--	--	--	--	--	--	--	--	--
MISC												
Total Suspended Solids	mg/L	-/-	82 *	26 *	55 *	18 *	2.0 Ja*	<10 *	10 *	<10 *	11 *	10 *
FIELD MEASUREMENTS												
Conductivity	mS	-/-	0.122	0.116	0.075	0.133	0.042	--	0.035	--	0.050	0.043
Temperature	deg C	-/-	10.6	10.2	10.9	11.6	NR	--	NR	--	13.0	11.5
pH	SU	6.5-8.5/-	6.85	6.60	6.67	6.85	5.78	--	5.86	--	6.53	6.71
Turbidity	NTU	-/-	31	31	13	25	2	--	14	--	25	8
RAINFALL MEASUREMENTS												
Total - Pre-Sampling	in	-/-	4.25	4.27	0.58	0.58	1.20	1.20	1.24	1.24	0.38	0.38
Total - Rain Event	in	-/-	6.88	6.88	1.84	1.84	1.52	1.52	1.52	1.52	0.38	0.38
Intensity (Ave) - Pre-Sampling	in/hr	-/-	0.06	0.06	0.09	0.09	0.16	0.16	0.16	0.16	0.02	0.02
Intensity (Ave) - Rain Event	in/hr	-/-	0.05	0.05	0.04	0.04	0.06	0.06	0.06	0.06	0.02	0.02
Intensity (Max) - Pre-Sampling	in/hr	-/-	0.52	0.52	0.14	0.14	0.34	0.34	0.34	0.34	0.13	0.13
Intensity (Max) - Rain Event	in/hr	-/-	0.52	0.52	0.20	0.20	0.34	0.34	0.34	0.34	0.13	0.13

TABLE 2E
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON

TABLE 2E

SURFACE WATER SAMPLE RESULTS - A2LF-3
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Object Name:		A2SW0001	A2SW0002	A2SW0001	A2SW0001	A2SW0006	A2SW0006	A2SW0002	A2SW0002	A2SW0006	A2SW0006	A2SW0002	A2SW0002	
Sample Name:		A2SW0001S001	A2SW0002S001	A2SW0001S002	A2SW0001S002	A2SW0006S001	A2SW0006S001	A2SW0002S002	A2SW0002S002	A2SW0006S002	A2SW0006S002	A2SW0002S003	A2SW0002S003	
Sample Date:		1/19/2010	1/19/2010	2/6/2010	2/6/2010	2/5/2010	2/5/2010	2/5/2010	2/5/2010	2/20/2010	2/20/2010	2/20/2010	2/20/2010	
Sample Type:		Perf Mon	Perf Mon	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	
Location:		UG (A2LF-3)	DG (A2LF-3)	UG (A2LF-3)	UG (A2LF-3)	UG (A2LF-3)	UG (A2LF-3)	DG (A2LF-3)	DG (A2LF-3)	UG (A2LF-3 east)	UG (A2LF-3 east)	DG (A2LF-3)	DG (A2LF-3)	
Rain Event:		January 17-22, 2010				February 5-6, 2010				February 19, 2010				
ANALYTE	UNITS	NPDES PERMIT LIMIT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	
DIOXINS														
TCDD TEQ_NoDNQ	ug/L	2.80E-08	4.59E-05	1.13E-05	1.50E-08	4.70E-08	7.13E-06	--	2.24E-06	2.10E-06	4.50E-08	1.31E-06	ND	5.50E-08
INORGANICS														
Cadmium	ug/L	4	--	--	--	--	--	--	--	--	--	--	--	--
Copper	ug/L	14	--	--	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	5.2	55	39	2.9 *	2.4 *	17 *	9.8 *	12 *	9.8 *	1.6 *	0.87 *	<0.20 *	<0.2 *
Mercury	ug/L	0.13	--	--	--	--	--	--	--	--	--	--	--	--
MISC														
Total Suspended Solids	mg/L	-/-	890*	610*	12 *	<10 *	250 *	688 *	46 *	42 *	16 *	<10 *	7.0 J*	<10 *
FIELD MEASUREMENTS														
Conductivity	mS	-/-	0.082	0.049	0.21	--	0.184	--	0.071	--	0.390	0.39	0.393	--
Temperature	deg C	-/-	11.1c	10.3c	11.0	--	10.7	--	11.0	--	12.0	12.0	11.4	--
pH	SU	6.5-8.5/-	6.52	6.71	7.32	--	6.65	--	7.11	--	7.45	7.45	7.54	--
Turbidity	NTU	-/-	398	815	34	--	42	--	132	--	1	1	6	--
RAINFALL MEASUREMENTS														
Total - Pre-Sampling	in	-/-	3.43	3.44	1.68	1.68	0.30	0.30	0.40	0.40	0.16	0.16	0.16	0.16
Total - Rain Event	in	-/-	6.88	6.88	1.84	1.84	1.84	1.84	1.84	1.84	0.14	0.14	0.14	0.14
Intensity (Ave) - Pre-Sampling	in/hr	-/-	0.07	0.07	0.06	0.06	0.07	0.07	0.08	0.08	0.01	0.01	0.01	0.01
Intensity (Ave) - Rain Event	in/hr	-/-	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.01	0.01	0.01	0.01
Intensity (Max) - Pre-Sampling	in/hr	-/-	0.52	0.52	0.20	0.20	0.14	0.14	0.14	0.14	0.05	0.05	0.05	0.05
Intensity (Max) - Rain Event	in/hr	-/-	0.52	0.52	0.20	0.20	0.20	0.20	0.20	0.20	0.05	0.05	0.05	0.05

TABLE 2E
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON

TABLE 2E

SURFACE WATER SAMPLE RESULTS - A2LF-3
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:	A2SW0001	A2SW0006	A2SW0006	A2SW0002	A2SW0002	A2SW0006	A2SW0002	A2SW0001	A2SW0001	A2SW0002	A2SW0002	
		Sample Name:	A2SW0001S003	A2SW0006S003	A2SW0006S003	A2SW0002S004	A2SW0002S004	A2SW0006S004	A2SW0002S005	A2SW0001S004	A2SW0001S004	A2SW0002S006	A2SW0002S006	
		Sample Date:	2/27/2010	2/27/2010	2/27/2010	2/27/2010	2/27/2010	3/7/2010	3/7/2010	4/5/2010	4/5/2010	4/5/2010	4/5/2010	
		Sample Type:	Perf Mon	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	
		Location:	UG (A2LF-3 west)	UG (A2LF-3 east)	UG (A2LF-3 east)	DG (A2LF-3)	DG (A2LF-3)	UG (A2LF-3 east)	DG (A2LF-3)	UG (A2LF-3 west)	UG (A2LF-3 west)	DG (A2LF-3)	DG (A2LF-3)	
		Rain Event:	February 27, 2010				March 6, 2010				April 4-5, 2010			
ANALYTE	UNITS	NPDES PERMIT LIMIT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	
DIOXINS														
TCDD TEQ_NoDNQ	ug/L	2.80E-08	1.68E-06	ND	ND	ND	1.10E-08	2.20E-08	ND	7.04E-06	4.40E-06	4.04E-06	1.77E-06	
INORGANICS														
Cadmium	ug/L	4	--	--	--	--	--	--	--	--	--	--	--	
Copper	ug/L	14	--	--	--	--	--	--	--	--	--	--	--	
Lead	ug/L	5.2	4.1 *	0.31 Ja*	0.22 *	0.50 Ja*	0.49 *	1.5 *	<0.20 *	5.1 *	1.8 *	2.9 *	1.4 *	
Mercury	ug/L	0.13	--	--	--	--	--	--	--	--	--	--	--	
MISC														
Total Suspended Solids	mg/L	-/-	8.0 H3, Ja (DNQ)	3.0 Ja*	<10 *	5.0 Ja*	<10 *	<1.0 *	10 *	17 *	19 *	11 *	13.0*	
FIELD MEASUREMENTS														
Conductivity	mS	-/-	0.037	0.106	--	0.103	--	0.134	0.107	0.092	--	0.108	--	
Temperature	deg C	-/-	NR	NR	--	NR	--	12.3	14.2	16.7	--	13.6	--	
pH	SU	6.5-8.5/-	6.50	6.83	--	6.9	--	6.07	7.05	7.01 HFT*	--	7.55 HFT*	--	
Turbidity	NTU	-/-	18	3	--	6	--	2	1	81	--	28	--	
RAINFALL MEASUREMENTS														
Total - Pre-Sampling	in	-/-	1.31	1.31	1.31	1.31	1.31	0.38	0.38	0.86	0.86	0.86	0.86	
Total - Rain Event	in	-/-	1.52	1.52	1.52	1.52	1.52	0.38	0.38	0.86	0.86	0.86	0.86	
Intensity (Ave) - Pre-Sampling	in/hr	-/-	0.14	0.13	0.13	0.13	0.13	0.02	0.02	0.06	0.06	0.06	0.06	
Intensity (Ave) - Rain Event	in/hr	-/-	0.06	0.06	0.06	0.06	0.06	0.02	0.02	0.03	0.03	0.03	0.03	
Intensity (Max) - Pre-Sampling	in/hr	-/-	0.34	0.34	0.34	0.34	0.34	0.13	0.13	0.23	0.23	0.23	0.23	
Intensity (Max) - Rain Event	in/hr	-/-	0.34	0.34	0.34	0.34	0.34	0.13	0.13	0.23	0.23	0.23	0.23	

TABLE 2F
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON

TABLE 2F

SURFACE WATER SAMPLE RESULTS - CM-9
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:	A1SW0004	A1SW0005	A1SW0004	A1SW0005	A1SW0004	A1SW0004	A1SW0005	A1SW0005	A1SW0004	A1SW0004
		Sample Name:	A1SW0004S001	A1SW0005S001	A1SW0004S002	A1SW0005S002	A1SW0004S003	A1SW0004S003	A1SW0005S003	A1SW0005S003	A1SW0004S004	A1SW0004S004
		Sample Date:	12/11/2009	12/11/2009	1/19/2010	1/19/2010	2/5/2010	2/5/2010	2/5/2010	2/5/2010	2/20/2010	2/20/2010
		Sample Type:	Perf Mon	Perf Mon	Perf Mon	Perf Mon	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split
		Location:	UG (CM-9)	DG (CM-9)	UG (CM-9)	DG (CM-9)	UG (CM-9)	UG (CM-9)	DG (CM-9)	DG (CM-9)	UG (CM-9)	UG (CM-9)
		Rain Event:	December 7-13, 2009			January 17-22, 2010		February 5-6, 2010			February 19, 2010	
ANALYTE	UNITS	NPDES PERMIT LIMIT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
DIOXINS												
TCDD TEQ NoDNQ	ug/L	2.80E-08	--	--	--	--	--	--	--	--	--	--
INORGANICS												
Cadmium	ug/L	4	0.25 J*	0.15 J*	0.18 J*	0.15 J*	0.21 RL1, J*	0.47 *	<0.10 *	0.14 *	0.18 J*	0.16 *
Copper	ug/L	14	5.3 *	5.1 *	4.4*	4.3*	9.9 *	4.7 *	11 *	4.3 *	3.0 *	2.7 *
Lead	ug/L	5.2	0.96 J*	<0.20 *	<0.20*	0.34 J*	6.9 *	3.6 *	15 *	9.8 *	<0.20 *	<0.2 *
Mercury	ug/L	0.13	<0.10 *	<0.10 *	<0.10*	<0.10*	<0.10 *	<0.5 *	<0.10 *	<0.5 *	<0.10 *	<0.5 *
MISC												
Total Suspended Solids	mg/L	-/-	100 *	7.0 J*	4.0 J*	21*	180 *	48 *	100 *	64 *	7.0 J*	<10 *
FIELD MEASUREMENTS												
Conductivity	mS	-/-	0.611	0.602	0.770	0.757	0.345	--	0.101	--	0.604	--
Temperature	deg C	-/-	10.7	10.2	11.4	10.9	10.8	--	11.0	--	11.7	--
pH	SU	6.5-8.5/-	6.87	7.12	7.08	7.49	6.91	--	6.73	--	7.20	--
Turbidity	NTU	-/-	20	151	172	10	185	--	134	--	5	--
RAINFALL MEASUREMENTS												
Total - Pre-Sampling	in	-/-	1.89	1.89	2.74	2.74	0.48	0.48	0.51	0.51	0.16	0.16
Total - Rain Event	in	-/-	3.43	3.43	6.88	6.88	1.84	1.84	1.84	1.84	0.14	0.14
Intensity (Ave) - Pre-Sampling	in/hr	-/-	0.02	0.02	0.06	0.06	0.09	0.09	0.09	0.09	0.01	0.01
Intensity (Ave) - Rain Event	in/hr	-/-	0.02	0.02	0.05	0.05	0.04	0.04	0.04	0.04	0.01	0.01
Intensity (Max) - Pre-Sampling	in/hr	-/-	0.25	0.25	0.52	0.52	0.14	0.14	0.14	0.14	0.05	0.05
Intensity (Max) - Rain Event	in/hr	-/-	0.25	0.25	0.52	0.52	0.20	0.20	0.20	0.20	0.05	0.05

TABLE 2F
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON

TABLE 2F

SURFACE WATER SAMPLE RESULTS - CM-9
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:	A1SW0004	A1SW0004	A1SW0005	A1SW0005	A1SW0004	A1SW0005	A1SW0004	A1SW0004	
		Sample Name:	A1SW0004S005	A1SW0004S005 -RWQCB	A1SW0005S004	A1SW0005S004 -RWQCB	A1SW0004S006	A1SW0005S005	A1SW0004S007	A1SW0004S007 -RWQCB	
		Sample Date:	2/27/2010	2/27/2010	2/27/2010	2/27/2010	3/7/2010	3/7/2010	4/5/2010	4/5/2010	
		Sample Type:	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon	Perf Mon	Perf Mon Split	
		Location:	UG (CM-9)	UG (CM-9)	DG (CM-9)	DG (CM-9)	UG (CM-9)	DG (CM-9)	UG (CM-9)	UG (CM-9)	
		Rain Event:	February 27, 2010				March 6, 2010		April 4-5, 2010		
ANALYTE	UNITS	NPDES PERMIT LIMIT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	
DIOXINS											
TCDD TEQ_NoDNQ	ug/L	2.80E-08	--	--	--	--	--	--	1.18E-06	9.21E-07	
INORGANICS											
Cadmium	ug/L	4	0.96 Ja*	1.1 *	0.43 Ja*	0.36 *	0.13 Ja*	0.11 Ja*	0.23 J*	0.19 *	
Copper	ug/L	14	14 *	7.7 *	9.1 *	5.3 *	2.6 *	2.5 *	7.6 *	5.6 *	
Lead	ug/L	5.2	11 *	6.2 *	6.4 *	4 *	<0.20 *	0.50 Ja*	7.3 *	1.1 *	
Mercury	ug/L	0.13	<0.10 *	<0.5 *	<0.10 *	<0.5 *	0.98 *	1.7 *	<0.10 *	<0.5 *	
MISC											
Total Suspended Solids	mg/L	-/-	110 *	131 *	87 *	73 *	8.0 Ja*	13 *	23 *	22 *	
FIELD MEASUREMENTS											
Conductivity	mS	-/-	0.099	--	0.086	--	0.322	0.188	0.387	--	
Temperature	deg C	-/-	NR	--	NR	--	10.4	11.0	15.0	--	
pH	SU	6.5-8.5/-	7.10	--	6.99	--	7.14	7.12	7.73 HFT*	--	
Turbidity	NTU	-/-	163	--	155	--	10	10	38	--	
RAINFALL MEASUREMENTS											
Total - Pre-Sampling	in	-/-	1.11	1.11	1.14	1.14	0.38	0.38	0.86	0.86	
Total - Rain Event	in	-/-	1.52	1.52	1.52	1.52	0.38	0.38	0.86	0.86	
Intensity (Ave) - Pre-Sampling	in/hr	-/-	0.16	0.16	0.16	0.16	0.02	0.02	0.06	0.06	
Intensity (Ave) - Rain Event	in/hr	-/-	0.06	0.06	0.06	0.06	0.02	0.02	0.03	0.03	
Intensity (Max) - Pre-Sampling	in/hr	-/-	0.34	0.34	0.34	0.34	0.13	0.13	0.23	0.23	
Intensity (Max) - Rain Event	in/hr	-/-	0.34	0.34	0.34	0.34	0.13	0.13	0.23	0.23	

TABLE 2G
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON

SURFACE WATER SAMPLE RESULTS - CM-11
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:	A1SW0006	A1SW0007	A1SW0006	A1SW0007	A1SW0006	A1SW0006	A1SW0006	A1SW0006	A1SW0007	A1SW0007	A1SW0006	A1SW0007
		Sample Name:	A1SW0006S001	A1SW0007S001	A1SW0006S002	A1SW0007S002	A1SW0006S003	A1SW0006S003	A1SW0006S004	A1SW0006S004	A1SW0007S003	A1SW0007S003	A1SW0006S005	A1SW0007S004
		Sample Date:	1/20/2010	1/20/2010	2/5/2010	2/5/2010	2/20/2010	2/20/2010	2/27/2010	2/27/2010	2/27/2010	2/27/2010	3/7/2010	3/7/2010
		Sample Type:	Perf Mon	Perf Mon	Perf Mon	Perf Mon	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon
		Location:	UG (CM-11)	DG (CM-11)	UG (CM-11)	DG (CM-11)	UG (CM-11)	UG (CM-11)	UG (CM-11)	UG (CM-11)	DG (CM-11)	DG (CM-11)	UG (CM-11)	DG (CM-11)
		Rain Event:	January 17-22, 2010		February 5-6, 2010		February 19, 2010		February 27, 2010			March 6, 2010		
ANALYTE	UNITS	NPDES PERMIT LIMIT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
DIOXINS														
TCDD TEQ_NoDNQ	ug/L	2.80E-08	ND	1.00E-08	1.50E-08	3.50E-08	3.70E-08	5.60E-07	ND	7.14E-07	3.00E-08	5.85E-07	ND	ND
INORGANICS														
Cadmium	ug/L	4	--	--	--	--	--	--	--	--	--	--	--	--
Copper	ug/L	14	--	--	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	5.2	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	0.13	--	--	--	--	--	--	--	--	--	--	--	--
MISC														
Total Suspended Solids	mg/L	-/-	19 *	9.0 Ja*	15 *	24 *	19 *	12 *	3.0 Ja*	<10 *	2.0 Ja*	<10 *	10 *	6.0 Ja*
FIELD MEASUREMENTS														
Conductivity	mS	-/-	0.120	0.131	0.097	0.097	0.300	--	0.043	--	0.043	--	0.066	0.085
Temperature	deg C	-/-	10.0	9.8	10.8	10.9	11.6	--	NR	--	NR	--	15.2	13.8
pH	SU	6.5-8.5/-	6.51	6.51	6.8	7.03	7.71	--	6.2	--	6.15	--	6.68	6.46
Turbidity	NTU	-/-	21	21	31	51	2	--	7	--	21	--	2	2
RAINFALL MEASUREMENTS														
Total - Pre-Sampling	in	-/-	4.21	4.22	0.56	0.57	0.16	0.16	1.28	1.28	1.29	1.29	0.38	0.38
Total - Rain Event	in	-/-	6.88	6.88	1.84	1.84	0.14	0.14	1.52	1.52	1.52	1.52	0.38	0.38
Intensity (Ave) - Pre-Sampling	in/hr	-/-	0.06	0.06	0.09	0.09	0.01	0.01	0.16	0.16	0.15	0.15	0.02	0.02
Intensity (Ave) - Rain Event	in/hr	-/-	0.05	0.05	0.04	0.04	0.01	0.01	0.06	0.06	0.06	0.06	0.02	0.02
Intensity (Max) - Pre-Sampling	in/hr	-/-	0.52	0.52	0.14	0.14	0.05	0.05	0.34	0.34	0.34	0.34	0.13	0.13
Intensity (Max) - Rain Event	in/hr	-/-	0.52	0.52	0.20	0.20	0.05	0.05	0.34	0.34	0.34	0.34	0.13	0.13

TABLE 2 FOOTNOTES
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON

TABLE 2 FOOTNOTES

FOOTNOTES - SURFACE WATER SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ - The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

B - Method blank contamination. The associated method blank contains the target analyte at a reportable level.

H-1 - Sample analysis performed past the method-specified holding time per client's approval.

J - Estimated result. Result is less than the reporting limit.

Ja - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

RL 1 - Reporting limit raised due to sample matrix effects.

C - Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.

* - Data Not validated by third party

NR - Not recorded (field measurement)

mS - millisiemens

Total - Rain Event: total inches of rainfall during the entire rain event

Total - Pre-Sampling: total inches of rainfall from the beginning of the rain event until the sample is collected

Intensity (Ave) - Pre-Sampling: cumulative rainfall from the beginning of the rain event until the sample is collected, divided by the number of hours from the beginning of the rain event until the sample is collected, including non-rainy hours

Intensity (Ave) - Rain Event: total inches of rainfall during the entire rain event, divided by the total number of hours in the rain event, including non-rainy hours

Intensity (Max) - Pre-Sampling: maximum rainfall in a 1-hour period from the beginning of the rain event until the sample is collected

Intensity (Max) - Rain Event: maximum rainfall in a 1-hour period in the entire rain event

TABLE 3A
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON

TABLE 3A

OUTFALL 008 NPDES SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:	OUTFALL 008	OUTFALL 008	OUTFALL 008	OUTFALL 008	OUTFALL 008
		Sample Name:	Outfall 008	Outfall 008	Outfall 008	Outfall 008	Outfall 008
		Sample Date:	1/18/2010	2/5/2010	2/27/2010	3/7/2010	3/25/2010
		Sample Type:	NPDES	NPDES	NPDES	NPDES	NPDES
		Location:	Outfall	Outfall	Outfall	Outfall	Outfall
ANALYTE	UNITS	NPDES VALUES	RESULT	RESULT	RESULT	RESULT	RESULT
DIOXINS							
TCDD TEQ_NoDNQ	ug/L	2.80E-08	2.35E-06	1.20E-08	1.60E-08	ND	ND
INORGANICS							
Copper	ug/L	14	6.8 J (*III)	14 J (*III)	9.1 J (*III)	1.3 Ja* (DNQ)	6.0 *
Lead	ug/L	5.2	7.9	10	7	0.38 Ja*(DNQ)	1.5 *
MISCELLANEOUS							
Total Suspended Solids	mg/L	-/-	780 (H-1)	250	100	--	--
FIELD MEASUREMENTS							
Conductivity	mS	-/-	--	--	--	--	--
Temperature	deg C	-/-	56	50	53.4	55	55
pH	SU	6.5-8.5/-	7.5	7.5	7.2	8.0	6.9
Turbidity	NTU	-/-	--	--	--	--	--

TABLE 3B
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON

TABLE 3B

OUTFALL 009 NPDES SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

		Object Name:	OUTFALL 009	OUTFALL 009	OUTFALL 009	OUTFALL 009	OUTFALL 009	OUTFALL 009	OUTFALL 009
		Sample Name:	Outfall 009	Outfall 009	Outfall 009	Outfall 009	Outfall 009	Outfall 009	Outfall 009
		Sample Date:	10/14/2009	12/7/2009	1/19/2010	2/5/2010	2/20/2010	2/27/2010	3/6/2010
		Sample Type:	NPDES	NPDES	NPDES	NPDES	NPDES	NPDES	NPDES
		Location:	Outfall	Outfall	Outfall	Outfall	Outfall	Outfall	Outfall
ANALYTE	UNITS	NPDES VALUES	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
DIOXINS									
TCDD TEQ_NoDNQ	ug/L	2.80E-08	1.60E-06	1.10E-07	3.43E-06	7.21E-07	1.40E-08	1.09E-06	2.90E-08
INORGANICS									
Cadmium	ug/L	4	<0.10 *	0.11 J	0.15 J(DNQ)	<0.10 *	<0.10 *	0.13 J (DNQ)	<0.10 *
Copper	ug/L	14	5.3 *	5.7 J	6.4 J(*III)	4.1 *	2.9 *	6.8 J (*III)	3.2 *
Lead	ug/L	5.2	2.2 *	5.7	9.3	3.5 *	<0.20 *	8.9	1.1 *
Mercury	ug/L	0.13	<0.027 UJ	0.027 J	ND <0.10	<0.10 U	<0.10 U	<0.10 U	<0.10 U
MISC									
Total Suspended Solids	mg/L	-/-	--	--	--	21	--	--	--
FIELD MEASUREMENTS									
Conductivity	mS	-/-	--	--	--	--	--	--	--
Temperature	deg C	-/-	60	47	50	50	47	51	51
pH	SU	6.5-8.5/-	6.7	6.8	7.1	7.2	7.3	7.0	7.0
Turbidity	NTU	-/-	--	--	--	--	--	--	--

TABLE 3 FOOTNOTES
ISRA PERFORMANCE MONITORING PROGRAM - 2009/2010 RAINY SEASON

TABLE 3 FOOTNOTES

FOOTNOTES - SURFACE WATER SAMPLE RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Notes:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ - The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

B - Method blank contamination. The associated method blank contains the target analyte at a reportable level.

H-1 - Sample analysis performed past the method-specified holding time per client's approval.

J - Estimated result. Result is less than the reporting limit.

Ja - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

RL 1 - Reporting limit raised due to sample matrix effects.

C - Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.

* - Data Not validated by third party

NR - Not recorded (field measurement)

mS - millisiemens

Total - Rain Event: total inches of rainfall during the entire rain event

Total - Pre-Sampling: total inches of rainfall from the beginning of the rain event until the sample is collected

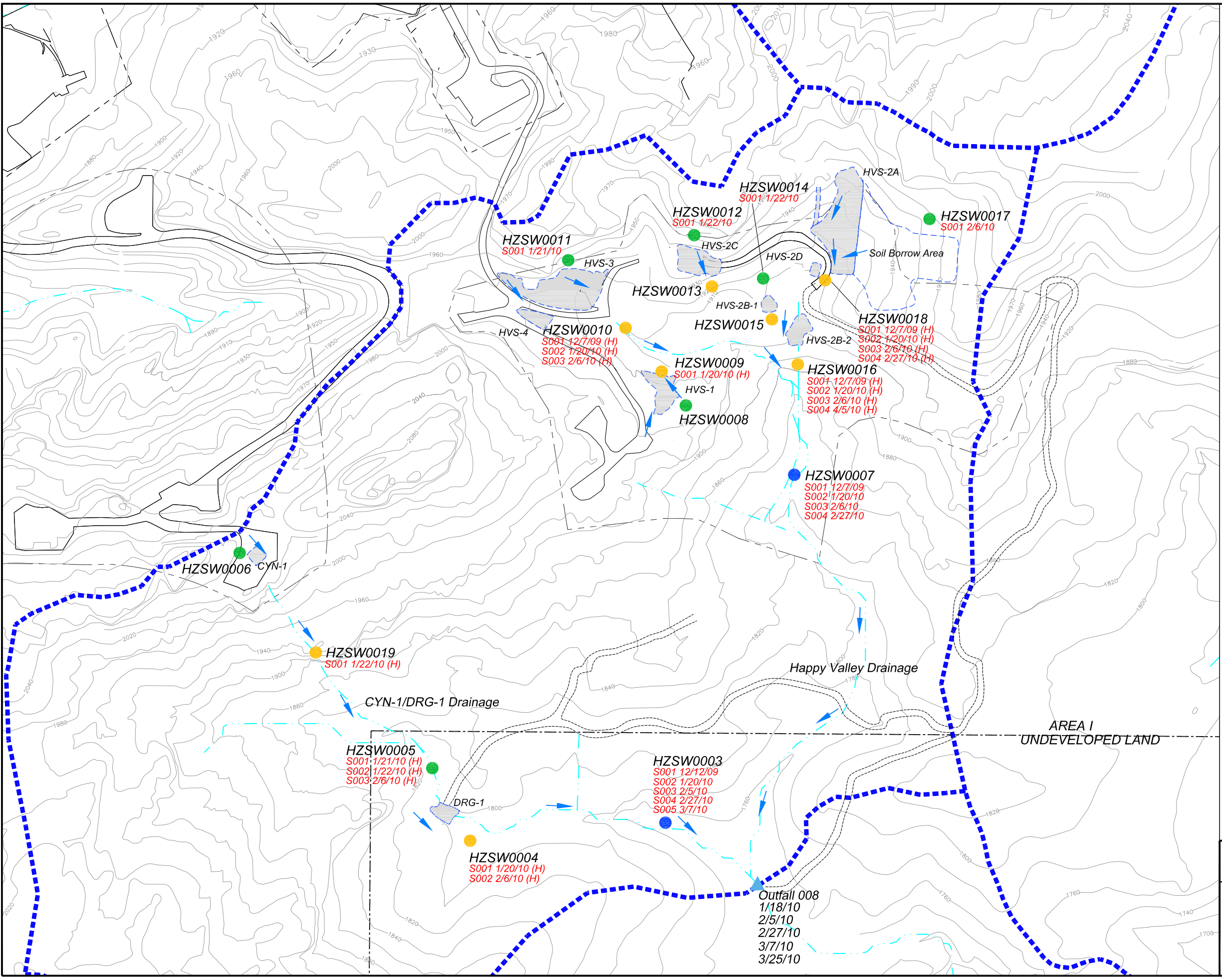
Intensity (Ave) - Pre-Sampling: cumulative rainfall from the beginning of the rain event until the sample is collected, divided by the number of hours from the beginning of the rain event until the sample is collected, including non-rainy hours

Intensity (Ave) - Rain Event: total inches of rainfall during the entire rain event, divided by the total number of hours in the rain event, including non-rainy hours

Intensity (Max) - Pre-Sampling: maximum rainfall in a 1-hour period from the beginning of the rain event until the sample is collected

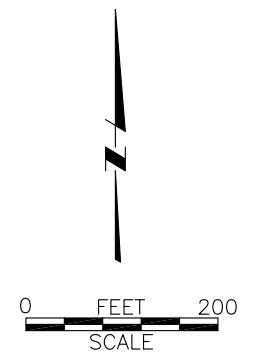
Intensity (Max) - Rain Event: maximum rainfall in a 1-hour period in the entire rain event

FIGURES



- ### Legend
- Administrative Area Boundary
 - RFI Site Boundary
 - Approximate Excavation Area
 - Surface Water Divide
 - Surface Water Drainage or Non-jurisdictional Pathway
 - Topographic Contour
 - Fire Road
 - Paved Road
 - Surface Water Flow Direction
 - NPDES Outfall
 - Upgradient Performance Monitoring Sampling Location
 - Downgradient Performance Monitoring Sampling Location
 - Downgradient Secondary Performance Monitoring Sampling Location

Note: Sample collection dates listed next to each location, (H) means sample is on hold. See Table 1 for analytical suite.

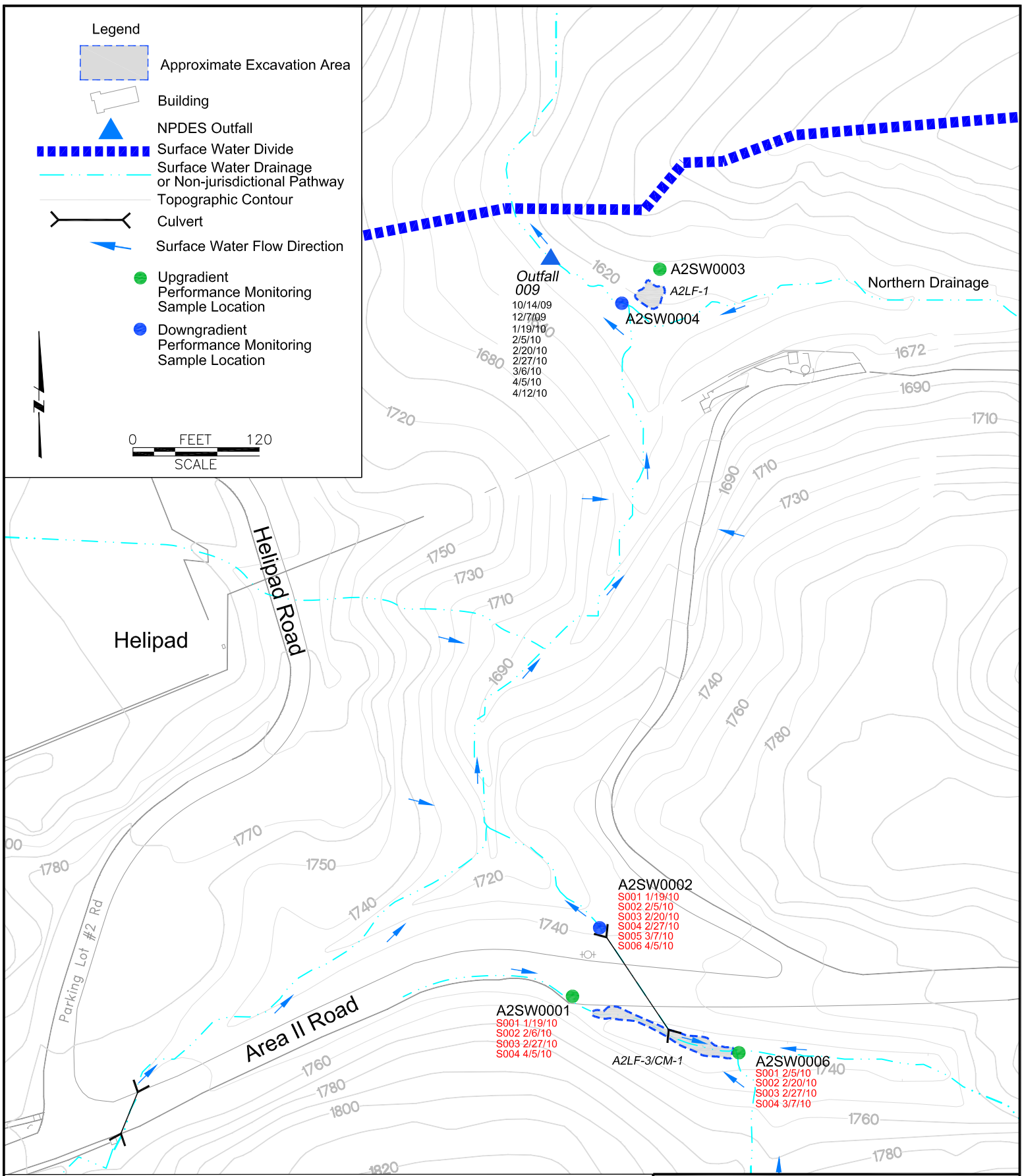


MWH
 SANTA SUSANA FIELD LABORATORY
 VENTURA COUNTY, CALIFORNIA

**OUTFALL 008
 ISRA PERFORMANCE MONITORING
 SAMPLING LOCATIONS**

FIGURE 1

FILE: CADMLUEBE\BOEING\SANTA SUSANA SWPP\A2LF EXCAVATION AREAS 9.11.09



Note: Surface water flows through underground culverts when crossing roadways.

Sample collection dates listed next to each location, (H) means sample is on hold. See Table 1 for analytical suite.

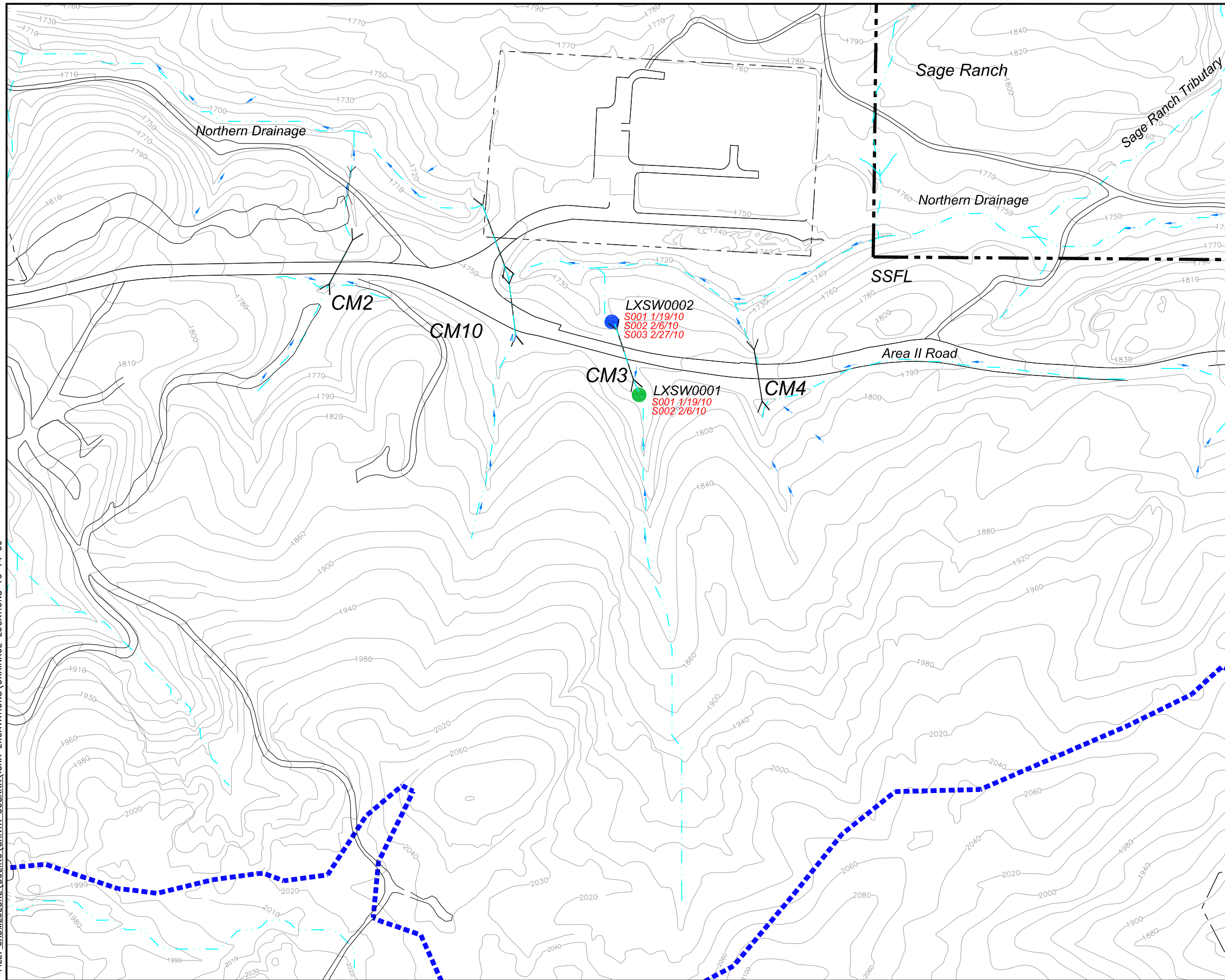
A2SW0001 is located immediately downgradient of the outlet of a culvert east of Helipad Road.



SANTA SUSANA FIELD LABORATORY
 VENTURA COUNTY, CALIFORNIA
 OUTFALL 009 - A2LF-1, A2LF-3
 ISRA PERFORMANCE MONITORING
 SAMPLE LOCATIONS

FIGURE 2

FILE: CAD\MUEBEK\BOEING\SANTA_SUSANA\ISRA_EXCAVATIONS\DRAINAGE_LOCATIONS_10_14_09

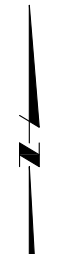


Legend

- SSFL Property Boundary
- RFI Site Boundary
- Surface Water Drainage or Non-jurisdictional Pathway
- Surface Water Divide
- Topographic Contour
- Unpaved Roads
- Culvert
- Surface Water Flow Direction
- Excavation
- Downgradient Performance Monitoring Sample Location
- Upgradient Performance Monitoring Sample Location

Note: Surface water flows through underground culverts when crossing roadways.

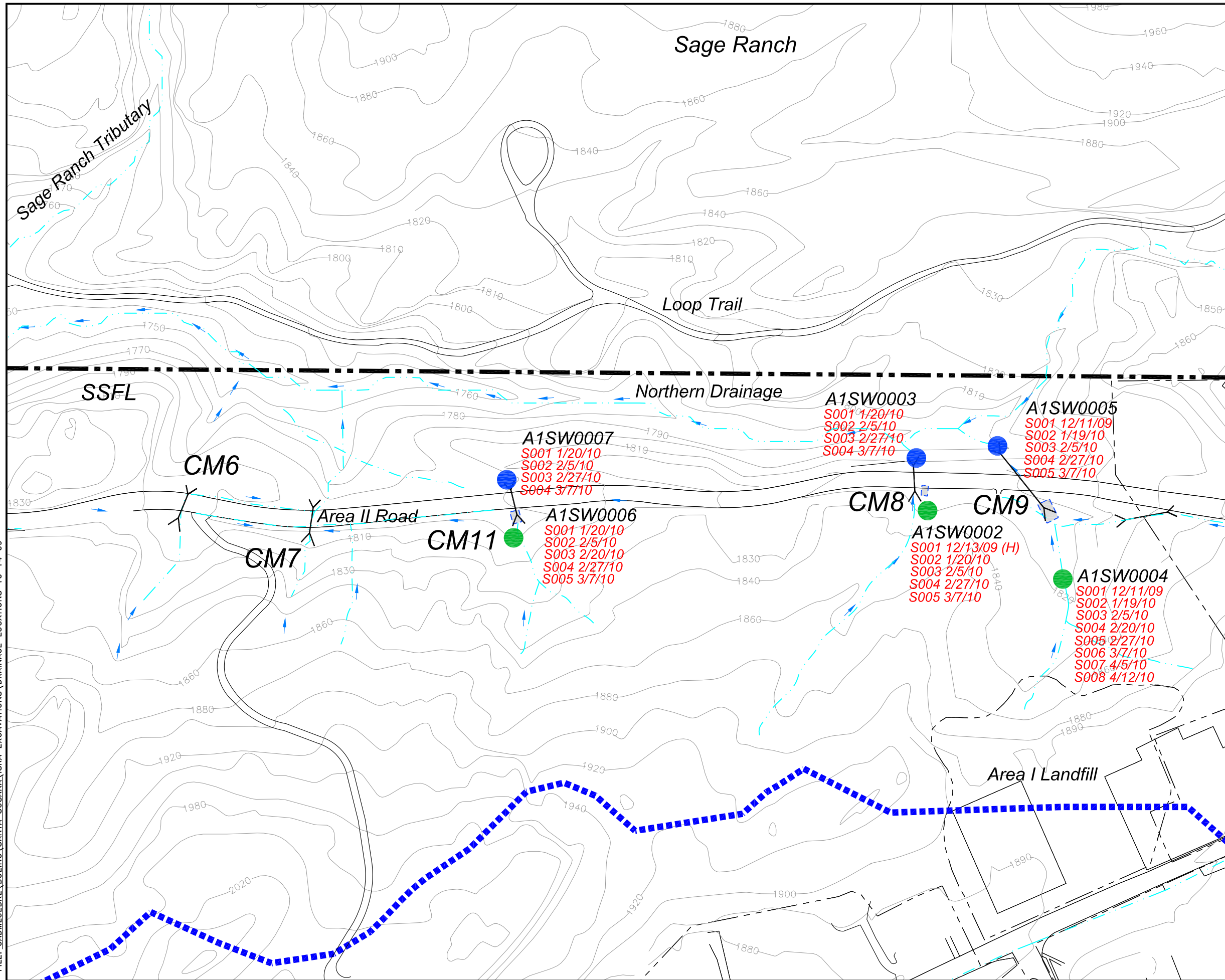
Sample collection dates listed next to each location, (H) means sample is on hold. See Table 1 for analytical suite.



SANTA SUSANA FIELD LABORATORY
VENTURA COUNTY, CALIFORNIA

OUTFALL 009 - CM-3
ISRA PERFORMANCE MONITORING
SAMPLE LOCATIONS

FIGURE 3



Legend

- SSFL Property Boundary
- Surface Water Divide
- RFI Site Boundary
- Surface Water Drainage or Non-jurisdictional Pathway
- Topographic Contour
- Culvert
- Surface Water Flow Direction
- Excavation
- Downgradient Performance Monitoring Sample Location
- Upgradient Performance Monitoring Sample Location

Note: Surface water flows through underground culverts when crossing roadways.

Sample collection dates listed next to each location, (H) means sample is on hold. See Table 1 for analytical suite.



SANTA SUSANA FIELD LABORATORY
VENTURA COUNTY, CALIFORNIA

OUTFALL 009 - CM-8, CM-9, CM-11
ISRA PERFORMANCE MONITORING
SAMPLE LOCATIONS

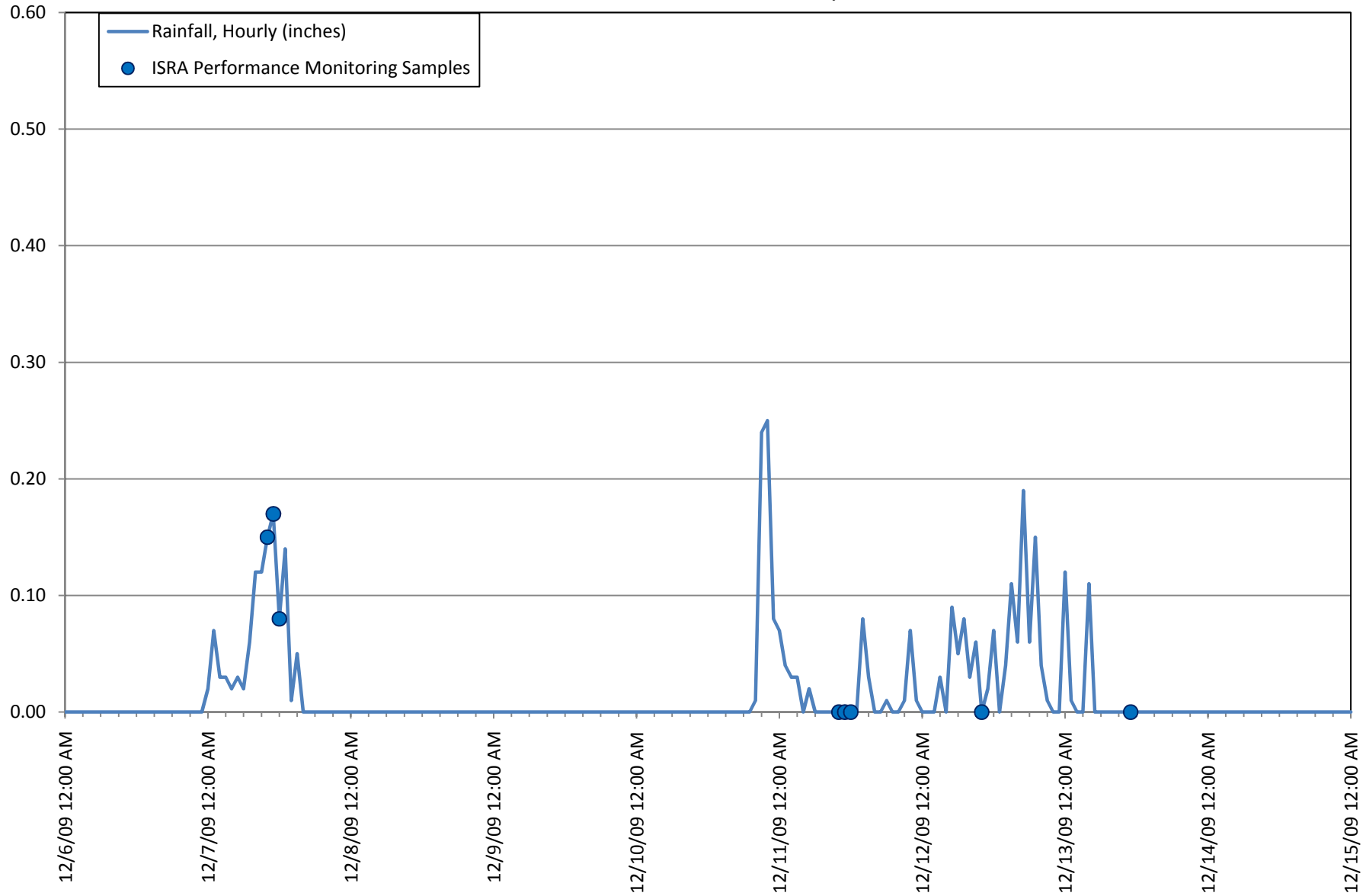
FIGURE 4

ATTACHMENT 1

**RAIN EVENT RAINFALL AND
SAMPLING GRAPHS**

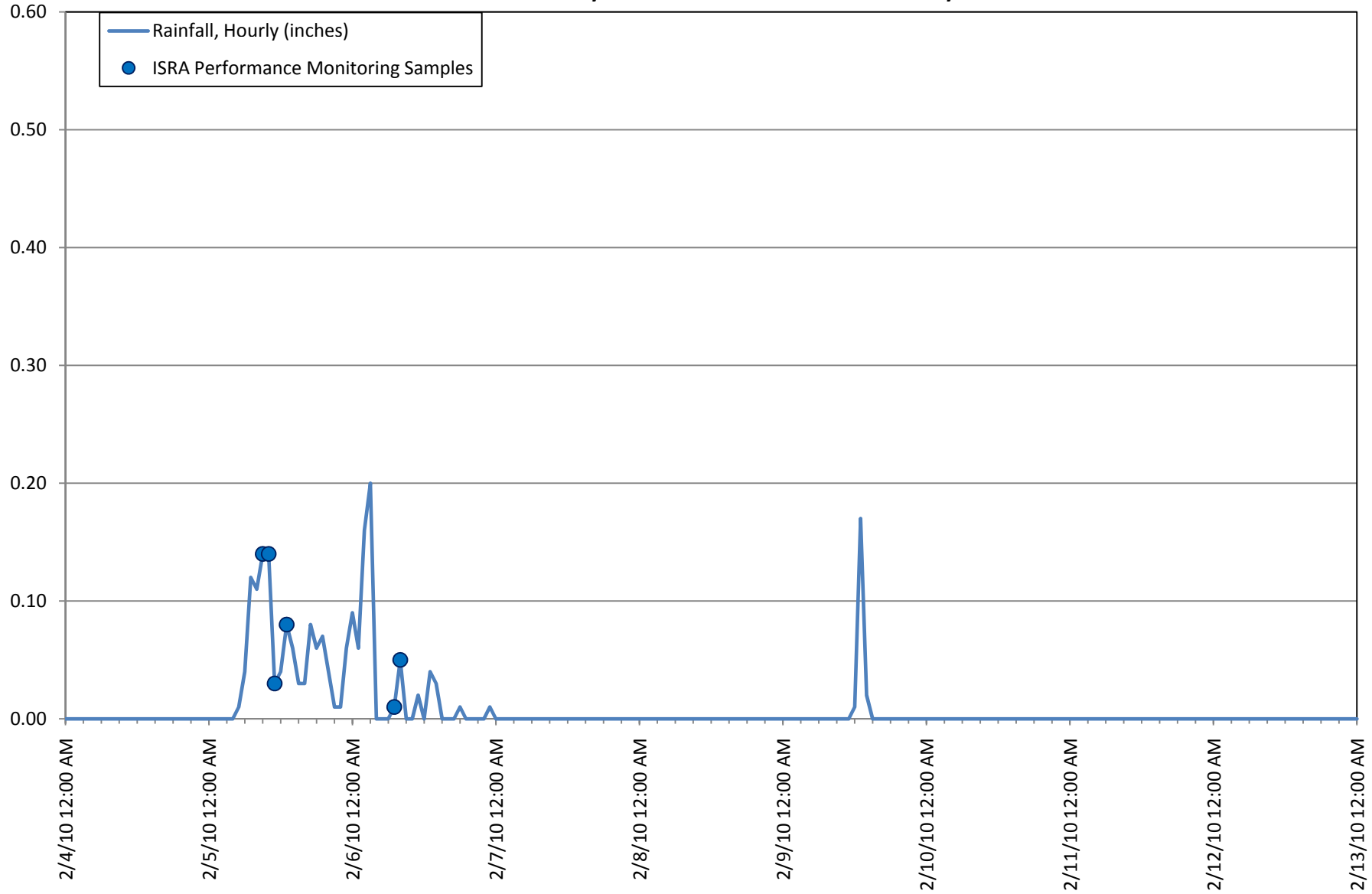
Rain Event Rainfall and Sampling Graphs

SSFL Rainfall (Area IV Rain Gauge)
Rain Event December 7-13, 2009



Rain Event Rainfall and Sampling Graphs

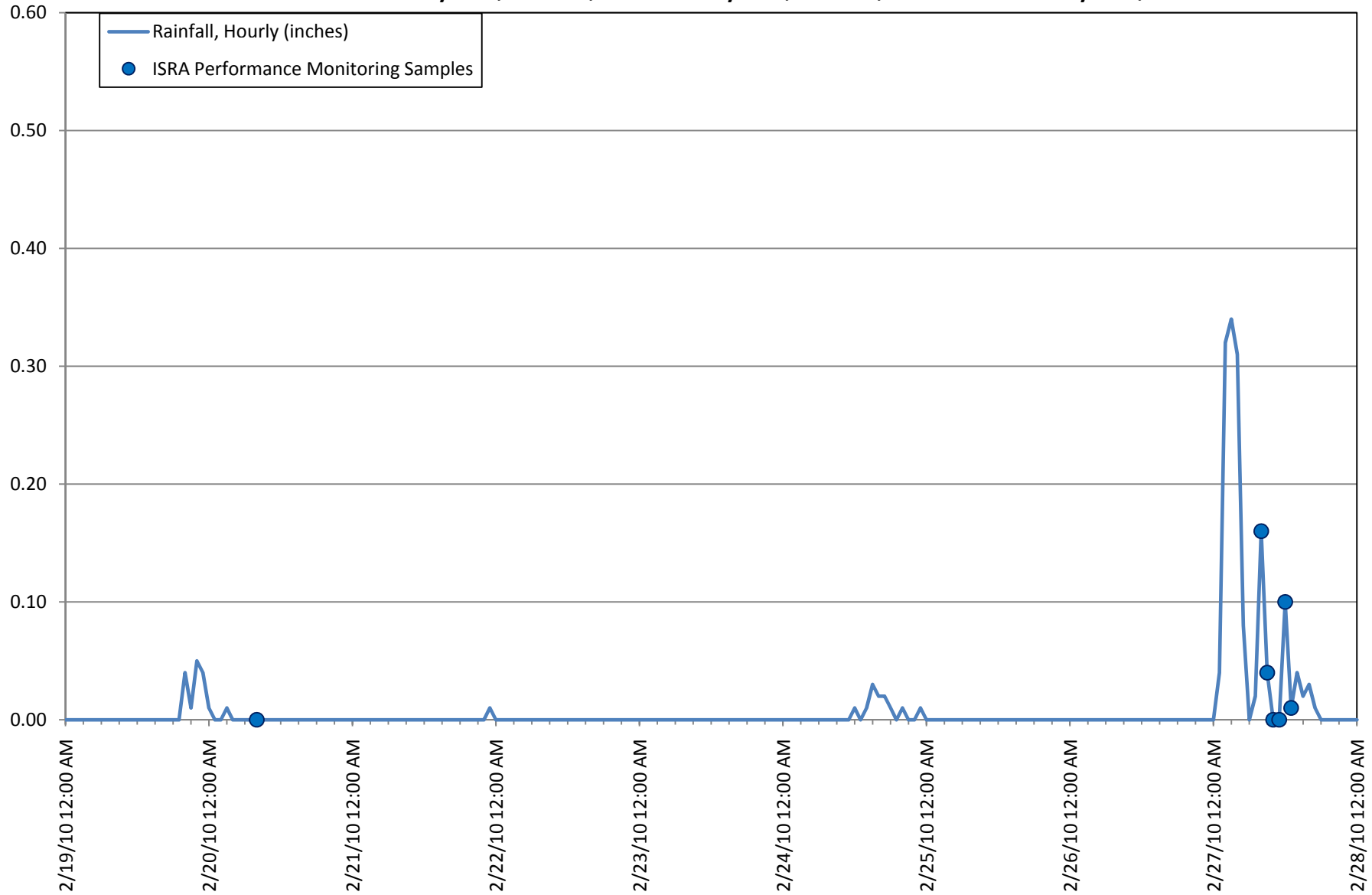
SSFL Rainfall (Area IV Rain Gauge)
Rain Events February 5-6, 2010 and February 9, 2010



Rain Event Rainfall and Sampling Graphs

SSFL Rainfall (Area IV Rain Gauge)

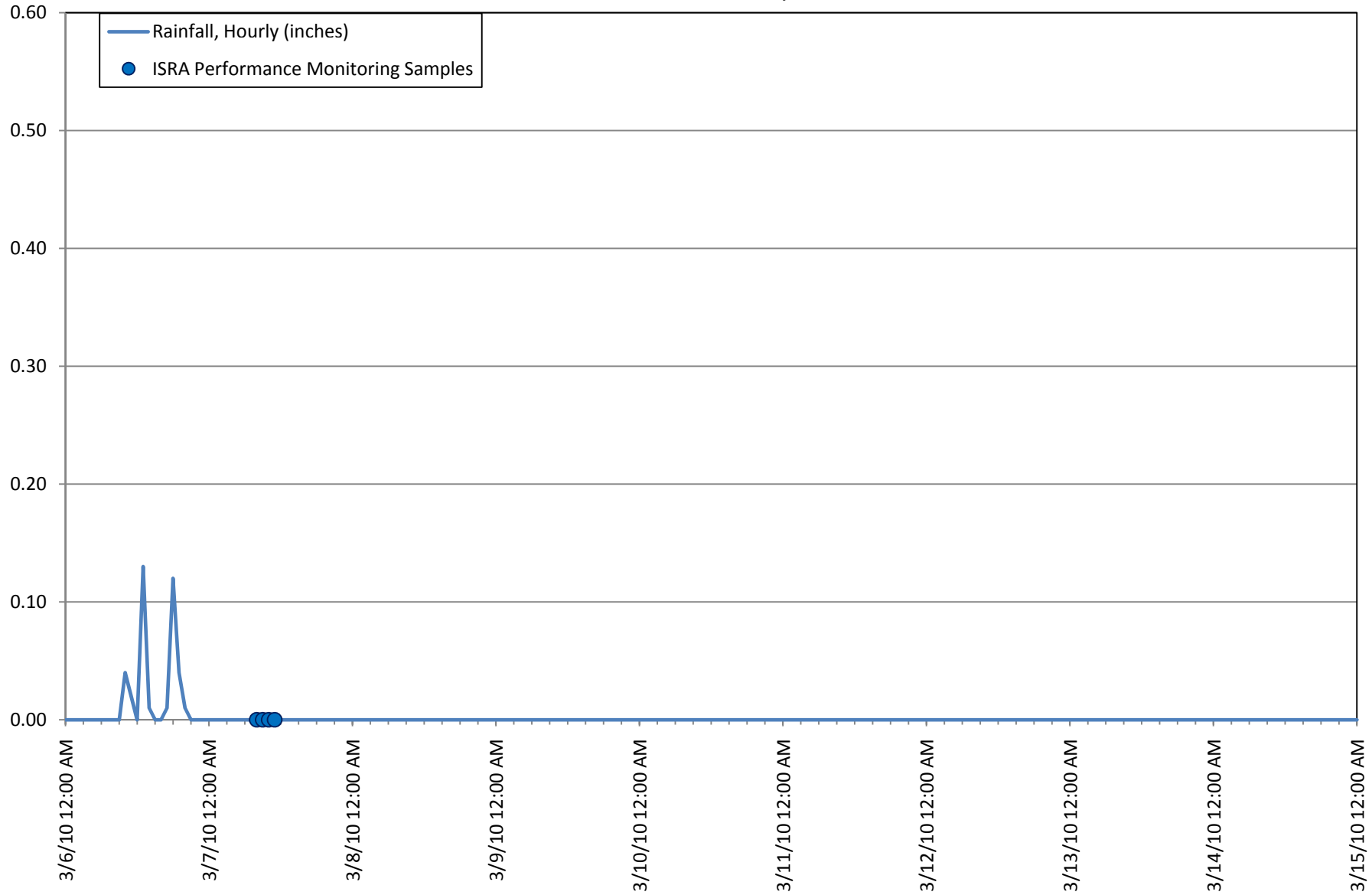
Rain Events February 19, 2010, February 24, 2010, and February 27, 2010



Rain Event Rainfall and Sampling Graphs

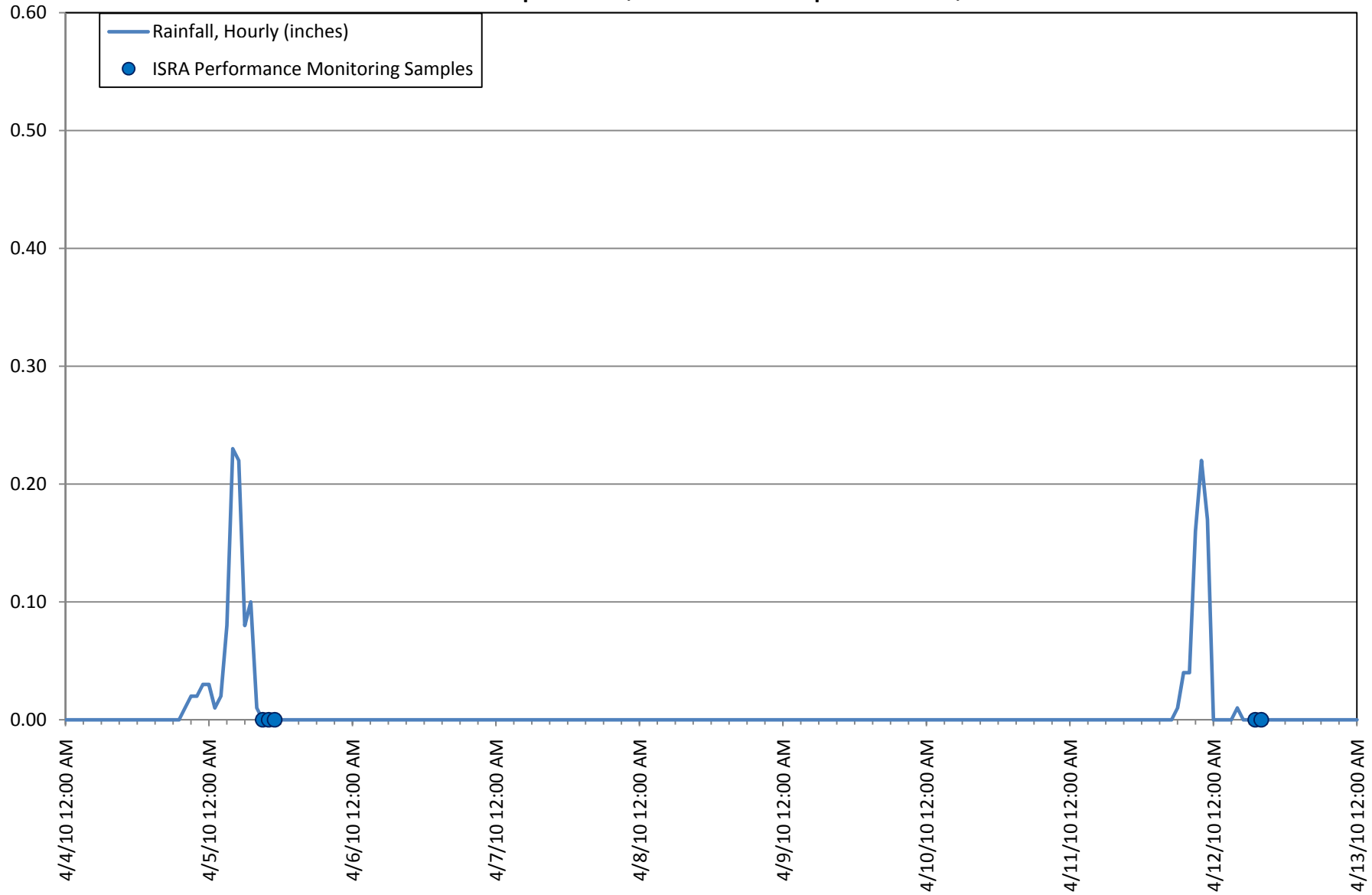
SSFL Rainfall (Area IV Rain Gauge)

Rain Event March 6, 2010



Rain Event Rainfall and Sampling Graphs

SSFL Rainfall (Area IV Rain Gauge)
Rain Events April 4-5, 2010 and April 11-12, 2010



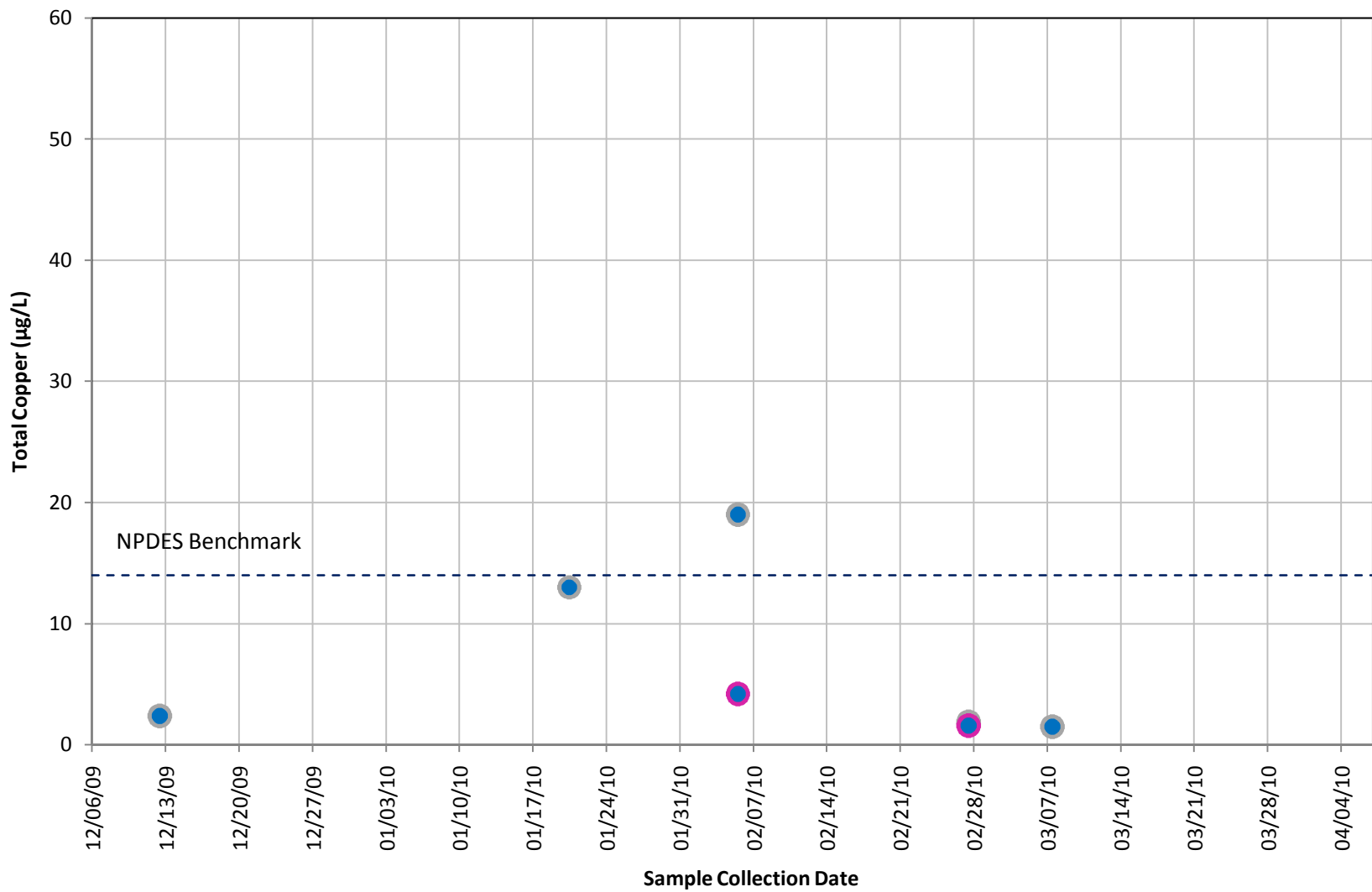
ATTACHMENT 2

**PERFORMANCE MONITORING
RESULTS AS TIME SERIES**

ISRA Performance Monitoring Results

DRG/CYN - Copper

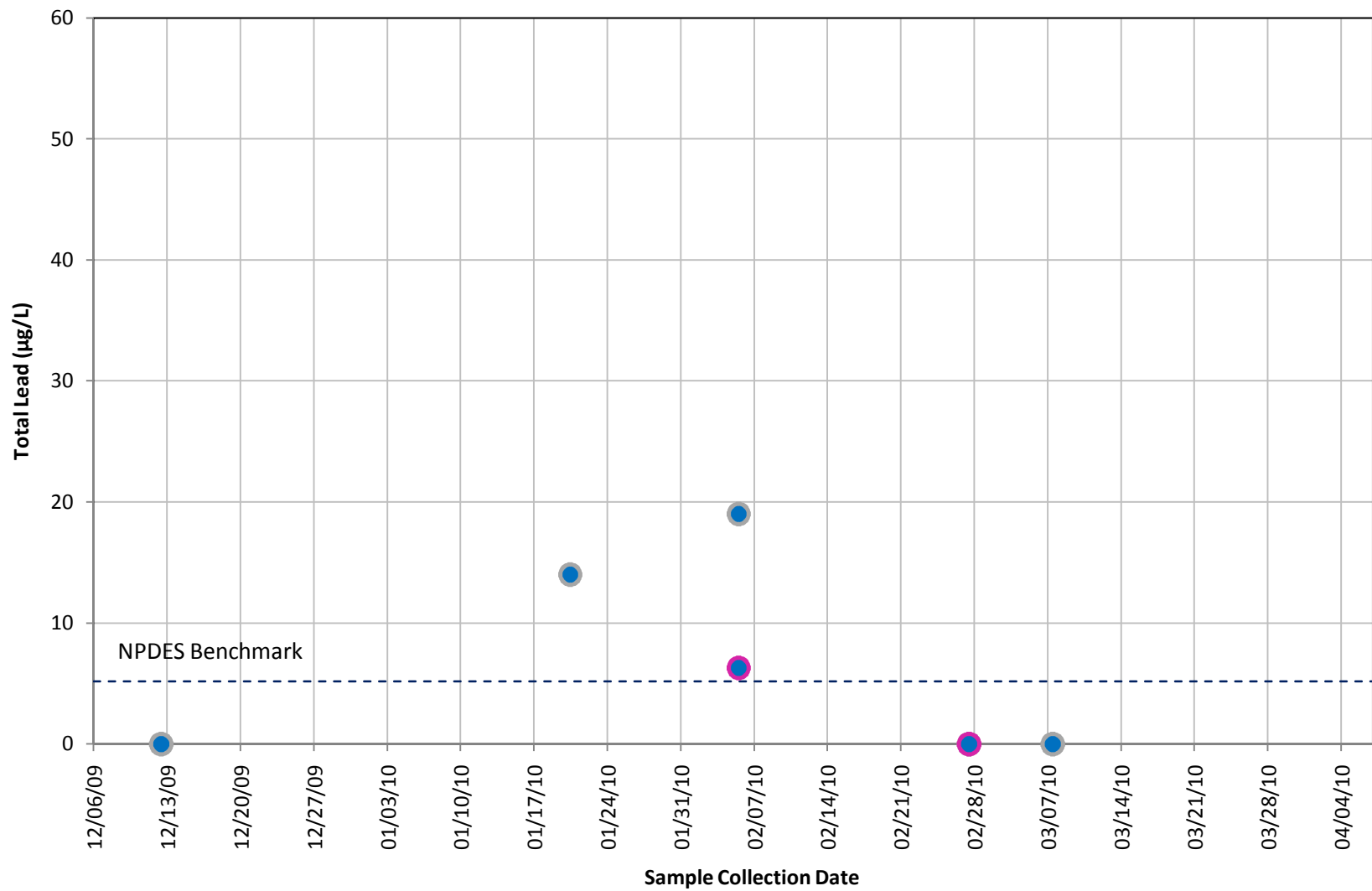
● Downgradient (HZSW0003) ● RWQCB Split DG (HZSW0003)



ISRA Performance Monitoring Results

DRG/CYN - Lead

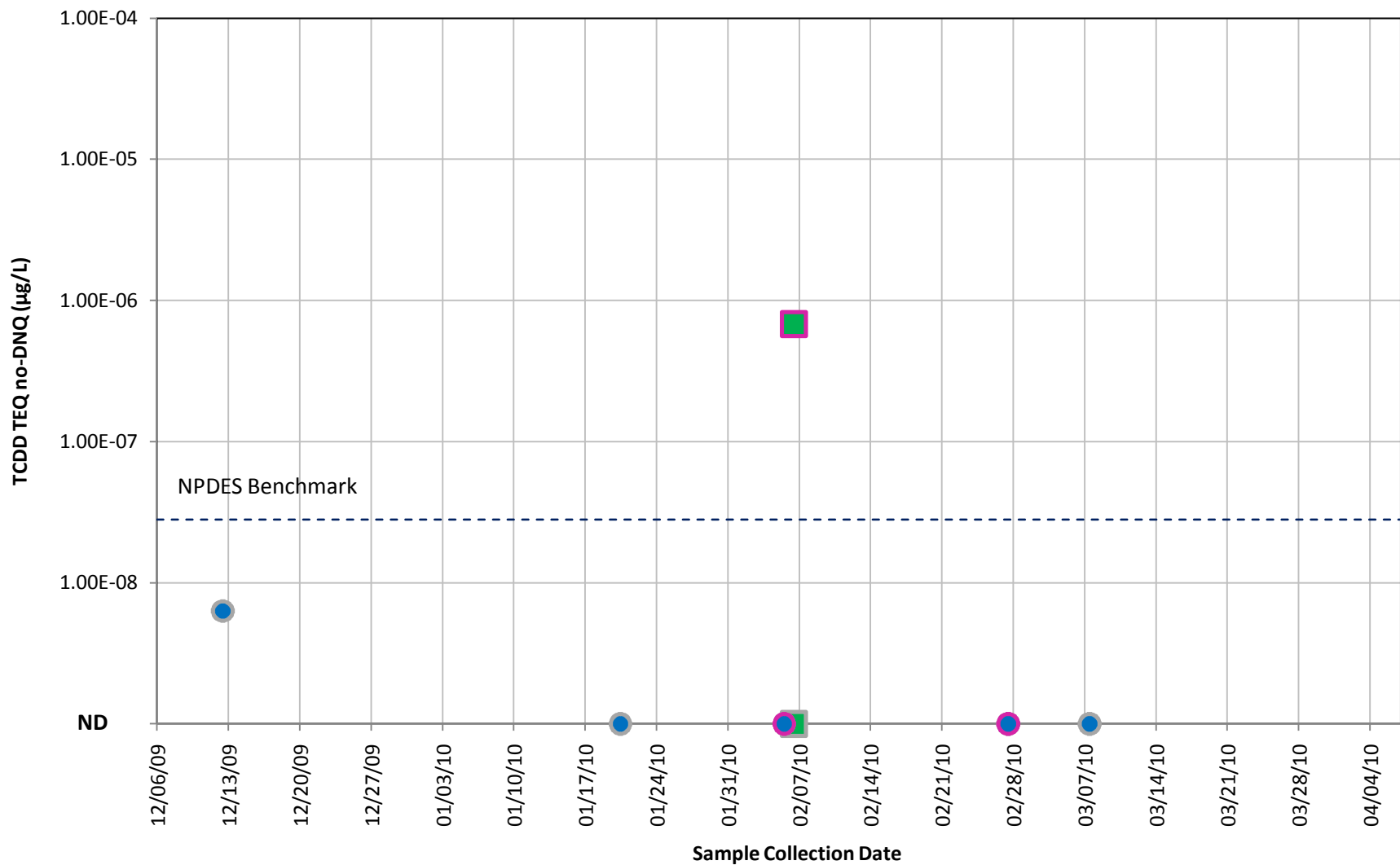
● Downgradient (HZSW0003) ● RWQCB Split DG (HZSW0003)



ISRA Performance Monitoring Results

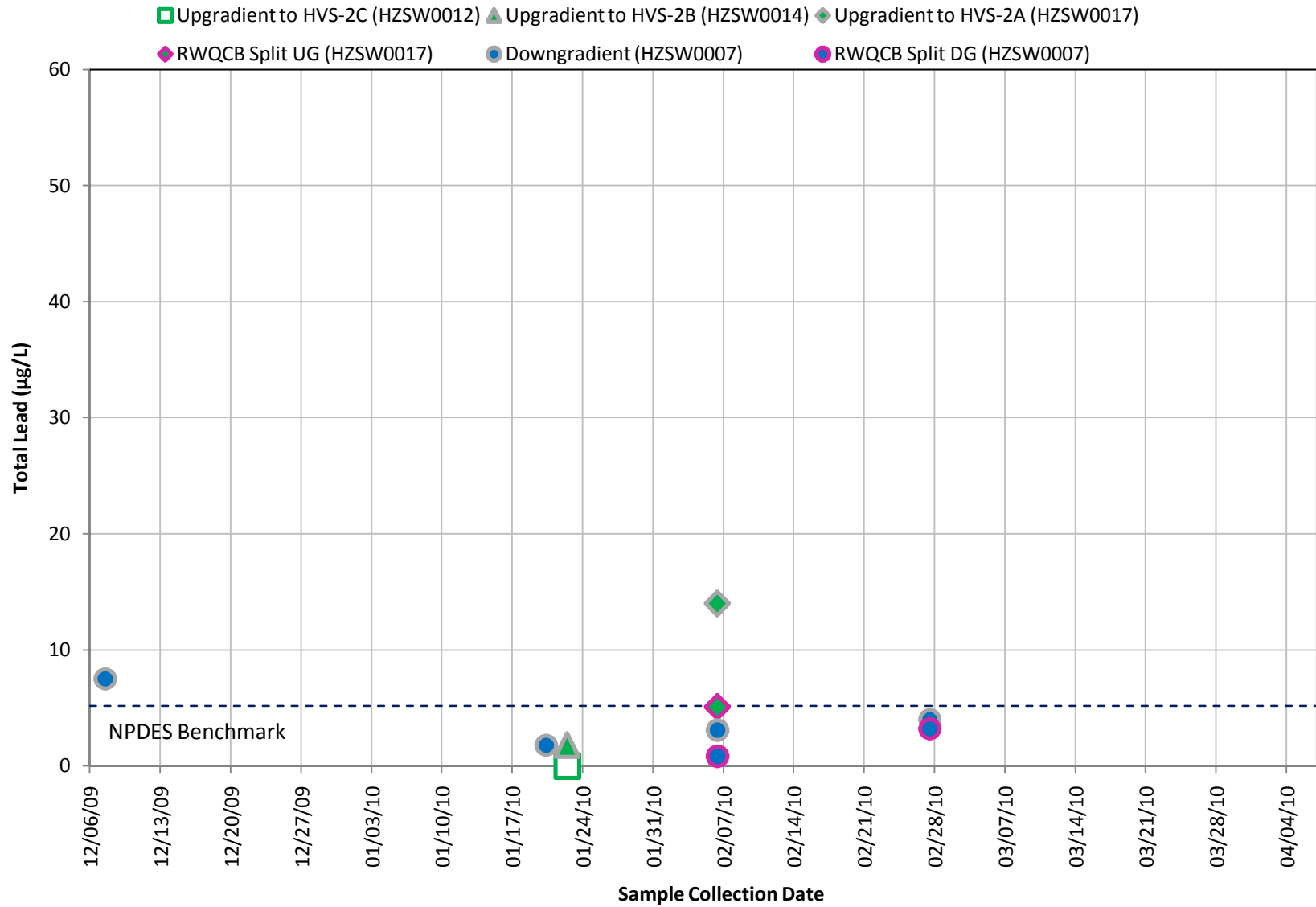
DRG/CYN - Dioxins

■ Upgradient (HZSW0005) ■ RWQCB Split UG (HZSW0005) ● Downgradient (HZSW0003) ● RWQCB Split DG (HZSW0003)



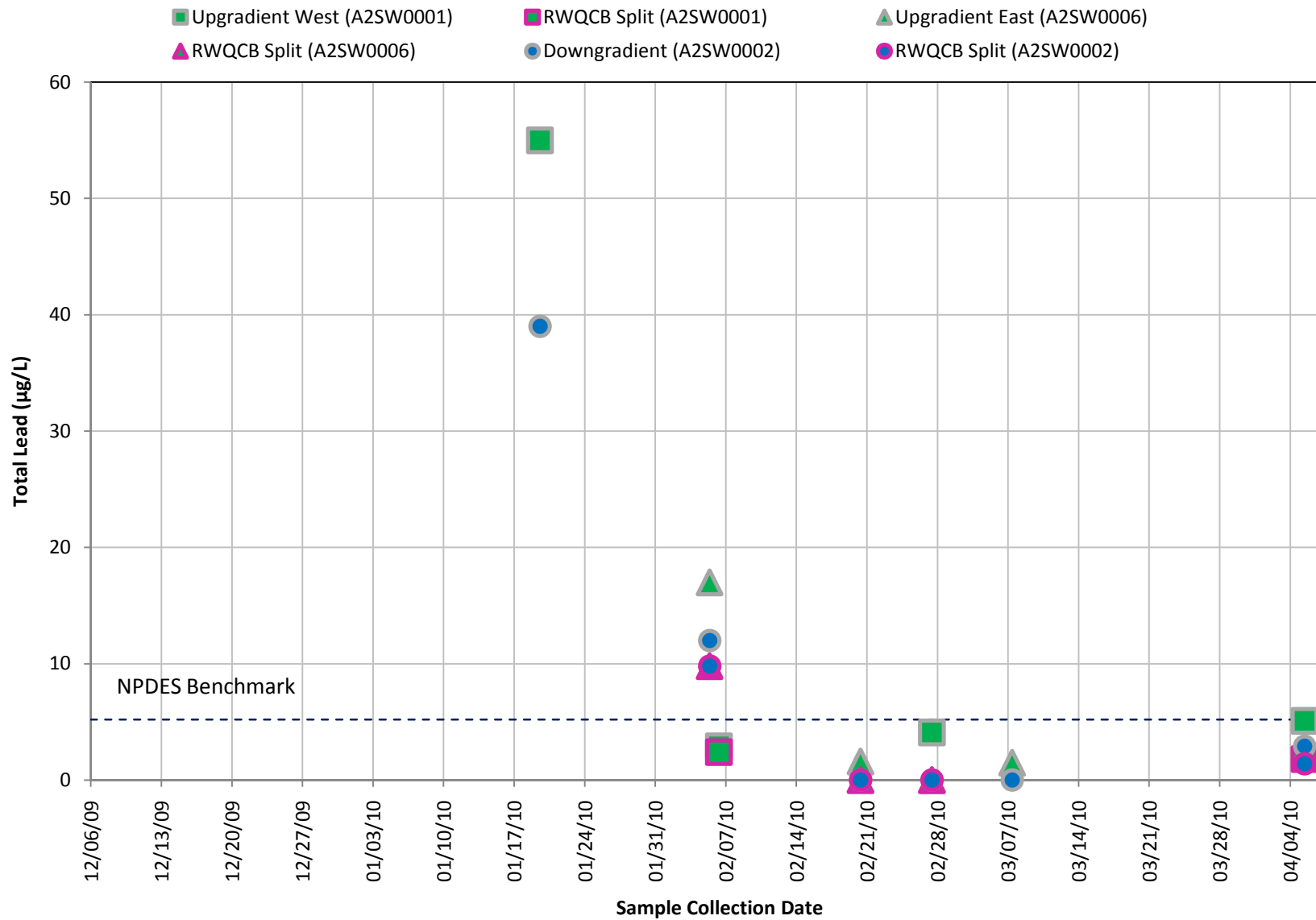
ISRA Performance Monitoring Results

HVS - Lead



ISRA Performance Monitoring Results

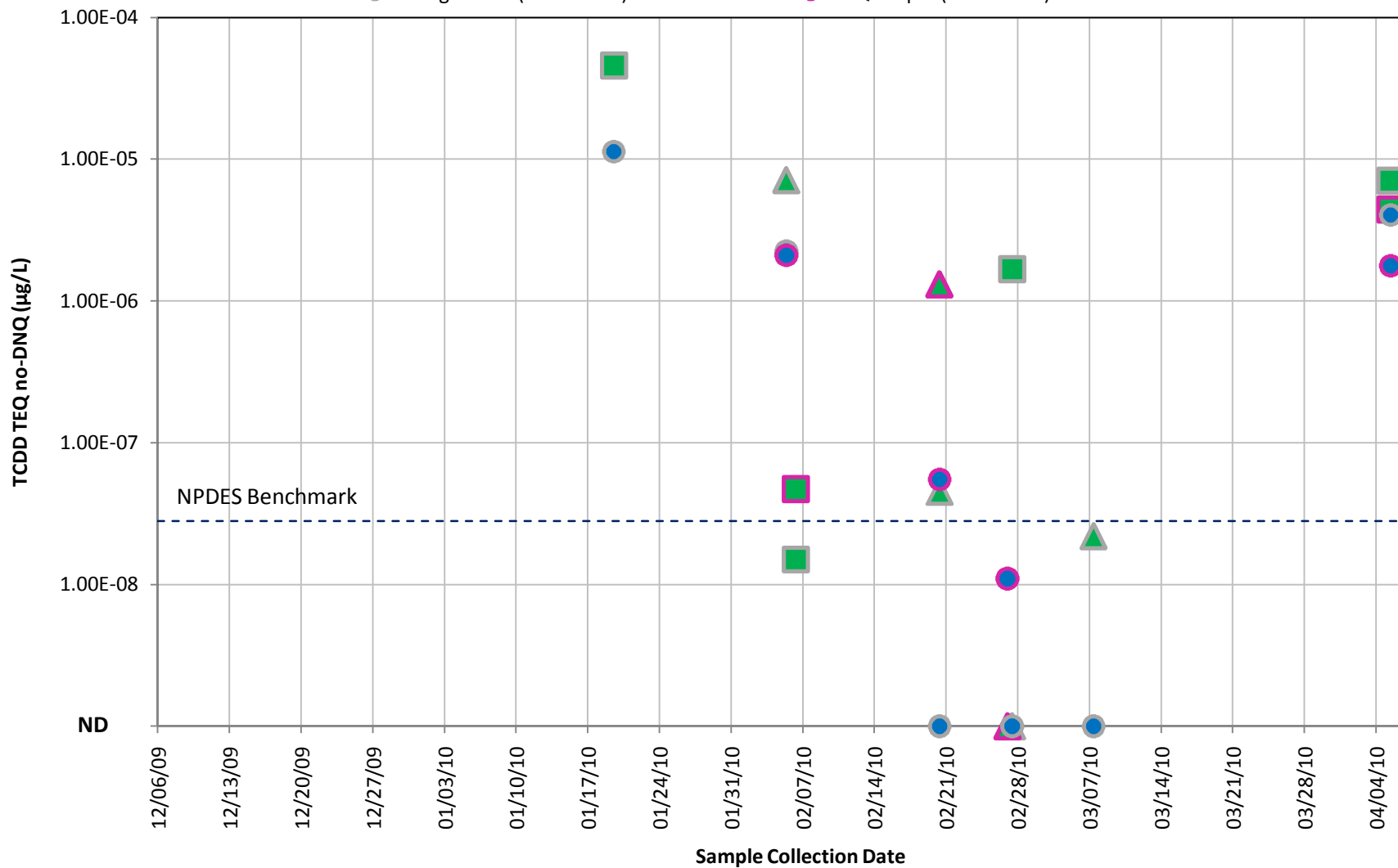
A2LF-3 - Lead



ISRA Performance Monitoring Results

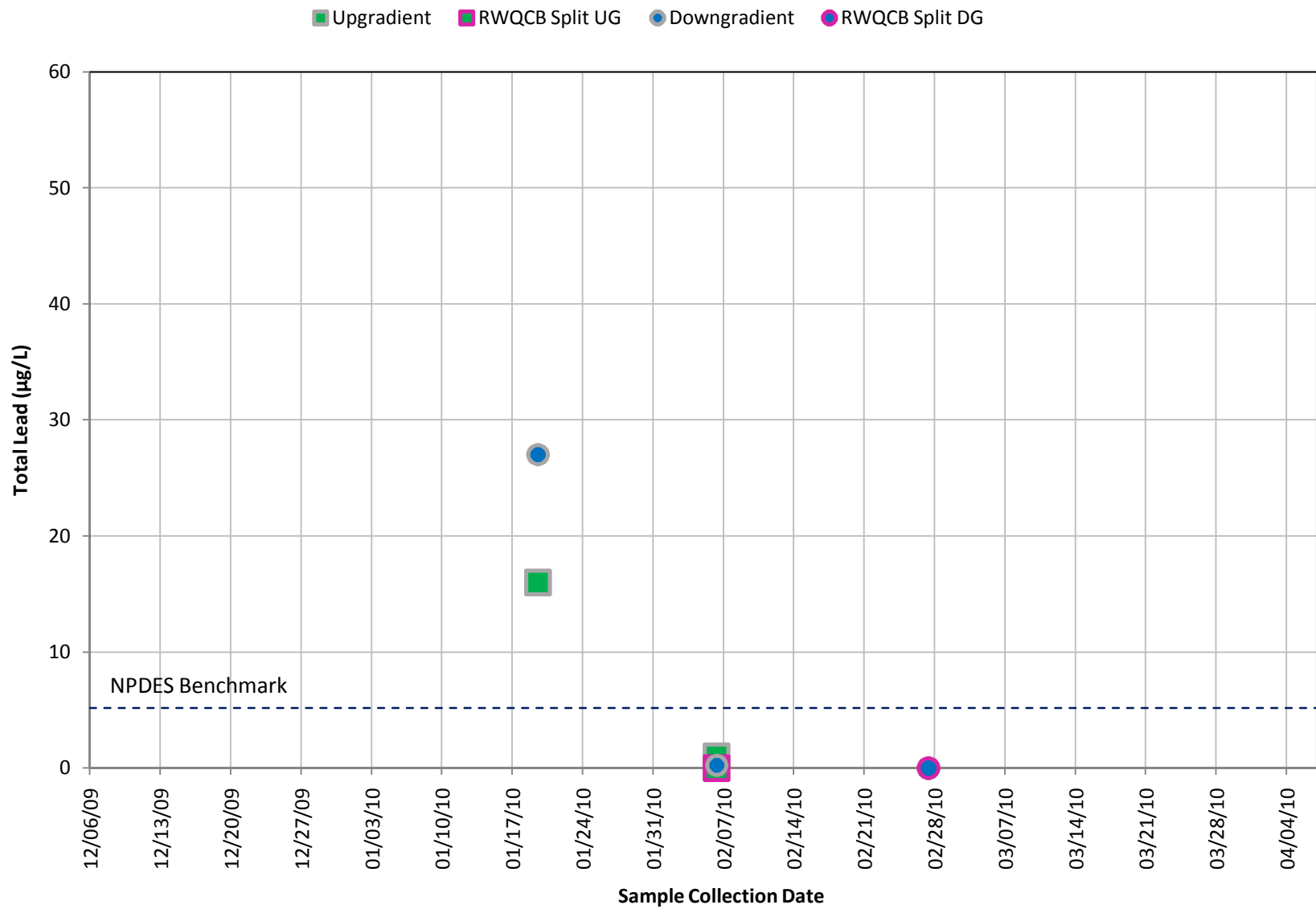
A2LF-3 - Dioxins

- Upgradient West (A2SW0001)
- ▲ Upgradient East (A2SW0006)
- Downgradient (A2SW0002)
- RWQCB Split (A2SW0001)
- ▲ RWQCB Split (A2SW0006)
- RWQCB Split (A2SW0002)



ISRA Performance Monitoring Results

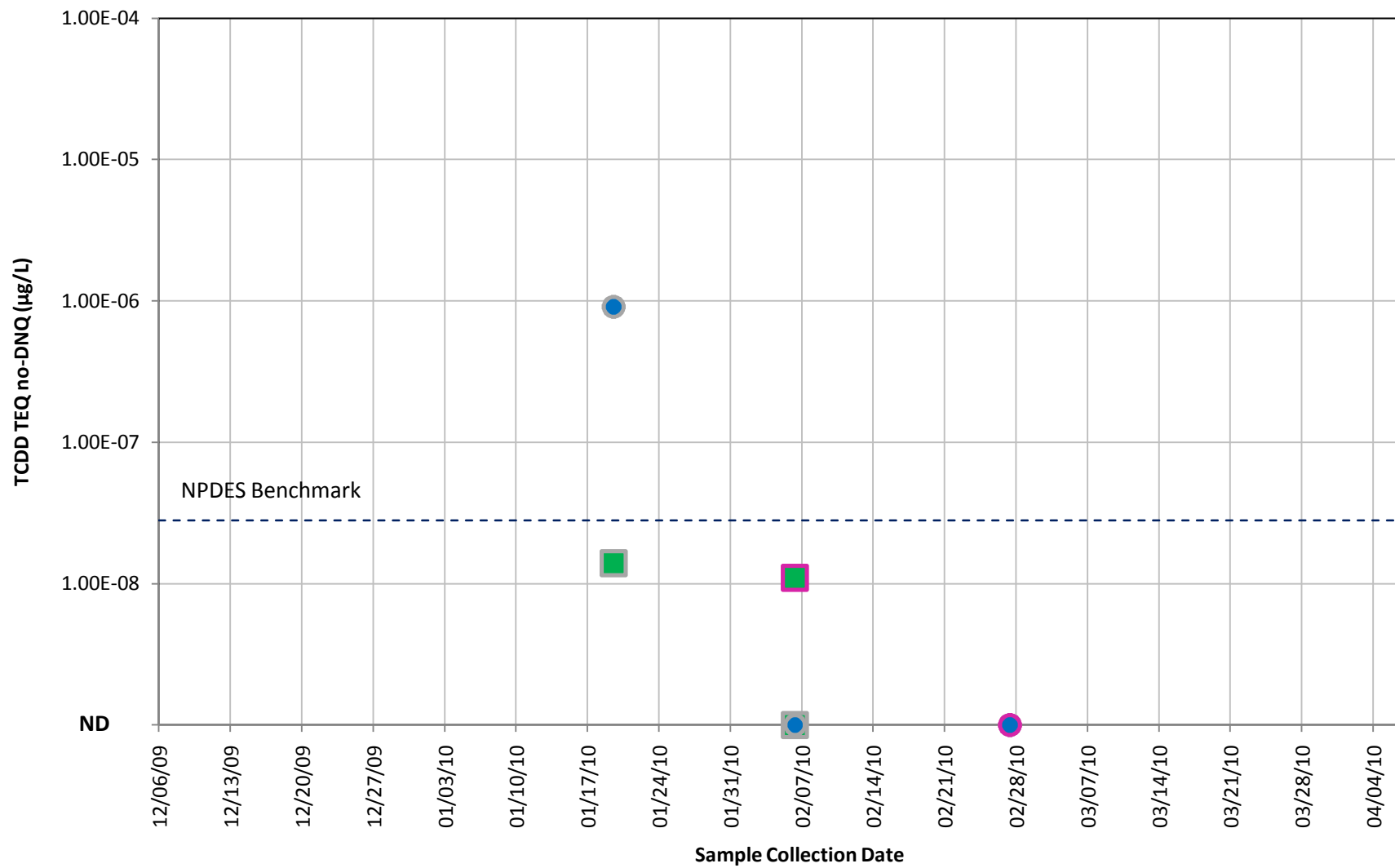
CM-3 - Lead



ISRA Performance Monitoring Results

CM-3 - Dioxins

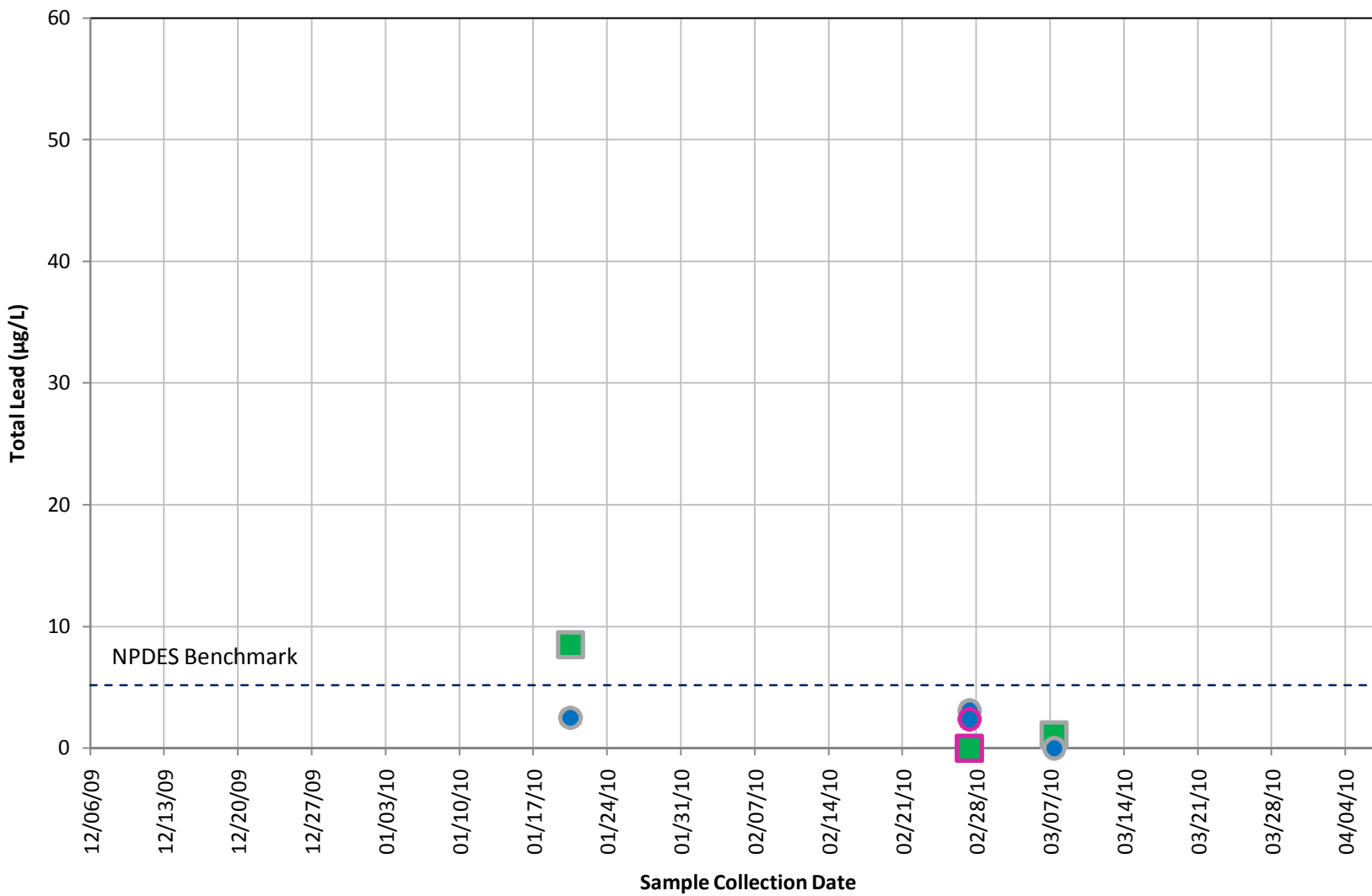
■ Upgradient ■ RWQCB Split UG ● Downgradient ● RWQCB Split DG



ISRA Performance Monitoring Results

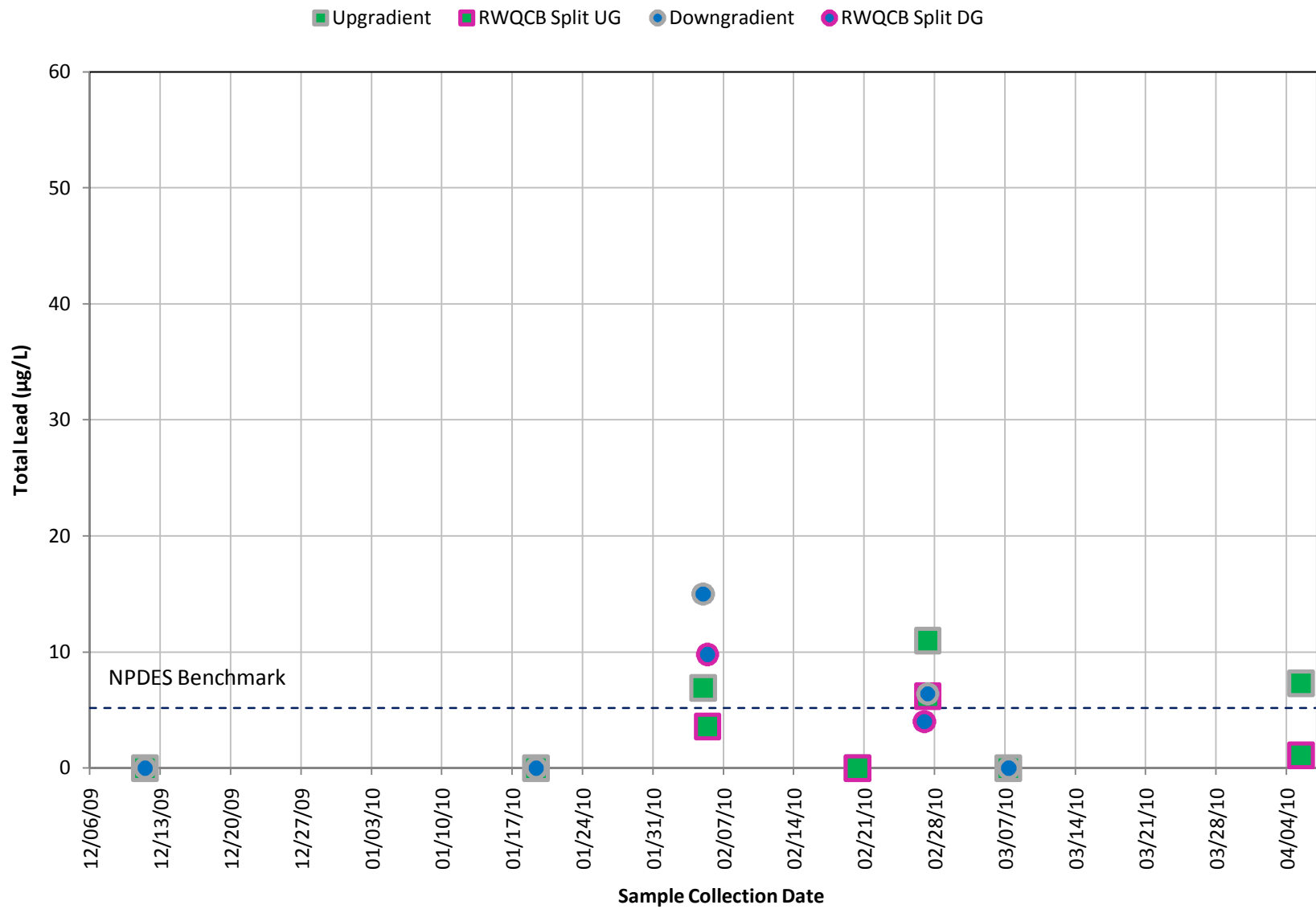
CM-8 - Lead

■ Upgradient ■ RWQCB Split UG ● Downgradient ● RWQCB Split DG



ISRA Performance Monitoring Results

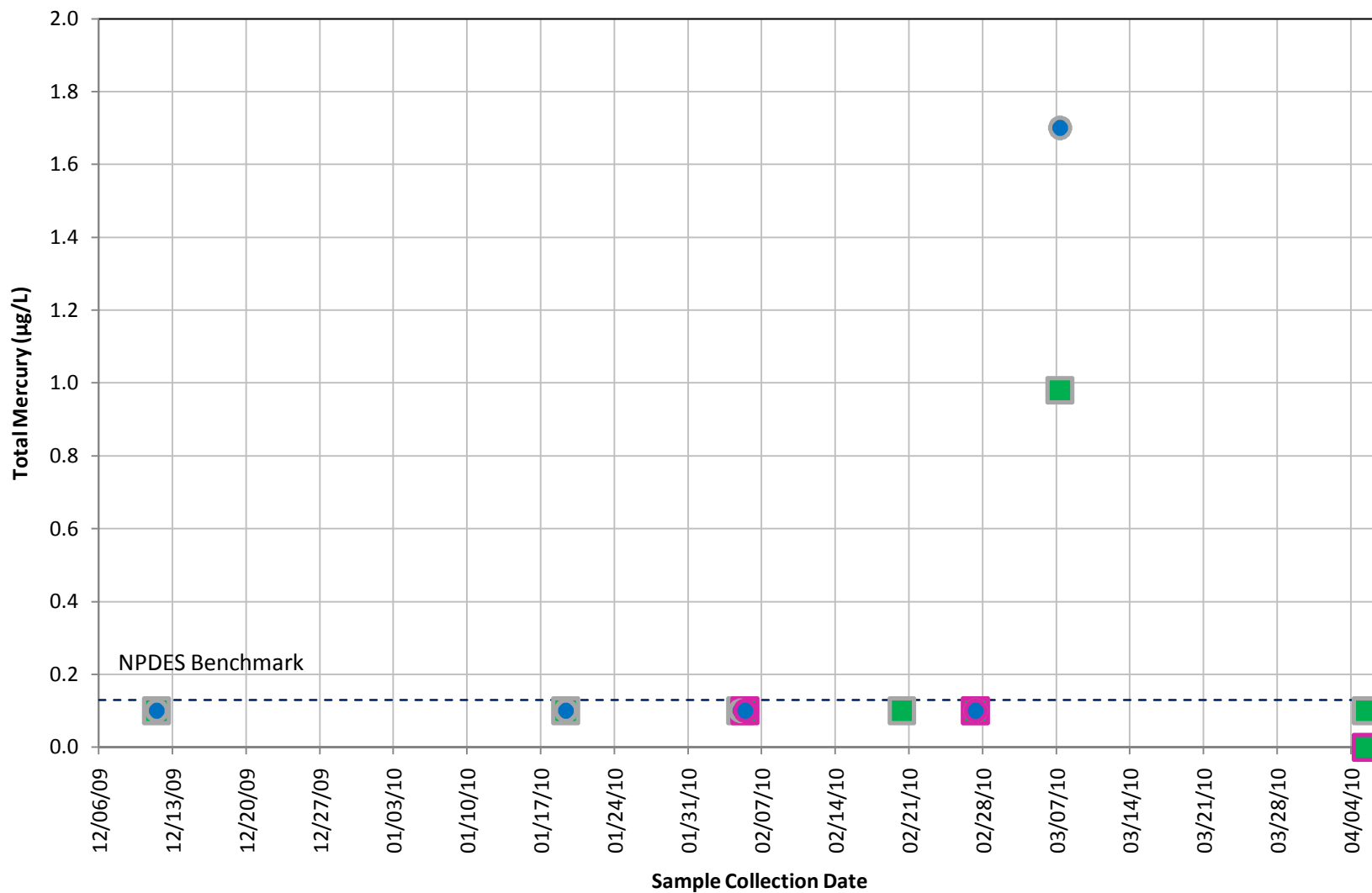
CM-9 - Lead



ISRA Performance Monitoring Results

CM-9 - Mercury

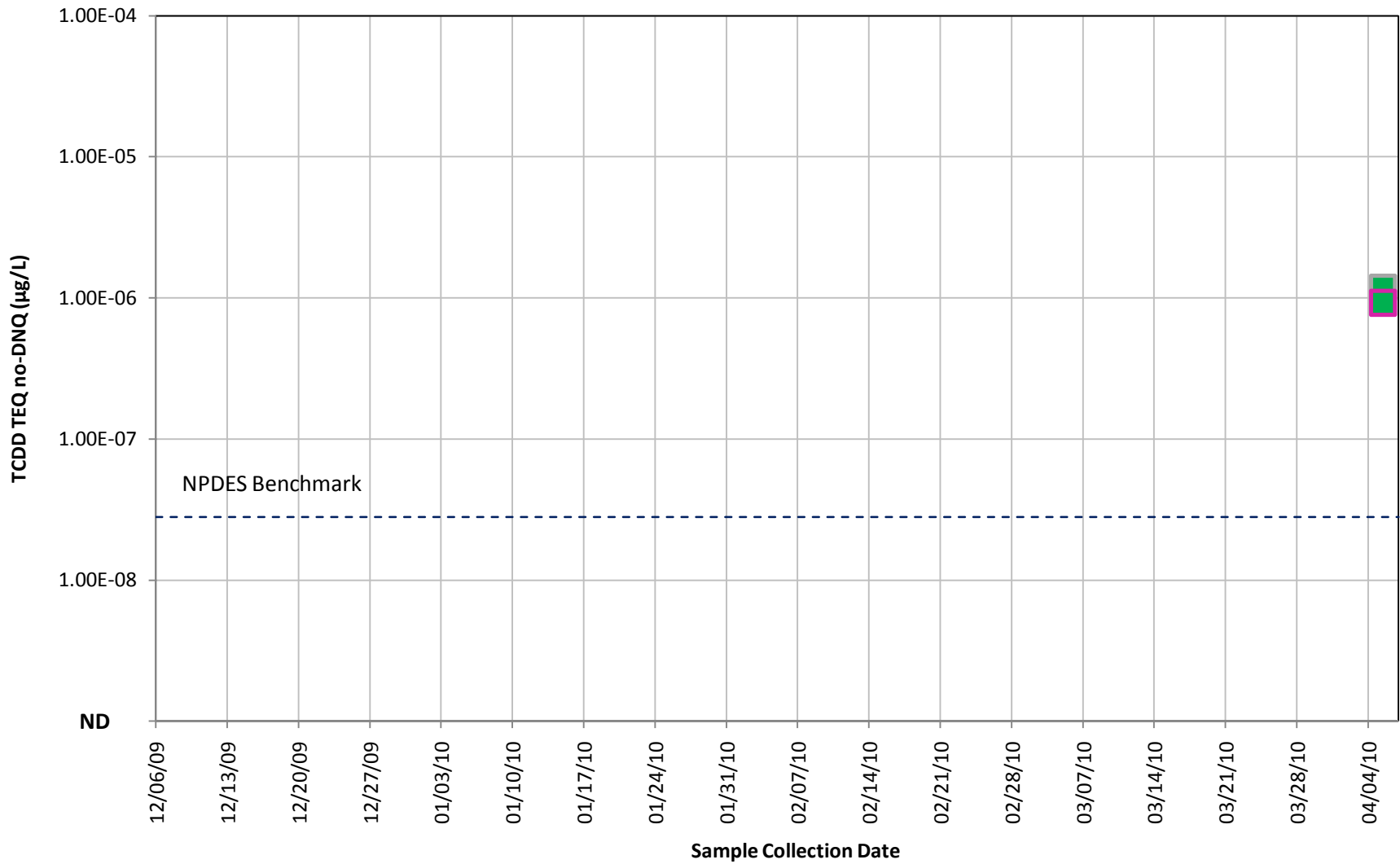
■ Upgradient ■ RWQCB Split UG ● Downgradient ● RWQCB Split DG



ISRA Performance Monitoring Results

CM-9 - Dioxins

■ Upgradient ■ RWQCB Split UG



ISRA Performance Monitoring Results

CM-11 - Dioxins

■ Upgradient ■ RWQCB Split UG ● Downgradient ● RWQCB Split DG

