



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

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VIA FEDERAL EXPRESS

March 29, 2010  
In reply refer to SHEA-110991

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

Attention: Mr. Peter Raftery

Subject: March 2011 Quarterly Progress Report for December 20, 2010 through March 20, 2011 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 2012). This Quarterly Progress Report is submitted for the first quarter 2011. This report summarizes ISRA activities performed during the period of December 20, 2010 through March 20, 2011.

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 December 20, 2010 through March 20, 2011, which are attached to provide the complete list of ISRA activities performed during the period covered by this quarterly report.

The ISRA Quarterly Reports are posted on the ISRA website at:

[http://www.boeing.com/aboutus/environment/santa\\_susana/isra.html](http://www.boeing.com/aboutus/environment/santa_susana/isra.html)



SHEA-  
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If you have any questions or require anything further, please contact Art Lenox at 818-466-8795.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Gallacher', with a long, sweeping underline.

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

Attachments:

- January 2011 Monthly Progress Report (December 20, 2010 – January 14, 2011)
- February 2011 Monthly Progress Report (January 15 – February 11, 2011)
- March 2011 Monthly Progress Report (February 12 – March 20, 2011)

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



Date: 1/20/2011

No.: SHEA-110791

To: Sam Unger  
Executive Officer  
LA Regional Water Quality Control  
BoardFrom: Tom Gallacher  
Director  
Santa Susana  
Environmental, Health & SafetySubject: January 2011 Monthly Progress Report for December 20, 2010 - January 14, 2011 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 December 20, 2010 to January 14, 2011. 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, Storm Water Expert Panel Members, Boeing, and NASA. For the period from mid-December to mid-January, the primary activities associated with 2010 ISRA areas have been backfilling/re-contouring ISRA area B1-2 and transporting waste soils offsite. In addition, inspections of BMPs were conducted at 2009 and 2010 ISRA areas per the ISRA SWPPP. BMPs were implemented at 2009 and 2010 ISRA areas prior to rain events, and performance monitoring and treatment BMP subarea monitoring was performed during rain events.

Per NPDES Permit (Order R4-2010-0090) adopted by the RWQCB on June 3, 2010, Boeing and NASA, with input from the Storm Water Expert Panel, submitted a BMP Plan for the Outfalls 008 and 009 watersheds on October 14, 2010 and posted the plan to the ISRA website. As identified in the plan, Boeing with support from the Expert Panel is implementing BMPs, identifying additional data needs, and reviewing the ISRA process. Boeing, working with the Expert Panel and NASA, submitted a surface water sampling plan for treatment BMP subarea monitoring and ISRA performance monitoring on December 21, 2010 and posted the plan to the ISRA website. Implementation of the sampling plan began on December 22, 2010. Accomplishments and upcoming actions are listed below.

#### **Activities Performed – December 20, 2010 to January 14, 2011**

- December 20, 2010 – January 14, 2011 – In coordination with the Expert Panel, continue design of interim and final BMP to be located within ISRA area B1-2 to capture eroded sediment from the B-1 area, not completed.

- December 20 – 22, 2010 – Conducted rain event Performance Monitoring sampling and inspections at 2009 ISRA areas, and BMP inspections at 2009 and 2010 ISRA areas per the ISRA SWPPP.
- December 20, 2010 – Completed offsite disposal of soils from 2010 ISRA areas.
- December 21, 2010 – Submitted 2010-2011 BMP and ISRA Performance Monitoring Sampling and Analysis Plan to the RWQCB.
- December 21, 2010 – RWQCB on site during rain event to inspect ISRA areas.
- December 22, 2010 – Conducted Treatment BMP Subarea Monitoring sampling during rain event.
- December 26, 2010 – Conducted rain event Performance Monitoring sampling and inspections at 2009 ISRA areas, and BMP inspections at 2009 and 2010 ISRA areas per the ISRA SWPPP.
- December 27, 2010 – Conducted post-rain event BMP inspections at 2009 and 2010 ISRA areas, per the ISRA SWPPP.
- December 29, 2010 – Conducted rain event Performance Monitoring sampling and inspections at 2009 ISRA areas, and BMP inspections at 2009 and 2010 ISRA areas per the ISRA SWPPP.
- January 3, 2011 – Conducted rain event Performance Monitoring (2009 ISRA areas) and Treatment BMP Subarea Monitoring sampling and inspections, and BMP inspections at 2009 and 2010 ISRA areas per the ISRA SWPPP.
- January 4 – 5, 2010 – Completed rehabilitation of fire roads within Happy Valley, which included installing BMPs and application of hydroseed/mulch.
- January 5, 2011 – During teleconference with RWQCB and DTSC, discussed confirmation samples results and received completion approval for ISRA area B1-2.
- January 7, 2011 – Collected additional waste characterization samples at ISRA area LOX-1B-3.
- January 10 – 14, 2011 – Continued backfilling and re-contouring ISRA area B1-2.
- January 11, 2011 – Completed ground-based topographic survey of completed ISRA area B1-2.
- January 13, 2011 – Conducted weekly BMP inspections at 2009 and 2010 ISRA areas, per the ISRA SWPPP.
- As of January 14, 2010 – Since the ISRA project commenced in 2010, at Boeing ISRA areas ~6,200 cy of soil have been excavated, ~285 confirmation samples have been collected, and ~410 truckloads of non-hazardous soil delivered to offsite disposal facilities (McKittrick and Lancaster), and ~8 truckloads of hazardous soil delivered to an offsite disposal facility (US Ecology, Beatty, Nevada). Since the ISRA project commenced in 2010, at NASA ISRA areas ~280 cy of soil have been excavated, ~25 confirmation samples have been collected, and ~13 truckloads of non-hazardous soil delivered to offsite disposal facilities (Lancaster).



Water bar on access road to CTLI-1 ISRA areas.



Restoration of access road to B1-1 ISRA areas.

### **30-Day Look ahead – through February 14, 2011**

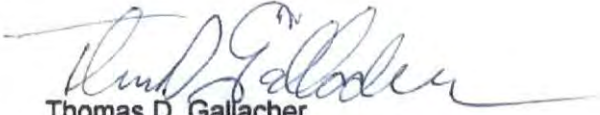
- Boeing/NASA/Expert Panel – Site tour for Public on January 22 to review 2010 ISRA areas and review Outfall 008 & 009 BMP Workplan implementation and progress.
- Boeing/Expert Panel – Ship soil sample for use in Area I Landfill phytoremediation research study to Edenspace Laboratory.
- Boeing – Submit letter to RWQCB documenting that Test America's laboratory in Irvine, California will be splitting performance monitoring samples following the protocols recommended by the Expert Panel, and sending the RWQCB's split samples to the RWQCB's analytical laboratory.
- RWQCB – Provide comments and/or approval on the 2010-2011 BMP and ISRA Performance Monitoring Sampling and Analysis Plan.
- Boeing – Complete backfilling, re-contouring, BMP installation (including interim BMP to transfer storm water from flat area to drainage), and apply hydroseed/mulch at ISRA area B1-2.
- Boeing/Expert Panel – Continue coordination with Expert Panel on the design of final BMP to be located within ISRA area B1-2 to capture eroded sediment from the B-1 area.
- Boeing/Expert Panel – Install Expert Panel's recommendation for containerized plants in B1-2 drainage area.
- Boeing – Complete soil removal at soil borrow area, complete ground-based topographic surveys, re-contour, install BMPs, and apply hydroseed/mulch.
- Boeing/NASA – Begin preparation of Phase II (2010) Implementation Summary Report.
- Boeing/NASA – Continue BMP inspections at the 2009 and 2010 ISRA areas per the ISRA SWPPP, and collect treatment BMP subarea monitoring and performance monitoring samples per the Monitoring Plan during rain events.

Mr. S. Unger, RWQCB (SHEA-110791 )

· · January 20, 2011

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Approved By:



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

Distribution:

Mr. Peter Raftery, RWQCB

Ms. Cassandra Owens, RWQCB

Mr. Buck King, DTSC

Mr. Allen Elliott, NASA



Date: 2/15/2011 No.: SHEA-110898

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

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

Subject: February 2011 Monthly Progress Report for January 15, 2011 - February 11, 2011 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 January 15, 2011 to February 11, 2011. 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, Storm Water Expert Panel Members, Boeing, and NASA. For the period from mid-January to mid-February, the primary activities associated with 2010 ISRA areas have been backfilling and re-contouring ISRA area B1-2, installing an interim BMP in the B1-2 ISRA area, and designing a final BMP for B1-2. In addition, inspections of erosion control BMPs were conducted at 2009 and 2010 ISRA areas per the ISRA SWPPP. Erosion control BMPs were implemented at 2009 and 2010 ISRA areas prior to rain events, and performance monitoring and treatment BMP subarea monitoring was performed during rain events.

Per NPDES Permit (Order R4-2010-0090) adopted by the RWQCB on June 3, 2010, Boeing and NASA, with input from the Storm Water Expert Panel, submitted a BMP Plan and a surface water sampling plan for treatment BMP subarea monitoring and ISRA performance monitoring in Fall 2010. Both documents have been posted to the ISRA website. Boeing with support from the Expert Panel is implementing the surface water sampling plan, reviewing available surface water data, and designing and implementing BMPs. Accomplishments and upcoming actions are listed below.

#### **Activities Performed – January 15, 2011 to February 11, 2011**

- January 15, 2011 – February 11, 2011 – Completed backfilling, re-contouring, BMP installation (including temporary sediment control BMP to collect, detain, and safely discharge runoff to a culvert inlet that discharges to the Northern Drainage), and hydroseed/mulch application.
- January 15, 2011 – February 11, 2011 – In coordination with the Expert Panel, continued design of final sediment control BMP to be located within ISRA area B1-2 to capture eroded sediment and reduce peak flows from the B-1 area (not completed).

- January 15, 2011 – February 11, 2011 – In coordination with the Expert Panel, continued development of conceptual designs for treatment BMPs in the Lower Parking Lot Stockpile area, at B-1 culvert inlet, and at the Area I Landfill (not completed).
- January 15, 2011 – February 11, 2011 – Working with the Expert Panel, began development of BMP evaluation levels (thresholds which will be used for comparison with BMP subarea monitoring results to determine where treatment BMPs are needed; not completed).
- January 22, 2011 – Boeing/NASA/Expert Panel conducted a site tour for the public to review 2010 ISRA areas and review Outfall 008 & 009 BMP Plan implementation and progress. The Expert Panel led a presentation and site walk of Happy Valley, the Lower Parking Lot, and AP/STP.
- January 24 – 25, 2011 – Disposed of debris from ISRA area B1-2.
- January 24, 2011 – February 11, 2011 – Began preparation of the Phase II ISRA Implementation Summary Report.
- January 26, 2011 – Submitted letter to RWQCB documenting that Test America's laboratory in Irvine, California will be splitting performance monitoring samples following the protocols recommended by the Expert Panel, and sending the RWQCB's split samples to the RWQCB's analytical laboratory.
- January 28, 2011 – Conducted weekly BMP inspections at 2009 and 2010 ISRA areas, per the ISRA SWPPP.
- January 30, 2011 – Conducted rain event Performance Monitoring (2009 and 2010 ISRA areas) and Treatment BMP Subarea Monitoring, and BMP inspections at 2009 and 2010 ISRA areas per the ISRA SWPPP. No surface flow was observed at monitoring locations.
- February 1, 2011 – Conducted biological inspection at B1-2 to check on sensitive species.
- February 1, 2011 – Conducted weekly BMP inspections at 2009 and 2010 ISRA areas, per the ISRA SWPPP.
- As of February 11, 2011 – Since the ISRA project commenced in 2010, at Boeing ISRA areas ~6,200 cy of soil have been excavated, ~285 confirmation samples have been collected, and ~410 truckloads of non-hazardous soil delivered to offsite disposal facilities (McKittrick and Lancaster), and ~8 truckloads of hazardous soil delivered to an offsite disposal facility (US Ecology, Beatty, Nevada). Since the ISRA project commenced in 2010, at NASA ISRA areas ~280 cy of soil have been excavated, ~25 confirmation samples have been collected, and ~13 truckloads of non-hazardous soil delivered to offsite disposal facilities (Lancaster).





Jute matting installed on the slope in the B1-2 ISRA area.



Backfilling around oak trees using hand tools.



Compacting soil in berm of the temporary sediment control BMP in the B1-2 ISRA area.



Temporary sediment control BMP (retention basin and discharge pipe) in the B1-2 ISRA area.



Restoration of B1-2 ISRA area near completion, including installation of temporary sediment control BMP and application of hydroseed mulch.

### **30-Day Look ahead – through March 13, 2011**

- RWQCB – Provide comments and/or approval on the 2010-2011 BMP and ISRA Performance Monitoring Sampling and Analysis Plan.
- Boeing – Complete ground-based topographic survey of ISRA area B1-2.
- Boeing/NASA – Continue preparation of Phase II (2010) Implementation Summary Report.
- Boeing/NASA – Continue erosion control BMP inspections at the 2009 and 2010 ISRA areas per the ISRA SWPPP, and collect treatment BMP subarea monitoring and performance monitoring samples per the Monitoring Plan during rain events.
- Boeing/Expert Panel – Continue design of final sediment control BMP to be located within ISRA area B1-2 to capture eroded sediment and reduce peak flows from the B-1 area.
- Boeing/Expert Panel – Continue development of conceptual designs for treatment BMPs in the Lower Parking Lot Stockpile area, at B-1 culvert inlet, and at the Area I Landfill.

- NASA/Expert Panel – Develop erosion control measures for bank stabilization at the LOX location.
- Expert Panel – Continue development of BMP evaluation levels.
- Boeing – Identify locations for remaining containerized plants and complete planting activities.

Approved By:



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

Distribution:

Mr. Peter Raftery, RWQCB  
Ms. Cassandra Owens, RWQCB  
Mr. Buck King, DTSC  
Mr. Allen Elliott, NASA



Date: 3/22/2011 No.: SHEA-110977

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

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

Subject: March 2011 Monthly Progress Report for February 12, 2011 - March 20, 2011 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)

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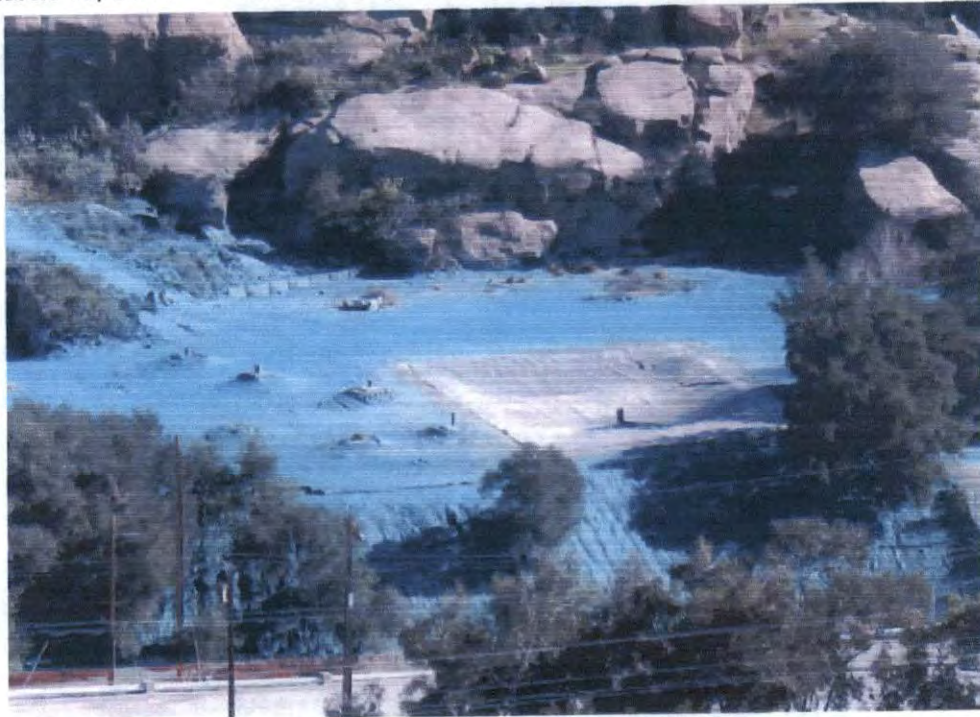
Per NPDES Permit (Order R4-2010-0090) adopted by the RWQCB on June 3, 2010, Boeing and NASA, with input from the Storm Water Expert Panel, submitted a BMP Plan and a surface water sampling plan for treatment BMP subarea monitoring and ISRA performance monitoring in Fall 2010. Both documents have been posted to the ISRA website. Boeing with support from the Expert Panel is implementing the surface water sampling plan, reviewing available surface water data, and designing and implementing BMPs. Accomplishments and upcoming actions are listed below.

#### **Activities Performed – February 12, 2011 to March 20, 2011**

- February 12, 2011 – March 20, 2011 – In coordination with the Expert Panel, continued design of final sediment control BMP to be located within ISRA area B1-2 to capture eroded sediment and reduce peak flows from the B-1 area.
- February 12, 2011 – March 20, 2011 – In coordination with the Expert Panel, continued development of conceptual designs for treatment BMPs in the Lower Parking Lot Stockpile area and at the B-1 culvert inlet, and evaluate bank stabilization at LOX.
- February 12, 2011 – March 20, 2011 – In coordination with the Expert Panel, continued development of BMP siting criteria (a process that will be used for evaluating BMP subarea monitoring results to determine where treatment BMPs are needed).

- February 12, 2011 – March 20, 2011 – In coordination with the Expert Panel, continued evaluation of phytoremediation as a possible remediation strategy for metals in shallow soils.
- February 12, 2011 – March 20, 2011 – Continued preparation of the Phase II (2010) ISRA Implementation Summary Report.
- February 14, 2011 – Applied hydroseed mulch at ISRA area B1-2.
- February 15, 2011 – Conducted ground-based topographic survey of post-restoration condition at ISRA area B1-2, and installed erosion control BMPs at B1-2 and RD-47 soil borrow area.
- February 15, 2011 – Conducted pre-rain event BMP inspections at 2009 and 2010 ISRA areas, per the ISRA SWPPP.
- February 16, 2011 – Conducted rain event Performance Monitoring (2009 and 2010 ISRA areas) and Treatment BMP Subarea Monitoring, and BMP inspections and sampling at 2009 and 2010 ISRA areas per the ISRA SWPPP. Use of Dekaport sample splitter to split performance monitoring samples was implemented.
- February 17, 2011 – RWQCB site visit to the Northern Drainage and ISRA areas B1-1 and B1-2.
- February 18, 2011 – Conducted pre-rain event BMP inspections at 2009 and 2010 ISRA areas, per the ISRA SWPPP.
- February 19-20, 2011 – Conducted rain event Performance Monitoring and Treatment BMP Subarea Monitoring, and BMP inspections and sampling at 2009 and 2010 ISRA areas per the ISRA SWPPP.
- February 25, 2011 – Conducted pre-rain event BMP inspections at 2009 and 2010 ISRA areas, per the ISRA SWPPP.
- February 26, 2011 – Conducted rain event Performance Monitoring and Treatment BMP Subarea Monitoring, and BMP inspections and sampling at 2009 and 2010 ISRA areas per the ISRA SWPPP.
- March 1, 2011 – Applied hydroseed mulch at ISRA area B1-2.
- March 3, 2011 – Conducted rain event Performance Monitoring and Treatment BMP Subarea Monitoring, and BMP inspections at 2009 and 2010 ISRA areas per the ISRA SWPPP. No surface flow was observed at monitoring locations.
- March 7, 2011 – Conducted rain event Performance Monitoring and Treatment BMP Subarea Monitoring, and BMP inspections and sampling at 2009 and 2010 ISRA areas per the ISRA SWPPP.
- March 8, 2011 – Re-applied hydroseed mulch to portions of ISRA area B1-2.

- March 8, 2011 – Conducted vegetation survey at the Area III Sewage Treatment Plant Pond in support of the phytoremediation study.
- March 16, 2011 – Ventura County site visit to inspect the completed 2010 ISRA areas.



Retention pond BMP at ISRA area B1-2



Piped discharge from B1-2 retention pond into culvert leading to Northern Drainage (2/26/11).

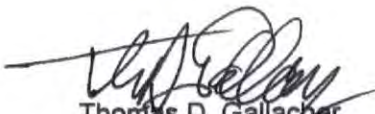


Collection of Performance Monitoring sample B1SW0011 at ISRA area B1-2 the morning after overnight rain (2/16/11).

**30-Day Look ahead – through April 20, 2011**

- Boeing/NASA – Continue preparation of Phase II (2010) Implementation Summary Report.
- Boeing/NASA – Continue erosion control BMP inspections at the 2009 and 2010 ISRA areas per the ISRA SWPPP, and collect treatment BMP subarea monitoring and performance monitoring samples per the Monitoring Plan during rain events.
- Boeing/Expert Panel – Continue design of final sediment control BMP to be located within ISRA area B1-2 to capture eroded sediment and reduce peak flows from the B-1 area.
- Boeing/Expert Panel – Continue development of conceptual designs for treatment BMPs in the Lower Parking Lot Stockpile area and at the B-1 culvert inlet.
- NASA/Expert Panel – Continue to evaluate bank stabilization at LOX.
- Boeing/Expert Panel – Continue evaluation of phytoremediation as a possible remediation strategy for metals in shallow soils; planned activities include vegetation sampling at the Area III Sewage Treatment Plant Pond and review of results from Edenspace's phase 1 NIH study.
- Expert Panel – Continue development of BMP siting criteria and begin preparation of memorandum describing BMP siting criteria approach for submittal to RWQCB.
- Expert Panel – Begin development of restoration and mitigation/monitoring plans for the Northern Drainage.
- Boeing – Install remaining containerized plants in Outfall 009.
- Boeing – Perform road rehabilitation of dirt road in Outfall 009 watershed.
- Boeing – Begin preparation activities for Phase III planned excavation activities at IEL-2.

Approved By:



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

Distribution:

Mr. Peter Raftery, RWQCB  
Ms. Cassandra Owens, RWQCB  
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