



Via FedEx

February 14, 2013

In reply refer to SHEA-113201

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

Attention: Information Technology Unit

Reference: Compliance File CI-6027 and NPDES No. CA0001309

Subject: Fourth Quarter 2012 NPDES Discharge Monitoring Report
Submittal – Santa Susana Site

Dear Sir/Madam,

The Boeing Company (Boeing) hereby submits this Discharge Monitoring Report (DMR) that includes the activities related to the Santa Susana Field Laboratory (Santa Susana Site) surface water outfalls (**Figure 1**) that occurred during the period of October 1 through December 31, 2012 (Fourth Quarter 2012). This DMR is prepared as required and in accordance with National Pollutant Discharge Elimination System (NPDES) Permit No. CA0001309 (Permit) and under regulatory oversight of the Los Angeles Regional Water Quality Control Board (Regional Board). Included are summary tables of, surface water sample analytical results, rainfall summaries, liquid waste shipment summaries, and analytical laboratory reports of surface water samples.

Hard copies of this DMR are available to the public at California State University at Northridge Library; Simi Valley Library; and the Platt Branch of the Los Angeles Library. An electronic version of this DMR is located at:

http://www.boeing.com/aboutus/environment/santa_susana/ents/monitoring_reports.html

FOURTH QUARTER 2012 DMR CONTENTS AND DISCHARGE SUMMARY

A summary of the Fourth Quarter 2012 measured precipitation at the Santa Susana Site is presented in **Appendix A**. All sanitary wastes from the domestic Sewage Treatment Plants (STPs I and II) were shipped from the Santa Susana Site for offsite disposal. These details of all other liquid waste shipments are summarized in **Appendix B**. Further details of demolition and BMP related activities are included in **Demolition Related Activities** section below.

The Santa Susana Site experienced five rain events that produced greater than 0.1 inch of rainfall within a 24-hour period (see **Appendix A**) and one storm water related sample was collected on November 17-18, 2012 at Outfall 009 only. Site inspections during and/or following a rain event did not indicate flow

at any additional stormwater only outfall locations. A quarterly sample was collected at Outfall 019 of the discharge of the Groundwater Extraction Treatment System (GETS) on October 3-4, 2012, and a monthly sample was collected on November 1-2, 2012. The GETS was taken off-line and discharge did not occur in December; once it resumes operation, samples will be collected in accordance with the NPDES Permit. Additionally, a quarterly sample was collected at the Arroyo Simi receiving water location in Simi Valley on November 17-18, 2012. **Table 1** summarizes the Fourth Quarter 2012 sampling record by outfall, location and sample type collected per the requirements of the NPDES Permit.

Table 1: Sampling Record during the Fourth Quarter 2012

Date	Outfall/Location	Samples Collected (i.e., grab, composite)
10/3-10/4/2012	Outfall 019 (GETS) Quarterly	Grab & Composite
11/1-1/2/2012	Outfall 019 (GETS) Monthly	Grab & Composite
11/17-11/18/2012	Arroyo Simi Receiving Water (RSW-002) – Quarterly	Grab
11/17-11/18/2012	Outfall 009 (WS-13 Drainage) Semi-annual	Grab & Composite

All samples are submitted to and analyzed by a California-certified analytical laboratory per the NPDES Permit requirements. Analytical results from Fourth Quarter 2012 storm water samples are presented in tabular form by outfall location, constituents evaluated (analytes), sample dates, and data validation qualifiers in **Appendices C and D**.

Results of a reasonable potential analysis (RPA) utilizing updated monitoring data are provided in **Appendix E**. A compilation of notes, abbreviations, and data validation codes that are used in the analytical data summary tables are included in **Appendices C through E**. **Appendix F** contains copies of the laboratory analytical reports, chains of custody, and data validation reports.

FOURTH QUARTER 2012 SUMMARY OF NONCOMPLIANCE

No exceedances of permit or receiving water limits were noted for the samples collected during the Fourth Quarter 2012. Therefore, there are no instances of noncompliance to report for this period. However, Boeing continues to actively address past exceedances and implement activities to minimize any potential future exceedances across the Santa Susana Site. The following is a summary of those activities for the Fourth Quarter 2012.

OUTFALL 001 BMP COMPLIANCE PLAN

As noted in the Third Quarter 2012 report, a BMP Compliance Plan was submitted to the Regional Board on August 27, 2012. The BMP Compliance Plan is primarily focused on reducing erosion and sedimentation upstream of Outfall 001. A section 401 water quality application was submitted to the Regional Board on October 4, 2012. The Regional Board approved the section 401 water quality permit on November 20, 2012. In the Fourth Quarter, stabilization and erosion control measures were installed upstream of the outfall including check dams, a rip rap apron, and jute matting. **Figure 2** shows the map location of the BMP project area near Outfall 001. Additionally, **Figure 2** shows BMP project areas at the Santa Susana Site that are further discussed in the **Other BMP Activities** section below.

FOURTH QUARTER 2012 SITE-WIDE STORM WATER POLLUTION PREVENTION PLAN (SWPPP)/BMP ACTIVITIES

Boeing conducted monthly, pre- and post-storm season inspections as required by the site-wide SWPPP to identify and mitigate any on-site conditions that may affect the quality of storm water runoff from the Santa Susana Site.

Site-wide activities also include the inspection of outfalls and outfall perimeters, inspection of storm water pumping and conveyance system. Inspection of specific BMP activities at each outfall location may include inspections of erosion and sediment control BMPs, flume and sample box condition, flow meter calibrations, surface water catchment or sedimentation basin condition, liner integrity, filter media condition, system pump and conveyance condition, and retention tank inspection. General maintenance and housekeeping of outfalls may include the removal of sediment, removal of leaf litter, filter media replacement, liner repair or replacement, and weed abatement.

Table 2 is a summary of the specific BMP activities by outfall location that were conducted during the Fourth Quarter 2012.

Table 2: Boeing’s BMP Activities during the Fourth Quarter 2012

OUTFALL (Location)	BMP ACTIVITIES DURING FOURTH QUARTER 2012
001 (South Slope below Perimeter Pond)	Inspected the outfall and flume for any excess sediment/debris. Observed sediment and erosion controls around the perimeter of the outfall and Outfall 001 drainage. Checked sample box, flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Cleaned sample boxes and flume prior to rain event. Temporary BMPs (hay bale check structures and fiber rolls) were installed in the drainage, and removed prior to installation of permanent BMPs. A trench alongside the road was excavated, lined with geotextile, and filled with rip rap to enhance drainage. Dressed roads with fresh gravel, and graded the road upstream from the culvert to direct runoff. Installed two check dams in the drainage, and an apron of rip rap at the inlet of the flume. Banks and access paths were restored with jute matting and fiber rolls.
002 (South Slope below R-2 Pond)	Conducted sediment and erosion control inspections around the perimeter and Outfall 002 drainage. Inspected outfall and flume for any excess sediment/debris. Flume, outfall and sample box drained and cleared of sediment and debris. Checked flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Completed maintenance inspection and reset of the automated composite sampling equipment (autosamplers). Cleaned sample boxes and flume prior to rain event.
003 Radioactive Material Handling Facility (RMHF)	Conducted sediment and erosion control inspections. Inspected flume and outfall for any excess sediment/debris. Maintenance inspections were conducted of the structural BMPs including the stormwater retention basin, conveyance and filter system. Checked sample box, flow meter control box for spiders and presence of the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis.

OUTFALL (Location)	BMP ACTIVITIES DURING FOURTH QUARTER 2012
004 Sodium Reactor Experiment (SRE)	Inspected the flume, outfall and liner for any excess sediment/debris. Conducted sediment and erosion control inspections near the outfall. Maintenance inspections were conducted of the structural BMPs including the stormwater retention system, conveyance and filter system. Completed inspection of dedicated retention tanks. Checked sample box, flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Cleaned sample boxes and flume prior to rain event. Performed vegetation clearance, street sweeping, and cleaning of the culverts. Installed fiber rolls above culverts, and placed gravel filter bags at the entrance to culverts. Added jute matting to slope at west end of concrete culvert.
005 Former Sodium Disposal Facility (FSDF)-1	Conducted sediment and erosion control inspections. Inspected the outfall and flume for any excess sediment/debris. Completed maintenance inspections on structural BMPs including the conveyance, stormwater retention system, and sediment basin liner. Completed inspection of dedicated retention tanks. Cleaned sample boxes and flume prior to rain event.
006 (FSDF-2)	Inspected the flume, outfall and liner for any excess sediment/debris. Conducted sediment and erosion control inspections near the outfall. Completed maintenance inspections on the structural BMPs including the stormwater retention system and filter system. Checked sample box, flow meter control box the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Completed inspection of dedicated retention tanks. Cleaned sample boxes and flume prior to rain event.
007 (Building 100)	Conducted sediment and erosion control inspections at perimeter of Outfall 007. Observed the sediment basin liner and outfall for any excess sediment/debris or deficiencies. Completed maintenance inspection of the conveyance system, stormwater retention system, and sediment basin liner. Checked high level float/switch in sedimentation basin. Completed inspection of dedicated retention tanks. Cleaned sample boxes and flume prior to rain event.
008 (Happy Valley)	Conducted sediment and erosion control inspections near the perimeter of the outfall and within the Outfall 008 drainage. Maintained and repaired existing sediment and erosion controls. Observed the outfall and flume for any excess sediment/debris, and cleared excess sediment from the flume. Checked sample box, flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Cleaned sample boxes and flume prior to rain event. Temporary erosion controls (sand bags and fiber rolls) were placed along the abandoned road, and road closure measures were installed across the road to prevent through-traffic. Two rip rap check dams were installed upstream from Outfall 008 flume.
009 (WS-13 Drainage)	<i>Outfall BMPs:</i> Checked sample box, flow meter control box for spiders and presence of rodents/animals. Flow meter reset and tape replaced on monthly basis. <i>Hydroseed:</i> Applied hydroseed at B-1, Liquid Oxygen (LOX) area, Area II Landfill (A2LF), and locations within the Northern Drainage.

OUTFALL (Location)	BMP ACTIVITIES DURING FOURTH QUARTER 2012
	<p><i>B-1 BMPs:</i> Installed 36-inch curb cuts and additional check dams/slope protection upstream from the B-1 media filter. Installed 18-inch curb cuts in the planted median near Post 505 and planted container plants. Removed spent fiber rolls from B1-1A area.</p> <p><i>Culvert BMPs:</i> Sediment and debris were cleared from culverts and basins, and rip rap was added at Culvert Maintenance (CM)-9 prior to the weir boards. Trimmed and replaced fabric wrapping on weir boards at CM-1, CM-2, CM-10, CM-3, CM-4, CM-6, CM-11, CM-8, and CM-9.</p> <p><i>Road Maintenance BMPs:</i> Installed matting, fiber rolls, and sand bags on slopes along the road east of CM-9 and north of Instrument Experimentation Lab (IEL)-3. Replaced sand bag berm at foot of access road, adjacent to CM-6. Road at A2LF was dressed with fresh gravel, and gravel was added to turnouts along Area II Road.</p> <p><i>Restoration, Monitoring and Mitigation Plan (RMMP) BMPs:</i> Exposed geocell material at LOX was covered with gravel and deteriorated gravel filter bags in the berm were replaced with sand bags. Pole cuttings and native plants were installed in the Northern Drainage during completion of the RMMP work.</p> <p><i>NASA BMPs:</i> The swale along Helipad Rd and culvert was cleaned, and jute matting and fiber rolls were installed along the slope to prevent further migration of sediment. Performed street sweeping from Helipad Rd to CM-1 and cleared plant debris and soil from two swales down gradient from Expendable Launch Vehicle (ELV). Installed plastic sheeting to divert water from the ELV excavation and installed a silt fence at the base to retain sediment. Installed sand bags and fiber rolls at the bottom of Helipad Rd to direct runoff into the culvert. Installed a sand bag diversion along the curb from the old fire station to Helipad, and two additional sand bag berms were installed up gradient from ELV. The Helipad berms were raised, and covered with plastic sheeting. A flow-through expandable plug was installed at Berm B, and Berm A was plumbed to storage tanks near Outfall 010. Pumps were placed at Berm A and at the base of the swale to pump captured water to the storage tanks. Installed sand bags and fiber roll along gunite slope at the Lower Lot.</p> <p><i>Lower Parking Lot BMP:</i> Continued construction of the Lower Lot biofilter, including construction of the sediment basin, media filter, and shade structure; installation of erosion control matting, rip rap aprons, and silt fence; planting of native plants; and excavation and placement of the cistern. Temporary BMPs were implemented during Lower Lot biofilter construction, including street sweeping, stockpile management, and installation of fiber rolls, tarps, and sand bags.</p>
010 (Building 203)	<p>Conducted maintenance inspections on structural BMPs including the filter media, conveyance and the stormwater retention system. Completed inspection of dedicated retention tanks. Maintained and inspected sediment and erosion controls within areas of disturbance or sparse vegetation. Checked sample box, flow meter control box for the presence of debris and/or animals. Flow meter</p>

OUTFALL (Location)	BMP ACTIVITIES DURING FOURTH QUARTER 2012
	reset and tape replaced on monthly basis. Cleaned sample boxes and flume prior to rain event.
011 (Perimeter Pond)	Conducted maintenance inspections on structural BMPs including the weir, filter media, pump and conveyance system. Conducted sediment and erosion control inspections at flume, drainage area, perimeter of outfall, pond and around conveyance system. Checked sample box, flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Cleaned sample boxes and flume prior to rain event. Replaced the deteriorated straw wattles on the construction area above the Area I burn pit area, and repaired silt fence. Applied hydroseed at Laser Engineering Test Facility (LETF), Component Test Laboratory (CTL)-III, and CTL-V. Revised outfall BMP by installing a y-strainer, extending the wall to direct flow into the sample box, and plumbing the Stormwater Treatment System (SWTS) effluent to media bed. Replaced sand bags on CTL-V road by the old fuel farm and cleaned up weed abatement debris from CTL-V road. Testing and optimization of the Stormwater Treatment System (SWTS) continued in anticipation of the rain season to ensure water quality objectives are met.
012 (ALFA Test Stand)	Maintenance inspections were conducted on structural BMPs including pump, conveyance system and retention tank. Maintenance performed on transfer pumps. Observed condition of the sand bag berm. Inspected outfall and perimeter for presence of rodents/animals. Conducted weed abatement at media beds and cleaned sample boxes and flume prior to rain event.
013 (BRAVO Test Stand)	Maintenance inspections were conducted on structural BMPs including pump, conveyance system and retention tank. Observed condition of the sand bag berm. Inspected outfall and perimeter for presence of rodents/animals. Cleaned sample boxes and flume prior to rain event.
014 Advanced Propulsion Test Facility (APTF)	Maintenance inspections were conducted on structural BMPs Observed the condition and integrity of the liner and berm. Observed sediment and erosion control BMPs around outfall perimeter. Cleaned sample boxes and flume prior to rain event. Applied hydroseed. A screen was installed on the discharge pipe.
018 (R-2 Spillway)	Maintenance inspections were conducted on structural BMPs including the filter media and conveyance system. Checked sample box, flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Cleaned sample boxes and flume prior to rain event. Applied hydroseed at Environmental Effects Lab (EEL) and STP-III. Concrete and rebar supports were installed at the walkway above R-2 Pond, and post-construction BMPs (jute matting and fiber rolls) were installed. Surge tank from Perimeter Pond was placed at R-2 and painted. Installed post-demo BMPs (sand bags and fiber rolls) at Building 4015. Testing and optimization of the SWTS continued in anticipation of the rain season to ensure water quality objectives are met.
019 (GETS)	Media vessels replaced and backwashed. Associated bag filters replaced frequently as needed. Automated influent valves were installed and modifications to the PLC screen were made for remote control of valves on

OUTFALL (Location)	BMP ACTIVITIES DURING FOURTH QUARTER 2012
	October 2012. Replaced purolite media for metals treatment and the installed temporary perchlorate vessels to perform a pump test on RD-10. Semiannual housekeeping was performed in November 2012. The WS-9A pump was pulled, cleaned and re-installed in December 2012. Overall system operation is nominal.
RSW-002 (Arroyo Simi Frontier Park)	Collected receiving water sample at Arroyo Simi Frontier Park location. Conducted monthly receiving water inspection.

Boeing also continued to implement the individual SWPPP's during the Fourth Quarter 2012. As part of the implementation of the SWPPP's, BMP inspections were completed in accordance with the State of California Construction General Permit (CGP) requirements.

Efforts to plan and implement BMPs for pre- and post-soil disturbance activities for construction/demolition and Interim Source Removal Action (ISRA) areas are discussed further in sections below. Demolition projects are comprised of areas of disturbed soil from recent demolition, post-demolition and post-demolition restoration. ISRA areas consist of the ongoing soil removal and/or remediation activities, post remediation and restoration areas.

Demolition Related BMP Activities

Previously active areas are being demolished and prepared for restoration in Boeing's continued commitment to the reinstatement of the site to its natural habitat. During the Fourth Quarter 2012 demolition activities were completed at the former Building 4015, weather station, and water tank in Area IV. All debris, metal, concrete, and asphalt was segregated upon demolition and transported to a waste or recycling facility per the waste management plan, and in accordance with all local, state, and federal regulations. Construction BMPs were implemented before, during and after demolition activities. Preliminary demolition activities at Building 4011 in Area IV began in the Fourth Quarter 2012. Demolition of Building 011 in Area IV is scheduled to be completed in the First Quarter 2013 and will be discussed in the following quarterly DMR.

Upon completion of demolition activities, post-demolition and restoration efforts included the implementation of erosion and sediment control BMPs. In the Fourth Quarter 2012, hydroseed and hydromulch was applied at Areas I, II, and III including: former Building 1459, former APTF area, and areas adjacent to former CTL-III in Area I; former STP-III and EEL in Area III; and former Building 4015 in Area IV. Boeing will continue demolition activities to reduce run-off, implement BMPs to address erosion and sedimentation, and return the Santa Susana Site to its natural habitat.

Outfall 008/009 ISRA and BMP Plan Related Activities

Boeing has continued with ISRA activities in the Outfall 008 and 009 watersheds during the Fourth Quarter 2012 to address constituents that have exceeded NPDES Permit limits/benchmarks. ISRA soil removal within Outfall 008 was completed on October 19, 2009, ISRA soil removal conducted within Outfall 009 was continued in the Fourth Quarter 2012. **Figure 3** shows the location of these ISRA soil

removal activities within the Santa Susana Site. A BMP plan was prepared by Boeing and NASA, with considerable input from the Surface Water Expert Panel (Expert Panel), pursuant to the NPDES Permit (Order No. R4-2010-0090). This plan was adopted by the Regional Board on June 3, 2010. A list of new BMP recommendations was developed based on a statistical evaluation performed on available data, which is presented in the 2010-2011 Rainy Season Summary Report. In subsequent rainy seasons, data is reevaluated and has resulted in updates to the BMP plan. The 2011 and 2012 BMP Plan Addenda were submitted to the Regional Board in September of 2011 and 2012, respectively.

In coordination with the Expert Panel, the following BMP activities were performed or started during the Fourth Quarter 2012: the Lower Parking Lot BMP; B-1 curb cut installation and the NASA ISRA areas and BMPs. A brief summary of these activities are given below:

Lower Parking Lot BMP

In the Fourth Quarter 2012, Lower Parking Lot BMP construction activities continued. Ventura County Building Inspector conducted weekly site visits to observe work being performed. In addition, Boeing and contractors met with Ventura County to review responses to Ventura County comments on the Building Permit Application for the Lower Parking Lot BMP cistern. The Building Permit Application was approved on October 26, 2012 and excavation activities began in the cistern area. The main construction of the sediment basin, biofilter and shade structure was completed. Irrigation was installed and the placement of trees, shrubs and grasses was finished. Temporary construction BMPs were implemented during Lower Lot biofilter construction, including street sweeping, stockpile management, and installation of fiber rolls, silt fence, tarps, erosion control blankets and sand bags. It is anticipated that the Lower Parking Lot BMP construction will be completed in the First Quarter 2013.

B-1 Curb Cut Installation

The 2012 BMP Plan Addendum recommended the installation of 36-inch curb cuts with slope protections to increase the capture and conveyance of road runoff to the northern portion of the B-1 drainage. The purpose of the curb cuts is to reduce concentrated flows at the B-1 media filter and increase sedimentation in the drainage before the surface water reaches the B-1 media filter. In Fourth Quarter 2012 three 36-inch curb cuts with slope protection were installed. In addition, three smaller 12-inch curb cuts with slope protection were installed in the planter across the street to convey road runoff that does not flow to the B-1 area to the vegetated planter area. Hydroseed was applied to the B-1 hillside to reduce the likelihood of erosion on the hillside

NASA BMPs

Planning and design activities for the BMPs and drainage improvements at the Helipad and the ELV channel resumed throughout the Fourth Quarter 2012. BMPs were installed at the Helipad in the Fourth Quarter 2012 and are described below. Additional BMPs for the ELV channel area are anticipated for installation in 2013.

Fourth Quarter NASA and Boeing ISRA Activities

In addition to activities performed in coordination with the Expert Panel, the following activities were performed for Outfall 008/009 during the Fourth Quarter 2012:

- Site visits:
 - The Regional Board conducted a site visit on October 8, 2012 to observe Lower Parking Lot BMP activities.
- Permitting:
 - Submitted memorandum prepared by Padre Associates concerning oak trees in Ash Pile/Sewage Treatment Plant (AP/STP) ISRA areas to the Regional Board; and
- Sampling and ISRA Implementation:
 - Completed planned soil removal at ISRA area AP/STP-1B (western portion), 1C-1 and conducted confirmation soil sampling;
 - Performed additional soil removal at ISRA areas AP/STP-1B and AP/STP-1C-1, 1C-2, and 1E-2 and conducted confirmation and Regional Board soil sampling;
 - Completed offsite disposal of AP/STP ISRA area waste soils from planned excavation areas;
 - Performed data gap and additional waste characterization soil sampling at ISRA area ELV-1C;
 - Conducted planned soil removal at ISRA area ELV-1C within non-hazardous and non-radiological areas (western portion) and performed confirmation and Regional Board soil sampling;
 - Performed waste characterization soil sampling at ISRA area IEL-3;
 - Collected soil samples from the stockpile of soil excavated from the Lower Parking Lot BMP to evaluate potential onsite reuse of the soil; and
 - Collected ISRA Performance Monitoring and BMP Subarea Monitoring surface water runoff samples during rain events.
- Surveys, Monitoring, and Inspections:
 - Conducted biological surveys at the Lower Parking Lot BMP construction area;
 - Surveyed excavation boundaries of AP/STP ISRA areas (work performed by CalVada);
 - Conducted sediment and erosion control inspections near the perimeter of Outfall 008 and within the Outfall 008 drainage;
 - Observed Outfall 008 and 009 flumes for any excess sediment/debris, checked the sample boxes and flow meter control boxes for spiders and presence of rodents/animals, and reset the flow meters and replaced tape on monthly basis;
 - Conducted rain event ISRA Performance Monitoring and BMP Subarea Monitoring inspections; and
 - Conducted SWPPP inspections at 2010 and 2011/2012 ISRA areas per the ISRA SWPPP.
- ISRA BMPs Implemented:
 - Removed excess sediment from culvert basins at CM-1, CM-2, CM-3, CM-4, CM-8, CM-9, CM-10, and CM-11, and cleaned and re-secured fabric covering weir boards at CM-1, CM-3, and CM-9;
 - Added rip rap prior to the culvert at CM-9 to prevent migration of sediment to the weir boards;

- Installed and maintained temporary erosion and sediment control BMPs at the Lower Parking Lot BMP construction area, at AP/STP ISRA areas, and at ISRA area ELV-1C prior to, during, and following forecasted rain events, as needed;
- Enhanced the sand bag berms at the Helipad by raising the height of both with additional sand bags and covering the western berm with plastic sheeting;
- Augmented the Helipad sand bag berm BMP by raising the height of the eastern berm and installing a pump and HDPE conveyance line to pump storm water captured behind the eastern sand bag berm to storage tanks at Outfall 010. Water collected in storage tanks is then pumped to Silvernale Pond. A second pump was later added at the spillway chute down gradient of the Helipad to capture runoff not captured by the berms and convey it back up to storm water behind the eastern berm;
- Cleared debris and vegetation from the swale along Area II Road below ELV excavation and added fiber rolls and sand bags to direct overflow into the culvert at Helipad Road.
- Cleared debris from an asphalt swale below the ELV area, installed plastic sheeting to divert runoff away from the covered ELV area, and installed a silt fence at the base of the plastic sheeting;
- Installed BMPs per the 2012 BMP Plan Addendum at B-1, including curb cuts, rip rap check dams, and installing container plants;
- Replaced sand bag berm at foot of former access road, adjacent to CM-6;
- Applied hydroseed to B-1, A2LF, LOX areas and sites within the Northern Drainage;
- Installed slope protection BMPs (jute matting) at A2LF locations where crews accessed the Northern Drainage to conduct Restoration RMMP activities, as summarized in the following section;
- Installed slope protection BMPs (jute matting, fiber rolls, and sand bags) along north and south sides of Area II Road, east of CM-9, as recommended in the 2012 BMP Plan Addendum;
- Performed street sweeping at the Lower Parking Lot and along Area II Road from Helipad Road to CM-1, as needed;
- Installed fiber rolls and sand bags along the base of slopes below the Lower Lot BMP to reduce sediment transport;
- Installed a line of sand bags along the curb from the old fire station to the Helipad to divert water to Berm A, and an additional two rows of sand bags upstream of ISRA area ELV-1C;
- Added supplemental gravel to cover exposed edges of geocell at LOX;
- Replaced deteriorated gravel filter bags at LOX berm with durable sand bags;
- Installed additional sand bags and fiber rolls at the western corner of the wooden retaining wall in the Lower Parking Lot to address sediment washing out from beneath the structure;
- Installed jute matting and fiber rolls to cover areas of exposed soil along slope west of Helipad Road and cleared away small boulders and swept loose sediment within asphalt swale along Helipad Road; and
- Added supplemental gravel to road in Happy Valley, A2LF and Outfall 009 areas.

Boeing continues to conduct bi-weekly status meetings, and submit monthly and quarterly progress reports to Regional Board staff on the progress of ISRA activities and BMP Plan¹. Boeing is committed to the restoration of the ISRA areas immediately following clean-up activities and works closely with the

¹ Available at: http://www.boeing.com/aboutus/environment/santa_susana/tech_reports.html

Regional Board, Department of Toxic Substances Control (DTSC), and the Expert Panel to ensure that restoration is comprehensive.

Northern Drainage

Boeing has actively worked to restore the Northern Drainage following clean-up activities performed under the oversight of the DTSC in accordance with the requirements of Regional Board Cleanup and Abatement Order (CAO) No. R4-2007-0054.

DTSC issued a Certification of Completion on April 29, 2011, stating that the response actions required under the Imminent and Substantial Endangerment Determination and Order and Remedial Action Order (ISE/RA Order), Santa Susana Field Laboratory, Ventura County, California (CAD 093365435 and CA 1800090010) were successfully performed, the contaminants of concern had been removed, and remaining concentrations no longer posed an immediate risk to humans or environmental receptors (DTSC, 2011).

Boeing and NASA worked with the Expert Panel to develop a site-specific RMMP for the areas of the Northern Drainage that were subject to this Order. The RMMP was submitted to the Regional Board on October 5, 2011 (Haley & Aldrich, 2011) and provides a detailed summary and conceptual designs for restoration and stabilization of the banks and bottom of the Northern Drainage, as well as mitigation and monitoring for riparian plants removed during remediation. Boeing received permit approvals from the Regional Board, California Department of Fish and Game (CDFG) and Los Angeles Division of the Army Corps of Engineers (ACOE) in early July 2012.

The RMMP implementation was divided into two phases. Phase I includes the installation of structural measures including biological monitoring during construction activities, while phase II consists of the installation of plants and bioengineering features. **Figure 4** shows map locations of the RMMP for the Santa Susana Site. Phase I began on August 28, 2012 and was completed on September 21, 2012. Phase II began on November 1, 2012 and was completed on November 9, 2012. Hydroseed was applied along the Northern Drainage on November 19-20, 2012.

Other BMP Activities

In October of 2012, Boeing submitted a CWA Section 401 Water Quality Certification Application to the Regional Board for the authorization to place storm water BMPs in several drainages at the Santa Susana Site. The Regional board issued the 401 Certification on November 20, 2012, and Boeing commenced field activities shortly thereafter. Only a portion of the proposed and approved activities were started and/or completed in the Fourth Quarter 2012.

Outfall 001

- Installed two rip rap check structures upstream of the Outfall 001 monitoring location;
- Installed a rip rap apron for energy dissipation immediately upstream of the Outfall 001 monitoring location;

- Installed matting and fiber rolls along the banks of the Outfall 001 drainage upstream of the Outfall 001 monitoring location; and
- BMPs to be performed early 2013 will include the repair of road washouts:
 - Placement of geocell along the Outfall 001 dirt road near the road washout; and
 - Installation of rip rap along the drainage bank to stabilize road runoff into the drainage.

Outfall 008

- Installed two rip rap check structures in the tributaries of the Outfall 008 drainage upstream of the Outfall 008 monitoring location;
- Refreshed the existing rip rap apron upstream from the Outfall 008 flume and extended the area of apron coverage, without the addition of rip rap; and
- Temporary erosion controls consisting of sand bags and fiber rolls were installed along a dirt road before the installation of permanent road rehabilitation BMPs.
- Anticipated BMPs to be performed in early 2013 consist of the following:
 - Placement of gravel/rip rap berms;
 - Installation of two or three earthen water bars along a dirt road to guide water into the vegetated margins to reduce erosion along the road.

Outfall 011

- BMPs to be performed in early 2013 consist of the following:
 - Removal of foreign gravel material from drainage channel immediately downstream of the Outfall 011 monitoring location;
 - Installation of a rip rap apron for energy dissipation immediately downstream of the Outfall 011 monitoring location;
 - Installation of two rip rap check structures downstream of the Outfall 011 monitoring location; and
 - Installation of biodegradable erosion control blanket along bare earth slopes adjacent to the existing Outfall 011 media bed and proposed access area to reduce erosion and sedimentation into the drainage for Outfall 011.

R2A Pond Area

- Drilled and secured steel supports to bedrock;
- Welded steel supports to steel catwalk to provide structural integrity catwalk; and
- Biodegradable matting was placed along access areas that were disturbed during construction.

A 2012 Annual Compliance Report for Outfall 001, Outfall 008, Outfall 011, and R2A Pond Areas was submitted to the Regional Board on December 19, 2012 (Boeing, 2012). This letter report provided information for those activities that commenced subsequent to November 20, 2012 and performed through December 14, 2012. Activities performed after December 14, 2012 will be included in the 2013 Annual Compliance Report.

REASONABLE POTENTIAL ANALYSIS (RPA)

Outfall monitoring data was collected and analytical results were evaluated during the Fourth Quarter 2012 for Outfalls 009, 019 and the Arroyo Simi Receiving Water sample location. Analytical results from this quarter were added to the RPA dataset as per the MWH and Flow Science RPA procedures for the outfall monitoring groups, Outfalls 003-007, 009-010 and Outfall 019 (MWH and Flow Science, 2006). RPA was not triggered for any constituent not already regulated under the current NPDES Permit. Complete RPA tables for the outfall monitoring group are provided in **Appendix E**.

DATA VALIDATION AND QUALITY CONTROL DISCUSSION

In accordance with current federal and state Environmental Protection Agency (EPA) guidelines and procedures, or as specified in the NPDES Permit, analyses of surface water discharge and receiving water samples were completed at a State of California-certified laboratory. Data validation was performed on the analytical results and quality control elements were found to be within acceptable limits for the analytical methods reported, except as noted on the analytical summary tables. Laboratory analytical reports, including validation reports and notes, are included in **Appendix F**. Attachment H of the NPDES Permit issued to the Santa Susana Site presents the State Board minimum levels (MLs) for use in reporting and determining compliance with NPDES Permit limits.

The analytical laboratory achieved these MLs for this reporting period when technically possible. When elevated laboratory reporting limits (RLs) were noted, the laboratory maximum detectable limits (MDLs) remained below the State of California MLs. However, some constituents' daily MDLs in the NPDES Permit are less than their respective MLs, and less than the RL. In cases where the NPDES Permit limit is less than the RL and ML, the RL was used to determine compliance. The specific constituents that have NPDES Permit limits that are less than the RL and ML are: mercury, bis(2-ethylhexyl)phthalate, polychlorinated biphenyls (PCBs) (Aroclor congeners), chlordane, Dichlorodiphenyldichloroethane (DDD), Dichlorodiphenyldichloroethylene (DDE), Dichlorodiphenyltrichloroethane (DDT), dieldrin, toxaphene, and chlorpyrifos. These compounds were either not a required analyte or not detected above the RL in all of the surface water/receiving water samples collected during Fourth Quarter 2012.

During the Fourth Quarter 2012, the autosamplers installed at several outfalls were calibrated and tested. Fixed flow testing was performed at three different flow rates 500 gallons per minute (gpm), 1,000 gpm, and 1,500 gpm to confirm that the autosamplers were pacing properly and collecting composite samples at the appropriate intervals. Sampling at Outfall 009 during the Fourth Quarter indicated that the autosamplers performed as intended. Boeing will continue to monitor autosampler performance to ensure sample collection is conducted appropriately.

FACILITY CONTACT

If there are any questions regarding this DMR or its enclosures, you may contact Ms. Debbie Taege at (818) 466-8849.

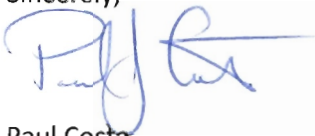
CERTIFICATION

I certify under penalty of law that this document and all appendices were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for a knowing violation.

Executed on the 14th of February 2013, at The Boeing Company, Santa Susana Site.

Sincerely,



Paul Costa
Environmental Operations and Compliance Manager
Santa Susana Field Laboratory

PC:jag

Figures:1 Storm Water Drainage System and Outfall Locations

- 2 BMP Construction Project Area Locations
- 3 ISRA Site Location Figure
- 4 RMMP Location Figure

Appendices:

- A Fourth Quarter 2012 Rainfall Data Summary
- B Fourth Quarter 2012 Liquid Waste Shipment Summary Tables
- C Fourth Quarter 2012 Summary Tables, Discharge Monitoring Data
- D Fourth Quarter 2012 Radiological Monitoring Data
- E Fourth Quarter 2012 RPA Summary Tables
- F Fourth Quarter 2012 Analytical Laboratory Reports, Chain-of- Custody, and Validation Reports

cc: Ms. Cassandra Owens, Regional Water Quality Control Board
Mr. Rick Brausch, Department of Toxic Substances Control
Mr. Gerard Abrams, Department of Toxic Substances Control
Mr. Robert Marshall, California State University – Northridge, Library
Mr. Gabriel Lundeen, Simi Valley Library
Ms. Lynn Light, Platt Branch, Los Angeles Library

References Cited:

Boeing, 2012, 2012 Annual 401 Certification Compliance Report, Santa Susana Field Laboratory, Ventura County, California, RWQCB File 12-116, December 19.

California Environmental Protection Agency (EPA) Department of Toxic Substances Control (DTSC), 2011. "Certification of Completion for Actions Under Imminent and Substantial Endangerment Determination and Order, Docket Number I/SED 07/08-002, Northern Drainage Area, Santa Susana Field Laboratory, Ventura County, California". April 29.

Haley & Aldrich, Inc., 2011. Northern Drainage Restoration, Mitigation, and Monitoring Plan (RMMP), Santa Susana Field laboratory, Ventura County, California, October.

MWH Americas, Inc., and Flow Science, 2006. Reasonable Potential Analysis Methodology Technical Memo- Version 1, Final, Santa Susana Field Laboratory, Ventura County, California. April 28.