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Via FedEx

February 15, 2010
In reply refer to SHEA-SHEA-109597

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

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Attention: Information Technology Unit

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

Subject: Fourth Quarter 2009 NPDES Discharge Monitoring Report Submittal
Santa Susana Site

Dear Sir/Madam,

The Boeing Company (Boeing) hereby submits the Discharge Monitoring Report (DMR) for the Santa Susana Field Laboratory (Santa Susana Site) for the Fourth Quarter of 2009. This DMR provides the results of the activities that occurred for the Santa Susana Site outfalls (Figure 1) for the period of October 1st through December 31st of 2009 as required by National Pollutant Discharge Elimination System (NPDES) Permit No. CA0001309 (NPDES Permit).

This quarterly DMR provides information and data, including summary tables of surface water sample analytical results, rainfall summaries, liquid waste shipment summaries, and surface water sample laboratory analytical reports. The DMR is provided for the Santa Susana Site outfalls authorized by the NPDES Permit. This document will be made available electronically at:

www.boeing.com/aboutus/environment/santa_susana/programs.html.

Additionally, hard copies of this DMR are available at the following: California State University at Northridge Library; Simi Valley Library; and the, Los Angeles Public Library, Platt Branch.

FOURTH QUARTER 2009 DISCHARGE MONITORING REPORT (DMR) CONTENTS AND DISCHARGE SUMMARY

Figure 1 is a site location map indicating the locations of the regulated outfalls at the Santa Susana Site. A summary of the Fourth Quarter 2009 precipitation measured at the Santa Susana Site is presented in Appendix A. All sanitary wastes from the domestic sewage

treatment plants (STPs I, II, and III) were shipped off-site for disposal. Details of all liquid waste shipments including the STP waste are summarized in Appendix B.

As detailed in Appendix A, Boeing observed seven daily rain events with greater than 0.1 inches of rainfall in a 24-hour period. These rainfall events occurred on October 13-14, December 7, and December 10-13, 2009. Field inspections are conducted at the storm water outfall locations prior to and following each rain event. The following table provides a summary of the Fourth Quarter 2009 sampling record (Table 1), by outfall/location where flow was observed and samples collected per the requirements of the NPDES Permit

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Table 1. Fourth Quarter 2009 Sampling Record -- Boeing SSFL

Date	Outfall/Location
10/14/2009	Outfall 006 (FSDF-2)
	Outfall 009 (WS-13 Drainage)
	Outfall 010 (Building 203)
	Outfall 013 (Bravo Test Stand)
11/4/2009	Arroyo Simi Receiving Water/Sediment Sampling (Frontier Park - City of Simi Valley)
12/7/2009	Outfall 009 (WS-13 Drainage)
	Outfall 010 (Building 203)
12/11/2009	Outfall 006 (FSDF-2)

On December 22, 2009, routine audit and maintenance was conducted at the meteorological station. These records of precipitation should not be considered as rainfall, as noted with the appropriate qualifier in the rainfall data summary table provided in Appendix A.

Samples collected for compliance purposes were submitted to and analyzed by a California-certified analytical laboratory. Appendices C and D contain summary tables of analytical results for surface water samples collected during the Fourth Quarter 2009. These tables identify the outfall, the constituents evaluated (analytes), the date of sampling, the analytical result, and data validation qualifiers.

A summary table of NPDES Permit limit exceedances and/or benchmark limits based on the surface water analytical data is provided in Appendix E. In addition, the results of a reasonable potential analysis (RPA) utilizing updated monitoring data are provided in Appendix F. Appendix G contains copies of the laboratory analytical reports, chains of custody, and data validation reports. Quarterly Summary Notes are a compilation of notes, abbreviations, and data validation codes that are used in the analytical data summary tables and are included as a supplement in Appendices C, D, E and F.

SUMMARY OF NONCOMPLIANCE

The following summary of noncompliance is organized by outfall location. Only those outfalls with NPDES Permit limits or benchmark limit exceedances are discussed in this DMR. No constituents were detected in the receiving water sample at concentrations greater than the receiving water limits for the Arroyo Simi.

Outfall 006

The following is a summary of exceedances of permit limits at Outfall 006 (FSDF-2). The benchmark limit exceedances are further detailed in Appendix E.

Nitrate + Nitrite as Nitrogen

Nitrate + nitrite as nitrogen (N) was detected at a concentration of 13 mg/L in storm water collected on October 14, 2009 from Outfall 006. This concentration exceeds the NPDES Permit limit of 10.0 mg/L for nitrate + nitrate as nitrogen as indicated in Appendix E.

The reason for the elevated nitrate/nitrite condition at this location has not been identified. All forms of nitrogen, including organic nitrogen, that are released to surface waters may be transformed to nitrate by soil bacteria under aerobic conditions. Primary sources of organic nitrogen include organic material such as leaf litter, animal excrement, atmospheric deposition, and fertilizers. The increase in nitrates/nitrites detected at this location is most likely the result of nitrification and/or some other bacterial metabolic activities occurring in the granular activated carbon (GAC) media of the filter BMPs. Accumulated decaying debris and organics may also have caused the elevated nitrate/nitrite condition. There is no fertilizer application occurring at the Site.

pH

Measurements on storm water collected at Outfall 006 on October 14, 2009 and December 11, 2009, indicated a pH of 6.2 and 6.4, respectively, which is outside the NPDES Permit limit range of 6.5 to 8.5. The reason for the decreased pH condition at this location appears to be the presence of byproducts resulting from microbial activity in the structural treatment control Best Management Practice (BMP) media beds at the outfall, which consists of sand, zeolite, and granular activated carbon filters. While the combination of elevated nitrate with low pH can suggest a water with low buffering capacity and nitrification occurring, the nitrate is not at a level that would suggest that it is influencing the pH, although it was measured above the permit limit (set at the maximum contaminant level for nitrate), suggesting microbial activity in the BMP media beds.

Boeing continues to implement measures to alleviate pH issues at this location that include rinsing the media, air blowing to dry the media, adding broken concrete to buffer the pH and adding limestone to buffer the pH to within permit limit range. The addition of a limestone buffer is expected to address the microbial activity within the BMP media beds. This was accomplished by installing bulk limestone on the top of the multimedia filtration bed and downstream of the existing BMP, directly upstream of the existing flow monitoring flume in a stainless steel filtration box. The bulk limestone was installed in order to address prior occurrences of elevated pH readings in filtered storm water runoff at Outfall 006.

Boeing is preparing plans to upgrade the BMPs at Outfall 006 during the summer of 2010. Additionally, Boeing will continue to monitor pH and Nitrate + Nitrite as Nitrogen at Outfall 006 and, if necessary, continue to implement BMP measures prior to upgrades taken during the dry season.

Outfall 009

The following is a summary of exceedances of benchmark limits at Outfall 009 (WS-13 Drainage). The benchmark limit exceedances are further detailed in Appendix E.

Dioxins and Furans: TCDD Toxic Equivalent Quotient (TEQ)

TCDD concentrations in storm water samples from Outfall 009 exceeded the NPDES benchmark limit of 2.80×10^{-8} µg/L on October 14, 2009, and December 7, 2009 as indicated in Appendix E. The reported concentration of TCDD Toxic Equivalent Quotient (TEQ) for the October 14, 2009 sample was 1.60×10^{-6} µg/L. The reported concentration of TCDD

TEQ for the December 7, 2009 samples was 1.10×10^{-7} µg/L. Additionally, TCDD TEQ exceeded the mass-based benchmark limit of 4.20×10^{-9}lbs/day for October 14, 2009. The reported mass calculations are 6.97×10^{-9} lbs/day for October 14.

TCDD congeners have been frequently detected in DTSC-approved, non-impacted background soils at the SSFL (MWH, 2005). In some areas, operations onsite have utilized combustion processes. However, when investigating these potentially impacted areas, the TCDD TEQ values in soils have been found either to be equivalent to background levels or, if elevated, they have been shown to decrease in relatively short distances to near background levels down slope or down drainage from the suspected source area.

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At this time Boeing continues to investigate sources of TCDD onsite. The presence of TCDD in both background soils and fire-related materials is well documented in scientific literature (USEPA, 2000; Gullett and Touati, 2003). These findings are further substantiated by previously completed onsite and offsite studies (MWH, 2005) as presented in the Flow Science Background Report (Flow Science, 2006) and reported in prior Santa Susana Site DMRs. These reports suggest that the levels of TCDD TEQ measured in surface water samples at the site may result primarily from wildfire combustion processes, regional atmospheric deposition, and other off-site sources over which Boeing has no control. Continued monitoring of surface water at the outfall locations during storm events will provide a more thorough dataset with which to further evaluate the occurrence of TCDD. Irrespective of the source of the exceedance, Boeing is committed to fulfilling the requirements of the NPDES Permit and, therefore, continues to take action to reduce discharges of regulated constituents. Those actions taken in the Fourth Quarter 2009 are further described below in the sections of this DMR addressing Interim Source Removal Action (ISRA) and Northern Drainage activities.

Metals

Lead was detected at Outfall 009 on December 7, 2010 at a concentration of 5.7 ug/L. This concentration exceeds the NPDES benchmark limit of 5.2 ug/Las indicated in Appendix E.

During the Fourth Quarter 2009, cleanup activities in the Northern Drainage area continued under Department of Toxic Substances Control (DTSC) oversight. In addition, pursuant to the December 3, 2008 Water Code Section 13304 Order issued by the LARWQCB (ISRA Order), Boeing, on behalf of the National Aeronautics and Space Administration (NASA), conducted source removal activities in the Outfall 009 watershed to address TCDD and lead, among other constituents. ISRA activities were completed at two locations during Fourth Quarter 2009.

It is likely that soil disturbance caused by these ongoing cleanup activities in the Outfall 009 watershed contributed to the elevated lead concentration noted in this sampling event.[1] The reduction of total suspended solids (TSS) in stormwater runoff is likely to be the most effective approach for reducing lead concentrations, since lead typically has low solubility and is associated with sediments. During these cleanup activities, Boeing has implemented BMPs (see the discussion below of significant BMP activities undertaken this quarter) to minimize the transportation of sediment from these areas. Boeing continues to investigate erosion sources and erosion control measures that can be implemented in the Outfall 009

[1] The background lead concentration of the soil is likely a contributing factor as well.

watershed, and erosion and sediment control plans, including channel stabilization, are underway for the Northern Drainage area, as are restoration activities (also described below).

Outfall 010

The following is a summary of exceedances of benchmark limits at Outfall 010 (Building 203). The benchmark limit exceedances are further detailed in Appendix E.

pH

Measurements on storm water collected at Outfall 010 on October 14, 2009, indicated a pH of 5.8, which is outside the NPDES Permit limit range of 6.5 to 8.5. The reason for the decreased pH condition at this location appears to be the presence of byproducts resulting from microbial activity within the BMP filter media.

Boeing implemented measures to alleviate pH issues at this location that included rinsing the media and adding limestone to buffer the pH to within permit limit range. Bulk limestone was installed on the top of the multimedia filtration bed and downstream of the existing BMP, directly upstream of the existing flow monitoring flume in a stainless steel filtration box. The bulk limestone was installed in order to address occurrences of lowered pH readings in filtered storm water runoff at Outfall 010.

Boeing is preparing plans to upgrade the BMPs at Outfall 010 during the dry season of 2010. Additionally, Boeing will continue to monitor pH and Dioxin at Outfall 010 and, if necessary, continue to implement BMP measures.

Dioxins and Furans: TCDD Toxic Equivalent Quotient (TEQ)

TCDD concentration in storm water samples from Outfall 010 exceeded the NPDES permit limit of 2.80×10^{-8} µg/L on December 7, 2009 as indicated in Appendix E. The reported concentration of TCDD TEQ was 8.90×10^{-8} µg/L.

TCDD congeners have been frequently detected in DTSC-approved, non-impacted background soils at the SSFL (MWH, 2005). In some areas, operations onsite have utilized combustion processes. However, when investigating these potentially impacted areas, the TCDD TEQ values in soils have been found either to be equivalent to background levels or, if elevated, they have been shown to decrease in relatively short distances to near background levels down slope or down drainage from the suspected source area.

At this time, Boeing continues to investigate sources of TCDD onsite. The presence of TCDD in both background soils and fire-related materials is well documented in scientific literature (USEPA, 2000; Gullett and Touati, 2003). These findings are further substantiated by previously completed onsite and offsite studies (MWH, 2005) as presented in the Flow Science Background Report (Flow Science, 2006) and reported in prior Santa Susana Site DMRs. These reports suggest that the levels of TCDD TEQ measured in surface water samples at the site may result primarily from wildfire combustion processes, regional atmospheric deposition, and other off-site sources over which Boeing has no control. Continued monitoring of surface water at the outfall locations during storm events will provide a more thorough dataset with which to further evaluate the occurrence of TCDD. Irrespective of the source of the exceedance, Boeing is committed to fulfilling the requirements of the NPDES permit and therefore continues to take actions to reduce discharges of regulated constituents.

As previously mentioned, Boeing is preparing plans to upgrade the BMPs at Outfall 010 during the dry season of 2010.

Outfall 013

The following is a summary of exceedances of benchmark limits at Outfall 013 (Bravo Test Stand). The benchmark limit exceedances are further detailed in Appendix E.

pH

Measurements on storm water collected at Outfall 013 on October 14, 2009, indicated a pH of 6.1, which is outside the NPDES permit limit range of 6.5 to 8.5. The reason for the decreased pH condition at this location appears to the presence of byproducts of microbial activity within the BMP media. Boeing implemented measures to alleviate pH as discussed below.

Metals

Despite Boeing's continued implementation of the site-wide Storm Water Pollution Prevention Plan (SWPPP) and maintenance of current structural and non-structural BMP material at SSFL, cadmium and zinc were detected above benchmark limits at Outfall 013 during the Fourth Quarter of 2009. Cadmium and zinc concentrations at Outfall 013 were detected at 8.4 ug/L and 260 ug/L, respectively. These concentrations exceeded the benchmark limits of 3.1 ug/L and 159 ug/L respectively, as indicated in Appendix E.

Outfall 013 is located directly downstream of the Bravo Test Stand, an inactive rocket engine testing facility residing within Area II of SSFL. Cooling water was previously discharged during rocket engine testing activities upstream of this monitoring location.

During the Fourth Quarter, Boeing replaced the BMP media which consists of bagged GAC and zeolite media upstream of the existing retention berm that is covered by an impervious membrane liner. In addition, a containment and hold system was added to Outfall 013 consisting of a pump and above ground 20,000 tank. Storm water is contained in the BMP and transferred via the pump to the staged tank for future management.

FOURTH QUARTER 2009 SITE-WIDE ACTIVITIES

Boeing continued to implement the Storm SWPPP throughout the Fourth Quarter 2009. Activities throughout the Santa Susana Site included site-wide inspections to identify sources of pollutants associated with current activities that may affect the quality of storm water. These activities included the removal of structural features, concrete foundations, metal, and other debris removals. Individual construction SWPPPs for these projects are being implemented as required. Additional activities that Boeing has completed or is currently conducting include: the Northern Drainage removal activities, media pilot study, significant BMP upgrades, autosampler installation and maintenance, and ISRA related activities as discussed below.

Northern Drainage

Phase II clay target removal in the Northern Drainage using a vacuum truck and manual excavation from the Former Shooting Range was completed in the Fourth Quarter of 2009. Hand-excavation of visible clay targets and black foam material within the Northern Drainage to the Brandeis-Bardin Campus of American Jewish University property was

performed. Additionally, confirmation soil sampling was completed with all results detected below clean-up criteria. Culvert maintenance activities were also completed during the Fourth Quarter 2009. Sediment and erosion control BMPs (consisting of fiber rolls, straw bales, and silt fencing) have been installed in the Northern Drainage watershed downstream of the excavation areas to minimize the potential for erosion along the drainage. BMPs were maintained, replaced and/or implemented throughout the Fourth Quarter prior to and following a rain event. Additionally, plastic sheeting was placed over all exposed soils areas. Hydroseeding in the Northern Drainage cleanup was also completed during the Fourth Quarter 2009.

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Plans are being developed for restoration of the Northern Drainage following the clean-up activities to be conducted in the First Quarter 2010. Restoration activities include planting along the banks to stabilize sediment per the recommendations from the Surface Water Expert Panel.

Media Pilot Study

Surface Water Expert Panel member Dr. Robert Pitt of the University of Alabama has completed a laboratory investigation on filtration media performance. With lab work managed by Dr. Shirley Clark of Penn State and study design guidance from Geosyntec Consultants and the other members of the Expert Panel, Dr. Pitt conducted a media study with the objective of (1) providing data to inform stormwater filtration BMP design (e.g., optimal media combinations and contact times), and (2) assessing the potential of media to achieve the BMP performance objectives (i.e., the Santa Susana NPDES Permit limits) in a cost-effective manner (e.g., considering maintenance frequency). Bench-scale column and batch tests were performed, and a draft final report has been circulated for Expert Panel review. The purpose of the column tests was to assess flow-through rates, time (or cumulative solids loading) until clogging/maintenance, time until breakthrough, effects of media depth (or contact time), achievable effluent concentrations, optimal combinations of media, and potential for contaminant release. The purpose of the batch tests was to assess pollutant uptake capacity and removal kinetics, and performance under aerobic versus anaerobic conditions. The study used stormwater samples collected at the Penn State Harrisburg campus, with water quality amendments where possible to match SSFL conditions. The study results are expected to provide valuable information on filtration media performance for stormwater treatment BMP design. A final report is expected to be released in February or March 2010.

Significant BMP Activities

The following sections list actions taken during the Fourth Quarter 2009 at the Santa Susana Site for the 2009/2010 Storm Season.

Installation of Electrical Power

Electrical installations to support the delivery of electricity to specific locations for the Santa Susana Site was conducted in the Fourth Quarter 2009. The installation of electrical power will support the necessary BMP upgrades, pumps, and treatment systems. The installation of this electrical distribution system was intended to replace the diesel powered generators that had been in use in the past. This upgrade will reduce the air emissions resulting from this activity, be less disruptive to the wildlife that inhabits the area, and will provide more flexibility in the future if additional BMP support equipment installation becomes necessary.

Outfall 004
As previously stated, electrical infrastructure was added to Outfalls 004 to support BMP pumps during the Fourth Quarter, 2009. Significant upgrade to the BMP was performed in order to increase retention and control the flow of storm water into the BMP to maximize contact time within the media beds. Pumps and temporary tanks were installed to contain storm water for subsequent management.

Outfalls 005/007
As previously stated, electrical infrastructure was added to both Outfalls 005 and 007 to support BMP pumps during the Fourth Quarter, 2009. During the Fourth Quarter 2009, storm water was collected at Outfalls 005 and 007 in the BMP impoundments and pumped to retention tanks for future management.

Outfalls 012 and 013
Boeing also took similar measures to enhance the BMPs at Outfall 012 as are described above in the discussion of Outfall 013. These actions included replacing the BMP media of bagged GAC and zeolite media upstream of the existing retention berm that is covered by an impervious membrane liner. In addition, a containment and hold system was added to Outfall 013 consisting of a pump and above ground 20,000 tank. Storm water is contained in the BMP and transferred via the pump to the staged tank for future management.

Outfalls 011 and 018
As previously stated, electrical infrastructure was added to both Outfalls 011 and 018 to support BMP pumps during the Fourth Quarter, 2009. Two temporary stormwater treatment systems (TSTSs) were installed at SSFL to treat stormwater from Outfalls 011 and 018, with capacities of 690 and 1,035 gallons per minute (gpm), respectively. The TSTSs are expected to reduce the concentration of the constituents of concern (COCs) listed in the current 2009 NPDES Permit limits present in stormwater discharged to these outfalls.

The Outfall 011 TSTS, located adjacent to R-1 Pond, consists of screen filters, an equalization tank, two banks of sand filters, bag filters, and granular activated carbon (GAC). Water is pumped from the Perimeter Pond to the R-1 Pond for treatment. Potassium permanganate ($KMnO_4$) solution is injected into the influent water to precipitate dissolved iron and manganese. Treated effluent water from the GAC skid is discharged directly to Outfall 011. Construction began for the Outfall 011 TSTS in November 2009 and was mostly completed in the Fourth Quarter 2009 with finalization in the First Quarter 2010.

The Outfall 018 TSTS consists of clean water treatment and solids removal systems. Water from R-2 Pond is pumped uphill to Silvernale Pond for treatment at the Outfall 018 TSTS, located adjacent to Silvernale Pond. $KMnO_4$, aluminum sulfate (alum) and polymer are injected into the water at different stages to enhance treatment. The $KMnO_4$ oxidizes iron and manganese so that it will precipitate out of solution. The alum and polymer stimulate coagulation and flocculation of fine sediments with co-precipitation of other metals and constituents. The clean water treatment system is comprised of screen filters, equalization tanks, contact tanks, two banks of sand filters, bag filters, and GAC filters. Effluent from the clean water system is discharged at Outfall 018 at approximately 1,000 gpm. The addition of alum and polymer coagulation followed by settling and filtration produces solids that are backwashed to a solids holding tank and later removed in a system comprised of a weir and lamella plate tank, solids holding tanks, and a centrifuge. Dewatered solids from this system are collected in roll-off bins and transported offsite for disposal, while the

supernatant is routed back to the front end of the clean water treatment system. Construction of the Outfall 018 TSTS began in November 2009 and was mostly completed in the fourth quarter of 2009 with finalization in the First Quarter of 2010.

Auto Sampler Installation for Composite Sampling

During the Fourth Quarter of 2009, installation of the auto sampling systems to collect composite samples was completed. The auto sampling systems consist of two peristaltic pumps with computer controllers to collect flow-weighted composite samples. The pumps draw samples from the flumes at the outfalls or from sample boxes downstream of the flumes and discharge these samples into Teflon lined 55-gallon drums. Two drums, pumps, and controllers were installed at each outfall. Two drums are needed so that sufficient sample volume can be captured for a wide range of storm sizes for the duration of the storm or until drum capacity is reached. The controllers were appropriately programmed based on the forecasted storm.

Despite Boeing's efforts to have all of the autosamplers installed and fully operational prior the rain season, not all of the autosamplers operated correctly during Fourth Quarter 2009 because of technical challenges resulting from start-up, real-time troubleshooting, equipment failures and adverse environmental conditions. In these instances, grab samples were instead collected and submitted for analysis for all analytes. Boeing is actively working to get these autosamplers fully operational with reduced risks of system failure during rain events.

The following is a list of the samples collected during the Fourth Quarter 2009 and the type of sample submitted:

- Outfall 006 on October 14, 2009 – Grab
- Outfall 009 on October 14, 2009 – Grab
- Outfall 010 on October 14, 2009 – Grab
- Outfall 013 on October 14, 2009 – Grab
- Outfall 009 on December 7, 2009 – Grab
- Outfall 010 on December 7, 2009 – Grab
- Outfall 006 on December 11, 2009 – Composite

As stipulated in the NPDES Permit, grab samples were collected during the first hour of discharge or at the first safe opportunity.

ISRA (Interim Source Removal Action) Related Activities

Pursuant to the December 3, 2008 Section 13304 Order issued by the RWQCB Boeing has been proceeding with ISRA activities in the Outfall 008 and 009 watersheds to address constituents that have historically exceeded NPDES Permit limits/benchmarks. During the Fourth Quarter 2009, ISRA activities were completed at 10 areas within the Outfall 008 watershed and 2 areas within the Outfall 009 watershed. The 2009 ISRA activities within the Outfall 008 and 009 watersheds consisted of excavation of approximately 5,200 cubic yards of soil, collection of approximately 130 confirmation samples, and restoration of the completed ISRA areas. Restoration activities included backfilling and grading of the excavation areas, installation of rock cropping and straw fiber roles, hydroseeding and planting within the Outfall 008 watershed to stabilize sediment per the recommendations from the Surface Water Expert Panel.

During the Fourth Quarter 2009, BMPs were implemented below the two planned Outfall 009 ISRA areas prior to beginning vegetation clearance to minimize the transportation of sediment from the areas. BMPs included the installation of hay bales in drainages. Stock piles were covered during nights, weekends, and on windy days to control dust from the stock pile area. A water hose was utilized to suppress dust during excavation activities and excavation areas were covered with plastic and sand bags prior to rain events. Since the completion of restoration activities associated with the 2009 ISRA areas, the site conditions, including BMPs, are monitored and maintained.

Boeing continues to submit monthly and quarterly progress reports to RWQCB Staff on the progress of the ISRA activities, including permit status. ISRA related documents can be found electronically at:

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

Specific BMP activities by outfall are also identified in Table 1.

Table 1: BMP Activities during the Fourth Quarter 2009

OUTFALL	BMP ACTIVITIES DURING FOURTH QUARTER 2009
001 (South Slope below Perimeter Pond)	Inspected erosion control BMPs, performed maintenance on the flume and conducted housekeeping activities at the sample location. Performed calibration check on outfall flow meter. Completed process of installing automatic composite samplers.
002 (South Slope below R-2 Pond)	Inspected erosion control BMPs, performed maintenance on the flume and conducted housekeeping activities at the sample location. Performed calibration check on outfall flow meter. Completed process of installing automatic composite samplers.
003 (RMHF)	Conducted structural BMP and storm water filter system inspections. Performed maintenance on flume and conducted housekeeping activities at the sample location. Completed process of installing automatic composite samplers.
004 (SRE)	Conducted structural BMP and storm water filter system inspections. Performed maintenance on flume and conducted housekeeping activities at the sample location. Completed process of installing automatic composite samplers. Completed installation of a sump, a pump, a tank, electricity delivery, and a pipeline to collect water from downstream of the BMP and distribute it upland within the Outfall 004 subwatershed to increase storage and evapotranspiration of the water. Completed modification to the BMP at its western end to slow water flowing down the service road area, retain more of it behind check dams on the service road, and filter it more thoroughly in the BMP.
005 (FSDF-1)	Conducted sedimentation basin and storm water filter system inspections. Conducted housekeeping activities at the sample location. Installed electrical delivery permanent pumps, partial lines, and storage tanks for Outfalls 005/007. Placed gravel at outfall.

OUTFALL	BMP ACTIVITIES DURING FOURTH QUARTER 2009
006 (FSDF-2)	Conducted structural BMP and storm water filter system inspections. Performed maintenance on flume and conducted housekeeping activities at the sample location. Rinsed filtration media beds. Placed limestone in outfall treatment area. Completed process of installing automatic composite samplers.
007 (Building 100)	Conducted BMP, sedimentation basin and storm water filter system inspections. Conducted housekeeping activities at the outfall and sample location. Installed electrical delivery permanent pumps, partial lines, and storage tanks for Outfalls 005/007.
008 (Happy Valley)	Inspected erosion control BMPs, performed maintenance on the flume and conducted housekeeping activities at the sample location. Conducted ISRA work, including restoration and erosion control activities, such as, planting native plants for erosion control. Performed calibration check on outfall flow meter. Completed process of installing automatic composite samplers.
009 (WS-13 Drainage)	Inspected erosion control BMPs, performed maintenance on the flume and conducted housekeeping activities at the sample location. Fiber rolls, coca matting, and hydroseed were installed in October to stabilize soil in the areas disturbed by culvert maintenance activities in the Outfall 009 Watershed. Completed process of installing automatic composite samplers.
010 (Building 203)	Conducted structural BMP and sedimentation/filtration basin inspections. Rinsed filtration media beds. Installed additional fiber rolls. Placed limestone in outfall treatment area. Completed process of installing automatic composite samplers.
011 (Perimeter Pond)	Conducted BMP and drainage system inspections. Performed maintenance and conducted housekeeping at the sample location. Installed new carbon media bed and rinsed media. Performed calibration check on outfall flow meter. Applied hydroseed to 1.5 acres of outfall. Continued process of procurement and design of the stormwater treatment system. Continued with installation of electricity and temporary stormwater treatment equipment, pumps, and pipelines. Completed process of installing automatic composite samplers.
012 (ALFA Test Stand)	Conducted inspection of structural BMPs. Performed maintenance and conducted housekeeping activities at the sample location. Replaced filtration media, continued to rinse. Placed pump and tanks at outfall for storage of stormwater.
013 (BRAVO Test Stand)	Conducted inspection of structural BMPs. Performed maintenance and conducted housekeeping activities at the sample location. Replaced filtration media, continued to

OUTFALL	BMP ACTIVITIES DURING FOURTH QUARTER 2009
	rinse. Placed pump and tanks at outfall for storage of stormwater.
014 (APTF Test Stand)	Conducted inspection of BMPs. Performed maintenance and conducted housekeeping activities at the sample location. Applied 1.5 acres of hydroseed.
018 (R-2 Spillway)	Conducted structural BMP inspections. Performed housekeeping activities at the sample location. Performed calibration check on outfall flow meter. Continued process of procurement and design of the stormwater treatment system. Continued with installation of electricity and temporary stormwater treatment equipment, pumps, and pipelines. Completed installation of automatic composite samplers.
019 (GETS)	Groundwater Extraction Treatment System (GETS) under construction. Treated ground water hauled off-site, no discharges.

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REASONABLE POTENTIAL ANALYSIS (RPA)

Outfall monitoring data were collected during the Fourth Quarter 2009 for Outfalls 006, 009, 010, and 013. Data from this quarter were added to the RPA dataset as per the MWH and Flow Science RPA procedures for the outfall monitoring groups, Outfalls 003-010 (excluding Outfall 008) and Outfalls 012-014 (MWH and Flow Science, 2006). The analytical results for this sampling period did not trigger reasonable potential for any constituents not already regulated under the current NPDES Permit. Complete RPA tables for the outfall monitoring group are provided in Appendix F.

As summarized in the MWH and Flow Science Technical Memo, Boeing does not believe the currently used RPA procedures are appropriate for storm water and storm water-dominated discharges from the SSFL.

DATA VALIDATION AND QUALITY CONTROL DISCUSSION

In accordance with current EPA guidelines and procedures, or as specified in the monitoring program, chemical analyses of the receiving water sample 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. As noted above, measures were implemented by the analytical laboratory to monitor and/or evaluate its low level detections, to analyze for interferences and to ensure that cross contamination does not occur in the future. Laboratory analytical reports, including validation reports and notes, are included in Appendix D. Attachment T-A of the NPDES Permit issued to the SSFL presents the State of California Water Resources Control Board (SWRCB or "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 the laboratory reporting limits (RLs) were elevated, the laboratory

maximum detectable limits (MDLs) were below the State of California MLs. However, some constituents' daily maximum discharge limits 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, cyanide, polychlorinated biphenyls (PCBs) (Aroclor congeners), chlordane, DDD, DDE, DDT, dieldrin, toxaphene, and chlorpyrifos. These compounds were either not a required analyses or below the RL in all of the surface water/receiving water samples collected during the Fourth Quarter 2009.

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FACILITY CONTACT

If there are any questions regarding this DMR or its enclosures, you may contact Ms. Lori Blair at (818) 466-8741.

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 15th of February 2010, at The Boeing Company, Santa Susana site.

Sincerely,

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

LB:bjc

Figure: 1 Storm Water Drainage System and Outfall Locations

Appendices:
- A Fourth Quarter 2009 Rainfall Data Summary
- B Fourth Quarter 2009 Liquid Waste Shipment Summary Tables
- C Fourth Quarter 2009 Summary Tables, Outfalls 006, 009, 010, 013, and Receiving Water Location (Arroyo Simi – Frontier Park)
- D Fourth Quarter 2009 Radiological Monitoring Data, 006, 009, 010, 013,
- E Fourth Quarter 2009 Summary of Exceedances

F Reasonable Potential Analysis (RPA) Summary Tables
G Fourth Quarter 2009 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

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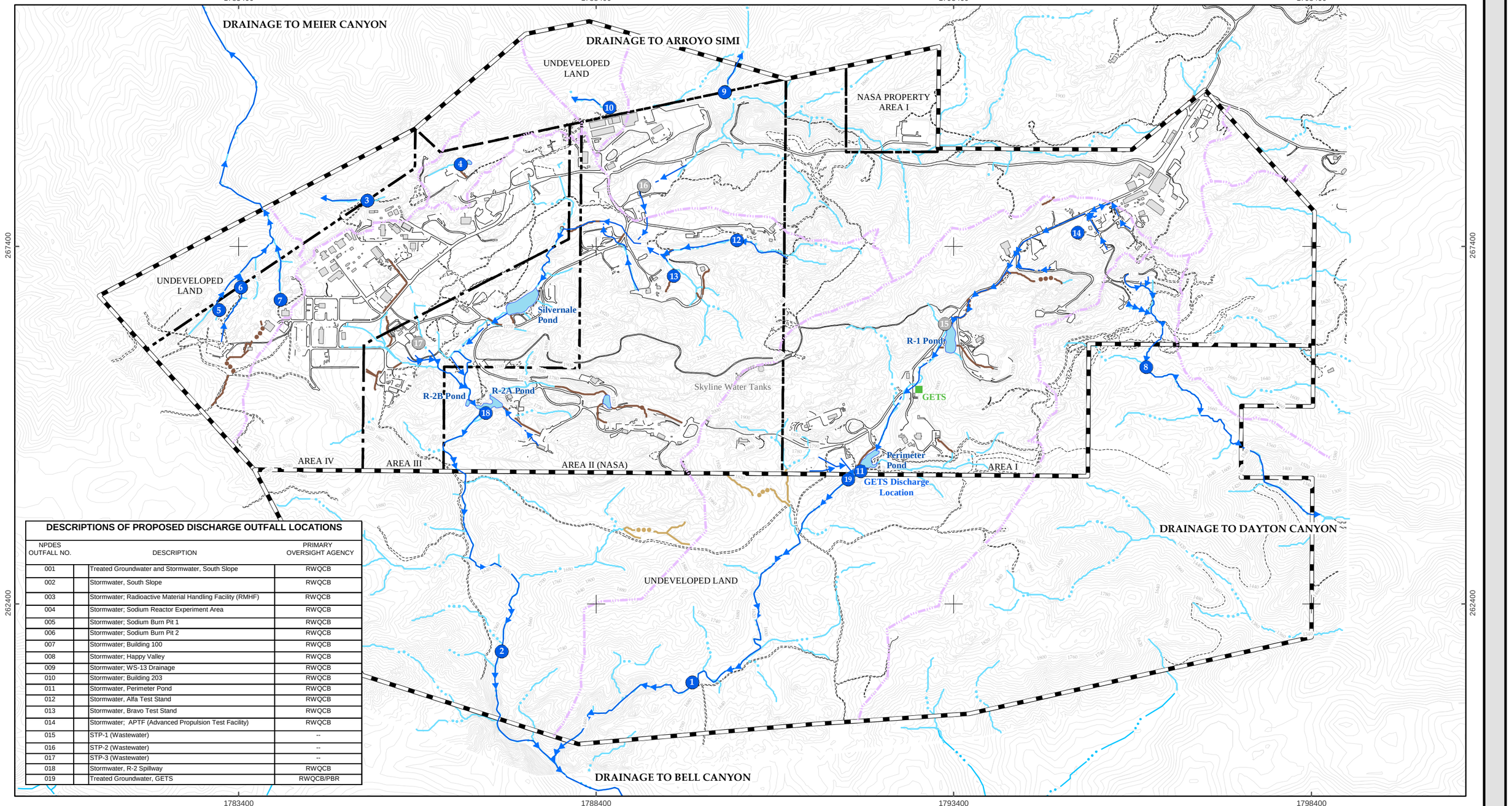
FIGURE 1

STORM WATER DRAINAGE SYSTEM AND OUTFALL LOCATIONS



DESCRIPTIONS OF PROPOSED DISCHARGE OUTFALL LOCATIONS

NPDES OUTFALL NO.	DESCRIPTION	PRIMARY OVERSIGHT AGENCY
001	Treated Groundwater and Stormwater, South Slope	RWQCB
002	Stormwater, South Slope	RWQCB
003	Stormwater; Radioactive Material Handling Facility (RMHF)	RWQCB
004	Stormwater; Sodium Reactor Experiment Area	RWQCB
005	Stormwater; Sodium Burn Pit 1	RWQCB
006	Stormwater; Sodium Burn Pit 2	RWQCB
007	Stormwater; Building 100	RWQCB
008	Stormwater; Happy Valley	RWQCB
009	Stormwater; WS-13 Drainage	RWQCB
010	Stormwater; Building 203	RWQCB
011	Stormwater, Perimeter Pond	RWQCB
012	Stormwater, Alfa Test Stand	RWQCB
013	Stormwater, Bravo Test Stand	RWQCB
014	Stormwater; APTF (Advanced Propulsion Test Facility)	RWQCB
015	STP-1 (Wastewater)	--
016	STP-2 (Wastewater)	--
017	STP-3 (Wastewater)	--
018	Stormwater, R-2 Spillway	RWQCB
019	Treated Groundwater, GETS	RWQCB/PBR

0 500 1,000 2,000 Feet

MAP COORDINATES IN STATE PLANE, NAD 27, ZONE V

Legend

- NPDES Outfalls (RWQCB Primary Oversight Authority)
- Historical NPDES Outfalls
- Groundwater Extraction Treatment System (GETS)
- Effluent Pathways
- Surface Water Drainage Divide
- Natural Drainage
- Concrete Lined Drainage
- Graded Drainage
- Surface Water Reclamation Ponds

Base Map Legend

- SSFL Property Boundary
- Administrative Area Boundary
- Ground Elevation Contours
- Drainage Pathways
- A/C Curbing
- Dirt Road
- Existing Building or Structure

Site Map with Outfall Locations and Storm Water Drainage Systems

Date: Jan 28, 2008

File: T:\projects\rock\plots\arcmap\LOX\Draft\NPDES.mxd

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FIGURE 1