State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Suite 200, Los Angeles

FACT SHEET
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
FOR
THE BOEING COMPANY
(Santa Susana Field Laboratory)

NPDES PERMIT NO.: CA0001309
Public Notice No.: 06-005

FACILITY MAILING ADDRESS
The Boeing Company
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148

FACILITY LOCATION
The Boeing Company
Santa Susana Field Laboratory
Top of Woolsey Canyon
Simi Hills, CA 91311
Contact: Paul Costa
(818) 466-8778

I. Public Participation

The California Regional Water Quality Control Board, Los Angeles Region, (Regional Board) will consider, during its January 19, 2006 meeting, the reissuance of waste discharge requirements (WDRs), which serve as a National Pollutant Discharge Elimination System (NPDES) permit to the Boeing Company for the Santa Susana Field Laboratory. As an initial step in the WDR process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

A. Written Comments

Interested persons are invited to submit written comments concerning the tentative WDRs. Comments should be submitted either in person, or by mail to:

August 28, 2003
Revised: December 19, 2003
Revised: January 14, 2004
Revised: February 27, 2004
Revised: March 25, 2004
Revised: June 22, 2004
Revised: July 1, 2004
Revised: November 30, 2005
Revised: December 19, 2005
Revised: January 9, 2006
Revised: January 19, 2006
Revised: March 9, 2006

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

Written comments regarding the tentative Order must be received at the Regional Board office by 5:00 p.m. on February 23, 2006, in order to be evaluated by staff and included in the Board's agenda folder.

B. Public Hearing

The proposed WDRs will be considered by the Regional Board at a public hearing. The hearing is scheduled as follows:

Date:	March 9, 2006
Time:	9:00 A.M.
Location:	Long Beach Water Department Groundwater Treatment Plant 2950 Redondo Avenue Long Beach, California

Interested persons are invited to attend. At the public hearing the Regional Board will hear testimony, if any, pertinent to the discharge, WDRs and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

C. Waste Discharge Requirements Appeals

Any person may petition State Water Resources Control Board to review the decision of the Regional Board regarding the final Waste Discharge Requirements. The petition must be filed within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board, Office of the Chief Counsel
Attn: Elizabeth Miller Jennings, Senior Staff Counsel
1001 I Street, 22nd Floor
Sacramento, CA 95812

D. Additional Information and Copies

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special conditions, comments received, and other information are on file and may be inspected at 320 West 4th Street, Suite 200, Los Angeles, CA 90013, at any time between 8:30 AM and 4:45 PM, Monday through Friday. Copying of documents may be arranged through the Los Angeles Regional Board by calling (213) 576-6600.

E. Register Of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Board, reference this facility, and provide a name, address, and phone number.

II. Introduction

The Boeing Company (hereinafter Boeing or Discharger) discharges waste from its Santa Susana Field Laboratory under waste discharge requirements, which serve as an NPDES permit, contained in Order No. 98-051 adopted by this Regional Board on June 29, 1998 (NPDES Permit No. CA0001309).

Boeing has filed a report of waste discharge (ROWD) and has applied for renewal of its WDRs and NPDES permit for discharge of wastes to surface waters. Order No. R4-2004-0111 was adopted on July 1, 2004.

This amendment (R4-2006-0008) to Order No R4-2004-0111 (adopted July 1, 2004) is the result of new information incorporated into the Order after one year of compliance and routine monitoring based on Monitoring and Reporting Program (MRP) No. 6027.

III. Facility and Waste Discharge Description

The Santa Susana Field Laboratory (SSFL) is located at the top of Woolsey Canyon, in the Simi Hills, CA (Figure 1). The developed portion of the site comprises approximately 1,500 acres. There is 1,200-acres of undeveloped property located to the south. Recently, an additional 150-acre undeveloped land has been purchased to the north of the site. SSFL is owned by both Boeing and the National Aeronautics and Space Administration (NASA). The United States Department of Energy (DOE) also owns several buildings located in Area IV, with the land being under the ownership of Boeing.

Boeing operations at SSFL since 1950 include research, development, assembly, disassembly, and testing of rocket engines, and chemical lasers. DOE conducted past operations in research and development of energy related programs, and seismic testing experiments. Current DOE activities onsite are solely related to facility closure, environmental remediation, and restoration.

SSFL is permitted to discharge excess water from its groundwater treatment system, industrial activities, onsite wastewater reclamation system, and rainfall runoff that has the potential to contain pollutants from the facilities. Approximately 60% of the discharge exits the property via two southerly discharge points (Discharge Outfalls 001 and 002) to Bell Creek, a tributary to the Los Angeles River, a water of the United States, with its confluence located near the intersection of Bassett Street and Owensmouth Avenue in Canoga Park, above the estuary (see Figure 1).

Past operations at the SSFL that may potentially contribute contaminants to discharges from the site include:

- Nuclear Operations, decontamination and decomissioning
- Monomethyl Hydrazine Usage,
- CTL-3 Chemical Laser Testing, and
- Energy Technology Engineering Center (ETEC) Cogeneration Operations.
- Rocket Engine and Component Testing

Nuclear Operations, decontamination and decommissioning: There are currently no programs at the SSFL, which employ special nuclear materials. Current decommissioning activities have reduced the inventory of radioactive waste at the SSFL to approximately 5 curies. Essentially all of this material is stored in shielded vaults located at the Radioactive Materials Handling Facility (RMHF). SSFL continues to utilize radioisotopes in the form of calibration sources which are necessary to calibrate radiation detectors and counting equipment. Periodic radiological monitoring of surface waters is conducted under the existing NPDES permit. Three radiological facilities located in Area IV of the SSFL remain to be decomissioned. Storm water run-off from Area IV of the SSFL is monitored for radioactivity. The Department of Energy (DOE) is responsible for the cost of decontamination and decommissioning, the California Department of Health Services (Radiological Health Branch) has radiological oversight responsibilities at Area IV of the SSFL.

Monomethyl Hydrazine Usage: Monomethyl hydrazine (MMH), a propellant, was used for research, development, and testing of rocket engines at the SSFL since 1955. The MMH, which was generated from testing operations was captured and treated by an ozonation unit under a variance, granted by the Department of Toxic Substances Control (DTSC)-. As a result, MMH was not released to the ponds from this area. MMH is no longer used at the SSFL.

CTL-3 Chemical Laser Testing: CTL-3 Chemical Laser Testing is shutdown for chemical based laser operations and is now only used for limited research and development, with no industrial discharges.

Energy Technology Engineering Center (ETEC) Cogeneration Operations: The facility has been decommissioned and was demolished in July 2003.

Rocket Engine and Component Testing: An engine test consists of a cycle of one to three engine runs lasting one to three minutes each. A test cycle may take one to two weeks to complete. Each engine run results in the use of 50,000 to 200,000 gallons of deluge/cooling water that may come in contact with fuels such as LOX or kerosene and associated combustion products. The frequency of testing varies depending on production requirements but currently one test cycle is completed every one to two months. This operation has significantly decreased over the past year and is likely to shut down completely during the life of this permit.

Current and Future Operations: Since the SSFL is a test facility, it is difficult to anticipate future test projects and possible wastewater generation. Following are descriptions of expected operations:

1. Treatment Under Tiered Permitting Rules. Boeing may explore the feasibility of treating certain waste streams by either a mobile or fixed hazardous waste treatment unit operating under DTSC Permit-by-Rule requirements. Treated effluent would then be released into the ponds.

2. Unspecified waste streams generated during remediation, cleaning, assembly, testing and support operations at the facility.

Groundwater Remediation: During the early 1950s to the mid-1970s, volatile organic compounds were utilized for the cleaning of hardware and rocket engine thrust chambers, and for the cleaning of other equipment. These solvents migrated into the subsurface, contaminating groundwater primarily with trichloroethylene (TCE) and 1,2-dichloroethylene (1,2-DCE).

As a result, there is now an extensive groundwater remediation/investigation program in progress at the SSFL, which includes pumping, treating and storing groundwater at the facility. Currently, this system is composed of eight treatment systems, five being active and three being inactive, which have the capability of producing up to 578 million gallons per year of groundwater treated to remove the volatile organic compounds. The treatment system is not designed to treat other pollutants such as perchlorate or metals. The chemical treatments used in groundwater treatment operations consist of ultraviolet light and hydrogen peroxide oxidation, carbon adsorption, and the physical treatment consists of air stripping towers. These treatment systems are regulated under Resource Conservation and Recovery Act (RCRA) part A and part B hazardous waste permits by DTSC, and various air quality control permits issued by Ventura County. Future plans to add new wells may increase the volume into the system by 25%. Pumping rates in the future may increase or decrease depending upon the outcome of the groundwater remediation program. In addition, there will also be intermittent pilot projects where test wells will be drilled and groundwater treated to determine optimum locations for future wells. Effluent from the groundwater remediation operations is discharged to the water reclamation system onsite via naturally occurring streambeds and in some cases man made watercourses present onsite.

Sewage Treatment Plants: Two package-type activated sludge sewage treatment plants (STP1 and STP3) provide secondary and tertiary treatment for the sewage. Disinfected sewage effluents from the activated sludge facilities are directed to the ponds. A third activated sludge sewage treatment plant (STP2) is available, but is currently used only as a pump station to STP-3 and as temporary storage of excess sewage. There are no discharges to receiving waters from STP-2.

Operations terminated at STP3 in October 2001 and at STP1 in December 2001. Recently, domestic sewage that had previously been treated at STP1 and STP3 has been diverted offsite. The STP1 and STP3 basins are used as collection points. Every few days, vacuum trucks transport the accumulated waste offsite for treatment. The Discharger has requested that the permit continue to cover potential discharges from these plants, as it may be necessary to bring them back on line in the future.

Water Reclamation System and Discharges: When in operation, effluent discharges from STP1 and STP3, the two sewage treatment plants, subsequently enter an onsite water retention system. The SSFL utilizes a system of natural, unlined and man-made ponds and

channels to collect water from onsite operations. Water supplied to the retention system comes from any one or a combination of the following sources: storm water, treated groundwater, treated sanitary sewage, rocket engine test cooling water, or domestic water purchased from an established purveyor. The water is stored in a series of 100,000-gallon steel tanks located in Area 2 called Skyline. Water from Perimeter and R-1 ponds may be pumped to the Skyline tanks where it can be transferred to Silvernale Pond. Water purchased from the Calleguas Water District is also stored at Skyline where it is used to cool test stands during engine testing and discharges to Silvernale Pone.

The water reclamation system consists of five ponds (see Figure 2).

R-1 Pond	capacity 3.7 million gallons
Perimeter Pond	capacity 1.3 million gallons
Silvernale Pond	capacity 6.0 million gallons
R2-B Pond	capacity 200,000 gallons
R2-A Pond	capacity 2.5 million gallons

Also shown on Figure 2 in Area 1 is the Coca Pond. This pond was previously used as a retention basin to collect water from the space shuttle main engine testing area. When Coca Pond is filled to capacity, it discharges to the R-2 Pond. The pond is currently used to collect water that may leak from the fire suppression system located in the former test area. If sufficient leaks occur, the pond discharges to R-2.

Area I utilizes the R-1 Pond as a reservoir. Water retained in the R-1 Pond is primarily comprised of storm water. Other sources include effluent from Sewage Treatment Plant 1 and treated groundwater. While this was a water reclamation system in the past, it is currently used as a retention system to minimize discharges.

Storm water collected at the facility is primarily stored at Silvernale Pond and R-2A Pond. As in Area I, the primary source of water stored in the ponds comes from storm water. Other sources include effluent from Sewage Treatment Plant 3, cooling water runoff from test operations and treated groundwater. While this was a water reclamation system in the past, it is currently used as a retention system to minimize discharges. If the supply of reclaimed water exceeds requirements, the water will be discharged to the south through R-2A Pond, and then to Bell Creek through Outfall 002.

The SSFL is underlain by alluvium, weathered bedrock and unweathered bedrock. The alluvium occurs in narrow drainages and alluvial valleys and is underlain by the Chatsworth Formation. The Chatsworth Formation consists of fractured sandstone with interbeds of siltstone and claystone, which can transmit water as well as contaminants.

The groundwater system at the SSFL is divided into two aquifers; the shallow and the deep. The alluvium and weathered bedrock comprise the shallow aquifer, and the unweathered and fractured Chatsworth Formation comprise the deep aquifer.

The groundwater in the shallow aquifer generally reflects surface topography. In April 2002, groundwater depths in the shallow aquifer ranged from approximately 6 feet to 40 feet below grade. Wells in the deeper aquifer, contained groundwater between approximately 23 feet to approximately 520 feet below grade.

In dry weather, ongoing activities were normally sufficient to use the water generated from onsite groundwater treatment systems. However, in recent years this water balance has changed. Water now being added into the system from the Calleguas Water District, plus the reduction of testing activities, has caused releases from R-2A Pond (located upstream from Outfall 002) to become intermittent. During hot weather, the water released may either evaporate or percolate into the ground before reaching Discharge Outfall 002. Thus, no offsite discharge of water occurs.

The discharges from Outfalls 001 and 002 were characterized in the permit application are as follows:

Constituents	Units	30-Day Average[1]	Daily Maximum
Flow	MGD	1.5	20
Temperature			
Winter (Oct. – April)	°F	57	59.2
Summer (May – September)	°F	71	76.2
pH	pH Units	7.9	8.41
BOD_5 20°C	mg/L	6	15
Total suspended solids	mg/L	15	62
Total organic carbon	µg/L	7.4	18
Total residual chlorine	mg/L	ND	ND
Fluoride	mg/L	0.4	0.7
Nitrate	mg/L	0.42	1.1
Oil and grease	mg/L	ND	ND
Radioactivity			
Total Alpha	pCi/L	----	8.9+/-5
Total Beta	pCI/L	----	20+/-9.1
Total Radium	pCi/L	----	3.54+/-1
Sulfate as SO_4	mg/L	120	173
Surfactants	mg/L	0.1	0.1
Barium	mg/L	17	90
Boron	mg/L	0.11	0.36
Iron	mg/L	0.09	0.22
Manganese	mg/L	51.6	170
Antimony	mg/L	2.8	5.7
Arsenic	mg/L	6.5	11
Beryllium	mg/L	ND	ND
Cadmium	mg/L	ND	ND
Chromium, Total	mg/L	7.7	10
Copper, Total	mg/L	5.2	15
Lead, Total	mg/L	1.6	3.5
Mercury, Total	mg/L	ND	ND
Nickel	mg/L	2	2
Selenium[2]	mg/L	2.1	2.1
Silver[2]	mg/L	1.2	1.4
Zinc	mg/L	28	80

[1] The maximum of the value presented for Discharge No. 001 or Discharge No. 002.
[2] This analyte was reported ND at Discharge No. 001. The values reported were for Discharge No. 002.

Other priority pollutants were reported as not detected or not believed to present in the discharge in the application.

Discharges from the groundwater treatment systems, the engine test stands and the water reclamation ponds located onsite in most cases enter naturally occurring drainage channels. Some of these channels are unlined, but portions of many of them have been lined or the flow is transported using piping to a natural drainage channel. Since the wastewater enters natural water transport channels onsite, these channels are considered waters of the United States and are thus subject to the Clean Water Act. These onsite natural drainage channels are tributaries to Bell Creek, hence limits for discharges to them must protect the beneficial uses for discharges to Bell Creek and the downstream reaches of the Los Angeles River. Similarly, because certain natural drainage channels are unlined and groundwater recharge is a designated beneficial use in Bell Creek and its tributaries, limits for discharges to the channels must protect the underlying beneficial uses of the groundwater.

Many of the areas discharging wastewater to the drainage areas and streambeds are associated with RCRA activities that are being directed by DTSC. The RCRA activities at the site include Post Closure Permits and investigation and corrective action oversight of contaminated areas. The Post Closure Permits cover the operation of the groundwater treatments systems. The investigation and corrective action oversight includes the site characterization and delineation of areas of contamination as well as subsequent cleanup operations at areas of concern onsite.

The 1995 Final SB 1082 Framework which was issued on December 14, 1995 documents the framework for implementing Health and Safety Code Section 25204.6(b) dealing with jurisdictional overlap between the DTSC and the Regional Water Quality Control Boards (RWQCBs). SB 1082 requires that "sole jurisdiction over the supervision of that action [meaning oversight of those corrective action activities] is vested in either the department or the State Water Resources Control Board and the California Regional Water Quality Control Boards." Since many of the identified wastewater sources are currently involved in the RCRA corrective action or the Post Closure Permits with DTSC as the oversight agency, consistent with RCRA, DTSC will ensure that the discharges from these operations through the RCRA permitting process meet the substantive Clean Water Act requirements. Regional Board staff will provide appropriate comments during the revision of RCRA permit to ensure the Clean Water Act, Porter-Cologne Act, and the Basin Plan requirements are met. However, at all time, the final downstream Outfalls 001 and 002 will be regulated by the accompanying NPDES permit and will implement relevant water quality standards.

There are several other operations that are ongoing which are not included in the RCRA corrective action that discharge wastewater to the onsite drainageways and streambeds. This NPDES permit will cover these activities.

The operation evaluated at SSFL and the agency (Regional Board or DTSC) with primary oversight authority and the NPDES outfall number associated with the operation if the Regional Board has oversight are listed below Figure 3.

	Operation	NPDES Outfall No.	Agency
1.	Wastewater and Storm water runoff	001	RWQCB
2.	Wastewater and storm water runoff	002	RWQCB
3.	Storm water Radioactive Material Handling Facility	003	RWQCB
4.	Storm water Sodium Reactor Exp.	004	RWQCB
5.	Storm water Sodium Burn Pit 1	005	RWQCB
6.	Storm water Sodium Burn Pit 2	006	RWQCB
7.	Storm water Building 100	007	RWQCB
8.	Storm water Happy Valley	008	RWQCB
9.	Storm water WS-13 Drainage	009	RWQCB
10.	Storm water Building 203	010	RWQCB
11.	R-1 Pond	-----	DTSC
12.	Perimeter Pond	011	RWQCB
13.	R-2 Ponds (R-2A and R-2B)	-----	DTSC
14.	R-2 Spillway	018	RWQCB
15.	Silvernale Pond	-----	DTSC
16.	Alfa Test Stand	012	RWQCB
17.	Bravo Test Stand	013	RWQCB
18.	WS-5 Groundwater Treatment System (GWTS)	-----	DTSC
19.	RD-9 GWTS	-----	DTSC
20.	Alfa GWTS	-----	DTSC
21.	Delta GWTS	-----	DTSC
22.	STLV-IV GWTS	-----	DTSC
23.	Interim GWTS near FSDF	-----	DTSC
24.	Interim GWTS near Bldg 59	-----	DTSC
25.	Interim GWTS near RMHF	-----	DTSC
26.	APTF	014	RWQCB
27.	STP-1 – effluent	015	RWQCB
28.	STP-2 – effluent	016	RWQCB
29.	STP-3 – effluent	017	RWQCB

Storm Water Discharges

In 1989, EPA conducted an investigation and submitted a report on SSFL environmental issues. The report specified under the recommended and planned actions that the Regional Board was to use the Clean Water Act to ensure run-off from the northwest side of Area IV was not contaminated. In response to the request, Rocketdyne developed a surface water monitoring program for the northwest slope area that was subsequently approved by EPA and implemented.

The topography of the SSFL is such that approximately 60% of rainfall runoff is routed to one of the two southerly-located retention ponds and is discharged from the site via Discharge Outfalls 001 or 002. Storm water runoff from the northwest slope of the facility is monitored at Discharge Outfalls 003, 004, 005, 006, and 007 which discharge towards the Arroyo Simi. The outfall locations near the Northwest slope are located such that they capture runoff from past and existing radiological facilities.

Discharge Outfall	Latitude (North)	Longitude (West)	Vicinity
003 (RMHF)	34° 14' 4.0"	118° 42' 38.4"	Radioactive Materials Handling Facility
004 (SRE)	34° 14' 9.1"	118° 42' 23.9"	Sodium Reactor Experiment
005 (SBP-1)	34° 13' 48.1"	118° 43' 3.9"	Sodium Burn Pit 1
006 (SBP 2)	34° 13' 50.7"	118° 42' 59.9"	Sodium Burn Pit 2
007 (B100)	34° 13' 50.2"	118° 42' 52.5"	Building 100

The samples collected are analyzed for radioactivity and for a number of other priority pollutants that may be present.

There is one more storm water monitoring location Discharge Outfall 008 (formerly referred to as Happy Valley and Happy Valley 1). This outfall captures runoff from an area that has previously been used for operations that involved perchlorate and monitoring events have yielded detections of perchlorate in the storm water runoff. Storm water from Happy Valley flows to Dayton Canyon Creek. The flow from Dayton Canyon Creek joins Chatsworth Creek , which flows south to Bell Creek southwest of the intersection of Shoup Avenue and Sherman Way. Bell Creek flows east to the Los Angeles River. This permit implements effluent limits for conventional pollutants and perchlorate at Outfall 008. Monitoring for the emergent chemicals and EPA priority pollutants except asbestos is also required.

A second Happy Valley sample location (referred to as Happy Valley 2) has been monitored during the past year. The samples in most cases yielded nondetect at Happy Valley 2 while samples collected during the same rain event yielded detections of perchlorate. However on May 3, 2003 samples collected from Happy Valley 1 (Discharge Outfall 008) was nondetect for perchlorate. The sample collected from Happy Valley 2 collected on that date resulted in a perchlorate concentration of 4.6 µg/L. The nondetect at 4 µg/L and the detected concentration of 4.6 µg/L may represent very similar concentrations.

During the 2002-2003 rain seasons, 2 locations were sampled in the Happy Valley area. Happy Valley 1 is the location agreed upon with the Regional Board in 1999. Happy Valley 2 is a location approximately 1500 feet downstream of Happy Valley 1. During the 2002-2003 storm season, Happy Valley 1 had frequent detections of perchlorate while Happy Valley 2 had consistently non-detected for perchlorate. However, on May 3, 2003, a detection of 4.6 µg/L was detected at Happy Valley 2 while the sample at Happy Valley 1 was non-detected at a 4.0 µg/L detection limit. As the concentration of 4.6 µg/L is very close to the laboratory detection limit of 4.0 µg/L, it is assumed that the two samples represent similar concentrations.

The objective of this Order is to protect the beneficial uses of receiving waters. To meet this objective, storm water runoff discharges from the SSFL are subject to requirements stipulated in this NPDES permit and the Discharger will be required to comply with all applicable provisions of the Storm Water Pollution Prevention Plan (Attachment A of the Order). This plan includes requirements to develop, implement, and when appropriate update a Storm Water Pollution Prevention Plan (SWPPP) along with Best Management Practices (BMPs) that will prevent all pollutants from contacting storm water and with the intent of keeping all contaminants of concern from moving into receiving waters.

Storm water sampling events during 1999, 2000 and 2001 yielded exceedances of existing effluent limitations for several contaminants of concern. These effluent violations indicate that the implementation of best management practices (BMPs) to control the transport of contaminants off site were not effective. Previous attempts to utilize BMPs to control the transport of contaminants offsite have proven ineffective as is demonstrated by the effluent limitation exceedances noted from Outfalls 003 through 007 on page 11 of the Fact Sheet (in the Compliance History Section). Storm water run off exiting the northern boundary of the site travels via Meir and Runkle Canyons to the Arroyo Simi, a tributary of Calleguas Creek. Hence, this Order includes effluent limits for the storm water discharges from the site for priority pollutants with reasonable potential.

Recent site inspections resulted in the identification of two other storm water monitoring locations:

- WS-13 Drainage Area — Discharge Outfall 009
- Building 203 — Discharge Outfall 010

Storm water runoff from the area that drains to discharge points 001, and 002 is estimated at 201 million gallons per day (MGD) (based on a 24-hour duration, 10-year return storm). This runoff is mixed with industrial waste collected in the ponds prior to discharge. Discharges from Outfall 008 are composed solely of storm water runoff.

The estimated flow from the area that drains storm water only from the northwest slope and discharges it via discharge points 003, 004, 005, 006, 007, 009 and 010 and via various drainage channels into Meir, Runkle and Woolsey Canyons is 71 MGD. (Figure 2).

The locations and the associated drainage areas are listed below for each of the seven storm water only discharge locations:

Discharge Outfall	Latitude (North)	Longitude (West)	Vicinity
003 (RMHF)	34° 14' 4.0"	118° 42' 38.4"	Radioactive Materials Handling Facility
004 (SRE)	34° 14' 9.1"	118° 42' 23.9"	Former Sodium Reactor Experiment
005 (SBP-1)	34° 13' 48.1"	118° 43' 3.9"	Former Sodium Burn Pit 1
006 (SBP 2)	34° 13' 50.7"	118° 42' 59.9"	Former Sodium Burn Pit 2
007 (B100)	34° 13' 50.2"	118° 42' 52.5"	Building 100
009(WS-13)	Not Available	Not Available	WS-13 Drainage Area
010(Bldg. 203)	Not Available	Not Available	Building 203

There is no flow from these locations except during heavy rainfall. For purposes of access and safety, these sampling stations have been established inside the SSFL northwest property boundary. The stations are located in close proximity to past and/or existing radiological facilities or other operations, as is noted in the vicinity column above.

Storm water from APTF flows toward Bell Creek and the Los Angeles River. Current operations at the facility have shut down. Past operations include small engine testing using kerosene (RP-1), hydrogen, potentially alcohol, methanol, peroxide, and liquid

oxygen (LOX). Nitrogen is also used for purge gas. After testing the staging areas are not routinely washed down to remove residual contaminants from the test operations. During normal operations testing may occur during storm events.

It is likely that contaminants associated with the engine test material would be present in the storm water runoff from the area. Hence, this permit requires that the storm water runoff from the area be monitored. If the monitoring data indicates reasonable potential, the permit will be reopened and effluent limitations will be implemented. The Discharger has indicated that the standard operating procedures for the area in the future will include washdowns of the staging areas after engine tests. The water associated with the washdown will be collected and disposed of offsite. If testing operations are required during storm events, the Discharger will collect the storm water runoff from the staging area for offsite disposal. If washdowns do not occur after test operations or if testing occurs during storm events and the water is not collected for offsite disposal, the Discharger will be required to sample it as stipulated for other storm water monitoring locations.

Compliance History

An audit of the file revealed several exceedances of the effluent limits prescribed in Order No. 98-051. The Table below lists the exceedances and/or potential exceedances noted in the self-monitoring reports submitted by the Discharger. The contaminant, effluent limit, detected value and date of detection is recorded for each exceedance in the table that follows. The table also includes footnote references to describe the disposition of each violation.

Footnote	Outfall Number	Contaminant	Effluent Limit (units)	Detected Value	Date of Exceedance
1	002	Total Suspended Solids	15 mg/L	21	08/31/1998
2	005	Mercury	0.012 µg/L	0.2	11/30/1998
10	STP1	Turbidity	2 NTU	3.1	10/13/1998
3	STP1	Turbidity	2 NTU	2.2	10/14/1998
3	STP1	Turbidity	2 NTU	2.3	11/10/1998
3	STP1	Turbidity	2 NTU	2.3	11/11/1998
3	STP1	Turbidity	2 NTU	2.4	11/24/1998
4	001	Manganese	50 µg/L	120	05/11/1999
4	001	Manganese	50 µg/L	60	05/20/1999
4	001	Manganese	50 µg/L	90	05/21/1999
4	001	Manganese	50 µg/L	110	05/24/1999
4	001	Manganese	50 µg/L	70	05/25/1999
2	004	Mercury	0.012 µg/L	0.26	02/09/1999
10	005	Antimony	6 µg/L	8	02/08/1999
10	005	Antimony	6 µg/L	7	02/09/1999
10	005	Antimony	6 µg/L	7	01/20/1999
5	005	Mercury	0.012 µg/L	8.04	11/08/1999

Footnote	Outfall Number	Contaminant	Effluent Limit (units)	Detected Value	Date of Exceedance
10	005	Copper	11 µg/L	14	11/08/1999
2	006	Mercury	0.012 µg/L	0.45	02/09/1999
10	007	Antimony	6 µg/L	8	02/09/1999
10	007	Antimony	6 µg/L	11	03/25/1999
10	007	Cadmium	3.7 µg/L	4	03/25/1999
9	003	Mercury	0.012 µg/L	0.025	2/00
9	004	Mercury	0.012 µg/L	2.3	2/00
9	005	Mercury	0.012 µg/L	0.87	2/00
9	006	Mercury	0.012 µg/L	0.17	2/00
9	007	Copper	11 µg/L	13	2/00
9	007	Mercury	0.012 µg/L	0.055	2/00
9	STP III	BOD_5	>85 % removal	71.6	2/00
9	STP III	Total coliform	2.2 MPN/100 mL	60	2/00
9	STP III	Total coliform	2.2 MPN/100 mL	60	2/00
9	002	TSS	15 mg/L	20	6/00
9	002	TSS	15 mg/L	16	9/00
9	005	Mercury	2.1 µg/L	3.6	1/25/00
9	005	Thallium	2.0 µg/L	3.2	3/5/00
9	006	Oil and Grease	15 mg/L	30.5	3/8/00
9	002	Thallium	2.0 µg/L	4.1	2/8/01
9	005	$(NO_2 + NO_3)$ as N	8.0 µg/L	14	2/27/01
9	005	$(NO_2 + NO_3)$ as N	8.0 µg/L	8.4	3/7/01
6	STP III	Turbidity	2 NTU	2.6	8/14/98
6	STP III	Turbidity	2 NTU	2.6	8/17/98
6	STP III	Turbidity	2 NTU	3.0	8/18/98
6	STP III	Turbidity	2 NTU	2.6	8/20/98
6	STP III	Turbidity	2 NTU	2.8	8/21/98
6	STP III	Turbidity	2 NTU	3.0	8/24/98
6	STP III	Turbidity	2 NTU	3.0	8/25/98
6	STP III	Turbidity	2 NTU	3.0	9/04/98
6	STP III	Turbidity	2 NTU	3.2	9/22/98
6	STP III	Turbidity	2 NTU	2.8	9/23/98
6	STP III	Turbidity	2 NTU	2.8	9/24/98
6	STP III	Turbidity	2 NTU	3.3	10/01/98
6	STP III	Turbidity	2 NTU	2.8	10/02/98
6	STP III	Turbidity	2 NTU	2.8	11/23/98
6	STP III	Turbidity	2 NTU	3.9	11/24/98
6	STP III	Turbidity	2 NTU	2.9	11/25/98
6	STP III	Turbidity	2 NTU	5.5	12/05/98
6	STP III	Turbidity	2 NTU	7.5	12/06/98
6	STP III	Turbidity	2 NTU	3.3	12/07/98
6	007	Cadmium	1	4	03/31/99
7	001	Iron	0.3 mg/L	0.67	2/12/03

Footnote	Outfall Number	Contaminant	Effluent Limit (units)	Detected Value	Date of Exceedance
7	002	Iron	0.3 mg/L	0.7	2/12/03
8	001	MBAS	0.5 mg/L	2	5/03/03

1. **The detected value should be adjusted** - Discharger sampled seven additional days during the month for a monthly average of 21 mg/L. The value of 16 mg/L on 08/06/98 was only one sample.

2. **These violations should not be included** - The method detection limit (MDL) used by the discharger is higher than the permit limit, the permit allows for the use of a PQL in place of the permitted monthly average limit. Per the permit the PQL for this limits was calculated by taking the Permittees' MDL (0.2 µg/L) and multiplying by a factor of 10 (due to the fact that Hg is a non-carcinogen).

3. **These violations should not be included** - The daily average permit limit for turbidity is 2 NTUs. For consistency purposes the Enforcement Unit uses the following guideline: since the permit limit is only shown with one significant figure, the Permittees' results are rounded to one significant figure.

4. **These identified violations should not be included** - The Permittee stated that no flow occurred from Outfall 001 during the month of May. The Permittee took samples although no wastewater was discharged from Outfall 001.

5. **This violation should not be included** – Additional analyses were performed on the same sample within the holding time for Hg. The results varied from 8.04 µg/L to 0.2 µg/L.

6. **These identified violations should be included** - Additional violations identified by the Enforcement Unit.

7. **This violation should not be included** – Additional analyses were performed on the same samples, which yielded results consistent with historical findings and below the specified limit.

8. **This violation should not be included** – The discharger has a letter from the laboratory indicating that an inappropriate method was used to analyze the sample. A subsequent analysis of the sample yielded a nondetect result at 0.1 mg/L.

9. **This violation was included** - The NOV issued June 27, 2001 included this violation.

10. **This violation was included** – The NOV issued February 6, 2004 included this violation.

A Notice of Violation (NOV) was issued for exceedances occurring after January 2000 on June 27, 2001 and SSFL provided additional information. A revised NOV was issued on October 19, 2001 and the Administrative Civil Liability complaint was issued on April 29, 2002. The Discharger completed the stipulated requirements on October 9, 2002.

On February 6, 2004 a NOV was issued for the violations identified in the table that occurred prior to January 2000, and subsequent to the previously mentioned NOV that have not been adequately addressed by the Discharger.

Order No. R4-2004-0111 was adopted on July 1, 2004 and implemented effluent limits that are more stringent than those from Order 98-051. Since the adoption of the permit, the Discharger has reported the following effluent exceedances.

OUTFALL #	DATE	CONSTITUENT	REPORTED VALUE	PERMIT LIMIT	UNITS
002	12/28/04	Hg	0.21	0.10	µg/L
002	12/28/04	TCDD	3.7E-08	2.8E-08	µg/L
002	12/31/04	Hg	0.32	0.10	µg/L
003	10/17/04	pH	9.13	6.5-8.5	pH units
003	10/17/04	TCDD	8.51E-06	2.8E-08	µg/L
003	12/05/04	TCDD	4.50E-08	2.8E-08	µg/L
004	10/17/04	Cu	15.0	14.0	µg/L
004	10/17/04	TCDD	7.08E-05	2.8E-08	µg/L
005	10/17/04	TCDD	3.32E-06	2.8E-08	µg/L
005	12/27/04	Hg	0.20	0.10	µg/L
006	10/17/04	TCDD	1.92E-04	2.8E-08	µg/L
006	10/27/04	pH	6.29	6.5-8.5	pH units
006	12/27/04	Hg	0.22	0.10	µg/L
006	12/27/04	pH	9.70	6.5-8.5	pH units
010	10/20/04	pH	9.40	6.5-8.5	pH units
012	10/20/04	pH	8.75	6.5-8.5	pH units
018	10/20/04	pH	8.51	6.5-8.5	pH units
004	1/3/2005	Mercury	0.23	0.13	µg/L
005	1/3/2005	TCDD	3.89E-08	2.80E-08	µg/L
017	1/10/2005	Residual Chlorine	5	0.1	mg/L
009	1/11/2005	Oil and Grease	16	15	mg/L
015	1/11/2005	Residual Chlorine	1	0.1	mg/L
015	1/11/2005	Chronic Toxicity	>16	1	TUc
017	1/1//2005	Residual Chloride	1	0.1	mg/L
017	1/11/2005	Chronic Toxicity	8	1	TUc
001	1/18/2005	Mercury	0.26	0.1	µg/L
002	1/18/2005	Mercury	0.23	0.1	µg/L
002	2/4/2005	Sulfate	310	300	mg/L
001	2/11//2005	MBAS	1	0.5	mg/L
001	2/11/2005	Chromium	27	16.3	µg/L
001	2/11/2005	Iron	27	0.3	mg/L
001	2/11/2005	Lead	9.7	5.2	µg/L
001	2/11/2005	Manganese	370	50	µg/L
001	2/11/2005	TCDD	4.71E-08	2.80E-08	µg/L
001	2/18/2005	Iron	9.2	0.3	mg/L
001	2/18/2005	Manganese	140	50	µg/L
001	2/18/2005	TCDD	6.52E-07	2.80E-08	µg/L

OUTFALL #	DATE	CONSTITUENT	REPORTED VALUE	PERMIT LIMIT	UNITS
007	2/18/2005	TCDD	6.98E-07	2.8E-08	µg/L
001	2/26/2005	Iron	0.45	0.3	mg/L
001	2/28/2005	TCDD	4.71E-08	1.40E-08	µg/L
001	3/26/2005	Iron	0.42	0.3	mg/L
002	4/01/2005	Sulfate	310	300	mg/L
002	4/08/2005	Sulfate	360	300	mg/L
002	4/15/2005	Sulfate	400	300	mg/L
002	4/22/2005	Sulfate	400	300	mg/L
002	4/22/2005	TDS	1,000	950	mg/L
001	4/28/2005	Iron	0.36	0.3	mg/L
001	4/28/2005	TCDD	3.73E-08	2.80E-08	µg/L
002	4/28/2005	TCDD	6.28E-07	2.80E-08	µg/L

The listed exceedances are currently being evaluated for enforcement action.

IV. Applicable Statutes, Plans, Policies, and Regulations

A. *Clean Water Act* (CWA). The federal CWA requires that any point source discharge of pollutants to a water of the United States must be done in conformance with an NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect water quality.

B. *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan). The Basin Plan contains water quality objectives and beneficial uses for inland surface waters and for the Pacific Ocean. The receiving water for storm water runoff from Outfall 008 (Happy Valley) is Dayton Canyon Creek which flows to Chatsworth Creek. Chatsworth Creek merges with Bell Creek and Bell Creek flows into the Los Angeles River. The receiving water for the permitted discharge of the treated effluent via Outfalls 001, 002, 011 and 018 is Bell Creek a tributary to the Los Angeles River. The beneficial uses of the Dayton Canyon Creek, Bell Creek and the Los Angeles River are:

Dayton Canyon Creek – Hydrologic Unit 405.21

Existing: wildlife habitat
Intermittent: groundwater recharge, contact and non-contact water recreation; warm freshwater habitat.

Bell Creek – Hydrologic Unit 405.21

Existing: wildlife habitat
Intermittent: groundwater recharge, contact and non-contact water recreation; warm freshwater habitat.

The Los Angeles River upstream of Figueroa Street – Hydrologic Unit 405.21:

Existing: groundwater recharge; contact and non-contact water recreation, warm freshwater habitat; wildlife habitat; and wetland habitat.
Potential: industrial service supply.

Los Angeles River downstream of Figueroa Street –Hydrologic Unit 405.15

Existing: groundwater recharge, contact and non-contact water recreation, and warm freshwater habitat.
Potential: industrial service supply and wildlife habitat.

Los Angeles River downstream of Figueroa Street – Hydrologic Unit 405.12

Existing: groundwater recharge; contact and noncontact water recreation; warm freshwater habitat; marine habitat; wildlife habitat; and rare, threatened, or endangered species.
Potential: industrial service supply; industrial process supply; migration of aquatic organisms; spawning, reproduction, and/or early development; and shellfish harvesting.

Los Angeles River Estuary – Hydrologic Unit 405.12

Existing: industrial service supply; navigation; contact and non-contact water recreation; commercial and sport fishing; estuarine habitat; marine habitat; wildlife habitat; rare, threatened, or endangered species; migration of aquatic organisms; spawning, reproduction, and/or early development; and wetland habitat.
Potential: shellfish harvesting.

Dayton Canyon Creek, Bell Creek and all of the reaches of the Los Angeles River listed except for the estuary also have municipal and domestic supply (MUN) listed as a potential beneficial use with an asterisk in the Basin Plan. This is consistent with Regional Board Resolution 89-03; however the Regional Board has only conditionally designated the MUN beneficial uses and at this time cannot establish effluent limitations designed to protect the conditional designation.

The storm water runoff from Outfalls 003 through 007, 009 and 010 discharges from the SSFL exit the site to the northwest and flows down the Meier and Runkle Canyons toward the Arroyo Simi. The Arroyo Simi is tributary to the Calleguas Creek. The beneficial uses for the receiving water are listed below.

Arroyo Simi – Hydrologic Unit 403.62

Existing: wildlife habitat, rare, threatened, or endangered species habitat,
Intermittent: industrial process supply, groundwater recharge, freshwater replenishment, contact and non-contact water recreation, warm freshwater habitat;

Arroyo Las Posas – Hydrologic Unit 403.62

Existing: groundwater recharge, freshwater replenishment, contact and non-contact water recreation, warm freshwater habitat, wildlife habitat,
Potential: industrial process supply, industrial service supply, agricultural supply, and cold freshwater habitat.

Calleguas Creek – Hydrologic Unit 403.12

Existing: industrial service supply, industrial process supply, agricultural supply, groundwater recharge, contact and non-contact water recreation, warm freshwater habitat, and wildlife habitat,

Calleguas Creek – Hydrologic Unit 403.11

Existing: agricultural supply, groundwater recharge, freshwater replenishment; contact and non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, rare, threatened or endangered species, and wetland habitat,

Calleguas Creek Estuary – Hydrologic Unit 403.11

Existing: noncontact water recreation, commercial and sport fishing, estuarine habitat, wildlife habitat, rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development, and wetland habitat;
Potential: navigation and water contact recreation.

Mugu Lagoon – Hydrologic Unit 403.11

Existing: navigation, non-contact water recreation, commercial and sport fishing, estuarine habitat, marine habitat, preservation of biological habitats, wildlife habitat, rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development, shellfish harvesting, and wetland habitat,
Potential: water contact recreation.

All of the reaches of Calleguas Creek except the estuary also include conditional municipal and domestic supply designations as an intermittent or potential beneficial use in the Basin Plan.

C. **Ammonia Basin Plan Amendment**. The 1994 Basin Plan provided water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on April 25, 2002, by the Regional Board with the adoption of Resolution No. 2002-011, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters (including enclosed bays, estuaries and wetlands) with Beneficial Use designations for protection of Aquatic Life*. The ammonia Basin Plan amendment was approved by the State Board, the Office of Administrative Law, and USEPA on April 30, 2003, June 5, 2003, and June 19, 2003, respectively. Although

the revised ammonia water quality objectives may be less stringent than those contained in the 1994 Basin Plan, they are protective of aquatic life and are consistent with USEPA's 1999 ammonia criteria update.

D. ***Title 22 of the California Code of Regulations***. The California Department of Health Services established primary and secondary maximum contaminant levels (MCLs) for a number of chemical and radioactive contaminants. These MCLs can be found in Title 22, California Code of Regulations (Title 22). Chapter 3 of the Basin Plan incorporates portions of Title 22 by reference. In addition, narrative objectives require the ground waters shall not contain taste or odor-producing substances in concentrations that affect beneficial uses. The secondary MCLs in Title 22 are designed to ensure that the water's taste and odor does not affect its suitability to drink. Title 22 MCLs have been incorporated into NPDES permits and Non-Chapter 15 WDRs to protect the municipal and domestic supply (MUN) and groundwater recharge (GWR), where the underlying groundwater has a designated MUN beneficial use.

Groundwater Recharge. Sections of Bell Creek and Arroyo Simi, near the SSFL discharge points, are designated as GWR indicating that groundwater recharge is a beneficial use. Surface water from the Bell Creek enter the Los Angeles River Watershed. The headwaters of the Los Angeles River originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. Four basins in the San Fernando Valley area contain substantial deep groundwater reserves and are recharged mainly through runoff and infiltration.

Surface water discharges from the north west edge of the SSFL are directed to Arroyo Simi a tributary located in the Calleguas Creek Watershed. Supplies of groundwater are critical to agricultural operations and industry (sand and gravel mining) in this watershed.

Moreover, much of the population in the watershed relies upon groundwater for drinking. Since groundwater from these basins is used to provide drinking water to a large portion of the population, Title 22-based limits are needed to protect that drinking water supply. By limiting the contaminants in the SSFL discharges, the amount of pollutants entering the surface waters and groundwater basins are correspondingly reduced. Once groundwater basins are contaminated, it may take years to clean up, depending on the pollutant. Compared to surface water pollution, investigations and remediation of groundwater are often more difficult, costly, and extremely slow. For these reasons Title 22-based limits will remain in the NPDES permit where there is reasonable potential.

On December 17, 2003, the Regional Board received the December *2003 Technical Memorandum Analysis of Groundwater Recharge, Santa Susana Field Laboratory, Ventura County, California*, prepared by Montgomery Watson Harza on behalf of the Boeing Company. This document was submitted to DTSC in order to present a qualitative and quantitative analysis of groundwater recharge at the Santa Susana Field Laboratory. Regional Board staff have also reviewed this document and find that a reasonable conclusion for the amount of rainfall that infiltrates soil using a water balance method is between 23% to 26%. Using a chloride mass balance method resulted in a range of 1% to 12% rainfall infiltration. As these calculations

by different methodologies differ significantly and are inconclusive, Regional Board staff find that there is insufficient data to suggest that rainfall will not significantly recharge groundwater in the underlying surficial soils, weathered and fractured bedrock. In addition, there has been no site-specific soil attenuation factor/model submitted for Regional Board staff review. Inasmuch, those limits placed in this Order to protect groundwater recharge beneficial uses and beneficial uses of underlying groundwater apply at end-of-pipe.

Action Levels. California Department of Health Services (DHS) establishes Action Levels (ALs), or health based advisory levels, for chemicals in drinking water that lack MCLs. An AL is the concentration of a chemical in drinking water that is considered not to pose a significant risk to people ingesting that water on a daily basis. ALs may be established by DHS for non-regulated chemical contaminants when one of the following occurs:

1. A chemical is found in an actual or proposed drinking water source, or
2. A chemical is in proximity to a drinking water source, and guidance is needed, should it reach the source.

An AL is calculated using standard risk assessment methods for non-cancer and cancer endpoints, and typical exposure assumptions, including a 2-liter per day ingestion rate, a 70-kilogram adult body weight, and a 70-year lifetime. For chemicals that are considered carcinogens, the AL is considered to pose "de minimus" risk, i.e., a theoretical lifetime risk of up to one excess case of cancer in a population of 1,000,000 people – the 10^{-6} risk level. (In that population, approximately 250,000 – 300,000 cases of cancer would be anticipated to occur naturally.) ALs may be revised from time to time to reflect new risk assessment information. Chemicals for which ALs are established may eventually be regulated by MCLs, depending on the extent of contamination, the levels observed, and the risk to human health. A number of the contaminants for which action levels were originally established now have MCLs.

In 1997, DHS established an 18 µg/L AL for perchlorate. DHS used the upper value of the 4 to 18 µg/L range that resulted from the "provisional" reference does that USEPA prepared in support of its Superfund activities. A revised external review draft perchlorate reference dose corresponding to a drinking water concentration of 1 µg/L was released in 2002. DHS concluded that the AL needed to be revised downward. On January 18, 2002, DHS reduced the perchlorate AL to 4 µg/L. The revised AL coincided with the analytical detection limit for purposes of reporting and was at the lower end of the 4 to 18 µg/L range from the USEPA 1992-1995 assessment. The Public Health Goal (PHG) for perchlorate was developed by Office of Environmental Health Hazard Assessment based on a contemporary health risk assessment. This new information was provided to DHS and on March 11, 2004 the AL for perchlorate was revised to 6 µg/L, a value identical to the PHG that will be used by DHS to develop the MCL for perchlorate. The effluent limit for perchlorate included in this Fact Sheet and in the revised-tentative WDR (dated March 25, 2004) has been updated to reflect the change in the AL by DHS (from 4 µg/L to 6 µg/L).

Perchlorate and its salts are used in, but not limited to, solid propellant for rockets, missiles, and fireworks. The defense and aerospace industries purchase more than 90 percent of all the perchlorate manufactured. Perchlorate has historically been used at SSFL and thus is considered a chemical of concern at the site. Monitoring data collected during the tenure of the current permit indicates that perchlorate was present in the storm water runoff in Happy Valley and it has been detected in some of the groundwater wells utilized in the cleanup operations ongoing with DTSC oversight.

Perchlorate can interfere with iodide uptake by the thyroid gland; this can result in a decrease in the production of thyroid hormones, which are needed for prenatal and postnatal growth and development, as well as for normal body metabolism. Neither, the CTR, NTR or the Basin Plan has requirements stipulated for perchlorate. Since there is not drinking waters standard, or maximum contaminant level (MCL), the DHS uses the AL as an advisory level. The Regional Board, exercising its best professional judgement, in the review of the "best available science" has in the past considered and used ALs when deemed appropriate to establish final effluent limitations in WDRs and NPDES permits adopted by this Board, to implement the Basin Plan narrative WQO, *"all waters shall be maintained free of toxic substance that produce detrimental physiological responses in human, plant, animal, or aquatic life,"* and to prevent degradation of valuable groundwater sources of drinking water.

E. Under title 40 Code of Federal Regulations (40 CFR) section 122.44(d), *Water Quality Standards and State Requirements*, "Limitations must control all pollutants or pollutant parameters (either conventional, non-conventional, or toxic pollutants), which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." Where numeric effluent limitations for a pollutant or pollutant parameter have not been established in the applicable state water quality control plan, 40 CFR section 122.44(d)(1)(vi) specifies that water quality-based effluent limitations (WQBELs) may be set based on United States Environmental Protection Agency (USEPA) criteria, and may be supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria, and to fully protect designated beneficial uses.

F. The influent to the package type sewage treatment plants located at SSFL meet the requirements for the special consideration for less concentrated influent wastewaters. Section 133.103 of 40 CFR provides guidance on special considerations for secondary treated effluent. Paragraph (d) address less concentrated influent wastewater for separate sewers. The regulation states that:

> "The Regional Administrator or, if appropriate, State Director is authorized to substitute either a lower percent removal requirement or a mass loading limit for the percent removal requirements set forth in sections 133.102 (a) (3), 133.102 (a) (4) (iii), 133.102 (b) (3), 102.105 (a) (3), 133.105(b) (3) and 133.105(e) (1) (iii) provided that the permittee satisfactorily demonstrates that: (1) The treatment works is consistently meeting, or will consistently meet, its permit effluent concentration limits but its percent removal requirements cannot be due to less concentrated influent wastewater (2) to meet the percent

removal requirements, the treatment works would have to achieve significantly more stringent limitations than would otherwise be required by the concentration-based standard, and (3) the less concentrated influent wastewater is not the result of excessive infiltration/inflow."

Consequently, this permit has substituted the mass loading limit for the percent removal requirement. However, there is a requirement that the influent monitoring be completed at least annually such that the per cent removal can be calculated.

G. Section 402(p) of the federal Clean Water Act (CWA), as amended by the Water Quality Act of 1987, requires NPDES permits for storm water discharges. The Discharger in addition to meeting the effluent limits included in this permit for storm water discharges only will be required to develop and implement a SWPPP as stipulated in Finding 27 of the Waste Discharge Requirements. These requirements as they are met will protect and maintain existing beneficial uses of the receiving water.

H. On May 18, 2000, the USEPA promulgated numeric criteria for priority pollutants for the State of California [known as the *California Toxics Rule* (CTR) and codified as 40 CFR section 131.38]. On March 2, 2000, State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or* SIP). The SIP was effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through National Toxics Rule (NTR) and to the priority pollutant objectives established by the Regional Boards in their Basin Plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by the USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP was effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the USEPA through the CTR.

I. Section 402(o) of the Clean Water Act and 40 CFR section 122.44(l) require that water-quality based effluent limits in re-issued permits must be at least as stringent as in the existing permit (anti-backsliding). There are, however, exceptions to the prohibition which are codified in sections 303(d)(4) and/or 402(o)(2) of the Clean Water Act. Hence, many of the limits from the existing waste discharge requirements contained in Regional Board Order No. 98-051, adopted by the Regional Board on June 29, 1998 have been included in this Order. For those limits carried forward, the Regional Board has determined that there is reasonable potential for the pollutant to cause or contribute to an exceedance of water quality standards in accordance with State Board Order No. WQ2003-0009. Reasonable potential is determined using the procedures established in the SIP, informed by professional judgment.

J. Antidegradation. On October 28, 1968, the State Board adopted Resolution No. 68-16, Maintaining High Quality Water, which established an antidegradation policy for State and Regional Boards. Similarly, the CWA (section 304(d)(4)(B)) and USEPA regulations (40 CFR section 131.12) requires that all NPDES permitting actions be consistent with the federal antidegradation policy. Specifically, waters that are of a higher quality than needed to maintain designated beneficial shall be maintained at the higher water quality unless specific findings are made.

K. *Watershed Management Approach.* The Regional Board has implemented a Watershed Management Approach, in accordance with *Watershed Protection: A Project Focus* (EPA841-R-95-003, August 1995), to address water quality protection in the Los Angeles Region. Programs covered under the Watershed Management Approach include regulatory (e.g., NPDES), monitoring and assessment, basin planning and water quality standards, watershed management, wetlands, total maximum daily loads (TMDLs), 401 certifications, groundwater (as appropriate), and nonpoint source management activities. The Watershed Management Approach integrates the Regional Board's many diverse programs, particularly, permitting, planning, and other surface-water oriented programs. It emphasizes cooperative relationships between regulatory agencies, the regulated community, environmental groups, and other stakeholders in the watershed to achieve the greatest environmental improvements with the resources available. This approach facilitates a more accurate assessment of cumulative impacts of pollutants from both point and nonpoint sources.

The Los Angeles River watershed is one of the largest in the Region. The headwaters of the Los Angeles River originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. The river flows through industrial and commercial areas and is bordered by rail yards, freeways, and major commercial and government buildings. The Los Angeles River tidal prism/estuary begins in Long Beach at Willow Street and runs approximately three miles before joining with Queensway Bay located between the Port of Long Beach and the city of Long Beach.

The wastewater discharge from Outfalls 001 and 002 at the SSFL enters Bell Creek near the headwaters of the Los Angeles River. The storm water runoff from Happy Valley (Outfall 008) exits the site via Dayton Canyon Creek which flows to Bell Creek and subsequently the Los Angeles River.

The other storm water runoff exiting the SSFL site does so near the northwest site boundary from Outfalls 003 through 007, 009 and 010. The receiving water for the storm water runoff from these locations is the Arroyo Simi, a tributary of Calleguas Creek. The Calleguas Creek Watershed extends from the Santa Monica Mountains and Simi Hills in the south, to the Santa Susana Mountains, South Mountain, and Oak Ridge in the north. Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Agricultural activities are spread out along valleys and on the Oxnard Plain.

The storm water discharge exits the site and travels down Meier and Runkle Canyons towards the Arroyo Simi. Most of the land use around the facility is open area. Overall the Calleguas Creek Watershed is considered an impaired watershed. It appears that the sources of many of these pollutants are agricultural activities. Approximately fifty percent of the watershed is still open space although there is a severe lack of benthic and riparian habitat present. The discharge, when it is sufficient to reach the Arroyo Simi, enters it in Reach 1 – Hydrological Unit 403.62.

L. *303(d) Listing of Impaired Waterways.* Bell Creek, which is the receiving, water for the wastewater discharge from Outfalls 001, and 002 is on the 2002 303(d) list with high coliform count as the stressor.

The storm water runoff discharge from Outfalls 003 through 007, 009 and 010, when it is sufficient to reach the Arroyo Simi, enters it in Reach 1 – Hydrological Unit 403.62. The stressors listed in the 2002 State Board's California 303(d) list for this reach of Arroyo Simi are ammonia, boron, chloride, sulfates, fecal coliform, organophosphorous pesticides, sediment/siltation, and total dissolved solids.

M. The TMDL for Nitrogen (nutrients) in the Los Angeles River received Regional Board approval on July 10, 2003 (Resolution No. 03-009) and State Board approval with adoption of Order 2003-0074 on November 19, 2003. Office of Administrative Law (OAL) and USEPA approval dates were February 27, 2003 and March 18, 2003, respectively. The Regional Board filed a Notice of Decision with the California Resources Agency on March 23, 2004 and the TMDL was effective as of that date. The Los Angeles River Nutrient TMDL revision with Interim WLAs was approved by the Regional Board on December 4, 2003 (Resolution No. 2003-016). The State Board approved the TMDL with Resolution 2004-0014 on March 24, 2004. OAL approved it on September 27, 2004, and the effective date for the Order was September 27, 2004.

The TMDL includes numeric targets for ammonia as nitrogen (NH3-N), Nitrate-nitrogen and nitrite-Nitrogen within Reach 5 (within Sepulveda Basin), Reach 3 (Riverside Drive to Figueroa Street, and the Burbank Western Channel. Waste loads are allocated to minor point sources in these reaches that are enrolled in industrial and construction storm water permits.

N. The TMDL for metals in the Los Angeles River was approved by the Regional Board during the June 2, 2005 hearing (Resolution No. 2005-006). State Board approved the TMDL on October 20, 2005. OAL approved the TMDL on December 9, 2005 and EPA approved it on December 22, 2005. The TMDL for metals in storm water is in effect for discharges to the specified reaches of the Los Angeles River.

The metals TMDL implements numeric water quality targets that are based on objectives established by USEPA in the CTR. Targets for copper, lead, zinc and/or selenium (total recoverable) are established in designated reaches of the Los Angeles River. Separate water quality targets are established for dry and wet weather discharges.

The TMDL for metals in the Los Angeles River includes an implementation schedule for non-storm water NPDES permits (including POTWs, other major, minor, and general permits). SSFL is included in this group of permittees. The implementation schedule states that NPDES permits shall achieve waste load allocations, which shall be expressed as NPDES water quality-based effluent limitations. Compliance schedules may allow up to five years in individual NPDES permits to meet permit requirements.

Discharges from SSFL, of wastewater and of storm water runoff only, exiting the site enters Bell Creek or Dayton Canyon Creek. Dry weather numeric water quality targets for copper, lead, and selenium are established for Bell Creek in the TMDL. WLAs are assigned to all point source discharges to Bell Creek and tributaries to Bell Creek. Wet-weather numeric targets for cadmium, copper lead and zinc are established for

Los Angeles (LA) River Reach 1 in the TMDL. WLAs are assigned to all point source discharges to LA River Reach 1 and all upstream reaches and tributaries to Reach 1 (including Bell Creek and tributaries to Bell Creek). Hence, effluent limits for cadmium, copper, lead, zinc, and selenium in discharges to Bell Creek, Dayton Canyon Creek, or any tributaries of the LA River will be based on WLAs established by the TMDL or existing permit limits, whichever are more protective.

O. The Regional Board approved the Basin Plan amendment to incorporate the TMDL for toxicity, chlorpyrifos, and diazinon in the Calleguas Creek , its tributaries and Mugu Lagoon (Resolution No. R4-2005-009) on July 7, 2005. The TMDL addresses impairment to water quality due to elevated levels of chlorpyrifos, diazinon, other pesticides and/or other toxicants. The amendment includes numeric targets, waste load allocations, and load allocations for Toxicity Unit Chronic, chlorpyrifos, and diazinon. It also includes a compliance schedule of two years from the effective date of the TMDL to meet the final waste load allocations and ten years to meet the load allocations applied to nonpoint sources.

State Board approved the TMDL on September 22, 2005 (Resolution No. 2005-0067). OAL and EPA approvals are pending. Once the TMDL is approved the specified WLA will be applicable to discharges from Outfalls 003 through 007, 009, and 010 which enter Arroyo Simi, a tributary of Calleguas Creek.

P. Resolution No. R4-2005-0010, a TMDL for organochlorine (OC) pesticides, polychlorinated biphenyl (PCBs) and siltation in Calleguas Creek, its tributaries, and Mugu Lagoon, was also approved by the Regional Board on July 7, 2005. The TMDL addresses impairment to water quality due to elevated concentrations of OC pesticides and PCBs, which can bioaccumulate in fish tissue and cause toxicity to aquatic life in estuarine and inland waters. Siltation may transport these contaminants to surface waters and impair aquatic life and wildlife habitats. The TMDL establishes water column targets, fish tissue targets, and sediment targets to ensure the protection of beneficial uses. The TMDL establishes a twenty-year plan for reducing OC pesticides, PCBs and siltation loads from point sources and nonpoint sources.

State Board approved the TMDL on September 22, 2005 (Resolution No. 2005-0068). OAL and USEPA approvals are pending. Once the TMDL is approved the appropriate targets will apply to discharges from Outfalls 003 through 007, 009, and 010 which enter Arroyo Simi, a tributary of Calleguas Creek.

V. Regulatory Basis for Effluent Limitations

A. General Bases for Effluent Limits

Effluent limitations established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality-Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 304 (Information and Guidelines), and 402 (NPDES) of the Federal Clean Water Act and amendments thereto, are applicable to the discharges covered by the tentative order.

B. Water Quality Based Effluent Limitations (WQBELs)

The WQBELs are based on the Basin Plan, other State plans and policies, or USEPA water quality criteria. These requirements, as they are met will protect and maintain existing beneficial uses of the receiving water. Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR section 122.44(d) specifies that WQBELs may be set based on USEPA criteria and supplemented, where necessary by, other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses. The previous NPDES permit for SSFL (Order No. 98-051) included monthly averages for chemicals of concern discharged from Outfalls 003 through 008. The discharges from these outfalls consist solely of storm water runoff. These discharges are seasonal and infrequent. Individual NPDES permits that regulate storm water runoff only discharges issued recently by the Regional Board do not contain monthly average limitations. Hence, this Order does not contain monthly average limitations for the storm water runoff only discharges from these outfalls.

C. Reasonable Potential Analysis

Discharges from the engine test stands had not previously regulated independently. These discharges did not have specific monitoring requirements or effluent limits. This permit includes effluent limits for conventional pollutants and requires monitoring for the EPA priority pollutants excluding asbestos from the engine test areas.

In accordance with Section 1.3 of the SIP, the Regional Board will conduct a reasonable potential analysis (RPA) for each priority pollutant with an applicable criterion or objective to determine if a WQBEL is required in the permit. The Regional Board will analyze effluent data to determine if a pollutant in a discharge has a reasonable potential to cause or contribute to an excursion above a state water quality standard. For all parameters that have a reasonable potential, numeric WQBELs are required. The RPA considers water quality objectives outlined in the CTR, NTR, as well as the Basin Plan. To conduct the RPA, the Regional Board must identify the maximum observed effluent concentration (MEC) for each constituent, based on data provided by the Discharger.

Section 1.3 of the SIP provides the procedures for determining reasonable potential to exceed water applicable water quality criteria and objectives. The preliminary steps involve the following:

- Identifying the lowest or most stringent criterion or water quality objective for the pollutant "(C)";

- Adjusting the selected criterion/objective, when appropriate, for hardness, pH, and translators of the receiving water (C_a). There is no hardness data available for Arroyo Simi. For the storm water only discharges to Arroyo Simi, the hardness used was 100 mg/L as $CACO_3$, which is the default value. Consequently, the default value was used to complete the calculation of the final effluent limits. The acute and chronic dilution factors utilized to complete the calculation is zero since Arroyo Simi which is a tributary to Calleguas Creek has intermittent flows and many of the beneficial uses

specified for Arroyo Simi are intermittent. A site-specific study would need to be completed to determine if seasonal dilution factors would be appropriate.

Wastewater discharges from industrial process and storm water from Happy Valley exit the site and flow into Bell Creek a tributary to the Los Angeles River. The hardness data submitted by the Discharger for the receiving water provided hardness values less than the 100 mg/L as $CACO_3$ default.

In fact the hardness data was very similar for the discharge and the receiving water, indicating that the discharge was a primary contributing flow to the receiving water. The default value of 100 mg/L for hardness was used to adjust the selected criteria.

- Collating the appropriate effluent data for the pollutant;

- Determining the observed maximum concentration in the effluent (MEC) from the effluent data; and

- Determining the observed maximum ambient background concentration of the pollutant (B). Ambient data was submitted for Bell Creek upstream of Discharge Serial 001 and 002. This ambient data was included in the calculation of effluent limits for the wastewater discharges from these two locations. Ambient data was not available for Arroyo Simi and was not included in the analysis of the discharges from Outfalls 003 through 007.

The SIP specifies three triggers to complete a RPA:

1. Trigger 1 – If the MEC is greater than or equal to the CTR water quality criteria or applicable objective (C), a limitation is needed. For certain

   constituents present in this discharge that were nondetect, the MEC was set at the method detection limit consistent with section 1.3 of the SIP.

2. Trigger 2 – If MEC<C and background water quality (B) > C, a limitation is needed.

3. Trigger 3 – If other related information such as CWA 303(d) listing for a pollutant, discharge type, compliance history, etc. indicates that a WQBEL is required.

The first two triggers were evaluated using the California Permit Writers Training Tool (CAPWTT). While on contract with the State Board, Scientific Applications International Corporation (SAIC) developed this software to determine RPAs and, when reasonable potential exists, calculate the WQBELs, following procedures in SIP. The third trigger is evaluated by the permit writer utilizing all other information available to determine if a water quality-based effluent limitation is required to protect beneficial uses.

The results of the RPA for each analyte evaluated is presented in Attachments 1 for discharges from Outfall 001 and 002 and in Attachment 2 for the storm water only discharges (Outfalls 003 – 007) of Order No. R4-2004-0111. Most of the targeted analytes evaluated have a response of BPJ (Best Professional Judgement) or No Criteria required. The BPJ response requires the permit writer use all other available information to determine if a limit should be stipulated and if necessary to determine the applicable limit. The No Criteria result indicates that CTR does not include criteria to evaluate this analyte.

A numeric limit has not been prescribed for a toxic constituent if it has been determined that it has no reasonable potential to cause or contribute to excursions of water quality standards. However, if the constituent had a limit in the previous permit, and if none of the Antibacksliding exceptions apply, then the limit will be retained if the Regional Board concludes there is reasonable potential. For those pollutants with existing effluent limitations where the CAPWTT did not statistically determine reasonable potential, the Regional Board staff conducted a further analysis under Trigger 3 of the SIP. If reasonable potential was found based on Trigger 3, the basis for that decision is articulated in this fact sheet. A narrative limit to comply with all water quality objectives is provided in *Standard Provisions* for the priority pollutants, which have no available numeric criteria.

Sufficient effluent and ambient data are needed to conduct a complete RPA. If data are not sufficient, the Discharger will be required to gather the appropriate data for the Regional Board to conduct the RPA. Upon review of the data, and if the Regional Board determines that WQBELs are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

D. Calculating WQBELs

If a reasonable potential exists to exceed applicable water quality criteria or objectives, then a WQBEL must be established in accordance with one of three procedures contained in Section 1.4 of the SIP. These procedures include:

1) If applicable and available, use of the wasteload allocation (WLA) established as part of a total maximum daily load (TMDL).

2) Use of a steady-state model to derive maximum daily effluent limitations (MDELs) and average monthly effluent limitations (AMELs).

3) Where sufficient effluent and receiving water data exist, use of a dynamic model, which has been approved by the Regional Board.

E. Impaired Water Bodies in 303 (d) List

Section 303(d) of the CWA requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. For all 303(d) listed water bodies and pollutants, the Regional Board plans to develop and adopt TMDLs that will specify WLAs for point sources and load allocations (LAs) for non-point sources, as appropriate.

The USEPA has approved the State's 303(d) list of impaired water bodies. Certain receiving waters in the Los Angeles and Ventura County watersheds do not fully support beneficial uses and therefore have been classified as impaired on the 2002 303(d) list and have been scheduled for TMDL development.

The Los Angeles River flows for 55 miles from the Santa Monica Mountains at the western end of the San Fernando Valley to the Pacific Ocean. The Los Angeles River drains an area of about 825 square miles. Approximately 324 square miles of the watershed are covered by forest or open space land. The rest of the watershed is highly developed. The river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach.

The majority of the Los Angeles River watershed is considered impaired due to a variety of point and nonpoint sources. The 2002 303(d) list includes total aluminum, dissolved cadmium, dissolved copper, dissolved zinc, high coliform count, pH, ammonia, nutrients (algae), odors, lead, coliform, trash, scum, oil, dichloroethylene, tetrachloroethylene, and trichloroethylene. High coliform count is a pollutant stressor for Bell Creek. The pollutant stressors listed for the Los Angeles River estuary include chlordane, DDT, lead, PCBs and zinc in sediment. The beneficial uses potentially threatened or impaired by degraded water quality are aquatic life, recreation, groundwater recharge, and municipal water supply.

Calleguas Creek Watershed and its major tributaries, Revlon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura and a small portion of western Los Angeles County. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Urban developments within the watershed are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

The Watershed Management Initiative characterizes the Callegaus Creek Watershed as a very impaired watershed. Calleguas Creek Reach 7 (the Arroyo Simi) is on the 2002 303 (d) list for ammonia, chloride, boron, sulfates, total dissolved solids, fecal coliform, organophosphorus pesticides, and sedimentation/siltation. The beneficial uses potentially threatened or impaired by degraded water quality are wildlife habitat, and rare, threatened or endangered species habitat. The intermittent beneficial uses potentially impacted include industrial process supply, groundwater recharge, freshwater replenishment, contact and non-contact water recreation, and warm freshwater habitat.

F. Whole Effluent Toxicity

Whole Effluent Toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of

response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxic amounts" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and measures mortality, reproduction, and growth.

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota. The existing permit does not contain toxicity limitations or monitoring requirements.

In accordance with the Basin Plan, acute toxicity limitations dictate that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test having less than 70% survival. Consistent with Basin Plan requirements, this Order includes acute toxicity limitations.

In addition to the Basin Plan requirements, Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters.

The Discharger will be required to conduct chronic toxicity testing. The Order includes a chronic testing trigger hereby defined as an exceedance of 1.0 toxic units chronic (TUc) in a critical life stage test for 100% effluent. (The monthly median for chronic toxicity of 100% effluent shall not exceed 1.0 TUc in a critical life stage test.) If the chronic toxicity of the effluent exceeds 1.0 TUc, the Discharger will be required to immediately implement accelerated chronic toxicity testing according to Monitoring and Reporting Program, Item IV.D.1. If the results of two of the six accelerated tests exceed 1.0 TUc, the Discharger shall initiate a toxicity identification evaluation (TIE).

G. Specific Rationale for Each Numerical Effluent Limitation

Section 402(o) of the Clean Water Act and 40 CFR 122.44(l) require that effluent limitations standards or conditions in re-issued permits are at least as stringent as in the existing permit unless an antibacksliding exception applies. The Regional Board has determined that reasonable potential exists for all pollutants that are regulated under the current permit; therefore effluent limitations have been established for these pollutants. Furthermore, effluent limitations for several contaminants have been included based on BPJ with the CTR WQBELs or with effluent limits from the current Order.

In compliance with 40 CFR 122.45(f), mass-based limitations have also been established in the proposed Order for conventional and priority pollutants. The mass for both the maximum and the monthly or 30-day average limits and when appropriate

the 7-day average effluent limits were calculated using the flow for the associated operation, which was provided by the Discharger.

When calculating the mass for discharges, the maximum permitted flow rate was used to calculate the daily maximum, the monthly average, or 7-day average mass. When calculating the appropriate mass for the discharge event or events evaluated the actual flow rate should be substituted in the following equation. The daily maximum flow will be used to calculate the daily maximum, the monthly average, 30-day average or 7-day average flows will be used to calculate the respective mass discharge limit.

Mass (lbs/day) = flow rate (MGD) X 8.34 X effluent limitation (mg/L):
where: mass = mass limit for a pollutant in lbs/day
effluent limitation = concentration limit for a pollutant, mg/L
flow rate = discharge flow rate in MGD

Outfalls 001 and 002. RPAs were performed using CAPWTT for each of 126 priority pollutants for which effluent data were available. The input data for the RPAs were provided in the Self-Monitoring Reports submitted by the Discharger. One RPA was performed for discharges from Outfalls 001 and 002, which are composed of treated wastewater, water from the groundwater treatment systems, excess reclaimed water, water from the engine test stands, and storm water. Four analytes had reasonable potential to exceed WQBELs: copper, lead, mercury, and TCDD. Three of these analytes (copper, lead, and mercury) had effluent limitations in the previous order (Order No. 98-051).

The Discharger also submitted data for the receiving water associated with discharges from Outfalls 001 and 002. This data was collected using elevated detection limits and hence several other constituents had reasonable potential. The constituents are 2,4,6-trichlorophenol, 2,4-dinitrotoluene, alpha-BHC, bis(2-ethylhexyl)phthalate, N-nitrosodimethlyamine and pentachlorophenol. Effluent limits for these constituents have also been included in this Order.

Since perchlorate has been detected above the Department of Health Services action level in storm water runoff from the facility and it has been detected in the influent to some of the groundwater treatment systems, BPJ has been used to establish reasonable potential for it to be present in discharges from the site via Outfalls 001 and 002. Consequently an effluent limit for perchlorate has been included in this Order for these discharges. Since perchlorate is typically not a naturally occurring pollutant and its presence in the receiving waters is the result of operations at the facility, the effluent limitation was developed based on anti-degradation grounds (State Board Res. No. 68-16 and 40 CFR § 131.12). The effluent limitation was therefore set at 6 µg/L, which would prevent the degradation of receiving waters and maintain and protect receiving water quality.

Several volatile organic compounds (VOCs) had effluent limits in Order No. 98-051 for discharges from Outfalls 001 and 002. The number of samples evaluated for each contaminant ranged from 19 to 60, and none of the contaminants were detected. The CTR based effluent limits for all of the VOCs except 1,1-dichloroethylene, were less stringent than the limits in Order No. 98-051. Since

none of the contaminants were detected during numerous sampling events and the limits in the tentative Order would be the same as those from the previous Order, the limits for these analytes were not included. The only VOC that has limits in the tentative Order is 1,1-dichloroethylene. The limit is included since the CTR based limit for this analyte are more stringent that the limit included in the previous Order.

As set forth above, Section 1.3 of the State Board's State Implementation Plan (SIP) establishes a stepwise procedure for determining which toxic pollutants require water quality-based effluent limitations in conformance with 40 C.F.R. § 122.44(d). This stepwise procedure for toxic pollutants is called a reasonable potential analysis. The SIP's reasonable potential analysis applies to water quality standards for priority pollutants, whether promulgated by USEPA or established as water quality objectives by the Regional Board. Steps 1 through 6 establish an analytical procedure for requiring water quality-based limitations based solely on discharge and ambient receiving water data. Except as noted in the preceding paragraph, reasonable potential for toxic pollutants regulated by this Order was determined using the analytical procedure in Steps 1 through 6 of SIP section 1.3 as explained above.

Step 7 of SIP Section 1.3 recognizes that in certain instances a rote, mathematical analysis of the data will not be sufficient to protect beneficial uses. Step 7 therefore reserves for the Regional Board the obligation to "review other available information to determine if a water quality-based effluent limitation is required, notwithstanding the above analysis in *Steps 1* through *6*, to protect beneficial uses." Among the factors the State Board identifies as relevant to the Step 7 analysis are: the facility type, discharge type, and potential toxic impact of the discharge. With respect to the Facility, the Regional Board finds sufficient, unusual circumstances to require a water quality-based effluent limitation for trichloroethylene (TCE). Data and testimony indicate that approximately 530,000 gallons of TCE were released to the soil and groundwater at the Facility. The tremendous volume of TCE released at the site warrants significant scrutiny. While recent monitoring data do not show TCE in surface water discharges, scouring from large storm events may release soils with adsorbed TCE. The large volumes of TCE in scoured soils may become chemically available in the surface water runoff and cause or contribute to an exceedance of the water quality standard. In addition, the existing monitoring data has been collected far downstream from on-site sources. The data may not reliably indicate the presence of TCE in waters of the United States because the turbid conditions may have volatilized the TCE before it reached existing monitoring points. Further, contamination is spotty and not completely characterized; pathways are not always predictable and are not fully characterized; and the site is in a hilly environment with uncertain pathways and seeps which could possibly lead to surfacing of water with contamination that cannot be predicted. Finally, TCE is a probable carcinogen that can cause skin rashes on contact, and when ingested has been associated with liver and kidney damage, impaired immune system function, and in large volumes unconsciousness, impaired heart function, or death. Considering the toxic nature of TCE and that past practices at the site released extraordinary volumes of TCE into the environment that can continue to leach into surface water through the scouring from storm events, and further considering that the existing monitoring data may not be representative of direct discharges to waters of the United States since the data were collected downstream of the initial discharge, the Regional Board has determined that a water

quality-based effluent limitation for TCE is necessary to protect beneficial uses.

Outfalls 003 through 007. Discharges from Outfall 003 through 007 are storm water runoff only. Daily maximum and monthly average limits for storm water were included in Order No. 98-051. This Order does not include monthly average limits for priority pollutants in storm water only discharges since storm events are infrequent and often occur less than once per month during the rainy season. This change in the limits is consistent with permits adopted by the Regional Board for storm water discharges only.

The storm water only discharges from Discharge Outfalls 003 through 007 were also evaluated using CAPWTT (Attachment 2 of Order No. R4-2004-0111). The analytes with statistical reasonable potential are cadmium, copper, cyanide, mercury, and TCDD (Attachment 2 page 1). Cyanide was detected only once during the period evaluated at a concentration of 5.8 micrograms/liter. That detection triggered the reasonable potential since it exceeds that calculated average monthly effluent limit (AMEL). However, the discharges evaluated are storm water only discharges, which do not have monthly average limits. When the maximum effluent concentration (MEC) of 5.8 µg/L is compared to the maximum daily effluent limit (MDEL) the MEC is less than the MDEL. Consequently, this permit does not include an effluent limit for cyanide in the storm water only discharges. CTR-WQBELs for cadmium copper, mercury and TCDD have been included in this Order. The previous order included effluent limits for all of these analytes except TCDD. The effluent limits for the analytes with a positive RPA are the most stringent of the limit included in Order 98-051, and the applicable CTR criteria which include the freshwater aquatic life criteria, and the human health criteria for consumption of organisms only. The previous permit included limits for these analytes from Title 22, which are more stringent than the CTR limits. The compliance history reveals that the effluent limit for antimony (6 µg/L) was exceeded at Outfalls 005 and 007 in 1999 and the limit for thallium (2 µg/L) was exceeded at Outfall 005 on March 8, 2000. Therefore, limits for antimony and thallium were established using best professional judgement.

The monthly average effluent limit for mercury included in Order No. 98-051 (0.012 µg/L) was based on freshwater continuous criteria from 40 CFR 131.36. This limit is based on a fish consumption advisory, which appeared in the July 1, 1998 edition but was subsequently withdrawn. CTR included criteria for mercury, which was used to develop the WQBEL for mercury that is included in this Order.

The CTR-WQBELs for cadmium in the tentative Order is greater than the limit stipulated in the previous order. The daily maximum concentrations for cadmium from the previous order were taken directly from NTR and were expressed as dissolved criteria. The daily maximum limits for all metals included in this order were calculated based on criteria that appears in CTR when they were the most protective criteria available. The dissolved criteria were adjusted using conversion factors to total recoverable. Since the effluent limits for cadmium in the tentative Order is total cadmium they are slightly higher than the limits included in the previous Order.

The criteria stipulated for TDS, sulfate, chloride, and nitrogen also changed for storm water discharges to the Arroyo Simi, a tributary of Calleguas Creek. The criteria listed previously were the stipulated criteria for the Los Angeles River Watershed. The

criteria stipulated for Calleguas Creek above Potrero Road are 850, 250, 150, 1.0, and 10 mg/L for TDS, sulfate, chloride, boron and nitrogen respectively.

Outfall 008. The area commonly referred to as Happy Valley receives storm water runoff from the former solid propellant testing area. Operations at the former solid propellant testing area ended in 1994. A major component of the propellant was perchlorate. Since the propellant has been used in the area and it has been detected in the storm water runoff at concentrations exceeding the Department of Health Services action level of 4 µg/L (which was changed to 6 µg/L on March 11, 2004), an effluent limit for perchlorate has been included in this Order. The effluent limitation for perchlorate is established based on antidegradation as explained for Outfalls 001 and 002. A requirement for sampling of the storm water runoff all other constituents tested for at Outfalls 003 through 007, has also been included in this Order. The new storm water monitoring location is Discharge Outfall 008. Storm water from Happy Valley flows to Dayton Canyon Creek. Dayton Canyon Creek merges with flows from Chatsworth Creek, which flows south to Bell Creek southwest of the intersection of Shoup Avenue and Sherman Way. Bell Creek subsequently flows east to the Los Angeles River.

This area has since undergone an interim measure under the direction of DTSC.

Outfalls 009. The WS-13 Drainage area begins near the entrance to the property and traverses several potential areas of concern. The WS-13 drainage area collects storm water runoff from the Area 1 and Area 2 Landfills, and the former LOX plant located on NASA owned property. In addition, WS-13 picks up storm water run on from Sage Ranch where agricultural operations took place and a gun shooting range is located. This location has only been sampled once in the past. Additional data would provide information regarding the transport of contaminants in these areas offsite by storm water runoff. The WS-13 Drainage area will become Discharge Outfall 009; this outfall drains to Arroyo Simi.

Outfall 010. Building 203 was formally used as an instrumentation laboratory where various types of instrumentation were repaired and calibrated. The instrumentation included but was not limited to, thermometers and manometers that contained mercury. Currently the building houses operations related to laser research. Operations include limited polishing fibers, hand wipe solvent and chemical cleaning, assembly and test of various components in both open warehouse and clean room environments. All wastes are currently containerized and transported off site for disposal. This area has also undergone an interim measures under the direction of DTSC.

Outfall 011. The Perimeter Pond collects wastewater generated from Area1. The discharges from groundwater treatment systems located in Area 1, discharges from Sewage Treatment Plant 1 and storm water runoff from the vicinity is discharged initially to R-1 Pond which flow to the Perimeter Pond. Discharges from the Perimeter Pond exit the site via Outfall 001. The Perimeter Pond is the final step in the storage of water. Consequently, this Order includes effluent limits and requirements for monitoring of the effluent from the pond for the priority pollutants and for other targeted chemicals of concern at the site.

Outfalls 012 – 014. The various test stands are used to test fire rocket engines built onsite. The fire suppression water used during testing may contain residual fuels and solvents. This wastewater is directed via lined and unlined channels to the reclamation ponds, which are used to store wastewater collected from the various onsite operations along with any storm water runoff for reuse onsite.

The Regional Board will have oversight of the discharges from the engine test stands. This permit will include requirements for monitoring of the discharges. The data collected will be used to evaluate reasonable potential of the discharge to exceed applicable requirements and if warranted; effluent limits will be implemented for the discharges.

Outfalls 015 – 017. The two operational plants (STP-1 and STP-3) are activated sludge sewage treatment plants that provide secondary and tertiary treatment for the domestic sewage from the facility. The disinfected sewage effluents are subsequently directed to the reclaim water system reservoir. The two plants are currently being used as collection reservoirs only, previously had effluent limits for $BOD_5 20°C$, coliform, and turbidity on discharges from the facilities. Sewage sludge generated was hauled offsite to the one of the facilities operated by Los Angeles County Sanitation Districts. The monitoring program for the sewage treatment plants included requirements for the previously mentioned constituents as well as pH, oil and grease and suspended solids. This permit includes requirements to monitor for priority pollutants except asbestos, perchlorate, N-nitrosodimethylamine, 1,4-dioxane, and 1,2,3-trichloropropane to provide the data required to evaluate reasonable potential. If reasonable potential exists, effluent limits will be implemented.

Outfall 018. The R-2A and R-2B Ponds are used to collect wastewater from Areas II and III. R-2A Ponds collect wastewater from the Delta Groundwater Treatment System and storm water runoff from the location of the former Delta Test Stand. The R-2B Ponds receive overflow from the Silvernale Pond which includes discharges from the Bravo, Alpha and RD-9 Groundwater Treatment Systems and storm water runoff from the Alpha and Bravo Engine Test Stands. The R-2B Pond also receives wastewater discharges and storm water runoff from the STL-IV Test Stand area. The R-2 Spillway is an overflow area used to allow the wastewater from the two ponds to flow via a drainageway to Outfall 002. Wastewater released from the R-2 Spillway travels approximately 4,500 feet prior to reaching Outfall 002. Hence, this permit includes a monitoring requirement for discharges from the R-2 Spillway.

Data collected from August 20, 2004 (the effective date of Order R4-2004-0111) through May 5, 2005 was used to evaluate reasonable potential at the compliance points enumerated in that Order. This analysis has been completed to supplement the initial results presented in Order R4-2004-0111.

Outfalls 001 002, 011, and 018 discharge wastewater and storm water runoff from the SSFL to Bell Creek at the south. Outfalls 011, the Perimeter Pond, and 018, the R-2 Pond Spillway are located directly upstream of Outfalls 001 and 002 respectively. Discharges from Outfalls 011 and 018 receive no additional treatment or additional discharges prior to exiting Outfalls 001 and 002. Since there are no

additional discharges or treatments the discharges from these outfalls were evaluated together.

The statistical analysis yielded RP for copper, lead mercury and TCDD. The data, site history, and other information available were incorporated into the BPJ analysis. This analysis supports the retention of effluent limits established at Outfalls 001 and 002 in Order No. R4-2004-0111 and it supports the inclusion of those effluent limits for discharges from Outfalls 011 and 018 (Attachment 1).

Discharges from Outfalls 001, 002, 011 and 018 flow to Bell Creek a tributary of the LA River. The TMDL for metals in the Los Angeles River assigned WLAs to all point source discharges to LA River and all upstream reaches and tributaries to (including Bell Creek and tributaries to Bell Creek). Effluent limits for cadmium, copper, lead, zinc, and selenium at the aforementioned outfalls will be based on WLAs established by the TMDL or existing effluent limits, whichever are more protective. The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N, which are included for these outfalls.

Outfalls 008, 009 and 010 are storm water only outfalls. Data collected at these locations since the adoption of Order No. R4-2004-011 indicates that the discharges from these locations are very similar to those from the other storm water only discharge locations. The statistical RPA of the data collected from all of the storm water locations resulted in Tier 1 RPA for copper, lead, mercury and TCDD. Since the discharges from Outfalls 008, 009 and 010 are very similar to those from Outfalls 003 through 007, BPJ was used to establish effluent limits for other priority pollutants and other chemicals of concern (i.e. perchlorate) at all of the storm water only outfalls (Attachment 2).

The storm water discharges do not have reasonable potential for zinc. However, discharges from Outfall 008 flow to the LA River, which has a TMDL that provides a WLA for zinc. That WLA will also be incorporated as an effluent limitation at Outfall 008 only. The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N, which are also included for this outfall.

Outfalls 012-014 (Rocket Engine Test Stands) Data collected at Outfall 012 resulted in Tier 1 reasonable potential using the method specified in the SIP for copper, lead, mercury, TCDD. Additional constituents including settleable solids, total suspended solids, 1,4-dioxane, total petroleum hydrocarbons, naphthalene, oil and grease, tertiary-butyl alcohol, and ethlyene dibromide demonstrated RP utilizing the TSD method. RP was established for total dissolved solids and perchlorate based on BPJ. These constituents as well as other applicable Basin Plan constituents have been included in this addendum (Attachment 3).

Discharges from Outfalls 012 through 014 exit the site via tributaries to Bell Creek. The metals that have TMDL WLAs that do not have reasonable potential at these outfalls are cadmium, selenium and zinc. Effluent limits for these constituents are included based on the TMDL. The Los Angeles River Nutrient TMDL developed WLAs for ammonia-N, nitrate-N, and nitrite-N. Daily maximum effluent limitations for these constituent are also applicable and included for discharges from these locations.

The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N, which are included for these outfalls.

During the development and adoption of Order R4-2004-0111, Regional Board staff was informed that Boeing was not utilizing the three package type sewage treatment plants located onsite (STP1, STP2, STP-3), Outfalls 15-17. A rain event January 9-11, 2005 resulted in the discharge of partially treated wastewater from Outfalls 015 and 017. The evaluation of the data collected resulted in Tier 1 reasonable potential for cadmium, chromium III, copper, mercury, nickel, TCDD. Other constituents of concern that demonstrates reasonable potential include MBAS, TSS, BOD, perchlorate, total coliform oil and grease, total residual chlorine, and nitrate as nitrogen. The BPJ analysis resulted in RP for total dissolved solids, chloride, sulfate, fluoride, nitrate + nitrite as nitrogen, and barium. Effluent limitations for these constituents have been included (Attachment 4).

Discharges from Outfalls 015 through 017 discharge also exit the site via tributaries to Bell Creek. The Metals TMDL resulted in new WLAs for lead and selenium and a wet weather discharge WLA for cadmium. The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N, which are included for these outfalls.

H. Total Maximum Daily Load (TMDL)

The TMDL development for the Los Angeles River watershed is scheduled for fiscal year 2002 beginning with coliform. The TMDL development for Calleguas Creek is also scheduled for fiscal year 2002 beginning with chloride. The TMDLs, which are not scheduled for completion within the lifetime of this permit, will include WLAs for the 303(d) listed pollutants. When each TMDL is complete, the Regional Board will adopt WQBELs consistent with the corresponding WLAs. If authorized, a time schedule may be included in a revised permit to require compliance with the final WQBELs.

The TMDL for Nitrogen (nutrients) in the Los Angeles River became effective on March 18, 2003. The Los Angeles River Nutrient TMDL revision with Interim WLAs became effective on September 27, 2004. The discussion in Finding M (Page 24) of this Fact Sheet explains that the developed WLAs apply to downstream reaches and tributaries thereto, as such discharges from SSFL have WLAs for nutrients (including ammonia-N, nitrate-N, and nitrite-N) in all discharges that enter drainage ways that are tributaries to Bell Creek or to Dayton Canyon Creek.

The TMDL for metals in the Los Angeles River was approved by the Regional Board on June 2, 2005, with State Board approval on October 20, 2005. OAL and EPA approvals were received on December 9, 2005 and December 22, 2005, respectively. The discharges from SSFL enter the headwaters of Bell Creek and Dayton Canyon Creek, tributaries to the Los Angeles River. These tributaries are assigned numeric targets or are upstream of reaches with numeric targets and WLAs are specified for all point source discharges to these tributaries (Dayton Canyon Creek and Bell Creek). Hence, effluent limits will be based on WLAs or existing effluent limits whichever is more protective.

The TMDL for metals in the Los Angeles River includes an implementation schedule for non-storm water NPDES permits (including POTWs, other major, minor, and general permits). SSFL is included in this group of permittees. The implementation schedule states that NPDES permits shall achieve waste load allocations, which shall be expressed as NPDES water quality-based effluent limitations upon permit issuance, renewal, or reopener after the effective data of the TMDL. Compliance schedules may allow up to five years in individual NPDES permits to meet permit requirements.

The Boeing Company may not be able to immediately comply with the wet weather effluent limit of 3.1 µg/L for cadmium at Outfalls 015 through 017. The wet weather effluent limit was implemented based on the WLA that was developed in the Los Angeles River Metals TMDL. That TMDL includes provisions for a compliance schedule in the permit.

A compliance schedule, which terminates one year after adoption of the permit, with an interim effluent concentration of 4 µg/L is included for discharges from Outfalls 015 though 017. The 4 µg/L interim effluent concentration is based on the daily maximum effluent limit for cadmium that is included Order R4-2006-0008.

During the July 7, 2005 Board Meeting, TMDLs were adopted for toxicity, chlorpyrifos, and diazinon in the Calleguas Creek, its tributaries and Mugu Lagoon and for organochlorine (OC) pesticides, polychlorinated biphenyls (PCBs) and siltation in the Calleguas Creek, its tributaries and Mugu Lagoon. State Board approved these TMDLs on September 22, 2005. OAL and USEPA approvals are pending. These two TMDLs will result in WLAs for chronic toxicity, chlorpyrifos, diazinon, and water column targets, fish tissue targets, and sediment targets for a host of constituents that may be discharged from SSFL. When the TMDLS are approved and become effective the permit will be reopened to include the required WLAs.

To prevent further degradation of the water quality of the Los Angeles River and Calleguas Creek and to protect their beneficial uses, mixing zones and dilution credits are not allowed in this Order. This determination is based on:

- Many of the beneficial uses stipulated are intermittent for Dayton Canyon Creek, Bell Creek and the Arroyo Simi. The discharges from SSFL in many cases provide a significant portion of the headwaters for these waterbodies. Since there is little assimilative capacity of the receiving water, a dilution factor is not appropriate and the final WQBEL should be a numeric objective applied end-of-pipe.

- The discharge may contain the 303(d) listed pollutants that are bioaccumulative such as metals. These pollutants, when exceeding water quality criteria within the mixing zone, can potentially result in tissue contamination of an organism directly or indirectly through contamination of bed sediments with subsequent incorporation into the food chain. The SIP, section 1.4.2.2.B. states that the "Regional Board shall deny or significantly limit a mixing zone and dilution credit as necessary to protect beneficial uses..." It

continues that "such situations may exist based upon the quality of the discharge... or the overall discharge environment (including ... potential for bioaccumulation)."

For some pollutants, including aldrin, alpha-BHC, chlordane, DDT, dieldrin, heptachlor, heptachlor epoxide, several PAHs, PCBs, TCDD equivalents, and toxaphene the applicable water quality objectives are below the levels that current analytical techniques can measure. Reasonable potential analyses have been completed on each of these constituents and two of them had reasonable potential: alpha-BHC and TCDD equivalents. The MEC detected for TCDD exceeded the CTR criterion and the detection limits for alpha-BHC in the receiving water and the effluent exceeded the criterion.

VI. SPECIFIC RATIONALES FOR EACH OF THE NUMERICAL EFFLUENT LIMITATIONS

A. The following table presents the effluent limitations and the specific rationales for pollutants that are expected to be present in the discharge from Outfalls 001, 002, 011, and 018:

Constituents	Units	Discharge Limitations		Rationale
		Monthly Average	Daily Maximum	
pH	pH Units	---	6.5-8.5	Basin Plan
Temperature	°F	---	86	BPJ/Thermal Plan
Total suspended solids	mg/L	15	45	BPJ–Previous Order
$BOD_5$20°C	mg/L	20	30	BPJ – Previous Order
Oil and grease	mg/L	10	15	BPJ – Previous Order
Settleable solids	ml/L	0.1	0.3	BPJ – Previous Order
Total residual chlorine	mg/L	----	0.1	Basin Plan
Total dissolved solids	mg/L	----	950	Basin Plan
Chloride	mg/L	----	150	Basin Plan
Sulfate	mg/L	----	300	Basin Plan
Barium	mg/L	----	1.0	BPJ-Previous Order
Iron	mg/L	----	0.3	BPJ-Previous Order
Fluoride	mg/L	----	1.6	Basin Plan
Detergents (as MBAS)	mg/L	----	0.5	Basin Plan
Nitrate + Nitrate-N	mg/L	----	8.0	Basin Plan
Ammonia-N	mg/L	1.96©	10.1®	TMDL
Nitrate-N	mg/L	----	8.0	TMDL
Nitrite-N	mg/L	----	1.0	TMDL
Manganese	µg/L	----	50	BPJ-Previous Order
Cyanide	µg/L	4.3	8.5	CTR
Antimony	µg/L	----	6.0	Basin Plan-Title 22
Arsenic	µg/L	----	10	USEPA MCL

Constituents	Units	Discharge Limitations		Rationale
		Monthly Average	Daily Maximum	
Beryllium	µg/L	----	4.0	Basin Plan-Title 22
Cadmium	µg/L	2.0	4.0/3.1*	CTR/TMDL
Chromium (VI)	µg/L	8.1	16.3	CTR
Copper	µg/L	7.1	14.0	CTR
Lead	µg/L	2.6	5.2	CTR
Mercury	µg/L	0.05	0.1	CTR
Nickel	µg/L	35	96	CTR
Selenium	µg/L	4.1	8.2/5#	CTR/TMDL
Silver	µg/L	2.0	4.1	CTR
Thallium	µg/L	----	2.0	Basin Plan
Zinc	µg/L	53.6	119	CTR
1,1-Dichloroethylene	µg/L	3.2	6.0	CTR/BPJ-Title 22
Trichloroethylene	µg/L	----	5.0	BPJ/Basin Plan-Title 22
Perchlorate	µg/L	----	6.0	BPJ/DHS Action Level
2,4,6-Trichlorophenol	µg/L	6.5	13.0	CTR
2,4-Dinitrotoluene	µg/L	9.1	18.3	CTR
Alpha-BHC	µg/L	0.01	0.03	CTR
Bis(2-ethylhexyl)phthalate	µg/L	----	4.0	Basin Plan/Title 22
N-Nitrosodimethylamine	µg/L	8.1	16.3	CTR
Pentachlorophenol	µg/L	8.2	16.5	CTR
TCDD	µg/L	1.4E-08	2.8E-08	CTR
Radioactivity				
Gross Alpha	pCi/L	----	15	BPJ/Basin Plan
Gross Beta	pCi/L	----	50	BPJ/Basin Plan
Combined Radium-226 & Radium-228	pCi/L	----	5	BPJ/Basin Plan
Tritium	pCi/L	----	20,000	BPJ/Basin Plan
Strontium-90	pCi/L	----	8	BPJ/Basin Plan

* Effluent limit applies only during wet weather discharges.
# Effluent limit applies only during dry weather discharges.
© Thirty day average at ph = 7.9 and 20°C, when hourly samples are collected and composited or only one grab sample is collected.
® One hour average WLA at 7.9 pH and 20°C, applies if hourly samples are taken throughout the storm and each is analyzed. No single sample may exceed the 10.1 mg/L limit.

B. Following are the effluent limitations and the specific rationales for pollutants discharged from Outfalls 003 through 010.

Constituents	Units	Discharge Limitations		Rationale
		Monthly Average	Daily Maximum	
pH	pH Units	----	6.5-8.5	Basin Plan
Oil and grease	mg/L	----	15	BPJ
Chloride	mg/L	----	150	Basin Plan
Sulfate	mg/L	----	250[2a]	Basin Plan
Sulfate	mg/L	----	300[2b]	Basin Plan
Boron[1]	mg/L	----	1.0	Basin Plan
Fluoride	mg/L	----	1.6	Basin Plan
Nitrate + Nitrate-N	mg/L	----	10.0[2a]	Basin Plan
Nitrate + Nitrate-N	mg/L	----	8[2b]	Basin Plan
Total dissolved solids	mg/L	----	850[2a]	Basin Plan
Total dissolved solids	mg/L	----	950[2b]	Basin Plan
Ammonia-N (Outfall 008 only)	mg/L	1.96©	10.1®	TMDL
Nitrate-N (Outfall 008 only)	mg/L	----	8.0	TMDL
Nitrite-N (Outfall 008 only)	mg/L	----	1.0	TMDL
Selenium (Outfall 008 only)	µg/L	----	5#	TMDL
Zinc (Outfall 008 only)	µg/L	----	159*	TMDL
Antimony	µg/L	----	6.0	Basin Plan/Title 22
Cadmium	µg/L	----	4.0/3.1*	CTR/TMDL
Copper	µg/L	----	14.0	CTR
Mercury	µg/L	----	0.13	CTR
Thallium	µg/L	----	2.0	Basin Plan
Lead	µg/L	----	5.2	CTR
TCDD	µg/L	----	2.8E-08	CTR
Perchlorate	µg/L	----	6.0	BPJ/ DHS Action Level
Radioactivity				
Gross Alpha	pci/L	----	15	Basin Plan/Title 22
Gross Beta	pci/L	----	50	Basin Plan/Title 22
Combined Radium-226 & Radium-228	pci/L	----	5	Basin Plan/Title 22
Tritium	pci/L	----	20,000	Basin Plan/Title 22
Strontium-90	pci/L	----	8	Basin Plan/Title 22

[1] Limit is for discharges for Outfalls 003 through 007, 009, and 010 which flows to Calleguas Creek. It is not applicable to discharges from Outfall 008 to Dayton Canyon Creek.
[2a] This limit is for discharges which flow to Calleguas Creek from Outfalls 003 through 007, 009, and 010.

C. Following are the effluent limitations and the specific rationales for pollutants discharged from Outfalls 012 through 014.

Constituents	Units	Discharge Limitations		Rationale
		Monthly Average	Daily Maximum	
pH	pH Units	----	6.5-8.5	Basin Plan
Oil and grease	mg/L	10	15	BPJ
Chloride	mg/L	----	150	Basin Plan
Sulfate	mg/L	----	300	Basin Plan
Fluoride	mg/L	----	1.6	Basin Plan
Nitrate + Nitrate-N	mg/L	----	8	Basin Plan
Total dissolved solids	mg/L	----	950	Basin Plan
Settleable solids	ml/L	0.1	0.3	Basin Plan
Total suspended solids	mg/L	15	45	BPJ
Ammonia-N	mg/L	1.96©	10.1®	TMDL
Nitrate-N	mg/L	----	8.0	TMDL
Nitrite-N	mg/L	----	1.0	TMDL
Cadmium	µg/L	----	3.1*	TMDL
Selenium	µg/L	----	5#	TMDL
Zinc	µg/L	----	159*	TMDL
Copper	µg/L	6.7	13.5	CTR
Mercury	µg/L	0.05	0.10	CTR
Lead	µg/L	2.6	5.2	CTR
TCDD	µg/L	1.4E-08	2.8E-08	CTR
Naphthalene	µg/L	----	21	BPJ
Total Petroleum Hydrocarbons	µg/L	----	100	BPJ
Ethylene dibromide	µg/L	----	50	BPJ
Tertiary butyl alcohol	µg/L	----	12	BPJ
1,4-dioxane	µg/L	----	3	BPJ
Perchlorate	µg/L	----	6.0	BPJ/ DHS Action Level

D. Following are the effluent limitations and the specific rationales for pollutants discharged from Outfalls 015 through 017.

Constituents	Units	Discharge Effluent Limitations			Rationale
		30-Day Average	7-Day Average	Daily Maximum	
pH	pH units	----	----	6.5-8.5	Basin Plan
Temperature	°F	----	----	86	BPJ/Thermal Plan
Total suspended solids	mg/L	30	45	----	40 CFR Part 133
$BOD_5$20°C	mg/L	30	45	----	40 CFR Part 133
Oil and grease	mg/L	10	----	15	BPJ
Settleable solids	ml/L	0.1	----	0.3	BPJ
Total residual chlorine	mg/L	----	----	0.1	Basin Plan
Total dissolved solids	mg/L	----	----	950	Basin Plan

Constituents	Units	Discharge Effluent Limitations			Rationale
		30-Day Average	7-Day Average	Daily Maximum	
Fluoride	mg/L	----	----	1.6	Basin Plan
Chloride	mg/L	----	----	150	Basin Plan
Sulfate	mg/L	----	----	300	Basin Plan
Boron	mg/L	----	----	1.0	Basin Plan
Barium	mg/L	----	----	1.0	Basin Plan
Detergents (as MBAS)	mg/L	----	----	0.5	Basin Plan
Coliform	MPN/100 ml	2.2	----	23	DHS/WRR
Turbidity	NTU	----	----	10.0	DHS/WRR
Nitrite-N (as Nitrogen)	mg/L	---	----	1.0	Basin Plan/TMDL
Ammonia-N	mg/L	1.96©	----	10.1®	Basin Plan
Nitrate + Nitrate as Nitrogen	mg/L	----	----	8.0	Basin Plan
Nitrate-N	mg/L	----	----	8.0	TMDL
Perchlorate	µg/L	----	----	6	DHS/Action Level
Cadmium	µg/L	2	----	4/3.1*	CTR/TMDL
Chromium III	µg/L	----	----	50	Basin Plan
Copper	µg/L	6.7	----	13.5	CTR
Mercury	µg/L	0.05	----	0.1	CTR
Nickel	µg/L	43	----	86	CTR
Zinc	µg/L	61	----	123	CTR
Lead	µg/L	----	----	19#/62*	TMDL
Selenium	µg/L	----	----	5#	TMDL
TCDD	µg/L	1.4E-8	----	2.8E-8	CTR

VII. Interim Effluent Concentrations

Wastewater Treatment Plants - Outfalls 015 through 017

Constituents	Units	Discharge Effluent Limitations			Rationale
		30-Day Average	7-Day Average	Daily Maximum	
Cadmium	µg/L	2	----	4	CTR/TMDL

The interim effluent concentrations are effective from the effective date of this Order through April 26, 2007. Discharges after April 26, 2007 must comply with the effluent limitations specified in Table B.6 above.

VIII. Monitoring Requirements

A. Influent Monitoring for the Sewage Treatment Plants (Discharge Outfalls 015 – 017)

Influent monitoring for the sewage treatment plants is required during treatment operations (1) to determine BOD_5 20°C and suspended solids removal rates; (2) to assess treatment plant performance; and (3) as a requirement of the Pollution Minimization Program.

B. Effluent Monitoring

To access the impact of the discharge to the beneficial uses of the receiving waters, the Discharger is required to monitor the conventional and priority pollutants and other identified parameters. Monitoring of these pollutants during treatment operations will characterize the wastes discharged.

C. Storm Water Monitoring And Reporting

Storm water runoff discharges from the SSFL are subject to requirements stipulated in this NPDES permit and the Discharger is required to comply with all applicable provisions of the Storm Water Pollution Prevention Plan (Attachment A of the Order). This plan includes requirements to develop, implement, and when appropriate update a Storm Water Pollution Prevention Plan (SWPPP) along with Best Management Practices (BMPs) with the intent of preventing all pollutants from contacting storm water and with the intent of keeping all contaminants of concern from moving into receiving waters.

SANTA SUSANA FIELD LABORATORY AND VICINTY - FIGURE 1

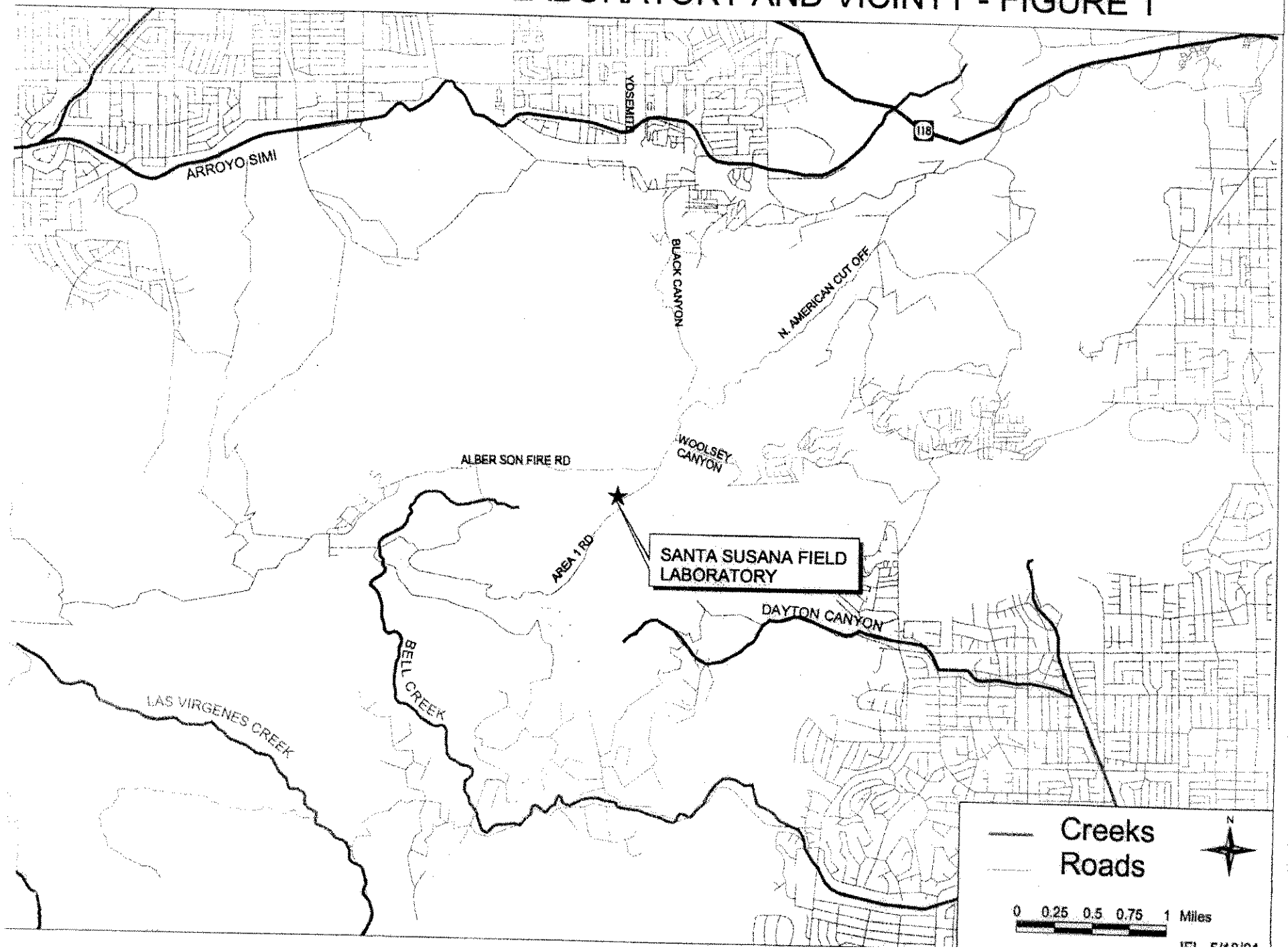
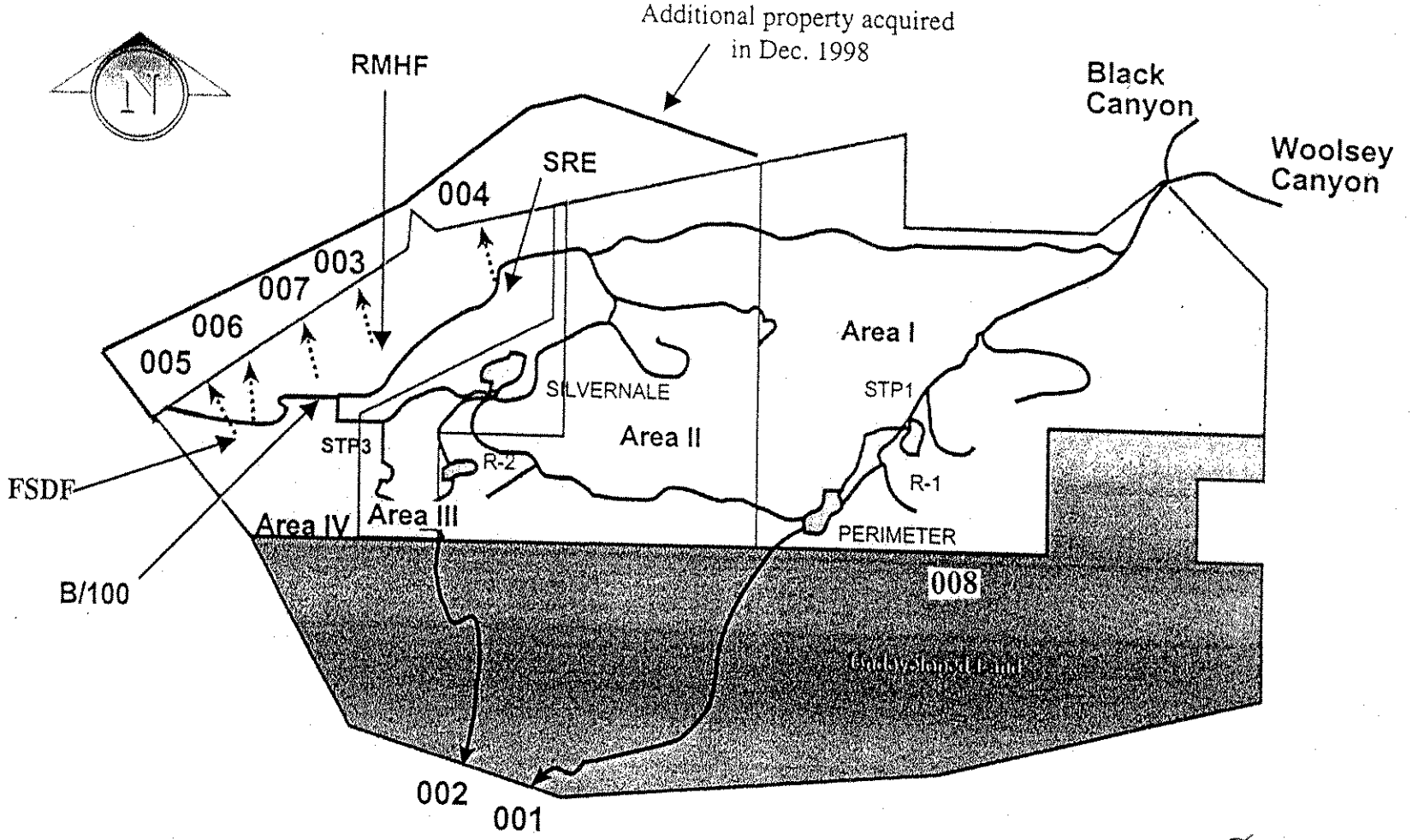


FIGURE 2

SSFL Surface Water Drainage Channels, Ponds & Discharge Locations



BOEING

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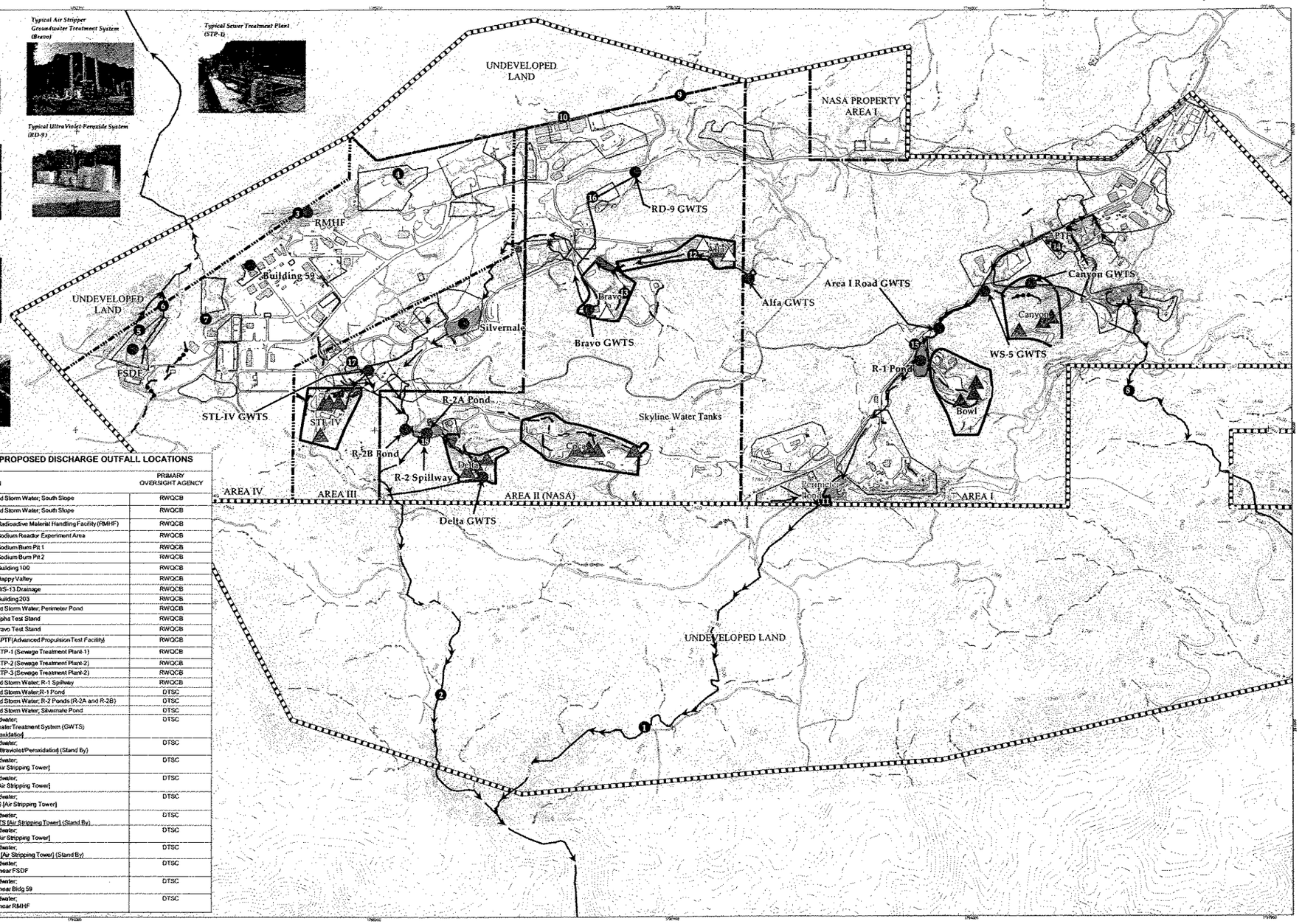

DESCRIPTIONS OF PROPOSED DISCHARGE OUTFALL LOCATIONS

NPDES OUTFALL NO.		DESCRIPTION	PRIMARY OVERSIGHT AGENCY
001		Wastewater and Storm Water; South Slope	RWQCB
002		Wastewater and Storm Water; South Slope	RWQCB
003		Storm Water; Radioactive Material Handling Facility (RMHF)	RWQCB
004		Storm Water; Sodium Reactor Experiment Area	RWQCB
005		Storm Water; Sodium Burn Pit 1	RWQCB
006		Storm Water; Sodium Burn Pit 2	RWQCB
007		Storm Water; Building 100	RWQCB
008		Storm Water; Happy Valley	RWQCB
009		Storm Water; WS-13 Drainage	RWQCB
010		Storm Water; Building 203	RWQCB
011		Wastewater and Storm Water; Perimeter Pond	RWQCB
012		Wastewater; Alpha Test Stand	RWQCB
013		Wastewater; Bravo Test Stand	RWQCB
014		Wastewater; APTF(Advanced Propulsion Test Facility)	RWQCB
015		Wastewater; STP-1 (Sewage Treatment Plant-1)	RWQCB
016		Wastewater; STP-2 (Sewage Treatment Plant-2)	RWQCB
017		Wastewater; STP-3 (Sewage Treatment Plant-2)	RWQCB
018		Wastewater and Storm Water; R-1 Spillway	RWQCB
not applicable		Wastewater and Storm Water;R-1 Pond	DTSC
not applicable		Wastewater and Storm Water; R-2 Ponds (R-2A and R-2B)	DTSC
not applicable		Wastewater and Storm Water; Silvernale Pond	DTSC
not applicable		Treated Groundwater; WS-5 Groundwater Treatment System (GWTS) [Ultraviolet/Peroxidation]	DTSC
not applicable		Treated Groundwater; RD-9 GWTS [Ultraviolet/Peroxidation] (Stand By)	DTSC
not applicable		Treated Groundwater; Alpha GWTS [Air Stripping Tower]	DTSC
not applicable		Treated Groundwater; Delta GWTS [Air Stripping Tower]	DTSC
not applicable		Treated Groundwater; STL-IV GWTS [Air Stripping Tower]	DTSC
not applicable		Treated Groundwater; Area 1 Rd GWTS [Air Stripping Tower] (Stand By)	DTSC
not applicable		Treated Groundwater; Bravo GWTS [Air Stripping Tower]	DTSC
not applicable		Treated Groundwater; Canyon GWTS [Air Stripping Tower] (Stand By)	DTSC
not applicable		Treated Groundwater; Interim GWTS near FSDF	DTSC
not applicable		Treated Groundwater; Interim GWTS near Bldg 59	DTSC
not applicable		Treated Groundwater; Interim GWTS near RMHF	DTSC

N

0 850 FEET

MAP COORDINATES IN STATE PLANE, NAD 27, ZONE V

Legend

- NPDES Outfalls (RWQCB Primary Oversight Authority)
- DTSC Primary Oversight Authority

Treated Effluent Pathways
HPDE Transmission Pipelines
Natural Drainage
Concrete Lined Drainage
Graded Drainage

Surface Water Reclamation Ponds
Water Tanks
Rocket Engine Test Stand RFI Sites
Groundwater Remediation Facilities (GRF)
Former Surface Impoundments (TPCA Evaluated)

Existing Test Stand With Engine Test Fire Quenching Operation
Existing Test Stand Without Engine Test Fire Quenching Operation
Dismantled Test Stand

Base Map Legend

SSFL Property Boundary
Administrative Area Boundary
RFI Site Boundary

NPDES Permit Related Features Santa Susana Field Laboratory

DATE 01/15/04
FILE: z:\rock\plots\arcmap\groundwater_treatment_systems_36x48.mxd

MWH

FIGURE 3

ATTACHMENT 1

TABLE R1

Boeing SSFL
Outfalls 001, 002, 011, and 018
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisms Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMEL hh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
1	Antimony	µg/L	0.6	0.95	NONE	NONE	14	4300	6	6.0	No	Go to Tier 2	No	NO	Yes	Yes	4300	2.0	8,627
2	Arsenic	µg/L	0.6	6.7	340	150	NONE	NONE	50	50.0	No	Go to Tier 2	No	NO	Yes	Yes	NONE	2.0	
3	Beryllium	µg/L	0.6	1.3	NONE	NONE	Narrative	Narrative	4	4.0	No	NO	No	NO	Yes	Yes	Narrative	2.0	
4	Cadmium*	µg/L	0.6	0.25	4.5	2.46	Narrative	Narrative	5	2.5	No	Go to Tier 2	No	NO	Yes	Yes	Narrative	2.0	
5a	Chromium III*	µg/L	0.6	27	1737	207	Narrative	Narrative		207.0	No	Go to Tier 2	No	NO	NO	NO	Narrative	2.0	
5b	Chromium VI	µg/L	0.6	0.17	16.3	11.4	Narrative	Narrative	50	11.4	No	Go to Tier 2	No	NO	Yes	Yes	Narrative	2.0	
6	Copper*	µg/L	0.581	13	14.0	9.3	1300	NONE		9.3	YES	Yes					NONE	2.0	
7	Lead*	µg/L	0.6	9.70	81.6	3.2	Narrative	Narrative		3.2	YES	Yes					Narrative	2.0	
8	Mercury	µg/L	0.6	0.32	Reserved	Reserved	0.05	0.051	2	0.05	YES	Yes					0.051	2.0	0.10
9	Nickel*	µg/L	1.268	23	469.17	52.16	610	4600	100	52.16	No	Go to Tier 2	No	NO	Yes	Yes	4600	2.7	12639
10	Selenium	µg/L	0.6	0.9	Reserved	5	Narrative	Narrative	50	5.00	No	Go to Tier 2	No	NO	Yes	Yes	Narrative	2.01	
11	Silver*	µg/L	0.6	0.14	4.06	none	NONE	NONE		4.06	No	Go to Tier 2	No	NO	Yes	Yes	NONE	2.01	
12	Thallium	µg/L	0.6	1	NONE	NONE	1.7	6.3	2	2.00	No	Go to Tier 2	No	NO	Yes	Yes	6.3	2.01	12.64
13	Zinc*	µg/L	0.727	90	120	120	none	NONE		119.82	No	Go to Tier 2	No	NO	Yes	Yes	NONE	2.19	

TABLE R1

Boeing SSFL
Outfalls 001, 002, 011, and 018
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
1	Antimony	µg/L	0.32		0.53			1.6		3.1		--	6.0	BPJ used to apply limit from Outfalls 001 and 002 to Outfalls 011 and 018.
2	Arsenic	µg/L	0.32	109.2	0.53	79.1	79.1	1.6	122.8	3.1	246.4	--	50.0	BPJ used to apply limit from Outfalls 001 and 002 to Outfalls 011 and 018.
3	Beryllium	µg/L	0.32		0.53			1.6		3.1		--	4.0	BPJ used to apply limit from Outfalls 001 and 002 to Outfalls 011 and 018.
4	Cadmium*	µg/L	0.32	1.5	0.53	1.3	1.3	1.6	2.0	3.1	4.0	2.0	4.0	BPJ used to apply limit from Outfalls 001 and 002 to Outfalls 011 and 018.
5a	Chromium III*	µg/L	0.32	557.6	0.53	109.2	109.2	1.6	169.5	3.1	340.0	--	--	No RPA at either Outfall. No effluent limit applied
5b	Chromium VI	µg/L	0.32	5.2	0.53	6.0	5.2	1.6	8.1	3.1	16.3	8.1	16.3	BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.
6	Copper*	µg/L	0.33	4.6	0.54	5.0	4.6	1.5	7.1	3.0	14.0	7.1	14.0	Tier 1 RPA. BPJ used to apply effluent limt at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.
7	Lead*	µg/L	0.32	26.2	0.53	1.7	1.7	1.6	2.6	3.1	5.2	2.6	5.2	Tier 1 RPA. BPJ used to apply effluent limt at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.
8	Mercury	µg/L	0.32		0.53			1.6		3.1		0.05	0.10	Tier 1 RPA. BPJ used to apply effluent limt at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.
9	Nickel*	µg/L	0.17	77.7	0.31	16.0	16.0	2.2	35	6.0	96	35.1	96.5	BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.
10	Selenium	µg/L	0.32		0.53	2.6	2.6	1.6	4	3.1	8	4.1	8.2	BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.
11	Silver*	µg/L	0.32	1.3	0.53		1.3	1.6	2	3.1	4	2.0	4.1	BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.
12	Thallium	µg/L	0.32		0.53			1.6		3.1		6.3	2.0	BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.
13	Zinc*	µg/L	0.27	32.6	0.47	56.2	32.6	1.7	55	3.7	120	54.6	119.8	BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.

TABLE R1

Boeing SSFL
Outfalls 001, 002, 011, and 018
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisms Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
14	Cyanide	µg/L	0.6	3.5	22	5.2	700	220,000	200	5.2	No	Go to Tier 2	No	NO	Yes	Yes	220000	2.0	441361.6
15	Asbestos	Fibers/ L			NONE	NONE	7,000,000	NONE	7x10^6	7x10^6	No	Go to Tier 2	No	NO	NO	NO			
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.6	4E-06	NONE	NONE	1.3E-08	1.4E-08	3x10^-5	1.4E-08	YES	Yes					0.000000014	2.01	2.81E-08
17	Acrolein	µg/L	0.6	<4.6	NONE	NONE	320	780		780	No	Go to Tier 2	No	NO	NO	NO			
18	Acrylonitrile	µg/L	0.6	<5.1	NONE	NONE	0.059	0.66		0.66	No	YES	No	NO	NO	NO			
19	Benzene	µg/L	0.6	0.38	NONE	NONE	1.2	71	1	1	No	Go to Tier 2	No	NO	NO	NO			
20	Bromoform	µg/L	0.6	<5	NONE	NONE	4.3	360		360	No	Go to Tier 2	No	NO	NO	NO			
21	Carbon Tetrahloride	µg/L	0.6	<5	NONE	NONE	0.25	4.4	600	4.4	No	Go to Tier 2	No	NO	NO	NO			
22	Chlorobenzene	µg/L	0.6	<2	NONE	NONE	680	21,000		21,000	No	Go to Tier 2	No	NO	NO	NO			
23	Dibromochloromethane	µg/L	0.6	<2	NONE	NONE	0.401	34		34	No	Go to Tier 2	No	NO	NO	NO			
24	Chloroethane	µg/L	0.6	<5	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
25	2-chloroethyl vinyl ether	µg/L	0.6	<5	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
26	Chloroform	µg/L	0.6	<2	NONE	NONE	Reserved	Reserved		Reserved	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
27	Dichlorobromomethane	µg/L	0.6	<2	NONE	NONE	0.56	46		46	No	Go to Tier 2	No	NO	NO	NO			
28	1,1-Dichloroethane	µg/L	0.6	<2	NONE	NONE	NONE	NONE	5	5	No	Go to Tier 2	No	NO	NO	NO			
29	1,2-dichloroethane		0.6	<2	NONE	NONE	0.38	99	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
30	1,1-Dichloroethylene	µg/L	0.6	<3	NONE	NONE	0.057	3.2	6	3.2	No	Go to Tier 2	No	NO	Yes	Yes	3.2	2.01	6.42
31	1,2-dichlooropropane	µg/L	0.6	<2	NONE	NONE	0.52	39	5	5	No	Go to Tier 2	No	NO	NO	NO			
32	1,3-dichloropropylene	µg/L	0.6	<2	NONE	NONE	10	1,700	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
33	Ethylbenzene	µg/L	0.6	<2	NONE	NONE	3100	29,000	0.7	0.7	No	Go to Tier 2	No	NO	NO	NO			
34	Methyl bromide	µg/L	0.6	<5	NONE	NONE	48	4,000		4,000	No	Go to Tier 2	No	NO	NO	NO			
35	Methyl chloride	µg/L		<5	NONE	NONE	Narrative	Narrative		Narrative	No Criteria Available	Go to Tier 2	No data	NO	NO	NO			
36	Methylene chloride	µg/L	0.6	<5	NONE	NONE	4.7	1,600		1,600	No	Go to Tier 2	No	NO	NO	NO			
37	1,1,2,2-tetrachloethne	µg/L	0.6	<2	NONE	NONE	0.17	11	1	1	No	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Outfalls 001, 002, 011, and 018
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater: ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater: AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS: Lowest AMEL	Lowest MDEL	Recommendation
14	Cyanide	µg/L	0.3	7.1	0.53	2.7	2.7	1.6	4.3	3.1	8.5	4.3	8.5	**BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.**
15	Asbestos	Fibers/ L										--	--	No RPA at either Outfall. No effluent limit applied
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.32		0.5			1.6		3.1		1.4E-08	2.8E-08	**Tier 1 RPA. BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.**
17	Acrolein	µg/L										--	--	Interim Monitoring - No Limit
18	Acrylonitrile	µg/L										--	--	Interim Monitoring - No Limit
19	Benzene	µg/L										--	--	Interim Monitoring - No Limit
20	Bromoform	µg/L										--	--	Interim Monitoring - No Limit
21	Carbon Tetrahloride	µg/L										--	--	Interim Monitoring - No Limit
22	Chlorobenzene	µg/L										--	--	Interim Monitoring - No Limit
23	Dibromochloromethane	µg/L										--	--	Interim Monitoring - No Limit
24	Chloroethane	µg/L										--	--	No Limit - No Criteria Available
25	2-chloroethyl vinyl ether	µg/L										--	--	No Limit - No Criteria Available
26	Chloroform	µg/L										--	--	No Limit - No Criteria Available
27	Dichlorobromomethane	µg/L										--	--	Interim Monitoring - No Limit
28	1,1-Dichloroethane	µg/L										--	--	Interim Monitoring - No Limit
29	1,2-dichloroethane											--	--	Interim Monitoring - No Limit
30	**1,1-Dichloroethylene**	µg/L	0.32		0.53							3.2	6.4	**BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.**
31	1,2-dichlooropropane	µg/L										--	--	Interim Monitoring - No Limit
32	1,3-dichloropropylene	µg/L										--	--	Interim Monitoring - No Limit
33	Ethylbenzene	µg/L										--	--	Interim Monitoring - No Limit
34	Methyl bromide	µg/L										--	--	Interim Monitoring - No Limit
35	Methyl chloride	µg/L										--	--	No Limit - No Criteria Available
36	Methylene chloride	µg/L										--	--	Interim Monitoring - No Limit
37	1,1,2,2-tetrachloroethne	µg/L										--	--	Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Outfalls 001, 002, 011, and 018
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)								HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan									Organisms Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
38	Tetrachloroethylene	µg/L	0.6	<2	NONE	NONE	0.8	8.85	5	5	No	Go to Tier 2	No	NO	NO	NO			
39	Toluene	µg/L	0.6	<2	NONE	NONE	6800	200,000	150	150	No	Go to Tier 2	No	NO	NO	NO			
40	Trans 1,2-Dichloroethylene	µg/L	0.6	<2	NONE	NONE	700	140,000	10	10	No	Go to Tier 2	No	NO	NO	NO			
41	1,1,1-Trichloroethane	µg/L	0.6	0.74	NONE	NONE	Narrative	Narrative	200	200	No	Go to Tier 2	No	NO	NO	NO			
42	1,1,2-trichloroethane	µg/L	0.6	<2	NONE	NONE	0.6	42	5	5	No	Go to Tier 2	No	NO	NO	NO			
43	**Trichloroethylene**	**µg/L**	**0.6**	**1.4**	**NONE**	**NONE**	**2.7**	**81**	**5**	**5**	**No**	**Go to Tier 2**	**No**	**NO**	**Yes**	**Yes**	**81**	**2.0**	**163**
44	Vinyl chloride	µg/L	0.6	<5	NONE	NONE	2	525	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
45	2-chlorophenol	µg/L	0.6	<1	NONE	NONE	120	400		400	No	Go to Tier 2	No	NO	NO	NO			
46	2,4-dihlorophenol	µg/L	0.6	<2	NONE	NONE	93	790		790	No	Go to Tier 2	No	NO	NO	NO			
47	2,4-dimethylphenol	µg/L	0.6	<2	NONE	NONE	540	2,300		2,300	No	Go to Tier 2	No	NO	NO	NO			
48	4,6-dinitro-o-resol (aka2-methyl-4,6-Dinitrophenol)	µg/L	0.6	<5	NONE	NONE	13.4	765		765	No	Go to Tier 2	No	NO	NO	NO			
49	2,4-dinitrophenol	µg/L	0.6	<5	NONE	NONE	70	14,000		14,000	No	Go to Tier 2	No	NO	NO	NO			
50	2-nitrophenol	µg/L	0.6	<2	NONE	NONE	NONE	NONE		None	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
51	4-nitrophenol	µg/L	0.6	<5	NONE	NONE	NONE	NONE		None	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
52	3-Methyl-4-Chlorophenol (aka P-chloro-m-resol)	µg/L	0.6	<2	NONE	NONE	NONE	NONE		None	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
53	**Pentachlorophenol**	**µg/L**	**0.6**	**<8**	**pH depend**	**pH depenc**	**0.28**	**8.2**	**1**	**1**	**No**	**Go to Tier 2**	**No**	**NO**	**Yes**	**Yes**	**8.2**	**2**	**16**
54	Phenol	µg/L	0.6	<1	NONE	NONE	21,000	4,600,000		4.6x10^6	No	Go to Tier 2	No	NO	NO	NO	4600000	2	9228470
55	**2,4,6-trihlorophenol**	**µg/L**	**0.6**	**<1**	**NONE**	**NONE**	**2.1**	**6.5**		**6.5**	**No**	**Go to Tier 2**	**No**	**NO**	**Yes**	**Yes**	**6.5**	**2**	**13**
56	Acenaphthene	µg/L	0.6	<0.5	NONE	NONE	1200	2,700		2,700	No	Go to Tier 2	No	NO	NO	NO			
57	Acenaphthylene	µg/L	0.6	<0.5	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
58	Anthracene	µg/L	0.6	<0.5	NONE	NONE	9600	110,000		110,000	No	Go to Tier 2	No	NO	NO	NO			
59	Benzidine	µg/L	0.6	<5	NONE	NONE	0.00012	0.00054		0.00054	No	Go to Tier 2	No	NO	NO	NO			
60	Benzo(a)Anthracene	µg/L	0.6	<5	NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
61	Benzo(a)Pyrene	µg/L	0.6	<2	NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
62	Benzo(b)Fluoranthene	µg/L	0.6	<0.5	NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Outfalls 001, 002, 011, and 018
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
38	Tetrachloroethylene	µg/L										--	--	Retain existing limit from Order 96-042, for protection of GWR & Antibacksliding.
39	Toluene	µg/L										--	--	Interim Monitoring - No Limit
40	Trans 1,2-Dichloroethylene	µg/L										--	--	Interim Monitoring - No Limit
41	1,1,1-Trichloroethane	µg/L										--	--	Interim Monitoring - No Limit
42	1,1,2-trichloroethane	µg/L										--	--	Interim Monitoring - No Limit
43	**Trichloroethylene**	**µg/L**	**0.32108321**		**0.52743344**			**1.55242461**		**3.1**		--	**5.0**	**BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.**
44	Vinyl chloride	µg/L										--	--	Interim Monitoring - No Limit
45	2-chlorophenol	µg/L										--	--	Interim Monitoring - No Limit
46	2,4-dihlorophenol	µg/L										--	--	Interim Monitoring - No Limit
47	2,4-dimethylphenol	µg/L										--	--	Interim Monitoring - No Limit
48	4,6-dinitro-o-resol (aka2-methyl-4,6-Dinitrophenol)	µg/L										--	--	Interim Monitoring - No Limit
49	2,4-dinitrophenol	µg/L										--	--	Interim Monitoring - No Limit
50	2-nitrophenol	µg/L										--	--	Interim Monitoring - No Limit
51	4-nitrophenol	µg/L										--	--	No Criteria Available
52	3-Methyl-4-Chlorophenol (aka P-chloro-m-resol)	µg/L										--	--	No Criteria Available
53	**Pentachlorophenol**	**µg/L**	**0.32**		**0.53**			**1.6**		**3.1**		**8.2**	**16.5**	**BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.**
54	Phenol	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No Limit
55	**2,4,6-trihlorophenol**	**µg/L**	**0.32**		**0.53**			**1.6**		**3.1**		**6.5**	**13.0**	**BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.**
56	Acenaphthene	µg/L										--	--	Interim Monitoring - No Limit
57	Acenaphthylene	µg/L										--	--	No Criteria Available
58	Anthracene	µg/L										--	--	Interim Monitoring - No Limit
59	Benzidine	µg/L										--	--	Interim Monitoring - No Limit
60	Benzo(a)Anthracene	µg/L										--	--	Interim Monitoring - No Limit
61	Benzo(a)Pyrene	µg/L										--	--	Interim Monitoring - No Limit
62	Benzo(b)Fluoranthene	µg/L										--	--	Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Outfalls 001, 002, 011, and 018
(CA0001309, CI-6027)

CTR#	DATE	Units	CV	MEC	CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health										Organisns Only		
					C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
63	Benzo(ghi)Perylene	µg/L	0.6	<5	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
64	Benzo(k)Fluoranthene	µg/L	0.6	<0.5	NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
65	Bis(2-Chloroethoxy) methane	µg/L	0.6	<0.5	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
66	Bis(2-Chloroethyl)Ether	µg/L	0.6	<0.5	NONE	NONE	0.031	1.4		1.4	No	Go to Tier 2	No	NO	NO	NO			
67	Bis(2-Chloroisopropyl) Ether	µg/L	0.6	<0.5	NONE	NONE	1400	170,000		170,000	No	Go to Tier 2	No	NO	NO	NO			
68	**Bis(2-Ethylhexyl) Phthalate**	**µg/L**	**0.6**	**2.2**	**NONE**	**NONE**	**1.8**	**5.9**	**4**	**4**	**No**	**Go to Tier 2**					**5.9**	**2.006189157**	**11.837**
69	4-Bromophenyl Phenyl Ether	µg/L	0.6	<1	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
70	Butylbenzyl Phthalate	µg/L	0.6	<5	NONE	NONE	3000	5,200		5,200	No	Go to Tier 2	No	NO	NO	NO			
71	2-Chloronaphthalene	µg/L	0.6	<0.5	NONE	NONE	1700	4,300		4,300	No	Go to Tier 2	No	NO	NO	NO			
72	4-Chlorophenyl Phenyl Ether	µg/L	0.6	<0.5	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
73	Chrysene	µg/L	0.6	<0.5	NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
74	Dibenzo(a,h)Anthracene	µg/L	0.6	<0.5	NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
75	1,2-Dichlorobenzene	µg/L	0.6	<0.5	NONE	NONE	2700	17,000	600	600	No	Go to Tier 2	No	NO	NO	NO			
76	1,3-Dichlorobenzene	µg/L	0.6	<0.5	NONE	NONE	400	2,600		2,600	No	Go to Tier 2	No	NO	NO	NO			
77	1,4-Dichlorobenzene	µg/L	0.6	<0.5	NONE	NONE	400	2,600	5	5	No	Go to Tier 2	No	NO	NO	NO			
78	3,3'-Dichlorobenzidine	µg/L	0.6	<5	NONE	NONE	0.04	0.077		0.077	No	Go to Tier 2	No	NO	NO	NO			
79	Diethyl Phthalate	µg/L	0.6	<1	NONE	NONE	23000	120,000		120,000	No	Go to Tier 2	No	NO	NO	NO			
80	Dimethyl Phthalate	µg/L	0.6	<0.5	NONE	NONE	313000	2,900,000		2.9x10^6	No	Go to Tier 2	No	NO	NO	NO			
81	Di-n-Butyl Phthalate	µg/L	0.6	<2	NONE	NONE	2700	12,000		12,000	No	Go to Tier 2	No	NO	NO	NO			
82	**2,4-Dinitrotoluene**	**µg/L**	**0.6**	**<5**	**NONE**	**NONE**	**0.11**	**9.1**		**9.1**	**No**	**Go to Tier 2**	**No**	**NO**	**Yes**	**Yes**	**9.1**	**2.01**	**18.3**
83	2,6-Dinitrotoluene	µg/L	0.6	<5	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
84	Di-n-Octyl Phthalate	µg/L	0.6	<5	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
85	1,2-Diphenylhydrazine	µg/L	0.6	<1	NONE	NONE	0.04	0.54		0.54	No	Go to Tier 2		NO	NO	NO			
86	Fluoranthene	µg/L	0.6	<0.5	NONE	NONE	300	370		370	No	Go to Tier 2	No	NO	NO	NO			
87	Fluorene	µg/L	0.6	<0.5	NONE	NONE	1300	14,000		14,000	No	Go to Tier 2	No	NO	NO	NO			
88	Hexachlorobenzene	µg/L	0.6	<1	NONE	NONE	0.00075	0.00077		0.00077	No	Go to Tier 2	No	NO	NO	NO			
89	Hexachlorobutadiene	µg/L	0.6	<2	NONE	NONE	0.44	50		50	No	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Outfalls 001, 002, 011, and 018
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS – Freshwater					AQUATIC LIFE CALCULATIONS – Freshwater				PROPOSED LIMITS		
			ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	Lowest AMEL	Lowest MDEL	Recommendation
63	Benzo(ghi)Perylene	µg/L										--	--	No Criteria Available
64	Benzo(k)Fluoranthene	µg/L										--	--	Interim Monitoring - No Limit
65	Bis(2-Chloroethoxy) methane	µg/L										--	--	No Criteria Available
66	Bis(2-Chloroethyl)Ether	µg/L										--	--	Interim Monitoring - No Limit
67	Bis(2-Chloroisopropyl) Ether	µg/L										--	--	Interim Monitoring - No Limit
68	**Bis(2-Ethylhexyl) Phthalate**	µg/L	0.32108321		0.52743344			1.55242461		3.1144574		--	4.0	**BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.**
69	4-Bromophenyl Phenyl Ether	µg/L										--	--	No Criteria Available
70	Butylbenzyl Phthalate	µg/L										--	--	Interim Monitoring - No Limit
71	2-Chloronaphthalene	µg/L										--	--	Interim Monitoring - No Limit
72	4-Chlorophenyl Phenyl Ether	µg/L										--	--	No Criteria Available
73	Chrysene	µg/L										--	--	Interim Monitoring - No Limit
74	Dibenzo(a,h)Anthracene	µg/L										--	--	Interim Monitoring - No Limit
75	1,2-Dichlorobenzene	µg/L										--	--	Interim Monitoring - No Limit
76	1,3-Dichlorobenzene	µg/L										--	--	Interim Monitoring - No Limit
77	1,4-Dichlorobenzene	µg/L										--	--	Interim Monitoring - No Limit
78	3,3'-Dichlorobenzidine	µg/L										--	--	Interim Monitoring - No Limit
79	Diethyl Phthalate	µg/L										--	--	Interim Monitoring - No Limit
80	Dimethyl Phthalate	µg/L										--	--	Interim Monitoring - No Limit
81	Di-n-Butyl Phthalate	µg/L										--	--	Interim Monitoring - No Limit
82	**2,4-Dinitrotoluene**	µg/L	0.3		0.5			1.6		3.1		9	18	**BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.**
83	2,6-Dinitrotoluene	µg/L										--	--	No Criteria Available
84	Di-n-Octyl Phthalate	µg/L										--	--	No Criteria Available
85	1,2-Diphenylhydrazine	µg/L										--	--	Interim Monitoring - No Limit
86	Fluoranthene	µg/L										--	--	Interim Monitoring - No Limit
87	Fluorene	µg/L										--	--	Interim Monitoring - No Limit
88	Hexachlorobenzene	µg/L										--	--	Interim Monitoring - No Limit
89	Hexachlorobutadiene	µg/L										--	--	Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Outfalls 001, 002, 011, and 018
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)								HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan									Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
90	Hexachlorocyclopentadiene	µg/L	0.6	<5	NONE	NONE	240	17,000		17,000	No	Go to Tier 2	No	NO	NO	NO			
91	Hexachloroethane	µg/L	0.6	<3	NONE	NONE	1.9	8.9		8.9	No	Go to Tier 2	No	NO	NO	NO			
92	Indeno(1,2,3-cd)Pyrene	µg/L	0.6	<2	NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
93	Isophorone	µg/L	0.6	<1	NONE	NONE	8.4	600		600	No	Go to Tier 2	No	NO	NO	NO			
94	Napthalene	µg/L	0.6	<1	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
95	Nitrobenzene	µg/L	0.6	<1	NONE	NONE	17	1,900		1,900	No	Go to Tier 2	No	NO	NO	NO			
96	**N-Nitrosodimethylamine**	**µg/L**	**0.6**	**<2**	**NONE**	**NONE**	**0.00069**	**8.1**		**8.1**	**No**	**Go to Tier 2**	**No**	**NO**	**Yes**	**Yes**	**8.1**	**2.01**	**16.25**
97	N-Nitrosodi-n-Propylamine	µg/L	0.6	<2	NONE	NONE	0.005	1.4		1.4	YES	Go to Tier 2	No	NO	NO	NO			
98	N-Nitrosodiphenylamine	µg/L	0.6	<1	NONE	NONE	5	16		16	YES	Go to Tier 2	No	NO	NO	NO			
99	Phenanthrene	µg/L	0.6	<0.5	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
100	Pyrene	µg/L	0.6	<0.5	NONE	NONE	960	11,000		11,000	No	Go to Tier 2	No	NO	NO	NO			
101	1,2,4-Trichlorobenzene	µg/L	0.6	<1	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
102	Aldrin	µg/L	0.6	<0.1	3	NONE	0.00013	0.00014		0.00014	ND>C	Go to Tier 2	No	NO	NO	NO			
103	**alpha-BHC**	**µg/L**	**0.6**	**<0.01**	**NONE**	**NONE**	**0.0039**	**0.013**		**0.013**	**No**	**Go to Tier 2**	**No**	**NO**	**Yes**	**Yes**	**0.013**	**2.0**	0.026
104	beta-BHC	µg/L	0.6	<0.1	NONE	NONE	0.014	0.046		0.046	No	Go to Tier 2	No	NO	NO	NO			
105	gamma-BHC (aka Lindane)	µg/L	0.6	<0.1	0.95	NONE	0.019	0.063	0.2	0.063	No	Go to Tier 2	No	NO	NO	NO			
106	delta-BHC	µg/L	0.6	<0.2	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
107	Chlordane	µg/L	0.6	<1	2.4	0.0043	0.00057	0.00059		0.00059	ND>C	Go to Tier 2	No	NO	NO	NO			
108	4,4'-DDT	µg/L	0.6	<0.1	1.1	0.001	0.00059	0.00059		0.00059	ND>C	Go to Tier 2	No	NO	NO	NO			
109	4,4'-DDE	µg/L	0.6	<0.1	NONE	NONE	0.00059	0.00059		0.00059	No	YES					0.00059	2.01	0.001
110	4,4'-DDD	µg/L	0.6	<0.1	NONE	NONE	0.00083	0.00084		0.00084	No	YES					0.00084	2.01	0.002
111	Dieldrin	µg/L	0.6	<0.1	0.24	0.056	0.00014	0.00014		0.00014	ND>C	Go to Tier 2	No	NO	NO	NO			
112	alpha-Endosulfan	µg/L	0.6	<0.1	0.22	0.056	110	240		0.056	No	Go to Tier 2	No	NO	NO	NO			
113	beta-Endosulfan	µg/L	0.6	<0.1	0.22	0.056	110	240		0.056	No	Go to Tier 2	No	NO	NO	NO			
114	Endosulfan Sulfate	µg/L	0.6	<0.2	NONE	NONE	110	240		240	No	Go to Tier 2	No	NO	NO	NO			
115	Endrin	µg/L	0.6	<0.1	0.086	0.036	0.76	0.81		0.036	No	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Outfalls 001, 002, 011, and 018
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS – Freshwater					AQUATIC LIFE CALCULATIONS – Freshwater				PROPOSED LIMITS		Recommendation
			ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	Lowest AMEL	Lowest MDEL	
90	Hexachlorocyclopentadiene	µg/L										--	--	Interim Monitoring - No Limit
91	Hexachloroethane	µg/L										--	--	Interim Monitoring - No Limit
92	Indeno(1,2,3-cd)Pyrene	µg/L										--	--	Interim Monitoring - No Limit
93	Isophorone	µg/L										--	--	Interim Monitoring - No Limit
94	Napthalene	µg/L										--	--	Interim Monitoring - No Limit
95	Nitrobenzene	µg/L										--	--	No Criteria Available
96	**N-Nitrosodimethylamine**	**µg/L**	**0.32**		**0.53**			**1.55**		**3.11**		**8.1**	**16.3**	**BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.**
97	N-Nitrosodi-n-Propylamine	µg/L										--	--	Interim Monitoring - No Limit
98	N-Nitrosodiphenylamine	µg/L										--	--	Interim Monitoring - No Limit
99	Phenanthrene	µg/L										--	--	Interim Monitoring - No Limit
100	Pyrene	µg/L										--	--	Interim Monitoring - No Limit
101	1,2,4-Trichlorobenzene	µg/L										--	--	Interim Monitoring - No Limit
102	Aldrin	µg/L	0.32	0.96								--	--	Interim Monitoring - No Limit
103	**alpha-BHC**	**µg/L**	**0.32**		**0.53**			**1.55**		**3.11**		**0.01**	**0.03**	**BPJ used to apply effluent limit at Outfalls 001 and 002 to discharges from Outfalls 011 and 018.**
104	beta-BHC	µg/L										--	--	Interim Monitoring - No Limit
105	gamma-BHC (aka Lindane)	µg/L	0.32	0.31								--	--	Interim Monitoring - No Limit
106	delta-BHC	µg/L										--	--	Interim Monitoring - No Limit
107	Chlordane	µg/L	0.32	0.77								--	--	Interim Monitoring - No Limit
108	4,4'-DDT	µg/L	0.32	0.35								--	--	Interim Monitoring - No Limit
109	4,4'-DDE	µg/L	0.321									--	--	Interim Monitoring - No Limit
110	4,4'-DDD	µg/L	0.321									--	--	Interim Monitoring - No Limit
111	Dieldrin	µg/L	0.32	0.08								--	--	Interim Monitoring - No Limit
112	alpha-Endosulfan	µg/L	0.32	0.07								--	--	Interim Monitoring - No Limit
113	beta-Endosulfan	µg/L	0.321	0.071								--	--	Interim Monitoring - No Limit
114	Endosulfan Sulfate	µg/L										--	--	Interim Monitoring - No Limit
115	Endrin	µg/L	0.32	0.03								--	--	Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Outfalls 001, 002, 011, and 018
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMEL hh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
116	Endrin Aldehyde	µg/L	0.6	<0.1	NONE	NONE	0.76	0.81		0.81	No	Go to Tier 2	No	NO	NO	NO			
117	Heptachlor	µg/L	0.6	<0.1	0.52	0.0038	0.00021	0.00021		0.00021	ND>C	Go to Tier 2	No	NO	NO	NO			
118	Heptachlor Epoxide	µg/L	0.6	<0.1	0.52	0.0038	0.0001	0.00011		0.00011	ND>C	Go to Tier 2	No	NO	NO	NO			
	Polychlorinated biphenyls (PCBs)	µg/L																	
119	Aroclor 1016	µg/L	0.6	<1	NONE	0.014	0.00017	0.00017		0.00017	ND>C	Go to Tier 2	No	NO	NO	NO			
120	Aroclor 1221	µg/L	0.6	<1	NONE	0.014	0.00017	0.00017		0.00017	ND>C	Go to Tier 2	No	NO	NO	NO			
121	Aroclor 1232	µg/L	0.6	<1	NONE	0.014	0.00017	0.00017		0.00017	ND>C	Go to Tier 2	No	NO	NO	NO			
122	Aroclor 1242	µg/L	0.6	<1	NONE	0.014	0.00017	0.00017		0.00017	ND>C	Go to Tier 2	No	NO	NO	NO			
123	Aroclor 1248	µg/L	0.6	<1	NONE	0.014	0.00017	0.00017		0.00017	ND>C	Go to Tier 2	No	NO	NO	NO			
124	Aroclor 1254	µg/L	0.6	<1	NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO	0.00017	2.01	0.0003
125	Aroclor 1260	µg/L	0.6	<1	NONE	0.014	0.00017	0.00017		0.00017	ND>C	Go to Tier 2	No	NO	NO	NO			
126	Toxaphene	µg/L	0.6	<5	0.73	0.0002	0.0073	0.00075		0.00075	ND>C	Go to Tier 2	No	NO	NO	NO			

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

TABLE R1

Boeing SSFL
Outfalls 001, 002, 011, and 018
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
116	Endrin Aldehyde	µg/L										--	--	Interim Monitoring - No Limit
117	Heptachlor	µg/L	0.32	0.17								--	--	Interim Monitoring - No Limit
118	Heptachlor Epoxide	µg/L	0.32	0.17								--	--	Interim Monitoring - No Limit
	Polychlorinated biphenyls (PCBs)	µg/L										--	--	Interim Monitoring - No Limit
119	Aroclor 1016	µg/L										--	--	Interim Monitoring - No Limit
120	Aroclor 1221	µg/L										--	--	Interim Monitoring - No Limit
121	Aroclor 1232	µg/L										--	--	Interim Monitoring - No Limit
122	Aroclor 1242	µg/L										--	--	Interim Monitoring - No Limit
123	Aroclor 1248	µg/L										--	--	Interim Monitoring - No Limit
124	Aroclor 1254	µg/L	0.32									--	--	Interim Monitoring - No Limit
125	Aroclor 1260	µg/L										--	--	Interim Monitoring - No Limit
126	Toxaphene	µg/L	0.32	0.23								--	--	Interim Monitoring - No Limit
FOOTNOTE:														
*	These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.													

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Wastewater
The Boeing Company
(Santa Susana Field Laboratory)
Outfalls 1,2,11, and 18
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
Iron	µg/L	12	27.00	2.12	11.24	303.38	0		303.38	0.3	BU	YES
Manganese	µg/L	8	370	1.76	13.12	4855.40	0		4855.40	50	BU	YES
Barium	µg/L	6	0.14	0.95	6.94	0.97	0		0.97	1,000	BU	NO*
Settleable solids	ml/L	37	1	0.15	1.18	1.18	0		1.18	0.3	BU	YES
MBAS	mg/L	42	4.4	1.72	3.50	15.38	0		15.38	0.5	BU	YES
TSS	mg/L	42	460	2.11	4.01	1844.70	0		1844.70	45.00	BU	YES
Perchlorate	µg/L	46	5.80	1.22	2.64	15.32	0		15.32	6.00	BU	YES
Nitrate + Nitrite as Nitrogen	mg/L	30	3.60	1.07	2.99	10.78	0		10.78	8.00	BU	YES
Fluoride	mg/L	2	0.45	0.31	2.94	1.32	0		1.32	1.60	BU	NO*
Oil and Grease	mg/L	5	17.00	0.83	6.55	111.30	0		111.30	10.00	BU	YES
Sulfate	mg/L	30	310.00	1.00	2.84	881.71	0		881.71	300.00	BU	YES
$BOD_5 20^{\circ}C$	mg/L	29	10.00	1.24	3.44	34.35	0		34.35	20.00	BU	YES
Chloride	mg/L	30	44.00	0.63	2.07	91.09	0		91.09	150.00	BU	NO*
TDS	mg/L	63	1000.00	0.82	1.84	1843.35	0		1843.35	150.00	BU	YES

* Effluent limit included based on BPJ

ATTACHMENT 2

TABLE R1

Boeing SSFL
Storm Water
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisms Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
1	Antimony	µg/L	1.79	20	NONE	NONE	14	4300	6	6.0	YES	Go to Tier 2	No	NO	NO	YES	4300	3.01	
2	Arsenic	µg/L	0.6		340	150	NONE	NONE	50	50.0	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
3	Beryllium	µg/L	0.6		NONE	NONE	Narrative	Narrative	4	4.0	No	NO	No	NO	NO	NO	Narrative	2.01	
4	Cadmium*	µg/L	3.6	0.72	4.6	2.4	Narrative	Narrative	5	2.4	No	Go to Tier 2	No	NO	NO	YES	Narrative	3.33	
5a	Chromium III*	µg/L	0.6	13	1741	209	Narrative	Narrative		209.3	No	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
5b	Chromium VI	µg/L	0.6		16.3	9.4	Narrative	Narrative	50	9.4	No	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
6	Copper*	µg/L	1.0	39	13.5	9.4	1300	NONE		9.4	YES	Yes				YES	NONE	2.6	
7	Lead*	µg/L	0.6	260	82.2	3.2	Narrative	Narrative		3.2	YES	Yes				YES	Narrative	2.0	
8	Mercury	µg/L	1.0	0.41	Reserved	Reserved	0.05	0.051	2	0.05	YES	Yes				YES	0.051	2.5	0.13
9	Nickel*	µg/L	0.6	6.3	470.94	52.156469	610	4600	100	52.16	No	Go to Tier 2	No	NO	NO	NO	4600	2.01	9228
10	Selenium	µg/L	0.6	4.7	Reserved	5	Narrative	Narrative	50	5.00	No	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
11	Silver*	µg/L	0.6		4	none	NONE	NONE		4.00	No	Go to Tier 2	No	NO	NO	YES	NONE	2.01	
12	Thallium	µg/L	0.6	0.21	NONE	NONE	1.7	6.3	2	2.00	No	Go to Tier 2	No	NO	NO	NO	6.3	2.01	13
13	Zinc*	µg/L	0.6	38	122.7	121.7	none	NONE		D	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
14	Cyanide	µg/L	0.6		22	5.2	700	220,000	200	5.2	No	No	No	NO	NO	No	220000	2.0	441362
15	Asbestos	Fibers/ L			NONE	NONE	7,000,000	NONE	7x10^6	7x10^6	No	Go to Tier 2	No	NO	NO	NO	NONE		
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.6	2E-04	NONE	NONE	1.3E-08	1.4E-08	3x10^-5	1.4E-08	YES	Yes	No	NO	NO	YES	0.000000014	2.01	2.81E-08
17	Acrolein	µg/L	0.6		NONE	NONE	320	780		780	No	Go to Tier 2	No	NO	NO	NO	780	2.01	1565
18	Acrylonitrile	µg/L	0.6		NONE	NONE	0.059	0.66		0.66	No	YES	No	NO	NO	NO	0.66	2.01	1.3
19	Benzene	µg/L	0.6		NONE	NONE	1.2	71	1	1	No	Go to Tier 2	No	NO	NO	NO			
20	Bromoform	µg/L	0.6		NONE	NONE	4.3	360		360	No	Go to Tier 2	No	NO	NO	NO			
21	Carbon Tetrahloride	µg/L	0.6		NONE	NONE	0.25	4.4	600	4.4	No	Go to Tier 2	No	NO	NO	NO			
22	Chlorobenzene	µg/L	0.6		NONE	NONE	680	21,000		21,000	No	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Storm Water
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS – Freshwater					AQUATIC LIFE CALCULATIONS – Freshwater				PROPOSED LIMITS		
			ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	Lowest AMEL	Lowest MDEL	Recommendation
1	Antimony	µg/L	0.13		0.53			2.63		7.9		---	6	BPJ used to apply limit from Outfalls 003 through 007.
2	Arsenic	µg/L	0.32	109.2	0.53	79.1	79.1	1.55	122.8	3.1	246.4	---	---	BPJ used to apply limit from Outfalls 003 through 007.
3	Beryllium	µg/L	0.32		0.53			0.53		3.1		---	---	Interim Monitoring - No CTR based Limit
4	Cadmium*	µg/L	0.09	0.4	0.13	0.3	0.3	3.50	1.1	11.7	3.6	---	4	BPJ used to apply limit from Outfalls 003 through 007.
5a	Chromium III*	µg/L	0.32	558.8	0.53	110.4	110.4	1.55	171.4	3.1	343.8	---	---	Interim Monitoring - No CTR based Limit
5b	Chromium VI	µg/L	0.32	5.2	0.53	4.9	4.9	1.55	7.7	3.1	15.4	---	---	Interim Monitoring - No CTR based Limit
6	Copper*	µg/L	0.20	2.7	0.36	3.4	2.7	2.0	5.3	5.1	13.5	---	14	Limit Based on CTR. BPJ used to apply limit from Outfalls 003 through 007.
7	Lead*	µg/L	0.32	26.4	0.53	1.7	1.7	1.6	2.6	3.1	5.2	---	5.2	New Limit Based on CTR
8	Mercury	µg/L	0.20		0.37			1.9		4.9		---	0.13	Limit Based on CTR. BPJ used to apply limit from Outfalls 003 through 007.
9	Nickel*	µg/L	0.32	151.2	0.53	27.5	28	1.55	42.7	3.1	85.7	---	---	Interim Monitoring - No CTR based Limit
10	Selenium	µg/L	0.32		0.53	2.6	2.6	1.55	4.1	3.1	8.2	---	---	Interim Monitoring - No CTR based Limit
11	Silver*	µg/L	0.32	1.3	0.53		1.3	1.55	2.0	3.1	4.0	---	---	Interim Monitoring - No CTR based Limit
12	Thallium	µg/L	0.32		0.53			1.55		3.1		---	2.0	Limit Based on CTR. BPJ used to apply limit from Outfalls 003 through 007.
13	Zinc*	µg/L	0.32	39.4	0.53	64.2	39	1.55	61.2	3.1	122.7	---	---	Interim Monitoring - No CTR based Limit
14	Cyanide	µg/L	0.32	7.1	0.53	2.7	2.7	1.55	4.3	3.1	8.5	---	---	Interim Monitoring - No CTR based Limit
15	Asbestos	Fibers/L										---	---	Interim Monitoring - No Limit
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.32		0.53			1.55		3.1		---	2.8E-08	Limit Based on CTR. BPJ used to apply limit from Outfalls 003 through 007.
17	Acrolein	µg/L	0.321		0.53							---	---	Interim Monitoring - No Limit
18	Acrylonitrile	µg/L	0.321		0.53							---	---	Interim Monitoring - No Limit
19	Benzene	µg/L										---	---	Interim Monitoring - No Limit
20	Bromoform	µg/L										---	---	Interim Monitoring - No Limit
21	Carbon Tetrahloride	µg/L										---	---	Interim Monitoring - No Limit
22	Chlorobenzene	µg/L										---	---	Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Storm Water
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMEL hh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
23	Dibromochloromethane	µg/L	0.6		NONE	NONE	0.401	34		34	No	Go to Tier 2	No	NO	NO	NO			
24	Chloroethane	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
25	2-chloroethyl vinyl ether	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
26	Chloroform	µg/L	0.6		NONE	NONE	Reserved	Reserved		Reserved	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
27	Dichlorobromomethane	µg/L	0.6		NONE	NONE	0.56	46		46	No	Go to Tier 2	No	NO	NO	NO			
28	1,1-Dichloroethane	µg/L	0.6		NONE	NONE	NONE	NONE	5	5	No	Go to Tier 2	No	NO	NO	NO			
29	1,2-dichloroethane		0.6		NONE	NONE	0.38	99	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
30	1,1-Dichloroethylene	µg/L	0.6		NONE	NONE	0.057	3.2	6	3.2	No	Go to Tier 2	No	NO	NO	NO			
31	1,2-dichlooropropane	µg/L	0.6		NONE	NONE	0.52	39	5	5	No	Go to Tier 2	No	NO	NO	NO			
32	1,3-dichloropropylene	µg/L	0.6		NONE	NONE	10	1,700	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
33	Ethylbenzene	µg/L	0.6		NONE	NONE	3100	29,000	0.7	0.7	No	Go to Tier 2	No	NO	NO	NO			
34	Methyl bromide	µg/L	0.6		NONE	NONE	48	4,000		4,000	No	Go to Tier 2	No	NO	NO	NO			
35	Methyl chloride	µg/L			NONE	NONE	Narrative	Narrative		Narrative	No Criteria Available	Go to Tier 2	No data	NO	NO	NO			
36	Methylene chloride	µg/L	0.6	1.4	NONE	NONE	4.7	1,600		1,600	No	Go to Tier 2	No	NO	NO	NO			
37	1,1,2,2-tetrachloroethne	µg/L	0.6		NONE	NONE	0.17	11	1	1	No	Go to Tier 2	No	NO	NO	NO			
38	Tetrachloroethylene	µg/L	0.6		NONE	NONE	0.8	8.85	5	5	No	Go to Tier 2	No	NO	NO	NO			
39	Toluene	µg/L	0.6		NONE	NONE	6800	200,000	150	150	No	Go to Tier 2	No	NO	NO	NO			
40	Trans 1,2-Dichloroethylene	µg/L	0.6		NONE	NONE	700	140,000	10	10	No	Go to Tier 2	No	NO	NO	NO			
41	1,1,1-Trichloroethane	µg/L	0.6	0.76	NONE	NONE	Narrative	Narrative	200	200	No	Go to Tier 2	No	NO	NO	NO			
42	1,1,2-trichloroethane	µg/L	0.6		NONE	NONE	0.6	42	5	5	No	Go to Tier 2	No	NO	NO	NO			
43	Trichloroethylene	µg/L	0.6	0.66	NONE	NONE	2.7	81	5	5	No	Go to Tier 2	No	NO	NO	NO			
44	Vinyl chloride	µg/L	0.6		NONE	NONE	2	525	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
45	2-chlorophenol	µg/L	0.6		NONE	NONE	120	400		400	No	Go to Tier 2	No	NO	NO	NO			
46	2,4-dihlorophenol	µg/L	0.6		NONE	NONE	93	790		790	No	Go to Tier 2	No	NO	NO	NO			
47	2,4-dimethylphenol	µg/L	0.6		NONE	NONE	540	2,300		2,300	No	Go to Tier 2	No	NO	NO	NO			
48	4,6-dinitro-o-resol (aka2-methyl-4,6-Dinitrophenol)	µg/L	0.6		NONE	NONE	13.4	765		765	No	Go to Tier 2	No	NO	NO	NO			
49	2,4-dinitrophenol	µg/L	0.6		NONE	NONE	70	14,000		14,000	No	Go to Tier 2	No	NO	NO	NO			
50	2-nitrophenol	µg/L	0.6		NONE	NONE	NONE	NONE		None	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
51	4-nitrophenol	µg/L	0.6		NONE	NONE	NONE	NONE		None	No Criteria Available	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Storm Water
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
23	Dibromochloromethane	µg/L										---	---	Interim Monitoring - No Limit
24	Chloroethane	µg/L										---	---	No Limit - No Criteria Available
25	2-chloroethyl vinyl ether	µg/L										---	---	No Limit - No Criteria Available
26	Chloroform	µg/L										---	---	No Limit - No Criteria Available
27	Dichlorobromomethane	µg/L										---	---	Interim Monitoring - No Limit
28	1,1-Dichloroethane	µg/L										---	---	Interim Monitoring - No Limit
29	1,2-dichloroethane											---	---	Interim Monitoring - No Limit
30	1,1-Dichloroethylene	µg/L										---	---	Interim Monitoring - No Limit
31	1,2-dichlooropropane	µg/L										---	---	Interim Monitoring - No Limit
32	1,3-dichloropropylene	µg/L										---	---	Interim Monitoring - No Limit
33	Ethylbenzene	µg/L										---	---	Interim Monitoring - No Limit
34	Methyl bromide	µg/L										---	---	Interim Monitoring - No Limit
35	Methyl chloride	µg/L										---	---	No Limit - No Criteria Available
36	Methylene chloride	µg/L										---	---	Interim Monitoring - No Limit
37	1,1,2,2-tetrachloroethne	µg/L										---	---	Interim Monitoring - No Limit
38	Tetrachloroethylene	µg/L										---	---	Interim Monitoring - No Limit
39	Toluene	µg/L										---	---	Interim Monitoring - No Limit
40	Trans 1,2-Dichloroethylene	µg/L										---	---	Interim Monitoring - No Limit
41	1,1,1-Trichloroethane	µg/L										---	---	Interim Monitoring - No Limit
42	1,1,2-trichloroethane	µg/L										---	---	Interim Monitoring - No Limit
43	Trichloroethylene	µg/L										---	---	Interim Monitoring - No Limit
44	Vinyl chloride	µg/L										---	---	Interim Monitoring - No Limit
45	2-chlorophenol	µg/L										---	---	Interim Monitoring - No Limit
46	2,4-dihlorophenol	µg/L										---	---	Interim Monitoring - No Limit
47	2,4-dimethylphenol	µg/L										---	---	Interim Monitoring - No Limit
48	4,6-dinitro-o-resol (aka2-methyl-4,6-Dinitrophenol)	µg/L										---	---	Interim Monitoring - No Limit
49	2,4-dinitrophenol	µg/L										---	---	Interim Monitoring - No Limit
50	2-nitrophenol	µg/L										---	---	Interim Monitoring - No Limit
51	4-nitrophenol	µg/L										---	---	No Criteria Available
												---	---	No Criteria Available

TABLE R1

Boeing SSFL
Storm Water
(CA0001309, CI-6027)

					CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health										Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
52	3-Methyl-4-Chlorophenol (aka P-chloro-m-resol)	µg/L	0.6		NONE	NONE	NONE	NONE		None	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
53	Pentachlorophenol	µg/L	0.6		pH depende	pH depende	0.28	8.2	1	1	No	Go to Tier 2	No	NO	NO	NO			
54	Phenol	µg/L	0.6		NONE	NONE	21,000	4,600,000		4.6x10^6	No	Go to Tier 2	No	NO	NO	NO			
55	2,4,6-trihlorophenol	µg/L	0.6		NONE	NONE	2.1	6.5		6.5	No	Go to Tier 2	No	NO	NO	NO			
56	Acenaphthene	µg/L	0.6		NONE	NONE	1200	2,700		2,700	No	Go to Tier 2	No	NO	NO	NO			
57	Acenaphthylene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
58	Anthracene	µg/L	0.6		NONE	NONE	9600	110,000		110,000	No	Go to Tier 2	No	NO	NO	NO			
59	Benzidine	µg/L	0.6		NONE	NONE	0.00012	0.00054		0.00054	No	Go to Tier 2	No	NO	NO	NO			
60	Benzo(a)Anthracene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
61	Benzo(a)Pyrene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
62	Benzo(b)Fluoranthene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
63	Benzo(ghi)Perylene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
64	Benzo(k)Fluoranthene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
65	Bis(2-Chloroethoxy) methane	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
66	Bis(2-Chloroethyl)Ether	µg/L	0.6		NONE	NONE	0.031	1.4		1.4	No	Go to Tier 2	No	NO	NO	NO			
67	Bis(2-Chloroisopropyl) Ether	µg/L	0.6		NONE	NONE	1400	170,000		170,000	No	Go to Tier 2	No	NO	NO	NO			
68	Bis(2-Ethylhexyl) Phthalate	µg/L	0.6		NONE	NONE	1.8	5.9	4	4	No	YES							
69	4-Bromophenyl Phenyl Ether	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
70	Butylbenzyl Phthalate	µg/L	0.6		NONE	NONE	3000	5,200		5,200	No	Go to Tier 2	No	NO	NO	NO			
71	2-Chloronaphthalene	µg/L	0.6		NONE	NONE	1700	4,300		4,300	No	Go to Tier 2	No	NO	NO	NO			
72	4-Chlorophenyl Phenyl Ether	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
73	Chrysene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
74	Dibenzo(a,h)Anthracene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
75	1,2-Dichlorobenzene	µg/L	0.6		NONE	NONE	2700	17,000	600	600	No	Go to Tier 2	No	NO	NO	NO			
76	1,3-Dichlorobenzene	µg/L	0.6		NONE	NONE	400	2,600		2,600	No	Go to Tier 2	No	NO	NO	NO			
77	1,4-Dichlorobenzene	µg/L	0.6		NONE	NONE	400	2,600	5	5	No	Go to Tier 2	No	NO	NO	NO			
78	3,3'-Dichlorobenzidine	µg/L	0.6		NONE	NONE	0.04	0.077		0.077	No	Go to Tier 2	No	NO	NO	NO			
79	Diethyl Phthalate	µg/L	0.6		NONE	NONE	23000	120,000		120,000	No	Go to Tier 2	No	NO	NO	NO			
80	Dimethyl Phthalate	µg/L	0.6		NONE	NONE	313000	2,900,000		2.9x10^6	No	Go to Tier 2	No	NO	NO	NO			
81	Di-n-Butyl Phthalate	µg/L	0.6		NONE	NONE	2700	12,000		12,000	No	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Storm Water
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS					AQUATIC LIFE CALCULATIONS				PROPOSED LIMITS		
			Freshwater					Freshwater						
			ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	Lowest AMEL	Lowest MDEL	Recommendation
52	3-Methyl-4-Chlorophenol (aka P-chloro-m-resol)	µg/L										---	---	No Criteria Available
53	Pentachlorophenol	µg/L										---	---	Interim Monitoring - No Limit
54	Phenol	µg/L										---	---	Interim Monitoring - No Limit
55	2,4,6-trihlorophenol	µg/L										---	---	Interim Monitoring - No Limit
56	Acenaphthene	µg/L										---	---	Interim Monitoring - No Limit
57	Acenaphthylene	µg/L										---	---	No Criteria Available
58	Anthracene	µg/L										---	---	Interim Monitoring - No Limit
59	Benzidine	µg/L										---	---	Interim Monitoring - No Limit
60	Benzo(a)Anthracene	µg/L										---	---	Interim Monitoring - No Limit
61	Benzo(a)Pyrene	µg/L										---	---	Interim Monitoring - No Limit
62	Benzo(b)Fluoranthene	µg/L										---	---	Interim Monitoring - No Limit
63	Benzo(ghi)Perylene	µg/L										---	---	No Criteria Available
64	Benzo(k)Fluoranthene	µg/L										---	---	Interim Monitoring - No Limit
65	Bis(2-Chloroethoxy) methane	µg/L										---	---	No Criteria Available
66	Bis(2-Chloroethyl)Ether	µg/L										---	---	Interim Monitoring - No Limit
67	Bis(2-Chloroisopropyl) Ether	µg/L										---	---	Interim Monitoring - No Limit
68	Bis(2-Ethylhexyl) Phthalate	µg/L										---	---	Interim Monitoring - No Limit
69	4-Bromophenyl Phenyl Ether	µg/L										---	---	No Criteria Available
70	Butylbenzyl Phthalate	µg/L										---	---	Interim Monitoring - No Limit
71	2-Chloronaphthalene	µg/L										---	---	Interim Monitoring - No Limit
72	4-Chlorophenyl Phenyl Ether	µg/L										---	---	No Criteria Available
73	Chrysene	µg/L										---	---	Interim Monitoring - No Limit
74	Dibenzo(a,h)Anthracene	µg/L										---	---	Interim Monitoring - No Limit
75	1,2-Dichlorobenzene	µg/L										---	---	Interim Monitoring - No Limit
76	1,3-Dichlorobenzene	µg/L										---	---	Interim Monitoring - No Limit
77	1,4-Dichlorobenzene	µg/L										---	---	Interim Monitoring - No Limit
78	3,3'-Dichlorobenzidine	µg/L										---	---	Interim Monitoring - No Limit
79	Diethyl Phthalate	µg/L										---	---	Interim Monitoring - No Limit
80	Dimethyl Phthalate	µg/L										---	---	Interim Monitoring - No Limit
81	Di-n-Butyl Phthalate	µg/L										---	---	Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Storm Water
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
82	2,4-Dinitrotoluene	µg/L	0.6		NONE	NONE	0.11	9.1		9.1	No	Go to Tier 2	No	NO	NO	NO			
83	2,6-Dinitrotoluene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
84	Di-n-Octyl Phthalate	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
85	1,2-Diphenylhydrazine	µg/L	0.6		NONE	NONE	0.04	0.54		0.54	No	Go to Tier 2		NO	NO	NO			
86	Fluoranthene	µg/L	0.6		NONE	NONE	300	370		370	No	Go to Tier 2	No	NO	NO	NO			
87	Fluorene	µg/L	0.6		NONE	NONE	1300	14,000		14,000	No	Go to Tier 2	No	NO	NO	NO			
88	Hexachlorobenzene	µg/L	0.6		NONE	NONE	0.00075	0.00077		0.00077	No	Go to Tier 2	No	NO	NO	NO			
89	Hexachlorobutadiene	µg/L	0.6		NONE	NONE	0.44	50		50	No	Go to Tier 2	No	NO	NO	NO			
90	Hexachlorocyclopentadiene	µg/L	0.6		NONE	NONE	240	17,000		17,000	No	Go to Tier 2	No	NO	NO	NO			
91	Hexachloroethane	µg/L	0.6		NONE	NONE	1.9	8.9		8.9	No	Go to Tier 2	No	NO	NO	NO			
92	Indeno(1,2,3-cd)Pyrene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
93	Isophorone	µg/L	0.6		NONE	NONE	8.4	600		600	No	Go to Tier 2	No	NO	NO	NO			
94	Napthalene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
95	Nitrobenzene	µg/L	0.6		NONE	NONE	17	1,900		1,900	No	Go to Tier 2	No	NO	NO	NO			
96	N-Nitrosodimethylamine	µg/L	0.6		NONE	NONE	0.00069	8.1		8.1	No	Go to Tier 2	No	NO	NO	NO			
97	N-Nitrosodi-n-Propylamine	µg/L	0.6		NONE	NONE	0.005	1.4		1.4	No	Go to Tier 2	No	NO	NO	NO			
98	N-Nitrosodiphenylamine	µg/L	0.6		NONE	NONE	5	16		16	No	Go to Tier 2	No	NO	NO	NO			
99	Phenanthrene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
100	Pyrene	µg/L	0.6		NONE	NONE	960	11,000		11,000	No	Go to Tier 2	No	NO	NO	NO			
101	1,2,4-Trichlorobenzene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
102	Aldrin	µg/L	0.6		3	NONE	0.00013	0.00014		0.00014	No	Go to Tier 2	No	NO	NO	NO			
103	alpha-BHC	µg/L	0.6		NONE	NONE	0.0039	0.013		0.013	No	Go to Tier 2	No	NO	NO	NO			
104	beta-BHC	µg/L	0.6		NONE	NONE	0.014	0.046		0.046	No	Go to Tier 2	No	NO	NO	NO			
105	gamma-BHC (aka Lindane)	µg/L	0.6		0.95	NONE	0.019	0.063	0.2	0.063	No	Go to Tier 2	No	NO	NO	NO			
106	delta-BHC	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
107	Chlordane	µg/L	0.6		2.4	0.0043	0.00057	0.00059		0.00059	No	Go to Tier 2	No	NO	NO	NO			
108	4,4'-DDT	µg/L	0.6		1.1	0.001	0.00059	0.00059		0.00059	No	Go to Tier 2	No	NO	NO	NO			
109	4,4'-DDE	µg/L	0.6		NONE	NONE	0.00059	0.00059		0.00059	No	YES					0.00059	2.01	0.0011859
110	4,4'-DDD	µg/L	0.6		NONE	NONE	0.00083	0.00084		0.00084	No	YES					0.00084	2.01	0.0016884
111	Dieldrin	µg/L	0.6		0.24	0.056	0.00014	0.00014		0.00014	No	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Storm Water
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
82	2,4-Dinitrotoluene	µg/L										---	---	Interim Monitoring - No Limit
83	2,6-Dinitrotoluene	µg/L										---	---	No Criteria Available
84	Di-n-Octyl Phthalate	µg/L										---	---	No Criteria Available
85	1,2-Diphenylhydrazine	µg/L										---	---	Interim Monitoring - No Limit
86	Fluoranthene	µg/L										---	---	Interim Monitoring - No Limit
87	Fluorene	µg/L										---	---	Interim Monitoring - No Limit
88	Hexachlorobenzene	µg/L										---	---	Interim Monitoring - No Limit
89	Hexachlorobutadiene	µg/L										---	---	Interim Monitoring - No Limit
90	Hexachlorocyclopentadiene	µg/L										---	---	Interim Monitoring - No Limit
91	Hexachloroethane	µg/L										---	---	Interim Monitoring - No Limit
92	Indeno(1,2,3-cd)Pyrene	µg/L										---	---	Interim Monitoring - No Limit
93	Isophorone	µg/L										---	---	Interim Monitoring - No Limit
94	Napthalene	µg/L										---	---	No Criteria Available
95	Nitrobenzene	µg/L										---	---	Interim Monitoring - No Limit
96	N-Nitrosodimethylamine	µg/L										---	---	Interim Monitoring - No Limit
97	N-Nitrosodi-n-Propylamine	µg/L										---	---	Interim Monitoring - No Limit
98	N-Nitrosodiphenylamine	µg/L										---	---	Interim Monitoring - No Limit
99	Phenanthrene	µg/L										---	---	Interim Monitoring - No Limit
100	Pyrene	µg/L										---	---	Interim Monitoring - No Limit
101	1,2,4-Trichlorobenzene	µg/L										---	---	Interim Monitoring - No Limit
102	Aldrin	µg/L										---	---	Interim Monitoring - No Limit
103	alpha-BHC	µg/L										---	---	Interim Monitoring - No Limit
104	beta-BHC	µg/L										---	---	Interim Monitoring - No Limit
105	gamma-BHC (aka Lindane)	µg/L										---	---	Interim Monitoring - No Limit
106	delta-BHC	µg/L										---	---	Interim Monitoring - No Limit
107	Chlordane	µg/L										---	---	Interim Monitoring - No Limit
108	4,4'-DDT	µg/L										---	---	Interim Monitoring - No Limit
109	4,4'-DDE	µg/L										---	---	Interim Monitoring - No Limit
110	4,4'-DDD	µg/L										---	---	Interim Monitoring - No Limit
111	Dieldrin	µg/L										---	---	Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Storm Water
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
112	alpha-Endosulfan	µg/L	0.6		0.22	0.056	110	240		0.056	No	Go to Tier 2	No	NO	NO	NO			
113	beta-Endosulfan	µg/L	0.6		0.22	0.056	110	240		0.056	No	Go to Tier 2	No	NO	NO	NO			
114	Endosulfan Sulfate	µg/L	0.6		NONE	NONE	110	240		240	No	Go to Tier 2	No	NO	NO	NO			
115	Endrin	µg/L	0.6		0.086	0.036	0.76	0.81		0.036	No	Go to Tier 2	No	NO	NO	NO			
116	Endrin Aldehyde	µg/L	0.6		NONE	NONE	0.76	0.81		0.81	No	Go to Tier 2	No	NO	NO	NO			
117	Heptachlor	µg/L	0.6		0.52	0.0038	0.00021	0.00021		0.00021	No	Go to Tier 2	No	NO	NO	NO			
118	Heptachlor Epoxide	µg/L	0.6		0.52	0.0038	0.0001	0.00011		0.00011	No	Go to Tier 2	No	NO	NO	NO			
	Polychlorinated biphenyls (PCBs)	µg/L									No								
119	Aroclor 1016	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
120	Aroclor 1221	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
121	Aroclor 1232	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
122	Aroclor 1242	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
123	Aroclor 1248	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
124	Aroclor 1254	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
125	Aroclor 1260	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO	0.00017	2.01	0.0003417
126	Toxaphene	µg/L	0.6		0.73	0.0002	0.0073	0.00075		0.00075	No	Go to Tier 2	No	NO	NO	NO			
FOOTNOTE:																			
*	These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.																		

TABLE R1

Boeing SSFL
Storm Water
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater					AQUATIC LIFE CALCULATIONS Freshwater				PROPOSED LIMITS		Recommendation
			ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	Lowest AMEL	Lowest MDEL	
112	alpha-Endosulfan	µg/L										---	---	Interim Monitoring - No Limit
113	beta-Endosulfan	µg/L										---	---	Interim Monitoring - No Limit
114	Endosulfan Sulfate	µg/L										---	---	Interim Monitoring - No Limit
115	Endrin	µg/L										---	---	Interim Monitoring - No Limit
116	Endrin Aldehyde	µg/L										---	---	Interim Monitoring - No Limit
117	Heptachlor	µg/L										---	---	Interim Monitoring - No Limit
118	Heptachlor Epoxide	µg/L										---	---	Interim Monitoring - No Limit
	Polychlorinated biphenyls (PCBs)	µg/L										---	---	Interim Monitoring - No Limit
119	Aroclor 1016	µg/L										---	---	Interim Monitoring - No Limit
120	Aroclor 1221	µg/L										---	---	Interim Monitoring - No Limit
121	Aroclor 1232	µg/L										---	---	Interim Monitoring - No Limit
122	Aroclor 1242	µg/L										---	---	Interim Monitoring - No Limit
123	Aroclor 1248	µg/L										---	---	Interim Monitoring - No Limit
124	Aroclor 1254	µg/L										---	---	Interim Monitoring - No Limit
125	Aroclor 1260	µg/L										---	---	Interim Monitoring - No Limit
126	Toxaphene	µg/L										---	---	Interim Monitoring - No Limit
FOOTNOTE:														
*	These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.													

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Wastewater
The Boeing Company
(Santa Susana Field Laboratory)
Outfalls 003 through 010
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
Chloride	mg/L	79	26	0.95	1.81	47.08	0		47.08	150	BU	NO*
TSS	mg/L	24	710	2.45	6.95	4935.93	0		4935.93	45	BU	YES
Perchlorate	µg/L	29	2.40	0.68	2.20	5.27	0		5.27	6	BU	NO*
Boron	mg/L	7	0.05	2.30	22.09	1.04	0		1.04	1	BU	YES
Sulfate	mg/L	80	160.00	2.25	2.69	430.22	0		430.22	300	BU	YES
TDS	mg/L	81	610.00	0.72	1.60	978.32	0		978.32	850	BU	YES
Oil and Grease	mg/L	87	16.00	0.79	1.62	25.99	0		25.99	10	BU	YES
Fluoride	mg/L	ND**										
Nitrate +Ntrite as Nitrogen	mg/L	87	8.90	1.09	1.85	16.50	0		16.50	8	BU	YES
*Effluent limit retained using BPJ												
**No Data												

ATTACHMENT 3

TABLE R1

Boeing SSFL
Outfalls 012 through 014
(CA0001309, CI-6027)

					CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health										Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
1	Antimony	µg/L	0.6		NONE	NONE	14	4300	6	6.0	No	Go to Tier 2	No	NO	NO	NO			
2	Arsenic	µg/L	0.6		340	150	NONE	NONE	50	50.0	No	Go to Tier 2	No	NO	NO	NO			
3	Beryllium	µg/L	0.6		NONE	NONE	Narrative	Narrative	4	4.0	No	NO	No	NO	NO	NO			
4	Cadmium*	µg/L	0.6	1.4	4.5	2.5	Narrative	Narrative	5	2.5	No	Go to Tier 2	No	NO	NO	NO			
5a	Chromium III*	µg/L	0.6	5.2	1737	207	Narrative	Narrative	50	50.0	No	Yes	No	NO	NO	NO			
5b	Chromium VI	µg/L	0.6		16.3	11.4	Narrative	Narrative		11.4	No	Go to Tier 2	No	NO	NO	NO			
6	**Copper***	**µg/L**	**0.581**	**12**	**14.0**	**9.3**	**1300**	**NONE**		9.3	**YES**	**Yes**	No				**NONE**	**2.0**	
7	**Lead***	**µg/L**	**0.6**	**6**	**81.6**	**3.2**	**Narrative**	**Narrative**		**3.2**	**YES**	**Yes**	No				**Narrative**	**2.0**	
8	**Mercury**	**µg/L**	**0.6**	**0.12**	**Reserved**	**Reserved**	**0.05**	**0.051**	**2**	0.05	**YES**	**Yes**	No				**0.051**	**2.0**	**0.10**
9	Nickel*	µg/L	0.6	4.5	469.17	52.16	610	4600	100	52.16	No	Go to Tier 2	No	NO	NO	NO			
10	Selenium	µg/L	0.6		Reserved	5	Narrative	Narrative	50	5.00	No	Go to Tier 2	No	NO	NO	NO			
11	Silver*	µg/L	0.6		4.06	none	NONE	NONE		4.06	No	Go to Tier 2	No	NO	NO	NO			
12	Thallium	µg/L	0.6		NONE	NONE	1.7	6.3	2	2.00	No	Go to Tier 2	No	NO	NO	NO			
13	Zinc*	µg/L	0.6	92	119.8	119.8	none	NONE		D	No	Go to Tier 2	No	NO	NO	NO			
14	Cyanide	µg/L	0.6		22	5.2	700	220,000	200	5.2	No	YES					220000	2.0	441360.6
15	Asbestos	Fibers/ L			NONE	NONE	7,000,000	NONE	7x10^6	7x10^6	No	Go to Tier 2	No	NO	NO	NO			
16	**2,3,7,8-TCDD (Dioxin)**	**µg/L**	**0.6**	**2E-07**	**NONE**	**NONE**	**0.000000013**	**0.000000014**	**3x10^-5**	**1.4E-08**	**YES**	**Yes**					**0.000000014**	**2.01**	**2.80866E-08**
17	Acrolein	µg/L	0.6		NONE	NONE	320	780		780	No	Go to Tier 2	No	NO	NO	NO			
18	Acrylonitrile	µg/L	0.6		NONE	NONE	0.059	0.66		0.66	No	YES	No	NO	NO	NO			
19	Benzene	µg/L	0.6	7.1	NONE	NONE	1.2	71	1	1	No	Go to Tier 2	No	NO	NO	NO			
20	Bromoform	µg/L	0.6		NONE	NONE	4.3	360		360	No	Go to Tier 2	No	NO	NO	NO			
21	Carbon Tetrahloride	µg/L	0.6		NONE	NONE	0.25	4.4	600	4.4	No	Go to Tier 2	No	NO	NO	NO			
22	Chlorobenzene	µg/L	0.6		NONE	NONE	680	21,000		21,000	No	Go to Tier 2	No	NO	NO	NO			
23	Dibromochloromethane	µg/L	0.6		NONE	NONE	0.401	34		34	No	Go to Tier 2	No	NO	NO	NO			
24	Chloroethane	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			

TABLE R1

Boeing SSFL
Outfalls 012 through 014
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
1	Antimony	µg/L										--	--	Interim Monitoring - No CTR-based Limit
2	Arsenic	µg/L										--	--	Interim Monitoring - No CTR-based Limit
3	Beryllium	µg/L										--	--	Interim Monitoring - No CTR-based Limit
4	Cadmium*	µg/L										--	--	Interim Monitoring - No CTR-based Limit
5a	Chromium III*	µg/L										--	--	Interim Monitoring - No CTR-based Limit
5b	Chromium VI	µg/L										--	--	Interim Monitoring - No CTR-based Limit
6	**Copper***	**µg/L**	**0.33**	**4.6**	**0.54**	**5.0**	**4.6**	**1.5**	**7.1**	**3.03131054**	**14.0**	**7.1**	**14.0**	**New Limit Based on CTR**
7	**Lead***	**µg/L**	**0.32**	**26.2**	**0.53**	**1.7**	**1.7**	**1.6**	**2.6**	**3.11445743**	**5.2**	**2.6**	**5.2**	**New Limit Based on CTR**
8	**Mercury**	**µg/L**	**0.32**		**0.53**			**1.6**		**3.1**		**0.05**	**0.10**	**New Limit Based on CTR**
9	Nickel*	µg/L										--	--	Interim Monitoring - No CTR-based Limit
10	Selenium	µg/L										--	--	Interim Monitoring - No CTR-based Limit
11	Silver*	µg/L										--	--	Interim Monitoring - No CTR-based Limit
12	Thallium	µg/L										--	--	Interim Monitoring - No CTR-based Limit
13	Zinc*	µg/L										--	--	Interim Monitoring - No CTR-based Limit
14	Cyanide	µg/L	0.3	7.1	0.53	2.7	2.7	1.6	4.3	3.1	8.5	--	--	Interim Monitoring - No CTR-based Limit
15	Asbestos	Fibers/L										--	--	Interim Monitoring - No CTR-based Limit
16	**2,3,7,8-TCDD (Dioxin)**	**µg/L**	**0.32**		**0.5**			**1.6**		**3.1**		**1.4E-08**	**2.8E-08**	**New Limit Based on CTR**
17	Acrolein	µg/L										--	--	Interim Monitoring - No Limit
18	Acrylonitrile	µg/L										--	--	Interim Monitoring - No Limit
19	Benzene	µg/L										--	--	Interim Monitoring - No Limit
20	Bromoform	µg/L										--	--	Interim Monitoring - No Limit
21	Carbon Tetrahloride	µg/L										--	--	Interim Monitoring - No Limit
22	Chlorobenzene	µg/L										--	--	Interim Monitoring - No Limit
23	Dibromochloromethane	µg/L										--	--	Interim Monitoring - No Limit
24	Chloroethane	µg/L										--	--	No Limit - No Criteria Available

TABLE R1

Boeing SSFL
Outfalls 012 through 014
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMEL.hh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
25	2-chloroethyl vinyl ether	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
26	Chloroform	µg/L	0.6	0.98	NONE	NONE	Reserved	Reserved		Reserved	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
27	Dichlorobromomethane	µg/L	0.6		NONE	NONE	0.56	46		46	No	Go to Tier 2	No	NO	NO	NO			
28	1,1-Dichloroethane	µg/L	0.6		NONE	NONE	NONE	NONE	5	5	No	Go to Tier 2	No	NO	NO	NO			
29	1,2-dichloroethane				NONE	NONE	0.38	99	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
30	1,1-Dichloroethylene	µg/L	0.6		NONE	NONE	0.057	3.2	6	3.2	No	Go to Tier 2	No	NO	NO	NO			
31	1,2-dichlooropropane	µg/L	0.6		NONE	NONE	0.52	39	5	5	No	Go to Tier 2	No	NO	NO	NO			
32	1,3-dichloropropylene	µg/L	0.6		NONE	NONE	10	1,700	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
33	Ethylbenzene	µg/L	0.6		NONE	NONE	3100	29,000	0.7	0.7	No	Go to Tier 2	No	NO	NO	NO			
34	Methyl bromide	µg/L	0.6		NONE	NONE	48	4,000		4,000	No	Go to Tier 2	No	NO	NO	NO			
35	Methyl chloride	µg/L			NONE	NONE	Narrative	Narrative		Narrative	No Criteria Available	Go to Tier 2	No data	NO	NO	NO			
36	Methylene chloride	µg/L	0.6		NONE	NONE	4.7	1,600		1,600	No	Go to Tier 2	No	NO	NO	NO			
37	1,1,2,2-tetrachloroethne	µg/L	0.6		NONE	NONE	0.17	11	1	1	No	Go to Tier 2	No	NO	NO	NO			
38	Tetrachloroethylene	µg/L	0.6		NONE	NONE	0.8	8.85	5	5	No	Go to Tier 2	No	NO	NO	NO			
39	Toluene	µg/L	0.6	3	NONE	NONE	6800	200,000	150	150	No	Go to Tier 2	No	NO	NO	NO			
40	Trans 1,2-Dichloroethylene	µg/L	0.6		NONE	NONE	700	140,000	10	10	No	Go to Tier 2	No	NO	NO	NO			
41	1,1,1-Trichloroethane	µg/L	0.6		NONE	NONE	Narrative	Narrative	200	200	NO	Go to Tier 2	No	NO	NO	NO			
42	1,1,2-trichloroethane	µg/L	0.6		NONE	NONE	0.6	42	5	5	No	Go to Tier 2	No	NO	NO	NO			
43	Trichloroethylene	µg/L	0.6	0.57	NONE	NONE	2.7	81	5	5	No	Go to Tier 2	No	NO	NO	NO			
44	Vinyl chloride	µg/L	0.6		NONE	NONE	2	525	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
45	2-chlorophenol	µg/L	0.6		NONE	NONE	120	400		400	No	Go to Tier 2	No	NO	NO	NO			
46	2,4-dihlorophenol	µg/L	0.6		NONE	NONE	93	790		790	No	Go to Tier 2	No	NO	NO	NO			
47	2,4-dimethylphenol	µg/L	0.6		NONE	NONE	540	2,300		2,300	No	Go to Tier 2	No	NO	NO	NO			
48	4,6-dinitro-o-resol (aka2-methyl-4,6-Dinitrophenol)	µg/L	0.6		NONE	NONE	13.4	765		765	No	Go to Tier 2	No	NO	NO	NO			
49	2,4-dinitrophenol	µg/L	0.6		NONE	NONE	70	14,000		14,000	No	Go to Tier 2	No	NO	NO	NO			
50	2-nitrophenol	µg/L	0.6		NONE	NONE	NONE	NONE		None	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
51	4-nitrophenol	µg/L	0.6		NONE	NONE	NONE	NONE		None	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
52	3-Methyl-4-Chlorophenol (aka P-chloro-m-resol)	µg/L	0.6		NONE	NONE	NONE	NONE		None	No Criteria Available	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Outfalls 012 through 014
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
25	2-chloroethyl vinyl ether	µg/L										--	--	No Limit - No Criteria Available
26	Chloroform	µg/L										--	--	No Limit - No Criteria Available
27	Dichlorobromomethane	µg/L										--	--	Interim Monitoring - No Limit
28	1,1-Dichloroethane	µg/L										--	--	Interim Monitoring - No Limit
29	1,2-dichloroethane											--	--	Interim Monitoring - No Limit
30	1,1-Dichloroethylene	µg/L										--	--	Interim Monitoring - No Limit
31	1,2-dichlooropropane	µg/L										--	--	Interim Monitoring - No Limit
32	1,3-dichloropropylene	µg/L										--	--	Interim Monitoring - No Limit
33	Ethylbenzene	µg/L										--	--	Interim Monitoring - No Limit
34	Methyl bromide	µg/L										--	--	Interim Monitoring - No Limit
35	Methyl chloride	µg/L										--	--	No Limit - No Criteria Available
36	Methylene chloride	µg/L										--	--	Interim Monitoring - No Limit
37	1,1,2,2-tetrachloroethne	µg/L										--	--	Interim Monitoring - No Limit
38	Tetrachloroethylene	µg/L										--	--	Interim Monitoring - No Limit
39	Toluene	µg/L										--	--	Interim Monitoring - No Limit
40	Trans 1,2-Dichloroethylene	µg/L										--	--	Interim Monitoring - No Limit
41	1,1,1-Trichloroethane	µg/L										--	--	Interim Monitoring - No Limit
42	1,1,2-trichloroethane	µg/L										--	--	Interim Monitoring - No Limit
43	Trichloroethylene	µg/L										--	--	Interim Monitoring - No Limit
44	Vinyl chloride	µg/L										--	--	Interim Monitoring - No Limit
45	2-chlorophenol	µg/L										--	--	Interim Monitoring - No Limit
46	2,4-dihlorophenol	µg/L										--	--	Interim Monitoring - No Limit
47	2,4-dimethylphenol	µg/L										--	--	Interim Monitoring - No Limit
48	4,6-dinitro-o-resol (aka2-methyl-4,6-Dinitrophenol)	µg/L										--	--	Interim Monitoring - No Limit
49	2,4-dinitrophenol	µg/L										--	--	Interim Monitoring - No Limit
50	2-nitrophenol	µg/L										--	--	No Criteria Available
51	4-nitrophenol	µg/L										--	--	No Criteria Available
52	3-Methyl-4-Chlorophenol (aka P-chloro-m-resol)	µg/L										--	--	No Criteria Available

TABLE R1

Boeing SSFL
Outfalls 012 through 014
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
53	Pentachlorophenol	µg/L	0.6		pH dependent	pH dependent	0.28	8.2	1	1	No	Go to Tier 2	No	NO	NO	NO			
54	Phenol	µg/L	0.6	7.2	NONE	NONE	21,000	4,600,000		4.6x10^6	No	Go to Tier 2	No	NO	NO	NO			
55	2,4,6-trihlorophenol	µg/L	0.6		NONE	NONE	2.1	6.5		6.5	No	Go to Tier 2	No	NO	NO	NO			
56	Acenaphthene	µg/L	0.6		NONE	NONE	1200	2,700		2,700	No	Go to Tier 2	No	NO	NO	NO			
57	Acenaphthylene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
58	Anthracene	µg/L	0.6		NONE	NONE	9600	110,000		110,000	No	Go to Tier 2	No	NO	NO	NO			
59	Benzidine	µg/L	0.6		NONE	NONE	0.00012	0.00054		0.00054	No	Go to Tier 2	No	NO	NO	NO			
60	Benzo(a)Anthracene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
61	Benzo(a)Pyrene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
62	Benzo(b)Fluoranthene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
63	Benzo(ghi)Perylene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
64	Benzo(k)Fluoranthene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
65	Bis(2-Chloroethoxy) methane	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
66	Bis(2-Chloroethyl)Ether	µg/L	0.6		NONE	NONE	0.031	1.4		1.4	No	Go to Tier 2	No	NO	NO	NO			
67	Bis(2-Chloroisopropyl) Ether	µg/L	0.6		NONE	NONE	1400	170,000		170,000	No	Go to Tier 2	No	NO	NO	NO			
68	Bis(2-Ethylhexyl) Phthalate	µg/L	0.6		NONE	NONE	1.8	5.9	4	4	No	YES							
69	4-Bromophenyl Phenyl Ether	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
70	Butylbenzyl Phthalate	µg/L	0.6		NONE	NONE	3000	5,200		5,200	No	Go to Tier 2	No	NO	NO	NO			
71	2-Chloronaphthalene	µg/L	0.6		NONE	NONE	1700	4,300		4,300	No	Go to Tier 2	No	NO	NO	NO			
72	4-Chlorophenyl Phenyl Ether	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
73	Chrysene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
74	Dibenzo(a,h)Anthracene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
75	1,2-Dichlorobenzene	µg/L	0.6		NONE	NONE	2700	17,000	600	600	No	Go to Tier 2	No	NO	NO	NO			
76	1,3-Dichlorobenzene	µg/L	0.6		NONE	NONE	400	2,600		2,600	No	Go to Tier 2	No	NO	NO	NO			
77	1,4-Dichlorobenzene	µg/L	0.6		NONE	NONE	400	2,600	5	5	No	Go to Tier 2	No	NO	NO	NO			
78	3,3'-Dichlorobenzidine	µg/L	0.6		NONE	NONE	0.04	0.077		0.077	No	Go to Tier 2	No	NO	NO	NO			
79	Diethyl Phthalate	µg/L	0.6		NONE	NONE	23000	120,000		120,000	No	Go to Tier 2	No	NO	NO	NO			
80	Dimethyl Phthalate	µg/L	0.6		NONE	NONE	313000	2,900,000		2.9x10^6	No	Go to Tier 2	No	NO	NO	NO			
81	Di-n-Butyl Phthalate	µg/L	0.6		NONE	NONE	2700	12,000		12,000	No	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Outfalls 012 through 014
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater					AQUATIC LIFE CALCULATIONS Freshwater				PROPOSED LIMITS		Recommendation
			ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	Lowest AMEL	Lowest MDEL	
53	Pentachlorophenol	µg/L										--	--	Interim Monitoring - No Limit
54	Phenol	µg/L										--	--	Interim Monitoring - No Limit
55	2,4,6-trihlorophenol	µg/L										--	--	Interim Monitoring - No Limit
56	Acenaphthene	µg/L										--	--	Interim Monitoring - No Limit
57	Acenaphthylene	µg/L										--	--	No Criteria Available
58	Anthracene	µg/L										--	--	Interim Monitoring - No Limit
59	Benzidine	µg/L										--	--	Interim Monitoring - No Limit
60	Benzo(a)Anthracene	µg/L										--	--	Interim Monitoring - No Limit
61	Benzo(a)Pyrene	µg/L										--	--	Interim Monitoring - No Limit
62	Benzo(b)Fluoranthene	µg/L										--	--	Interim Monitoring - No Limit
63	Benzo(ghi)Perylene	µg/L										--	--	No Criteria Available
64	Benzo(k)Fluoranthene	µg/L										--	--	Interim Monitoring - No Limit
65	Bis(2-Chloroethoxy) methane	µg/L										--	--	No Criteria Available
66	Bis(2-Chloroethyl)Ether	µg/L										--	--	Interim Monitoring - No Limit
67	Bis(2-Chloroisopropyl) Ether	µg/L										--	--	Interim Monitoring - No Limit
68	Bis(2-Ethylhexyl) Phthalate	µg/L										--	--	Interim Monitoring - No Limit
69	4-Bromophenyl Phenyl Ether	µg/L										--	--	No Criteria Available
70	Butylbenzyl Phthalate	µg/L										--	--	Interim Monitoring - No Limit
71	2-Chloronaphthalene	µg/L										--	--	Interim Monitoring - No Limit
72	4-Chlorophenyl Phenyl Ether	µg/L										--	--	No Criteria Available
73	Chrysene	µg/L										--	--	Interim Monitoring - No Limit
74	Dibenzo(a,h)Anthracene	µg/L										--	--	Interim Monitoring - No Limit
75	1,2-Dichlorobenzene	µg/L										--	--	Interim Monitoring - No Limit
76	1,3-Dichlorobenzene	µg/L										--	--	Interim Monitoring - No Limit
77	1,4-Dichlorobenzene	µg/L										--	--	Interim Monitoring - No Limit
78	3,3'-Dichlorobenzidine	µg/L										--	--	Interim Monitoring - No Limit
79	Diethyl Phthalate	µg/L										--	--	Interim Monitoring - No Limit
80	Dimethyl Phthalate	µg/L										--	--	Interim Monitoring - No Limit
81	Di-n-Butyl Phthalate	µg/L										--	--	Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Outfalls 012 through 014
(CA0001309, Ci-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMEL hh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
82	2,4-Dinitrotoluene	µg/L	0.6		NONE	NONE	0.11	9.1		9.1	No	Go to Tier 2	No	NO	NO	NO			
83	2,6-Dinitrotoluene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
84	Di-n-Octyl Phthalate	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
85	1,2-Diphenylhydrazine	µg/L	0.6		NONE	NONE	0.04	0.54		0.54	No	Go to Tier 2		NO	NO	NO			
86	Fluoranthene	µg/L	0.6		NONE	NONE	300	370		370	No	Go to Tier 2	No	NO	NO	NO			
87	Fluorene	µg/L	0.6		NONE	NONE	1300	14,000		14,000	No	Go to Tier 2	No	NO	NO	NO			
88	Hexachlorobenzene	µg/L	0.6		NONE	NONE	0.00075	0.00077		0.00077	No	Go to Tier 2	No	NO	NO	NO			
89	Hexachlorobutadiene	µg/L	0.6		NONE	NONE	0.44	50		50	No	Go to Tier 2	No	NO	NO	NO			
90	Hexachlorocyclopentadiene	µg/L	0.6		NONE	NONE	240	17,000		17,000	No	Go to Tier 2	No	NO	NO	NO			
91	Hexachloroethane	µg/L	0.6		NONE	NONE	1.9	8.9		8.9	No	Go to Tier 2	No	NO	NO	NO			
92	Indeno(1,2,3-cd)Pyrene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
93	Isophorone	µg/L	0.6		NONE	NONE	8.4	600		600	No	Go to Tier 2	No	NO	NO	NO			
94	Napthalene	µg/L	0.6	73	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
95	Nitrobenzene	µg/L	0.6		NONE	NONE	17	1,900		1,900	No	Go to Tier 2	No	NO	NO	NO			
96	N-Nitrosodimethylamine	µg/L	0.6		NONE	NONE	0.00069	8.1		8.1	No	Go to Tier 2	No	NO	NO	NO			
97	N-Nitrosodi-n-Propylamine	µg/L	0.6		NONE	NONE	0.005	1.4		1.4	No	Go to Tier 2	No	NO	NO	NO			
98	N-Nitrosodiphenylamine	µg/L	0.6		NONE	NONE	5	16		16	No	Go to Tier 2	No	NO	NO	NO			
99	Phenanthrene	µg/L	0.6	4.9	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
100	Pyrene	µg/L	0.6		NONE	NONE	960	11,000		11,000	No	Go to Tier 2	No	NO	NO	NO			
101	1,2,4-Trichlorobenzene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
102	Aldrin	µg/L	0.6		3	NONE	0.00013	0.00014		0.00014	No	Go to Tier 2	No	NO	NO	NO			
103	alpha-BHC	µg/L	0.6		NONE	NONE	0.0039	0.013		0.013	No	Go to Tier 2	No	NO	NO	NO			
104	beta-BHC	µg/L	0.6		NONE	NONE	0.014	0.046		0.046	No	Go to Tier 2	No	NO	NO	NO			
105	gamma-BHC (aka Lindane)	µg/L	0.6		0.95	NONE	0.019	0.063	0.2	0.063	No	Go to Tier 2	No	NO	NO	NO			
106	delta-BHC	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
107	Chlordane	µg/L	0.6		2.4	0.0043	0.00057	0.00059		0.00059	No	Go to Tier 2	No	NO	NO	NO			
108	4,4'-DDT	µg/L	0.6		1.1	0.001	0.00059	0.00059		0.00059	No	Go to Tier 2	No	NO	NO	NO			
109	4,4'-DDE	µg/L	0.6		NONE	NONE	0.00059	0.00059		0.00059	No	YES					0.00059	2.01	0.0011859
110	4,4'-DDD	µg/L	0.6		NONE	NONE	0.00083	0.00084		0.00084	No	YES					0.00084	2.01	0.0016884

TABLE R1

Boeing SSFL
Outfalls 012 through 014
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
82	2,4-Dinitrotoluene	µg/L										--	--	Interim Monitoring - No Limit
83	2,6-Dinitrotoluene	µg/L										--	--	No Criteria Available
84	Di-n-Octyl Phthalate	µg/L										--	--	No Criteria Available
85	1,2-Diphenylhydrazine	µg/L										--	--	Interim Monitoring - No Limit
86	Fluoranthene	µg/L										--	--	Interim Monitoring - No Limit
87	Fluorene	µg/L										--	--	Interim Monitoring - No Limit
88	Hexachlorobenzene	µg/L										--	--	Interim Monitoring - No Limit
89	Hexachlorobutadiene	µg/L										--	--	Interim Monitoring - No Limit
90	Hexachlorocyclopentadiene	µg/L										--	--	Interim Monitoring - No Limit
91	Hexachloroethane	µg/L										--	--	Interim Monitoring - No Limit
92	Indeno(1,2,3-cd)Pyrene	µg/L										--	--	Interim Monitoring - No Limit
93	Isophorone	µg/L										--	--	Interim Monitoring - No Limit
94	Napthalene	µg/L										--	--	No Criteria Available
95	Nitrobenzene	µg/L										--	--	Interim Monitoring - No Limit
96	N-Nitrosodimethylamine	µg/L										--	--	Interim Monitoring - No Limit
97	N-Nitrosodi-n-Propylamine	µg/L										--	--	Interim Monitoring - No Limit
98	N-Nitrosodiphenylamine	µg/L										--	--	Interim Monitoring - No Limit
99	Phenanthrene	µg/L										--	--	Interim Monitoring - No Limit
100	Pyrene	µg/L										--	--	Interim Monitoring - No Limit
101	1,2,4-Trichlorobenzene	µg/L										--	--	Interim Monitoring - No Limit
102	Aldrin	µg/L										--	--	Interim Monitoring - No Limit
103	alpha-BHC	µg/L										--	--	Interim Monitoring - No Limit
104	beta-BHC	µg/L										--	--	Interim Monitoring - No Limit
105	gamma-BHC (aka Lindane)	µg/L										--	--	Interim Monitoring - No Limit
106	delta-BHC	µg/L										--	--	Interim Monitoring - No Limit
107	Chlordane	µg/L										--	--	Interim Monitoring - No Limit
108	4,4'-DDT	µg/L										--	--	Interim Monitoring - No Limit
109	4,4'-DDE	µg/L										--	--	Interim Monitoring - No Limit
110	4,4'-DDD	µg/L										--	--	Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Outfalls 012 through 014
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
111	Dieldrin	µg/L	0.6		0.24	0.056	0.00014	0.00014		0.00014	No	Go to Tier 2	No	NO	NO	NO			
112	alpha-Endosulfan	µg/L	0.6		0.22	0.056	110	240		0.056	No	Go to Tier 2	No	NO	NO	NO			
113	beta-Endosulfan	µg/L	0.6		0.22	0.056	110	240		0.056	No	Go to Tier 2	No	NO	NO	NO			
114	Endosulfan Sulfate	µg/L	0.6		NONE	NONE	110	240		240	No	Go to Tier 2	No	NO	NO	NO			
115	Endrin	µg/L	0.6		0.086	0.036	0.76	0.81		0.036	No	Go to Tier 2	No	NO	NO	NO			
116	Endrin Aldehyde	µg/L	0.6		NONE	NONE	0.76	0.81		0.81	No	Go to Tier 2	No	NO	NO	NO			
117	Heptachlor	µg/L	0.6		0.52	0.0038	0.00021	0.00021		0.00021	No	Go to Tier 2	No	NO	NO	NO			
118	Heptachlor Epoxide	µg/L	0.6		0.52	0.0038	0.0001	0.00011		0.00011	No	Go to Tier 2	No	NO	NO	NO			
	Polychlorinated biphenyls (PCBs)	µg/L									No								
119	Aroclor 1016	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
120	Aroclor 1221	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
121	Aroclor 1232	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
122	Aroclor 1242	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
123	Aroclor 1248	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
124	Aroclor 1254	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO	0.00017	2.01	0.0003417
125	Aroclor 1260	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
126	Toxaphene	µg/L	0.6		0.73	0.0002	0.0073	0.00075		0.00075	No	Go to Tier 2	No	NO	NO	NO			
FOOTNOTE																			
*	These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.																		

TABLE R1

Boeing SSFL
Outfalls 012 through 014
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
111	Dieldrin	µg/L										--	--	Interim Monitoring - No Limit
112	alpha-Endosulfan	µg/L										--	--	Interim Monitoring - No Limit
113	beta-Endosulfan	µg/L										--	--	Interim Monitoring - No Limit
114	Endosulfan Sulfate	µg/L										--	--	Interim Monitoring - No Limit
115	Endrin	µg/L										--	--	Interim Monitoring - No Limit
116	Endrin Aldehyde	µg/L										--	--	Interim Monitoring - No Limit
117	Heptachlor	µg/L										--	--	Interim Monitoring - No Limit
118	Heptachlor Epoxide	µg/L										--	--	Interim Monitoring - No Limit
	Polychlorinated biphenyls (PCBs)	µg/L										--	--	Interim Monitoring - No Limit
119	Aroclor 1016	µg/L										--	--	Interim Monitoring - No Limit
120	Aroclor 1221	µg/L										--	--	Interim Monitoring - No Limit
121	Aroclor 1232	µg/L										--	--	Interim Monitoring - No Limit
122	Aroclor 1242	µg/L										--	--	Interim Monitoring - No Limit
123	Aroclor 1248	µg/L										--	--	Interim Monitoring - No Limit
124	Aroclor 1254	µg/L										--	--	Interim Monitoring - No Limit
125	Aroclor 1260	µg/L										--	--	Interim Monitoring - No Limit
126	Toxaphene	µg/L										--	--	Interim Monitoring - No Limit
FOOTNOTE:														
*	These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.													

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Wastewater
The Boeing Company
(Santa Susana Field Laboratory)
Outfalls 012 through 014
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
Total Dissolved Solids	mg/L	26	300	0.08	1.11	332.90	0		332.90	850	BU	NO*
Settleable solids	ml/L	18	0.1	0.3	1.57	0.16	0		0.16	0.1	BU	YES
Perchlorate	µg/L	18	2	0.42	1.88	3.75	0		3.75	6	BU	NO*
Total Suspended solids	mg/L	24	21.00	0.32	1.55	32.45	0		32.45	15	BU	YES
1,4-Dioxane	µg/L	18	1.6	0.86	3.22	5.15	0		5.15	3	BU	YES
$BOD_5 20^oC$	mg/L	26	6.9	0.51	1.90	13.14	0		13.14	30	BU	NO
Total Petroleum Hydrocarbons	µg/L	26	4100	1.70	4.77	19556.56	0		19556.56	100	BU	YES
Naphthalene	µg/L	26	73	0.54	1.98	144.19	0		144.19	21	BU	YES
Oil and Grease	mg/L	13	6.9	0.60	2.69	18.57	0		18.57	10	BU	YES
Turbidity	mg/L	26	30	0.29	1.47	44.12	0		44.12	50	BU	NO
Methyl-tert-butyl-ether	µg/L	18	0.32	0.51	2.12	0.68	0		0.68	5	BU	NO
tertiary-Butyl alcohol	µg/L	18	10	0.40	1.82	18.24	0		18.24	12	BU	YES
Ethylene dibromide	µg/L	18	0.16	0.44	1.94	0.31	0		0.31	0.05	BU	YES
Diisopropyl ether	µg/L	18	0.25	0.52	2.15	0.54	0		0.54	0.8	BU	NO
*Best professional judgement used to include this constituent												

ATTACHMENT 4

TABLE R1

Boeing SSFL
Outfalls 015 through 017
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
1	Antimony	µg/L	0.6		NONE	NONE	14	4300	6	6.0	NO	Go to Tier 2	No	NO	NO	NO	4300	2.01	8627
2	Arsenic	µg/L	0.6	4.8	340	150	NONE	NONE	50	50.0	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
3	Beryllium	µg/L	0.6		NONE	NONE	Narrative	Narrative	4	4.0	NO	NO	No	NO	NO	NO	Narrative	2.01	
4	**Cadmium***	**µg/L**	**0.6**	**5**	**4.6**	**2.4**	**Narrative**	**Narrative**	**5**	**2.4**	**YES**	**Yes**	**No**				**Narrative**	**2.01**	
5a	**Chromium III***	**µg/L**	**0.6**	**650**	**1741**	**209**	**Narrative**	**Narrative**	**50**	**50.0**	**YES**	**Yes**	**No**				**Narrative**	**2.01**	
5b	Chromium VI	µg/L	0.6	0.13	16.3	11.5	Narrative	Narrative		11.5	No	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
6	**Copper***	**µg/L**	**0.6**	**32**	**13.5**	**9.4**	**1300**	**NONE**		9.4	**YES**	**Yes**	**No**				**NONE**	**2.0**	
7	Lead*	µg/L	0.6		82.2	3.2	Narrative	Narrative		3.2	NO	NO	No	NO	NO	NO	Narrative	2.0	
8	**Mercury**	**µg/L**	**0.6**	**0.3**	**Reserved**	**Reserved**	**0.05**	**0.051**	**2**	0.05	**YES**	**Yes**	**No**				**0.051**	**2.0**	**0.10**
9	**Nickel***	**µg/L**	**0.6**	**830**	**471**	**52**	**610**	**4600**	**100**	**52.16**	**YES**	**Yes**	**No**	**NO**	**NO**	**NO**	**4600**	**2.01**	**9228**
10	Selenium	µg/L	0.6		Reserved	5	Narrative	Narrative	50	5.00	NO	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
11	Silver*	µg/L	0.6		4	none	NONE	NONE		4.00	NO	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
12	Thallium	µg/L	0.6		NONE	NONE	1.7	6.3	2	2.00	NO	Go to Tier 2	No	NO	NO	NO	6.3	2.01	13
13	**Zinc***	**µg/L**	**0.6**	**160**	**122.7**	**121.7**	**none**	**NONE**		**121.70**	**YES**	**Go to Tier 2**	**No**	**NO**	**NO**	**NO**	**NONE**	**2.01**	
14	Cyanide	µg/L	0.6		22	5.2	700	220,000	200	5.2	NO	YES					220000	2.0	441362
15	Asbestos	Fibers/ L			NONE	NONE	7,000,000	NONE	7x10^6	7x10^6	No	Go to Tier 2	No	NO	NO	NO			
16	**2,3,7,8-TCDD (Dioxin)**	**µg/L**	**0.6**	**8E-07**	**NONE**	**NONE**	**0.000000013**	**1.4E-08**	**3x10^-5**	**1.4E-08**	**YES**	**Yes**	**No**				**0.000000014**	**2.01**	**2.81E-08**
17	Acrolein	µg/L	0.6		NONE	NONE	320	780		780	No	Go to Tier 2	No	NO	NO	NO			
18	Acrylonitrile	µg/L	0.6		NONE	NONE	0.059	0.66		0.66	No	YES	No	NO	NO	NO			
19	Benzene	µg/L	0.6		NONE	NONE	1.2	71	1	1	No	Go to Tier 2	No	NO	NO	NO			
20	Bromoform	µg/L	0.6		NONE	NONE	4.3	360		360	No	Go to Tier 2	No	NO	NO	NO			
21	Carbon Tetrahloride	µg/L	0.6		NONE	NONE	0.25	4.4	600	4.4	No	Go to Tier 2	No	NO	NO	NO			
22	Chlorobenzene	µg/L	0.6		NONE	NONE	680	21,000		21,000	No	Go to Tier 2	No	NO	NO	NO			
23	Dibromochloromethane	µg/L	0.6		NONE	NONE	0.401	34		34	No	Go to Tier 2	No	NO	NO	NO			
24	Chloroethane	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
25	2-chloroethyl vinyl ether	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
26	Chloroform	µg/L	0.6	34	NONE	NONE	Reserved	Reserved		Reserved	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
27	Dichlorobromomethane	µg/L	0.6	4.7	NONE	NONE	0.56	46		46	No	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Outfalls 015 through 017
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS – Freshwater					AQUATIC LIFE CALCULATIONS – Freshwater				PROPOSED LIMITS		
			ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	Lowest AMEL	Lowest MDEL	Recommendation
1	Antimony	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
2	Arsenic	µg/L	0.32	109	0.53	79.1	79.1	1.6	123	3.1	246	--	--	Interim Monitoring - No CTR-based Limit
3	Beryllium	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
4	**Cadmium***	**µg/L**	**0.32**	**1.5**	**0.53**	1.3	**1.3**	**1.6**	**2**	3.1	**4**	**1.98**	**4**	**New Limit Based on CTR**
5a	**Chromium III***	**µg/L**	**0.32**	**559**	**0.53**	**110.4**	**110.4**	**1.6**	**171**	3.1	**344**	--	**50**	**New Limit Based on CTR**
5b	Chromium VI	µg/L	0.32	**5**	0.53	6.0	**5.2**	1.6	**8**	3.1	**16**	--	--	Interim Monitoring - No CTR-based Limit
6	**Copper***	**µg/L**	**0.32**	**4.3**	**0.53**	**4.9**	**4.3**	**1.6**	**6.7**	3.1	**13.5**	**6.7**	**14**	**New Limit Based on CTR**
7	Lead*	µg/L	0.32	26.4	0.53	1.7	1.7	1.6	2.6	3.1	5.2	--	--	Interim Monitoring - No CTR-based Limit
8	**Mercury**	**µg/L**	**0.32**		**0.53**			**1.6**		**3.1**		**0.05**	**0.10**	**New Limit Based on CTR**
9	**Nickel***	**µg/L**	**0.32**	151.2	**0.53**	27.5	**27.5**	**1.6**	**43**	**3.1**	**86**	**43**	**86**	**New Limit Based on CTR**
10	Selenium	µg/L	0.32		0.53	2.6	**2.6**	1.6	**4.1**	3.1	**8**	--	--	Interim Monitoring - No CTR-based Limit
11	Silver*	µg/L	0.32	1.3	0.53		**1.3**	1.6	**2.0**	3.1	**4**	--	--	Interim Monitoring - No CTR-based Limit
12	Thallium	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
13	**Zinc***	**µg/L**	**0.32**	**39.4**	**0.53**	**64.2**	**39.4**	**1.6**	**61**	**3.1**	**123**	**61**	**123**	**New Limit Based on CTR**
14	Cyanide	µg/L	0.3	7.1	0.53	2.7	2.7	1.6	4.3	3.1	8.5	--	--	Interim Monitoring - No CTR-based Limit
15	Asbestos	Fibers/L												Interim Monitoring - No CTR-based Limit
16	**2,3,7,8-TCDD (Dioxin)**	**µg/L**	**0.32**		**0.53**			**1.6**		**3.1**		**1.40E-08**	**2.8E-08**	**New Limit Based on CTR**
17	Acrolein	µg/L												Interim Monitoring - No Limit
18	Acrylonitrile	µg/L												Interim Monitoring - No Limit
19	Benzene	µg/L												Interim Monitoring - No Limit
20	Bromoform	µg/L												Interim Monitoring - No Limit
21	Carbon Tetrahloride	µg/L												Interim Monitoring - No Limit
22	Chlorobenzene	µg/L												Interim Monitoring - No Limit
23	Dibromochloromethane	µg/L												Interim Monitoring - No Limit
24	Chloroethane	µg/L												No Limit - No Criteria Available
25	2-chloroethyl vinyl ether	µg/L												No Limit - No Criteria Available
26	Chloroform	µg/L												No Limit - No Criteria Available
27	Dichlorobromomethane	µg/L												Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Outfalls 015 through 017
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)								HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan									Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
28	1,1-Dichloroethane	µg/L	0.6		NONE	NONE	NONE	NONE	5	5	No	Go to Tier 2	No	NO	NO	NO			
29	1,2-dichloroethane		0.6		NONE	NONE	0.38	99	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
30	1,1-Dichloroethylene	µg/L	0.6		NONE	NONE	0.057	3.2	6	3.2	No	Go to Tier 2	No	NO	NO	NO			
31	1,2-dichlooropropane	µg/L	0.6		NONE	NONE	0.52	39	5	5	No	Go to Tier 2	No	NO	NO	NO			
32	1,3-dichloropropylene	µg/L	0.6		NONE	NONE	10	1,700	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
33	Ethylbenzene	µg/L	0.6		NONE	NONE	3100	29,000	0.7	0.7	No	Go to Tier 2	No	NO	NO	NO			
34	Methyl bromide	µg/L	0.6		NONE	NONE	48	4,000		4,000	No	Go to Tier 2	No	NO	NO	NO			
35	Methyl chloride	µg/L			NONE	NONE	Narrative	Narrative		Narrative	No Criteria Available	Go to Tier 2	No data	NO	NO	NO			
36	Methylene chloride	µg/L	0.6		NONE	NONE	4.7	1,600		1,600	No	Go to Tier 2	No	NO	NO	NO			
37	1,1,2,2-tetrachloroethne	µg/L	0.6		NONE	NONE	0.17	11	1	1	No	Go to Tier 2	No	NO	NO	NO			
38	Tetrachloroethylene	µg/L	0.6		NONE	NONE	0.8	8.85	5	5	No	Go to Tier 2	No	NO	NO	NO			
39	Toluene	µg/L	0.6		NONE	NONE	6800	200,000	150	150	No	Go to Tier 2	No	NO	NO	NO			
40	Trans 1,2-Dichloroethylene	µg/L	0.6		NONE	NONE	700	140,000	10	10	No	Go to Tier 2	No	NO	NO	NO			
41	1,1,1-Trichloroethane	µg/L	0.6		NONE	NONE	Narrative	Narrative	200	200	NO	Go to Tier 2	No	NO	NO	NO			
42	1,1,2-trichloroethane	µg/L	0.6		NONE	NONE	0.6	42	5	5	No	Go to Tier 2	No	NO	NO	NO			
43	Trichloroethylene	µg/L	0.6	2	NONE	NONE	2.7	81	5	5	No	Go to Tier 2	No	NO	NO	NO			
44	Vinyl chloride	µg/L	0.6		NONE	NONE	2	525	0.5	0.5	No	Go to Tier 2	No	NO	NO	NO			
45	2-chlorophenol	µg/L	0.6		NONE	NONE	120	400		400	No	Go to Tier 2	No	NO	NO	NO			
46	2,4-dihlorophenol	µg/L	0.6		NONE	NONE	93	790		790	No	Go to Tier 2	No	NO	NO	NO			
47	2,4-dimethylphenol	µg/L	0.6		NONE	NONE	540	2,300		2,300	No	Go to Tier 2	No	NO	NO	NO			
48	4,6-dinitro-o-resol (aka2-methyl-4,6-Dinitrophenol)	µg/L	0.6		NONE	NONE	13.4	765		765	No	Go to Tier 2	No	NO	NO	NO			
49	2,4-dinitrophenol	µg/L	0.6		NONE	NONE	70	14,000		14,000	No	Go to Tier 2	No	NO	NO	NO			
50	2-nitrophenol	µg/L	0.6		NONE	NONE	NONE	NONE		None	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
51	4-nitrophenol	µg/L	0.6		NONE	NONE	NONE	NONE		None	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
52	3-Methyl-4-Chlorophenol (aka P-chloro-m-resol)	µg/L	0.6		NONE	NONE	NONE	NONE		None	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
53	Pentachlorophenol	µg/L	0.6		pH depende	pH depende	0.28	8.2	1	1	No	Go to Tier 2	No	NO	NO	NO			
54	Phenol	µg/L	0.6		NONE	NONE	21,000	4,600,000		4.6x10^6	No	Go to Tier 2	No	NO	NO	NO			
55	2,4,6-trihlorophenol	µg/L	0.6		NONE	NONE	2.1	6.5		6.5	No	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Outfalls 015 through 017
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
28	1,1-Dichloroethane	µg/L												Interim Monitoring - No Limit
29	1,2-dichloroethane													Interim Monitoring - No Limit
30	1,1-Dichloroethylene	µg/L												Interim Monitoring - No Limit
31	1,2-dichlooropropane	µg/L												Interim Monitoring - No Limit
32	1,3-dichloropropylene	µg/L												Interim Monitoring - No Limit
33	Ethylbenzene	µg/L												Interim Monitoring - No Limit
34	Methyl bromide	µg/L												Interim Monitoring - No Limit
35	Methyl chloride	µg/L												No Limit - No Criteria Available
36	Methylene chloride	µg/L												Interim Monitoring - No Limit
37	1,1,2,2-tetrachloroethne	µg/L												Interim Monitoring - No Limit
38	Tetrachloroethylene	µg/L											–	Interim Monitoring - No CTR-based Limit
39	Toluene	µg/L												Interim Monitoring - No Limit
40	Trans 1,2-Dichloroethylene	µg/L												Interim Monitoring - No Limit
41	1,1,1-Trichloroethane	µg/L												Interim Monitoring - No Limit
42	1,1,2-trichloroethane	µg/L												Interim Monitoring - No Limit
43	Trichloroethylene	µg/L												Interim Monitoring - No Limit
44	Vinyl chloride	µg/L												Interim Monitoring - No Limit
45	2-chlorophenol	µg/L												Interim Monitoring - No Limit
46	2,4-dihlorophenol	µg/L												Interim Monitoring - No Limit
47	2,4-dimethylphenol	µg/L												Interim Monitoring - No Limit
48	4,6-dinitro-o-resol (aka2-methyl-4,6-Dinitrophenol)	µg/L												Interim Monitoring - No Limit
49	2,4-dinitrophenol	µg/L												Interim Monitoring - No Limit
50	2-nitrophenol	µg/L												No Criteria Available
51	4-nitrophenol	µg/L												No Criteria Available
52	3-Methyl-4-Chlorophenol (aka P-chloro-m-resol)	µg/L												No Criteria Available
53	Pentachlorophenol	µg/L												Interim Monitoring - No Limit
54	Phenol	µg/L												Interim Monitoring - No Limit
55	2,4,6-trihlorophenol	ug/L												Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Outfalls 015 through 017
(CA0001309, CI-6027)

					CTR CRITERIA					REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health		Basin Plan								Organisms Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
56	Acenaphthene	µg/L	0.6	14	NONE	NONE	1200	2,700		2,700	No	Go to Tier 2	No	NO	NO	NO			
57	Acenaphthylene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
58	Anthracene	µg/L	0.6		NONE	NONE	9600	110,000		110,000	No	Go to Tier 2	No	NO	NO	NO			
59	Benzidine	µg/L	0.6		NONE	NONE	0.00012	0.00054		0.00054	No	Go to Tier 2	No	NO	NO	NO			
60	Benzo(a)Anthracene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
61	Benzo(a)Pyrene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
62	Benzo(b)Fluoranthene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
63	Benzo(ghi)Perylene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
64	Benzo(k)Fluoranthene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
65	Bis(2-Chloroethoxy) methane	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
66	Bis(2-Chloroethyl)Ether	µg/L	0.6		NONE	NONE	0.031	1.4		1.4	No	Go to Tier 2	No	NO	NO	NO			
67	Bis(2-Chloroisopropyl) Ether	µg/L	0.6		NONE	NONE	1400	170,000		170,000	No	Go to Tier 2	No	NO	NO	NO			
68	Bis(2-Ethylhexyl) Phthalate	µg/L	0.6		NONE	NONE	1.8	5.9	4	4	No	YES							
69	4-Bromophenyl Phenyl Ether	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
70	Butylbenzyl Phthalate	µg/L	0.6	6	NONE	NONE	3000	5,200		5,200	No	Go to Tier 2	No	NO	NO	NO			
71	2-Chloronaphthalene	µg/L	0.6		NONE	NONE	1700	4,300		4,300	No	Go to Tier 2	No	NO	NO	NO			
72	4-Chlorophenyl Phenyl Ether	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
73	Chrysene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
74	Dibenzo(a,h)Anthracene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
75	1,2-Dichlorobenzene	µg/L	0.6		NONE	NONE	2700	17,000	600	600	No	Go to Tier 2	No	NO	NO	NO			
76	1,3-Dichlorobenzene	µg/L	0.6		NONE	NONE	400	2,600		2,600	No	Go to Tier 2	No	NO	NO	NO			
77	1,4-Dichlorobenzene	µg/L	0.6		NONE	NONE	400	2,600	5	5	No	Go to Tier 2	No	NO	NO	NO			
78	3,3'-Dichlorobenzidine	µg/L	0.6		NONE	NONE	0.04	0.077		0.077	No	Go to Tier 2	No	NO	NO	NO			
79	Diethyl Phthalate	µg/L	0.6		NONE	NONE	23000	120,000		120,000	No	Go to Tier 2	No	NO	NO	NO			
80	Dimethyl Phthalate	µg/L	0.6		NONE	NONE	313000	2,900,000		2.9x10^6	No	Go to Tier 2	No	NO	NO	NO			
81	Di-n-Butyl Phthalate	µg/L	0.6	5.8	NONE	NONE	2700	12,000		12,000	No	Go to Tier 2	No	NO	NO	NO			
82	2,4-Dinitrotoluene	µg/L	0.6		NONE	NONE	0.11	9.1		9.1	No	Go to Tier 2	No	NO	NO	NO			
83	2,6-Dinitrotoluene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
84	Di-n-Octyl Phthalate	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Outfalls 015 through 017
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater					AQUATIC LIFE CALCULATIONS Freshwater				PROPOSED LIMITS		Recommendation
			ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	Lowest AMEL	Lowest MDEL	
56	Acenaphthene	µg/L												Interim Monitoring - No Limit
57	Acenaphthylene	µg/L												No Criteria Available
58	Anthracene	µg/L												Interim Monitoring - No Limit
59	Benzidine	µg/L												Interim Monitoring - No Limit
60	Benzo(a)Anthracene	µg/L												Interim Monitoring - No Limit
61	Benzo(a)Pyrene	µg/L												Interim Monitoring - No Limit
62	Benzo(b)Fluoranthene	µg/L												Interim Monitoring - No Limit
63	Benzo(ghi)Perylene	µg/L												No Criteria Available
64	Benzo(k)Fluoranthene	µg/L												Interim Monitoring - No Limit
65	Bis(2-Chloroethoxy) methane	µg/L												No Criteria Available
66	Bis(2-Chloroethyl)Ether	µg/L												Interim Monitoring - No Limit
67	Bis(2-Chloroisopropyl) Ether	µg/L												Interim Monitoring - No Limit
68	Bis(2-Ethylhexyl) Phthalate	µg/L												Interim Monitoring - No CTR-based Limit
69	4-Bromophenyl Phenyl Ether	µg/L												No Criteria Available
70	Butylbenzyl Phthalate	µg/L												Interim Monitoring - No Limit
71	2-Chloronaphthalene	µg/L												Interim Monitoring - No Limit
72	4-Chlorophenyl Phenyl Ether	µg/L												No Criteria Available
73	Chrysene	µg/L												Interim Monitoring - No Limit
74	Dibenzo(a,h)Anthracene	µg/L												Interim Monitoring - No Limit
75	1,2-Dichlorobenzene	µg/L												Interim Monitoring - No Limit
76	1,3-Dichlorobenzene	µg/L												Interim Monitoring - No Limit
77	1,4-Dichlorobenzene	µg/L												Interim Monitoring - No Limit
78	3,3'-Dichlorobenzidine	µg/L												Interim Monitoring - No Limit
79	Diethyl Phthalate	µg/L												Interim Monitoring - No Limit
80	Dimethyl Phthalate	µg/L												Interim Monitoring - No Limit
81	Di-n-Butyl Phthalate	µg/L												Interim Monitoring - No Limit
82	2,4-Dinitrotoluene	µg/L												Interim Monitoring - No Limit
83	2,6-Dinitrotoluene	µg/L												No Criteria Available
84	Di-n-Octyl Phthalate	µg/L												No Criteria Available

TABLE R1

Boeing SSFL
Outfalls 015 through 017
(CA0001309, CI-6027)

					CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health										Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
85	1,2-Diphenylhydrazine	µg/L	0.6		NONE	NONE	0.04	0.54		0.54	No	Go to Tier 2		NO	NO	NO			
86	Fluoranthene	µg/L	0.6		NONE	NONE	300	370		370	No	Go to Tier 2	No	NO	NO	NO			
87	Fluorene	µg/L	0.6	6.9	NONE	NONE	1300	14,000		14,000	No	Go to Tier 2	No	NO	NO	NO			
88	Hexachlorobenzene	µg/L	0.6		NONE	NONE	0.00075	0.00077		0.00077	No	Go to Tier 2	No	NO	NO	NO			
89	Hexachlorobutadiene	µg/L	0.6		NONE	NONE	0.44	50		50	No	Go to Tier 2	No	NO	NO	NO			
90	Hexachlorocyclopentadiene	µg/L	0.6		NONE	NONE	240	17,000		17,000	No	Go to Tier 2	No	NO	NO	NO			
91	Hexachloroethane	µg/L	0.6		NONE	NONE	1.9	8.9		8.9	No	Go to Tier 2	No	NO	NO	NO			
92	Indeno(1,2,3-cd)Pyrene	µg/L	0.6		NONE	NONE	0.0044	0.049		0.049	No	Go to Tier 2	No	NO	NO	NO			
93	Isophorone	µg/L	0.6		NONE	NONE	8.4	600		600	No	Go to Tier 2	No	NO	NO	NO			
94	Napthalene	µg/L	0.6	8.6	NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
95	Nitrobenzene	µg/L	0.6		NONE	NONE	17	1,900		1,900	No	Go to Tier 2	No	NO	NO	NO			
96	N-Nitrosodimethylamine	µg/L	0.6		NONE	NONE	0.00069	8.1		8.1	No	Go to Tier 2	No	NO	NO	NO			
97	N-Nitrosodi-n-Propylamine	µg/L	0.6		NONE	NONE	0.005	1.4		1.4	NO	Go to Tier 2	No	NO	NO	NO			
98	N-Nitrosodiphenylamine	µg/L	0.6		NONE	NONE	5	16		16	NO	Go to Tier 2	No	NO	NO	NO			
99	Phenanthrene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
100	Pyrene	µg/L	0.6		NONE	NONE	960	11,000		11,000	No	Go to Tier 2	No	NO	NO	NO			
101	1,2,4-Trichlorobenzene	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	NA	NO	NO	NO			
102	Aldrin	µg/L	0.6		3	NONE	0.00013	0.00014		0.00014	No	Go to Tier 2	No	NO	NO	NO			
103	alpha-BHC	µg/L	0.6		NONE	NONE	0.0039	0.013		0.013	No	Go to Tier 2	No	NO	NO	NO			
104	beta-BHC	µg/L	0.6		NONE	NONE	0.014	0.046		0.046	No	Go to Tier 2	No	NO	NO	NO			
105	gamma-BHC (aka Lindane)	µg/L	0.6		0.95	NONE	0.019	0.063	0.2	0.063	No	Go to Tier 2	No	NO	NO	NO			
106	delta-BHC	µg/L	0.6		NONE	NONE	NONE	NONE		NONE	No Criteria Available	Go to Tier 2	No	NO	NO	NO			
107	Chlordane	µg/L	0.6		2.4	0.0043	0.00057	0.00059		0.00059	No	Go to Tier 2	No	NO	NO	NO			
108	4,4'-DDT	µg/L	0.6		1.1	0.001	0.00059	0.00059		0.00059	No	Go to Tier 2	No	NO	NO	NO			
109	4,4'-DDE	µg/L	0.6		NONE	NONE	0.00059	0.00059		0.00059	No	YES					0.00059	2.01	0.0011859
110	4,4'-DDD	µg/L	0.6		NONE	NONE	0.00083	0.00084		0.00084	No	YES					0.00084	2.01	0.0016884
111	Dieldrin	µg/L	0.6		0.24	0.056	0.00014	0.00014		0.00014	No	Go to Tier 2	No	NO	NO	NO			
112	alpha-Endosulfan	µg/L	0.6		0.22	0.056	110	240		0.056	No	Go to Tier 2	No	NO	NO	NO			
113	beta-Endosulfan	µg/L	0.6		0.22	0.056	110	240		0.056	No	Go to Tier 2	No	NO	NO	NO			

TABLE R1

Boeing SSFL
Outfalls 015 through 017
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
85	1,2-Diphenylhydrazine	µg/L												Interim Monitoring - No Limit
86	Fluoranthene	µg/L												Interim Monitoring - No Limit
87	Fluorene	µg/L												Interim Monitoring - No Limit
88	Hexachlorobenzene	µg/L												Interim Monitoring - No Limit
89	Hexachlorobutadiene	µg/L												Interim Monitoring - No Limit
90	Hexachlorocyclopentadiene	µg/L												Interim Monitoring - No Limit
91	Hexachloroethane	µg/L												Interim Monitoring - No Limit
92	Indeno(1,2,3-cd)Pyrene	µg/L												Interim Monitoring - No Limit
93	Isophorone	µg/L												Interim Monitoring - No Limit
94	Napthalene	µg/L												Interim Monitoring - No Limit
95	Nitrobenzene	µg/L												No Criteria Available
96	N-Nitrosodimethylamine	µg/L												Interim Monitoring - No Limit
97	N-Nitrosodi-n-Propylamine	µg/L												Interim Monitoring - No Limit
98	N-Nitrosodiphenylamine	µg/L												Interim Monitoring - No Limit
99	Phenanthrene	µg/L												Interim Monitoring - No Limit
100	Pyrene	µg/L												Interim Monitoring - No Limit
101	1,2,4-Trichlorobenzene	µg/L												Interim Monitoring - No Limit
102	Aldrin	µg/L												Interim Monitoring - No Limit
103	alpha-BHC	µg/L												Interim Monitoring - No Limit
104	beta-BHC	µg/L												Interim Monitoring - No Limit
105	gamma-BHC (aka Lindane)	µg/L												Interim Monitoring - No Limit
106	delta-BHC	µg/L												Interim Monitoring - No Limit
107	Chlordane	µg/L												Interim Monitoring - No Limit
108	4,4'-DDT	µg/L												Interim Monitoring - No Limit
109	4,4'-DDE	µg/L												Interim Monitoring - No Limit
110	4,4'-DDD	µg/L												Interim Monitoring - No Limit
111	Dieldrin	µg/L												Interim Monitoring - No Limit
112	alpha-Endosulfan	µg/L												Interim Monitoring - No Limit
113	beta-Endosulfan	µg/L												Interim Monitoring - No Limit

TABLE R1

Boeing SSFL
Outfalls 015 through 017
(CA0001309, CI-6027)

					CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health										Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
114	Endosulfan Sulfate	µg/L	0.6		NONE	NONE	110	240		240	No	Go to Tier 2	No	NO	NO	NO			
115	Endrin	µg/L	0.6		0.086	0.036	0.76	0.81		0.036	No	Go to Tier 2	No	NO	NO	NO			
116	Endrin Aldehyde	µg/L	0.6		NONE	NONE	0.76	0.81		0.81	No	Go to Tier 2	No	NO	NO	NO			
117	Heptachlor	µg/L	0.6		0.52	0.0038	0.00021	0.00021		0.00021	No	Go to Tier 2	No	NO	NO	NO			
118	Heptachlor Epoxide	µg/L	0.6		0.52	0.0038	0.0001	0.00011		0.00011	No	Go to Tier 2	No	NO	NO	NO			
	Polychlorinated biphenyls (PCBs)	µg/L									No								
119	Aroclor 1016	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
120	Aroclor 1221	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
121	Aroclor 1232	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
122	Aroclor 1242	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
123	Aroclor 1248	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
124	Aroclor 1254	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO	0.00017	2.01	0.0003417
125	Aroclor 1260	µg/L	0.6		NONE	0.014	0.00017	0.00017		0.00017	No	Go to Tier 2	No	NO	NO	NO			
126	Toxaphene	µg/L	0.6		0.73	0.0002	0.0073	0.00075		0.00075	No	Go to Tier 2	No	NO	NO	NO			
FOOTNOTE:																			
	These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.																		

TABLE R1

Boeing SSFL
Outfalls 015 through 017
(CA0001309, CI-6027)

			AQUATIC LIFE CALCULATIONS					AQUATIC LIFE CALCULATIONS				PROPOSED LIMITS		
			Freshwater					Freshwater						
CTR#	DATE	Units	ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	Lowest AMEL	Lowest MDEL	Recommendation
114	Endosulfan Sulfate	µg/L												Interim Monitoring - No Limit
115	Endrin	µg/L												Interim Monitoring - No Limit
116	Endrin Aldehyde	µg/L												Interim Monitoring - No Limit
117	Heptachlor	µg/L												Interim Monitoring - No Limit
118	Heptachlor Epoxide	µg/L												Interim Monitoring - No Limit
	Polychlorinated biphenyls (PCBs)	µg/L												Interim Monitoring - No Limit
119	Aroclor 1016	µg/L												Interim Monitoring - No Limit
120	Aroclor 1221	µg/L												Interim Monitoring - No Limit
121	Aroclor 1232	µg/L												Interim Monitoring - No Limit
122	Aroclor 1242	µg/L												Interim Monitoring - No Limit
123	Aroclor 1248	µg/L												Interim Monitoring - No Limit
124	Aroclor 1254	µg/L												Interim Monitoring - No Limit
125	Aroclor 1260	µg/L												Interim Monitoring - No Limit
126	Toxaphene	µg/L												Interim Monitoring - No Limit
FOOTNOTE:														
*	These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.													

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Wastewater
The Boeing Company
(Santa Susana Field Laboratory)
Outfalls 015 throu 017
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
MBAS	mg/L	2	0.19	0.88	15.45	2.94	0		2.94	0.5	BU	YES
TSS	mg/L	3	35.00	0.73	7.62	266.65	0		266.65	45	BU	YES
Perchlorate	µg/L	2	150.00	0.78	12.15	1822.72	0		1822.72	6	BU	YES
$BOD_5 20^oC$	mg/L	2	17.00	0.14	1.63	27.79	0		27.79	20	BU	YES
Total Coliform	MPN/100 mL	3	23.00	0.48	4.14	95.24	0		95.24	23	BU	YES
Nitrite as Nitrogen	mg/L	3	2.20	0.17	1.71	3.76	0		3.76	1	BU	YES
Oil and Grease	mg/L	2	10.00	0.07	1.31	13.08	0		13.08	10	BU	YES
Total residual chlorine	mg/L	3	5.00	0.99	13.11	65.55	0		65.55	0.1	BU	YES
Total dissolved solids	mg/L	2	440.00	0.07	1.27	560.86	0		560.86	950	BU	NO*
Chloride	mg/L	2	140.00	0.0E+00	1.00	140.00	0		140.00	150	BU	NO*
Sulfate	mg/L	2	38.00	0.58	6.90	262.24	0		262.24	300	BU	NO*
Fluoride	mg/L	2	0.36	0.06	1.25	0.45	0		0.45	1.6	BU	NO*
Nitrate + Nitrite as Nitrogen	mg/L	2	2.20	0.22	2.22	4.88	0		4.88	8	BU	NO*
Barium	mg/L	2	0.02	0.06	1.26	0.03	0		0.03	1	BU	NO*
*BPJ used to retain effluent limits since data set is small.												