



Via E-Mail to [losangeles@waterboards.ca.gov](mailto:losangeles@waterboards.ca.gov)

January 8, 2015

In reply, refer to SHEA-115103

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Dear Mr. Ali:

**Subject: Comments on December 4, 2014 Tentative Order No. R4-2015-XXXX  
(Waste Discharge Requirements) for Santa Susana Field Laboratory,  
NPDES No. CA0001309**

The Boeing Company is pleased to submit the following comments on Tentative Order No. R4-2015-XXXX ("Tentative WDR") for the Santa Susana Field Laboratory ("Santa Susana" or the "Site"), NPDES No. CA0001309, issued by the Los Angeles Regional Water Quality Control Board ("Regional Board" or "Board") on December 4, 2014. The Tentative WDR would supersede Order No. 2010-0090 ("2010 WDR"). A hearing on the Tentative WDR is scheduled for February 12, 2015.

Boeing greatly appreciates the efforts of Board Staff in preparing the Tentative WDR and proposing changes that take into consideration information regarding the Site since the issuance of the 2010 WDR. We remain concerned that, like the 2010 WDR, the Tentative WDR does not fully account for the complexity of conditions and compliance efforts at Santa Susana. We respectfully request that the Tentative WDR be modified in accordance with our comments as set forth below. These comments are based on robust technical data and analysis; accordingly, our requested revisions are reasonable, and protective of water quality and public health and safety.

Before we present our comments on the Tentative WDR, we would like to highlight the recent efforts Boeing has taken, under the Regional Board's direction, to achieve compliance with its NPDES permit. These efforts are critical and substantial components of the coordinated endeavor to improve and protect water quality in and around Santa Susana.

#### **Completion of the Regional Board's Interim Source Removal Action ("ISRA")**

The Interim Source Removal Action ("ISRA") order issued by the Regional Board in December 2008 directed Boeing to investigate and remove soil constituents in areas in the Outfall 008 and 009 watersheds that could be contributing to violations of the effluent limits at these outfalls.<sup>1</sup>

<sup>1</sup> California Water Code Section 13004 Cleanup and Abatement Order ("13304 Order"), issued on December 3, 2008. [See http://www.dtsc-ssfl.com/files/lib\\_rwqcb/orders/3614\\_RWQCBOrder12-03-2008.pdf](http://www.dtsc-ssfl.com/files/lib_rwqcb/orders/3614_RWQCBOrder12-03-2008.pdf)

Beginning in 2009, Boeing began implementation of the ISRA under the direction of the Regional Board. Boeing excavated approximately 14,000 cubic yards of soil from twenty areas in these two watersheds. This work was done pursuant to work plans approved by Board Staff at an estimated cost of \$6 million. The ISRA was successfully completed in 2013. Sampling in the areas where the ISRA work was performed will continue through 2016 so that surface water quality in those areas may be assessed.

### **Enhanced Stormwater Treatment**

In effort to continuously improve the quality of stormwater leaving the site, Boeing began investigating more robust methods for treating stormwater beginning in 2006. We conducted numerous pilot tests on media and filters. The results of our pilot tests resulted in installation of media flow through cells at outfalls, and implementation of interim active treatment systems while permanent systems were being designed. In 2012, Boeing completed the installation of two permanent state-of-the-art stormwater treatment systems, along with an extensive conveyance system, at an estimated combined cost of over \$25 million. These systems treat stormwater using a combination of chemical and physical treatments prior to monitoring and release of the water into the receiving stream. This advanced system uses a series of pumps and over 30,000 feet of piping to transfer water from 9 separate outfalls to one centralized location for treatment at a rate of 1,000 gallons per minute and discharge at Outfall 018. A second, smaller treatment unit is also in place to treat stormwater from another portion of the Site at a rate of 700 gallons per minute for discharge at Outfall 011.

### **Implementation of Recommendations from the Stormwater Expert Panel**

Since 2007, a panel of stormwater experts ("Expert Panel") has been evaluating and developing designs for various engineered natural treatment systems to improve water quality at Outfalls 008 and 009 at the Site. The Expert Panel's recommendations have resulted in the implementation of numerous measures at the Site. These changes have included the modification of twelve culverts from side drainages into the Outfall 009 primary drainage, which have reduced water velocities and sediment loadings and provided pretreatment of stormwater prior to it entering the main Outfall 009 drainage channel. Changes implemented since late 2010 have included the removal of several acres of impervious surfaces such as asphalt and concrete, resulting in lower peak flows, runoff volumes, downstream channel erosion and pollutant loads, and increased percolation of stormwater during storm events. In addition, significant beneficial hydromodification and revegetation activities following cleanup activities in the Outfall 008 and 009 watersheds were implemented, which involved the placement of over 5,000 plants to minimize erosion.

The 2010 WDR required Boeing to develop a Best Management Practices ("BMP") plan for Outfalls 008 and 009 and seek the input of the Expert Panel on enhanced compliance approaches to take in these watersheds. With the input of the Expert Panel, Boeing implemented numerous BMPs to reduce exceedances at these two outfalls. The two most significant BMPs were the restoration of the main drainage leading to Outfall 009 and the installation in 2013 of a biofilter to collect and naturally treat the stormwater from a lower parking lot. This biofilter won an award from the California Stormwater Quality Association for being the best BMP in the State of California in 2013.

Additional bioswales, designed by the Expert Panel to slow down stormwater runoff and provide filtration using natural vegetation have been installed, and Boeing will continue to perform extensive internal monitoring to determine the effectiveness of the existing systems and BMPs and upgrade them as necessary. Boeing will continue to provide annual progress updates to the Board.

In addition to the significant investments Boeing has made in eliminating sources and taking steps to achieve improved water quality at the Site, since 2010, Boeing has spent over \$53 million on enhancing its stormwater management program at the Site. Boeing's current stormwater management budget for Santa Susana is approximately \$ 6 million a year. Boeing understands that much remains to be done to achieve full compliance with its NPDES permit. However, these activities and expenditures confirm that Boeing is working hard to achieve that goal.

**I. Comments on the Tentative WDR**

**A. The Tentative WDR Appropriately Provides that Treated Groundwater Discharges be Permitted Only After the California Department of Fish and Wildlife Has Provided Approvals.**

The Tentative WDR proposes that the amount of treated groundwater that may be discharged from Outfall 019 and proposed Outfall 020 be subject to the direction and advice of the California Department Fish and Wildlife ("CDFW") and permitted only after CDFW has approved such discharges. Outfall 019, the current discharge location for treated groundwater, is located immediately downstream from Outfall 001. Outfall 020 will be located downstream and down gradient from Outfall 002, and water from this outfall will flow into the drainage that leads to Bell Creek. Boeing fully supports the inclusion of this provision in the Tentative WDR.

Boeing agrees that it is appropriate for CDFW to evaluate Boeing's discharges of treated groundwater from these two outfalls. We share the goal of protecting natural resources and preventing the potential growth of invasive species that may have a negative impact on the waterways and native plants and animals. Boeing is currently working with CDFW to ensure that all required approvals are secured. Boeing requests that a footnote be added providing that the Average Monthly Effluent Limitations in Table 4b of the Tentative WDR apply only when a continuous discharge during a reporting month occurs.

**B. The Tentative WDR Should Allow for the Use of Treated Groundwater for Dust Suppression And Irrigation Purposes.**

2013 was the driest calendar year in recorded state history and the 2014 water year (i.e., October 1, 2013 to September 30, 2014) was the third driest water year in California history.<sup>2</sup> The severe water shortage has resulted in the Governor's declaration of a statewide drought emergency, and all Californians have been asked to reduce their water use by 20 percent. Currently Boeing utilizes water purchased from the Calleguas Municipal Water District for dust suppression purposes. If treated groundwater meeting the effluent limits set forth in the Tentative WDR was instead put to this use, then the Calleguas Municipal Water District would have additional water available for other users. Boeing requests that the Tentative WDR be revised to allow for treated groundwater to be used on-site for dust suppression purposes and irrigation of native plants associated with BMPs.

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<sup>2</sup> See California Department of Water Resources, "Water Year 2014 Ends as 3rd Driest in Precipitation", <http://www.water.ca.gov/waterconditions/>.

**C. The Tentative WDR Should Not Require that a Sitewide Stormwater Pollution Prevention Plan Be Prepared.**

At present, the only activities that are occurring at Santa Susana are construction, demolition and cleanup activities, for which specific Stormwater Pollution Prevention Plans ("SWPPPs") are prepared and implemented. Boeing requests that the Tentative WDR be revised to require that SWPPPs continue to be prepared for the specific activities conducted at the Site as required by law, but to eliminate the requirement for a sitewide SWPPP. Boeing will continue to evaluate the BMPs that have been installed to improve water quality and compliance at the outfalls, and to design and implement upgrades to these BMPs as necessary, on an annual basis. These actions, combined with the continued implementation of specific SWPPPs that fully address those activities that would be covered by a sitewide SWPPP, will assure that the pollution prevention objectives of a sitewide SWPPP will continue to be met.

**D. The Tentative WDR Should Establish Monitoring Requirements that Fully Consider the Provisions of Water Code Section 13267 and Reflect Site Conditions**

Data collected since 2004 from over 100 rain events and more than 300 samples demonstrate that there are a number of constituents that have never been detected in stormwater discharges from Santa Susana over the last 10 years. Exhibit A (attached) provides a list of these constituents. Boeing requests that the Tentative WDR be revised to provide that no monitoring is required for these constituents until soil removal activities under the direction of DTSC are implemented.

This request is consistent with the requirements of Water Code section 13267, which gives the Regional Board discretion to request dischargers to provide technical or monitoring reports if their discharges could affect the quality of waters within the region, but balances such requests against the burden imposed. Section 13267 states that:

"The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."

The burden in the form of continued monitoring and reporting costs associated with monitoring analytes that have never been detected at the Site clearly far outweighs any benefit from continuing any monitoring for these constituents under existing site conditions. Boeing understands that there may be a concern that these constituents might appear during the cleanup of historical soil contamination from past industrial activities at the Site. It should be noted that during the performance of the ISRA activities performed at the Site from 2009-2013 under the Regional Board's direction, monitoring for these constituents was performed, and none were ever detected. Boeing proposes to monitor the stormwater discharged at the outfall(s) serving the watershed(s) where the work is done for those analytes identified by DTSC as constituents of concern in soil.

**E. The Regional Board Should Consider the Duration of Discharge Events in Establishing Effluent Limitations for Chronic Criteria.**

**1. Chronic toxicity tests should only be required when a continuous discharge of seven days or longer occurs.**

Boeing requests that the Tentative WDR be revised to recognize that chronic toxicity tests are not appropriate for infrequent or short-lived discharges. For discharges shorter than seven (7) days in duration, Boeing requests that the acute toxicity limitations of the 2010 WDR be retained.

The Tentative WDR states that “[t]he Maximum Daily Effluent Limitation (MDEL) for chronic toxicity is exceeded and a violation will be flagged when a chronic toxicity test, analyzed using the TST [i.e., test of significant toxicity] approach, results in ‘Fail’ and the ‘Percent Effect’ is  $\geq 50$ ”, while “[t]he Median Monthly Effluent Limitation (MMEL) for chronic toxicity is exceeded and a violation will be flagged when the median of no more than three independent chronic toxicity tests, conducted within the same calendar month and analyzed using the TST approach, results in ‘Fail’.” (Tentative WDR, at 29.) The Tentative WDR establishes chronic toxicity MDELs for Outfalls 001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, and 018 (stormwater only discharges) and both chronic toxicity MDELs and MMELs for Outfalls 019 and 020 (treated groundwater discharges).

However, chronic toxicity limitations are not appropriate for infrequent and short-lived discharges. For effluent limitations to have ecological relevance (i.e., for those limitations to be properly indicative of a potential impact in the receiving water), effluent limitations should be developed in recognition of the frequency, magnitude, and duration of a discharge. (See, e.g., EPA’s Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-90-001, 1991, at pp. 29-36.<sup>3</sup>) Stormwater discharges from the Site are intermittent, infrequent, and typically last for fewer than seven days. Treated groundwater discharges, while occurring more regularly, may also last for fewer than seven days. As such, these discharges of less than seven days do not have the potential to result in chronic exposures, and chronic toxicity tests are an inappropriate and ecologically irrelevant metric. In addition, most chronic toxicity test methods require the collection of new samples (i.e., renewal samples) daily for up to eight (8) days. Accordingly, it is unclear whether effluent testing could be completed in a manner that conforms to the requirements of the test methods. As it is currently formulated, the inclusion in the Tentative WDR of chronic toxicity limitations is inappropriate. For discharges that are seven days or more, however, Boeing agrees that chronic toxicity limitations are appropriate.

Additionally, in this case, the Regional Board proposes that the TST statistical approach be used to analyze whole effluent toxicity (“WET”) test data.<sup>4</sup> However, WET tests evaluate the response of organisms exposed to effluent

<sup>3</sup> Available at: [http://water.epa.gov/scitech/datait/models/upload/2002\\_10\\_25\\_npdes\\_pubs\\_owm0264.pdf](http://water.epa.gov/scitech/datait/models/upload/2002_10_25_npdes_pubs_owm0264.pdf)

<sup>4</sup> Regarding the TST statistical approach, EPA regulations require that WET test data be analyzed using a sample and 5 effluent concentrations. (See 40 C.F.R. Part 136.) The TST only uses two concentrations (a control and an effluent sample). It is Boeing’s understanding that the Regional Board is continuing to work with EPA Region IX in evaluating use of the TST approach for analyzing WET test data, and that the State Water Resources Control Board is continuing to develop and modify the State’s Draft Toxicity Assessment Policy (or Plan). However, it is our understanding that these discussions have not resulted in a final decision at this time.

The 2010 WDR “includes a chronic testing toxicity trigger defined as an exceedance of 1.0 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.)” (2010 WDR, at 25.) Accordingly, the current chronic toxicity testing trigger mirrors the WLA of 1.0 TUC in the Calleguas Creek Toxicity TMDL. (See Tentative Permit, at F-18 (describing the Calleguas Creek Toxicity TMDL).) If the chronic toxicity of the effluent exceeds 1.0 TUC, Boeing must immediately implement accelerated chronic toxicity testing; and, if the results of two

for long durations – *typically seven to eight days* – and as noted above, many of the discharges from the Site’s outfalls are intermittent, infrequent, and will typically last for fewer than seven days.

For these reasons, Boeing requests that a footnote be added to the tables of effluent limitations in the Tentative WDR and the WDR Fact Sheet specifying that chronic toxicity tests for all outfalls must only be performed when a continuous discharge of seven (7) days or longer occurs at the relevant outfall. For discharges shorter than seven (7) days in duration, Boeing requests that the acute toxicity limitations of the current permit be retained.

**2. Effluent limitations for cadmium, copper, lead, and nickel should account for the duration of the discharge event.**

As discussed above, effluent limitations must be developed in recognition of the frequency, magnitude, and duration of a discharge. Indeed, for chronic criteria, EPA recommends an averaging period of four days, stating that it is “based on the shortest duration in which chronic effects are sometimes observed...” (EPA, Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-90-001, at 35.) In other words, chronic water quality criteria assume an exposure duration that is longer than acute criteria.

The CTR criteria table in 40 C.F.R. § 131.38(b)(1) specifies that chronic CTR criteria (i.e., Criteria Continuous Concentrations (“CCC”)) “equals the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects.” (EPA, “Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; Rule”, 65 Fed. Reg. 31711, 31716, note d (May 20, 2000) (emphasis added).<sup>5</sup>) The list of pollutants to which this statement applies includes, but is not limited to, cadmium, copper, lead, and nickel. For these pollutants, chronic criteria should not be applied to discharges that last for time periods shorter than the chronic exposure period.

Our analysis indicates that the Tentative WDR’s effluent limitations for cadmium, copper, lead, and nickel are based on chronic toxicity values. Because the discharges at the Site are typically short-lived, Boeing requests that the effluent limitations for these parameters be adjusted to reflect whether such discharges are short-lived or longer-lived. Accordingly, Boeing believes that there should be two separate effluent limitations for these metals in the WDR: one would be an MDEL that is based on the acute criteria for discharges of less than four (4) days; and the second would be an MDEL that is based on chronic criteria that would apply only to discharges of four days or more. Boeing’s calculations of appropriate limits for these pollutants—which we request the Regional Board incorporate into the final WDR—are shown in the table on the following page:

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of the six accelerated tests exceed 1.0 TUc, Boeing must initiate a toxicity identification evaluation (“TIE”) and implement the Initial Investigation Toxicity Reduction Evaluation (“TRE”) Workplan. (*Id.* at 25.) Because it mirrors the WLA of 1.0 TUc in the Calleguas Creek Toxicity TMDL, Boeing requests that the Tentative WDR retain the approach to analyzing chronic toxicity established by the 2010 WDR at this time, pending final resolution of the proper application of the TST method.

<sup>5</sup> Available at:

<http://ladpw.org/wmd/watershed/dc/DCMP/docs/Appendix%20A%20California%20Toxic%20Rule%20Water%20Quality%20Standards.pdf>

	Outfall 1, 2, 11, 18			Outfall 3-7, 9, 10			Outfall 19			Outfall 8		
Compound	RWQCB Proposed	Chronic*	Acute**	RWQCB Proposed	Chronic*	Acute**	RWQCB Proposed	Chronic*	Acute**	RWQCB Proposed	Chronic*	Acute**
<b>Cadmium</b>	4.0/3.1	4.3	4.5	4.0	4.4	4.5	4.0/3.1	4.0	4.5	4.0/3.1	4.0	4.5
<b>Nickel</b>	94	94	100	86	86	100	86	86	100	86	86	100
<b>Lead</b>	5.2	5.8	81.6	5.2	5.8	81.6	5.2	5.3	81.6	5.2	5.7	81.6
<b>Copper</b>	14	16.5	14.0	13.0	13.4	14.0	14	16.7	14.0	14.0	15.8	14

\* Chronic effluent limits would apply for discharges with a duration of four (4) days or longer.

\*\* Acute effluent limits would apply for discharges with a duration of less than four (4) days.

**F. The Interim Waste Load Allocations for Pollutants in Sediment in the 2010 WDR Should Be Extended to the Tentative WDR.**

The 2010 WDR establishes the interim ambient Waste Load Allocations (“WLAs”) for pollutants in sediment (i.e., chlordane; 4,4-DDD; 4,4-DDE; 4,4-DDT; dieldrin; PCBs; and, toxaphene) from the TMDL for organochlorine (OC) pesticides, polychlorinated biphenyls (PCBs) and siltation in Calleguas Creek and its tributaries (“Calleguas Creek TMDL”, Resolution No. R4-2005-010) as sediment limitations applicable in receiving water downstream of Santa Susana. (2010 WDR, at 29.) However, the Tentative WDR would rescind these sediment limitations and require Boeing to comply with the final WLAs in the Calleguas Creek TMDL. As the Tentative WDR states, “[t]he Discharger shall comply with the final receiving water sediment limitations [in the Calleguas Creek TMDL]...The Discharger is required to use analytical methods with detection values below the specified limits, if possible, to demonstrate compliance.” (Tentative WDR, at 19.)

Boeing believes that the final WLAs are not appropriately included in the Tentative WDR, and that the interim WLAs should be extended as the sediment limitations for the receiving waters downstream of Santa Susana. First, the implementation schedule for the Resolution approving the Calleguas Creek TMDL (i.e., No. R4-2005-010) authorizes the Regional Board to utilize interim sediment limitations through March 24, 2026. There is nothing preventing the Regional Board from continuing to apply the interim WLAs as the sediment limitations in Boeing’s WDR for Santa Susana.

Additionally, the 2010 WDR states that “[t]he final WLAs must be achieved and become sediment limitations *after* the sampling indicates that the Discharger is able to comply with the final WLAs *or* at the end of the 20-year compliance schedule specified in the TMDL (March 24, 2026), whichever occurs first.” (2010 WDR, at 28 (emphasis added).) Neither of these pre-conditions for converting the final WLAs into Boeing’s sediment limitations has occurred.

As shown in the table below, the method detection limits (“MDLs”) and the reporting limits (“RLs”) for each constituent are *lower* than the *interim* ambient WLAs with the exception of chlordane and dieldrin. Boeing’s analytical laboratory has indicated that they anticipate that they will develop methods that are below the interim ambient WLAs for chlordane and dieldrin in 2015. However, the MDLs and RLs are *higher* than all of the *final* ambient WLAs with only the exception of the MDL for 4,4-DDD and the MDL/ RL for PCBs. Because the laboratory MDLs and RLs are currently higher than the majority of the final WLAs, compliance with the final WLAs is subject to analytical methodology. Therefore, current sampling does *not* indicate that Boeing “is able to comply with the final WLAs”, such that converting the final WLAs into sediment limitations would be appropriate. (*Id.*)

Constituent	Number of Samples	Number of Detects	Number of Exceedances of the Interim WLA	Current Laboratory Method Detection Limits (MDL)*	Current Laboratory Reporting Limits (RL)*	Interim Ambient WLA (2010 WDR)*	Final Ambient WLA (Tentative WDR)*
Chlordane	7	0	0	0.01	0.050	0.0033	0.0033
4,4-DDD	7	0	0	0.0015	0.0050	0.014	0.002
4,4-DDE	7	1	0	0.0015	0.0050	0.17	0.0014
4,4-DDT	7	0	0	0.0015	0.0050	0.025	0.0003
Dieldrin	7	0	0	0.0015	0.0050	0.0011	0.0003
PCBs	7	0	0	0.017	0.050	25.7	0.12
Toxaphene	7	0	0	0.05	0.20	0.23	0.0006

\*Units in ug/g = micrograms per gram

### **G. The Tentative WDR Inappropriately Continues to Impose Monitoring Requirements for *E. Coli* and Fecal Coliform.**

The Tentative WDR continues to include discussion of receiving waters' limits for *E. coli* and fecal coliform and includes those COCs in Boeing's monitoring requirements. (See, e.g., Tentative WDR, Section V. A.3 at 17, and Attachment E – MRP, at E-9.) The Tentative WDR does not establish effluent limits for *E. coli* or fecal coliform. (*Id.*, at 7-16, Tables 4a, 4b, 4c, and 4d.)

For the reasons we discuss below, monitoring requirements for *E. coli* and fecal coliform are inappropriate for Santa Susana. If the Regional Board determines that monitoring is appropriate and required, it should amend the Tentative WDR to require only monitoring for *E. coli* at locations under Boeing's control.

#### **1. There is no basis for imposing bacterial monitoring requirements at Santa Susana.**

The Regional Board provides no basis for assuming that there is "reasonable potential" for stormwater runoff from Santa Susana to be a significant source of indicator bacteria at levels that exceed Basin Plan objectives. In fact, the Regional Board has stated in the Final Los Angeles River Bacteria TMDL that it does not believe that Santa Susana is a significant source of bacteria. That TMDL discusses Boeing's NPDES permit and a Plains West Coast Terminals (tank farm) permit by name, and concludes that "neither discharger is required to monitor for bacteria in their current permit and are not known to be a significant source of bacteria to the watershed." (Los Angeles River Bacteria TMDL, at 27 (July 15, 2010).<sup>6</sup>)

There are no facts that would establish that industrial sources at Santa Susana are a significant source of indicator bacteria at levels that exceed Basin Plan objectives. Because Boeing collects sanitary waste and transports it from Santa Susana to an offsite POTW for treatment and disposal, there is no indication that human waste generated at the Site will be exposed to or enter stormwater runoff. Boeing has conducted additional testing to determine if there is a human contribution to indicator bacteria concentrations present in runoff from Santa Susana. Specifically, Boeing has sent 12 samples from 2011 – 2014 to an analytical laboratory for human-specific Bacteroidales at OF001, 002, 008, 009, 010, 018, and 019. Test results indicate that no human-specific Bacteroidales were found in any of the samples, indicating that bacteria from Santa Susana originate from wildlife, birds, and other natural sources. (Note that if Boeing's testing were to determine that the bacteria in stormwater at Santa Susana appears to be from human sources, Boeing would take actions to investigate, identify, and eliminate those sources.)

To the extent that bacteria may be detected in waters receiving stormwater discharges from Santa Susana, it is highly likely that they would originate from natural sources. A number of studies show that non-human sources, such as birds and wildlife, contribute to the presence of bacteria in stormwater runoff. (See, e.g., (CREST Nov. 2008; Grant et al. 2001; Griffith et al. 2009; Tiefenthaler et al. 2008).<sup>7</sup>) Data collected by Los Angeles County demonstrate that storm water runoff from a variety of land use types, including vacant land and open space like

<sup>6</sup> Available at:

[http://www.waterboards.ca.gov/losangeles/board\\_decisions/basin\\_plan\\_amendments/technical\\_documents/80\\_New/LARiverFinal/Staff%20Report%20LAR%20Bact%2015Jul10%20final.pdf](http://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/80_New/LARiverFinal/Staff%20Report%20LAR%20Bact%2015Jul10%20final.pdf) Note that, in fact, the 2010 WDR, which was finalized shortly before this TMDL was finalized, does require monitoring for bacteria; however, the fact remains that Santa Susana is not a significant source of bacteria.

<sup>7</sup> References to these and the other studies cited in this section can be found in Exhibit B.

Santa Susana, exhibit concentrations of indicator bacteria that exceed water quality objectives. (See, e.g., Los Angeles County Department of Public Works, Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report.<sup>8</sup>) Similarly, a Bacteria Source Identification (“BSI”) study of the Los Angeles River found that the increase in *E. coli* concentrations in some reaches appeared to originate from non-human sources, potentially including regrowth in sediments and bioslimes, resuscitation of bacteria from POTW discharges, and/or birds and wildlife.<sup>9</sup>

2. **If the Regional Board determines that the Tentative WDR must regulate bacteria, it should do so only by imposing monitoring requirements for *E. coli* at onsite locations under Boeing’s control.**

- a. **The Tentative WDR should regulate only *E. coli*, not fecal coliform.**

Monitoring requirements for fecal coliform should not be included in the Tentative WDR. Fecal coliform is an ineffective indicator of human health risk. Numerous studies have found that concentrations of fecal coliform in water are not associated with health risks, and that fecal coliform objectives should be abandoned in favor of alternative indicators of water quality. (See, e.g., (Cabelli 1983; Colford et al. 2007; Gerba et al. 1979; Kay et al. 1994; McLaughlin and Rose 2000; Prüss 1998; Wade et al. 2003).) Consistent with these studies and EPA guidance (i.e., “Ambient Water Quality for Bacteria – 1986”), the Regional Board amended the Basin Plan to remove fecal coliform objectives for freshwater and, in so doing, stated that such removal “will result in a removal of the associated monitoring and reporting requirements from Regional Board orders...” (Regional Board, Resolution No. R10-005, at 4 (July 8, 2010).<sup>10</sup>) Consistent with the Basin Plan, the Los Angeles River Bacteria TMDL only establishes numeric targets for *E. coli* for REC-1 in freshwaters. (Los Angeles River Bacteria TMDL, at 17.) Thus, to the extent the Tentative WDR regulates bacteria, it should only require monitoring of *E. coli*.

- b. **Any monitoring of bacteria should only be required at onsite locations under Boeing’s control, and should not be duplicative.**

As currently written, the Tentative WDR imposes bacteria monitoring requirements at a location outside the boundaries of Santa Susana and outside of Boeing’s control, where stormwater runoff is received from multiple sources and land use types. Specifically, monitoring location RSW-002 (Frontier Park) is located in the Arroyo Simi downstream of Santa Susana, and downstream of a concrete-lined channel section. See Exhibit J [map]. The high flow suspension of recreational beneficial uses during rainfall events, which the Regional Board adopted in 2003 (Resolution No. 2003-010), appears to apply only to highly engineered channels in Los Angeles County.<sup>11</sup> However, the portion of the Arroyo Simi upstream of the RSW-002 sampling location is typical of channels to which the suspension is applied: it is concrete-lined, highly engineered, and unsafe to enter during high flow conditions. Furthermore, it receives drainage from a large land area downstream of Santa Susana and outside of Boeing’s control. . For these reasons, it is inappropriate to require monitoring at this location. To the extent the Tentative WDR requires monitoring of bacteria, it should only require monitoring on the Site.

<sup>8</sup> Available at: [http://dpw.lacounty.gov/wmd/NPDES/int\\_report/Tables/Table\\_4-12.pdf](http://dpw.lacounty.gov/wmd/NPDES/int_report/Tables/Table_4-12.pdf)

<sup>9</sup> The human health risk posed by swimming exposures to bacteria from non-human sources is likely lower than the risk posed by exposure to bacteria from human sources, including treated and untreated sewage. See (Schoen and Ashbolt 2010; Colford et al. 2005).

<sup>10</sup> Available at: [http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/docs/la\\_fecalcoliform/att\\_r10\\_005.pdf](http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/la_fecalcoliform/att_r10_005.pdf).

<sup>11</sup> These channels do not have to meet bacteria criteria during high-flow conditions. (See U.S. Environmental Protection Agency, Suspension of Recreational Beneficial Uses in Engineered Channels during Unsafe Wet Weather Conditions (March 2006), available at: [http://www.epa.gov/waterscience/standards/uses/uaa/casestudies/la\\_channels.html](http://www.epa.gov/waterscience/standards/uses/uaa/casestudies/la_channels.html))

## H. Miscellaneous Issues

### 1. Substantive issues

Removal of technology-based effluent limits. The Tentative WDR includes technology-based effluent limitations for TSS, BOD, oil and grease, settleable solids, and sulfides in Section IV.B.2 (page F-22) and Tables F-4 and F-4a (page F-23). However, these limits are appropriate for discharges from wastewater treatment plants, and Boeing no longer has any such discharges. Boeing requests that the effluent limits for these constituents be deleted from the WDR.

### 2. Errata

Table 4d. Effluent Limitations – Outfall 008. Please add superscript “7” to the 0.19 value for cadmium.

Section V. C. Consistent with the WDRs issued to other dischargers, and to the extent that the Regional Board includes only the final WLAs as sediment limitations in Boeing’s WDR, please revise the text on page 19 to read (additions are underlined and deletions are shown in strikeout):

“Attainment of the final limitations is determined by evaluating the in-stream annual averages of the constituents below near Frontier Park, a tributary to Arroyo Simi. The Discharger is required to use analytical methods with detection values below the specified limits, if feasible, to demonstrate attainment.”

Section VI.C.3.a.ii, last sentence. Please confirm that this sentence applies to all three Plans and not just to the BMP Plan.

Section VI.C.3.a.iii, first full paragraph. Please confirm that this paragraph applies to all three Plans and not just to the Spill Contingency Plan.

Section VII.H, entire section. Please revise the section to be consistent with Section V.A.1. (additions are underlined):

If the receiving water pH falls below 6.5 or exceeds 8.5 pH units as a result of

- a. high or low pH in the off-site stormwater, or
- b. elevated or depressed pH in the receiving water upstream of the discharge

then the exceedance shall not be considered a violation.

Section VII.N. Consistent with the WDRs issued to other dischargers, please revise the text on page 31 to read (additions are underlined and deletions are shown in strikeout):

“Attainment of sediment limitations in the receiving water for the constituents listed in section V.C above will be determined by calculating the in-stream annual average at the base of the subwatershed where the discharges are located.”

### Attachment E, MRP:

Table E-1. Monitoring Station Locations, RSW-001. The current text in the Monitoring Location Description implies that all sampling requirements are satisfied by priority pollutant sampling analysis once every 5 years.

Table E-3a lists additional sampling requirements at higher frequencies. The text of Table E-1 should be revised to read as follows (deletions are shown in ~~strikeout~~):

Receiving water sampling requirements are satisfied by sampling from EFF-001, EFF-002, EFF-011, or EFF-018.

Table E-1. Monitoring Station Locations, RSW-002. The current text in the Monitoring Location Description states that RSW-002 is downstream of the discharge point into Arroyo Simi. Page F-59 (Section VI.E.1) states that RSW-002 (Frontier Park) is upstream of the discharge point into Arroyo Simi. Please correct page F-59.

As stated in the Tentative WDR, compliance with the effluent limits is based on an annual average of the sample results for each outfall (determined at each sampling point). Compliance will be determined based on an average of all samples collected throughout the calendar year and reported in the annual report.

For clarity, please revise footnote 7 as follows (additions are underlined and deletions are shown in ~~strikeout~~):

If gross beta >50 pCi/L (after subtracting K-40 activity) gamma isotopic analysis must be performed for Cs-137 (the most likely beta/gamma emitter associated with the site). The sum of the fractions technique must be used to demonstrate that the beta/gamma emitters don't exceed 4 mrem/year. The sum of the fractions must include H-3 and Sr-90. If the limit is exceeded, which is an annual average, the frequency of the sampling is increased to once per discharge event until the annual average is below the specified limit. If analyses of these constituents, during a single discharge, indicates an exceedance of the annual average effluent limitation (determined at each sampling point), then subsequent discharge results (at that same sampling point) will be averaged to demonstrate compliance with the average annual limit.

Tables E-2a, 2b, and 2c, footnote 9: Please add "and Outfall 020" after "the monitoring frequency must be increased from monthly to weekly at Outfall 019".

Table E-2c: The footnote reference for TPH analysis for Outfalls 019 and 020 should be changed from "14" to "13".

Tables E-2a, 2b, and 2c, footnote 15: Please revise this footnote to delete the language after the first sentence.

Section V.A.8.a. This paragraph states that the Detailed TRE Work Plan is due within 90 days of the effective date of this Order. Page E-18, Section V.A.7 and page E-30, Section XII.D.2 state that the Initial TRE Work Plan is due within 90 days of the effective date of this Order. The sentence in V.A.8.a goes on to say "revised as appropriate for this toxicity event." Therefore, it is assumed that a Detailed TRE Work Plan is due within 90 days of a triggering toxicity event per Section V.A.6. Please change the paragraph as follows (additions are underlined and deletions are shown in ~~strikeout~~):

Preparation and Implementation of Detailed TRE Work Plan. Per the conditions specified in Section V.A.6, the Discharger shall immediately initiate a TRE using – according to the type of treatment facility – EPA manual Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants (EPA/833/B-99/002, 1999) or EPA manual Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (EPA/600/2-88/070, 1989). Within 90 days of the triggering toxicity event, the Discharger shall submit to the Regional Water Board Executive Officer a Detailed TRE Work Plan,

which shall follow the generic Initial Investigation TRE Work Plan revised as appropriate for this toxicity event.....

Table E-3a. Receiving Water Monitoring Requirements – RSW-001 and RSW-002. Footnote 2 (pH, hardness, priority pollutants) does not apply to TSS. Please delete reference to footnote 2 in the Required Analytical Test Method column.

Table E-3a. Receiving Water Monitoring Requirements – RSW-001 and RSW-002. The language in Footnote 2 states that pH, hardness, and priority pollutants "must" be collected at the same time in the receiving water as the effluent samples (from Outfall 009). Grab samples are required to be collected within the first hour of discharge (or the first hour when collecting the sample is deemed safe). Boeing estimates that flow from Outfall 009 could take 8 hours to reach sample location RSW-002. Please delete this footnote.

Footnote 5, Table E-3a. Receiving Water Monitoring Requirements – RSW-001 and RSW-002. In 2010 Boeing commented on the language in this footnote. Please change the text as follows to make the footnote language consistent with the Water Board's 2010 response (additions are underlined and deletions are shown in ~~strikeout~~):

The Permit requires sampling 1/year and that a geometric mean value be calculated; therefore, the annual sampling event must include 5 samples equally spaced over a 30-day period.

Section XI.B.2. The reference to Section X.B.3 should be to Section XII.B.3. Please make the revision in the text.

Section XII.A.5. The reference to Section V.G should be to Section V.A.9. Please make the revision in the text.

Table E-4. Please change the SMR Due Date for the Annual Report to March 01 per the 2010 WDR.

Section XII.D.1. The text references SMR reporting requirements which are in Section XII.B. Please change the reference to Section X to Section XII.B.

#### **Attachment F, Fact Sheet:**

Table F-2. Historic Effluent Limitations and Monitoring Data from Outfalls 001, 002, 011, 018, and 019. Please delete the reference to footnote 1 from TCDD. Footnote 1 is reserved for values equal to "ND" and the MEC value for TCDD is not "ND."

Section II.D, table. Please change the Reported Value for TCDD on 04/11/2012, for Outfall 009 to 3.72E-08.

Section III.D, paragraph 3. Please consider adding "not related to SSFL" at the end of the second sentence for clarity as follows (additions are underlined):

The majority of the Los Angeles River Watershed downstream of the site is considered impaired due to a variety of point and nonpoint sources not related to SSFL.

Section III.D, paragraph 5. Please consider adding "not related to SSFL" at the end of the fourth sentence for clarity as follows (additions are underlined):

It appears that the sources of many of these pollutants are agricultural activities not related to SSFL.

Section IV.B.2, third and fourth paragraph. Please make the following text edits (additions are underlined and deletions are shown in ~~strikeout~~):

The Regional Water Board requires the Discharger to update their BMP Plan. The purpose of the BMP Plan is to establish.....

The combination of the SWPPP and BMP Plan and the Order.....

Section IV.C.2, first paragraph. The references to Section IV.C should be to Section III.C. Please make the edit in the text.

Table F-5c. Applicable Basin Plan Numeric Water Quality Objectives. Please change "0.2 units" in the Water Quality Criteria for pH to "0.5 units", per page 17, Section V.A.1. The Basin Plan confirms on page 3-15 that a value of 0.5 units is applicable to inland surface waters.

Table F-5c. Applicable Basin Plan Numeric Water Quality Objectives. Please add MBAS to Attachment A.

Table F-6a. Summary of Reasonable Potential Analysis for Outfalls 001, 002, 011, and 018. Please add a footnote to define the meaning of "—" and a blank in column "Maximum Detected Receiving Water Conc. (B)."

Section IV.C.4.d, Step 1. The text makes a reference to "Attachment Table R2". This Table does not exist in the tentative permit or its Attachments.

Table F-7a, footnote 1. The text of this footnote should be the same as footnote 1 for Table F-7b. Please add "and Outfall 020" after "Outfall 019."

Table F-7b. For chronic toxicity, please add a reference to footnote 2.

Table F-7b, footnote 3. Footnote 3 references Page F-31. The reference should be to Page F-26. Please make the revision in the text.

Table F-8c. Summary of Final Effluent Limitations for Outfalls 003, 004, 005, 006, 007, 009, and 010. Please add a reference to footnote 1 to column header "Basis for Limitation".

Section V.C. Consistent with the WDRs issued to other dischargers, and to the extent that the Regional Board includes only the final WLAs as sediment limitations in Boeing's WDR, please revise the text on page F-57 to read (additions are underlined and deletions are shown in ~~strikeout~~): "The Discharger shall demonstrate attainment of the final receiving water sediment limitations below on the effective date of this permit."

Please also revise the text on pages F-57 and F-58 to read (additions are underlined and deletions are shown in ~~strikeout~~):

"As per Resolution No. R4-2005-010, attainment of the final limitations is determined by evaluating the in-stream annual averages of the constituents below in a tributary to Arroyo Simi. The Discharger is required to use analytical methods with detection values below the specified limits, if feasible."

Table F-8d. Summary of Final Effluent Limitations for Outfalls 008. Please add a reference to footnote 1 to column header "Basis for Limitation".

Table F-10. Summary of Final Receiving Water Sediment Limitations for Arroyo Simi. Column header "Limitations" has a reference to footnote 1, but no footnotes appear under the table. Please delete the reference to footnote 1.

Section VI.D. Please delete the second sentence of the second paragraph of this Section on page F-59 and add: "A chronic toxicity effluent limitation is applicable only to discharges that last seven days or longer."

**Attachment G – SWPPP Requirements:**

Section I, first sentence. This sentence states that the SWPPP will be submitted to the Water Board "within 90 days following the adoption of this Order." However, Page E-30 states that the SWPPP is due 90 days from the effective date of this Order. Please change "adoption" to "effective date".

The text in Attachment G makes references to Sections that are not found in the Tentative WDR. The table below summarizes these references. Please insert the appropriate Section references.

Permit Section	Section Referenced in the Text	Appropriate Section Reference
Section IV.D	Section A.6.a.iv	
Section VI.A	Section A.4.e	Section IV.E
Section VI.B	Section A.8	
Section VII.A	Section A.6	
Section VI.B	Section 8	Section VIII
Section VIII	Sections A.6 and 7	
Section VIII.A	Section A.8.b	Section VIII.B
Section VIII.B	Section A.8.a	Section VIII.A
Section IX.D	Section A.10.e	
Section IX.D	Standard Provisions V.D.5 of Attachment D	Standard Provisions V.B.5 of Attachment D

**II. CONCLUSION**

Boeing thanks the Regional Board and Board Staff for its consideration of these comments on the Tentative WDR.

Sincerely,



Steven L. Shestak  
 Director, Enterprise Remediation

**List of Exhibits**

**Exhibit A:** Constituents Not Detected in Stormwater at Santa Susana Since 2004

**Exhibit B:** List of References cited in Section I.G.1 (see footnote 7)

**Exhibit C:** Map of Arroyo Simi Receiving Water Sample Location

Exhibit A

Constituents Not Detected in Stormwater at Santa Susana Since 2004

1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2,4-Trichlorobenzene
1,2-Dichloro-1,1,2-trifluoroethane
1,2-Dichlorobenzene
1,2-Dichloropropane
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4-Dichlorophenol
2,4-Dinitrophenol
2,6-Dinitrotoluene
2-Chloroethylvinylether
2-Chlorophenol
2-Methyl-4,6-dinitrophenol
2-Methylphenol
2-Nitrophenol
3,3'-Dichlorobenzidine
4,4'-DDD
4,4'-DDE
4-Bromophenylphenylether
4-Chloro-3-methylphenol
4-Chloroaniline
4-Chlorophenylphenylether
4-Nitrophenol
Acenaphthene
Acrolein
Acrylonitrile
Aldrin
Aniline
Anthracene
Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260
Benzidine
Benzo(a)anthracene
Benzo(a)pyrene

Exhibit A

Constituents Not Detected in Stormwater at Santa Susana Since 2004

Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Benzyl alcohol
bis (2-Chloroethyl) ether
bis(2-Chloroethoxy) methane
bis(2-Chloroisopropyl) ether
Bromomethane
Carbon Tetrachloride
Chlordane
Chlorobenzene
Chloroethane
Chlorpyrifos
Chrysene
cis-1,3-Dichloropropene
Cyclohexane
delta-BHC
Diazinon
Dibenzo(a,h)anthracene
Dibenzofuran
Dieldrin
Di-n-octylphthalate
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin ketone
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno(1,2,3-cd)pyrene
Lindane (gamma-BHC)
Methoxychlor
m-Nitroaniline
Monomethyl hydrazine
Nitrobenzene
n-Nitrosodimethylamine
n-Nitroso-di-n-propylamine
n-Nitrosodiphenylamine
o-Nitroaniline
p-Nitroaniline
Pyrene
Tetrachloroethene
Toxaphene

Exhibit A

Constituents Not Detected in Stormwater at Santa Susana Since 2004

trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
Trichlorofluoromethane
Trichlorotrifluoroethane (Freon 113)
Vinyl chloride

# EXHIBIT B

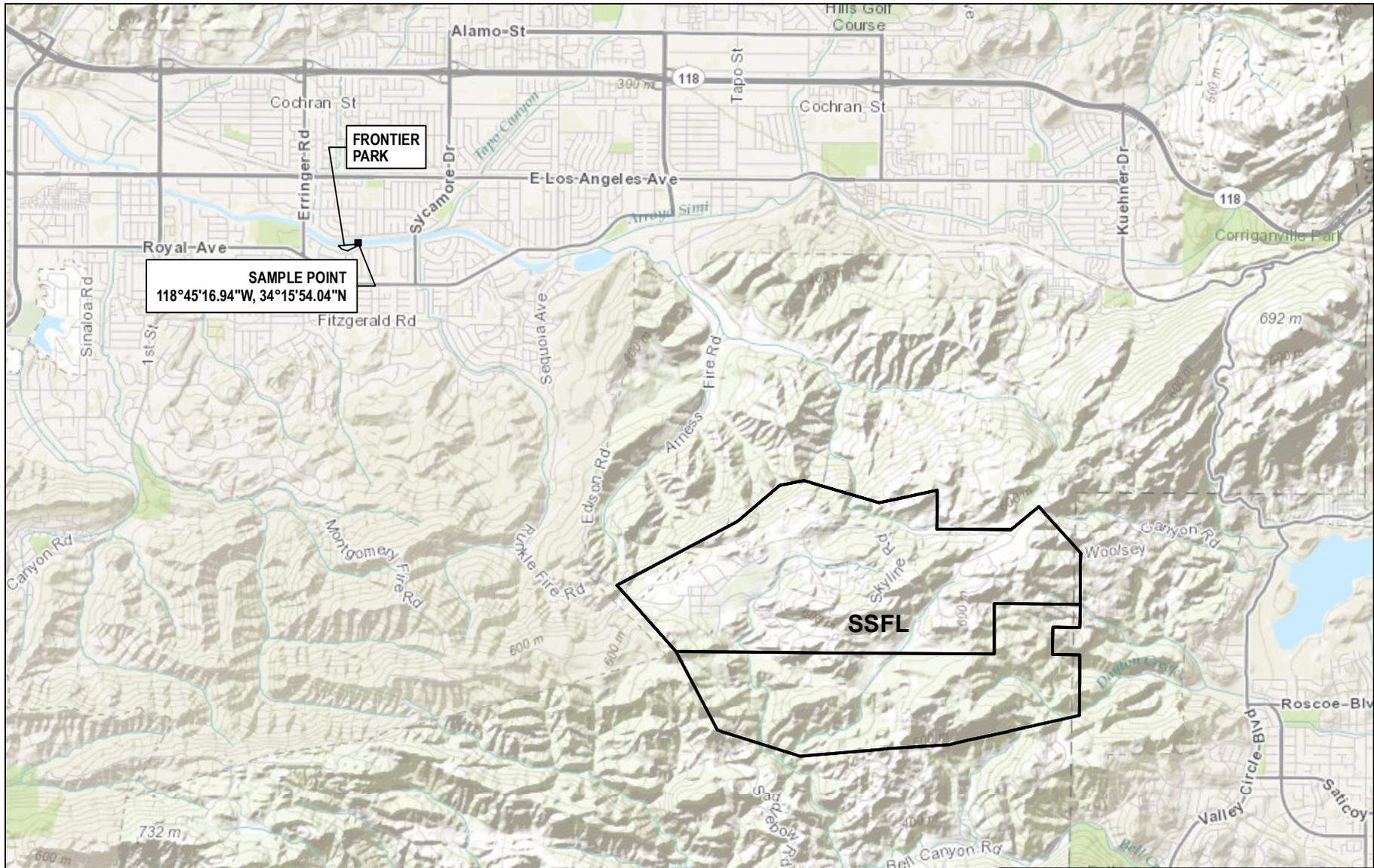
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# EXHIBIT B

## REFERENCES [Footnote 7]

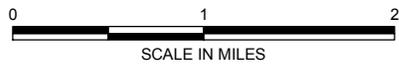
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**SAMPLE POINT**  
 118°45'16.94"W, 34°15'54.04"N

**FRONTIER PARK**

**SSFL**



THE BOING COMPANY  
 VENTURA COUNTY, CALIFORNIA  
 Exhibit C—Map of the Arroyo Simi Receiving  
 Water Sample Location  
 SCALE: AS SHOWN  
 JANUARY 2015