

APPENDIX D

FIRST QUARTER 2011 RADIOLOGICAL MONITORING DATA

**FIRST QUARTER 2011
 REPORTING SUMMARY NOTES
 THE BOEING COMPANY
 SANTA SUSANA FIELD LABORATORY
 NPDES PERMIT CA0001309**

Notes:

1. For Dioxins and Furans, laboratory results may have been reported in picograms/liter (pg/L). However, the permit limit is stated in micrograms/liter (µg/L). To evaluate permit compliance, the laboratory results have been converted to µg/L, as necessary, to calculate the TCDD TEQ.
2. TCDD TEQs for the purpose of determining permit compliance are the sum of the products of the detected dioxin congener concentration multiplied by that congener's TEF. The resulting compliance TCDD TEQ does not include those congener concentrations that are reported as DNQ, as specified on Page 40 of the NPDES permit.
3. For some sample dates, pH was determined with a field instrument and was noted as such. These results were not validated. Since pH does not have an RL, the possible pH range is shown in the RL column.
4. The NPDES permit limit or benchmark limit for mercury of 0.10 µg/L (Outfalls 001, 002, 011, 018 and 019) and 0.13 µg/L (Outfalls 003-010) are not achievable by the laboratory; therefore, the laboratory reporting limit of 0.20 µg/L was used to determine compliance.
5. All of the following abbreviations and/or notes may not occur on every table.

-92.9 +/-200	A negative radiochemical analytical result indicates the count rate of the sample was less than the background condition
\$	reported result or other information was incorrectly reported by the laboratory; result was corrected by the data validator
--	based on validation of the data, a qualifier was not required
-/-	no permit limit established for daily maximum or monthly average
<(value)	analyte not detected at a concentration greater than or equal to the DL, MDL, or RL (see laboratory report for specific detail)
*	result not validated
*1	improper preservation of sample
*2	the ICP/MS ppb check standard was recovered above the control limit; therefore, the constituent detected was qualified as estimated (J)
*3	initial and or continuing calibration recoveries were outside acceptable control limits
*5	blank spike/blank spike duplicate relative percent difference was outside the control limit

**FIRST QUARTER 2011
REPORTING SUMMARY NOTES
THE BOEING COMPANY**

OUTFALL 001 (Frontier Park Receiving Water)

**FIRST QUARTER 2011 REPORTING SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

January 1 through March 31, 2011

ANALYTE	UNITS	Benchmark Limit Daily Max/Monthly Avg	03/20/2011 (Comp)		
			RESULT	MDA	VALIDATION QUALIFIER
RADIOACTIVITY					
Gross Alpha	pCi/L	15/-	3.09 ± 0.55	0.307	J (C)
Gross Beta	pCi/L	50/-	6.03 ± 0.68	0.819	--
Strontium-90	pCi/L	8.0/-	-0.071 ± 0.31	0.744	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	0.01 ± 0.76	1.15	U
Tritium	pCi/L	20000/-	-59.7 ± 96	166	U
Uranium, Total	pCi/L	20/-	0.438 ± 0.051	0.02	J (DNQ)
Potassium-40	pCi/L	-/-	ND < 23.5	23.5	U
Cesium 137	pCi/L	200/-	ND < 1.46	1.46	U

OUTFALL 002 (South Slope below R-2 Pond)

OUTFALL 008 (Happy Valley Drainage)

FIRST QUARTER 2011 REPORTING SUMMARY

THE BOEING COMPANY

SANTA SUSANA FIELD LABORATORY

NPDES PERMIT CA0001309

January 1 through March 31, 2011

01/03/2011 (Comp)

OUTFALL 009 (WS-13 Drainage)

**FIRST QUARTER 2011 REPORTING SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

January 1 through March 31, 2011

01/03/2011

OUTFALL 009 (WS-13 Drainage)

**FIRST QUARTER 2011 REPORTING SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

January 1 through March 31, 2011

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	03/03/2011 (Comp)			03/07/2011 (Comp)			03/20/2011 (Comp)		
			RESULT	MDA	VALIDATION QUALIFIER	RESULT	MDA	VALIDATION QUALIFIER	RESULT	MDA	VALIDATION QUALIFIER
RADIOACTIVITY											
Gross Alpha	pCi/L	15/-	0.226 ± 0.22	0.341	UJ (C)	0.649 ± 0.31	0.359	J (C, DNQ)	2.29 ± 0.50	0.409	J (C, DNQ)
Gross Beta	pCi/L	50/-	1.42 ± 0.64	0.999	J (DNQ)	1.49 ± 0.65	1	J (DNQ)	8.13 ± 0.74	0.827	--
Strontium-90	pCi/L	8.0/-	-0.007 ± 0.49	1.11	U	-0.064 ± 0.44	1.04	U	-0.044 ± 0.34	0.798	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	0.42 ± 0.49	1.32	U	0.17 ± 0.47	1.23	U	0.09 ± 0.43	1.28	U
Tritium	pCi/L	20000/-	80.4 ± 89	146	U	81.6 ± 89	146	U	-35.9 ± 99	169	U
Uranium, Total	pCi/L	20/-	0.087 ± 0.032	0.025	J (DNQ)	0.141 ± 0.019	0.025	J (DNQ)	0.247 ± 0.030	0.02	J (DNQ)
Potassium-40	pCi/L	-/-	ND < 21	21	U	ND < 24.7	24.7	U	ND < 30.8	30.8	U
Cesium 137	pCi/L	200/-	ND < 1.55	1.55	U	ND < 1.64	1.64	U	ND < 1.56	1.56	U

OUTFALL 010 (Building 203)

FIRST QUARTER 2011 REPORTING SUMMARY

OUTFALL 011 (Perimeter Pond Weir)

**FIRST QUARTER 2011 REPORTING SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

January 1 through March 31, 2011

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	03/20/2011 (Comp)		
			RESULT	MDA	VALIDATION QUALIFIER
RADIOACTIVITY					
Gross Alpha	pCi/L	15/-	2.26 ± 0.46	0.276	J (C, DNQ)
Gross Beta	pCi/L	50/-	6.22 ± 0.70	0.866	--
Strontium-90	pCi/L	8.0/-	-0.018 ± 0.26	0.625	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	0.58 ± 0.47	0.96	U
Tritium	pCi/L	20000/-	-77.2 ± 96	167	U
Uranium, Total	pCi/L	20/-	0.321 ± 0.18	0.02	J (DNQ)
Potassium-40	pCi/L	-/-	ND < 58.4	58.4	U
Cesium 137	pCi/L	200/-	ND < 3.25	3.25	U

OUTFALL 018 (R-2 Spillway)

**FIRST QUARTER 2011 REPORTING SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

January 1 through March 31, 2011

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	02/18/2011 (Comp)			02/27/2011 (Comp)			03/20/2011 (Comp)		
			RESULT	MDA	VALIDATION QUALIFIER	RESULT	MDA	VALIDATION QUALIFIER	RESULT	MDA	VALIDATION QUALIFIER
RADIOACTIVITY											
Gross Alpha	pCi/L	15/-	0.49 ± 0.30	0.367	J (C, E, DNQ)	0.345 ± 0.34	0.516	UJ (C)	1.08 ± 0.40	0.364	J (C, DNQ)
Gross Beta	pCi/L	50/-	3.7 ± 0.71	1.01	J (DNQ)	3.1 ± 0.70	1.02	J (DNQ)	4.79 ± 0.68	0.886	--
Strontium-90	pCi/L	8.0/-	-0.162 ± 0.29	0.728	U	-0.256 ± 0.37	0.999	U	-0.103 ± 0.28	0.723	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	-0.16 ± 0.38	1.08	U	0.66 ± 0.42	0.99	U	0.67 ± 0.63	1.21	U
Tritium	pCi/L	20000/-	-33.1 ± 130	218	U	-78.4 ± 99	170	U	-42 ± 98	168	U
Uranium, Total	pCi/L	20/-	0.104 ± 0.015	0.02	J (DNQ)	0.322 ± 0.037	0.022	J (DNQ)	0.267 ± 0.032	0.02	J (DNQ)
Potassium-40	pCi/L	-/-	ND < 29.1	29.1	U	ND < 24.3	24.3	U	ND < 24.7	24.7	U
Cesium 137	pCi/L	200/-	ND < 1.25	1.25	U	ND < 1.69	1.69	U	ND < 1.7	1.7	U

OUTFALL 019 (Treatment System)

FIRST QUARTER 2011 REPORTING SUMMARY THE BOEING COMPANY SANTA SUSANA FIELD LABORATORY NPDES PERMIT CA0001309

January 1 through March 31, 2011

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	01/07/2011 (Comp)			02/25/2011 (Comp)		
			RESULT	MDA	VALIDATION QUALIFIER	RESULT	MDA	VALIDATION QUALIFIER
RADIOACTIVITY								
Gross Alpha	pCi/L	15/-	0.496 ± 0.69	1.13	UJ (C)	1.1 ± 1.0	1.46	UJ (C)
Gross Beta	pCi/L	50/-	0.161 ± 1.1	1.75	U	3.76 ± 1.1	1.65	J (DNQ)
Strontium-90	pCi/L	8.0/-	0.051 ± 0.78	1.79	U	-0.281 ± 0.34	0.924	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	0.62 ± 0.37	0.85	U	0.56 ± 0.56	1.16	U
Tritium	pCi/L	20000/-	-18.9 ± 170	298	U	-56.2 ± 100	172	U
Uranium, Total	pCi/L	20/-	0.065 ± 0.010	0.016	J (DNQ)	0.159 ± 0.025	0.022	J (DNQ)
Potassium-40	pCi/L	-/-	ND < 22.6	22.6	U	ND < 18	18	U
Cesium 137	pCi/L	200/-	ND < 1.1	1.1	U	ND < 1.18	1.18	U