

**FIRST QUARTER 2009 REPORTING SUMMARY NOTES  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309**

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*10	value was estimated detect or estimated non detect (J,UJ) due to deficiencies in quantitation of the constituent including constituents reported by the laboratory as Estimated Maximum Possible Concentration (EMPC) values
*11	no calibration was performed for this compound; result is reported as a tentatively identified compound (TIC)
*II, *III	unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analysis." The number following the asterisk (*) will indicate the report section where a description of the problem can be found
ANR	analysis not required; e.g., constituent or outfall was not required by the permit to be sampled and analyzed (annual, semi-annual, etc.)
B	laboratory method blank contamination
C	calibration %RSD or %D were noncompliant
C5	Calibration verification %R was outside method control limits
%D	percent difference between the initial and continuing calibration relative response factors
deg F	degrees Fahrenheit
DL	detection limit
DNQ	detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less than the laboratory reporting limit)
E	duplicates show poor agreement
H	holding time was exceeded
I	ICP interference check solution results were unsatisfactory
J	estimated value
K	The sample dilution's set-up did not meet the oxygen depletion criteria of at least 2 mg/l. Therefore, the reported result is an estimated value only.
L2	the laboratory control sample %R was below the method control limits
L	laboratory control sample %R was outside control limits
LOD	limit of detection
M1	matrix spike (MS) and/or MS duplicate were above the acceptance limits due to sample matrix interference
M2	the MS and/or MS duplicate were below the acceptance limits due to sample matrix interference
MDL	method detection limit
MGD	million gallons per day
MHA*	Due to high level of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information.
mg/L	milligrams per liter
ml/L/hr	milliliters per liter per hour
NA	not applicable; no permit limit established for the constituent and/or outfall

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ND	analyte value less than the LOD or MDL
NM	not measured or determined
NTU	nephelometric turbidity unit
p	relative percent difference (RPD) is outside control limits
pCi/L	picocuries per liter
pg/L	picograms per liter
Q	matrix spike recovery outside of control limits
R	as a validation qualifier, results are rejected; the presence or absence of analyte cannot be verified
R	(reason code in parentheses) %R for calibration not within control limits
RL	laboratory reporting limit
RL-1	reporting limit raised due to sample matrix effects
%RSD	percent relative standard deviation
S	surrogate recovery was outside control limits
TEQ	toxic equivalent
T	presumed contamination, as indicated by a detect in the trip blank
TU <sub>c</sub>	toxicity units (chronic)
U	result not detected
µg/L	micrograms per liter
UJ	result not detected at the estimated reporting limit
umhos/cm	micromhos per centimeter
WHO TEF	World Health Organization toxic equivalency factor
^	analysis not completed due to hold time exceedence or insufficient sample volume

**OUTFALL 001 (South Slope below Perimeter Pond)**

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January 1 through March 31, 2009

ANALYTE	UNITS	Benchmark Limit Daily Max/Monthly Avg	2/16/2009		
			RESULT	MDA	VALIDATION QUALIFIER
<b>RADIOACTIVITY</b>					
Gross Alpha	pCi/L	15/-	5.5 ± 1.6	1.1	J (H,C)
Gross Beta	pCi/L	50/-	4.9 ± 1.1	1.2	J (H)
Strontium-90	pCi/L	8.0/-	0.06 ± 0.28	0.49	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	0.48 ± 0.39	0.80	U
Tritium	pCi/L	20000/-	-50 ± 170	300	U
Uranium, Total	pCi/L	20/-	0.547 ± 0.066	0.42	J (H,DNQ)
Potassium-40	pCi/L	-/-	-80 ± 1600	300	UJ (H)
Cesium 137	pCi/L	-/-	2.6 ± 9.8	18	UJ (H)

OUTFALL 002 (South Slope below R-2 Pond)

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January 1 through March 31, 2009

ANALYTE	UNITS	Benchmark Limit Daily Max/Monthly Avg	2/16/2009		
			RESULT	MDA	VALIDATION QUALIFIER
<b>RADIOACTIVITY</b>					
Gross Alpha	pCi/L	15/-	6.8 ± 2.3	2.4	J (H,C)
Gross Beta	pCi/L	50/-	5.4 ± 1.1	1.2	J (H)
Strontium-90	pCi/L	8.0/-	-0.01 ± 0.30	0.53	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	0.78 ± 0.31	0.57	J (DNQ)
Tritium	pCi/L	20000/-	230 ± 190	300	U
Uranium, Total	pCi/L	20/-	0.483 ± 0.052	0.21	J (H,DNQ)
Potassium-40	pCi/L	-/-	-100 ± 3800	200	UJ (H)
Cesium 137	pCi/L	-/-	-4 ± 10	19	UJ (H)

**OUTFALL 004 (SRE)**

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January 1 through March 31, 2009

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	2/6/2009			2/16/2009		
			RESULT	MDA	VALIDATION QUALIFIER	RESULT	MDA	VALIDATION QUALIFIER
<b>RADIOACTIVITY</b>								
Gross Alpha	pCi/L	15/-	2.2 ± 1.1	1.2	J (C,H,DNQ)	1.4 ± 1.1	1.6	UJ (H,C)
Gross Beta	pCi/L	50/-	13.7 ± 1.7	1.1	J (H)	7.2 ± 1.2	1.1	J (H)
Strontium-90	pCi/L	8.0/-	0.21 ± 0.38	0.64	U	0.14 ± 0.25	0.43	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	0.58 ± 0.33	0.71	U	0.31 ± 0.43	0.69	U
Tritium	pCi/L	20000/-	20 ± 190	340	U	-10 ± 170	310	U
Uranium, Total	pCi/L	20/-	0.518 ± 0.059	0.42	J (DNQ)	0.594 ± 0.071	0.21	J (DNQ,H)
Potassium-40	pCi/L	-/-	-90 ± 770	280	U	-90 ± 3400	200	UJ (H)
Cesium 137	pCi/L	-/-	0.6 ± 7.5	14	U	1.1 ± 7.0	13	UJ (H)

**OUTFALL 006 (FSDF-2)**

**FIRST QUARTER 2009 REPORTING SUMMARY  
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**January 1 through March 31, 2009**

**1/24/2009**

**2/6/2009**

**2/13/2009**

**OUTFALL 008 (Happy Valley Drainage)**

**FIRST QUARTER 2009 REPORTING SUMMARY  
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**January 1 through March 31, 2009**

**2/16/2009**

**ANALYTE**

**UNITS**

**Benchmark  
Limit Daily  
Max/Monthly  
Avg**



**OUTFALL 009 (WS-13 Drainage)**

**FIRST QUARTER 2009 REPORTING SUMMARY  
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January 1 through March 31, 2009

ANALYTE	UNITS	Benchmark Limit Daily Max/Monthly Avg	1/5/2009			2/6/2009			2/13/2009		
			RESULT	MDA	VALIDATION QUALIFIER	RESULT	MDA	VALIDATION QUALIFIER	RESULT	MDA	VALIDATION QUALIFIER
<b>RADIOACTIVITY</b>											
Gross Alpha	pCi/L	15/-	3.1 ± 1.9	2.6	J (R)	0.96 ± 0.80	1.2	UJ (C,H)	4.6 ± 1.3	1	J (H,C)
Gross Beta	pCi/L	50/-	3.9 ± 0.93	0.94	J (DNQ)	0.73 ± 0.67	1	UJ (H)	3.35 ± 0.91	1	J (H,DNQ)
Strontium-90	pCi/L	8.0/-	0.24 ± 0.41	0.69	U	0.36 ± 0.41	0.66	U	-0.2 ± 0.47	0.83	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	0.228 ± 0.314	0.66	U	0.42 ± 0.37	0.78	U	0.52 ± 0.30	0.61	U
Tritium	pCi/L	20000/-	-130 ± 170	310	U	10 ± 190	340	U	-80 ± 170	310	U
Uranium, Total	pCi/L	20/-	1.25 ± 0.13	0.21	J (H)	0.228 ± 0.027	0.42	U	0.319 ± 0.037	0.21	J (H,DNQ)
Potassium-40	pCi/L	-/-	-70 ± 460	270	U	-80 ± 510	270	U	0.1 ± 96	220	UJ (H)
Cesium 137	pCi/L	-/-	1.4 ± 7.2	13	U	0.3 ± 7.3	14	U	0.6 ± 7.2	14	UJ (H)

**OUTFALL 010 (Building 203)**

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January 1 through March 31, 2009

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	1/24/2009			2/6/2009			2/13/2009		
			RESULT	MDA	VALIDATION QUALIFIER	RESULT	MDA	VALIDATION QUALIFIER	RESULT	MDA	VALIDATION QUALIFIER
<b>RADIOACTIVITY</b>											
Gross Alpha	pCi/L	15/-	0.44 ± 0.89	1.6	UJ (H,C)	0.77 ± 0.96	1.6	UJ (C,H)	1.3 ± 1.2	1.7	UJ (H,C)
Gross Beta	pCi/L	50/-	4.36 ± 0.96	0.99	J (H)	4.8 ± 1.0	1.1	J (H)	4.2 ± 1.0	1.1	J (H)
Strontium-90	pCi/L	8.0/-	0.12 ± 0.38	0.64	U	0.52 ± 0.64	1	U	0.36 ± 0.48	0.79	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	0.15 ± 0.30	0.71	U	0.19 ± 0.32	0.76	U	0.00 ± 0.32	0.74	U
Tritium	pCi/L	20000/-	30 ± 170	290	U	-80 ± 180	330	U	30 ± 180	310	U
Uranium, Total	pCi/L	20/-	0.176 ± 0.021	0.21	UJ (H)	0.266 ± 0.029	0.21	J (DNQ)	1.21 ± 0.13	0.21	J (H)
Potassium-40	pCi/L	-/-	-90 ± 620	250	UJ (H)	-100 ± 1900	300	U	-80 ± 5200	300	UJ (H)
Cesium 137	pCi/L	-/-	-1.2 ± 7.4	14	UJ (H)	0 ± 7.5	14	U	2.8 ± 7.0	13	UJ (H)

**OUTFALL 011 (Perimeter Pond Weir)**

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ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	2/16/2009		
			RESULT	MDA	VALIDATION QUALIFIER
<b>RADIOACTIVITY</b>					
Gross Alpha	pCi/L	15/-	4.7 ± 1.4	1.1	J (C,H)
Gross Beta	pCi/L	50/-	5.5 ± 1.1	1.2	J (H)
Strontium-90	pCi/L	8.0/-	-0.11 ± 0.25	0.47	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	0.39 ± 0.34	0.74	U
Tritium	pCi/L	20000/-	-40 ± 170	310	U
Uranium, Total	pCi/L	20/-	0.358 ± 0.039	0.21	J (H,DNQ)
Potassium-40	pCi/L	-/-	-100 ± 3300	300	UJ (H)
Cesium 137	pCi/L	-/-	0 ± 9.4	18	UJ (H)

**OUTFALL 018 (R-2 Spillway)**

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ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	2/16/2009		
			RESULT	MDA	VALIDATION QUALIFIER
<b>RADIOACTIVITY</b>					
Gross Alpha	pCi/L	15/-	2.2 ± 1.9	3	UJ (H,C)
Gross Beta	pCi/L	50/-	3.4 ± 1.5	2.1	J (H,DNQ)
Strontium-90	pCi/L	8.0/-	0.05 ± 0.25	0.44	U
Total Combined Radium-226 & Radium 228	pCi/L	5.0/-	0.62 ± 0.39	0.81	U
Tritium	pCi/L	20000/-	740 ± 230	310	--
Uranium, Total	pCi/L	20/-	0.475 ± 0.055	0.21	J (H,DNQ)
Potassium-40	pCi/L	-/-	-90 ± 18000	300	UJ (H)
Cesium 137	pCi/L	-/-	-0.6 ± 7.8	15	UJ (H)