

APPENDIX D

THIRD QUARTER 2011 RADIOLOGICAL MONITORING DATA

**THIRD 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 |

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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) |
| 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 |
| ND | analyte value less than the LOD or MDL |
| NM | not measured or determined |
| NTU | nephelometric turbidity unit |
| pCi/L | picocuries per liter |

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| | |
|-----------------|---|
| 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 _c | 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 |
| # | Per ORDER NO. R4-2010-0090 page 23 Footnote 1. The effluent limitations for total suspended solids and settleable solids are not applicable for discharges during wet weather. During wet weather flow, a discharge event is greater than 0.1 inches of rainfall in a 24-hour period. No more than one sample per week need be obtained during extended periods of rainfall or the discharge of collected stormwater. A storm event must be preceded by at least 72 hours of dry weather. |
| (4.0)3.1/- | Represents (Dry Weather Limit) Wet Weather Limit / Monthly Average Limit. |

OUTFALL 002 (South Slope below R-2 Pond)

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

July 1 through September 30, 2011

| ANALYTE | UNITS | Benchmark Limit Daily Max/Monthly Avg | 07/20-21/2011 (Comp) | | |
|--|-------|--|----------------------|-------|-------------------------|
| | | | RESULT | MDA | VALIDATION QUALIFIER |
| RADIOACTIVITY | | | | | |
| Gross Alpha | pCi/L | 15/- | 0.285 ± 0.73 | 1.2 | UJ (C) |
| Gross Beta | pCi/L | 50/- | 4.29 ± 1.0 | 1.47 | -- |
| Strontium-90 | pCi/L | 8.0/- | 0.296 ± 0.42 | 0.844 | U |
| Total Combined Radium-226 & Radium 228 | pCi/L | 5.0/- | -0.13 ± 0.33 | 0.96 | U |
| Tritium | pCi/L | 20000/- | 61.8 ± 96 | 159 | U |
| Uranium, Total | pCi/L | 20/- | 0.356 ± 0.043 | 0.023 | J (DNQ) |
| Potassium-40 | pCi/L | -/- | ND < 72.1 | 72.1 | U |
| Cesium 137 | pCi/L | 200/- | ND < 2.25 | 2.25 | U |

OUTFALL 018

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

July 1 through September 30, 2011

| ANALYTE | UNITS | Permit Limit Daily Max/Monthly Avg | 07/19-20/2011 (Comp) | | |
|--|-------|---|----------------------|-------|-------------------------|
| | | | RESULT | MDA | VALIDATION QUALIFIER |
| RADIOACTIVITY | | | | | |
| Gross Alpha | pCi/L | 15/- | 0.276 ± 0.72 | 1.18 | UJ (C) |
| Gross Beta | pCi/L | 50/- | 5.2 ± 0.80 | 1.06 | -- |
| Strontium-90 | pCi/L | 8.0/- | 0.316 ± 0.44 | 0.873 | U |
| Total Combined Radium-226 & Radium 228 | pCi/L | 5.0/- | 0.06 ± 0.35 | 1.02 | U |
| Tritium | pCi/L | 20000/- | 12.1 ± 83 | 141 | U |
| Uranium, Total | pCi/L | 20/- | 0.025 ± 0.011 | 0.023 | J (DNQ) |
| Potassium-40 | pCi/L | -/- | ND < 66.2 | 66.2 | U |
| Cesium 137 | pCi/L | 200/- | ND < 2.06 | 2.06 | U |

OUTFALL 019 (Treatment System)

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

July 1 through September 30, 2011

| ANALYTE | UNITS | Permit Limit Daily Max/Monthly Avg | 08/10-11/2011 (Comp) | | | 09/07-08/2011 (Comp) | | |
|--|-------|---|----------------------|-------|-------------------------|----------------------|-------|-------------------------|
| | | | RESULT | MDA | VALIDATION QUALIFIER | RESULT | MDA | VALIDATION QUALIFIER |
| RADIOACTIVITY | | | | | | | | |
| Gross Alpha | pCi/L | 15/- | 0.472 ± 1.1 | 1.78 | UJ (C) | 0.717 ± 1.2 | 2.04 | UJ (C) |
| Gross Beta | pCi/L | 50/- | 6.82 ± 2.3 | 3.55 | -- | 7.87 ± 0.89 | 1.13 | -- |
| Strontium-90 | pCi/L | 8.0/- | -0.073 ± 0.37 | 0.904 | U | -0.292 ± 0.34 | 0.93 | U |
| Total Combined Radium-226 & Radium 228 | pCi/L | 5.0/- | 0.29 ± 0.38 | 1.01 | U | 0.57 ± 0.46 | 1.18 | U |
| Tritium | pCi/L | 20000/- | 13.7 ± 93 | 156 | U | -15.4 ± 91 | 155 | U |
| Uranium, Total | pCi/L | 20/- | 0.115 ± 0.018 | 0.028 | J (DNQ) | 0.04 ± 0.011 | 0.022 | J (DNQ) |
| Potassium-40 | pCi/L | -/- | ND < 22.4 | 22.4 | U | ND < 20.3 | 20.3 | U |
| Cesium 137 | pCi/L | 200/- | ND < 1.12 | 1.12 | U | ND < 1.48 | 1.48 | U |

See attached notes for abbreviations, definitions,
and other explanations for the data presented.