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November 17, 2005

Mr. James Sickles
Project Manager
U.S. Environmental Protection Agency Region 9
75 Hawthorne Street, SFD-8-2
San Francisco, California 94105

Subject: First Quarter 2005 Air Quality Monitoring Report Addendum, Yerington Mine Site

Dear Mr. Sickles:

The Atlantic Richfield Company (ARC) has prepared this addendum to the subject report, which provides additional analytical data to supplement the information originally presented in the *Air Quality Monitoring Data Summary Report for the Yerington Mine Site, First Quarter 2005* prepared by Brown and Caldwell (May 10, 2005). At the time of the first quarter 2005 (1Q 2005) monitoring conducted by ARC at the Yerington Mine Site final agreement on the analyte list had not yet been reached. Samples collected during 1Q 2005 were weighed for gravimetric analysis and then stored by the laboratory until further notice. Pursuant to correspondence between ARC and the U.S. Environmental Protection Agency (EPA) during second quarter 2005, ARC took the initiative and initiated chemical analyses of metals and radiochemicals on the stored samples on June 3, 2005.

Chemical analyses of metals and radiochemicals present on PM_{10} (particulate matter with a diameter of 10 microns or less) filters were conducted for Event 1 on January 28, 2005 through Event 11 on March 29, 2005. Chemical analyses of metals and radiochemicals present on TSP (total suspended particulates) filters were conducted for Event 1 on January 28, 2005 through Event 6 on February 27, 2005. The TSP high volume samplers were shut down on March 2, 2005 through the remainder of 1Q 2005, pending resolution of the analyte list. Note that the radiochemical results for TSP filters from Event 1 through Event 5 were inadvertently (??????) omitted by the laboratory at the time of this addendum. However, the results will be presented in the third quarter 2005 report.

The following sections describe the data verification activities conducted on the additional analytical data and provide a summary of the analytical results.

Air Quality Data Verification

The original, and additional, air quality data were verified according to the quality control (QC) criteria provided in the draft *Air Quality Monitoring Work Plan for the Yerington Mine Site* ("Work Plan") prepared by Brown and Caldwell on December 22, 2004 and conditionally approved by the EPA on January 19, 2005. The analytical results for the entire 1Q 2005 are provided electronically on compact disc in Microsoft Excel format as revised Appendix F. The laboratory

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reports for the entire 1Q 2005 are provided electronically on compact disc in Adobe Acrobat portable document format (PDF) as revised Appendix G. A new Appendix L is also provided summarizing the analytical results for the entire 1Q 2005 in tabular format. The items listed in the following table were also verified during the analytical data verification process.

Data Verification Requirements	
Review Item	Checked During Data Verification
Case Narrative	X
Chain-of-Custody Documentation	X
Summary of Results	X
Holding Times	X
Method Blank Analysis Results	X
Field/Trip Blank Analysis Results	X
Surrogate Standard Percent Recoveries (%R)	X
Laboratory Control Samples (LCS) - %R	X
LCS/LCS Duplicate (LCSD) - Relative Percent Difference (RPD)	X
Field Duplicate (FD) - RPD	X

A detailed QC report is provided for the entire 1Q 2005 as revised Appendix H. In summary, the verification indicates that the analytical data generated during 1Q 2005 are usable with no data flagged as rejected. Notable findings from the QC report are provided below.

§ *Data Completeness:* The Work Plan specified a data completeness goal of quarterly valid data retrieval of 80 percent for air quality data. Eleven sampling events were conducted during 1Q 2005 as summarized in the original Table 5. There were four exceptions to the sampling and analysis plan during 1Q 2005. First, during Event 2 the AM-1-PM10 mass flow controller was erratic and only 12 of 13 samples were completed. Although a sample volume could not be determined for the AM-1-PM10, this filter was inadvertently analyzed anyway. The results are reported in the new Appendix L, but concentrations could not be determined. Second, Event 3 on February 9, 2005 was aborted to complete troubleshooting and recalibration of the AM-1-PM10 high volume sampler. Event 3 was completed three days later on the makeup day of February 12, 2005. Third, TSP samples were not collected for Events 7 through 11 as indicated previously. Fourth, mercury analysis was not performed on held samples due to gross exceedance of the sample hold time. A total of 101 primary samples were collected out of 102 planned. The actual completeness for air quality data was calculated to be 99 percent, which exceeds the 80 percent program goal.

§ *Sample Hold Time*: Most metals results were qualified due to analysis past the method holding times as described in revised Appendix H. This is due to the fact that the analysis of metals were held pending resolution of the analyte list. When the filters were analyzed for metals, the 6-month holding time was already exceeded. In most cases, the holding time was only exceeded by a relatively short time.

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§ *Field Duplicates:* The Work Plan specified a collection frequency goal of 10 percent for field duplicates. Field duplicates were collected for every event at location AM-1 with a co-located high volume air sampler (AM-1-PM10-DUP). The total number of primary samples targeted during 1Q 2005 was 102 with a total of 11 field duplicate samples collected. The actual frequency of field duplicate collection was 10.8 percent, which exceeds the program goal of 10 percent. Field duplicate precision for metals and radiochemicals are provided in revised Table 6. Four primary/field duplicate sample pairs had a relative percent difference (RPD) higher than 60 percent for PM_{10} as described in revised Appendix F.

§ *Field Blanks and Trip Blanks:* The Work Plan specified a collection frequency goal of 5 percent for field blanks and 5 percent for trip blanks. Five field blanks and three trip blanks were collected during 1Q 2005 as shown in revised Tables 7a and 7b. The total number of primary samples targeted during 1Q 2005 was 102 resulting in a calculated frequency of 4.8 percent for field blanks and 2.9 percent for trip blanks. Additional trip blanks were scheduled for the following quarter to achieve the 5 percent frequency goal. Eighty-three results were qualified due to the presence of copper, cadmium, iron, lead, zinc, radium-226, and radium-228 as described in revised Appendix H. Field procedures for sample handling were reviewed, and no sample collection issues were identified.

§ *Method Blanks:* Forty-seven results were qualified due to the presence of mercury, zinc, radium-226, and radium-228 in associated method blanks as described in revised Appendix F.

The Work Plan specified that 10 percent of the air quality data would be validated by a third party. The data verification requirement was mainly concerned with metals and radiological analyses since gravimetric analytical methods specify minimal QC. Third party data validation was performed on Event 3 metals data. Data qualifiers from the validation process have been included in the database and this addendum. Third party data validation is currently being conducted on Event 3 radiochemical data and the results will be presented in the third quarter 2005 report.

Summary of Results

This section summarizes the results of air quality analyses for metals and radiochemicals analyzed during 1Q 2005. Note that background concentrations of particulate matter, metals and radiochemicals have yet to be determined. Interpretation of the analytical results presented in this report will be provided at a later date. Note that the quantity of chemical analyses performed on the filters affects the detection limits achievable for the project since each analysis requires a portion of the total filter be sectioned for digestion. In general, the less filter area available for digestion corresponds to less of the chemical available to measure, which results in higher detection limits.

<u>Metals Results</u>

A total of 21 metals were analyzed from PM_{10} and TSP filters by the methods indicated below.

§ *ICP:* five metals (aluminum, calcium, iron, magnesium, and sodium) were analyzed by inductively coupled plasma (ICP).

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- *ICP/MS:* fifteen metals (arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc) were analyzed by inductively coupled plasma/mass spectrometry (ICP/MS).
- *CVAA:* mercury was analyzed by cold vapor atomic adsorption (CVAA).

Analytical results for metals detected on PM_{10} and TSP filters are summarized in the new Appendix L. The masses detected on the PM_{10} filters were divided by the sample volumes to calculate metals concentrations which are summarized in revised Table 9. The masses detected on the TSP filters were divided by the sample volumes to calculate metals concentrations which are summarized in revised Table 10.

A brief discussion of each metal is provided below in alphabetical order. The quantity of detections on PM_{10} and TSP filters are provided for each metal. The average concentration is provided for metal results with more than one detection. Non-detected results were included in the average concentration calculation by assuming the metal was present at the detection limit. This assumption may result in some averages having a high bias compared to the actual average concentration.

- Aluminum: Aluminum was detected on 30 of 77 PM_{10} filters analyzed during 1Q 2005. The average aluminum concentration measured on PM_{10} filters was 0.058 µg/m^3. Aluminum was detected on 28 of 36 TSP filters analyzed during 1Q 2005. The average aluminum concentration measured on TSP filters was 0.036 µg/m^3.
- Arsenic: Arsenic was detected on one of 77 PM_{10} filters analyzed during 1Q 2005 at a concentration of 1.2 nanograms per cubic meter (ng/m^3). Arsenic was not detected on any TSP filters analyzed during 1Q 2005 at detection limits down to 0.91 ng/m^3.
- Barium: Barium was detected on three of 77 PM_{10} filters analyzed during 1Q 2005. The average barium concentration measured on PM_{10} filters was 20 ng/m^3. Barium was not detected on any TSP filters analyzed during 1Q 2005 at detection limits down to 17 ng/m^3.
- Beryllium: Beryllium was detected on nine of 77 PM_{10} filters analyzed during 1Q 2005. The average beryllium concentration measured on PM_{10} filters was 0.006 ng/m^3. Beryllium was detected on two of 36 TSP filters analyzed during 1Q 2005. The average beryllium concentration measured on TSP filters was 0.004 ng/m^3.
- Cadmium: Cadmium was detected on 34 of 77 PM_{10} filters analyzed during 1Q 2005. The average cadmium concentration measured on PM_{10} filters was 0.084 ng/m^3. Cadmium was detected on 28 of 36 TSP filters analyzed during 1Q 2005. The average cadmium concentration measured on TSP filters was 0.044 ng/m^3.
- Calcium: Calcium was detected on eight of 77 PM_{10} filters analyzed during 1Q 2005. The average calcium concentration measured on PM_{10} filters was 0.53 µg/m^3. Calcium was detected on four of 36 TSP filters analyzed during 1Q 2005. The average calcium concentration measured on TSP filters was 0.46 µg/m^3.
- Chromium, Total: Chromium was detected on one of 77 PM_{10} filters analyzed during 1Q 2005 at a concentration of 18 ng/m^3. Chromium was not detected on any TSP filters analyzed during 1Q 2005 at detection limits down to 4.9 ng/m^3.

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- Cobalt: Cobalt was detected on one of 77 PM_{10} filters analyzed during 1Q 2005 at a concentration of 2.2 ng/m^3. Cobalt was not detected on any TSP filters analyzed during 1Q 2005 at detection limits down to 1.8 ng/m^3.
- Copper: Copper was detected on 74 of 77 PM_{10} filters analyzed during 1Q 2005. The average copper concentration measured on PM_{10} filters was 8.0 ng/m^3. Copper was detected on all 36 TSP filters analyzed during 1Q 2005. The average copper concentration measured on TSP filters was 36 ng/m^3.
- Iron: Iron was detected on 51 of 77 PM_{10} filters analyzed during 1Q 2005. The average iron concentration measured on PM_{10} filters was 0.10 µg/m^3. Iron was detected on 28 of 36 TSP filters analyzed during 1Q 2005. The average iron concentration measured on TSP filters was 0.058 µg/m^3.
- Lead: Lead was detected on 59 of 77 PM_{10} filters analyzed during 1Q 2005. The average lead concentration measured on PM_{10} filters was 1.2 ng/m^3. Lead was detected on 33 of 36 TSP filters analyzed during 1Q 2005. The average lead concentration measured on TSP filters was 1.4 ng/m^3.
- Magnesium: Magnesium was detected on 23 of 77 PM_{10} filters analyzed during 1Q 2005. The average magnesium concentration measured on PM_{10} filters was 0.075 µg/m^3. Magnesium was detected on 19 of 36 TSP filters analyzed during 1Q 2005. The average magnesium concentration measured on TSP filters was 0.058 µg/m^3.
- Manganese: Manganese was detected on 50 of 77 PM_{10} filters analyzed during 1Q 2005. The average manganese concentration measured on PM_{10} filters was 2.4 ng/m^3. Manganese was detected on 33 of 36 TSP filters analyzed during 1Q 2005. The average manganese concentration measured on TSP filters was 1.8 ng/m^3.
- Mercury: Mercury was detected on all 14 PM_{10} filters analyzed during 1Q 2005. The average mercury concentration measured on PM_{10} filters was 0.019 ng/m^3. Mercury was not detected on any TSP filters analyzed during 1Q 2005 at detection limits down to 0.001 ng/m^3. Note that mercury was not analyzed on filters where twice the sample hold time had elapsed.
- Molybdenum: Molybdenum was not detected on any PM_{10} or TSP filters analyzed during 1Q 2005 at detection limits down to 0.52 ng/m^3.
- Nickel: Nickel was detected on one of 77 PM_{10} filters during 1Q 2005 at a concentration of 3.3 ng/m^3. Nickel was detected on one of 36 TSP filters during 1Q 2005 at a concentration of 2.8 ng/m^3.
- Selenium: Selenium was detected on one of 77 PM_{10} filters analyzed during 1Q 2005 at a concentration of 1.0 ng/m^3. Selenium was detected on one of 36 TSP filters analyzed during 1Q 2005 at a concentration of 1.1 ng/m^3.
- Silver: Silver was detected on one of 77 PM_{10} filters analyzed during 1Q 2005 at a concentration of 0.009 ng/m^3. Silver was detected on 24 of 36 TSP filters analyzed during 1Q 2005. The average silver concentration measured on TSP filters was 0.011 ng/m^3.
- Sodium: Sodium was not detected on any PM_{10} filters analyzed during 1Q 2005 at detection limits down to 1.0 µg/m^3. Sodium was detected on two of 36 TSP filters analyzed during 1Q 2005. The average sodium concentration measured on TSP filters was 1.1 µg/m^3.

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- Vanadium: Vanadium was detected on one of 77 PM_{10} filters analyzed during 1Q 2005 at a concentration of 24 ng/m^3. Vanadium was not detected on any TSP filters analyzed during 1Q 2005 at detection limits down to 1.4 ng/m^3.
- Zinc: Zinc was detected on 26 of 77 PM_{10} filters analyzed during 1Q 2005. The average zinc concentration measured on PM_{10} filters was 5.5 ng/m^3. Zinc was detected on 23 of 36 TSP filters analyzed during 1Q 2005. The average zinc concentration measured on TSP filters was 6.3 ng/m^3.

Radiochemical Results

A total of 10 radiochemicals were analyzed from PM_{10} and TSP filters using the following methods for PM_{10} and TSP samples described below.

- *Gas Proportional Counters:* gross alpha and gross beta were analyzed by EPA Method 900.0 and radium-228 was analyzed by EPA Method 904.0.
- *Alpha Scintillation Counter:* radium-226 was analyzed by EPA Method 903.1.
- *Alpha Spectrometry:* three species of thorium (228, 230, and 232) were analyzed by Standard Method 7500-U-C and ASTM Method D-5174 and three species of uranium (234, 235, and 238) were analyzed by EPA Method 908.0.

Analytical results for the radiochemicals detected on PM_{10} and TSP filters are summarized in the new Appendix L. The activity values detected on the PM_{10} filters were divided by the sample volumes to calculate radiochemical concentrations, which are summarized in revised Table 11. The activity values detected on the TSP filters were divided by the sample volumes to calculate radiochemical concentrations, which are summarized in revised Table 12. A brief discussion of each radiochemical is provided below. Analytical results are presented in femtoCuries (1,000 femtoCuries = 1 picoCurie) for ease of presentation. The quantity of detections on PM_{10} and TSP filters are provided for each radiochemical. The average concentration is provided for radiochemical results with more than one detection. Non-detected results were included in the average concentration calculation by assuming that the radiochemical was present at the detection limit. This assumption may result in some averages having a high bias compared to the actual average concentration.

- Gross Alpha: Gross alpha was detected on 52 of 77 PM_{10} filters analyzed during 1Q 2005. The average gross alpha concentration measured on PM_{10} filters was 2.3 femtoCuries per cubic meter (fCi/m^3). Gross alpha was detected on all 6 TSP filters analyzed during 1Q 2005. The average gross alpha concentration measured on TSP filters was 3.2 fCi/m^3.
- Gross Beta: Gross beta was detected on 66 of 77 PM_{10} filters. The average gross beta concentration measured on PM_{10} filters was 13 fCi/m^3. Gross beta was detected on all 6 TSP filters analyzed during 1Q 2005. The average gross beta concentration measured on TSP filters was 17 fCi/m^3.
- Radium-226: Radium-226 was detected on 11 of 77 PM_{10} filters analyzed during 1Q 2005. The average radium-226 concentration measured on PM_{10} filters was 0.35 fCi/m^3. Radium-226 was not detected on any TSP filters analyzed during 1Q 2005 at detection limits down to 0.24 ± 0.11 fCi/m^3.
- Radium-228: Radium-228 was detected on 18 of 77 PM_{10} filters analyzed during 1Q 2005. The average radium-228 concentration measured on PM_{10} filters was 1.1 fCi/m^3.

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Radium-228 was detected on one of 6 TSP filters analyzed during 1Q 2005 at a concentration of 1.3 ± 0.62 fCi/m^3.

§ Thorium-228: Thorium-228 was not detected on any PM_{10} or TSP filters analyzed during 1Q 2005 at detection limits down to 0.078 ± 0.072 fCi/m^3.

§ Thorium-230: Thorium-230 was detected on four of 77 PM_{10} filters analyzed during 1Q 2005. The average thorium-230 concentration measured on PM_{10} filters was 0.15 fCi/m^3. Thorium-230 was not detected on any TSP filters analyzed during 1Q 2005 at detection limits down to 0.052 ± 0.047 fCi/m^3.

§ Thorium-232: Thorium-232 was not detected on any PM_{10} or TSP filters analyzed during 1Q 2005 at detection limits down to 0.042 ± 0.044 fCi/m^3.

§ Uranium-234: Uranium-234 was detected on one of 77 PM_{10} filters analyzed during 1Q 2005 at a concentration of 2.6 ± 0.84 fCi/m^3. Uranium-234 was not detected on any TSP filters analyzed during 1Q 2005 at detection limits down to 0.14 ± 0.12 fCi/m^3.

§ Uranium-235: Uranium-235 was not detected on any PM_{10} or TSP filters analyzed during 1Q 2005 at detection limits down to 0.12 ± 0.089 fCi/m^3.

§ Uranium-238: Uranium-238 was detected on one of 77 PM_{10} filters analyzed during 1Q 2005 at a concentration of 2.1 ± 0.79 fCi/m^3. Uranium-238 was not detected on any TSP filters analyzed during 1Q 2005 at detection limits down to 0.28 ± 0.11 fCi/m^3.

Attachments

(Original)	Table 5.	Analytical Data Completeness
(Revised)	Table 6.	Field Duplicate Precision
(Revised)	Table 7.	Trip and Field Blank Analytical Results Summary
(Revised)	Table 9.	Summary of Metals and PM_{10} Analyzed on PM_{10} Filters
(Revised)	Table 10.	Summary of Metals and TSP Analyzed on TSP Filters
(Revised)	Table 11.	Summary of Radiochemicals Analyzed on PM_{10} Filters
(Revised)	Table 12.	Summary of Radiochemicals Analyzed on TSP Filters
(Revised)	Appendix F.	Electronic Analytical Laboratory Results (compact disc)
(Revised)	Appendix G.	Hardcopy Analytical Laboratory Results (compact disc)
(Revised)	Appendix H.	Analytical Data Quality Control
(New)	Appendix L.	Analytical Data Summary

Please contact me at 661-287-3855 to discuss these analytical results.

Sincerely,

Dave McCarthy
Environmental Business Manager

cc: Chris Winsor/Atlantic Richfield
Todd Normane/Legal
Art Gravenstein/NDEP
Pat Plumb/BLM

Table 10. Summary of Metals and TSP Analyzed on TSP Filters, 1Q 2005

Event	Date	Units	AM-1-TSP	AM-2-TSP	AM-3-TSP	AM-4-TSP	AM-5-TSP	AM-6-TSP
Parameter:	**ALUMINUM**							
01	01/28/05	UG/M3	0.023	0.029	0.053	0.052	0.026	0.031
02	02/03/05	UG/M3	0.092	0.061	0.04	0.058	0.03	0.035
03	02/12/05	UG/M3	0.027	0.023	0.034	0.054	0.03	0.031
04	02/15/05	UG/M3	0.02	<0.021	0.026	0.032	<0.021	0.036
05	02/21/05	UG/M3	<0.02	<0.021	<0.022	<0.021	<0.021	<0.021
06	02/27/05	UG/M3	0.04	0.037	0.042	0.093	0.032	0.035
Parameter:	**ARSENIC**							
01	01/28/05	NG/M3	<0.913	<0.936	<0.991	<0.947	<0.987	<0.983
02	02/03/05	NG/M3	<0.906	<0.938	<0.984	<0.943	<0.988	<0.97
03	02/12/05	NG/M3	<0.927	<1.011	<1.019	<0.974	<0.998	<0.996
04	02/15/05	NG/M3	<0.907	<0.979	<1.008	<0.966	<0.996	<0.982
05	02/21/05	NG/M3	<0.933	<0.995	<1.007	<0.97	<0.978	<0.992
06	02/27/05	NG/M3	<0.919	<0.983	<1.006	<0.969	<0.978	<0.997
Parameter:	**BARIUM**							
01	01/28/05	NG/M3	<16.723	<17.151	<18.144	<17.339	<18.069	<18.003
02	02/03/05	NG/M3	<16.587	<17.177	<18.031	<17.27	<18.097	<17.773
03	02/12/05	NG/M3	<16.984	<18.511	<18.67	<17.837	<18.287	<18.239
04	02/15/05	NG/M3	<16.619	<17.929	<18.462	<17.701	<18.239	<17.994
05	02/21/05	NG/M3	<17.092	<18.22	<18.442	<17.764	<17.92	<18.163
06	02/27/05	NG/M3	<16.836	<18.003	<18.432	<17.755	<17.91	<18.258
Parameter:	**BERYLLIUM**							
01	01/28/05	NG/M3	<0.004	0.004	<0.004	<0.004	0.007	<0.004
02	02/03/05	NG/M3	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
03	02/12/05	NG/M3	<0.004	<0.004	<0.005	<0.004	<0.004	<0.004
04	02/15/05	NG/M3	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
05	02/21/05	NG/M3	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
06	02/27/05	NG/M3	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Parameter:	**CADMIUM**							
01	01/28/05	NG/M3	0.039	0.035	0.063	0.234	0.088	0.078
02	02/03/05	NG/M3	0.029	0.033	0.042	0.055	0.049	0.039
03	02/12/05	NG/M3	0.029	0.035	0.037	0.037	0.037	0.039
04	02/15/05	NG/M3	0.036	0.046	0.039	0.041	0.045	0.039
05	02/21/05	NG/M3	<0.027	0.029	<0.029	<0.028	0.037	0.033
06	02/27/05	NG/M3	<0.026	<0.028	<0.029	0.034	<0.028	<0.028

Event	Date	Units	AM-1-TSP	AM-2-TSP	AM-3-TSP	AM-4-TSP	AM-5-TSP	AM-6-TSP
Parameter:	**CALCIUM**							
01	01/28/05	UG/M3	<0.432	<0.443	<0.468	0.518	0.481	0.477
02	02/03/05	UG/M3	<0.428	<0.443	<0.465	0.479	<0.467	<0.459
03	02/12/05	UG/M3	<0.438	<0.478	<0.482	<0.46	<0.472	<0.471
04	02/15/05	UG/M3	<0.429	<0.463	<0.476	<0.457	<0.471	<0.464
05	02/21/05	UG/M3	<0.441	<0.47	<0.476	<0.458	<0.462	<0.469
06	02/27/05	UG/M3	<0.434	<0.465	<0.476	<0.458	<0.462	<0.471
Parameter:	**CHROMIUM, TOTAL**							
01	01/28/05	NG/M3	<4.95	<5.076	<5.37	<5.132	<5.348	<5.329
02	02/03/05	NG/M3	<4.909	<5.084	<5.337	<5.112	<5.356	<5.26
03	02/12/05	NG/M3	<5.027	<5.479	<5.526	<5.279	<5.413	<5.398
04	02/15/05	NG/M3	<4.919	<5.307	<5.464	<5.239	<5.398	<5.326
05	02/21/05	NG/M3	<5.059	<5.393	<5.458	<5.258	<5.304	<5.376
06	02/27/05	NG/M3	<4.983	<5.329	<5.456	<5.255	<5.301	<5.404
Parameter:	**COBALT**							
01	01/28/05	NG/M3	<1.778	<1.824	<1.929	<1.844	<1.921	<1.914
02	02/03/05	NG/M3	<1.764	<1.826	<1.917	<1.836	<1.924	<1.89
03	02/12/05	NG/M3	<1.806	<1.968	<1.985	<1.896	<1.944	<1.939
04	02/15/05	NG/M3	<1.767	<1.906	<1.963	<1.882	<1.939	<1.913
05	02/21/05	NG/M3	<1.817	<1.937	<1.961	<1.889	<1.905	<1.931
06	02/27/05	NG/M3	<1.79	<1.914	<1.96	<1.888	<1.904	<1.941
Parameter:	**COPPER**							
01	01/28/05	NG/M3	36.713	28.388	52.659	39.811	21.963	29.074
02	02/03/05	NG/M3	22.259	29.961	40.104	43.424	27.301	33.197
03	02/12/05	NG/M3	30.893	33.351	75.644	41.568	36.784	35.901
04	02/15/05	NG/M3	24.26	36.837	64.191	32.655	21.122	45.812
05	02/21/05	NG/M3	11.788	27.12	50.874	21.031	27.034	30.689
06	02/27/05	NG/M3	31.205	31.712	64.089	48.622	21.822	35.572
Parameter:	**IRON**							
01	01/28/05	UG/M3	<0.024	<0.027	0.059	0.066	<0.029	<0.033
02	02/03/05	UG/M3	0.034	0.04	0.061	0.075	0.037	0.049
03	02/12/05	UG/M3	0.054	0.055	0.074	0.103	0.078	0.067
04	02/15/05	UG/M3	0.045	0.05	0.064	0.068	0.051	0.067
05	02/21/05	UG/M3	<0.028	<0.026	0.112	<0.042	0.046	<0.038
06	02/27/05	UG/M3	0.073	0.07	0.081	0.138	0.062	0.068

Event	Date	Units	AM-1-TSP	AM-2-TSP	AM-3-TSP	AM-4-TSP	AM-5-TSP	AM-6-TSP
Parameter:	**LEAD**							
01	01/28/05	NG/M3	2.21	2.218	4.536	5.331	4.413	3.932
02	02/03/05	NG/M3	1.239	1.481	1.658	1.241	1.404	1.277
03	02/12/05	NG/M3	0.634	0.585	0.805	0.718	0.946	0.839
04	02/15/05	NG/M3	0.573	0.618	0.637	0.966	0.577	1.086
05	02/21/05	NG/M3	0.172	0.241	2.173	0.26	0.257	0.339
06	02/27/05	NG/M3	<0.871	<0.828	1.218	1.48	1.081	<0.997
Parameter:	**MAGNESIUM**							
01	01/28/05	UG/M3	0.049	0.075	0.063	0.081	0.063	0.067
02	02/03/05	UG/M3	0.073	0.062	0.066	0.084	0.063	0.063
03	02/12/05	UG/M3	<0.047	<0.052	0.057	0.069	<0.051	<0.051
04	02/15/05	UG/M3	<0.046	<0.05	<0.052	0.05	<0.051	<0.05
05	02/21/05	UG/M3	<0.048	<0.051	<0.052	<0.05	<0.05	<0.051
06	02/27/05	UG/M3	0.056	<0.05	<0.051	0.089	0.054	0.055
Parameter:	**MANGANESE**							
01	01/28/05	NG/M3	1.009	<0.936	1.616	2.541	1.558	1.138
02	02/03/05	NG/M3	1.811	1.826	2.383	2.283	1.612	1.941
03	02/12/05	NG/M3	1.855	1.755	2.253	2.768	1.997	2.096
04	02/15/05	NG/M3	1.48	1.597	1.804	1.984	1.572	1.861
05	02/21/05	NG/M3	<0.933	<0.995	1.272	1.072	2.163	0.992
06	02/27/05	NG/M3	2.08	2.38	2.278	3.776	1.956	2.204
Parameter:	**MERCURY**							
01	01/28/05	NG/M3	<0.007	<0.014	<0.003	<0.012	<0.013	<0.011
02	02/03/05	NG/M3	<0.019	<0.012	<0.008	<0.009	<0.01	<0.001
03	02/12/05	NG/M3	<0.01	<0.016	<0.022	<0.016	<0.018	<0.028
04	02/15/05	NG/M3	<0.011	<0.013	<0.023	<0.01	<0.012	<0.015
05	02/21/05	NG/M3	<0.011	<0.028	<0.025	<0.012	<0.033	<0.021
Parameter:	**MOLYBDENUM**							
01	01/28/05	NG/M3	<0.529	<0.542	<0.574	<0.548	<0.571	<0.569
02	02/03/05	NG/M3	<0.524	<0.543	<0.57	<0.546	<0.572	<0.562
03	02/12/05	NG/M3	<0.537	<0.585	<0.59	<0.564	<0.578	<0.577
04	02/15/05	NG/M3	<0.525	<0.567	<0.584	<0.56	<0.577	<0.569
05	02/21/05	NG/M3	<0.54	<0.576	<0.583	<0.562	<0.566	<0.574
06	02/27/05	NG/M3	<0.532	<0.569	<0.583	<0.561	<0.566	<0.577
Parameter:	**NICKEL**							
01	01/28/05	NG/M3	<1.682	<1.725	<1.825	<1.744	<1.817	<1.811
02	02/03/05	NG/M3	<1.668	<1.728	<1.813	<1.737	<1.82	<1.788
03	02/12/05	NG/M3	<1.708	<1.862	<1.878	<1.794	<1.839	<1.834
04	02/15/05	NG/M3	<1.671	<1.803	<1.857	<1.78	<1.834	2.844
05	02/21/05	NG/M3	<1.719	<1.832	<1.855	<1.787	<1.802	<1.827
06	02/27/05	NG/M3	<1.693	<1.811	<1.854	<1.786	<1.801	<1.836

Event	Date	Units	AM-1-TSP	AM-2-TSP	AM-3-TSP	AM-4-TSP	AM-5-TSP	AM-6-TSP
Parameter:	**SELENIUM**							
01	01/28/05	NG/M3	<0.817	<0.838	<0.886	<0.847	<0.883	<0.879
02	02/03/05	NG/M3	<0.81	<0.839	<0.881	<0.844	<0.884	<0.868
03	02/12/05	NG/M3	<0.83	<0.904	<0.912	<0.871	<0.893	<0.891
04	02/15/05	NG/M3	<0.812	<0.876	<0.902	<0.865	<0.891	<0.879
05	02/21/05	NG/M3	<0.835	<0.89	<0.901	<0.868	<0.875	<0.887
06	02/27/05	NG/M3	<0.822	<0.879	<0.9	<0.867	1.081	<0.892
Parameter:	**SILVER**							
01	01/28/05	NG/M3	0.014	0.015	0.018	0.012	0.01	0.009
02	02/03/05	NG/M3	0.012	0.015	0.009	0.01	0.014	0.01
03	02/12/05	NG/M3	<0.007	<0.01	0.021	<0.01	<0.009	<0.012
04	02/15/05	NG/M3	0.007	0.012	0.02	0.008	<0.007	0.012
05	02/21/05	NG/M3	<0.007	0.007	0.011	<0.007	<0.007	<0.007
06	02/27/05	NG/M3	0.008	<0.007	0.017	0.011	<0.007	0.007
Parameter:	**SODIUM**							
01	01/28/05	UG/M3	<0.971	<0.996	<1.053	<1.006	<1.049	<1.045
02	02/03/05	UG/M3	1.778	1.347	<1.047	<1.002	<1.05	<1.032
03	02/12/05	UG/M3	<0.986	<1.074	<1.084	<1.035	<1.061	<1.059
04	02/15/05	UG/M3	<0.965	<1.041	<1.072	<1.027	<1.059	<1.044
05	02/21/05	UG/M3	<0.992	<1.058	<1.07	<1.031	<1.04	<1.054
06	02/27/05	UG/M3	<0.977	<1.045	<1.07	<1.031	<1.04	<1.06
Parameter:	**VANADIUM**							
01	01/28/05	NG/M3	<1.394	<1.429	<1.512	<1.445	<1.506	<1.5
02	02/03/05	NG/M3	<1.382	<1.431	<1.503	<1.439	<1.508	<1.481
03	02/12/05	NG/M3	<1.415	<1.543	<1.556	<1.486	<1.524	<1.52
04	02/15/05	NG/M3	<1.385	<1.494	<1.538	<1.475	<1.52	<1.499
05	02/21/05	NG/M3	<1.424	<1.518	<1.537	<1.48	<1.493	<1.514
06	02/27/05	NG/M3	<1.403	<1.5	<1.536	<1.48	<1.493	<1.522
Parameter:	**ZINC**							
01	01/28/05	NG/M3	8.65	6.259	6.726	20.429	11.89	9.105
02	02/03/05	NG/M3	8.961	6.17	5.959	7.643	6.084	7.406
03	02/12/05	NG/M3	<4.197	<3.989	<5.848	<6.561	<7.199	<5.66
04	02/15/05	NG/M3	<4.728	<4.688	<5.995	<5.951	<3.931	<7.601
05	02/21/05	NG/M3	3.536	7.539	4.769	3.369	3.502	3.236
06	02/27/05	NG/M3	4.064	<3.207	3.867	8.469	4.581	4.565

Notes

NG/M3 = nanograms per cubic meter
UG/M3 = micrograms per cubic meter
TSP = total suspended particulates

Table 11. Summary of Radiochemicals Analyzed on PM-10 Filters, 1Q 2005

Event	Date	Units	AM-1-PM10	AM-1-PM10-Dup	AM-2-PM10	AM-3-PM10	AM-4-PM10	AM-5-PM10	AM-6-PM10
Parameter:	**ALPHA, GROSS**								
01	01/28/05	fCi/M3	1.207±0.724	1.617±0.727	1.381±0.693	<1.408±1.061	1.838±0.766	1.814±0.749	2.066±0.873
02	02/03/05	fCi/M3		3.026±1.056	3.988±1.313	2.156±0.917	3.565±1.168	3.546±1.167	4.401±1.467
03	02/12/05	fCi/M3	3.655±1.19	4.195±1.298	4.219±1.271	1.744±0.729	4.235±1.311	2.392±0.944	3.352±1.131
04	02/15/05	fCi/M3	<0.559±0.24	1.617±0.778	0.848±0.521	2.208±0.899	1.346±0.657	2.692±0.952	1.969±0.801
05	02/21/05	fCi/M3	0.925±0.561	<0.866±0.466	0.751±0.476	<0.853±0.496	<0.881±0.494	<0.728±0.461	0.586±0.419
06	02/27/05	fCi/M3	2.712±0.981	1.879±0.82	3.522±1.111	0.97±0.508	3.161±1.065	2.227±0.891	3.818±1.235
07	03/05/05	fCi/M3	3.134±1.875	3.032±1.665	<1.999±1.333	<2.341±1.404	2.817±1.805	2.216±1.366	2.538±1.63
08	03/11/05	fCi/M3	<1.909±1.376	2.772±1.859	2.577±1.637	3.453±1.735	2.885±1.627	7.849±2.93	3.155±1.682
09	03/17/05	fCi/M3	<2.332±1.347	2.48±1.676	<2.285±1.523	2.765±1.784	1.949±1.296	<2.124±1.235	<2.262±1.435
10	03/23/05	fCi/M3	<2.014±1.048	<2.089±1.084	<2.367±0.888	<2.048±1.165	1.844±1.237	<2.303±0.921	<2.693±1.016
11	03/29/05	fCi/M3	<2.358±1.19	<1.974±1.201	<1.865±0.786	<1.99±1.006	1.158±0.862	<2.082±1.142	<1.673±1.024
Parameter:	**BETA, GROSS**								
01	01/28/05	fCi/M3	8.57±2.112	6.603±1.847	8.102±2.186	7.821±1.955	7.385±1.915	8.989±2.087	8.382±2.095
02	02/03/05	fCi/M3		15.073±2.991	19.037±3.665	19.667±3.784	19.188±3.615	19.622±4.002	18.31±4.108
03	02/12/05	fCi/M3	35.714±7.738	34.808±6.49	34.727±5.823	36.96±6.73	37.978±6.557	39.822±6.296	40.871±6.783
04	02/15/05	fCi/M3	18.307±3.601	17.605±3.832	10.521±2.63	9.944±2.303	11.549±2.518	10.999±2.38	10.761±2.519
05	02/21/05	fCi/M3	3.178±1.401	5.875±1.768	2.474±1.216	4.041±1.505	2.853±1.29	3.536±1.31	3.711±1.395
06	02/27/05	fCi/M3	16.907±3.289	13.232±2.693	12.85±2.961	16.174±3.067	13.453±2.691	20.65±4.14	17.125±3.313
07	03/05/05	fCi/M3	16.394±3.267	13.615±2.973	14.126±2.878	12.802±2.807	14.059±3.337	18.382±3.519	16.88±3.376
08	03/11/05	fCi/M3	14.482±3.411	18.071±3.486	16.948±3.168	16.9±3.19	17.408±3.308	19.571±3.768	15.081±3.248
09	03/17/05	fCi/M3	13.533±2.871	12.197±2.659	11.607±2.626	12.932±3.122	13.013±3.024	13.683±2.778	13.375±2.755
10	03/23/05	fCi/M3	<2.386±1.281	<2.683±1.427	<2.173±1.097	<2.131±0.999	<2.269±1.183	<2.139±1.024	<2.298±1.129
11	03/29/05	fCi/M3	3.685±1.361	<2.3±1.259	2.687±1.257	<2.141±1.23	<2.338±1.293	<2.17±1.194	4.997±1.594
Parameter:	**RADIUM-226**								
01	01/28/05	fCi/M3	<0.332±0.223	<0.439±0.263	<0.282±0.187	<0.259±0.151	<0.384±0.219	<0.245±0.15	<0.263±0.163
02	02/03/05	fCi/M3		<0.497±0.276	<0.515±0.29	<0.298±0.161	<0.249±0.133	<0.454±0.25	<0.273±0.164
03	02/12/05	fCi/M3	0.401±0.208	<0.333±0.212	<0.31±0.185	<0.346±0.191	<0.351±0.169	<0.336±0.194	<0.287±0.164
04	02/15/05	fCi/M3	<0.286±0.18	<0.247±0.174	0.287±0.172	<0.286±0.152	<0.34±0.203	<0.194±0.132	0.289±0.16
05	02/21/05	fCi/M3	<0.426±0.241	0.369±0.194	<0.36±0.185	<0.433±0.201	<0.424±0.188	<0.212±0.115	<0.373±0.195
06	02/27/05	fCi/M3	<0.517±0.283	<0.482±0.304	<0.414±0.227	<0.293±0.201	<0.545±0.353	<0.366±0.22	<0.424±0.241
07	03/05/05	fCi/M3	<0.385±0.212	<0.399±0.19	<0.469±0.235	0.311±0.197	<0.373±0.208	<0.366±0.215	<0.494±0.268
08	03/11/05	fCi/M3	<0.289±0.197	<0.216±0.151	<0.29±0.185	<0.34±0.229	<0.285±0.179	0.421±0.283	<0.27±0.191
09	03/17/05	fCi/M3	<0.438±0.281	0.375±0.225	0.189±0.142	0.58±0.334	<0.444±0.254	0.309±0.206	<0.614±0.339
10	03/23/05	fCi/M3	<0.377±0.233	<0.329±0.183	0.255±0.141	<0.396±0.222	<0.369±0.215	<0.389±0.235	<0.268±0.186
11	03/29/05	fCi/M3	<0.256±0.181	<0.2±0.137	<0.21±0.126	<0.319±0.179	<0.232±0.119	<0.255±0.125	<0.223±0.137

Event	Date	Units	AM-1-PM10	AM-1-PM10-Dup	AM-2-PM10	AM-3-PM10	AM-4-PM10	AM-5-PM10	AM-6-PM10
Parameter:	**RADIUM-228**								
01	01/28/05	fCi/M3	<1.973±0.664	<1.539±0.616	<0.991±0.506	<1.156±0.559	<1.296±0.602	<1.482±0.589	<1.304±0.64
02	02/03/05	fCi/M3		<1.208±0.575	<1.209±0.602	1.25±0.631	1.257±0.612	<1.145±0.611	<1.614±0.646
03	02/12/05	fCi/M3	<1.262±0.589	<1.18±0.572	<1.085±0.508	<0.959±0.426	<0.989±0.426	<0.887±0.42	<0.916±0.373
04	02/15/05	fCi/M3	1.627±0.582	1.515±0.599	1.911±0.59	2±0.618	1.286±0.493	1.47±0.582	1.151±0.55
05	02/21/05	fCi/M3	<1.373±0.673	<1.738±0.825	<1.321±0.687	<1.616±0.78	<1.521±0.752	<1.294±0.629	<1.613±0.725
06	02/27/05	fCi/M3	<0.935±0.415	<0.89±0.474	1.074±0.529	1.249±0.558	<0.97±0.482	<0.818±0.377	<0.999±0.505
07	03/05/05	fCi/M3	<1.113±0.544	<1.094±0.458	<0.928±0.426	<0.999±0.46	<0.925±0.416	1.014±0.483	<1.007±0.407
08	03/11/05	fCi/M3	<1.137±0.575	<1.383±0.639	<1.051±0.491	<0.996±0.442	<0.9±0.428	<1.088±0.492	<0.76±0.4
09	03/17/05	fCi/M3	<0.996±0.457	<1.064±0.445	<0.987±0.457	<0.987±0.535	<0.967±0.459	<0.993±0.458	<1.085±0.488
10	03/23/05	fCi/M3	<0.937±0.466	<0.822±0.285	1.202±0.481	<0.871±0.438	1.091±0.452	<0.681±0.343	<0.774±0.378
11	03/29/05	fCi/M3	1.02±0.482	1.167±0.475	<0.833±0.393	<0.85±0.408	<0.776±0.383	0.815±0.379	0.814±0.415
Parameter:	**THORIUM-228**								
01	01/28/05	fCi/M3	<0.097±0.091	<0.165±0.027	<0.092±0.085	<0.273±0.112	<0.298±0.093	<0.164±0.08	<0.178±0.064
02	02/03/05	fCi/M3		<0.177±0.022	<1.242±0.323	<0.305±0.12	<0.196±0.038	<0.094±0.083	<0.174±0.065
03	02/12/05	fCi/M3	<0.299±0.039	<0.181±0.023	<0.261±0.079	<0.165±0.027	<0.146±0.055	<0.292±0.094	<0.094±0.085
04	02/15/05	fCi/M3	<0.182±0.023	<0.339±0.047	<0.279±0.037	<0.284±0.035	<0.18±0.03	<0.16±0.027	<0.281±0.057
05	02/21/05	fCi/M3	<0.092±0.084	<0.16±0.027	<0.182±0.035	<0.172±0.029	<0.089±0.091	<0.18±0.079	<0.16±0.061
06	02/27/05	fCi/M3	<0.177±0.058	<0.095±0.088	<0.268±0.09	<0.159±0.084	<0.264±0.035	<0.273±0.11	<0.306±0.079
07	03/05/05	fCi/M3	<0.304±0.042	<0.18±0.077	<0.156±0.045	<0.254±0.112	<0.252±0.126	<0.139±0.051	<0.144±0.024
08	03/11/05	fCi/M3	<0.16±0.078	<0.161±0.058	<0.244±0.079	<0.092±0.084	<0.195±0.037	<0.146±0.099	<0.09±0.064
09	03/17/05	fCi/M3	<0.168±0.028	<0.2±0.104	<0.081±0.074	<0.183±0.033	<0.319±0.044	<0.151±0.057	<0.254±0.069
10	03/23/05	fCi/M3	<0.14±0.023	<0.142±0.074	<0.232±0.073	<0.078±0.072	<0.163±0.108	<0.128±0.067	<0.08±0.073
11	03/29/05	fCi/M3	<0.165±0.032	<0.136±0.05	<0.228±0.063	<0.148±0.067	<0.236±0.086	<0.215±0.067	<0.141±0.052
Parameter:	**THORIUM-230**								
01	01/28/05	fCi/M3	<0.165±0.028	<0.057±0.042	<0.07±0.052	<0.16±0.084	<0.073±0.077	<0.153±0.051	<0.166±0.032
02	02/03/05	fCi/M3		<0.047±0.042	<0.29±0.263	<0.18±0.018	<0.056±0.041	<0.16±0.027	<0.06±0.045
03	02/12/05	fCi/M3	<0.135±0.058	<0.049±0.044	<0.155±0.016	<0.158±0.079	<0.139±0.027	<0.073±0.052	<0.072±0.054
04	02/15/05	fCi/M3	<0.049±0.044	<0.08±0.059	<0.126±0.011	<0.17±0.017	<0.172±0.055	<0.153±0.03	<0.07±0.063
05	02/21/05	fCi/M3	<0.072±0.067	<0.153±0.029	<0.052±0.048	<0.061±0.061	<0.155±0.026	<0.052±0.047	<0.153±0.051
06	02/27/05	fCi/M3	<0.057±0.063	<0.166±0.064	<0.063±0.069	<0.064±0.067	<0.121±0.052	<0.165±0.017	<0.072±0.054
07	03/05/05	fCi/M3	<0.073±0.067	<0.052±0.039	<0.047±0.053	<0.117±0.05	<0.153±0.015	<0.134±0.045	<0.139±0.047
08	03/11/05	fCi/M3	<0.156±0.078	<0.157±0.07	<0.062±0.063	<0.073±0.067	<0.063±0.076	2.606±0.628	<0.158±0.027
09	03/17/05	fCi/M3	<0.06±0.064	<0.059±0.053	<0.144±0.074	<0.054±0.056	<0.086±0.103	<0.042±0.031	<0.118±0.069
10	03/23/05	fCi/M3	<0.139±0.07	<0.142±0.074	<0.061±0.057	<0.094±0.094	0.36±0.172	<0.047±0.035	<0.145±0.054
11	03/29/05	fCi/M3	<0.05±0.037	<0.136±0.045	<0.109±0.079	0.077±0.073	0.221±0.156	<0.123±0.088	<0.141±0.047

Event	Date	Units	AM-1-PM10	AM-1-PM10-Dup	AM-2-PM10	AM-3-PM10	AM-4-PM10	AM-5-PM10	AM-6-PM10
Parameter:	**THORIUM-232**								
01	01/28/05	fCi/M3	<0.074±0.066	<0.057±0.042	<0.07±0.064	<0.16±0.061	<0.073±0.066	<0.153±0.064	<0.061±0.055
02	02/03/05	fCi/M3		<0.047±0.042	<0.29±0.263	<0.18±0.018	<0.056±0.041	<0.072±0.067	<0.06±0.055
03	02/12/05	fCi/M3	<0.135±0.011	<0.049±0.044	<0.155±0.016	<0.058±0.043	<0.139±0.027	<0.073±0.068	<0.072±0.068
04	02/15/05	fCi/M3	<0.049±0.044	<0.08±0.072	<0.126±0.011	<0.17±0.017	<0.063±0.055	<0.153±0.03	<0.07±0.063
05	02/21/05	fCi/M3	<0.072±0.078	<0.153±0.029	<0.052±0.048	<0.061±0.055	<0.07±0.064	<0.052±0.047	<0.056±0.051
06	02/27/05	fCi/M3	<0.051±0.046	<0.075±0.07	<0.063±0.058	<0.043±0.039	<0.121±0.052	<0.165±0.017	<0.072±0.054
07	03/05/05	fCi/M3	<0.073±0.067	<0.052±0.055	<0.043±0.039	<0.117±0.01	<0.153±0.055	<0.049±0.036	<0.139±0.027
08	03/11/05	fCi/M3	<0.156±0.052	<0.058±0.052	<0.062±0.058	<0.073±0.067	<0.057±0.052	<0.052±0.052	<0.071±0.064
09	03/17/05	fCi/M3	<0.06±0.045	<0.059±0.053	<0.065±0.058	<0.054±0.048	<0.077±0.07	<0.042±0.044	<0.118±0.01
10	03/23/05	fCi/M3	<0.139±0.046	<0.052±0.047	<0.061±0.045	<0.064±0.055	<0.072±0.075	<0.052±0.061	<0.065±0.056
11	03/29/05	fCi/M3	<0.05±0.037	<0.136±0.045	<0.062±0.058	<0.042±0.044	<0.113±0.081	<0.145±0.015	<0.052±0.039
Parameter:	**URANIUM-234**								
01	01/28/05	fCi/M3	<0.291±0.03	<0.124±0.112	<0.456±0.128	<0.16±0.145	<0.306±0.142	<0.348±0.043	<0.347±0.116
02	02/03/05	fCi/M3		<0.128±0.117	<0.271±0.137	<0.298±0.172	<0.338±0.034	<0.161±0.172	<0.512±0.032
03	02/12/05	fCi/M3	<0.243±0.119	<0.307±0.124	<0.223±0.101	<0.384±0.024	<0.161±0.148	<0.322±0.033	<0.322±0.119
04	02/15/05	fCi/M3	<0.157±0.144	<0.473±0.029	<0.196±0.177	<0.399±0.044	<0.396±0.049	<0.306±0.1	<0.508±0.143
05	02/21/05	fCi/M3	<0.478±0.067	<0.167±0.153	<0.261±0.022	<0.288±0.029	<0.23±0.019	<0.151±0.136	<0.29±0.029
06	02/27/05	fCi/M3	<0.198±0.179	<0.422±0.043	<0.146±0.111	<0.328±0.123	<0.145±0.129	<0.183±0.089	<0.261±0.101
07	03/05/05	fCi/M3	<0.154±0.139	<0.216±0.161	<0.253±0.026	<0.152±0.135	<0.207±0.008	<0.278±0.158	<0.285±0.016
08	03/11/05	fCi/M3	<0.297±0.108	<0.192±0.174	<0.134±0.1	<0.197±0.101	<0.306±0.017	2.559±0.837	<0.247±0.122
09	03/17/05	fCi/M3	<0.403±0.164	<0.308±0.156	<0.287±0.095	<0.4±0.111	<0.419±0.059	<0.134±0.123	<0.277±0.103
10	03/23/05	fCi/M3	<0.356±0.044	<0.297±0.097	<0.276±0.031	<0.381±0.049	<0.324±0.091	<0.133±0.154	<0.259±0.096
11	03/29/05	fCi/M3	<0.231±0.019	<0.289±0.166	<0.118±0.105	<0.264±0.19	<0.121±0.108	<0.178±0.125	<0.248±0.102
Parameter:	**URANIUM-235**								
01	01/28/05	fCi/M3	<0.14±0.127	<0.124±0.112	<0.433±0.053	<0.16±0.145	<0.333±0.104	<0.128±0.096	<0.263±0.022
02	02/03/05	fCi/M3		<0.128±0.117	<0.13±0.115	<0.24±0.01	<0.162±0.083	<0.285±0.024	<0.478±0.027
03	02/12/05	fCi/M3	<0.276±0.014	<0.281±0.014	<0.132±0.122	<0.358±0.02	<0.284±0.024	<0.154±0.142	<0.273±0.023
04	02/15/05	fCi/M3	<0.278±0.023	<0.442±0.025	<0.196±0.177	<0.303±0.129	<0.146±0.131	<0.333±0.106	<0.508±0.143
05	02/21/05	fCi/M3	<0.266±0.112	<0.167±0.153	<0.261±0.111	<0.138±0.123	<0.23±0.019	<0.267±0.023	<0.139±0.128
06	02/27/05	fCi/M3	<0.35±0.029	<0.202±0.181	<0.259±0.022	<0.157±0.117	<0.145±0.129	<0.208±0.01	<0.196±0.008
07	03/05/05	fCi/M3	<0.154±0.139	<0.383±0.032	<0.122±0.091	<0.152±0.135	<0.236±0.012	<0.224±0.009	<0.261±0.013
08	03/11/05	fCi/M3	<0.142±0.132	<0.339±0.028	<0.134±0.121	<0.224±0.011	<0.247±0.01	<0.235±0.105	<0.281±0.014
09	03/17/05	fCi/M3	<0.148±0.135	<0.261±0.022	<0.312±0.1	<0.4±0.111	<0.234±0.019	<0.238±0.103	<0.133±0.121
10	03/23/05	fCi/M3	<0.131±0.116	<0.225±0.097	<0.3±0.094	<0.381±0.049	<0.198±0.017	<0.212±0.092	<0.124±0.113
11	03/29/05	fCi/M3	<0.231±0.019	<0.265±0.114	<0.118±0.089	<0.127±0.095	<0.121±0.108	<0.202±0.01	<0.2±0.008

Event	Date	Units	AM-1-PM10	AM-1-PM10-Dup	AM-2-PM10	AM-3-PM10	AM-4-PM10	AM-5-PM10	AM-6-PM10
Parameter:	**URANIUM-238**								
01	01/28/05	fCi/M3	<0.14±0.127	<0.26±0.095	<0.382±0.197	<0.16±0.145	<0.398±0.175	<0.325±0.039	<0.347±0.038
02	02/03/05	fCi/M3		<0.267±0.027	<0.13±0.115	<0.319±0.019	<0.162±0.083	<0.161±0.145	<0.259±0.235
03	02/12/05	fCi/M3	<0.301±0.125	<0.247±0.01	<0.223±0.101	<0.195±0.202	<0.161±0.148	<0.154±0.142	<0.322±0.032
04	02/15/05	fCi/M3	<0.157±0.144	<0.24±0.216	<0.196±0.177	<0.399±0.044	<0.37±0.159	<0.434±0.18	<0.368±0.037
05	02/21/05	fCi/M3	<0.457±0.168	<0.348±0.177	<0.308±0.159	<0.138±0.123	<0.303±0.102	<0.151±0.136	<0.139±0.128
06	02/27/05	fCi/M3	<0.461±0.051	<0.202±0.181	<0.146±0.111	<0.157±0.139	<0.303±0.031	<0.281±0.02	<0.289±0.101
07	03/05/05	fCi/M3	<0.154±0.139	<0.505±0.056	<0.122±0.112	<0.317±0.032	<0.319±0.022	<0.298±0.116	<0.231±0.009
08	03/11/05	fCi/M3	<0.142±0.108	<0.192±0.139	<0.278±0.143	<0.303±0.021	<0.328±0.02	2.109±0.785	<0.306±0.017
09	03/17/05	fCi/M3	<0.376±0.045	<0.308±0.116	<0.335±0.1	<0.289±0.106	<0.401±0.178	<0.28±0.103	<0.133±0.121
10	03/23/05	fCi/M3	<0.332±0.039	<0.297±0.166	<0.322±0.094	<0.276±0.139	<0.285±0.172	<0.25±0.128	<0.124±0.113
11	03/29/05	fCi/M3	<0.305±0.102	<0.233±0.009	<0.118±0.105	<0.127±0.095	<0.252±0.092	<0.274±0.019	<0.265±0.016

Notes

fCi/M3 = femtoCuries per cubic meter
PM-10 = particulate matter with a diameter of 10 microns or less
PM-10 analysis performed per 40 CFR 50 Appendix J

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November 17, 2005

Mr. James Sickles
Project Manager
U.S. Environmental Protection Agency Region 9
75 Hawthorne Street, SFD-8-2
San Francisco, California 94105

Subject: Second Quarter 2005 Air Quality Monitoring Report Addendum, Yerington Mine Site

Dear Mr. Sickles:

The Atlantic Richfield Company (ARC) has prepared this addendum to the subject report, which provides additional analytical data to supplement the information originally presented in the *Air Quality Monitoring Data Summary Report for the Yerington Mine Site, Second Quarter 2005* prepared by Brown and Caldwell (May 10, 2005). As of the first part of the second quarter of 2005 (2Q 2005) monitoring conducted by ARC at the Yerington Mine Site, final agreement on the analyte list had not yet been reached. Samples collected during 2Q 2005 were weighed for gravimetric analysis and then stored by the laboratory until further notice. Pursuant to correspondence between ARC and the U.S. Environmental Protection Agency (EPA) during 2Q 2005, ARC took the initiative and initiated chemical analyses of metals and radiochemicals on the stored samples on June 3, 2005.

Chemical analysis of metals and radiochemicals present on PM_{10} (particulate matter with a diameter of 10 microns or less) filters was conducted for Event 12 on April 4, 2005 through Event 26 on June 27, 2005. The total suspended particulates (TSP) high volume samplers were shut down on March 2, 2005 through the end of May 2005, pending resolution of the analyte list. Chemical analysis of metals and radiochemicals present on TSP filters was conducted for Event 22 on June 3, 2005 through Event 26 on June 27, 2005. The following sections describe the data verification activities conducted on the additional analytical data and provide a summary of the analytical results.

Air Quality Data Verification

The original and additional air quality data were verified according to the quality control (QC) criteria provided in the draft *Air Quality Monitoring Work Plan for the Yerington Mine Site* ("Work Plan") prepared by Brown and Caldwell on December 22, 2004 and conditionally approved by the EPA on January 19, 2005. The analytical results for the entire 2Q 2005 are provided electronically on compact disc in Microsoft Excel format as revised Appendix D. The laboratory reports for the entire 2Q 2005 are provided electronically on compact disc in Adobe Acrobat portable document format (PDF) as revised Appendix E. The analytical results for the entire 2Q 2005 are summarized in tabular format and provided as revised Appendix H. The items listed in the following table were verified during the analytical data verification process.

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Data Verification Requirements	
Review Item	Checked During Data Verification
Case Narrative	X
Chain-of-Custody Documentation	X
Summary of Results	X
Holding Times	X
Method Blank Analysis Results	X
Field/Trip Blank Analysis Results	X
Surrogate Standard Percent Recoveries (%R)	X
Laboratory Control Samples (LCS) - %R	X
LCS/LCS Duplicate (LCSD) - Relative Percent Difference (RPD)	X
Field Duplicate (FD) - RPD	X

A detailed QC report is provided for the entire 2Q 2005 as revised Appendix F. In summary, the verification indicates that the analytical data generated during 2Q 2005 are usable with no data flagged as rejected. Notable findings from the QC report are provided below.

§ *Data Completeness:* The Work Plan specified a data completeness goal of quarterly valid data retrieval of 80 percent for air quality data. Fourteen sampling events were conducted during 2Q 2005 as summarized in the original Table 5. There were three exceptions to the sampling and analysis plan during 2Q 2005. First, Event 16 on April 28, 2005 was cancelled due to routine quarterly maintenance. Second, power outages resulted in unusable samples at AM-5-PM10 during Event 19 on May 16, 2005 and Event 21 on May 28, 2005. Third, a digital timer malfunction resulted in an unusable sample at AM-1-PM10-DUP during Event 24 on June 15, 2005. A total of 112 primary samples were collected out of 120 planned. The actual completeness for air quality data was calculated to be 93 percent, which exceeds the 80 percent program goal.

§ *Sample Hold Time:* Mercury was not analyzed on the stored filters from Events 12 through Event 21 because more than twice the 28-day holding time had expired. This is due to the fact that the analysis of metals were held pending resolution of the analyte list.

§ *Field Duplicates:* The Work Plan specified a collection frequency goal of 10 percent for field duplicates. Field duplicates were collected for every event except one at location AM-1 with a co-located high volume air sampler (AM-1-PM10-DUP). The total number of primary samples targeted during 2Q 2005 was 120 and a total of 13 field duplicate samples were collected. The actual frequency of field duplicate collection was 10.8 percent, which exceeds the program goal of 10 percent. Field duplicate precision for metals and radiochemicals are provided in revised Table 6. Three primary/field duplicate sample result pairs had a relative percent difference (RPD) higher than 60% as described in revised Appendix F

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- *Field Blanks and Trip Blanks:* The Work Plan specified a collection frequency goal of 5 percent for field blanks and 5 percent for trip blanks. Seven field blanks and ten trip blanks were collected during this reporting period as shown on revised Tables 7a and 7b. The total number of primary samples targeted during this reporting period was 120. The actual frequency of field and trip blank collection was 5.8 and 8.3 percent, respectively, which exceeds the program goals of 5 percent each. Forty results were qualified due to the presence of mercury, iron, lead, radium-226, and radium-228 in associated field and trip blanks as described in revised Appendix F. Field procedures for sample handling were reviewed, and no sample collection issues were identified.

- *Method Blanks:* Sixty-one results were qualified due to the presence of beryllium, mercury, zinc, lead, and radium-226 in associated method blanks as described in revised Appendix F.

- *Low LCS Recovery:* Fourteen gross alpha results were qualified due to low recovery of the associated LCS as described in revised Appendix F.

- *Calibration Blank:* Thirty-five results were qualified due to calibration blank issues as described in revised Appendix F.

- *ICV/CCV Check:* One vanadium result was qualified due to initial calibration verification (ICV) and continuing calibration verification (CCV) check issues as described in revised Appendix F.

The Work Plan specified that 10 percent of the air quality data would be validated by a third party. The data verification requirement was mainly concerned with metals and radiological analyses since gravimetric analytical methods specify minimal QC. Third party data validation was performed on Event 13 and Event 23 metals data. Data qualifiers from the validation process have been included in the database and this addendum. Third party data validation is currently being conducted on Event 13 and Event 23 radiochemical data and the results will be presented in the third quarter 2005 report.

Summary of Results

This section summarizes the results of air quality analyses for metals and radiochemicals analyzed during 2Q 2005. Note that background concentrations of particulate matter, metals and radiochemicals have yet to be determined. Interpretation of the analytical results presented in this addendum will be provided at a later date. Note that the quantity of chemical analyses performed on the filters affects the detection limits achievable for the project since each analysis requires a portion of the total filter be sectioned for digestion. In general, the less filter area available for digestion corresponds to less of the chemical available to measure, which results in higher detection limits.

<u>Metals Results</u>

A total of 21 metals were analyzed from PM_{10} and TSP filters by the methods indicated below.

- *ICP:* five metals (aluminum, calcium, iron, magnesium, and sodium) were analyzed by inductively coupled plasma (ICP).
- *ICP/MS:* fifteen metals (arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc) were analyzed by inductively coupled plasma/mass spectrometry (ICP/MS).

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§ *CVAA:* mercury was analyzed by cold vapor atomic adsorption (CVAA).

Analytical results for metals detected on PM_{10} and TSP filters are summarized in revised Appendix H. The masses detected on the PM_{10} filters were divided by the sample volumes to calculate metals concentrations which are summarized in revised Table 9. The masses detected on the TSP filters were divided by the sample volumes to calculate metals concentrations which are summarized in revised Table 10.

A brief discussion of each metal is provided below in alphabetical order. The quantity of detections on PM_{10} and TSP filters are provided for each metal. The average concentration is provided for metal results with more than one detection. Non-detected results were included in the average concentration calculation by assuming the metal was present at the detection limit. This assumption may result in some averages having a high bias compared to the actual average concentration.

§ Aluminum: Aluminum was detected on 76 of 95 PM_{10} filters analyzed during 2Q 2005. The average aluminum concentration measured on PM_{10} filters was 0.10 µg/m^3. Aluminum was detected on all 30 TSP filters analyzed during 2Q 2005. The average aluminum concentration measured on TSP filters was 0.32 µg/m^3.

§ Arsenic: Arsenic was not detected on any PM_{10} filters analyzed during 2Q 2005 at detection limits down to 0.97 nanograms per cubic meter (ng/m^3). Arsenic was not detected on any TSP filters analyzed during 2Q 2005 at detection limits down to 0.97 ng/m^3.

§ Barium: Barium was detected on one of 95 PM_{10} filters analyzed during 2Q 2005 at a concentration of 36 ng/m^3. Barium was not detected on any TSP filters analyzed during 2Q 2005 at detection limits down to 18 ng/m^3.

§ Beryllium: Beryllium was detected on 11 of 95 PM_{10} filters analyzed during 2Q 2005. The average beryllium concentration measured on PM_{10} filters was 0.006 ng/m^3. Beryllium was detected on seven of 30 TSP filters analyzed during 2Q 2005. The average beryllium concentration measured on TSP filters was 0.011 ng/m^3.

§ Cadmium: Cadmium was detected on 45 of 95 PM_{10} filters analyzed during 2Q 2005. The average cadmium concentration measured on PM_{10} filters was 0.042 ng/m^3. Cadmium was detected on 17 of 30 TSP filters analyzed during 2Q 2005. The average cadmium concentration measured on TSP filters was 0.040 ng/m^3.

§ Calcium: Calcium was detected on five of 95 PM_{10} filters analyzed during 2Q 2005. The average calcium concentration measured on PM_{10} filters was 0.52 µg/m^3. Calcium was detected on ten of 30 TSP filters analyzed during 2Q 2005. The average calcium concentration measured on TSP filters was 0.66 µg/m^3.

§ Chromium, Total: Chromium was not detected on any PM_{10} or TSP filters analyzed during 2Q 2005 at detection limits down to 5.2 ng/m^3.

§ Cobalt: Cobalt was detected on three of 95 PM_{10} filters analyzed during 2Q 2005. The average cobalt concentration measured on PM_{10} filters was 2.4 ng/m^3. Cobalt was not detected on any TSP filters analyzed during 2Q 2005 at detection limits down to 1.9 ng/m^3.

§ Copper: Copper was detected on all 95 PM_{10} filters analyzed during 2Q 2005. The average copper concentration measured on PM_{10} filters was 8.8 ng/m^3. Copper was

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detected on all 30 TSP filters analyzed during 2Q 2005. The average copper concentration measured on TSP filters was 57 ng/m^3.

§ Iron: Iron was detected on 81 of 95 PM_{10} filters analyzed during 2Q 2005. The average iron concentration measured on PM_{10} filters was 0.14 µg/m^3. Iron was detected on all 30 TSP filters analyzed during 2Q 2005. The average iron concentration measured on TSP filters was 0.41 µg/m^3.

§ Lead: Lead was detected on 81 of 95 PM_{10} filters analyzed during 2Q 2005. The average lead concentration measured on PM_{10} filters was 1.1 ng/m^3. Lead was detected on 23 of 30 TSP filters analyzed during 2Q 2005. The average lead concentration measured on TSP filters was 1.3 ng/m^3.

§ Magnesium: Magnesium was detected on 68 of 95 PM_{10} filters analyzed during 2Q 2005. The average magnesium concentration measured on PM_{10} filters was 0.097 µg/m^3. Magnesium was detected on 24 of 30 TSP filters analyzed during 2Q 2005. The average magnesium concentration measured on TSP filters was 0.21 µg/m^3.

§ Manganese: Manganese was detected on 86 of 95 PM_{10} filters analyzed during 2Q 2005. The average manganese concentration measured on PM_{10} filters was 4.1 ng/m^3. Manganese was detected on all 30 TSP filters analyzed during 2Q 2005. The average manganese concentration measured on TSP filters was 9.8 ng/m^3.

§ Mercury: Mercury was detected on 27 of 34 PM_{10} filters analyzed during 2Q 2005. The average mercury concentration measured on PM_{10} filters was 0.014 ng/m^3. Mercury was detected on 18 of 30 TSP filters analyzed during 2Q 2005. The average mercury concentration measured on TSP filters was 0.020 ng/m^3. Note that mercury was not analyzed on filters where twice the sample hold time had elapsed.

§ Molybdenum: Molybdenum was not detected on any PM_{10} or TSP filters analyzed during 2Q 2005 at detection limits down to 0.56 ng/m^3.

§ Nickel: Nickel was detected on one of 95 PM_{10} filters during 2Q 2005 at a concentration of 2.3 ng/m^3. Nickel was not detected on any TSP filters during 2Q 2005 at detection limits down to 1.8 ng/m^3.

§ Selenium: Selenium was detected on one of 95 PM_{10} filters analyzed during 2Q 2005 at a concentration of 1.3 ng/m^3. Selenium was detected on four of 30 TSP filters analyzed during 2Q 2005. The average selenium concentration measured on TSP filters was 0.95 ng/m^3.

§ Silver: Silver was detected on seven of 95 PM_{10} filters analyzed during 2Q 2005. The average silver concentration measured on PM_{10} filters was 0.008 ng/m^3. Silver was detected on 23 of 30 TSP filters analyzed during 2Q 2005. The average silver concentration measured on TSP filters was 0.022 ng/m^3.

§ Sodium: Sodium was detected on one of 95 PM_{10} filters analyzed during 2Q 2005 at a concentration of 1.6 µg/m^3. Sodium was not detected on any TSP filters analyzed during 2Q 2005 at detection limits down to 1.0 µg/m^3.

§ Vanadium: Vanadium was not detected on any PM_{10} filters analyzed during 2Q 2005 at detection limits down to 1.5 ng/m^3. Vanadium was detected on 10 of 30 TSP filters analyzed during 2Q 2005. The average vanadium concentration measured on TSP filters was 1.7 ng/m^3.

§ Zinc: Zinc was detected on 36 of 95 PM_{10} filters analyzed during 2Q 2005. The average zinc concentration measured on PM_{10} filters was 4.9 ng/m^3. Zinc was detected on 22 of

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30 TSP filters analyzed during 2Q 2005. The average zinc concentration measured on TSP filters was 5.1 ng/m^3.

Radiochemical Results

A total of 10 radiochemicals were analyzed from PM_{10} and TSP filters using the following methods for PM_{10} and TSP samples described below.

- *Gas Proportional Counters:* gross alpha and gross beta were analyzed by EPA Method 900.0 and radium-228 was analyzed by EPA Method 904.0.
- *Alpha Scintillation Counter:* radium-226 was analyzed by EPA Method 903.1.
- *Alpha Spectrometry:* three species of thorium (228, 230, and 232) were analyzed by Standard Method 7500-U-C and ASTM Method D-5174 and three species of uranium (234, 235, and 238) were analyzed by EPA Method 908.0.

Analytical results for the radiochemicals detected on PM_{10} and TSP filters are summarized in revised Appendix H. The activity values detected on the PM_{10} filters were divided by the sample volumes to calculate radiochemical concentrations, which are summarized in revised Table 11. The activity values detected on the TSP filters were divided by the sample volumes to calculate radiochemical concentrations, which are summarized in revised Table 12. A brief discussion of each radiochemical is provided below. Analytical results are presented in femtoCuries (1,000 femtoCuries = 1 picoCurie) for ease of presentation. The quantity of detections on PM_{10} and TSP filters are provided for each radiochemical. The average concentration is provided for radiochemical results with more than one detection. Non-detected results were included in the average concentration calculation by assuming that the radiochemical was present at the detection limit. This assumption may result in some averages having a high bias compared to the actual average concentration.

- Gross Alpha: Gross alpha was detected on 19 of 95 PM_{10} filters analyzed during 2Q 2005. The average gross alpha concentration measured on PM_{10} filters was 2.1 femtoCuries per cubic meter (fCi/m^3). Gross alpha was detected on six of 30 TSP filters analyzed during 2Q 2005. The average gross alpha concentration measured on TSP filters was 1.6 fCi/m^3.
- Gross Beta: Gross beta was detected on 90 of 95 PM_{10} filters. The average gross beta concentration measured on PM_{10} filters was 8.6 fCi/m^3. Gross beta was detected on all 30 TSP filters analyzed during 2Q 2005. The average gross beta concentration measured on TSP filters was 11 fCi/m^3.
- Radium-226: Radium-226 was detected on eight of 94 PM_{10} filters analyzed during 2Q 2005. Note that one result was omitted by the laboratory at the time of this report, but will be reported with the third quarter 2005 report. The average radium-226 concentration measured on PM_{10} filters was 0.38 fCi/m^3. Radium-226 was detected on five of 30 TSP filters analyzed during 2Q 2005. The average radium-226 concentration measured on TSP filters was 0.38 fCi/m^3.
- Radium-228: Radium-228 was detected on 33 of 95 PM_{10} filters analyzed during 2Q 2005. The average radium-228 concentration measured on PM_{10} filters was 1.5 fCi/m^3. Radium-228 was detected on 23 of 30 TSP filters analyzed during 2Q 2005. The average radium-228 concentration measured on TSP filters was 1.8 fCi/m^3.

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- § Thorium-228: Thorium-228 was detected on one of 95 PM_{10} filters analyzed during 2Q 2005 at a concentration of 0.18 ± 0.17 fCi/m^3. Thorium-228 was detected on one of 30 TSP filters analyzed during 2Q 2005 at a concentration of 0.21 ± 0.18 fCi/m^3.
- § Thorium-230: Thorium-230 was detected on eight of 95 PM_{10} filters analyzed during 2Q 2005. The average thorium-230 concentration measured on PM_{10} filters was 0.10 fCi/m^3. Thorium-230 was detected on eight of 30 TSP filters analyzed during 2Q 2005. The average thorium-230 concentration measured on TSP filters was 0.064 fCi/m^3.
- § Thorium-232: Thorium-232 was not detected on any PM_{10} filters analyzed during 2Q 2005 at detection limits down to 0.020 ± 0.018 fCi/m^3. Thorium-232 was detected on two of 30 TSP filters analyze during 2Q 2005. The average thorium-232 concentration measured on TSP filters was 0.042 fCi/m^3.
- § Uranium-234: Uranium-234 was detected on one of 95 PM_{10} filters analyzed during 2Q 2005 at a concentration of 0.063 ± 0.052 fCi/m^3. Uranium-234 was detected on one of 30 TSP filters analyzed during 2Q 2005 at a concentration of 0.046 ± 0.025 fCi/m^3.
- § Uranium-235: Uranium-235 was not detected on any PM_{10} or TSP filters analyzed during 2Q 2005 at detection limits down to 0.022 ± 0.022 fCi/m^3.
- § Uranium-238: Uranium-238 was not detected on any PM_{10} or TSP filters analyzed during 2Q 2005 at detection limits down to 0.024 ± 0.018 fCi/m^3.

Attachments

(Original)	Table 5.	Analytical Data Completeness
(Revised)	Table 6.	Field Duplicate Precision
(Revised)	Table 7.	Trip and Field Blank Analytical Results Summary
(Revised)	Table 9.	Summary of Metals and PM_{10} Analyzed on PM_{10} Filters
(Revised)	Table 10.	Summary of Metals and TSP Analyzed on TSP Filters
(Revised)	Table 11.	Summary of Radiochemicals Analyzed on PM_{10} Filters
(Revised)	Table 12.	Summary of Radiochemicals Analyzed on TSP Filters
(Revised)	Appendix D.	Electronic Analytical Laboratory Results (compact disc)
(Revised)	Appendix E.	Hardcopy Analytical Laboratory Results (compact disc)
(Revised)	Appendix F.	Analytical Data Quality Control
(Revised)	Appendix H.	Analytical Data Summary

Please contact me at 661-287-3855 to discuss these analytical results.

Sincerely,

Dave McCarthy
Environmental Business Manager

cc: Chris Winsor/Atlantic Richfield
Todd Normane/Legal
Art Gravenstein/NDEP
Pat Plumb/BLM

Table 11. Summary of Radiochemicals Analyzed on PM-10 Filters, 2Q 2005

Event	Date	Units	AM-1-PM10	AM-1-PM10-Dup	AM-2-PM10	AM-3-PM10	AM-4-PM10	AM-5-PM10	AM-6-PM10
Parameter:	**ALPHA, GROSS**								
12	04/04/05	fCi/M3	<2.286±1.12	<1.789±0.923	<1.59±0.792	<2.352±0.896	<1.849±1.309	<2.241±1.047	<1.91±1.205
13	04/10/05	fCi/M3	<1.849±1.277	<1.969±1.259	1.682±1.205	<2.136±1.446	<2.199±1.192	<1.878±1.208	<2.084±1.025
14	04/16/05	fCi/M3	2.624±1.571	2.705±1.608	3.264±1.764	2.557±1.553	2.916±1.557	<2.659±1.685	<2.761±1.378
15	04/22/05	fCi/M3	3.159±1.728	2.154±1.429	3.032±1.582	<0.961±0.777	<2.092±1.189	2.834±1.699	3.109±1.886
17	05/04/05	fCi/M3	<2.069±1.427	7.884±2.964	<1.464±0.717	<2.208±1.285	1.614±1.178	<2.297±1.392	<3.011±1.663
18	05/10/05	fCi/M3	<1.622±1.047	<1.84±0.487	<2.68±1.079	<2.465±1.359	<2.434±1.004	<1.424±0.574	<1.624±0.815
19	05/16/05	fCi/M3	<1.827±0.884	<1.762±0.881	<2.249±0.701	<1.702±0.926	<1.833±1.044		<2.909±1.09
20	05/22/05	fCi/M3	1.648±1.194	<2.819±1.331	<2.755±1.53	<1.92±1.116	1.921±1.293	<2.568±1.469	<1.678±1.067
21	05/28/05	fCi/M3	<2.512±1.478	2.781±1.768	<1.97±1.407	2.259±1.499	<1.814±1.279		3.105±1.725
22	06/03/05	fCi/M3	<0.055±0.125	<0.068±0.095	<0.05±0.049	<0.041±0.028	<0.048±0.079	<0.059±0.168	<0.063±0.066
23	06/09/05	fCi/M3	<2.129±1.014	<1.682±0.985	<2.369±1.056	<2.178±1.183	<1.721±0.816	<1.552±0.764	<1.4±0.891
24	06/15/05	fCi/M3	<2.721±1.429		<2.332±1.427	<1.891±1.186	<2.099±1.155	<2.249±1.313	1.953±1.398
25	06/21/05	fCi/M3	<2.272±1.215	<2.176±0.908	<1.934±0.699	<2.05±0.996	<2.317±1.394	<1.779±0.704	<2.12±1.125
26	06/27/05	fCi/M3	<2.351±1.045	<1.288±0.801	<1.723±0.996	<2.582±1.383	<2.407±1.279	<1.901±0.63	<2.121±1.185
Parameter:	**BETA, GROSS**								
12	04/04/05	fCi/M3	3.754±1.532	3.67±1.443	2.927±1.321	4.401±1.512	3.562±1.364	4.817±1.571	4.934±1.664
13	04/10/05	fCi/M3	7.218±1.888	7.098±1.946	6.181±1.781	7.453±2.113	6.284±1.733	3.17±1.449	6.606±1.822
14	04/16/05	fCi/M3	12.042±2.618	10.167±2.355	9.6±2.283	9.817±2.496	11.117±2.417	8.544±2.166	10.85±2.411
15	04/22/05	fCi/M3	11.621±2.563	10.343±2.343	10.362±2.501	11.494±2.443	11.081±2.378	11.772±2.609	11.2±2.629
17	05/04/05	fCi/M3	11.296±2.556	11.085±2.786	11.237±2.63	11.098±2.453	11.72±2.591	12.587±2.552	12.648±2.732
18	05/10/05	fCi/M3	<2.721±1.395	<9.23±4.19	3.046±1.439	<2.465±1.3	3.042±1.418	2.8±1.406	<2.421±1.339
19	05/16/05	fCi/M3	3.235±1.355	2.689±1.351	2.926±1.343	3.231±1.39	<2.703±1.45		2.828±1.492
20	05/22/05	fCi/M3	11.104±2.448	8.59±2.178	7.593±2.119	16.442±3.171	10.576±2.35	10.223±2.35	11.085±2.608
21	05/28/05	fCi/M3	18.144±3.546	14.732±3.418	18.875±3.693	15.965±3.17	18.198±3.372		16.895±3.331
22	06/03/05	fCi/M3	0.93±0.685	1.187±0.857	0.965±0.703	1.019±0.74	0.998±0.728	0.974±0.709	0.834±0.615
23	06/09/05	fCi/M3	4.733±1.465	3.91±1.453	4.129±1.408	3.982±1.349	2.698±1.251	3.694±1.32	2.751±1.268
24	06/15/05	fCi/M3	15.886±3.165		16.125±3.271	14.864±3.193	14.344±3.417	14.384±2.945	14.444±3.012
25	06/21/05	fCi/M3	9.561±2.154	6.708±1.849	11.028±2.477	12.608±2.838	12.718±2.66	12.243±2.672	10.836±2.45
26	06/27/05	fCi/M3	12.943±2.728	10.132±2.404	14.654±3.048	14.294±3.112	15.407±3.605	15.464±3.093	13.744±2.903

Event	Date	Units	AM-1-PM10	AM-1-PM10-Dup	AM-2-PM10	AM-3-PM10	AM-4-PM10	AM-5-PM10	AM-6-PM10
Parameter:	**RADIUM-226**								
12	04/04/05	fCi/M3	<0.361±0.147	0.493±0.329	<0.269±0.185	<0.323±0.207	<0.303±0.207	<0.308±0.152	<0.295±0.143
13	04/10/05	fCi/M3	<0.188±0.1	<0.241±0.132	<0.215±0.126	<0.488±0.306	<0.31±0.206	<0.576±0.314	<0.388±0.233
14	04/16/05	fCi/M3	<0.215±0.14	<0.262±0.172	<0.308±0.161	<0.183±0.133	<0.179±0.124	<0.274±0.187	<0.337±0.155
15	04/22/05	fCi/M3	<0.446±0.244	<0.284±0.177	<0.229±0.153	<0.255±0.15	<0.231±0.157	<0.303±0.218	<0.473±0.274
17	05/04/05	fCi/M3	<0.256±0.143	<0.582±0.326	<0.285±0.167	<0.265±0.146	<0.547±0.324	0.287±0.209	<0.512±0.273
18	05/10/05	fCi/M3		<0.213±0.153	<0.375±0.258	<0.293±0.207	<0.251±0.183	<0.407±0.264	<0.268±0.18
19	05/16/05	fCi/M3	<0.32±0.177	<0.321±0.206	<0.509±0.321	<0.62±0.336	<0.412±0.238		<0.26±0.155
20	05/22/05	fCi/M3	<0.315±0.167	<0.226±0.157	<0.371±0.182	<0.361±0.194	<0.271±0.188	<0.256±0.165	<0.237±0.166
21	05/28/05	fCi/M3	<0.284±0.207	<0.45±0.295	<0.27±0.199	<0.314±0.202	<0.234±0.157		<0.283±0.167
22	06/03/05	fCi/M3	<0.294±0.183	0.363±0.251	0.247±0.163	0.211±0.144	<0.265±0.188	<0.448±0.228	<0.213±0.155
23	06/09/05	fCi/M3	<0.434±0.294	<0.565±0.377	<0.71±0.335	<0.615±0.364	<0.709±0.319	<0.393±0.242	<0.381±0.176
24	06/15/05	fCi/M3	<0.735±0.375		<0.566±0.339	<0.544±0.245	<0.729±0.39	<0.298±0.207	<0.362±0.216
25	06/21/05	fCi/M3	<0.367±0.245	<0.699±0.413	<0.428±0.254	0.318±0.214	<0.377±0.265	0.418±0.227	<0.554±0.329
26	06/27/05	fCi/M3	<0.894±0.418	<0.57±0.303	<0.483±0.317	<0.466±0.282	<0.733±0.39	0.456±0.258	<0.551±0.32
Parameter:	**RADIUM-228**								
12	04/04/05	fCi/M3	<0.913±0.466	<0.906±0.456	<0.967±0.512	<0.957±0.459	<0.966±0.502	1.042±0.471	1.429±0.574
13	04/10/05	fCi/M3	1.694±0.666	<1.236±0.63	1.289±0.629	1.174±0.556	<1.046±0.504	1.135±0.562	<1.532±0.74
14	04/16/05	fCi/M3	<1.024±0.524	<0.959±0.46	<1.235±0.488	<0.987±0.46	<1.096±0.467	<1.438±0.59	<1.47±0.574
15	04/22/05	fCi/M3	<0.894±0.346	1.743±0.571	<0.801±0.357	<0.905±0.389	<0.886±0.432	<1.044±0.498	<1.091±0.526
17	05/04/05	fCi/M3	<1.51±0.654	1.162±0.545	<1.47±0.658	5.234±1.168	<1.201±0.548	<1.259±0.58	<1.33±0.576
18	05/10/05	fCi/M3	<2.099±0.698	<2.225±0.68	<3.034±0.839	<2.435±0.709	<3.249±0.827	<1.64±0.586	<2.689±0.757
19	05/16/05	fCi/M3	<1.173±0.483	<1.274±0.575	<1.145±0.52	<1.123±0.521	<1.131±0.493		<1.268±0.574
20	05/22/05	fCi/M3	<1.2±0.597	<0.835±0.423	<1.107±0.524	<1.192±0.528	<1.181±0.505	<1.228±0.57	<1.043±0.498
21	05/28/05	fCi/M3	<1.797±0.887	<1.509±0.648	<1.7±0.703	<1.55±0.692	<1.494±0.64		<1.44±0.654
22	06/03/05	fCi/M3	<1.412±0.769	1.745±0.893	<1.24±0.715	2.877±1.019	1.626±0.851	2.012±0.928	<1.509±0.87
23	06/09/05	fCi/M3	<1.281±0.919	2.679±1.165	1.993±1.032	2.686±1.107	1.787±1.007	1.702±0.909	1.657±0.903
24	06/15/05	fCi/M3	1.274±0.64		0.974±0.544	1.851±0.758	3.382±1.032	1.067±0.567	1.257±0.637
25	06/21/05	fCi/M3	1.53±0.754	2.384±1.06	<1.345±0.751	2.429±0.944	1.469±0.732	<1.127±0.669	2.344±0.919
26	06/27/05	fCi/M3	2.676±1.451	<1.099±0.572	1.975±0.821	1.349±0.692	<1.552±0.93	<1.369±0.687	<1.546±0.829

Event	Date	Units	AM-1-PM10	AM-1-PM10-Dup	AM-2-PM10	AM-3-PM10	AM-4-PM10	AM-5-PM10	AM-6-PM10
Parameter:	**THORIUM-228**								
12	04/04/05	fCi/M3	<0.087±0.077	<0.19±0.032	<0.064±0.047	<0.081±0.073	<0.177±0.06	<0.274±0.038	<0.178±0.048
13	04/10/05	fCi/M3	<0.087±0.078	<0.195±0.074	<0.065±0.068	<0.083±0.078	<0.172±0.033	<0.155±0.058	<0.191±0.037
14	04/16/05	fCi/M3	<0.27±0.037	<0.173±0.075	<0.134±0.038	<0.236±0.067	<0.23±0.07	<0.283±0.096	<0.15±0.02
15	04/22/05	fCi/M3	<0.259±0.143	<0.147±0.091	<0.123±0.046	<0.129±0.067	<0.234±0.092	<0.083±0.061	<0.17±0.057
17	05/04/05	fCi/M3	<0.269±0.101	<0.084±0.077	<0.145±0.072	<0.254±0.082	<0.084±0.077	<0.174±0.034	<0.146±0.055
18	05/10/05	fCi/M3	<0.138±0.052	<0.076±0.068	<0.14±0.072	<0.248±0.051	<0.08±0.071	<0.172±0.033	<0.139±0.052
19	05/16/05	fCi/M3	<0.184±0.035	<0.085±0.076	<0.141±0.023	<0.185±0.031	<0.082±0.075		<0.075±0.069
20	05/22/05	fCi/M3	<0.27±0.072	<0.263±0.085	<0.147±0.071	<0.248±0.033	<0.249±0.141	<0.138±0.082	<0.135±0.05
21	05/28/05	fCi/M3	<0.177±0.077	<0.2±0.077	<0.24±0.1	<0.35±0.086	<0.184±0.035		<0.153±0.077
22	06/03/05	fCi/M3	<0.221±0.027	<0.183±0.093	<0.148±0.041	<0.246±0.032	<0.289±0.119	<0.188±0.059	<0.159±0.053
23	06/09/05	fCi/M3	<0.068±0.019	<0.021±0.019	<0.059±0.006	<0.051±0.022	<0.064±0.005	<0.05±0.026	<0.039±0.004
24	06/15/05	fCi/M3	<0.309±0.091		<0.226±0.075	<0.215±0.08	<0.231±0.086	<0.21±0.07	<0.174±0.055
25	06/21/05	fCi/M3	<0.071±0.074	<0.167±0.035	<0.264±0.09	<0.144±0.048	<0.21±0.078	<0.227±0.085	<0.208±0.106
26	06/27/05	fCi/M3	<0.281±0.122	<0.077±0.057	<0.132±0.07	<0.387±0.167	<0.453±0.233	0.18±0.172	<0.136±0.016
Parameter:	**THORIUM-230**								
12	04/04/05	fCi/M3	<0.07±0.071	<0.069±0.075	<0.114±0.019	<0.072±0.084	0.097±0.087	<0.064±0.068	<0.08±0.069
13	04/10/05	fCi/M3	<0.078±0.089	<0.071±0.063	<0.116±0.043	<0.067±0.072	<0.057±0.065	<0.057±0.051	<0.154±0.03
14	04/16/05	fCi/M3	<0.075±0.087	<0.059±0.069	<0.038±0.04	<0.114±0.009	<0.147±0.075	<0.071±0.052	0.08±0.075
15	04/22/05	fCi/M3	<0.165±0.06	<0.055±0.057	<0.126±0.056	<0.132±0.067	<0.063±0.065	<0.103±0.103	<0.052±0.038
17	05/04/05	fCi/M3	<0.276±0.089	<0.155±0.026	<0.148±0.114	<0.076±0.088	<0.071±0.065	<0.053±0.056	<0.081±0.083
18	05/10/05	fCi/M3	<0.144±0.048	<0.142±0.053	<0.146±0.06	<0.068±0.05	<0.068±0.059	<0.054±0.04	<0.053±0.039
19	05/16/05	fCi/M3	<0.154±0.124	0.132±0.117	<0.053±0.056	<0.07±0.075	<0.069±0.064		<0.138±0.052
20	05/22/05	fCi/M3	<0.07±0.066	<0.073±0.067	<0.044±0.046	<0.124±0.011	<0.163±0.082	<0.145±0.028	<0.142±0.071
21	05/28/05	fCi/M3	0.084±0.077	<0.077±0.071	<0.133±0.082	<0.144±0.012	<0.156±0.11		<0.059±0.043
22	06/03/05	fCi/M3	<0.138±0.083	<0.103±0.076	<0.052±0.061	<0.163±0.084	0.156±0.141	0.194±0.133	0.125±0.104
23	06/09/05	fCi/M3	<0.023±0.02	<0.036±0.003	<0.027±0.029	<0.049±0.004	<0.035±0.032	<0.041±0.018	<0.028±0.002
24	06/15/05	fCi/M3	<0.075±0.055		<0.079±0.059	<0.206±0.104	<0.1±0.074	<0.164±0.099	<0.119±0.06
25	06/21/05	fCi/M3	<0.075±0.088	<0.115±0.069	<0.061±0.064	0.094±0.086	<0.202±0.102	<0.099±0.089	<0.163±0.138
26	06/27/05	fCi/M3	<0.154±0.139	<0.075±0.069	<0.089±0.038	<0.209±0.017	<0.212±0.128	<0.098±0.086	<0.092±0.065

Event	Date	Units	AM-1-PM10	AM-1-PM10-Dup	AM-2-PM10	AM-3-PM10	AM-4-PM10	AM-5-PM10	AM-6-PM10
Parameter:	**THORIUM-232**								
12	04/04/05	fCi/M3	<0.07±0.065	<0.153±0.025	<0.114±0.042	<0.145±0.024	<0.116±0.06	<0.064±0.048	<0.08±0.007
13	04/10/05	fCi/M3	<0.071±0.061	<0.157±0.026	<0.116±0.019	<0.149±0.025	<0.114±0.042	<0.126±0.046	<0.057±0.051
14	04/16/05	fCi/M3	<0.067±0.05	<0.059±0.069	<0.043±0.05	<0.114±0.009	<0.147±0.054	<0.071±0.072	<0.043±0.045
15	04/22/05	fCi/M3	<0.165±0.06	<0.055±0.05	<0.046±0.042	<0.132±0.044	<0.063±0.046	<0.069±0.052	<0.052±0.038
17	05/04/05	fCi/M3	<0.102±0.089	<0.07±0.065	<0.148±0.029	<0.068±0.064	<0.071±0.065	<0.053±0.048	<0.055±0.05
18	05/10/05	fCi/M3	<0.053±0.039	<0.065±0.057	<0.146±0.049	<0.068±0.059	<0.068±0.059	<0.054±0.049	<0.053±0.048
19	05/16/05	fCi/M3	<0.057±0.051	<0.158±0.026	<0.118±0.044	<0.155±0.026	<0.069±0.064		<0.138±0.023
20	05/22/05	fCi/M3	<0.07±0.066	<0.073±0.067	<0.044±0.046	<0.124±0.053	<0.163±0.016	<0.054±0.048	<0.142±0.027
21	05/28/05	fCi/M3	<0.084±0.007	<0.17±0.028	<0.075±0.07	<0.144±0.063	<0.058±0.042		<0.13±0.022
22	06/03/05	fCi/M3	<0.078±0.058	<0.103±0.062	<0.083±0.007	<0.078±0.07	<0.149±0.012	<0.059±0.053	<0.057±0.042
23	06/09/05	fCi/M3	<0.023±0.02	<0.02±0.018	<0.027±0.025	<0.028±0.025	<0.035±0.032	<0.023±0.021	<0.028±0.002
24	06/15/05	fCi/M3	<0.075±0.068		<0.079±0.072	<0.093±0.098	<0.1±0.091	<0.074±0.067	<0.119±0.02
25	06/21/05	fCi/M3	<0.068±0.061	<0.115±0.019	<0.061±0.045	<0.051±0.054	<0.091±0.067	<0.099±0.089	<0.074±0.054
26	06/27/05	fCi/M3	<0.154±0.139	<0.075±0.069	<0.105±0.011	<0.246±0.025	<0.212±0.093	<0.098±0.086	<0.108±0.04
Parameter:	**URANIUM-234**								
12	04/04/05	fCi/M3	<0.2±0.212	<0.368±0.031	<0.338±0.034	<0.179±0.162	<0.201±0.008	<0.296±0.017	<0.39±0.161
13	04/10/05	fCi/M3	<0.481±0.061	<0.558±0.206	<0.345±0.194	<0.556±0.072	<0.356±0.152	<0.362±0.187	<0.264±0.022
14	04/16/05	fCi/M3	<0.39±0.048	<0.268±0.027	<0.309±0.034	<0.392±0.105	<0.453±0.22	<0.134±0.096	<0.261±0.026
15	04/22/05	fCi/M3	<0.15±0.113	<0.634±0.189	<0.291±0.03	<0.144±0.105	<0.237±0.092	<0.287±0.016	<0.281±0.103
17	05/04/05	fCi/M3	<0.381±0.143	<0.294±0.148	<0.527±0.215	<0.332±0.216	<0.416±0.054	<0.438±0.215	<0.166±0.125
18	05/10/05	fCi/M3	<0.365±0.047	<0.127±0.096	<0.144±0.132	<0.255±0.095	<0.164±0.124	<0.132±0.117	<0.289±0.029
19	05/16/05	fCi/M3	<0.477±0.053	<0.172±0.153	<0.545±0.07	<0.4±0.045	<0.615±0.383		<0.516±0.189
20	05/22/05	fCi/M3	<0.262±0.015	<0.148±0.109	<0.366±0.124	<0.439±0.055	<0.361±0.04	<0.38±0.106	<0.38±0.148
21	05/28/05	fCi/M3	<0.202±0.148	<0.625±0.253	<0.368±0.037	<0.165±0.121	<0.261±0.116		<2.38±0.155
22	06/03/05	fCi/M3	<0.248±0.155	<0.335±0.026	<0.243±0.098	<0.173±0.157	<0.255±0.013	<0.435±0.028	<0.144±0.131
23	06/09/05	fCi/M3	<0.068±0.036	<0.105±0.05	<0.069±0.03	<0.031±0.036	0.063±0.052	<0.131±0.055	<0.028±0.03
24	06/15/05	fCi/M3	<0.151±0.112		<0.144±0.131	<0.141±0.128	<0.236±0.118	<0.255±0.013	<0.457±0.146
25	06/21/05	fCi/M3	<0.139±0.146	<0.127±0.094	<0.349±0.045	<0.247±0.105	<0.146±0.108	<0.169±0.198	<0.158±0.166
26	06/27/05	fCi/M3	<0.125±0.116	<0.128±0.097	<0.132±0.117	<0.242±0.173	<0.216±0.009	<0.431±0.03	<0.161±0.172

Event	Date	Units	AM-1-PM10	AM-1-PM10-Dup	AM-2-PM10	AM-3-PM10	AM-4-PM10	AM-5-PM10	AM-6-PM10
Parameter:	**URANIUM-235**								
12	04/04/05	fCi/M3	<0.2±0.183	<0.368±0.031	<0.162±0.148	<0.179±0.162	<0.228±0.011	<0.239±0.12	<0.357±0.018
13	04/10/05	fCi/M3	<0.313±0.133	<0.472±0.039	<0.376±0.045	<0.53±0.067	<0.249±0.108	<0.173±0.157	<0.15±0.108
14	04/16/05	fCi/M3	<0.144±0.128	<0.227±0.019	<0.336±0.04	<0.372±0.048	<0.252±0.021	<0.236±0.02	<0.125±0.115
15	04/22/05	fCi/M3	<0.265±0.022	<0.233±0.211	<0.14±0.128	<0.144±0.128	<0.178±0.007	<0.263±0.013	<0.238±0.02
17	05/04/05	fCi/M3	<0.323±0.027	<0.141±0.13	<0.194±0.173	<0.361±0.111	<0.416±0.054	<0.288±0.029	<0.294±0.025
18	05/10/05	fCi/M3	<0.224±0.019	<0.127±0.113	<0.254±0.022	<0.122±0.112	<0.29±0.024	<0.234±0.02	<0.139±0.128
19	05/16/05	fCi/M3	<0.362±0.03	<0.304±0.025	<0.201±0.181	<0.435±0.052	<0.586±0.168		<0.301±0.025
20	05/22/05	fCi/M3	<0.24±0.107	<0.262±0.022	<0.278±0.024	<0.161±0.117	<0.394±0.046	<0.361±0.046	<0.234±0.02
21	05/28/05	fCi/M3	<0.358±0.03	<0.573±0.029	<0.176±0.158	<0.165±0.121	<0.261±0.013		<1.695±0.065
22	06/03/05	fCi/M3	<0.248±0.155	<0.287±0.02	<0.132±0.119	<0.257±0.129	<0.225±0.009	<0.411±0.025	<0.144±0.131
23	06/09/05	fCi/M3	<0.068±0.023	<0.03±0.023	<0.027±0.02	<0.058±0.008	<0.028±0.021	<0.11±0.045	<0.028±0.021
24	06/15/05	fCi/M3	<0.151±0.137		<0.144±0.131	<0.25±0.021	<0.159±0.143	<0.255±0.013	<0.286±0.143
25	06/21/05	fCi/M3	<0.246±0.021	<0.127±0.114	<0.214±0.129	<0.14±0.126	<0.146±0.132	<0.153±0.138	<0.158±0.143
26	06/27/05	fCi/M3	<0.125±0.116	<0.128±0.114	<0.233±0.019	<0.163±0.15	<0.216±0.009	<0.28±0.137	<0.161±0.148
Parameter:	**URANIUM-238**								
12	04/04/05	fCi/M3	<0.2±0.147	<0.485±0.054	<0.162±0.148	<0.373±0.038	<0.309±0.104	<0.317±0.019	<0.314±0.013
13	04/10/05	fCi/M3	<0.449±0.194	<0.558±0.206	<0.489±0.068	<0.53±0.206	<0.327±0.152	<0.173±0.157	<0.312±0.031
14	04/16/05	fCi/M3	<0.364±0.043	<0.268±0.167	<0.438±0.228	<0.351±0.043	<0.433±0.193	<0.279±0.144	<0.125±0.115
15	04/22/05	fCi/M3	<0.15±0.113	<0.589±0.183	<0.14±0.102	<0.3±0.111	<0.237±0.124	<0.232±0.009	<0.281±0.143
17	05/04/05	fCi/M3	<0.381±0.196	<0.141±0.13	<0.491±0.058	<0.387±0.158	<0.301±0.112	<0.419±0.215	<0.347±0.131
18	05/10/05	fCi/M3	<0.321±0.14	<0.265±0.027	<0.3±0.108	<0.122±0.089	<0.382±0.043	<0.234±0.02	<0.139±0.128
19	05/16/05	fCi/M3	<0.477±0.218	<0.359±0.036	<0.509±0.158	<0.466±0.058	<0.55±0.162		<0.462±0.138
20	05/22/05	fCi/M3	<0.211±0.008	<0.309±0.157	<0.366±0.041	<0.41±0.129	<0.422±0.123	<0.292±0.188	<0.334±0.202
21	05/28/05	fCi/M3	<0.202±0.183	<0.505±0.02	<0.176±0.158	<0.344±0.035	<0.353±0.025		<2.249±0.137
22	06/03/05	fCi/M3	<0.29±0.11	<0.287±0.136	<0.196±0.008	<0.341±0.13	<0.225±0.159	<0.352±0.018	<0.256±0.021
23	06/09/05	fCi/M3	<0.084±0.251	<0.045±0.046	<0.027±0.028	<0.088±0.033	<0.059±0.031	<0.097±0.032	<0.077±0.042
24	06/15/05	fCi/M3	<0.267±0.114		<0.255±0.109	<0.25±0.021	<0.293±0.016	<0.255±0.112	<0.192±0.143
25	06/21/05	fCi/M3	<0.246±0.021	<0.224±0.095	<0.367±0.186	<0.247±0.105	<0.146±0.108	<0.153±0.113	<0.158±0.143
26	06/27/05	fCi/M3	<0.222±0.019	<0.128±0.114	<0.233±0.1	<0.3±0.017	<0.245±0.012	<0.188±0.172	<0.161±0.118

Notes

fCi/M3 = femtoCuries per cubic meter
PM-10 = particulate matter with a diameter of 10 microns or less
PM-10 analysis performed per 40 CFR 50 Appendix J

Table 12. Summary of Radiochemicals Analyzed on TSP Filters, 2Q 2005

Event	Date	Units	AM-1-TSP	AM-2-TSP	AM-3-TSP	AM-4-TSP	AM-5-TSP	AM-6-TSP
Parameter:	**ALPHA, GROSS**							
22	06/03/05	fCi/M3	<0.071±0.199	<0.043±0.097	<0.051±0.06	<0.058±0.131	<0.041±0.034	<0.048±0.136
23	06/09/05	fCi/M3	<1.41±0.823	<1.435±0.709	<1.269±0.564	<1.486±0.52	<1.463±0.968	<1.216±0.541
24	06/15/05	fCi/M3	<2.508±1.489	<1.927±1.213	3.506±1.756	3.216±1.84	<1.817±1.215	2.171±1.449
25	06/21/05	fCi/M3	<1.562±1.153	2.081±1.373	2.456±1.572	<2.779±1.622	<2.193±1.329	<1.793±1.039
26	06/27/05	fCi/M3	<1.474±0.958	<2.118±1.273	<1.853±0.807	<1.682±1.123	1.667±1.106	<2.222±0.945
Parameter:	**BETA, GROSS**							
22	06/03/05	fCi/M3	1.09±0.79	1.193±0.863	1.073±0.784	1.094±0.801	1.196±0.866	1.227±0.884
23	06/09/05	fCi/M3	3.122±1.206	3.342±1.219	4.129±1.354	3.061±1.159	4.508±1.321	3.741±1.238
24	06/15/05	fCi/M3	16.614±3.171	18.272±3.555	16.912±3.559	16.552±3.801	18.609±3.578	16.97±3.366
25	06/21/05	fCi/M3	13.417±2.725	11.367±2.581	13.912±2.852	12.977±2.721	12.791±2.602	12.521±2.679
26	06/27/05	fCi/M3	11.927±2.438	13.434±2.616	21.274±4.039	24.347±4.791	22.497±4.081	20.532±3.949
Parameter:	**RADIUM-226**							
22	06/03/05	fCi/M3	<0.389±0.219	<0.523±0.274	<0.438±0.26	<0.268±0.164	<0.415±0.241	<0.304±0.215
23	06/09/05	fCi/M3	<0.463±0.255	<0.318±0.174	0.495±0.3	<0.297±0.205	<0.506±0.212	<0.343±0.223
24	06/15/05	fCi/M3	0.487±0.305	<0.388±0.25	0.447±0.274	0.338±0.236	<0.29±0.172	<0.345±0.198
25	06/21/05	fCi/M3	<0.52±0.278	<0.285±0.203	<0.555±0.274	<0.483±0.335	<0.327±0.221	<0.336±0.208
26	06/27/05	fCi/M3	<0.403±0.249	<0.315±0.202	<0.337±0.175	<0.235±0.166	0.311±0.173	<0.303±0.194
Parameter:	**RADIUM-228**							
22	06/03/05	fCi/M3	1.679±0.749	2.493±0.89	2.056±0.795	1.978±0.785	<1.153±0.655	1.644±0.787
23	06/09/05	fCi/M3	1.763±0.772	1.697±0.699	2.307±0.874	1.45±0.748	1.446±0.718	1.416±0.714
24	06/15/05	fCi/M3	<0.987±0.554	<1.047±0.642	1.32±0.666	2.541±0.896	1.436±0.707	<1.047±0.545
25	06/21/05	fCi/M3	<0.954±0.524	1.785±0.769	1.199±0.64	<0.958±0.576	1.323±0.664	<1.104±0.601
26	06/27/05	fCi/M3	2.125±1.01	2.291±0.926	1.823±0.818	3.678±1.217	3.911±1.177	2.417±0.88
Parameter:	**THORIUM-228**							
22	06/03/05	fCi/M3	<0.171±0.068	<0.137±0.046	<0.224±0.089	<0.185±0.036	<0.126±0.087	<0.168±0.072
23	06/09/05	fCi/M3	<0.029±0.002	<0.037±0.002	<0.04±0.013	<0.041±0.014	<0.053±0.004	<0.042±0.015
24	06/15/05	fCi/M3	<0.014±0.006	<0.029±0.008	<0.034±0.019	<0.014±0.006	<0.017±0.011	<0.032±0.011
25	06/21/05	fCi/M3	<0.253±0.1	<0.174±0.066	0.211±0.175	<0.173±0.12	<0.157±0.03	<0.162±0.104
26	06/27/05	fCi/M3	<0.023±0.012	<0.024±0.018	<0.033±0.008	<0.027±0.009	<0.022±0.011	<0.02±0.003
Parameter:	**THORIUM-230**							
22	06/03/05	fCi/M3	0.099±0.089	<0.049±0.036	<0.07±0.073	<0.066±0.049	<0.121±0.073	0.11±0.1
23	06/09/05	fCi/M3	<0.018±0.001	<0.025±0.001	<0.017±0.015	<0.029±0.013	<0.031±0.027	<0.029±0.001
24	06/15/05	fCi/M3	<0.009±0.004	<0.015±0.001	0.098±0.039	<0.008±0.01	0.012±0.011	<0.017±0.01
25	06/21/05	fCi/M3	0.113±0.105	<0.049±0.051	0.265±0.192	0.36±0.209	<0.123±0.072	<0.112±0.087
26	06/27/05	fCi/M3	<0.018±0.011	<0.013±0.012	<0.008±0.008	<0.011±0.012	<0.021±0.004	0.016±0.015

Event	Date	Units	AM-1-TSP	AM-2-TSP	AM-3-TSP	AM-4-TSP	AM-5-TSP	AM-6-TSP
Parameter:	**THORIUM-232**							
22	06/03/05	fCi/M3	0.099±0.089	<0.049±0.044	<0.07±0.052	<0.066±0.049	<0.121±0.02	0.132±0.11
23	06/09/05	fCi/M3	<0.018±0.001	<0.025±0.013	<0.025±0.001	<0.017±0.016	<0.031±0.001	<0.019±0.017
24	06/15/05	fCi/M3	<0.011±0.006	<0.018±0.002	<0.016±0.007	<0.007±0.006	<0.014±0.005	<0.02±0.007
25	06/21/05	fCi/M3	<0.061±0.058	<0.049±0.036	<0.084±0.087	<0.083±0.099	<0.056±0.042	<0.112±0.042
26	06/27/05	fCi/M3	<0.008±0.006	<0.013±0.012	<0.008±0.006	<0.01±0.009	<0.01±0.009	<0.009±0.007
Parameter:	**URANIUM-234**							
22	06/03/05	fCi/M3	<0.268±0.085	<0.201±0.01	<0.218±0.011	<0.137±0.16	<0.256±0.147	<0.354±0.023
23	06/09/05	fCi/M3	<0.106±0.058	<0.068±0.032	<0.024±0.025	<0.026±0.03	0.046±0.025	<0.022±0.022
24	06/15/05	fCi/M3	<0.087±0.059	<0.223±0.095	<0.209±0.212	<0.129±0.116	<0.137±0.102	<0.12±0.089
25	06/21/05	fCi/M3	<0.375±0.126	<0.15±0.137	<0.215±0.221	<0.303±0.22	<0.235±0.1	<0.129±0.115
26	06/27/05	fCi/M3	<0.336±0.096	<0.199±0.1	<0.226±0.161	<0.428±0.031	<0.154±0.129	<0.161±0.12
Parameter:	**URANIUM-235**							
22	06/03/05	fCi/M3	<0.235±0.085	<0.201±0.01	<0.129±0.096	<0.183±0.007	<0.207±0.008	<0.312±0.179
23	06/09/05	fCi/M3	<0.059±0.023	<0.068±0.032	<0.024±0.018	<0.024±0.025	<0.025±0.025	<0.022±0.022
24	06/15/05	fCi/M3	<0.06±0.023	<0.223±0.019	<0.141±0.128	<0.129±0.116	<0.137±0.124	<0.12±0.108
25	06/21/05	fCi/M3	<0.244±0.01	<0.15±0.137	<0.258±0.111	<0.23±0.019	<0.133±0.122	<0.129±0.115
26	06/27/05	fCi/M3	<0.206±0.017	<0.134±0.121	<0.153±0.138	<0.268±0.011	<0.154±0.139	<0.161±0.146
Parameter:	**URANIUM-238**							
22	06/03/05	fCi/M3	<0.247±0.119	<0.235±0.014	<0.129±0.096	<0.243±0.092	<0.207±0.008	<0.286±0.014
23	06/09/05	fCi/M3	<0.113±0.054	<0.086±0.042	<0.024±0.018	<0.035±0.035	<0.025±0.025	<0.061±0.061
24	06/15/05	fCi/M3	<0.114±0.061	<0.263±0.027	<0.209±0.212	<0.143±0.167	<0.137±0.124	<0.211±0.09
25	06/21/05	fCi/M3	<0.164±0.121	<0.15±0.137	<0.258±0.192	<0.375±0.283	<0.277±0.144	<0.19±0.191
26	06/27/05	fCi/M3	<0.414±0.182	<0.246±0.141	<0.257±0.198	<0.18±0.163	<0.154±0.139	<0.336±0.034

Notes

fCi/M3 = femtoCuries per cubic meter
TSP = total suspended particulates