Appendix G Corrected Chemical Results

APPENDIX G
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LIST OF ATTACHMENTS

1. SUMMARY OF CORRECTIONS TO DATA VALIDATION QUALIFIERS

The third quarter 2010 groundwater report [*Groundwater Monitoring Progress Report Third Quarter 2010 July Through September 2010, Santa Susana Field Laboratory, Ventura County, California* (MWH, 2010)] was published on November 30, 2010. Several data validation qualifier codes applied by Laboratory Data Consultants, Inc. (LDC) of Carlsbad, California during validation of the data were incorrectly assigned to several samples, and were subsequently changed.

1.1 Field Duplicate Revised Qualifiers

Per the Groundwater Monitoring QAPP (Haley &Aldrich, 2010), relative percent differences (RPDs) are calculated for field duplicate pairs only if analytes are detected in both the primary and duplicate samples at concentrations exceeding five times their reporting limits (RL). This requirement was overlooked by LDC during review of the data and validation qualifiers were incorrectly assigned to several field duplicate pairs. The field duplicate pairs affected are present below and the validation qualifier changes are summarized on Table G-1.

Primary Sample	Field Duplicate Sample	Parameter
HAR-26_080910_01	HAR-26_080910_36	bis(2-Ethylhexyl) phthalate
RD-36C_080610_01	RD-36C_080610_36	bis(2-Ethylhexyl) phthalate

1.2 Split Sample Revised Qualifier

Several split samples were not identified by LDC during their review of third quarter verification sample results, and therefore were not evaluated for precision. Follow-up review of the data determined that one split sample RPD exceeded the project acceptance criterion of 35, which resulted in validation qualifiers being assigned to the split sample pair presented below. The validation qualifier changes are summarized in Table G-1.

Primary Sample	Split Sample	Parameter
HAR-26_080910_01	HAR-26_080910_03	bis(2-Ethylhexyl) phthalate

1.3 Un-Rejected Data

Four monitoring wells (ES-13, PZ-076, PZ-141, and SH-04) were recollected for specific analyses in order to meet equipment blank requirements in the Groundwater Monitoring (Haley & Aldrich, 2010) and SMOU RFI (MECx, 2009) QAPPs. For each set of recollected wells, LDC was instructed to pick the more technically sound data for reporting, and reject the duplicate results. Instead of rejecting only the duplicate data for the analyses that were recollected, LDC rejected all data associated with one of the two replicate

samples. This resulted data being rejected that did not have a more technically sound replacement data. LDC was asked to reassess the recollected wells, and un-reject the results that were not duplicates. The samples and analyses that had revised validation qualifier codes are presented below and the changes are summarized in Table G-1.

Primary Sample	EPA Method
ES-13_081710_01_	SW8260B
PZ-076_081710_01	SW8260B SW8260B with Selective Ion Monitoring (SIM)
PZ-141_090310_01	SW8290 SW8270C
SH-04_080910_01	1625M SW8260B SW8260B SIM SW8270C SW8315A
SH-04_080910_36	1625M

Summary of Data Qualification Changes,
Revision 1 to Table A-3 of the Third Quarter 2010 Groundwater Monitoring Report

Well ID	Collection Date	Sample Type	Analytical Method	Parameter	Sample Result	Units	Original Qualifier Code	Revised Qualifier Code	Validation Level	Reason for Revision	Validation Report
ES-13	8/17/2010	Primary Sample	8260B	1,1,1-Trichloroethane	0.16	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	1,1,2-Trichloro-1,2,2-trifluoroethane	0.42	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	1,1,2-Trichloroethane	0.27	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	1,1-Dichloroethane	0.22	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	1,1-Dichloroethene	0.23	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	1,2-Dichloroethane	0.13	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	Acetone	4.8	µg/L	R	J	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	Benzene	0.16	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	Carbon Tetrachloride	0.19	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	Chloroform	0.16	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	cis-1,2-Dichloroethene	0.27	µg/L	R	J	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	Ethylbenzene	0.16	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	Methyl ethyl ketone	2	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	Methylene chloride	0.35	µg/L	R	J	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	m-Xylene & p-Xylene	0.34	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	o-Xylene	0.19	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	Tetrachloroethene	0.2	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	Toluene	0.17	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	trans-1,2-Dichloroethene	0.15	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	Trichloroethene	0.16	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	Trichlorofluoromethane	0.29	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
ES-13	8/17/2010	Primary Sample	8260B	Vinyl chloride	0.4	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1

Summary of Data Qualification Changes,
Revision 1 to Table A-3 of the Third Quarter 2010 Groundwater Monitoring Report

Well ID	Collection Date	Sample Type	Analytical Method	Parameter	Sample Result	Units	Original Qualifier Code	Revised Qualifier Code	Validation Level	Reason for Revision	Validation Report
PZ-076	8/17/2010	Primary Sample	8260B	1,1,1-Trichloroethane	0.16	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	1,1,2-Trichloro-1,2,2-trifluoroethane	0.42	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	1,1,2-Trichloroethane	0.27	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	1,1-Dichloroethane	0.22	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	1,1-Dichloroethene	0.27	µg/L	R	J	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	1,2-Dichloroethane	0.13	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	Acetone	1.9	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	Benzene	0.16	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	Carbon Tetrachloride	0.19	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	Chloroform	0.16	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	cis-1,2-Dichloroethene	0.15	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	Ethylbenzene	0.16	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	Methyl ethyl ketone	2	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	Methylene chloride	0.37	µg/L	R	J	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	m-Xylene & p-Xylene	0.34	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	o-Xylene	0.19	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	Tetrachloroethene	0.2	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	Toluene	0.17	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	trans-1,2-Dichloroethene	0.15	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	Trichloroethene	3.3	µg/L	R		V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	Trichlorofluoromethane	0.29	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1
PZ-076	8/17/2010	Primary Sample	8260B	Vinyl chloride	0.4	µg/L	R	U	V	Result incorrectly rejected during validation	24042 Revision 1

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Well ID	Collection Date	Sample Type	Analytical Method	Parameter	Sample Result	Units	Original Qualifier Code	Revised Qualifier Code	Validation Level	Reason for Revision	Validation Report
PZ-076	8/17/2010	Primary Sample	8260B SIM	1,4-Dioxane	6.1	µg/L	R		V	Result incorrectly rejected during validation	24042 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.97	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	1.5	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	1,2,3,4,7,8,9-Heptachlorodibenzofuran	1.4	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	1,2,3,4,7,8-Hexachlorodibenzofuran	0.74	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	1.1	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	1,2,3,6,7,8-Hexachlorodibenzofuran	0.74	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	1.4	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	1,2,3,7,8,9-Hexachlorodibenzofuran	0.89	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	1.1	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	1,2,3,7,8-Pentachlorodibenzofuran	1.3	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	1.9	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	2,3,4,6,7,8-Hexachlorodibenzofuran	0.81	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	2,3,4,7,8-Pentachlorodibenzofuran	1.1	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	2,3,7,8-TCDD	3.4	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	2,3,7,8-Tetrachlorodibenzofuran	2.3	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	Octachlorodibenzofuran	1.4	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8290	Octachlorodibenzo-p-dioxin	1.4	pg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	1,2,4-Trichlorobenzene	0.3	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	1,3-Dinitrobenzene	2.1	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	2,4,6-Trichlorophenol	0.31	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	2,4-Dichlorophenol	0.68	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1

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PZ-141	9/3/2010	Primary Sample	8270C	2,4-Dimethylphenol	0.61	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	2,4-Dinitrophenol	11	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	2,4-Dinitrotoluene	1.8	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	2,6-Dinitrotoluene	2	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	2-Chloronaphthalene	0.28	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	2-Chlorophenol	2.1	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	2-Nitrophenol	0.41	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	3,3'-Dichlorobenzidine	2.1	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	4,6-Dinitro-o-cresol	4.2	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	4-Bromophenyl phenyl ether	0.46	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	4-Chlorophenylphenyl ether	1.8	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	4-Nitrophenol	1.3	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Acenaphthene	0.3	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Acenaphthylene	0.52	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Anthracene	0.45	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Azobenzene	0.24	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Benzidine	53	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Benzo(a)anthracene	0.37	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Benzo(a)pyrene	0.33	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Benzo(b)fluoranthene	0.56	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Benzo(ghi)perylene	0.53	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Benzo(k)fluoranthene	0.49	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1

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PZ-141	9/3/2010	Primary Sample	8270C	bis(2-Chloroethoxy)methane	1	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	bis(2-Chloroethyl) ether	0.43	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	bis(2-Chloroisopropyl) ether	0.3	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	bis(2-Ethylhexyl) phthalate	11	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Butyl benzyl phthalate	1.1	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Chrysene	0.57	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Dibenzo(a,h)anthracene	0.54	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Diethyl phthalate	0.4	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Dimethyl phthalate	0.22	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Di-n-butyl phthalate	1.2	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Di-n-octyl phthalate	0.37	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Fluoranthene	0.21	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Fluorene	0.33	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Hexachlorobenzene	0.7	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Hexachlorobutadiene	3.5	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Hexachloroethane	2.2	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Indeno(1,2,3-cd)pyrene	0.69	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Isophorone	0.22	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Naphthalene	0.31	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Nitrobenzene	0.86	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	n-Nitrosodimethylamine	0.31	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	n-Nitrosodi-n-propylamine	0.37	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1

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Well ID	Collection Date	Sample Type	Analytical Method	Parameter	Sample Result	Units	Original Qualifier Code	Revised Qualifier Code	Validation Level	Reason for Revision	Validation Report
PZ-141	9/3/2010	Primary Sample	8270C	n-Nitrosodiphenylamine	0.47	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	p-Chloro-m-cresol	2.6	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Pentachlorophenol	21	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Phenanthrene	0.28	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
PZ-141	9/3/2010	Primary Sample	8270C	Phenol	2.1	µg/L	R	U	V	Result incorrectly rejected during validation	24031 Revision 1
SH-04	8/9/2010	Primary Sample	1625M	n-Nitrosodimethylamine	0.077	µg/L	R		V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	1,1,1-Trichloroethane	0.91	µg/L	R	J	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	1,1,2-Trichloro-1,2,2-trifluoroethane	15	µg/L	R		V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	1,1,2-Trichloroethane	0.27	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	1,1-Dichloroethane	6.8	µg/L	R		V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	1,1-Dichloroethene	2.3	µg/L	R		V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	1,2-Dichloroethane	2.7	µg/L	R		V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	Acetone	6.3	µg/L	R	J	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	Benzene	0.16	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	Carbon Tetrachloride	18	µg/L	R		V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	Chloroform	20	µg/L	R		V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	cis-1,2-Dichloroethene	4.6	µg/L	R		V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	Ethylbenzene	0.16	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	Methyl ethyl ketone	2	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	Methylene chloride	0.85	µg/L	R	J	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	m-Xylene & p-Xylene	0.34	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	o-Xylene	0.19	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1

Summary of Data Qualification Changes,
Revision 1 to Table A-3 of the Third Quarter 2010 Groundwater Monitoring Report

Well ID	Collection Date	Sample Type	Analytical Method	Parameter	Sample Result	Units	Original Qualifier Code	Revised Qualifier Code	Validation Level	Reason for Revision	Validation Report
SH-04	8/9/2010	Primary Sample	8260B	Tetrachloroethene	5.8	µg/L	R		V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	Toluene	0.17	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	trans-1,2-Dichloroethene	0.15	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	Trichloroethene	48	µg/L	R		V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	Trichlorofluoromethane	0.29	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B	Vinyl chloride	0.4	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8260B SIM	1,4-Dioxane	10	µg/L	R		V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8270C	1,3-Dinitrobenzene	1.9	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8270C	Anthracene	0.4	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8270C	Nitrobenzene	0.77	µg/L	R	U	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Primary Sample	8315A	Formaldehyde	21	µg/L	R	J	V	Result incorrectly rejected during validation	24029 Revision 1
SH-04	8/9/2010	Field Duplicate	1625M	n-Nitrosodimethylamine	0.091	µg/L	R		V	Result incorrectly rejected during validation	24029 Revision 1

NOTES AND ABBREVIATIONS

µg/L - micrograms per liter
J - Result is estimated
pg/L - picrograms per liter
R - Result is rejected
U - Not detected above the method detection limit (MDL) or reporting limit (RL)

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

December 3, 2010

SUBJECT: Boeing SSFL GW 3rd Qtr, Data Validation

Dear Mr. Reiners,

Enclosed are the revised data validation reports for the Boeing SSFL GW 3rd Qtr data validation project. Please replace the previously submitted reports with the enclosed revised reports.

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng

Pei Geng
Project Manager/Senior Chemist

23864_257713_Wet Chemistry

23886_257987_Semivolatiles

23917_280-5734-1_N-Nitrosodimethylamine
_280-5847-1_N-Nitrosodimethylamine

23935_258363_Semivolatiles
_258758_Semivolatiles

23977_280-5697-1_N-Nitrosodimethylamine

24000_1208252_1, 2, 3-Trichloropropane
_280-5962-1_Semivolatiles
_280-5927-1_Wet Chemistry
_280-5962-1_Gasoline Range Organics

24029_280-6071-1_Volatiles
_280-6162-1_Volatiles
_280-6268-1_Volatiles
_280-6071-1_Semivolatiles
_280-6162-1_Semivolatiles
_280-6121-1_Semivolatiles
_280-6268-1_Semivolatiles
_280-6325-1_Semivolatiles
_280-6162-1_N-Nitrosodimethylamine
_280-6121-1_N-Nitrosodimethylamine
_280-6121-1_Metals
_280-6325-1_Metals
_280-6268-1_Wet Chemistry
_280-6162-1/A0H100485_Formaldehyde

24031_280-7064-1_Volatiles
_280-7064-1_1, 4-Dioxane
_280-7064-1_Semivolatiles
_280-7064-1_N-Nitrosodimethylamine
_280-7064-1_Polychlorinated Biphenyls
_280-7064-1_Metals
_280-7064-1_Diesel Range Organics
_280-7064-1_Wet Chemistry
_280-7064-1_Dioxins/Dibenzofurans
_280-7064-1_Formaldehyde
_280-7064-1_Hydrazines

24042_280-6444-1_Volatiles
_280-6444-1_1, 4-Dioxane

_280-6404-1/ITH1626_1, 2, 3-Trichloropropane

24081_260237_Volatiles
- _260237_Semivolatiles
- _260237_1, 4-Dioxane
- _280-6500-1_N-Nitrosodimethylamine
- _260237/0I07012_N-Nitrosodimethylamine
- _260237_Polychlorinated Biphenyls
- _260237_Water
- _260237/0I07012_Wet Chemistry
- _260237_Diesel Range Organics
- _260237/12001917_Dioxins/Dibenzofurans
- _260126_Gross alpha & Beta
- _260126_Tritium
- _260126_Gamma Spectroscopy
- _260126_Isotopic Uranium
- _260126_Strontium-90
- _260237/1210538_Formaldehyde
- _260237/1210538_Hydrazines

24290_280-7068-1/8983_Gross Alpha & Beta
- _280-7068-1/8983_Gamma Spectroscopy
- _280-7068-1/8983_Tritium
- _280-7068-1/8983_Isotopic Uranium
- _280-7068-1/8983_Strontium-90

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr.

Collection Date: August 2, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Wet Chemistry

Validation Level: Level V

Laboratory: General Engineering Laboratories, LLC

Sample Delivery Group (SDG): 257713

Sample Identification

HAR-09_080210_03
HAR-09_080210_03DUP
HAR-09_080210_03MS

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 350.1 for Ammonia as Nitrogen, Standard Method 2510B for Conductivity, EPA Method 300.0 for Chloride, Fluoride, Nitrate as Nitrogen, and Sulfate, EPA Method 314.0 for Perchlorate, EPA SW 846 Method 9040B for pH, Standard Method 2540C for Total Dissolved Solids, and EPA Method 180.1 for Turbidity.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
HAR-09_080210_03 HAR-09_080210_03DUP	pH	8 days	48 hours	J (all detects) UJ (all non-detects)	P
HAR-09_080210_03 HAR-09_080210_03DUP HAR-09_080210_03MS	Nitrate as N	62.5 hours	48 hours	J (all detects) UJ (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Ammonia as N Alkalinity	0.023 mg/L 1.00 mg/L	All samples in SDG 257713

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

No field blanks were identified in this SDG.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

All metals reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 257713	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*IX. Field Duplicates

Samples HAR-09_080210_03 and HAR-09_080210_01 (from SDG 280-5927-1) were identified as split samples. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Difference (Limits)	Flags	A or P
	HAR-09_080210_01	HAR-09_080210_03				
Alkalinity	720 mg/L	694 mg/L	4 (≤35)	-	-	-
Specific conductance	1300 umhos/cm	1360 umhos/cm	5 (≤35)	-	-	-
Total dissolved solids	830 mg/L	845 mg/L	2 (≤35)	-	-	-

Analyte	Concentration (mg/L)		RPD (Limits)	Difference (Limits)	Flags	A or P
	HAR-09_080210_01	HAR-09_080210_03				
Chloride	43 mg/L	37.8	13 (≤35)	-	-	-
Fluoride	0.36 mg/L	0.327	NA	-	-	-
Sulfate	34 mg/L	34.1	0 (≤35)	-	-	-
pH	7.26 units	7.34 units	1 (≤35)	-	-	-
Turbidity	37 NTU	34.4 NTU	7 (≤35)	-	-	-

*Added split sample (RPD/Difference) findings.

Boeing SSFL GW 3rd Qtr.
Wet Chemistry - Data Qualification Summary - SDG 257713

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
257713	HAR-09_080210_03	pH	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
257713	HAR-09_080210_03	Nitrate as N	J (all detects) UJ (all non-detects)	A	Technical holding times (H)
257713	HAR-09_080210_03	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*VII)

Boeing SSFL GW 3rd Qtr.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 257713

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr.
Wet Chemistry - Field Blank Data Qualification Summary - SDG 257713

No Sample Data Qualified in this SDG

LDC #: 23864E6 **VALIDATION COMPLETENESS WORKSHEET** Date: 9-9-10
SDG #: 257713 Level ~~II~~ IV Page: 1 of 1
Laboratory: GEL Laboratories LLC Reviewer: CR
2nd Reviewer: W

METHOD: (Analyte) Alkalinity (SM2320B), Ammonia-N (EPA Method 350.1), Conductivity (SM2510B), Chloride, Fluoride, Nitrate-N, Sulfate (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B), TDS (SM2540C), Turbidity (EPA Method 180.1), ~~Cortosulfide (SW9040)~~

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/2/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS
V	Duplicates	A	Dup
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates / Split samples	SW	Split=(1, HAR-09-080210_01 (SDG# 280-5927-1))
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	HAR-09_080210_03	11	PBW	21		31	
2	HAR-09_080210_03DUP	12		22		32	
3	↓ MS	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 23864E6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer:

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1		[✓ pH] [✓ TDS] [✓ Cl] [✓ F] [✓ NO_3] NO_2 [✓ SO_4] PO_4 [✓ ALK] CN^- [✓ NH_3] TKN TOC CR^{6+} [✓ ClO_4] [✓ Cond] ~~Corr~~ [✓ Turb]
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
QC2		[✓ pH] TDS [✓ Cl] [✓ F] [✓ NO_3] NO_2 [✓ SO_4] PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] [✓ Cond] ~~Corr~~
↓3		pH TDS [✓ Cl] [✓ F] [✓ NO_3] NO_2 [✓ SO_4] PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

LDC #: 23864E6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: CR
2nd reviewer:

All circled dates have exceeded the technical holding time.
Y (N) N/A Were all samples preserved as applicable to each method ?
Y (N) N/A Were all cooler temperatures within validation criteria?

Method:		9040	NO_3-N				
Parameters:		pH	300.0				
Technical holding time:	(ASAP)	48hrs	48hrs				
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1, 2	8/2/10	8/10/10	(8days)				J/UJ/P (H)
1, 2, 3	8/2/10 08:06		8/14/10 22:33	(62.5hrs)			J/UJ/A *(H)

*Reanalysis - originally ran within holding time

LDC #: 23864E6

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: SR
2nd Reviewer: W

METHOD: Inorganics, Method See Cover

Reason Code: B

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were blank analyses performed as required? If no, please see qualifications below.
Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples: All**

Analyte	Blank ID	Blank ID	Blank Action Limit									
	PB	ICB/CCB (mg/L)		No Qualifiers (>5x)								
NH3-N	0.023		0.115									
Alkalinity	1.00		5									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC# 23864E6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CR
2nd Reviewer: [illegible]

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	HAR-09_080210_01	1		
Alkalinity	720	694	4	
Specific Conductance (umhos/cm)	1300	1360	5	
TDS	830	845	2	
Chloride	43	37.8	13	
Fluoride	0.36	0.327	NA (0 (NQ))	
Sulfate	34	34.1	0	
pH (pH units)	7.26	7.34	1	
Turbidity (NTU)	37	34.4	7	

V:\FIELD DUPLICATES\FD_inorganic\23864E6.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr.

Collection Date: August 5, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Semivolatiles

Validation Level: EPA Level IV

Laboratory: General Engineering Laboratories, LLC

Sample Delivery Group (SDG): 257987

Sample Identification

HAR-19_080510_03
HAR-19_080510_03MS
HAR-19_080510_03MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
7/27/10	4-Nitroqinoline-1-oxide Aramite	0.03318 0.03833	All samples in SDG 257987	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 25% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/12/10 (s4h1214)	2,4-Dinitrophenol	28.04145	All samples in SDG 257987	J (all detects) UJ (all non-detects)	A
8/12/10 (s4h1215)	4-Nitroqinoline-1-oxide	52.50151	All samples in SDG 257987	J (all detects) UJ (all non-detects)	A

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
7/27/10 (icv)	Pyridine	25.36326	All samples in SDG 257987	J (all detects) UJ (all non-detects)	A
	Hexachlorocyclopentadiene	25.30927		J (all detects) UJ (all non-detects)	

All of the continuing calibration relative response factors (RRF) were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
8/12/10	4-Nitroqinoline-1-oxide	0.01576	All samples in SDG 257987	J (all detects) UJ (all non-detects)	A
	Aramite	0.03583		J (all detects) UJ (all non-detects)	

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 257987	All compounds reported below the RL	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples HAR-19_080510_01 and HAR-19_080510_03 were identified as split samples. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-19_080510_01	HAR-19_080510_03			
Bis(2-ethylhexyl)phthalate	20	10.6	61 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split sample (RPD) findings.

Boeing SSFL GW 3rd Qtr.
Semivolatiles - Data Qualification Summary - SDG 257987

SDG	Sample	Compound	Flag	A or P	Reason (Code)
257987	HAR-19_080510_03	4-Nitroqinoline-1-oxide Aramite	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Initial calibration (RRF) (R)
257987	HAR-19_080510_03	2,4-Dinitrophenol 4-Nitroqinoline-1-oxide	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
257987	HAR-19_080510_03	Pyridine Hexachlorocyclopentadiene	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
257987	HAR-19_080510_03	4-Nitroqinoline-1-oxide Aramite	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (RRF) (R)
257987	HAR-19_080510_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr.
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 257987

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr.
Semivolatiles - Field Blank Data Qualification Summary - SDG 257987

No Sample Data Qualified in this SDG

LDC #: 23886A2a **VALIDATION COMPLETENESS WORKSHEET** Date: 9/9/10
SDG #: 257987 Level III IV Page: 1 of 1
Laboratory: GEL Laboratories LLC Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/5/10
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	% RSD
IV.	Continuing calibration/ICV	SW	CCV/ICV ∈ 25 %
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/CRQLs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	CSDGs 280-6071-1
XVI.	Field duplicates 1 split	SW	Split samples = (1, HAR-19_080510_01)
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: All

1	HAR-19_080510_03	11		21		31	
2	HAR-19_080510_03MS	12		22		32	
3	HAR-19_080510_03MSD	13		23		33	
4	MB 1012747	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 23886 A2a

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: JVR
2nd Reviewer:

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?			✓	
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogates				
Were all surrogate %R within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 23586A2a

VALIDATION FINDINGS CHECKLIST

Reviewer: VB
2nd Reviewer: JC

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
XI. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within + 30 seconds from the associated calibration standard?	✓			
XII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?				
XIII. Compound quantitation and CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIV. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XV. System performance				
System performance was found to be acceptable.	✓			
XVI. Overall assessment				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field QC				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 4-Nitroquinoline-1-oxide
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU Aramite
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: 23886 A2a

SDG #: See Cover

VALIDATION FINDINGS WORKSHEET

Initial Calibration

Reviewer: JVG

2nd Reviewer: e

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Did the laboratory conduct an acceptable 5 point calibration prior to sample analysis?

(Y) N N/A Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?

(Y) N N/A Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation? r ≥ 0.99

(Y) N N/A Did the initial calibration meet the acceptance criteria?

Y (N) N/A Were all %RSDs and RRFs within the validation criteria of ≤30 %RSD and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤30.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	7/27/10	ICAL-MSD4	TTT		0.03318	All	J/UJ/A
			UUU		0.03833	↓	↓

INICAL.2S

LDC #: 23886A2c

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JV6
2nd Reviewer: Q

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
Y (N) N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y (N) N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <25.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
	7/27/10	S4g 2715	RRR	25.36326		All	J/UJ/A
		(ICV)	X	25.30927			
	8/12/10	S4h 1214	HH	28.64145			
		(CCV)					
		S4h 1215	TTT	52.50151			
		(CCV)	TTT		0.01576		
			UUU		0.03583		

CONCAL.2S

LDC #: 24886A2a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CR
2nd reviewer: W

METHOD: GC/MS ✓ HPLC _____

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ng/L)		RPD (≤35)
	HAR-RI_080510_01	1	
EEE	20	10.6	~~NF~~ 61 (MQ)

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

LDC #: 23886 A2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer: [signature]

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)		Reported RRF (RRF 40 std)	Recalculated RRF (RRF 40 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/27/2010	Phenol	(IS1)	1.25934	1.25934	1.27660	1.27660	1.61856	1.61863
	MSD4		Naphthalene	(IS2)	0.80821	0.80821	0.82269	0.82269	14.54558	14.54550
			Fluorene	(IS3)	1.14945	1.14945	1.14799	1.14799	3.04212	3.04211
			Hexachlorobenzene	(IS4)	0.21798	0.21798	0.21947	0.21947	6.34687	6.34583
	Mix A		Bis(2-ethex)phthalate	(IS5)	0.64125	0.64125	0.60919	0.60919	4.51974	4.51949
			Benzo(a)pyrene	(IS6)	0.83495	0.83495	0.82644	0.82644	10.07551	10.07549

Conc IS/Cpd	Area cpd	Area IS
40/40	1322967	1050524
40/40	3260763	4034526
40/40	2642060	2298540
40/40	902353	4139578
40/40	2442790	3809391
40/40	2387375	2859312

Conc	Phenol	Naphthalene	Fluorene	Hexachloroben	Bis(2-eh)phthalate	Benz(a)py
1		0.99169	1.12593			0.66671
10	1.26479	0.90282	1.14618	0.19753	0.55638	0.73913
20	1.30932	0.90781	1.20745	0.21320	0.62951	0.83654
40	**1.25934**	**0.80821**	**1.14945**	**0.21798**	**0.64125**	0.83495
50	1.26811	0.79500	1.18508	0.21522	0.62260	0.85674
80	1.25785	0.68157	1.12063	0.22400	0.59746	0.86779
100	1.27511	0.67170	1.15004	0.22496	0.60888	0.89250
120	1.30166		1.09919	0.24339	0.60822	0.91717
S =	1.27660	0.82269	1.14799	0.21947	0.60919	0.82644
X =	0.02066	0.11966	0.03492	0.01393	0.02753	0.08327

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 23886 A2c

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer: [signature]

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)		Reported RRF (RRF 40 std)	Recalculated RRF (RRF 40 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/28/2010	Acetophenone	(IS1)	1.45285	1.45285	1.43540	1.43540	3.14133	3.14141
	MSD4		2,6-Dichlorophenol	(IS2)	0.24666	0.24666	0.24052	0.24052	7.68783	7.68820
			Pentachlorobenzene	(IS3)	0.43902	0.43902	0.44122	0.44122	5.18841	5.18891
	Mix B		Pronamide	(IS4)	0.28130	0.28130	0.27930	0.27930	7.11286	7.11242
			3,3-Dimethylbenzidine	(IS5)	0.51998	0.51998	0.49369	0.49369	11.94646	11.94641
			3-Methylcholanthrene	(IS6)	0.43378	0.43378	0.42336	0.42336	12.84709	12.84710

Conc IS/Cpd	Area cpd	Area IS
40/40	1057670	727999
40/40	649554	2633433
40/40	731545	1666307
40/40	897452	3190339
40/40	1734819	3336311
40/40	1284303	2960714

Conc	Acetophenone	2,6-DCP	Pentachlorbenz	Pronamide	3,3-Dimethylbenz	3-Methylchol
1						
10	1.38519	0.20764	0.40753	0.24705	0.41196	0.32495
20	1.36696	0.22238	0.41859	0.25692	0.40656	0.37381
40	**1.45285**	**0.24666**	**0.43902**	**0.28130**	**0.51998**	**0.43378**
50	1.43385	0.24530	0.43595	0.28304	0.50626	0.43431
80	1.44177	0.24848	0.45437	0.29355	0.53077	0.46054
100	1.48416	0.25733	0.46418	0.29482	0.54547	0.46946
120	1.48304	0.25585	0.46888	0.29840	0.53485	0.46664
X =	1.43540	0.24052	0.44122	0.27930	0.49369	0.42336
S =	0.04509	0.01849	0.02289	0.01986	0.05898	0.05439

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 23886 A2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)	Reported RRF (RRF 40 std)	Recalculated RRF (RRF 40 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
	ICAL	7/28/2010	Triethylphosphorothioate (IS2)	0.15167	0.15167	0.15738	0.15738	4.96481	4.96494
	MSD4								
	Mix D								

Conc IS/Cpd	Area cpd	Area IS
40/40	231161	1524108

Conc	TEPP					
1						
10	0.14783					
20	0.14923					
40	**0.15167**					
50	0.15839					
80	0.16712					
100	0.16410					
120	0.16330					
X =	0.15738					
S =	0.00781					

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 38642a

VALIDATION FINDINGS WORSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer: R

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound Reference IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	s4h1214	8/12/2010	Phenol (IS1)	1.27660	1.17919	1.17919	7.63042	7.63040
	MSD4		Naphthalene (IS2)	0.82269	0.75928	0.75928	7.70764	7.70693
			Fluorene (IS3)	1.14799	1.07780	1.07780	6.11416	6.11419
	Mix A		Hexachlorobenzene (IS4)	0.21947	0.18760	0.18760	14.52135	14.52068
			Bis(2-ethex)phthalate (IS5)	0.60919	0.58854	0.58854	3.38975	3.38919
			Benzo(a)pyrene (IS6)	0.82644	0.78951	0.78951	4.46856	4.46897
2	s4h1215	8/12/2010	Acetophenone (IS1)	1.43540	1.31872	1.31872	8.12874	8.12880
	MSD4		2,6-Dichlorophenol (IS2)	0.24052	0.23110	0.23110	3.91651	3.91625
			Pentachlorobenzene (IS3)	0.44122	0.40210	0.40210	8.86633	8.86616
	Mix B		Pronamide (IS4)	0.27930	0.25953	0.25953	7.07841	7.07762
			3,3-Dimethylbenzidine (IS5)	0.49369	0.45958	0.45958	6.90919	6.90983
			3-Mrthylchlolanthrene (IS6)	0.42336	0.37659	0.37659	11.04734	11.04723
3	s4h1217	8/12/2010	Triethylphosphorothioate (IS2)	0.15738	0.15621	0.15621	0.74342	0.74493
	MSD4							
	Mix D							

		CCV1		CCV2		CCV3	
	Cis/Cx	Ax	Ais	Ax	Ais	Ax	Ais
1	40/40	1231235	1044136	1247962	946344		
2	40/40	2989299	3937008	751778	3253033	521746	3340080
3	40/40	2396973	2223943	826239	2054806		
4	40/40	747831	3986301	967799	3729013		
5	40/40	2061274	3502356	1382329	3007830		
6	40/40	1999060	2532033	784244	2082485		

LDC #: 23886A2a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JV6
2nd reviewer: [signature]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	50	36.94	73.9	73.9	0
2-Fluorobiphenyl	↓	31.98	64	64	
Terphenyl-d14	↓	51.44	103	103	
Phenol-d5	100	26.95	27.0	27	
2-Fluorophenol	↓	42.55	42.5	42.6	
2,4,6-Tribromophenol	↓	73.79	73.8	73.8	↓
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 23886 A 2a
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: e

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA

Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = | MSC - MSC | * 2/(MSC + MSDC)

MSC = Matrix spike concentration; MSDC = Matrix spike duplicate concentration

MS/MSD samples: 2/3

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol	100	100	0	43.3	41.1	43.3	43.3	41.1	41.1	5	5
N-Nitroso-di-n-propylamine				81.6	77.4	81.6	81.6	77.4	77.4	5	5
4-Chloro-3-methylphenol				90.0	84.1	90.0	90.6	84.1	84.1	7	7
Acenaphthene				73.7	67.8	73.7	73.7	67.8	67.8	8	8
~~Pentachlorophenol~~											
Pyrene				92.9	96.4	92.9	92.9	96.4	96.4	4	4

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 23988A2a

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG
2nd Reviewer: R

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration; SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboraotry control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 10127F7 LCS

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol	50.0	NA	17.7	NA	35.5	35.5				
N-Nitroso-di-n-propylamine			39.7		79.4	79.4				
4-Chloro-3-methylphenol			43.1		86.1	86.1				
Acenaphthene			35.9		71.8	71.8				
~~Pentachlorophenol~~										
Pyrene			48.1		96.3	96.2				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 03886A2a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: JV
2nd reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Y N N/A — Were all reported results recalculated and verified for all level IV samples?
Y N N/A — Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. _____, ND

Conc. = ( )( )( )( )( ) / ( )( )( )( )( )

=

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

LDC #: 23886A2a
SDG #: Bea Creek

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: JV6
2nd reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_t = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. #1 . EEE

Conc. = $\frac{(597359)(40)(1ml)(1000)(\quad)}{(3320113)(0.60919)(1080ml)(\quad)(\quad)}$

= 10.939

≈ 10.9 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: July 27, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-5734-1

Sample Identification

RD-43B_072710_01
RD-05A_072710_01
RD-05B_072710_01
RD-51B_072710_01
RD-51C_072710_01
RD-51C_072710_36
RD_78_072710_01
RD_78_072710_36
PZ-139_072710_01

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625 for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-Nitrosodimethylamine was found in the method blanks.

Sample EB_PZ141_090310 (from SDG 280-7064-1) was identified as an equipment blank. No N-Nitrosodimethylamine was found in this blank.

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No N-Nitrosodimethylamine was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-5734-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples RD-51C_072710_01 and RD-51C_072710_36 and samples RD_78_072710_01 and RD_78_072710_36 were identified as field duplicates. No N-Nitrosodimethylamine was detected in any of the samples.

*Added Field duplicate text.

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-5734-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-5734-1	RD-43B_072710_01 RD-05A_072710_01 RD-05B_072710_01 RD-51B_072710_01 RD-51C_072710_01 RD-51C_072710_36 RD_78_072710_01 RD_78_072710_36 PZ-139_072710_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary - SDG 280-5734-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-5734-1

No Sample Data Qualified in this SDG

LDC #: 23917A2b
SDG #: 280-5734-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 9/3/10
Page: 1 of 1
Reviewer: CR
2nd Reviewer: LW

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	~~A~~ N	~~A~~ Client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	(5,6), (7,8)
XVII.	Field blanks	~~ND~~	See below

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	RD-43B_072710_01	11	MB 280-25087/1-A	21		31	
2	RD-05A_072710_01	12	MB 280-25197/1-A	22		32	
3	RD-05B_072710_01	13		23		33	
4	RD-51B_072710_01	14		24		34	
5	RD-51C_072710_01	15		25		35	
6	RD-51C_072710_36	16		26		36	
7	RD-78_072710_01	17		27		37	
8	RD-78_072710_36	18		28		38	
9	PZ-139_072710_01	19		29		39	
10		20		30		40	

EB = ~~EB_SH-01_090310~~ ~~(280-7064-1)~~
EB_PZ141~~-090310~~
~~EB_PZ-076_082510~~ ~~(280-6744-8)~~
FB = ~~FB-082510~~_19 (280-6784-1)

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: July 29, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-5847-1

Sample Identification

RD-48B_072910_01
RD-48C_072910_01
RD-03_072910_01
HAR-13_072910_01
RD-67_072910_01
RD-67_072910_36
HAR-20_072910_01
RD-48B_072910_01MS
RD-48B_072910_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625 for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-Nitrosodimethylamine was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-5847-1	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples RD-67_072910_01 and RD-67_072910_36 were identified as field duplicates. No N-Nitrosodimethylamine was detected in any of the samples.

*Added Field duplicate text.

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-5847-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-5847-1	RD-48B_072910_01 RD-48C_072910_01 RD-03_072910_01 HAR-13_072910_01 RD-67_072910_01 RD-67_072910_36 HAR-20_072910_01	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary - SDG 280-5847-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-5847-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 23917B2b

SDG #: 280-5847-1

Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 9-13-10

Page: 1 of 1

Reviewer: gc

2nd Reviewer: [illegible]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/29/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	MS/D
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	(5,6)
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	RD-48B_072910_01	11	MB-280-25760/1-A	21		31	
2	RD-48C_072910_01	12		22		32	
3	RD-03_072910_01	13		23		33	
4	HAR-13_072910_01	14		24		34	
5	RD-67_072910_01	15		25		35	
6	RD-67_072910_36	16		26		36	
7	HAR-20_072910_01	17		27		37	
8	RD-48B_072910_01MS	18		28		38	
9	RD-48B_072910_01MSD	19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr.

Collection Date: August 9, 2010

LDC Report Date: December 2, 2010

Matrix: Water

Parameters: Semivolatiles

Validation Level: EPA Level IV

Laboratory: General Engineering Laboratories, LLC

Sample Delivery Group (SDG): 258363

Sample Identification

HAR-15_080910_03
HAR-26_080910_03
HAR-33_080910_03

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
7/27/10	4-Nitroquinoline-1-oxide	0.03318 (≥0.05)	All samples in SDG 258363	J (all detects) UJ (all non-detects)	A
	Aramite	0.03833 (≥0.05)		J (all detects) UJ (all non-detects)	

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/12/10 (s4h1214)	2,4-Dinitrophenol	28.04145	HAR-15_080910_03 HAR-26_080910_03 MB1012745	J (all detects) UJ (all non-detects)	A
8/12/10 (s4h1215)	4-Nitroquinoline-1-oxide	52.50151	HAR-15_080910_03 HAR-26_080910_03 MB1012745	J (all detects) UJ (all non-detects)	A
8/13/10 (s4h1303)	4-Nitroquinoline-1-oxide	32.64014	HAR-33_080910_03	J (all detects) UJ (all non-detects)	A

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
7/27/10 (s4g2715)	Pyridine Hexachlorocyclopentadiene	25.36326 25.30927	All samples in SDG 258363	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
8/12/10 (s4h1215)	4-Nitroquinoline-1-oxide Aramite	0.01576 (≥0.05) 0.03583 (≥0.05)	HAR-15_080910_03 HAR-26_080910_03 MB1012745	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
8/13/10 (s4h1303)	4-Nitroquinoline-1-oxide Aramite	0.02235 (≥0.05) 0.03903 (≥0.05)	HAR-33_080910_03	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 258363	All compounds reported below the RL	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples HAR-15_080910_03 and HAR-15_080910_01, samples HAR-26_080910_03 and HAR-26_080910_01, and samples HAR-33_080910_03 and HAR-33_080910_01 (all from SDG 280-6162-1) were identified as split samples. No semilvolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-15_080910_03	HAR-15_080910_01			
Bis(2-ethylhexyl)phthalate	2.0U	0.66	101 (≤35)	NQ	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-26_080910_03	HAR-26_080910_01			
Bis(2-ethylhexyl)phthalate	154	95	47 (≤35)	J (all detects)	A

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added above split samples (RPD) findings.

*Boeing SSFL GW 3rd Qtr.
Semivolatiles - Data Qualification Summary - SDG 258363

SDG	Sample	Compound	Flag	A or P	Reason (Code)
258363	HAR-15_080910_03 HAR-26_080910_03 HAR-33_080910_03	4-Nitroquinoline-1-oxide Aramite	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Initial calibration (RRF) (R)
258363	HAR-15_080910_03 HAR-26_080910_03	2,4-Dinitrophenol	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
258363	HAR-15_080910_03 HAR-26_080910_03 HAR-33_080910_03	4-Nitroquinoline-1-oxide	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
258363	HAR-15_080910_03 HAR-26_080910_03 HAR-33_080910_03	Pyridine Hexachlorocyclopentadiene	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
258363	HAR-15_080910_03 HAR-26_080910_03 HAR-33_080910_03	4-Nitroquinoline-1-oxide Aramite	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (RRF) (R)
258363	HAR-15_080910_03 HAR-26_080910_03 HAR-33_080910_03	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)
*258363	HAR-26_080910_03	Bis(2-ethylhexyl)phthalate	J (all detects)	A	Split sample (RPD) (*XVI)

*Added Split sample (RPD) findings in above summary table.

Boeing SSFL GW 3rd Qtr.
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 258363

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr.
Semivolatiles - Field Blank Data Qualification Summary - SDG 258363

No Sample Data Qualified in this SDG

LDC #: 23935A2a **VALIDATION COMPLETENESS WORKSHEET** Date: 9/20/10
SDG #: 258363 Level IV Page: 1 of 1
Laboratory: GEL Laboratories LLC Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/09/10
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	%RSD r
IV.	Continuing calibration/ICV	SW	CCV/ICV ≤ 25%
V.	Blanks	A	
VI.	Surrogate spikes	SW A	
VII.	Matrix spike/Matrix spike duplicates	A	HAR-19-080510-03
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/CRQLs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / splits	SW	S_1 = 1, HAR-15_080910_01 from 280-6162-1 S_2 = 2, HAR-26_080910_01 ~~S_3 = 3~~, HAR-33_080910_01
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; * ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1	HAR-15_080910_03	11		21		31	
2	HAR-26_080910_03	12		22		32	
3	HAR-33_080910_03	13		23		33	
4	MB 101274S	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 23935 A2a

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: JVR
2nd Reviewer: [illegible]

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.				
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	NA	✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?				
VII. Matrix Spike/Matrix Spike Duplicate				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 23935A29

VALIDATION FINDINGS CHECKLIST

Reviewer: MC
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
[illegible]				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
[illegible]				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
[illegible]				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?				
[illegible]				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
[illegible]				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
[illegible]				
System performance was found to be acceptable.	✓			
[illegible]				
Overall assessment of data was found to be acceptable.	✓			
[illegible]				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 23935 A2a
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Did the laboratory conduct an acceptable 5 point calibration prior to sample analysis?
(Y) N N/A Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?
(Y) N N/A Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation? r² ≥ 0.99
(Y) N N/A Did the initial calibration meet the acceptance criteria?
Y (N) N/A Were all %RSDs and RRFs within the validation criteria of ≤30 %RSD and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤30.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	7/27/10	ICAL-MSD4	TTT		0.03318	All	J/UJ/A (A)
			UUU		0.03833		

INICAL2S

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 4-Nitroquinoline-1-oxide
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU Aramite
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: 23985A2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVC
2nd Reviewer: L

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
(Y) N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y (N) N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <25.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
	7/27/10	S4g2715	RRR	25.36326		All	J/UJ/A (C)
		(ICV)	X	25.30927		↓	
	8/12/10	S4h1214	HH	28.04145		1, 2 Blk	
		(CCV)					
		S4h1215	TTT	52.50151			
		(CCV)	TTT		0.01576		(R)
			UUU		0.03583	↓	↓
	8/13/10	S4h1303	TTT	32.64014		3	(C)
		(CCV)	TTT		0.02235	↓	(R)
			UUU		0.03903		↓

CONCAL.2S

LDC #: 23935A✓

VALIDATION FINDINGS WORKSHEET
~~Field Duplicates~~ Splits

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were ~~field duplicate~~ Split pairs identified in this SDG? ~~Split~~
Y N N/A Were target compounds identified in the ~~field duplicate~~ pairs?

Compound	Concentration (ug/L) 1	HAR-15_080910_01	(≤35%) RPD	Parent only
EEE	2.0U	0.66	101	NA

Compound	Concentration (ug/L) 2	HAR-26_080910_01	(≤35%) RPD	Parent only
EEE	154	95	47	Jdets/A (*x1)

Compound	Concentration ( ) 3		RPD

Compound	Concentration ( )		RPD

LDC #: 23935 A2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)		Reported RRF (RRF 40 std)	Recalculated RRF (RRF 40 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/27/2010	Phenol	(IS1)	1.25934	1.25934	1.21617	1.27660	1.61856	1.61863
	MSD4		Naphthalener	(IS2)	0.80821	0.80821	0.82269	0.82269	14.54558	14.54550
			Fluorene	(IS3)	1.14945	1.14945	1.14799	1.14799	3.04212	3.04211
			Hexachlorobenzene	(IS4)	0.21798	0.21798	0.21947	0.21947	6.34687	6.34583
	Mix A		Bis(2-ethex)phthalate	(IS5)	0.64125	0.64125	0.60919	0.60919	4.51974	4.51949
			Benzo(a)pyrene	(IS6)	0.83495	0.83495	0.82644	0.82644	10.07551	10.07549

Conc IS/Cpd	Area cpd	Area IS
40/40	1322967	1050524
40/40	3260763	4034526
40/40	2642060	2298540
40/40	902353	4139578
40/40	2442790	3809391
40/40	2387375	2859312

Conc	Phenol	Naphthalene	Fluorene	Hexachloroben	Bis(2-eh)phthalate	Benz(a)py
1		0.99169	1.12593			0.66671
10	1.26479	0.90282	1.14618	0.19753	0.55638	0.73913
20	1.30932	0.90781	1.20745	0.21320	0.62951	0.83654
40	**1.25934**	**0.80821**	**1.14945**	**0.21798**	**0.64125**	0.83495
50	1.26811	0.79500	1.18508	0.21522	0.62260	0.85674
80	1.25785	0.68157	1.12063	0.22400	0.59746	0.86779
100	1.27511	0.67170	1.15004	0.22496	0.60888	0.89250
120	1.30166		1.09919	0.24339	0.60822	0.91717
S =	1.27660	0.82269	1.14799	0.21947	0.60919	0.82644
X =	0.02066	0.11966	0.03492	0.01393	0.02753	0.08327

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 73935A2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)		Reported RRF (RRF 40 std)	Recalculated RRF (RRF 40 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/28/2010	Acetophenone	(IS1)	1.45285	1.45285	1.43540	1.43540	3.14133	3.14141
	MSD4		2,6-Dichlorophenol	(IS2)	0.24666	0.24666	0.24052	0.24052	7.68783	7.68820
			Pentachlorobenzene	(IS3)	0.43902	0.43902	0.44122	0.44122	5.18841	5.18891
	Mix B		Pronamide	(IS4)	0.28130	0.28130	0.27930	0.27930	7.11286	7.11242
			3,3-Dimethylbenzidine	(IS5)	0.51998	0.51998	0.49369	0.49369	11.94646	11.94641
			3-Methylcholanthrene	(IS6)	0.43378	0.43378	0.42336	0.42336	12.84709	12.84710

Conc IS/Cpd	Area cpd	Area IS
40/40	1057670	727999
40/40	649554	2633433
40/40	731545	1666307
40/40	897452	3190339
40/40	1734819	3336311
40/40	1284303	2960714

Conc	Acetophenone	2,6-DCP	Pentachlorbenz	Pronamide	3,3-Dimethylbenz	3-Methylchol
1						
10	1.38519	0.20764	0.40753	0.24705	0.41196	0.32495
20	1.36696	0.22238	0.41859	0.25692	0.40656	0.37381
40	**1.45285**	**0.24666**	**0.43902**	**0.28130**	**0.51998**	**0.43378**
50	1.43385	0.24530	0.43595	0.28304	0.50626	0.43431
80	1.44177	0.24848	0.45437	0.29355	0.53077	0.46054
100	1.48416	0.25733	0.46418	0.29482	0.54547	0.46946
120	1.48304	0.25585	0.46888	0.29840	0.53485	0.46664
X =	1.43540	0.24052	0.44122	0.27930	0.49369	0.42336
S =	0.04509	0.01849	0.02289	0.01986	0.05898	0.05439

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 23935 A2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)	Reported RRF (RRF 40 std)	Recalculated RRF (RRF 40 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
	ICAL	7/28/2010	Triethylphosphorothioate (IS2)	0.15167	0.15167	0.15738	0.15738	4.96481	4.96494
	MSD4								
	Mix D								

Conc IS/Cpd	Area cpd	Area IS
40/40	231161	1524108

Conc	TEPP					
1						
10	0.14783					
20	0.14923					
40	0.15167					
50	0.15839					
80	0.16712					
100	0.16410					
120	0.16330					
X =	0.15738					
S =	0.00781					

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 23935 Ana

VALIDATION FINDINGS WORSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound Reference IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	s4h1214	8/12/2010	Phenol (IS1)	1.27660	1.17919	1.17919	7.63042	7.63040
	MSD4		Naphthalene (IS2)	0.82269	0.75928	0.75928	7.70764	7.70693
			Fluorene (IS3)	1.14799	1.07780	1.07780	6.11416	6.11419
	Mix A		Hexachlorobenzene (IS4)	0.21947	0.18760	0.18760	14.52135	14.52068
			Bis(2-ethex)phthalate (IS5)	0.60919	0.58854	0.58854	3.38975	3.38919
			Benzo(a)pyrene (IS6)	0.82644	0.78951	0.78951	4.46856	4.46897
2	s4h1215	8/12/2010	Acetophenone (IS1)	1.43540	1.31872	1.31872	8.12874	8.12880
	MSD4		2,6-Dichlorophenol (IS2)	0.24052	0.23110	0.23110	3.91651	3.91625
			Pentachlorobenzene (IS3)	0.44122	0.40210	0.40210	8.86633	8.86616
	Mix B		Pronamide (IS4)	0.27930	0.25953	0.25953	7.07841	7.07762
			3,3-Dimethylbenzidine (IS5)	0.49369	0.45958	0.45958	6.90919	6.90983
			3-Mrthylchlolanthrene (IS6)	0.42336	0.37659	0.37659	11.04734	11.04723
3	s4h1217	8/12/2010	Triethylphosphorothioate (IS2)	0.15738	0.15621	0.15621	0.74342	0.74493
	MSD4							
	Mix D							

		CCV1		CCV2		CCV3	
	Cis/Cx	Ax	Ais	Ax	Ais	Ax	Ais
1	40/40	1231235	1044136	1247962	946344		
2	40/40	2989299	3937008	751778	3253033	521746	3340080
3	40/40	2396973	2223943	826239	2054806		
4	40/40	747831	3986301	967799	3729013		
5	40/40	2061274	3502356	1382329	3007830		
6	40/40	1999060	2532033	784244	2082485		

LDC # 27925A2a

VALIDATION FINDINGS WORSHEET

Continuing Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound Reference IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	s4h1302	8/13/2010	Phenol (IS1)	1.27660	1.26421	1.26421	0.97055	0.97018
	MSD4		Naphthalene (IS2)	0.82269	0.79864	0.79864	2.92334	2.92248
			Fluorene (IS3)	1.14799	1.13620	1.13620	1.02701	1.02699
	Mix A		Hexachlorobenzene (IS4)	0.21947	0.19465	0.19465	11.30906	11.30711
			Bis(2-ethex)phthalate (IS5)	0.60919	0.62030	0.62030	1.82373	1.82379
			Benzo(a)pyrene (IS6)	0.82644	0.85805	0.85805	3.82484	3.82502
2	s4h1303	8/13/2010	Acetophenone (IS1)	1.43540	1.36812	1.36812	4.68720	4.68695
	MSD4		2,6-Dichlorophenol (IS2)	0.24052	0.23770	0.23770	1.17246	1.17247
			Pentachlorobenzene (IS3)	0.44122	0.42422	0.42422	3.85295	3.85293
	Mix B		Pronamide (IS4)	0.27930	0.27700	0.27700	0.82349	0.82432
			3,3-Dimethylbenzidine (IS5)	0.49369	0.53479	0.53479	8.32506	8.32594
			3-Mrthylchlolanthrene (IS6)	0.42336	0.41483	0.41483	2.01483	2.01440
3	s4h1304	8/13/2010	Triethylphosphorothioate (IS2)	0.15738	0.15968	0.15968	1.46143	1.45880
	MSD4							
	Mix D							

		CCV1		CCV2		CCV3	
	Cis/Cx	Ax	Ais	Ax	Ais	Ax	Ais
1	40/40	1205325	953418	1339096	978783		
2	40/40	2905673	3638263	809062	3403711	473753	2966967
3	40/40	2270707	1998503	900923	2123716		
4	40/40	697665	3584147	1065958	3848256		
5	40/40	2060191	3321303	1833167	3427798		
6	40/40	2115826	2465846	1086754	2619746		

LDC #: 29975A2A

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: JW
2nd reviewer:

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	50	35.3	70.6	70.6	0
2-Fluorobiphenyl	↓	29.8	59.5	59.5	↓
Terphenyl-d14	↓	51.7	103	103	↓
Phenol-d5	100	27.8	27.8	27.8	↓
2-Fluorophenol	↓	44.1	44.1	44.1	↓
2,4,6-Tribromophenol	↓	80.1	80.1	80.1	✓
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 23935A2a
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: JM
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = | MSC - MSC | * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: HAR-19-080510-003 MS MSD

Compound	Spike Added (µg/L)		Sample Concentration (µg/L)	Spiked Sample Concentration (µg/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-----	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
Phenol	100	100	0	43.3	41.1	43.3	43.3	41.1	41.1	5	5
N-Nitroso-di-n-propylamine				81.6	77.4	81.6	81.6	77.4	77.4	5	5
4-Chloro-3-methylphenol				90.0	84.1	90.0	90.6	84.1	84.1	7	7
Acenaphthene				73.7	67.8	73.7	73.7	67.8	67.8	8	8
~~Pentachlorophenol~~											
Pyrene				92.9	96.4	92.9	92.9	96.4	96.4	4	4

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 28925A2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 1012747 LCS

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol	50	NA	17.7	NA	35.5	35.4				
N-Nitroso-di-n-propylamine			39.7		79.4	79.4				
4-Chloro-3-methylphenol			43.1		86.1	86.2				
Acenaphthene			35.9		71.8	71.8				
~~Pentachlorophenol~~										
Pyrene	↓	↓	48.1	↓	96.3	96.2				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 23975 A2a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: MG
2nd reviewer: _____

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. #2, EEE

Conc. = $\frac{(3709999)(40.0)(1\ ml)(2)(1000)}{(3096745)(0.60919)(10\ 20m)(\ )(\ )}$

= 154.1 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr.

Collection Date: August 12, 2010

LDC Report Date: December 2, 2010

Matrix: Water

Parameters: Semivolatiles

Validation Level: EPA Level IV

Laboratory: General Engineering Laboratories, LLC

Sample Delivery Group (SDG): 258758

Sample Identification

HAR-03_081210_03
HAR-03_081210_03MS
HAR-03_081210_03MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
7/30/10	4-Nitroquinoline-1-oxide	0.01964 (≥0.05)	All samples in SDG 258758	J (all detects) UJ (all non-detects)	A
	Aramite	0.04566 (≥0.05)		J (all detects) UJ (all non-detects)	

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/17/10	Benzyl alcohol Hexachlorocyclopentadiene 4-Nitroaniline Benzo(g,h,i)perylene	26.05669 36.80799 29.12905 27.66898	All samples in SDG 258758	J (all detects) UJ (all non-detects)	A

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
7/30/10	Methapyrilene	28.3711	All samples in SDG 258758	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
8/17/10	4-Nitroquinoline-1-oxide Aramite	0.0173 (≥0.05) 0.04793 (≥0.05)	All samples in SDG 258758	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
HAR-03_081210_03MS/MSD (HAR-03_081210_03)	Pyridine	-	-	38 (≤25)	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 258758	All compounds reported below the RL	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples HAR-03_081210_03 and HAR-03_081210_01 (from SDG 280-6325-1) were identified as split samples. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-03_081210_03	HAR-03_081210_01			
Diethylphthalate	1.89	0.76	85 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples HAR-03_081210_03 and HAR-03_081210_01.

Boeing SSFL GW 3rd Qtr.
Semivolatiles - Data Qualification Summary - SDG 258758

SDG	Sample	Compound	Flag	A or P	Reason (Code)
258758	HAR-03_081210_03	4-Nitroquinoline-1-oxide Aramite	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Initial calibration (RRF) (R)
258758	HAR-03_081210_03	Benzyl alcohol Hexachlorocyclopentadiene 4-Nitroaniline Benzo(g,h,i)perylene	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
258758	HAR-03_081210_03	Methapyrilene	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
258758	HAR-03_081210_03	4-Nitroquinoline-1-oxide Aramite	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (RRF) (R)
258758	HAR-03_081210_03	Pyridine	J (all detects)	A	Matrix spike/Matrix spike duplicates (RPD) (Q)
258758	HAR-03_081210_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr.
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 258758

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr.
Semivolatiles - Field Blank Data Qualification Summary - SDG 258758

No Sample Data Qualified in this SDG

LDC #: 23935B2a **VALIDATION COMPLETENESS WORKSHEET** Date: 9/21/11
SDG #: 258758 Level IV Page: 1 of 1
Laboratory: GEL Laboratories LLC Reviewer: JM
2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/12/10
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	2 RSD ✓
IV.	Continuing calibration/ICV	SW	CCV/ICAL ≤ 25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/CRQLs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Splits	SW	S = 1 + HAR-03_081210_01 (from 280-23754)
XVII.	Field blanks X	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1	HAR-03_081210_03	11		21		31	
2	HAR-03_081210_03MS	12		22		32	
3	HAR-03_081210_03MSD	13		23		33	
4	MB101494	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 23935b2a

VALIDATION FINDINGS CHECKLIST

Reviewer: JVL
2nd Reviewer: [illegible]

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?		✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓	✓		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 23935 B29

VALIDATION FINDINGS CHECKLIST

Reviewer: JVC
2nd Reviewer: MC

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field/Rinsate/Trip Blank Association				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
XI. Internal Standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XII. Target Compound Identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIII. Compound Quantitation (CRQL)				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIV. Tentatively Identified Compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XV. System Performance				
System performance was found to be acceptable.	✓			
XVI. Overall Assessment				
Overall assessment of data was found to be acceptable.	✓			
XVII. Field Duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVIII. Field Blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 4-Nitroquinoline-1-oxide
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU Aramite
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. Methapyrilene
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: 23935B2x
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Did the laboratory conduct an acceptable 5 point calibration prior to sample analysis?
(Y) N N/A Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?
(Y) N N/A Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation? r² 20.99
(Y) N N/A Did the initial calibration meet the acceptance criteria?
Y (N) N/A Were all %RSDs and RRFs within the validation criteria of ≤30 %RSD and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤30.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	7/30/10	ICAL-MSD7	TTT		0.01964	All	J/UJ/A (R)
			UUU		0.04566	↓	↓

INICAL2S

LDC #: 23935 Bx

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JV
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
(Y) N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y (N) N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤25.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
	7/20/10	S7g 3019 (ICV)	VVV	28.3711		All	J/UJ/A (CC)
	8/17/10	S7h1716 (CCV)	QQQ	26,05669		All	CC
			X	36.80799			
			OO	29.12905			
			LLL	27.66898			
			TTT		0.0173		R
			UUU		0.04793		

LDC #: 23935 B2G

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: SVG
2nd Reviewer: 1

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

(Y) N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y (N) N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		2/3	RRR	( )	( )	38 (25)	1	J det/A (Q)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

	Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)		Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)
A.	Phenol	26-90%	≤ 35%	12-110%	≤ 42%	GG	Acenaphthene	31-137%	≤ 19%	46-118%	≤ 31%
C.	2-Chlorophenol	25-102%	≤ 50%	27-123%	≤ 40%	II.	4-Nitrophenol	11-114%	≤ 50%	10-80%	≤ 50%
E.	1,4-Dichlorobenzene	28-104%	≤ 27%	36-97%	≤ 28%	KK.	2,4-Dinitrotoluene	28-89%	≤ 47%	24-96%	≤ 38%
J.	N-Nitroso-di-n-propylamine	41-126%	≤ 38%	41-116%	≤ 38%	TT.	Pentachlorophenol	17-109%	≤ 47%	9-103%	≤ 50%
R.	1,2,4-Trichlorobenzene	38-107%	≤ 23%	39-98%	≤ 28%	ZZ.	Pyrene	35-142%	≤ 36%	26-127%	≤ 31%
V.	4-Chloro-3-methylphenol	26-103%	≤ 33%	23-97%	≤ 42%						

LDC #: 23935 B2q

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JV
2nd reviewer: [signature]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds identified in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤35%)	Parent only
	1	HAR-03_081210_01		
LL	1.89	0.76	85	NA

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

LDC #: 23935b2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)		Reported RRF (RRF 40 std)	Recalculated RRF (RRF 40 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/30/2010	Phenol	(IS1)	1.26195	1.26195	1.27823	1.27823	4.21370	4.21361
	MSD7		Naphthalene	(IS2)	0.75245	0.75245	0.75827	0.75827	12.17576	12.17589
			Fluorene	(IS3)	1.02544	1.02544	1.05517	1.05517	9.40437	9.40442
			Hexachlorobenzene	(IS4)	0.18569	0.18569	0.19012	0.19012	5.08617	5.08595
	Mix A		Bis(2-ethex)phthalate	(IS5)	0.64890	0.64890	0.64815	0.64815	7.21702	7.21721
			Benzo(a)pyrene	(IS6)	0.87249	0.87249	0.82803	0.82803	10.38710	10.38710

Conc IS/Cpd	Area cpd	Area IS
40/40	613898	486467
40/40	1354056	1799523
40/40	1054476	1028311
40/40	339816	1830025
40/40	1100488	1695919
40/40	1319744	1512611

Conc	Phenol	Naphthalene	Fluorene	Hexachloroben	Bis(2-eh)phthalate	Benz(a)py
1		0.87950	1.15303			0.63710
10	1.30224	0.83211	1.16415	0.20234	0.67667	0.85006
20	1.35787	0.82722	1.14746	0.20249	0.72564	0.88867
40	**1.26195**	**0.75245**	**1.02544**	**0.18569**	**0.64890**	0.87249
50	1.27312	0.71243	1.00668	0.18214	0.62683	0.84936
80	1.28131	0.68000	0.97191	0.18603	0.60244	0.86400
100	1.19288	0.62418	0.91753	0.18205	0.60842	0.83453
S =	1.27823	0.75827	1.05517	0.19012	0.64815	0.82803
X =	0.05386	0.09233	0.09923	0.00967	0.04678	0.08601

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 23935 B2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)		Reported RRF (RRF 80 std)	Recalculated RRF (RRF 80 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/30/2010	Acetophenone	(IS1)	1.28958	1.28958	1.30043	1.30043	5.70589	5.70598
	MSD7		2,6-Dichlorophenol	(IS2)	0.22237	0.22237	0.21226	0.21226	5.10797	5.10876
			Pentachlorobenzene	(IS3)	0.38402	0.38402	0.39054	0.39054	6.07116	6.07096
	Mix B		Pronamide	(IS4)	0.22889	0.22889	0.24555	0.24555	15.93308	15.93284
			3,3-Dimethylbenzidine	(IS5)	0.57806	0.57806	0.54824	0.54824	4.88033	4.87983
			3-Methylchlolanthrene	(IS6)	0.39974	0.39974	0.39285	0.39285	3.33298	3.33347

Conc IS/Cpd	Area cpd	Area IS
40/80	1354787	525284
40/80	801079	1801253
40/80	826268	1075823
40/80	854288	1866119
40/80	2158667	1867157
40/80	1330319	1663994

Conc	Acetophenone	2,6-DCP	Pentachlorbenz	Pronamide	3,3-Dimethylbenz	3-Methylchol
10	1.35597	0.19648	0.41735	0.28986	0.52212	0.37433
20	1.39466	0.22224	0.41376	0.28500	0.57621	0.40940
80	1.28958	0.22237	0.38402	0.22889	0.57806	0.39974
100	1.24300	0.21239	0.36952	0.21801	0.53431	0.39257
120	1.21892	0.20784	0.36804	0.20597	0.53049	0.38821
X =	1.30043	0.21226	0.39054	0.24555	0.54824	0.39285
S =	0.07420	0.01084	0.02371	0.03912	0.02675	0.01310

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 22935 b2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)	Reported RRF (RRF 40 std)	Recalculated RRF (RRF 40 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
	ICAL	7/30/2010	Triethylphosphorothioate (IS2)	0.14890	0.14890	0.14764	0.14764	2.07130	2.07297
	MSD7								
	Mix D								

Conc IS/Cpd	Area cpd	Area IS
40/40	252005	1692466

Conc	TEPP					
10	0.15180					
20	0.14935					
40	0.14890					
50	0.14661					
80	0.14867					
100	0.14591					
120	0.14223					
X =	0.14764					
S =	0.00306					

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 23935 B2a

VALIDATION FINDINGS WORSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound Reference IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	s7h1716	8/17/2010	Phenol (IS1)	1.27823	1.30877	1.30877	2.38924	2.38958
	MSD7		Naphthalene (IS2)	0.75827	0.73765	0.73765	2.71935	2.71887
			Fluorene (IS3)	1.05517	1.07232	1.07232	1.62533	1.62479
	Mix A		Hexachlorobenzene (IS4)	0.19012	0.18066	0.18066	4.97580	4.97727
			Bis(2-ethex)phthalate (IS5)	0.64815	0.76727	0.76727	18.37846	18.37798
			Benzo(a)pyrene (IS6)	0.82803	0.91110	0.91110	10.03225	10.03274
2	s7h1718	8/17/2010	Acetophenone (IS1)	1.30043	1.32291	1.32291	1.72866	1.72877
	MSD7		2,6-Dichlorophenol (IS2)	0.21226	0.21664	0.21664	2.06351	2.06246
			Pentachlorobenzene (IS3)	0.39054	0.37092	0.37092	5.02138	5.02324
	Mix B		Pronamide (IS4)	0.24555	0.26921	0.26921	9.63551	9.63648
			3,3-Dimethylbenzidine (IS5)	0.54824	0.51560	0.51560	5.95360	5.95379
			3-Mrthylchlolanthrene (IS6)	0.39285	0.40308	0.40308	2.60405	2.60474
3	s7h1719	8/17/2010	Triethylphosphorothioate (IS2)	0.14764	0.15750	0.15750	6.67841	6.67789
	MSD7							
	Mix D							

		CCV1		CCV2		CCV3	
	Cis/Cx	Ax	Ais	Ax	Ais	Ax	Ais
1	40/40	492622	376400	581495	439557		
2	40/40	1068031	1447876	338987	1564764	260797	1655862
3	40/40	844780	787809	336241	906500		
4	40/40	250570	1386967	410081	1523262		
5	40/40	938171	1222744	680323	1319481		
6	40/40	951282	1044098	374403	928849		

LDC #: 73935 B2a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: JVG
2nd reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	50	38.86	77.7	77.7	0
2-Fluorobiphenyl	↓	40.67	81.3	81.3	↓
Terphenyl-d14	↓	59.77	120	120	↓
Phenol-d5	100	27.7	27.7	27.7	↓
2-Fluorophenol	↓	43.96	44.0	44.6	↓
2,4,6-Tribromophenol	↓	85.97	86.0	86.0	✓
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 53935 B2a
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: SVG
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration; MSDC = Matrix spike duplicate concentration

MS/MSD samples: 2/3

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-----	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol	100	100	0	43.9	42.5	43.9	43.9	42.5	42.5	3	3
N-Nitroso-di-n-propylamine				82.5	80.9	82.5	82.5	80.9	80.9	2	2
4-Chloro-3-methylphenol				91.2	90.2	91.2	91.2	90.2	90.2	1	1
Acenaphthene				91.1	90.6	91.1	91.1	90.6	90.6	1	1
~~Pentachlorophenol~~											
Pyrene				101	100	100	101	100	100	1	1

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 23975b2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: JVC
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration; SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 1014494 LCS

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol	50.0	NA	20.3	NA	40.5	40.5				
N-Nitroso-di-n-propylamine			42.8		85.6	85.6				
4-Chloro-3-methylphenol			47.5		94.9	95				
Acenaphthene			47.2		94.4	94.4				
Pentachlorophenol										
Pyrene			52.9		106	106				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 23935 b2A

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVZ
2nd reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

(Y) N N/A — Were all reported results recalculated and verified for all level IV samples?
(Y) N N/A — Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. _____, ND:

Conc. = ( )( )( )( )( ) / ( )( )( )( )( ) =

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: July 26, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-5697-1

Sample Identification

ES-26_072610_01
ES-26_072610_36
FB_ES-26_072610
RD-05C_072610_01
RD-44_072610_01
RD-44_072610_36
RD-43A_072610_01

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625 for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
ES-26_072610_01 RD-05C_072610_01 RD-44_072610_01 RD-44_072610_36	N-Nitrosodimethylamine	11	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-Nitrosodimethylamine was found in the method blanks.

Sample FB_ES-26_072610 was identified as a field blank. No N-Nitrosodimethylamine was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

*Indicates change as the result of report review.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-5697-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples ES-26_072610_01 and ES-26_072610_36 and samples RD-44_072610_01 and RD-44_072610_36 were identified as field duplicates. No N-Nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	ES-26_072610_01	ES-26_072610_36			
N-Nitrosodimethylamine	0.0098	0.0050U	65 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-5697-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-5697-1	ES-26_072610_01 RD-05C_072610_01 RD-44_072610_01 RD-44_072610_36	N-Nitrosodimethylamine	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-5697-1	ES-26_072610_01 ES-26_072610_36 FB_ES-26_072610 RD-05C_072610_01 RD-44_072610_01 RD-44_072610_36 RD-43A_072610_01	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

*Removed Field duplicates (RPD) finding.

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary - SDG 280-5697-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-5697-1

No Sample Data Qualified in this SDG

LDC #: 23977A2b
SDG #: 280-5697-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 9-23-10
Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/26/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	(1,2), *(5,6)
XVII.	Field blanks	ND	FB=3

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
* ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	ES-26_072610_01	11	MB 280-25025/1-A	21		31	
2	ES-26_072610_36	12	MB 280-25087/1-A	22		32	
3	FB_ES-26_072610	13	MB 280-25908/1-A	23		33	
4	RD-05C_072610_01	14		24		34	
5	RD-44_072610_01	15		25		35	
6	RD-44_072610_36	16		26		36	
7	~~FB~~ RD-43A_072610_01	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 45877A25

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: CR
2nd Reviewer: [signature]

All circled dates have exceeded the technical holding times.
(Y) N N/A Were all cooler temperatures within validation criteria?

METHOD: / GC HPLC (EPA 1625M)

Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
1,4-6	W	-	7/26/10	(8/6/10)	8/16/10	11	J/UJ/P (CH)

TECHNICAL HOLDING TIME CRITERIA

VOLATILES:
- Water unpreserved: Aromatic within 7 days, non-aromatic within 14 days of sample collection.
- Water preserved: Both within 14 days of sample collection.
- Soils: Both within 14 days of sample collection.

EXTRACTABLES:
- Water: Extracted within 7 days, analyzed within 40 days.
- Soil: Extracted within 14 days, analyzed within 40 days.

LDC #: 23978Z5

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CR
2nd reviewer: [illegible]

METHOD: GC/MS (Method: See Cover)

(Y) N N/A Were field duplicate pairs identified in this SDG?
(Y) N N/A Were target compounds detected in the field duplicate pairs?

Qual: Parent Only

Compound	Concentration (ug/L) 1	Concentration (ug/L) 2	RPD (C≤35%)
N-Nitrosodimethylamine	0.0098	0.0050U	~~65~~ ~~J/UJ/(A)~~ NA ~~(*16)~~ Q2

Compound	Concentration ( )	Concentration ( )	RPD

Compound	Concentration ( )	Concentration ( )	RPD

Compound	Concentration ( )	Concentration ( )	RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 16, 2010

LDC Report Date: December 2, 2010

Matrix: Water

Parameters: 1,2,3-Trichloropropane

Validation Level: Level IV

***Laboratory:** TestAmerica, Inc./Lancaster Lab

Sample Delivery Group (SDG): 1208252

Sample Identification

HAR-16_081610_03

*Added "Lancaster Lab" to Laboratory list

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for 1,2,3-Trichloropropane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 30.0% for all compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-Trichloropropane was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Although surrogates were not required by the method, surrogate analysis was performed by the laboratory. Surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 1208252	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples HAR-16_081610_03 and HAR-16_081610_01 (from SDG 280-6404-1) were identified as split samples. No 1,2,3-Trichloropropane was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-16_081610_03	HAR-16_081610_01			
1,2,3-Trichloropropane	0.2U	0.0023	195 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples HAR-16_081610_03 and HAR-16_081610_01.

Boeing SSFL GW 3rd Qtr
1,2,3-Trichloropropane - Data Qualification Summary - SDG 1208252

SDG	Sample	Compound	Flag	A or P	Reason (Code)
1208252	HAR-16_081610_03	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
1,2,3-Trichloropropane - Laboratory Blank Data Qualification Summary - SDG 1208252

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
1,2,3-Trichloropropane - Field Blank Data Qualification Summary - SDG 1208252

No Sample Data Qualified in this SDG

LDC #: 24000G1c **VALIDATION COMPLETENESS WORKSHEET** Date: 9/27/10
SDG #: ~~MB041~~ 120852 Level IV Page: 1 of 1
Laboratory: Test America Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/16/10
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	%RSD ≤ 30%
IV.	Continuing calibration/ICV	A	CCV/ICV ≤ 30%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	~~A~~ N	client spec (non-client sample)
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/CRQLs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Splits	SW	S = 1 + HAR-16_081610_01 (from 250-6404-1)
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Water

1	HAR-16_081610_03	11		21		31	
2	~~HAR-16_081610_03MS~~	12		22		32	
3	~~HAR-16_081610_03MSD~~	13		23		33	
4	Blk	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 24000G1c
SDG #: See Cover

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer: LV

Method: Volatiles (EPA Method 524.2)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) < 20%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) < 30%?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Was a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 24000 61C
SDG #: See Cover

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer: V

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		✓
Were the performance evaluation (PE) samples within the acceptance limits?				
X. Internal standards				
Were internal standard area counts within +/-40% from the associated calibration standard?	✓			
Were retention times within - 30% of the last continuing calibration or +/- 50% of the initial calibration?	✓			
XI. Target compound identification	✓			
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?				
Were chromatogram peaks verified and accounted for?		✓		
XII. Compound quantitation/CRQLs	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 25 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 24000 61c

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JVG
2nd reviewer: [signature]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

(Y) N N/A Were field duplicate pairs identified in this SDG?
(Y) N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD	Parent only
	1	HAR-16_081610-01		
1,2,3-Trichloropropane	0.24	0.0023	195	NA

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

LDC #: 24000 GIC

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 5.0 std)	Recalculated RRF (RRF 5.0 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	08/24/10	1,2,3-TCP (FBZ)	0.0206	0.0206	0.0228	0.0228	16	15.52
2	SH08259								
3									

Conc IS/Cpd	Response cpd	Response IS
5/5	28772	1394112

Conc	1,2,3-TCP (FBZ)		
0.5	0.0192		
5	0.0206		
10	0.0242		
25	0.0270		
S =	0.0228		
X =	0.0035		

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 24000 GIC

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: JVG
2nd Reviewer: LA

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	sg25c01	8/25/2010	1,2,3-TCP (FBZ)	0.023	0.027	0.027	18	17.9
2								
3								

		CCV1		CCV2		CCV3	
Conc IS/Cpd	Compound	Response cpd	Response IS	Response cpd	Response IS	Response cpd	Response IS
10/10	1,2,3-TCP (FBZ)	74646	1390912				

LDC #: 24000 G1C
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: JVG
2nd reviewer:

METHOD: GC/MS VOA (EPA Method 524.2)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	
Toluene-d8					
Bromofluorobenzene	5.00	4,69	94	94	0
1,2-Dichlorobenzene-d4	↓	4,414	88	88	↓
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	
Toluene-d8					
Bromofluorobenzene					
1,2-Dichlorobenzene-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	
Toluene-d8					
Bromofluorobenzene					
1,2-Dichlorobenzene-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	
Toluene-d8					
Bromofluorobenzene					
1,2-Dichlorobenzene-d4					
Dibromofluoromethane					

LDC #: 24000 G1C
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method 524.2)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene (1,2,3-TCP)	5.00	NA	5.02	NA	100	100				
Trichloroethene										
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 24000 G1C
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: SVK
2nd reviewer: LAC

METHOD: GC/MS VOA (EPA Method 524.2)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. _____, ND:

Conc. = $\frac{(\quad)(\quad)(\quad)(\quad)}{(\quad)(\quad)(\quad)(\quad)}$

=

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 3, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-5962-1

Sample Identification

PZ-158_080310_01
HAR-08_080310_01
RS-33_080310_01
HAR-11_080310_01
RD-38B_080310_01
RD-38B_080310_36

*Indicates change as the result of report review.

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample EB_PZ-141_090310 (from SDG 280-7064-1) was identified as an equipment blank. No semivolatile contaminants were found in this blank with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-141_090310	9/3/10	Bis(2-ethylhexyl)phthalate	3.2 ug/L	PZ-158_080310_01

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No semivolatile contaminants were found in this blank.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-5962-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples RD-38B_080310_01 and RD-38B_080310_36 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-38B_080310_01	RD-38B_080310_36			
Bis(2-ethylhexyl)pthalate	0.68	1.0	38 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Indicates change as the result of report review.

*Boeing SSFL GW 3rd Qtr
Semivolatiles - Data Qualification Summary - SDG 280-5962-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-5962-1	PZ-158_080310_01 HAR-08_080310_01 RS-33_080310_01 HAR-11_080310_01 RD-38B_080310_01 RD-38B_080310_36	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

*Removed Field duplicates (RPD) finding.

Boeing SSFL GW 3rd Qtr
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-5962-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-5962-1

No Sample Data Qualified in this SDG

LDC #: 24000B2a
SDG #: 280-5962-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 9-27-10
Page: 1 of 1
Reviewer: AZ
2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/3/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	(5,6)
XVII.	Field blanks	SW	FB=FB082510-19, EB= ~~EB-PZ-076-082510(280-6744~~ (280-6744-1) ~~EB-SH-04-090310~~ EB_PZ-146-090310 280-7064

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	PZ-158_080310_01	11	MB 280-26145/1-A	21		31	
2	HAR-08_080310_01	12		22		32	
3	RS-33_080310_01	13		23		33	
4	HAR-11_080310_01	14		24		34	
5	RD-38_080310_01	15		25		35	
6	RD-38_080310_36	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 24000B2a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: CR
2nd Reviewer: LA

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270)

(Y) N N/A Were field blanks identified in this SDG?
(Y) N N/A Were target analytes detected in the field blanks? Reason Code: F

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 9/3/10 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: (EB) Associated Samples: 1

Analyte	Blank ID	Action Limit	Sample Identification						
	EB_PZ-141_090310 (SDG#: 280-7064-1)		No Quals (ND)						
Bis(2-ethylhexyl) phthalate	3.2	16							

LDC #: 24000B2a
SDG #: —

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

METHOD: ✓ GC/MS __ HPLC (EPA 8270C)

(Y) N N/A Were field duplicate pairs identified in this SDG?
Y (N) N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ng/L)		RPD (≤35) Qual Parents only
	5	6	
Bis(2-ethylhexyl) phthalate	0.68	1.0	~~38 J det/A~~ NA (*16)

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 2, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Wet Chemistry

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-5927-1

Sample Identification

RD-51A_080210_01
HAR-32_080210_01
HAR-21_080210_01
HAR-09_080210_01
PZ-141_080210_01
RD-51A_080210_01DUP
HAR-21_080210_01MS
HAR-21_080210_01MSD
HAR-21_080210_01DUP
HAR-09_080210_01DUP
PZ-141_080210_01MS
PZ-141_080210_01MSD
PZ-141_080210_01DUP

*Indicates change as the result of report review.

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320C for Alkalinity, EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate as Phosphorus, and Sulfate, EPA SW 846 Method 7196A for Dissolved Hexavalent Chromium, EPA Method 314.0 for Perchlorate, EPA SW 846 Method 9040B for pH, EPA 180.1 for Turbidity, Standard Method 2440C for Total Dissolved Solids, and Standard Method 2510C for Specific Conductance.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
HAR-32_080210_01	pH	50 hours	48 hours	J (all detects) UJ (all non-detects)	P
HAR-09_080210_01	pH	49.25 hours	48 hours	J (all detects) UJ (all non-detects)	P
PZ-141_080210_01 PZ-141_080210_01MS PZ-141_080210_01MSD PZ-141_080210_01DUP	Hexavalent chromium	29.5 hours	24 hours	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks.

Samples EB_SH-04_090310 and EB_PZ-141_090310 (both from SDG 280-7064-1) were identified as equipment blanks. No contaminant concentrations were found in these blanks.

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No contaminant concentrations were found in this blank.

*Indicates change as the result of report review.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-5927-1	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*IX. Field Duplicates

Samples HAR-09_080210_01 and HAR-09_080210_03 were identified as split samples. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD (Limits)	Flag	A or P
	HAR-09_080210_01	HAR-09_080210_03			
Alkalinity	720 mg/L	694 mg/L	4 (≤35)	-	-
Specific conductance	1300 umhos/cm	1360 umhos/cm	5 (≤35)	-	-
Total dissolved solids	830 mg/L	845 mg/L	2 (≤35)	-	-

*Indicates change as the result of report review.

Analyte	Concentration		RPD (Limits)	Flag	A or P
	HAR-09_080210_01	HAR-09_080210_03			
Chloride	43 mg/L	37.8 mg/L	13 (≤35)	-	-
Fluoride	0.36 mg/L	0.327 mg/L	10 (≤35)	-	-
Sulfate	34 mg/L	34.1 mg/L	0 (≤35)	-	-
pH	7.26 units	7.34 units	1 (≤35)	-	-
Turbidity	37 NTU	34.4 NTU	7 (≤35)	-	-

*Added split samples (RPD) findings.

Boeing SSFL GW 3rd Qtr
Wet Chemistry - Data Qualification Summary - SDG 280-5927-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-5927-1	HAR-32_080210_01 HAR-09_080210_01	pH	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-5927-1	PZ-141_080210_01	Hexavalent chromium	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-5927-1	RD-51A_080210_01 HAR-32_080210_01 HAR-21_080210_01 HAR-09_080210_01 PZ-141_080210_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (*VII)

Boeing SSFL GW 3rd Qtr
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-5927-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-5927-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24000A6
SDG #: 280-5927-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 9-27-10
Page: 1 of 1
Reviewer: GR
2nd Reviewer: AM

METHOD: (Analyte) Alkalinity (SM2320B), Ammonia-N (EPA Method 350.1), Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate (EPA Nethod 300.0), Dissolved Hexavalent Chromium (EPA SW846 Method 7196A), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B), Turbitity (EPA Method 180.1), Total Dissolved Solids (SM2440C) Specific Conductance (SM2510C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/2/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/D
V	Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS/D
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates / Split Samples	SW	Split= (4, HAR-09_080210_03 (280-6784-1) 257 713)
X.	Field blanks	ND	FB=FB_082510_19, EB=EB_PZ-076_082510 (280-6784-1) 448) EB_SH-04_090310 EB_PZ-141_090310 (280-7064-1) 4

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	RD-51A_080210_01	11	PZ-141_080210_01 MS	21	PBW	31	
2	HAR-32_080210_01	12	MSD	22		32	
3	HAR-21_080210_01	13	DUP	23		33	
4	HAR-09_080210_01	14		24		34	
5	PZ-141_080210_01	15		25		35	
6	RD-51A_080210_01DUP	16		26		36	
7	HAR-21_080210_01MS	17		27		37	
8	HAR-21_080210_01MSD	18		28		38	
9	HAR-21_080210_01DUP	19		29		39	
10	HAR-09_080210_01DUP	20		30		40	

Notes:

LDC #: 21400A6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer:

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1,2		[✓ pH] TDS [✓ Cl] F [✓ NO_3] NO_2 SO_4 PO_4 ALK CN^- [✓ NH_3] TKN TOC CR^{6+} [✓ ClO_4] ___ ___
3		pH TDS Cl [✓ F] [✓ NO_3] NO_2 SO_4 PO_4 ALK CN^- [✓ NH_3] TKN TOC CR^{6+} [✓ ClO_4] ___ ___
4		[✓ pH] [✓ TDS] [✓ Cl F NO_3] NO_2 [✓ SO_4] PO_4 [✓ ALK] CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] [✓ Turb] [✓ Cond]
5		pH TDS [✓ Cl F NO_3 NO_2 SO_4] [✓ PO_4] ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] ClO_4 [✓ Br] ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
QC: 6		[✓ pH] TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
7		pH TDS Cl [✓ F] [✓ NO_3] NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] ___ ___
8		pH TDS Cl [✓ F] [✓ NO_3] NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] ___ ___
9		pH TDS [✓ Cl] [✓ F] [✓ NO_3 NO_2] [✓ SO_4] [✓ PO_4] ALK CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] [✓ Br] ___
10		pH [✓ TDS] Cl F NO_3 NO_2 SO_4 PO_4 [✓ ALK] CN^- NH_3 TKN TOC CR^{6+} ClO_4 [✓ Turb] [✓ Cond]
1113		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

LDC #: 24000A6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: CR
2nd reviewer: AC

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:	9040B		7196A			
Parameters:	pH		Cr6+			
Technical holding time:	48hrs		24hrs			

Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
2	8/2/10 08:46	8/4/10 10:41	(50hrs)				J/UJ/P (HT)
4	09:30	10:43	(49.25hrs)				↓
5,11-13	08:44			8/13/10 14:14	(29.5hrs)		↓

LDC# 24000A6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: [illegible]
2nd Reviewer: [illegible]

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	4	HAR-09_080210_03		
Alkalinity	720	694	4	
Specific Conductance (umhos/cm)	1300	1360	5	
TDS	830	845	2	
Chloride	43	37.8	13	
Fluoride	0.36	0.327	10 NA (NQ)	
Sulfate	34	34.1	0	
pH (pH units)	7.26	7.34	1	
Turbidity (NTU)	37	34.4	7	

V:\FIELD DUPLICATES\FD_inorganic\24000A6.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 3, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: Gasoline Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-5962-1

Sample Identification

RS-30_080310_01
TB_RS-30_080310
RS-31_080310_01
RS-32_080310_01
RD-38B_080310_01
RD-38B_080310_36
TB_RD-38_080310
RS-30_080310_01MS
RS-30_080310_01MSD

*Indicates change as the result of report review.

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Gasoline Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No gasoline range organic contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound	Concentration	Associated Samples
MB 280-26837-6	8/12/10	C6-C12	5.92 ug/L	All samples in SDG 280-5962-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
TB_RS-30_080310	C6-C12	6.5 ug/L	100U ug/L
RS-32_080310_01	C6-C12	25 ug/L	100U ug/L
RD-38B_080310_01	C6-C12	25 ug/L	100U ug/L

Samples TB_RS-30_080310 and TB_RD-38_080310 were identified as trip blanks. No gasoline range organic contaminants were found in these blanks with the following exceptions:

*Indicates change as the result of report review.

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RS-30_080310	8/3/10	C6-C12	6.5 ug/L	RS-30_080310_01 RS-32_080310_01
TB_RD-38_080310	8/3/10	C6-C12	6.6 ug/L	RD-38B_080310_01 RD-38B_080310_36

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RS-32_080310_01	C6-C12	25 ug/L	100U ug/L
RD-38B_080310_01	C6-C12	25 ug/L	100U ug/L

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

*Indicates change as the result of report review.

Sample	Finding	Flag	A or P
All samples in SDG 280-5962-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*IX. Field Duplicates

Samples RD-38B_080310_01 and RD-38B_080310_36 were identified as field duplicates. No gasoline range organics were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	*Flags	A or P
	RD-38B_080310_01	RD-38B_080310_36			
C6-C12	25	4.9U	134 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Boeing SSFL GW 3rd Qtr
Gasoline Range Organics - Data Qualification Summary - SDG 280-5962-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-5962-1	RS-30_080310_01 TB_RS-30_080310 RS-31_080310_01 RS-32_080310_01 RD-38B_080310_01 RD-38B_080310_36 TB_RD-38_080310	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*VI)

*Removed Field duplicates (RPD) finding.

Boeing SSFL GW 3rd Qtr
Gasoline Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-5962-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-5962-1	TB_RS-30_080310	C6-C12	100U ug/L	A	B
280-5962-1	RS-32_080310_01	C6-C12	100U ug/L	A	B
280-5962-1	RD-38B_080310_01	C6-C12	100U ug/L	A	B

Boeing SSFL GW 3rd Qtr
Gasoline Range Organics - Field Blank Data Qualification Summary - SDG 280-5962-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-5962-1	RS-32_080310_01	C6-C12	100U ug/L	A	T
280-5962-1	RD-38B_080310_01	C6-C12	100U ug/L	A	T

*Indicates change as the result of report review.

LDC #: 24000B7 **VALIDATION COMPLETENESS WORKSHEET** Date: 9-28-10
SDG #: 280-5962-1 Level V Page: 1 of 1
Laboratory: Test America Inc. Reviewer: CR
2nd Reviewer: CM

METHOD: ~~GC TPH as Gasoline~~ GRO (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/3/10
IIa.	Initial calibration	N	
IIb.	Calibration verification/ICV	N	
III.	Blanks	A SW	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	A	MS/D
IVc.	Laboratory control samples	A	LCS/D
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	(5,6)
X.	Field blanks	SW	TB=5,7

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	RS-30_080310_01	11	MB 280-26837/6	21		31	
2	TB_RS-30_080310	12		22		32	
3	RS-31_080310_01	13		23		33	
4	RS-32_080310_01	14		24		34	
5	RD-38_080310_01	15		25		35	
6	RD-38_080310_36	16		26		36	
7	TB_RD-38_080310	17		27		37	
8	RS-30_080310_01MS	18		28		38	
9	RS-30_080310_01MSD	19		29		39	
10		20		30		40	

Notes: _____

LDC #: 24000B7
SDG #: _____

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: CR
2nd Reviewer: CM

METHOD: ✓ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all samples associated with a given method blank?
Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
Y N N/A Was a method blank performed with each extraction batch?
Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

(CB)

Level IV/D Only

Y N N/A (Gasoline and aromatics only)Was a method blank analyzed with each 24 hour batch?
Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 8/12/10 **Blank analysis date:** 8/12/10 **Associated samples:** All

Conc. units: ug/L

Compound	Blank ID	5X	Sample Identification					
	MB 280-26837/6	2	4	5				
C6-C12	5.92	29.6	6.5 U	25 U	25 U			

Blank extraction date: _____ **Blank analysis date:** _____ **Associated samples:** _____

Conc. units: _____

Compound	Blank ID	Sample Identification						

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 24000B57

SDG #: —

VALIDATION FINDINGS WORKSHEET

Field Blanks

Page: 1 of 1

Reviewer: OR

2nd Reviewer: [illegible]

METHOD: ✓ GC ___ HPLC (EPA 8015B)

(T)

N N/A Were field blanks identified in this SDG?

Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L Associated sample units: ug/L

Sampling date: 8/3/10

Field blank type: (circle one) Field Blank / Rinsate / Other: Trip Blk Associated Samples: 1, 4

Compound	Blank ID	Sample Identification								
	2	5X	~~No Qual's (>5X)~~ ER			4				
C6-C12	6.5	32.5				25/100U				

Blank units: ug/L Associated sample units: ug/L

Sampling date: 8/3/10

Field blank type: (circle one) Field Blank / Rinsate / Other: Trip Blk Associated Samples: 5, 6

Compound	Blank ID	Sample Identification								
	7	5X	5							
C6-C12	6.6	33	25/100U							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Samples with compound concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U"

LDC #: 24009B7
SDG #: ——

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CR
2nd reviewer: A

METHOD: ✓ GC __ HPLC (EPA 8015B)

(Y) N N/A Were field duplicate pairs identified in this SDG?
(Y) N N/A Were target compounds detected in the field duplicate pairs?

Qual parents only

Compound	Concentration (ug/L)		RPD (≤35)
	5	6	
C6-C12	25	4.90	134 NA ~~J/UJ/A~~ (*9)

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 5, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6071-1

Sample Identification

HAR-04_080510_01
HAR-23_080510_01
TB_HAR-23_080510
RD-37_080510_01
RD-37_080510_36
TB_RD-37_080510
HAR-19_080510_01
TB_HAR-19_080510
RD-36C_080510_01
RD-36C_080510_36

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Samples TB_HAR-23_080510, TB_RD-37_080510, and TB_HAR-19_080510 were identified as trip blanks. No volatile contaminants were found in these blanks with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-37_080510	8/5/10	Methylene chloride Acetone	0.37 ug/L 3.5 ug/L	RD-37_080510_01 RD-37_080510_36 RD-36C_080510_01 RD-36C_080510_36
TB_HAR-19_080510	8/5/10	Methylene chloride	0.45 ug/L	HAR-19_080510_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-37_080510_01	Methylene chloride	0.37 ug/L	2.0U ug/L

*Indicates change as the result of report review.

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-37_080510_36	Acetone	3.4 ug/L	10U ug/L
RD-36C_080510_01	Methylene chloride Acetone	0.41 ug/L 4.5 ug/L	5.0U ug/L 10U ug/L
RD-36C_080510_36	Methylene chloride Acetone	0.37 ug/L 4.6 ug/L	5.0U ug/L 10U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
HAR-23_080510_01	Toluene-d8	112 (88-110)	All TCL compounds	J (all detects)	P
RD-37_080510_01	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P
RD-37_080510_36	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P
HAR-19_080510_01	Toluene-d8	116 (88-110)	cis-1,2-Dichloroethene trans-1,2-Dichloroethene Trichloroethene	J (all detects) J (all detects) J (all detects)	A
TB_HAR-19_080510	Toluene-d8	112 (88-110)	All TCL compounds	J (all detects)	P
MB280-27187	Toluene-d8	115 (88-110)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

*Indicates change as the result of report review.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6071-1	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples RD-37_080510_01 and RD-37_080510_36 and samples RD-36C_080510_01 and RD-36C_080510_36 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-37_080510_01	RD-37_080510_36			
cis-1,2-Dichloroethene	0.22	0.26	17 (≤35)	-	-

*Indicates change as the result of report review.

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-37_080510_01	RD-37_080510_36			
Methylene chloride	0.37	0.32U	14 (≤35)	-	-
Trichloroethene	0.19	0.16U	17 (≤35)	-	-
Acetone	1.9U	3.4	57 (≤35)	NQ	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-36C_080510_01	RD-36C_080510_36			
1,1-Dichloroethane	0.52	0.55	6 (≤35)	-	-
1,1-Dichloroethene	2.4	2.4	0 (≤35)	-	-
Acetone	4.5	4.6	2 (≤35)	-	-
cis-1,2-Dichloroethene	56	56	0 (≤35)	-	-
Methylene chloride	0.41	0.37	10 (≤35)	-	-
Toluene	0.26	0.25	4 (≤35)	-	-
trans-1,2-Dichloroethene	21	22	5 (≤35)	-	-
Trichloroethene	0.26	0.25	4 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Indicates change as the result of report review.

*Boeing SSFL GW 3rd Qtr
Volatiles - Data Qualification Summary - SDG 280-6071-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
*280-6071-1	HAR-23_080510_01 RD-37_080510_01 RD-37_080510_36 TB_HAR-19_080510	All TCL compounds	J (all detects)	P	Surrogate recovery (%R) (S)
280-6071-1	HAR-19_080510_01	cis-1,2-Dichloroethene trans-1,2-Dichloroethene Trichloroethene	J (all detects) J (all detects) J (all detects)	A	Surrogate recovery (%R) (S)
280-6071-1	HAR-04_080510_01 HAR-23_080510_01 TB_HAR-23_080510 RD-37_080510_01 RD-37_080510_36 TB_RD-37_080510 HAR-19_080510_01 TB_HAR-19_080510 RD-36C_080510_01 RD-36C_080510_36	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*XII)

*Removed Field duplicates (RPD) finding.

Boeing SSFL GW 3rd Qtr
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-6071-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Volatiles - Field Blank Data Qualification Summary - SDG 280-6071-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-6071-1	RD-37_080510_01	Methylene chloride	2.0U ug/L	A	T
280-6071-1	RD-37_080510_36	Acetone	10U ug/L	A	T
280-6071-1	RD-36C_080510_01	Methylene chloride Acetone	5.0U ug/L 10U ug/L	A	T
280-6071-1	RD-36C_080510_36	Methylene chloride Acetone	5.0U ug/L 10U ug/L	A	T

*Indicates change as the result of report review.

LDC #: 24029B1a
SDG #: 280-6071-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 9-30-10
Page: 1 of 1
Reviewer: CR
2nd Reviewer: W

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/5/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A/SW	
VII.	Matrix spike/Matrix spike duplicates	N	Client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	(4,5), (9,10)
XVII.	Field blanks	SW	TB=3,6,8

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	HAR-04_080510_01	11	MB 280-27187/5	21		31	
2	HAR-23_080510_01	12		22		32	
3	TB_HAR-23_080510	13		23		33	
4	RD-37_080510_01	14		24		34	
5	RD-37_080510_36	15		25		35	
6	TB_RD-37_080510	16		26		36	
7	HAR-19_080510_01	17		27		37	
8	TB_HAR-19_080510	18		28		38	
9	RD-36C_080510_01	19		29		39	
10	RD-36C_080510_36	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 24052A01A

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

(CT)

(Y) N /N/A Were field blanks identified in this SDG?
Y/N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 8/5/10
Field blank type: (circle one) Field Blank / Rinsate / (Trip Blank) / Other: Associated Samples: 4,5,9,10

Compound	Blank ID	Sample Identification								
	6	4	5	9	10					
Methylene chloride	0.37	0.37/2.0U		0.41/5.0U	0.37/5.0U					
Acetone	3.5		3.4/10U	4.5/10U	4.6/10U					

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 8/5/10
Field blank type: (circle one) Field Blank / Rinsate / (Trip Blank) / Other: Associated Samples: 7

Compound	Blank ID	Sample Identification								
	8	Normals	(ND)							
Methylene chloride	0.45									
~~Acetone~~										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 24029-D17

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Page: 1 of 1
Reviewer: Q
2nd Reviewer: W

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Were all surrogate %R within QC limits?

Y (N) N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outsid of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications (S)
		2	TOL	112 (88-110)	J det's/P
		4	TOL	111 ( )	
		5	TOL	111 ( )	
		7	TOL	116 ( )	J det's/A (BBB. PPP. S)
		8	TOL	112 ( )	J det's/P
		MB 280-27187	TOL	115 (88-110)	

	QC Limits (Soil)	QC Limits (Water)
SMC1 (TOL) = Toluene-d8	81-117	88-110
SMC2 (BFB) = Bromofluorobenzene	74-121	86-115
SMC3 (DCE) = 1,2-Dichloroethane-d4	80-120	80-120
SMC4 (DFM) = Dibromofluoromethane	80-120	86-118

LDC #: 41049B1a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: CR
2nd reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L) 4	5	(≤35) RPD Qual: Parents Only
QQQ ~~cis-1,2-Dichloroethene~~	0.22	0.26	~~17~~ NA
E ~~Methylene Chloride~~	0.37	0.32U	~~14~~ NA
S ~~Trichloroethene~~	0.19	0.16U	~~17~~ NA
F Acetone	1.9U	3.4	~~57~~ NA J/UJ/A (*or

Compound	Concentration (ug/L) 9	10	(≤35) RPD
~~I~~	0.52	0.55	~~6~~ NA
H	2.4	2.4	~~0~~ NA
F	4.5	4.6	8 NA
QQQ	56	56	0
E	0.41	0.37	~~10~~ NA

~~PPP~~ 0.26 Z1

Compound	Concentration ( )		(≤35) RPD
CC	0.26	0.25	~~4~~ NA
PPP	Z1	22	5
S	0.26	0.25	~~4~~ NA

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 9, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6162-1

Sample Identification

HAR-15_080910_01
HAR-30_080910_01
TB_HAR-30_080910
HAR-26_080910_01
TB_HAR-26_080910
SH-04_080910_01
TB_SH-04_080910
HAR-33_080910_01

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore

qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Samples TB_HAR-30_080910, TB_HAR-26_080910, and TB_SH-04_080910 were identified as trip blanks. No volatile contaminants were found in these blanks.

Sample EB_PZ-141_090310 (from SDG 280-7064-1) was identified as an equipment blank. No volatile contaminants were found in this blank with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-141_090310	9/3/10	Acetone	4.5 ug/L	SH-04_080910_01

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No volatile contaminants were found in this blank.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
SH-04_080910_01	Acetone	6.3 ug/L	10U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6162-1	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

*XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

*Removed Overall assessment of data finding.

*Boeing SSFL GW 3rd Qtr
Volatiles - Data Qualification Summary - SDG 280-6162-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6162-1	HAR-15_080910_01 HAR-30_080910_01 TB_HAR-30_080910 HAR-26_080910_01 TB_HAR-26_080910 SH-04_080910_01 TB_SH-04_080910 HAR-33_080910_01	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-6162-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Volatiles - Field Blank Data Qualification Summary - SDG 280-6162-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-6162-1	SH-04_080910_01	Acetone	10U ug/L	A	F

*Indicates change as the result of report review.

LDC #: 24029C1a

SDG #: 280-6162-1

Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 10-1-10

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/9/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client specified
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	~~A~~ N	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	TB=*3,*5,7. EB=EB_PZ-14l_090310 (280-7064-1), *FB=FB_082510 (280-6744-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; $ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	HAR-15_080910_01	11	MB 280-27359/5	21		31	
2	HAR-30_080910_01	12		22		32	
3	TB_HAR-30_080910	13		23		33	
4	HAR-26_080910_01	14		24		34	
5	TB_HAR-26_080910	15		25		35	
6	SH-04_080910_01	16		26		36	
7	TB_SH-04_080910	17		27		37	
8	HAR-33_080910_01	18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 24029C1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: W

METHOD: GC/MS Volatiles (EPA SW846 Method 8260B)

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target analytes detected in the field blanks? Reason Code: F

Blank units: ug/L **Associated sample units:** ug/L

Sampling date: 9/3/10 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 6

Analyte	Blank ID	Action Limit	Sample Identification							
	EB_PZ-141_090310 (SDG#: 280-7064-1)		6							
Acetone	4.5	45	6.3/10U							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 11, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6268-1

Sample Identification

RD-46B_081110_01
TB_RD-46B_081110
RD-36B_081110_01
RD-36B_081110_36
HAR-29_081110_01
TB_HAR-29_081110
RD-06_081110_01
RD-68A_081110_01
RD-68B_081110_01
RD-59B_081110_01
RD-59A_081110_36
RD-59A_081110_01
RD-59C_081110_01
RD-36B_081110_01MS
RD-36B_081110_01MSD

Introduction

This data review covers 15 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB280-26030/5	8/20/10	Methylene chloride	0.326 ug/L	All samples in SDG 280-6268-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-46B_081110_01	Methylene chloride	0.40 ug/L	5.0U ug/L
TB_RD-46B_081110	Methylene chloride	0.85 ug/L	5.0U ug/L
RD-36B_081110_01	Methylene chloride	0.38 ug/L	5.0U ug/L
RD-36B_081110_36	Methylene chloride	0.37 ug/L	5.0U ug/L

*Indicates change as the result of report review.

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
HAR-29_081110_01	Methylene chloride	0.37 ug/L	5.0U ug/L
TB_HAR-29_081110	Methylene chloride	0.79 ug/L	5.0U ug/L
RD-06_081110_01	Methylene chloride	0.38 ug/L	5.0U ug/L
RD-68A_081110_01	Methylene chloride	0.37 ug/L	5.0U ug/L
RD-68B_081110_01	Methylene chloride	0.35 ug/L	5.0U ug/L
RD-59B_081110_01	Methylene chloride	0.34 ug/L	5.0U ug/L
RD-59A_081110_36	Methylene chloride	0.35 ug/L	5.0U ug/L
RD-59A_081110_01	Methylene chloride	0.37 ug/L	5.0U ug/L
RD-59C_081110_01	Methylene chloride	0.34 ug/L	5.0U ug/L

Samples TB_RD-46B_081110 and TB_HAR-29_081110 were identified as trip blanks. No volatile contaminants were found in these blanks with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-46B_081110	8/11/10	Methylene chloride Acetone	0.85 ug/L 4.0 ug/L	RD-46B_081110_01
TB_HAR-29_081110	8/11/10	Methylene chloride Acetone	0.79 ug/L 3.6 ug/L	HAR-29_081110_01 RD-06_081110_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-46B_081110_01	Methylene chloride Acetone	0.40 ug/L 6.3 ug/L	5.0U ug/L 10U ug/L

*Indicates change as the result of report review.

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-29_081110_01	Methylene chloride	0.37 ug/L	5.0U ug/L
RD-06_081110_01	Methylene chloride	0.38 ug/L	5.0U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
RD-46B_081110_01	Toluene-d8	116 (88-110)	All TCL compounds	J (all detects)	P
TB_RD-46B_081110	Toluene-d8	113 (88-110)	All TCL compounds	J (all detects)	P
RD-36B_081110_01	Toluene-d8	115 (88-110)	All TCL compounds	J (all detects)	A
RD-36B_081110_36	Toluene-d8	113 (88-110)	All TCL compounds except Trichloroethene	J (all detects)	A
RD-36B_081110_36	Toluene-d8	111 (88-110)	Trichloroethene	J (all detects)	A
HAR-29_081110_01	Toluene-d8	115 (88-110)	All TCL compounds	J (all detects)	P
RD-68A_081110_01	Toluene-d8	113 (88-110)	All TCL compounds	J (all detects)	P
RD-59B_081110_01	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P
MB280-28030	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P
MB280-28216	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6268-1	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples RD-36B_081110_01 and RD-36B_081110_36 and samples RD-59A_081110_36 and RD-59A_081110_01 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-36B_081110_01	RD-36B_081110_36			
Acetone	4.6	2.8	49 (≤35)	NQ	-
Chloroform	0.35	0.35	0 (≤35)	-	-
cis-1,2-Dichloroethene	0.21	0.24	13 (≤35)	-	-
Methylene chloride	0.38	0.37	3 (≤35)	-	-
Tetrachloroethene	10	10	0 (≤35)	-	-
Trichloroethene	140	150	7 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-59A_081110_36	RD-59A_081110_01			
Methylene chloride	0.35	0.37	6 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Boeing SSFL GW 3rd Qtr
Volatiles - Data Qualification Summary - SDG 280-6268-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6268-1	RD-46B_081110_01 TB_RD-46B_081110 HAR-29_081110_01 RD-68A_081110_01 RD-59B_081110_01	All TCL compounds	J (all detects)	P	Surrogate recovery (%R) (S)
280-6268-1	RD-36B_081110_01 RD-36B_081110_36	All TCL compounds	J (all detects)	A	Surrogate recovery (%R) (S)
280-6268-1	RD-46B_081110_01 TB_RD-46B_081110 RD-36B_081110_01 RD-36B_081110_36 HAR-29_081110_01 TB_HAR-29_081110 RD-06_081110_01 RD-68A_081110_01 RD-68B_081110_01 RD-59B_081110_01 RD-59A_081110_36 RD-59A_081110_01 RD-59C_081110_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*XII)

*Removed Field duplicates (RPD) finding.

Boeing SSFL GW 3rd Qtr
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-6268-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-6268-1	RD-46B_081110_01	Methylene chloride	5.0U ug/L	A	B
280-6268-1	TB_RD-46B_081110	Methylene chloride	5.0U ug/L	A	B
280-6268-1	RD-36B_081110_01	Methylene chloride	5.0U ug/L	A	B
280-6268-1	RD-36B_081110_36	Methylene chloride	5.0U ug/L	A	B
280-6268-1	HAR-29_081110_01	Methylene chloride	5.0U ug/L	A	B
280-6268-1	TB_HAR-29_081110	Methylene chloride	5.0U ug/L	A	B
280-6268-1	RD-06_081110_01	Methylene chloride	5.0U ug/L	A	B

*Indicates change as the result of report review.

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-6268-1	RD-68A_081110_01	Methylene chloride	5.0U ug/L	A	B
280-6268-1	RD-68B_081110_01	Methylene chloride	5.0U ug/L	A	B
280-6268-1	RD-59B_081110_01	Methylene chloride	5.0U ug/L	A	B
280-6268-1	RD-59A_081110_36	Methylene chloride	5.0U ug/L	A	B
280-6268-1	RD-59A_081110_01	Methylene chloride	5.0U ug/L	A	B
280-6268-1	RD-59C_081110_01	Methylene chloride	5.0U ug/L	A	B

Boeing SSFL GW 3rd Qtr
Volatiles - Field Blank Data Qualification Summary - SDG 280-6268-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-6268-1	RD-46B_081110_01	Methylene chloride Acetone	5.0U ug/L 10U ug/L	A	T
280-6268-1	HAR-29_081110_01	Methylene chloride	5.0U ug/L	A	T
280-6268-1	RD-06_081110_01	Methylene chloride	5.0U ug/L	A	T

*Indicates change as the result of report review.

LDC #: 24029F1a
SDG #: 280-6268-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 10-1-10
Page: 1 of 1
Reviewer: CR
2nd Reviewer: MM

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/11/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	~~A~~ SW	
VII.	Matrix spike/Matrix spike duplicates	A	MS/D
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	(3,4),(11,12)
XVII.	Field blanks	SW	TB=2,6

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	RD-46B_081110_01	11	RD-59A_081110_36	21	MB 280-28830/5	31	
2	TB_RD-46B_081110	12	RD-59A_081110_01	22	MB 280-28216/5	32	
3	RD-36B_081110_01	13	RD-59C_081110_01	23		33	
4	RD-36B_081110_36	14	RD-36B_081110_01MS	24		34	
5	HAR-29_081110_01	15	RD-36B_081110_01MSD	25		35	
6	TB_HAR-29_081110	16		26		36	
7	RD-06_081110_01	17		27		37	
8	RD-68A_081110_01	18		28		38	
9	RD-68B_081110_01	19		29		39	
10	RD-59B_081110_01	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	lll. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 24029Fk2

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A". (CB)

Y N N/A Was a method blank associated with every sample in this SDG?
Y N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
Y N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 8/20/10
Conc. units: ug/L
Associated Samples: All

Compound	Blank ID	Sample Identification								
[redacted]	MB280	28030/5	1	2	3	4	5	6	7	8
Methylene chloride	0.326		0.40/5.0	0.85/5.0	0.38/5.0	0.37/5.0	0.37/5.0	0.79/5.0	0.38/5.0	0.37/5.0
~~Acetone~~										
			9	10	11	12	13			
			0.35/5.0	0.34/5.0	0.35/5.0	~~0.37~~/5.0 0.37	0.34/5.0			

Blank analysis date: 8/23/10
Conc. units:
Associated Samples:

Compound	Blank ID	Sample Identification								
[redacted]	~~MB 280~~	~~28216/5CC~~								
Methylene chloride	0.500 CC									
Acetone	4.33 CC									

All results were qualified using the criteria stated below except those circled.

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 24067TM

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: QR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

CT)

Y N /N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 8/11/10
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: Associated Samples: 1

Compound	Blank ID	Sample Identification								
	2	1								
Methylene chloride	0.85	0.40/5.0								
Acetone	4.0	6.3/10								

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 8/11/10
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: Associated Samples: 5, 7

Compound	Blank ID	Sample Identification								
	6	5	7							
Methylene chloride	0.79	0.37/5.0	0.58/5.0U							
Acetone	3.6									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 24047TT4

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Page: 1 of 1
Reviewer: O
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all surrogate %R within QC limits?

Y N N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outsid of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications (CS)
		1	TOL.	116 (88-110)	Vdets/P (FS)
		2		113 ( )	
		3		115 ( )	Vdets/A (FS)
		4		113 ( )	↓ (All except 5)
		4		111 ( )	Vdets/A (5 only)
		5		115 ( )	Vdets/P
		8		113 ( )	
		10		111 ( )	
		MB280-28030		111 ( )	
		MB280-28216	↓	111 ( )	↓

	QC Limits (Soil)	QC Limits (Water)
SMC1 (TOL) = Toluene-d8	81-117	88-110
SMC2 (BFB) = Bromofluorobenzene	74-121	86-115
SMC3 (DCE) = 1,2-Dichloroethane-d4	80-120	80-120
SMC4 (DFM) = Dibromofluoromethane	80-120	86-118

LDC #: 41074K

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: SR
2nd reviewer:

METHOD: GC/MS ✓ HPLC_____

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ng/L)		≤35 RPD Qual Parents Only
	3	4	
F	4.6	2.8	~~49~~ NA ~~Identify (*X)~~ OR
IA	0.35	0.35	0
QQQ	0.21	0.24	~~13~~
E	0.38	0.37	~~3~~ ↓
AA	10	10	0
S	140	150	7

Compound	Concentration (ng/L)		≤35 RPD
	11	12	
E	0.35	0.37	~~6~~ NA

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 5, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V & IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6071-1

Sample Identification

HAR-04_080510_01
HAR-23_080510_01
RD-37_080510_01
RD-37_080510_36
HAR-19_080510_01**
HAR-19_080510_36**
FB_HAR-19_080510**

**Indicates sample underwent Level IV review

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level V review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/18/10	o,o',o"-Triethylphosphorothioate Hexachloropropene n-Nitrosodi-n-butylamine 1,4-Naphthoquinone Pentachloronitrobenzene Pronamide 4-Nitroquinoline-1-oxide Methapyrilene	31.2 58.8 28.5 58.9 79.7 44.6 37.8 82.2	HAR-19_080510_36** FB_HAR-19_080510** MB 280-26524/1-A	J (all detects) UJ (all non-detects)	A
8/19/10	o,o',o"-Triethylphosphorothioate Hexachloropropene 1,4-Naphthoquinone Pentachloronitrobenzene Pronamide Methapyrilene	35.6 51.1 57.3 58.6 32.1 74.3	HAR-19_080510_01**	J (all detects) UJ (all non-detects)	A

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
7/31/10	Methapyrilene	37.4	HAR-19_080510_01** HAR-19_080510_36** FB_HAR-19_080510** MB 280-26524/1-A	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample FB_HAR-19_080510** was identified as a field blank. No semivolatile contaminants were found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

*Indicates change as the result of report review.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D 280-26524/23-A (HAR-19_080510_01** HAR-19_080510_36** FB_HAR-19_080510** MB 280-26524/1-A)	Hexachlorocyclopentadiene	7 (10-120)	-	-	J (all detects) R (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard percent recoveries (%R) were within QC limits for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a Level IV review was performed.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6071-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level V criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples RD-37_080510_01 and RD-37_080510_36, samples HAR-19_080510_01** and HAR-19_080510_36** were identified as field duplicates and samples HAR-19_080510_01** and HAR-19_080510_03 (from SDG 257987) were identified as split samples. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-19_080510_01**	HAR-19_080510_36**			
Bis(2-ethylhexyl)phthalate	20	23	14 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-19_080510_01**	HAR-19_080510_03			
Bis(2-ethylhexyl)phthalate	20	10.6	61 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split sample findings for samples HAR-19_080510_01** and HAR-19_080510_03.

Boeing SSFL GW 3rd Qtr
Semivolatiles - Data Qualification Summary - SDG 280-6071-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6071-1	HAR-19_080510_36** FB_HAR-19_080510**	o,o',o"-Triethylphosphorothioate Hexachloropropene n-Nitrosodi-n-butylamine 1,4-Naphthoquinone Pentachloronitrobenzene Pronamide 4-Nitroquinoline-1-oxide Methapyrilene	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
280-6071-1	HAR-19_080510_01**	o,o',o"-Triethylphosphorothioate Hexachloropropene 1,4-Naphthoquinone Pentachloronitrobenzene Pronamide Methapyrilene	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
280-6071-1	HAR-19_080510_01** HAR-19_080510_36** FB_HAR-19_080510**	Methapyrilene	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
280-6071-1	HAR-19_080510_01** HAR-19_080510_36** FB_HAR-19_080510**	Hexachlorocyclopentadiene	J (all detects) R (all non-detects)	P	Laboratory control samples (%R) (L)
280-6071-1	HAR-04_080510_01 HAR-23_080510_01 RD-37_080510_01 RD-37_080510_36 HAR-19_080510_01** HAR-19_080510_36** FB_HAR-19_080510**	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-6071-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-6071-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24029B2a **VALIDATION COMPLETENESS WORKSHEET** Date: 10/04/10
SDG #: 280-6071-1 Level V/IV Page: 1 of 1
Laboratory: Test America Reviewer: JVL
2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/05/10
II.	GC/MS Instrument performance check	A	Not reviewed for Level V validation.
III.	Initial calibration	A	Not reviewed for Level V validation. %RSD, r²
IV.	Continuing calibration/ICV	SW	Not reviewed for Level V validation. CCV/ICV ± 25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	Not reviewed for Level V validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for Level V validation.
XIII.	Tentatively identified compounds (TICs)	N	Not reviewed for Level V validation.
XIV.	System performance	A	Not reviewed for Level V validation.
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	*D_1 = 3,4 D_2 = 5,6, **See below
XVII.	Field blanks	ND	FB = 7

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; *ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

**Split samples = (5, HAR-19_080510_03) (SDG # 257987)

Validated Samples: ** Indicates sample underwent Level IV validation

1	HAR-04_080510_01 (Water)	11	MB 280-26524/1-A	21		31	
2	HAR-23_080510_01	12		22		32	
3	RD-37_080510_01 D_1	13		23		33	
4	RD-37_080510_36 D_1	14		24		34	
5	HAR-19_080510_01** D_2	15		25		35	
6	HAR-19_080510_36** D_2	16		26		36	
7	FB_HAR-19_080510**	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

1, 3, 4 – Nitrobenzenes + ~~Phthalates~~ Phthalates
2 – Nitrobenzenes only
5 – App IX + NB
6, 7 – App IX

LDC #: 24025 B2A
SDG #: See Cover

VALIDATION FINDINGS CHECKLIST

Reviewer: JM
2nd Reviewer: V

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
Did the laboratory perform a 5 point calibration prior to sample analysis?				
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?				
Was a curve fit used for evaluation?				
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?				
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?				
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?				
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
Were all surrogate %R within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?		✓		✓
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?				
Was an LCS analyzed for this SDG?	✓			

LDC #: 24029 B2a
SDG #: See Cover

VALIDATION FINDINGS CHECKLIST

Reviewer: MH
2nd Reviewer: V

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries.(%R) and relative percent difference (RPD) within the QC limits?		✓		
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within + 30 seconds from the associated calibration standard?	✓			
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?		✓		
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
System performance was found to be acceptable.	✓			
Overall assessment of data was found to be acceptable.	✓			
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. Methapyrilene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU O,O',O''-Triethylphosphorothioate
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. Hexachloropropene
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW. n-Nitrosodi-n-butylamine

XXX. 1,4-Naphthoquinone
YYY. Pentachloronitrobenzene
ZZZ. Pronamide
AAAA. 4-Nitroquinoline-1-oxide

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: 24029 B2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
(Y) N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y (N) N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <25.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
	7/31/10	Y3856 (ICV)	TTT	37.4		5-7, +Blk	J/UJ (c)
	8/18/10	Y4072 (CCV)	UUU	31.2		6,7 + Blk	
			VVV +	58.8			
			WWW	28.5			
			XXX	58.9			
			YYY (+)	79.7			
			ZZZ	44.6			
			AAA	37.8			
			TTT (+)	82.2			
	8/19/10	Y4128 (CCV)	UUU	35.6		5	
			VVV (+)	51.1			
			XXX (-)	57.3			
			YYY (+)	58.6			
			ZZZ	32.1			
			TTT (+)	74.3			

LDC #: 24029 P2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of __
Reviewer:
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

[✓ Y] N N/A Was a LCS required?

Y [✓ N] N/A Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		LCS/D 280-26524/2,3-A	X	7 (10-120)	( )	( )	5-7, MB 280-26524/1-A	J/R/P (L)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 24029 B2a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JVG
2nd reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds identified in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤35%)
	5	6	
EEE	20	23	14 NA

Compound	Concentration (ug/L)		RPD (≤35)
	5	HAR-19_080510_03	
EEE	20	10.6	61 (NA)

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

LDC #: 24029B2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	8/9/2010	Phenol (IS1)	1.9134	1.9134	1.9068	1.9067	5.0	4.99
	MSS Y		Naphthalene (IS2)	1.1581	1.1581	1.1462	1.1462	4.9	4.86
			Fluorene (IS3)	1.3585	1.3585	1.3814	1.3815	11.1	11.12
			Hexachlorobenzene (IS4)	0.2416	0.2416	0.2562	0.2563	11.3	11.31
			bis(2-ethylhexyl)phthalate (IS5)	0.6103	0.6103	0.5863	0.5863	10.3	10.26
			Benzo(g,h,i)perylene (IS6)	1.0493	1.0493	1.0466	1.0466	11.2	11.21

nc IS/Cpd	Area cpd	Area IS
40/50	683653	285831
40/50	1568111	1083218
40/50	1239480	729932
40/50	383817	1271028
40/50	1157942	1517849
40/50	1609797	1227272

Conc	Phenol	Naphthalene	Fluorene	Hexachlorob	bis(2eh)phtha	Benzo(g,h,i)per
4.00		1.0656	1.1930		0.4856	0.8549
10.00	1.8031	1.0721	1.2181	0.2138	0.5087	0.9348
20.00	1.7632	1.1086	1.2203	0.2292	0.5619	0.9679
50.00	1.9134	1.1581	1.3585	0.2416	0.6103	1.0493
80.00	1.9306	1.1829	1.4710	0.2601	0.6333	1.0857
120.00	1.9142	1.1963	1.5044	0.2753	0.6323	1.1461
160.00	1.9955	1.1932	1.5188	0.2831	0.6270	1.1520
200.00	2.0272	1.1924	1.5675	0.2908	0.6311	1.1818
X =	1.9067	1.1462	1.3815	0.2563	0.5863	1.0466
S =	0.0952	0.0557	0.1537	0.0290	0.0601	0.1173

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 24029 3 29

VALIDATION FINDINGS WORSHEET
Continuing Calibration Results Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Ais = Area of associated internal standard
Cx = Concentration of compound
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference IS)		Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	Y4071	08/18/10	Phenol	(IS1)	1.9068	1.8820	1.8820	1.3	1.3
			Naphthalene	(IS2)	1.1462	1.1791	1.1791	2.9	2.9
			Fluorene	(IS3)	1.3814	1.4965	1.4965	8.3	8.3
			Hexachlorobenzene	(IS4)	0.2562	0.2713	0.2713	5.9	5.9
			bis(2-ethylhexyl)phthalate	(IS5)	0.5863	0.5840	0.5840	0.4	0.4
			Benzo(g,h,i)perylene	(IS6)	1.0466	1.0744	1.0744	2.7	2.7
2	Y4127	08/19/10	Phenol	(IS1)	1.9068	1.8213	1.8213	4.5	4.5
			Naphthalene	(IS2)	1.1462	1.1635	1.1635	1.5	1.5
			Fluorene	(IS3)	1.3814	1.4360	1.4360	4.0	4.0
			Hexachlorobenzene	(IS4)	0.2562	0.2687	0.2687	4.8	4.9
			bis(2-ethylhexyl)phthalate	(IS5)	0.5863	0.6007	0.6007	2.5	2.5
			Benzo(g,h,i)perylene	(IS6)	1.0466	1.0860	1.0860	3.8	3.8

Compound (Reference IS)		Concentration (IS/Cpd)	Area Cpd	Area IS	Area Cpd	Area IS
Phenol	(IS1)	40/80	1111142	295202	994062	272892
Naphthalene	(IS2)	40/80	2600800	1102846	2360809	1014492
Fluorene	(IS3)	40/80	2293570	766321	1995534	694812
Hexachlorobenzene	(IS4)	40/80	758288	1397537	706025	1313984
bis(2-ethylhexyl)phthalate	(IS5)	40/80	2146419	1837731	1989188	1655755
Benzo(g,h,i)perylene	(IS6)	40/80	3060889	1424486	2964580	1364873

LDC #: 24629 b 2a

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: SVG
2nd reviewer: V

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 5

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	100	77.6	78	78	0
2-Fluorobiphenyl	↓	72.99	73	73	
Terphenyl-d14	↓	92.98	93	93	
Phenol-d5	150	109.3	73	109	
2-Fluorophenol	↓	108.3	72	~~10~~ 72	
2,4,6-Tribromophenol	↓	124.5	83	83	
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 24029 B2a
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVL
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration; SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: LCS/D 280-26524/2,3-A

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol	80	80	66.7	71.9	83	83	90	90	8	8
N-Nitroso-di-n-propylamine			66.9	76.3	84	84	95	95	13	13
4-Chloro-3-methylphenol			67.3	72.8	84	84	91	91	8	8
Acenaphthene			52.6	65.5	66	66	82	82	22	22
~~Pentachlorophenol~~										
Pyrene	↓	↓	68.3	73.8	85	85	92	92	8	8

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 74029B2a
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: JM
2nd reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. # 5 . EEE

Conc. = $\frac{(68576)(40)(1\text{ml})(1000)(\quad)}{(149539)(0.5863)(1057\text{ml})(\quad)(\quad)}$

= 28.27

≈ 20 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

(20)

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 9, 2010

LDC Report Date: December 2, 2010

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V & IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6162-1

Sample Identification

HAR-15_080910_01**
HAR-15_080910_36**
FB_HAR-15_080910**
HAR-30_080910_01
HAR-26_080910_01**
HAR-26_080910_36**
FB_HAR-26_080910**
SH-04_080910_01
HAR-33_080910_01**
HAR-33_080910_36**
FB_HAR-33_080910**

**Indicates sample underwent Level IV review

*Indicates change as the result of report review.

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level V review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
FB_HAR-26_080910**	All TCL compounds	14	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

*Indicates change as the result of report review.

Date	Compound	%D	Associated Samples	Flag	A or P
8/28/10	Methyl methanesulfonate 1,4-Naphthoquinone	29.5 57.3	FB_HAR-26_080910** MB 280-28094/1-A	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
8/21/10	1,4-Naphthoquinone Methyl methanesulfonate	59.8 31.6	HAR-15_080910_01** HAR-15_080910_36** FB_HAR-15_080910** HAR-26_080910_01** HAR-33_080910_01** HAR-33_080910_36** FB_HAR-33_080910** MB 280-26523/1-A	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
8/25/10	1,4-Naphthoquinone Methyl methanesulfonate	37.9 49.0	HAR-26_080910_36**	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/28/10	1,4-Phenylenediamine Methapyrilene	36.1 39.4	FB_HAR-26_080910** MB 280-28094/1-A	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
8/10/10	1,4-Phenylenediamine	38.9	HAR-15_080910_01** HAR-15_080910_36** FB_HAR-15_080910** HAR-26_080910_01** HAR-26_080910_36** HAR-33_080910_01** HAR-33_080910_36** FB_HAR-33_080910** MB 280-26523/1-A	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

*Indicates change as the result of report review.

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-28094/1-A	8/23/10	Benzyl alcohol Bis(2-ethylhexyl)phthalate Di-n-octylphthalate Phenanthrene	0.430 ug/L 3.14 ug/L 4.47 ug/L 1.27 ug/L	FB_HAR-26_080910**

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
FB_HAR-26_080910**	Bis(2-ethylhexyl)phthalate	2.8 ug/L	9.7U ug/L

Samples FB_HAR-15_080910**, FB_HAR-26_080910**, FB_HAR-33_080910**, and sample FB_082510_19 (from SDG 280-6744-1) were identified as field blanks. No semivolatile contaminants were found in these blanks with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_HAR-26_080910**	8/9/10	Bis(2-ethylhexyl)phthalate	2.8 ug/L	HAR-26_080910_01** HAR-26_080910_36**
FB_HAR-33_080910**	8/9/10	Acetophenone	0.42 ug/L	HAR-33_080910_01** HAR-33_080910_36**

Sample EB_PZ-141-090310 (from SDG 280-7064-1) was identified as an equipment blank. No semivolatile contaminants were found in this blank.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

*Indicates change as the result of report review.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard percent recoveries (%R) were within QC limits for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a Level IV review was performed.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6162-1	All compounds reported below the RL	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level V criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

*XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples HAR-15_080910_01** and HAR-15_080910_36**, samples HAR-26_080910_01** and HAR-26_080910_36**, and samples HAR-33_080910_01** and HAR-33_080910_36** were identified as field duplicates and samples HAR-15_080910_03 and HAR-15_080910_01, samples HAR-26_080910_03 and HAR-26_080910_01, and samples HAR-33_080910_03 and HAR-33_080910_01 (all from SDG 258363) were identified as split samples. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-15_080910_01**	HAR-15_080910_36**			
Bis(2-ethylhexyl)phthalate	0.66	2.4	114 (≤35)	NQ	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-26_080910_01**	HAR-26_080910_36**			
Bis(2-ethylhexyl)phthalate	95	160	51 (≤35)	J (all detects)	A

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-33_080910_01**	HAR-33_080910_36**			
Bis(2-ethylhexyl)phthalate	0.95U	0.56	52 (≤35)	NQ	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-15_080910_01**	HAR-15_080910_03			
Bis(2-ethylhexyl)phthalate	0.66	2.0U	101 (≤35)	NQ	-

*Indicates change as the result of report review.

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-26_080910_01**	HAR-26_080910_03			
Bis(2-ethylhexyl)phthalate	95	154	47 (≤35)	J (all detects)	A

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added above split samples (RPD) findings.

*Boeing SSFL GW 3rd Qtr
Semivolatiles - Data Qualification Summary - SDG 280-6162-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6162-1	FB_HAR-26_080910**	All TCL compounds	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-6162-1	FB_HAR-26_080910** HAR-15_080910_01** HAR-15_080910_36** FB_HAR-15_080910** HAR-26_080910_01** HAR-33_080910_01** HAR-33_080910_36** FB_HAR-33_080910** HAR-26_080910_36**	1,4-Naphthoquinone Methyl methanesulfonate	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
280-6162-1	FB_HAR-26_080910**	1,4-Phenylenediamine Methapyrilene	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
280-6162-1	HAR-15_080910_01** HAR-15_080910_36** FB_HAR-15_080910** HAR-26_080910_01** HAR-26_080910_36** HAR-33_080910_01** HAR-33_080910_36** FB_HAR-33_080910**	1,4-Phenylenediamine	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
280-6162-1	HAR-15_080910_01** HAR-15_080910_36** FB_HAR-15_080910** HAR-30_080910_01 HAR-26_080910_01** HAR-26_080910_36** FB_HAR-26_080910** SH-04_080910_01 HAR-33_080910_01** HAR-33_080910_36** FB_HAR-33_080910**	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*XII)
280-6162-1	HAR-26_080910_01** HAR-26_080910_36**	Bis(2-ethylhexyl)phthalate	J (all detects)	A	Field duplicates (RPD) (*XVI)
*280-6162-1	HAR-26_080910_01**	Bis(2-ethylhexyl)phthalate	J (all detects)	A	Split sample (RPD) (*XVI)

*Corrected removed Overall and Field duplicates (RPD) findings and added Split sample (RPD) findings in above summary table.

*Indicates change as the result of report review.

Boeing SSFL GW 3rd Qtr
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-6162-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-61621	FB_HAR-26_080910**	Bis(2-ethylhexyl)phthalate	9.7U ug/L	A	B

Boeing SSFL GW 3rd Qtr
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-6162-1

No Sample Data Qualified in this SDG

LDC #: 24029C2a **VALIDATION COMPLETENESS WORKSHEET** Date: 10/04/10
SDG #: 280-6162-1 Level V/IV Page: 1 of 1
Laboratory: Test America Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/09/10
II.	GC/MS Instrument performance check	A	Not reviewed for Level V validation.
III.	Initial calibration	A	Not reviewed for Level V validation. %RSD r²
IV.	Continuing calibration/ICV	SW	Not reviewed for Level V validation. CCV/ICV ≤25 %
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	client SMC
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	Not reviewed for Level V validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for Level V validation.
XIII.	Tentatively identified compounds (TICs)	N	Not reviewed for Level V validation.
XIV.	System performance	A	Not reviewed for Level V validation.
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D_1 = 1, 7 D_2 = 5, 6 D_3 = 9, 10
XVII.	Field blanks	SW	FB = *3, FB_082510-19 (280-6744-1), EB = EB_82-141_090310 (280-7064-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; *ND = No compounds detected // ; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Splits = S_1 = 1 + HAR-15_080910_0
S_2 = 5 + HAR-26_080910_0
S_3 = 9 + HAR-33-080910_0

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	HAR-15_080910_01** D_1	11	FB_HAR-33_080910**	21	MB 280-26523/1-A	31	(All from 258763)
2	HAR-15_080910_36** D_1	12		22	MB 280-26594/1-A	32	
3	FB_HAR-15_080910**	13		23		33	
4	HAR-30_080910_01	14		24		34	
5	HAR-26_080910_01** D_2	15		25		35	
6	HAR-26_080910_36** D_2	16		26		36	
7	FB_HAR-26_080910**	17		27		37	
8	SH-04_080910_01	18		28		38	
9	HAR-33_080910_01** D_3	19		29		39	
10	HAR-33_080910_36** D_3	20		30		40	

App IX + NB = 1, 8, 9, 5
App IX = 2, 3, 6-7, 10, 11
NB = 4

 Anthracene + NB = 8

LDC #: 24029 C24
SDG #: See Cover

VALIDATION FINDINGS CHECKLIST

Reviewer: JM
2nd Reviewer: M

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
All technical holding times were met.	~~✓~~	✓		
Cooler temperature criteria was met.	✓			
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	✓			
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		✓		
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓	✓		
Were all surrogate %R within QC limits?		✓		
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?		✓		
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
Was an LCS analyzed for this SDG?	✓			

LDC #: 24029 C2q
SDG #: See Cover

VALIDATION FINDINGS CHECKLIST

Reviewer: JV
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?				✓
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?		✓		
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
System performance was found to be acceptable.	✓			
Overall assessment of data was found to be acceptable.	✓			
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. Acetophenone
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU 1,4-Phenylenediamine
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. Methapyrilene
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW. Methyl methanesulfonate
				XXX. 1,4-Naphthoquinone

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: 24029 C29
SDG #: Su Cover

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: JVG
2nd Reviewer: [illegible]

All circled dates have exceeded the technical holding times.

(Y) N N/A Were all cooler temperatures within validation criteria?

METHOD : GC/MS BNA (EPA SW 846 Method 8270)

Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
7	W	N	8/09/10	8/23/10	8/29/10	14	J/UJ/P (H)

TECHNICAL HOLDING TIME CRITERIA

Water: Extracted within 7 days, analyzed within 40 days.
Soil: Extracted within 14 days, analyzed within 40 days.

LDC #: 24029 C29

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of
Reviewer: JVL
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <25.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
	8/28/10	B9893	UUU	36.1		7, MB 280-28094/1-A	J/UJ/A (C)
		(ICV)	VVV	39.4			
		B9887	WWW	29.5			
		(CCV)	XXX	57.3			
	8/10/10	D7277	UUU	38.9		1-3, 5, 9-11, MB 280-26523/1-A	
		(ICV)					
	8/21/10	D7713	XXX	59.8		1-3, 5, 9-11, MB 280-26523/1-A	
		(CCV)	WWW	31.6			
	8/25/10	D7848	WWW	37.9		6	
		(CCV)	XXX	49.0			

LDC #: 24029C2q
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MC
2nd Reviewer: ~

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

(B)

Blank extraction date: 8/23/10 **Blank analysis date:** 8/28/10
Conc. units: ug/L Associated Samples: 7

Compound	Blank ID	Sample Identification								
	MB 280-78094/1-A	7								
QQQ	0.430									
EEE	3.14		2.8/9.7U							
FFF	4.47									
UU	1.27									

Blank extraction date: _____ **Blank analysis date:** _____
Conc. units: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 24029C2a
SDG #: Sm Grn

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: JVB
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 8/09/10
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 5, 6

Compound	Blank ID	Sample Identification								
	7	5	6							
Diethylphthalate EEE	2.8	(95)	(160)							
Di-n-butylphthalate										
Bis(2-ethylhexyl)phthalate										
CRQL										

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 8/09/10
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 9, 10 (ND)

Compound	Blank ID	Sample Identification								
	11									
Diethylphthalate TTT	0.42									
Di-n-butylphthalate										
Bis(2-ethylhexyl)phthalate										
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 24029C2a

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)
Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Were percent recoveries (%R) for surrogates within QC limits?
Y (N) N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N (N/A) If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		FD	TPH	131 (45-135)	No qual (only 1 out)
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 24029 C2g

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JM
2nd reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

(Y) N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds identified in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤35) (Parent only)
	1	2	
EEE	0.66	2.4	~~NA~~ ~~J (all detects) / A~~ NA (xx)

Compound	Concentration (ug/L)		RPD (≤35) (Parent only)
	5	6	
EEE	95	160	51 J (all detects) / A (xx)

Compound	Concentration (ug/L)		RPD (≤35) (Parent only)
	9	10	
EEE	0.95 U	0.56	~~52 NC~~ ~~J/NJ/A~~ NA (xx)

Compound	Concentration ( )		RPD

LDC #: 24029C2a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JG
2nd reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds identified in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤35%)	
	1	HAR-25_080910_03		Parent only
EEE	0.66	2.0U	101	NA

Compound	Concentration (ug/L)		RPD (≤35%)	
	5	HAR-26_080910_03		Parent only
EEE	95	154	47	J dets/A (*x1)

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 6, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6121-1

Sample Identification

RD-49C_080610_01
RD-49C_080610_36
RD-49B_080610_01
RD-49B_080610_36
RD-58B_080610_01
RD-58C_080610_01
PZ-155_080610_01

*Indicates change as the result of report review.

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample EB_PZ-141_090310 (from SDG 280-7064-1) was identified as a field blank. No semivolatiles were found in this blank with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-141_090310	9/3/10	Bis(2-ethylhexyl)phthalate	3.2 ug/L	PZ-155_080610_01

Sample FB_082510_19 (from SDG 280-6744-1) was identified as field blanks. No N-Nitrosodimethylamine was found in these blanks.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
280-26962-BCS/D (RD-49C_080610_01 RD-49C_080610_36 280-26524-BLK)	Hexachlorocyclopentadiene	7 (10-120)	-	-	J (all detects) R (all non-detects)	A

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standard data were not reviewed for Level IV.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6121-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

*Indicates change as the result of report review.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples RD-49C_080610_01 and RD-49C_080610_36 and samples RD-36C_080610_01 and RD-36C_080610_36 were identified as field duplicates. No semivolatiles were found in these blanks with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	*Flags	A or P
	RD-36C_080610_01	RD-36C_080610_36			
Bis(2-ethylhexyl)phthalate	36	66	59 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Indicates change as the result of report review.

Boeing SSFL GW 3rd Qtr
Semivolatiles - Data Qualification Summary - SDG 280-6121-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6121-1	RD-49C_080610_01 RD-49C_080610_36	Hexachlorocyclopentadiene	J (all detects) R (all non-detects)	A	Laboratory control samples (%R) (L)
280-6121-1	RD-49C_080610_01 RD-49C_080610_36 RD-49B_080610_01 RD-49B_080610_36 RD-58B_080610_01 RD-58C_080610_01 PZ-155_080610_01	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

*Removed Field duplicates (RPD) finding.

Boeing SSFL GW 3rd Qtr
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-6121-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-6121-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24029D2a
SDG #: 280-6121-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 10-4-10
Page: 1 of 1
Reviewer: RT
2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/6/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	Client Specified
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	FD=1+2, 4+5
XVII.	Field blanks	SW	FB=FB_082510_19 (SDG: 280-6744-1) EB=EB_PZ-141_090310 (SDG: 280-7064-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

All Wp

24

1	RD-49C_080610_01	11		21		31	280-26579-BLK
2	RD-49C_080610_36	12		22		32	
3	RD-49B_080610_01	13		23		33	
4	RD-36C_080610_01	14		24		34	
5	RD-36C_080610_36	15		25		35	
6	RD-58B_080610_01	16		26		36	
7	RD-58C_080610_01	17		27		37	
8	PZ-155_080610_01	18		28		38	
9		19		29		39	
10		20		30		40	

3, 6, 7 - MB only
8 - Reg 8270
1, 2 - 8270 App IX
4, 5 - Phthalates + MB only

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	(X) Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: 24029D2a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AT
2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270)

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target analytes detected in the field blanks? Reason Code: F

Blank units: ug/L **Associated sample units:** ug/L

Sampling date: 9/3/10 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 8 (ND)

Analyte	Blank ID	Action Limit	Sample Identification							
	EB_PZ-141_090310 (SDG#: 280-7064-1)		8							
Bis(2-ethylhexyl) phthalate	3.2	16								

LDC #: 24029D2a
SDG #: See Cover
METHOD: GC/MS BNA (EPA SW 846 Method 8270)

VALIDATION FINDINGS WORKSHEET

Surrogate Recovery

Page: 1 of 1
Reviewer: Nt
2nd Reviewer:

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y [✓ N] N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N [✓ N/A] If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N [✓ N/A] If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		Blk	FBP	42 (45-130)	only 1 out, no qual
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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* QC limits are advisory

	QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116
S3 (TPH) = Terphenyl-d14	18-137	33-141
S4 (PHL) = Phenol-d5	24-113	10-94
S5 (2FP) = 2-Fluorophenol	25-121	21-100
S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 24029D2a
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: MT
2nd Reviewer: L

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

[✓ Y] N N/A Was a LCS required?
Y [✓ N] N/A Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	8/18/10	280-26962-BCS/D	X	7 (10-120)	( )	( )	All 1,2 + Blk	J/R/P (L)
				( )	( )	( )		
				( )	( )	( )	— — —	—
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		

LDC #: 24029D2q
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: AT
2nd reviewer:

METHOD: ☒ GC/MS ☐ HPLC

~~Y~~ N N/A Were field duplicate pairs identified in this SDG?
~~Y~~ N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		%RPD Limit 35	Qualification Parent only / All Samples
	4	5		
EEE Bis(2-ethylhexyl)phthalate	36	66	59 NA	~~Folds/A~~ **&XYI

Compound	Concentration ( )		%RPD Limit _____	Qualification Parent only / All Samples

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 11, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6268-1

Sample Identification

RD-46B_081110_01
RD-36B_081110_01
RD-36B_081110_36
HAR-29_081110_01
RD-06_081110_01
RD-68A_081110_01
RD-68B_081110_01

*Indicates change as the result of report review.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB280-27111/1-A	8/16/10	Bis(2-ethylhexyl)phthalate	0.665 ug/L	RD-46B_081110_01 RD-36B_081110_01 RD-36B_081110_36

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-46B_081110_01	Bis(2-ethylhexyl)phthalate	0.60 ug/L	9.9U ug/L
RD-36B_081110_36	Bis(2-ethylhexyl)phthalate	1.1 ug/L	10U ug/L

No field blanks were identified in this SDG.

*Indicates change as the result of report review.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6268-1	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

*Indicates change as the result of report review.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples RD-36B_081110_01 and RD-36B_081110_36 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-36B_081110_01	RD-36B_081110_36			
Bis(2-ethylhexyl)phthalate	0.55U	1.1	67 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Indicates change as the result of report review.

*Boeing SSFL GW 3rd Qtr
Semivolatiles - Data Qualification Summary - SDG 280-6268-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6268-1	RD-46B_081110_01 RD-36B_081110_01 RD-36B_081110_36 HAR-29_081110_01 RD-06_081110_01 RD-68A_081110_01 RD-68B_081110_01	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

*Removed Field duplicates (RPD) finding.

Boeing SSFL GW 3rd Qtr
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-6268-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-6268-1	RD-46B_081110_01	Bis(2-ethylhexyl)phthalate	9.9U ug/L	A	B
280-6268-1	RD-36B_081110_36	Bis(2-ethylhexyl)phthalate	10U ug/L	A	B

Boeing SSFL GW 3rd Qtr
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-6268-1

No Sample Data Qualified in this SDG

LDC #: 24029F2a
SDG #: 280-6268-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 10-1-10
Page: 1 of 1
Reviewer: CR
2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/11/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	(2,3)
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	RD-46B_081110_01	11	MB280271111/1A	21		31	
2	RD-36B_081110_01	12		22		32	
3	RD-36B_081110_36	13		23		33	
4	HAR-29_081110_01	14		24		34	
5	RD-06_081110_01	15		25		35	
6	RD-68A_081110_01	16		26		36	
7	RD-68B_081110_01	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 24029F2a
SDG #: —

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: GR
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(B)

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 8/16/10 **Blank analysis date:** 8/27/10
Conc. units: ug/L Associated Samples: 1-3

Compound	Blank ID	Sample Identification								
[redacted]	MB 280-27111/[illegible]A	1	3							
Bis(2-ethylhexyl) phthalate	0.665		0.60/9.9	1.1/10						

Blank extraction date: _____ **Blank analysis date:** _____
Conc. units: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								
[redacted]										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 24029F2a
SDG #: —

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

METHOD: ✓ GC/MS ___ HPLC (EPA 8270C)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(≤35) RPD Qual Parent only
	2	3	
Bis(2-ethylhexyl) phthalate	0.55U	1.1	~~67~~ ~~J/UJ/A~~ NA

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 12, 2010

LDC Report Date: December 2, 2010

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V & IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6325-1

Sample Identification

HAR03_081210_01**
HAR-03_081210_36**
FB_HAR-03_081210**
PZ-140_081210_01
PZ-140_081210_36

**Indicates sample underwent Level IV review

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level V review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/25/10	Methyl methanesulfonate	37.9	HAR03_081210_01** HAR-03_081210_36**	J (all detects) UJ (all non-detects)	A
	1,4-Naphthoquinone	49.0	FB_HAR-03_081210** MB 280-27377/1-A	J (all detects) UJ (all non-detects)	

*Indicates change as the result of report review.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/10/10	1,4-Phenylenediamine	38.9	HAR03_081210_01** HAR-03_081210_36** FB_HAR-03_081210** MB 280-27377/1-A	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Samples FB_HAR-03_081210** and FB_082510_19 (from SDG 280-6744-1) were identified as field blanks. No semivolatile contaminants were found in these blanks.

Sample EB_PZ-141-090310 (from SDG 280-7064-1) was identified as an equipment blank. No semivolatile contaminants were found in this blank with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-141-090310	9/3/10	Bis(2-ethylhexyl)phthalate	3.2 ug/L	PZ-140_081210_01 PZ-140_081210_36

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

*Indicates change as the result of report review.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard percent recoveries (%R) were within QC limits for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a Level IV review was performed.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 260-6325-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level V criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples HAR03_081210_01** and HAR-03_081210_36** and samples PZ-140_081210_01 and PZ-140_081210_36 were identified as field duplicates, and samples HAR03_081210_01** and HAR03_081210_03 (from SDG 258758) were identified as split samples. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR03_081210_01**	HAR-03_081210_36**			
Diethylphthalate	0.76	0.52	38 (≤35)	NQ	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR03_081210_01**	HAR03_081210_03			
Diethylphthalate	0.76	1.89	85 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples HAR03_081210_01** and HAR03_081210_03.

*Indicates change as the result of report review.

*Boeing SSFL GW 3rd Qtr
Semivolatiles - Data Qualification Summary - SDG 280-6325-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6325-1	HAR03_081210_01** HAR-03_081210_36** FB_HAR-03_081210**	1,4-Naphthoquinone Methyl methanesulfonate	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
280-6325-1	HAR03_081210_01** HAR-03_081210_36** FB_HAR-03_081210**	1,4-Phenylenediamine	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
280-6325-1	HAR03_081210_01** HAR-03_081210_36** FB_HAR-03_081210** PZ-140_081210_01 PZ-140_081210_36	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

*Removed Field duplicates (RPD) finding from above summary findings table.

Boeing SSFL GW 3rd Qtr
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-6325-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-6325-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24029G2a **VALIDATION COMPLETENESS WORKSHEET** Date: 10/04/10
SDG #: 280-6325-1 Level V/IV Page: 1 of 1
Laboratory: Test America Reviewer: JVC
2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/12/10
II.	GC/MS Instrument performance check	A	Not reviewed for Level V validation.
III.	Initial calibration	A	Not reviewed for Level V validation. %RSD r²
IV.	Continuing calibration/ICV	SW	Not reviewed for Level V validation. CCV/ICV ±25%
V.	Blanks	A	
VI.	Surrogate spikes	~~SW~~ A	
VII.	Matrix spike/Matrix spike duplicates	N	client spec.
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	Not reviewed for Level V validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for Level V validation.
XIII.	Tentatively identified compounds (TICs)	N	Not reviewed for Level V validation.
XIV.	System performance	A	Not reviewed for Level V validation.
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 1, r D_r* = 4, 5 Split = 1 + HAR-03_081210-03 from 258758
XVII.	Field blanks	SW	FB*=3, FB-082510-19 (280-6744-1), EB=EB-PZ-141-090310 (280-7064-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; *ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

water

1	HAR03_081210_01**	11	MB 280-27377/1-A	21		31	
2	HAR-03_081210_36**	12		22		32	
3	FB_HAR-03_081210**	13		23		33	
4	PZ-140_081210_01	14		24		34	
5	PZ-140_081210_36	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

App IX + 8B + Phthalates = 1
App IX = 2, 3
Reg. 8270 = 4, 5

LDC #: 24029 G 2a
SDG #: See Cover

VALIDATION FINDINGS CHECKLIST

Reviewer: JYG
2nd Reviewer:

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		✓		
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
Were all surrogate %R within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
Was an LCS analyzed for this SDG?	✓			

LDC #: 24029 G2c
SDG #: See Cover

VALIDATION FINDINGS CHECKLIST

Reviewer: JVC
2nd Reviewer: W

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
System performance was found to be acceptable.	✓			
Overall assessment of data was found to be acceptable.	✓			
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. Acetophenone
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU 1,4-Phenylene diamine
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. Methapyrilene
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW. Methyl methanesulfonate

XXX. 1,4-Naphthoquinone

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: 24029 G29

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <25.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
	8/10/10	D7277 (ICV)	UUU	38.9		1-3, MB 280-27377/1-A	J/UJ/A (c)
	8/25/10	D7848 (CCV)	WWW XXX	37.9 49.0			

CONCAL.2S

LDC #: 24034B2a (296)

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270)
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks? Reason Code: F
Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 9/3/10 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 4, 5 (ND)

Analyte	Blank ID	Action Limit	Sample Identification							
	EB_PZ-141_090310 (SDG#: 280-7064-1)									
Bis(2-ethylhexyl) phthalate	3.2	16								

LDC #: 24024 G2a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: JVG
2nd reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

(Y) N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds identified in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤35%) Parent only
	1	✓	
LL	0.76	0.52	~~38 NA J (all sts/a)~~ (x) ~~x~~ R

Split

Compound	Concentration (ug/L)		RPD (≤35%) Parent only
	1	HAR-03_081210_03	
LL	0.76	1.89	85 NA

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

LDC #: 24029 G2a

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	8/10/2010	Phenol (IS1)	1.6505	1.6505	1.6835	1.6835	3.3	3.31
	MSS D		Naphthalene (IS2)	1.1149	1.1149	1.1194	1.1195	3.4	3.40
			Diethylphthalate (IS3)	1.3088	1.3088	1.3184	1.3184	7.2	7.24
			Hexachlorobenzene (IS4)	0.2600	0.2600	0.2691	0.2691	9.2	9.19
			Bis(2-ethylhexyl)phthalate (IS5)	0.6163	0.6163	0.5712	0.5712	10.7	10.74
			Benzo(g,h,i)perylene (IS6)	1.0246	1.0246	1.0088	1.0088	7.6	7.63

)nc IS/Cpd	Area cpd	Area IS
40/50	527301	255590
40/50	1238471	888662
40/50	1033758	631884
40/50	375593	1155600
40/50	1071747	1391283
40/50	1619030	1264175

Conc	Phenol	Naphthalene	Diethylphtha	Hexachlorob	bis(2-eh)phtha	Benzo(g,h,i)per
4.00		1.1179	1.1706		0.4358	0.8966
10.00	1.6040	1.0623	1.2533	0.2310	0.5285	0.9278
20.00	1.6673	1.0741	1.2257	0.2489	0.5755	0.9378
50.00	**1.6505**	**1.1149**	**1.3088**	**0.2600**	**0.6163**	**1.0246**
80.00	1.6524	1.1156	1.3516	0.2701	0.6063	1.0474
120.00	1.7269	1.1477	1.3827	0.2831	0.6033	1.0666
160.00	1.7160	1.1467	1.4318	0.2867	0.6030	1.0668
200.00	1.7674	1.1764	1.4225	0.3041	0.6009	1.1027
X =	1.6835	1.1195	1.3184	0.2691	0.5712	1.0088
S =	0.0557	0.0381	0.0954	0.0247	0.0614	0.0770

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 24029G2a

VALIDATION FINDINGS WORSHEET
Continuing Calibration Results Verification

Reviewer: JVG
2nd Reviewer: LA

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
Ax = Area of compound
Cx = Concentration of compound
RRF = continuing calibration RRF
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference IS)		Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	D7847	08/25/10	1,4-Dioxane	(IS1)	1.684	1.824	1.824	8.4	8.4
			Naphthalene	(IS2)	1.119	1.143	1.143	2.1	2.1
			Diethylphthalate	(IS3)	1.318	1.260	1.260	4.4	4.4
			Hexachlorobenzene	(IS4)	0.269	0.299	0.299	10.9	10.9
			Bis(2-ethylhexyl)phthalate	(IS5)	0.571	0.624	0.624	9.2	9.2
			Benzo(g,h,i)perylene	(IS6)	1.009	1.118	1.118	10.8	10.8
2									

Compound (Reference IS)		Concentration (IS/Cpd)	Area Cpd	Area IS	Area Cpd	Area IS
1,4-Dioxane	(IS1)	40/80	1458701	399836		
Naphthalene	(IS2)	40/80	3231268	1413677		
Diethylphthalate	(IS3)	40/80	2408436	955855		
Hexachlorobenzene	(IS4)	40/80	1015660	1700886		
Bis(2-ethylhexyl)phthalate	(IS5)	40/80	2551541	2044675		
Benzo(g,h,i)perylene	(IS6)	40/80	4317064	1930679		

LDC #: 24029G2a
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: JVG
2nd reviewer: [signature]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	100	71.3	71	71	0
2-Fluorobiphenyl	↓	71.9	72	72	0
Terphenyl-d14	↓	97.1	97	97	↓
Phenol-d5	150	137.9	92	92	↓
2-Fluorophenol	↓	129.9	87	87	↓
2,4,6-Tribromophenol	↓	132.8	89	89	↓
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 24029G2A
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration; SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: LCS 280-27377/2-A

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol	80.0	NA	55.8	NA	70	70				
N-Nitroso-di-n-propylamine			56.7		71	71				
4-Chloro-3-methylphenol			61.7		77	77				
Acenaphthene			48.9		61	61				
Pentachlorophenol										
Pyrene			67.3		84	84				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 24029G29
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JR
2nd reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. #2 , LL

Conc. = $\frac{(12567)(40)(1\ ml)(100)(\quad)(\quad)}{(742314)(1.3784)(991.9\ mg)(\quad)(\quad)}$

= 0.5178

≈ 0.52 mg/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 9, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6162-1

Sample Identification

HAR-15_080910_01
HAR-30_080910_01
HAR-26_080910_01
SH-04_080910_01
SH-04_080910_36
FB_SH-04_080910
EB_SH-04_080910
HAR-33_080910_01

*Indicates change as the result of report review.

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625 for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-Nitrosodimethylamine was found in the method blanks.

Samples EB_SH-04_080910 and EB_PZ-141_090310 (from SDG 280-7064-1) were identified as equipment blanks. No N-Nitrosodimethylamine was found in these blanks.

Samples FB_SH-04_080910 and FB_082510_19 (from SDG 280-6744-1) were identified as field blanks. No N-Nitrosodimethylamine was found in these blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6162-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

*XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples SH-04_080910_01 and SH-04_080910_36 were identified as field duplicates. No N-Nitrosodimethylamine was found in these blanks with the following exceptions:

*Removed Overall assessment of data finding.

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	SH-04_080910_01	SH-04_080910_36			
N-Nitrosodimethylamine	0.077	0.091	17 (≤35)	-	-

*Indicates change as the result of report review.

***Boeing SSFL GW 3rd Qtr**
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-6162-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6162-1	HAR-15_080910_01 HAR-30_080910_01 HAR-26_080910_01 SH-04_080910_01 SH-04_080910_36 FB_SH-04_080910 EB_SH-04_080910 HAR-33_080910_01	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary - SDG 280-6162-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-6162-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24029C2b

SDG #: 280-6162-1

Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 10-1-10

Page: 1 of 1

Reviewer: CR

2nd Reviewer: W

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/9/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	(4,5)
XVII.	Field blanks	ND	FB=6, FB_082510_19 (280-6144-1), EB=7, EB_PZ-141_090310 (280-7064-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1	HAR-15_080910_01	11	MB 280-2652/1-A	21		31	
2	HAR-30_080910_01	12	MB 280-20156/1-A	22		32	
3	HAR-26_080910_01	13		23		33	
4	SH-04_080910_01	14		24		34	
5	SH-04_080910_36	15		25		35	
6	FB_SH-04_080910	16		26		36	
7	EB_SH-04_080910	17		27		37	
8	HAR-33_080910_01	18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 26029C2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CR
2nd reviewer: [illegible]

METHOD: GC/MS ✓ HPLC_____

(Y N N/A) Were field duplicate pairs identified in this SDG?
(Y N N/A) Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤35)
	4	5	
N-Nitrosodimethylamine	0.077	0.091	17 NA

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 6, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6121-1

Sample Identification

RD-49C_080610_01
RD-49C_080610_36
FB_RD-49C_080610
RD-49B_080610_01
RD-49B_080610_36
FB_RD-49B_080610
RD-58B_080610_01
RD-58C_080610_01
PZ-155_080610_01

*Indicates change as the result of report review.

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625 for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-Nitrosodimethylamine was found in the method blanks.

Sample EB_PZ-141_090310 (from SDG 280-7064-1) was identified as a field blank. No N-Nitrosodimethylamine was found in this blank.

Samples FB_RD-49C_080610, FB_RD-49B_080610, and FB_082510_19 (from SDG 280-6744-1) were identified as field blanks. No N-Nitrosodimethylamine was found in these blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6121-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples RD-49C_080610_01 and RD-49C_080610_36 and samples RD-49B_080610_01 and RD-49B_080610_36 were identified as field duplicates. No N-Nitrosodimethylamine was found in these blanks with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	*Flags	A or P
	RD-49C_080610_01	RD-49C_080610_36			
N-Nitrosodimethylamine	0.010	0.0069	37 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-49B_080610_01	RD-49B_080610_36			
N-Nitrosodimethylamine	0.037	0.043	15 (≤35)	-	-

*Indicates change as the result of report review.

*Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-6121-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6121-1	RD-49C_080610_01 RD-49C_080610_36 FB_RD-49C_080610 RD-49B_080610_01 RD-49B_080610_36 FB_RD-49B_080610 RD-58B_080610_01 RD-58C_080610_01 PZ-155_080610_01	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

*Removed Field duplicates (RPD) finding.

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary - SDG 280-6121-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-6121-1

No Sample Data Qualified in this SDG

LDC #: 24029D2b
SDG #: 280-6121-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 10-4-10
Page: 1 of 1
Reviewer: pat
2nd Reviewer: [signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/6/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	FD= 1+2, 4+5
XVII.	Field blanks	ND	FB= 3, 6, FB_082510_17 (SDG: 280-6744-1) EB= EB_PZ-141_090310 (SDG: 280-7064-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All but 40

1	RD-49C_080610_01	11		21		31	280-26137-BLK
2	RD-49C_080610_36	12		22		32	280-26521-BLK
3	FB_RD-49C_080610	13		23		33	280-26756-BLK
4	RD-49B_080610_01	14		24		34	~~280-2675~~
5	RD-49B_080610_36	15		25		35	
6	FB_RD-49B_080610	16		26		36	
7	RD-58B_080610_01	17		27		37	
8	RD-58C_080610_01	18		28		38	
9	PZ-155_080610_01	19		29		39	
10		20		30		40	

LDC #: 24029D2b
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: AF
2nd reviewer:

METHOD: X GC/MS HPLC

(X) N N/A Were field duplicate pairs identified in this SDG?
(Y) N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (µg/L)		%RPD Limit 35	Qualification (Parent only) / All Samples
	1	2		
~~N-Nitrosodiethylamine~~	0.010	0.0069	37 NA	J detects/A ~~XX XVL~~
N-Nitrosodimethylamine.				

Compound	Concentration (µg/L)		%RPD Limit 35	Qualification Parent only / All Samples
	4	5		
N-Nitrosodimethylamine.	0.037	0.043	~~15~~ NA	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 6, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: Metals

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6121-1

Sample Identification

RD-49C_080610_01
RD-49C_080610_36
RD-49B_080610_01
PZ-155_080610_01
RD-49C_080610_01F
RD-49C_080610_36F
RD-49B_080610_01F
RD-49C_080610_01MS
RD-49C_080610_01MSD
RD-49B_080610_01MS
RD-49B_080610_01MSD

Sample IDs ending in "F" were analyzed for dissolved metals

*Indicates change as the result of report review.

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section IV.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Sodium	0.226 mg/L	RD-49B_080610_01F
PB (prep blank)	Cobalt Silver	0.0000101 mg/L 0.0000258 mg/L	RD-49C_080610_01 RD-49C_080610_36
PB (prep blank)	Mercury	0.000030 mg/L	RD-49C_080610_01F RD-49C_080610_36F

Data qualification by the initial, continuing and preparation blanks (PBs) was based on the maximum contaminant concentration in the PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
RD-49C_080610_01	Silver	0.000023 mg/L	0.000023U mg/L
RD-49C_080610_36	Silver	0.000040 mg/L	0.000040U mg/L
RD-49C_080610_01F	Mercury	0.000040 mg/L	0.000040U mg/L

*Indicates change as the result of report review.

Sample	Analyte	Reported Concentration	Modified Final Concentration
RD-49C_080610_36F	Mercury	0.000030 mg/L	0.000030U mg/L

Sample EB_PZ-141_090310 (from SDG 280-7064-1) was identified as an equipment blank. No metal contaminants were found in this blank.

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No metal contaminants were found in this blank with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_082510_19	8/26/10	Antimony Arsenic Barium Cadmium Lead Silver Thallium	0.00010 mg/L 0.0021 mg/L 0.0019 mg/L 0.000043 mg/L 0.00023 mg/L 0.000044 mg/L 0.00042 mg/L	PZ-155_080610_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-155_080610_01	Antimony Arsenic Barium Cadmium	0.00018 mg/L 0.0021 mg/L 0.0087 mg/L 0.000065 mg/L	0.00018U mg/L 0.0021U mg/L 0.0087U mg/L 0.000065U mg/L

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

*Indicates change as the result of report review.

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
RD-49C_080610_01MS/MSD (RD-49C_080610_01 RD-49C_080610_36 PZ-155_080610_01)	Mercury	113 (88-111)	-	-	J (all detects)	A

VII. Duplicate Sample Analysis

Duplicate sample analyses were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
LCS	Mercury	113 (88-111)	RD-49C_080610_01 RD-49C_080610_36 PZ-155_080610_01	J (all detects)	P

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-6121-1	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG.

*Indicates change as the result of report review.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*XIV. Field Duplicates

Samples RD-49C_080610_01 and RD-49C_080610_36 and samples RD-49C_080610_01F and RD-49C_080610_36F were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD (Limits)	*Flags	A or P
	RD-49C_080610_01	RD-49C_080610_36			
Antimony	0.00019	0.00030	45 (≤35)	NQ	-
Arsenic	0.00094	0.00088	7 (≤35)	-	-
Barium	0.074	0.076	3 (≤35)	-	-
Chromium	0.0010	0.0011	10 (≤35)	-	-
Cobalt	0.00034	0.00036	6 (≤35)	-	-
Copper	0.0073	0.012	49 (≤35)	NQ	-
Lead	0.0017	0.0021	21 (≤35)	-	-
Nickel	0.0015	0.0015	0 (≤35)	-	-
Silver	0.000023	0.000040	54 (≤35)	NQ	-
Tin	0.00027	0.00037	31 (≤35)	NQ	-
Thallium	0.000032	0.000027	17 (≤35)	-	-
Vanadium	0.00025	0.00021	17 (≤35)	-	-
Zinc	0.57	0.58	2 (≤35)	-	-

*Indicates change as the result of report review.

Analyte	Concentration (ug/L)		RPD (Limits)	*Flags	A or P
	RD-49C_080610_01F	RD-49C_080610_36F			
Antimony	0.00013	0.00011	17 (≤35)	-	-
Arsenic	0.00075	0.00076	1 (≤35)	-	-
Barium	0.077	0.076	1 (≤35)	-	-
Cobalt	0.00027	0.00029	7 (≤35)	-	-
Lead	0.00054	0.00097	57 (≤35)	NQ	-
Mercury	0.000040	0.000030	29 (≤35)	NQ	-
Nickel	0.0013	0.0014	7 (≤35)	-	-
Zinc	0.57	0.58	2 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Indicates change as the result of report review.

*Boeing SSFL GW 3rd Qtr
Metals - Data Qualification Summary - SDG 280-6121-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-6121-1	RD-49C_080610_01 RD-49C_080610_36 PZ-155_080610_01	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicates (%R) (Q)
280-6121-1	RD-49C_080610_01 RD-49C_080610_36 PZ-155_080610_01	Mercury	J (all detects)	P	Laboratory control samples (%R) (L)
280-6121-1	RD-49C_080610_01 RD-49C_080610_36 RD-49B_080610_01 PZ-155_080610_01 RD-49C_080610_01F RD-49C_080610_36F RD-49B_080610_01F	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (*XII)

*Removed Field duplicates (RPD) finding.

Boeing SSFL GW 3rd Qtr
Metals - Laboratory Blank Data Qualification Summary - SDG 280-6121-1

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-6121-1	RD-49C_080610_01	Silver	0.000023U mg/L	A	B
280-6121-1	RD-49C_080610_36	Silver	0.000040U mg/L	A	B
280-6121-1	RD-49C_080610_01F	Mercury	0.000040U mg/L	A	B
280-6121-1	RD-49C_080610_36F	Mercury	0.000030U mg/L	A	B

Boeing SSFL GW 3rd Qtr
Metals - Field Blank Data Qualification Summary - SDG 280-6121-1

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-6121-1	PZ-155_080610_01	Antimony Arsenic Barium Cadmium	0.00018U mg/L 0.0021U mg/L 0.0087U mg/L 0.000065U mg/L	A	F

*Indicates change as the result of report review.

LDC #: 24029D4
SDG #: 280-6121-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 10-10
Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 6/6/10
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	SW	MS/D
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	SW	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(1,2) (5,6)
XV	Field Blanks	SW	FB=FB_082510_19 (280-6744-1), EB=EB_PZ-141_090310 (280-7064-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: WATER

1	RD-49C_080610_01	11	RD-49B_080610_01MS	21	PBLW	31	
2	RD-49C_080610_36	12	RD-49B_080610_01MSD	22	PBLWF	32	
3	RD-49B_080610_01	13		23		33	
4	PZ-155_080610_01	14		24		34	
5	RD-49C_080610_01F	15		25		35	
6	RD-49C_080610_36F	16		26		36	
7	RD-49B_080610_01F	17		27		37	
8	~~PZ-155_080610_01F~~	18		28		38	
9	RD-49C_080610_01MS	19		29		39	
10	RD-49C_080610_01MSD	20		30		40	

Notes: Samples appended with "F" were analyzed for dissolved metals

LDC #: 24029D4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1,2,5,6		Al, [✓ Sb, As, Ba, Be, Cd] Ca, [✓ Cr, Co, Cu] Fe, [✓ Pb,] Mg, Mn, [✓ Hg, Ni] K, [✓ Se, Ag] Na, [✓ Tl, V, Zn] Mo, B, Si, CN$^-$, [✓ Sn]
3,7		Al, Sb, As, Ba, Be, Cd, [✓ Ca], Cr, Co, Cu, [✓ Fe] Pb, [✓ Mg, Mn], Hg, Ni, [✓ K] Se, Ag, [✓ Na], Tl, V, [✓ Zn], Mo, B, Si, CN$^-$ [✓ Sc]
4		Al, [✓ Sb, As, Ba, Be, Cd, ~~Ca~~, Cr, Co, Cu, Fe, Pb, ~~Mg~~, Mn, Hg, Ni, ~~K~~, Se, Ag, ~~Na~~, Tl, V, Zn, Mo] B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
QC 9,10		Al, [✓ Sb, As, Ba, Be, Cd], Ca, [✓ Cr, Co, Cu] Fe, [✓ Pb] Mg, Mn, [✓ Hg, Ni] K, [✓ Se, Ag] Na, [✓ Tl, V, Zn], Mo, B, Si, CN$^-$, [✓ Sn]
11,12		Al, Sb, As, Ba, Be, Cd, [✓ Ca] Cr, Co, Cu, [✓ Fe], Pb, [✓ Mg, Mn], Hg, Ni, [✓ K], Se, Ag, [✓ Na], Tl, V, [✓ Zn], Mo, B, Si, CN$^-$ [✓ Sc]
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, [✓ Ca] Cr, Co, Cu, [✓ Fe] Pb, [✓ Mg, Mn], Hg, Ni, [✓ K] Se, Ag, [✓ Na], Tl, V, [✓ Zn] [✓ Mo] B, Si, CN$^-$, [✓ Sc]
ICP-MS		Al, [✓ Sb, As, Ba, Be, Cd], Ca, [✓ Cr, Co, Cu] Fe, [✓ Pb], Mg, Mn, Hg, [✓ Ni] K, [✓ Se, Ag] Na, [✓ Tl, V, Zn] Mo, B, Si, CN$^-$, [✓ Sn]
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN$^-$,

Comments: [✓ Mercury by CVAA if performed]

LDC #: 24029G4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: NA Reason: B

Sample Concentration units, unless otherwise noted: mg/L Associated Samples: ~~X~~7

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Action Limit	No Qualifiers (>5x)									
Na		0.226		1.13										

Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 1, 2

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Action Limit	1	2								
Co		0.0000101		0.0000505										
Ag		0.0000258		0.0001	0.000032	0.000040								

Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 5,6

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Action Limit	5	6								
Hg		0.0000300		0.0002	0.000040	0.000030								

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 24029D4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: L

METHOD: Trace Metals (EPA SW846 6010B/7000)

(Y) N N/A Were field blanks identified in this SDG?

Y N N/A Were target analytes detected in the field blanks? Reason Code: F

Blank units: mg/L **Associated sample units:** mg/L

Sampling date: 8/26/10 ~~Soil factor~~ applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 4

Analyte	Blank ID	Sample Identification										
	FB_082510_19 (SDG#: 280-6744-1)	Action Level	4									
Sb	0.00010	0.0005	0.00018									
As	0.0021	0.0105	0.0021									
Ba	0.0019	0.0095	0.0087									
Cd	0.000043	0.0002	0.000065									
Pb	0.00023	0.00115										
Ag	0.000044	0.0002										
Tl	0.00042	0.0021										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 24029D4

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y (N) N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

(Y) N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

Y N (N/A) Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	9/2-10	W	Hg	113(88-111)			1,2,4	J det/A (Q)

Comments: _____

MSD.4SW

LDC #: 24029(Y)
SDG #: —

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: QR
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a laboratory control sample (LCS) analyzed for each matrix in this SDG?

Y N N/A Were all aqueous LCS percent recoveries (%R) within the control limits of 80-120% and all soil LCS %R within laboratory established control limits.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	LCS ID	Matrix	Analyte	%R (limits)	Associated Samples	Qualifications
	LCS	W	Hg	113(88-111)	1,2,4	Jdet/P (CL)

Comments: _____

LCS.4S2

LDC#: 24029D4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: VR
2nd Reviewer: VR

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	Qual Parents only
	1	2		
Antimony	0.00019	0.00030	~~45~~ NA	~~Jdet/A (*X/V)~~ X±V
Arsenic	0.00094	0.00088	7	
Barium	0.074	0.076	3	
Chromium	0.0010	0.0011	~~10~~ NA	
Cobalt	0.00034	0.00036	6	
Copper	0.0073	0.012	~~49~~	~~Jdet/A (*X/V)~~ X±V
Lead	0.0017	0.0021	21	
Nickel	0.0015	0.0015	0	
Silver	0.000023	0.000040	54	~~Jdet/A (*X/V)~~ X±V
Tin	0.00027	0.00037	31	~~Jdet/A (*X/V)~~ X±V
Thallium	0.000032	0.000027	17	
Vanadium	0.00025	0.00021	17	
Zinc	0.57	0.58	2	

LDC#: 24029D4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: SR
2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	Qual Parents only
	5	6		
Antimony	0.00013	0.00011	17 NA	
Arsenic	0.00075	0.00076	1	
Barium	0.077	0.076	1	
Cobalt	0.00027	0.00029	7 NA	
Lead	0.00054	0.00097	57	~~Jdet/A (*X)~~ XJ
Mercury	0.000040	0.000030	29	~~Jdet/A (*X)~~ XJ
Nickel	0.0013	0.0014	7	
Zinc	0.57	0.58	2	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 12, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: Metals

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6325-1

Sample Identification

PZ-140_081210_01
PZ-140_081210_36
PZ-140_081210_01MS
PZ-140_081210_01MSD
PZ-140_081210_36MS
PZ-140_081210_36MSD

*Indicates change as the result of report review.

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020, and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section IV.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Antimony Silver Thallium	0.0000907 mg/L 0.0000154 mg/L 0.0000232 mg/L	All samples in SDG 280-6325-1

Data qualification by the initial, continuing and preparation blanks (PBs) was based on the maximum contaminant concentration in the PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-140_081210_01	Antimony Silver Thallium	0.00015 mg/L 0.000019 mg/L 0.000043 mg/L	0.00015U mg/L 0.000019U mg/L 0.000043U mg/L
PZ-140_081210_36	Antimony Thallium	0.00015 mg/L 0.000037 mg/L	0.00015U mg/L 0.000037U mg/L

Sample EB_PZ-141_090310 (from SDG 280-7064-1) was identified as an equipment blank. No metal contaminants were found in this blank.

*Indicates change as the result of report review.

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No metal contaminants were found in this blank with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_082510_19	8/26/10	Antimony Arsenic Barium Cadmium Lead Silver Thallium	0.00010 mg/L 0.0021 mg/L 0.0019 mg/L 0.000043 mg/L 0.00023 mg/L 0.000044 mg/L 0.00042 mg/L	All samples in SDG 280-6325-1

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-140_081210_01	Antimony Arsenic Cadmium Silver Thallium	0.00015 mg/L 0.00073 mg/L 0.000072 mg/L 0.000019 mg/L 0.000043 mg/L	0.00015U mg/L 0.00073U mg/L 0.000072U mg/L 0.000019U mg/L 0.000043U mg/L
PZ-140_081210_36	Antimony Arsenic Lead Thallium	0.000015 mg/L 0.00075 mg/L 0.00021 mg/L 0.000037 mg/L	0.000015U mg/L 0.00075U mg/L 0.00021U mg/L 0.000037U mg/L

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate sample analyses were reviewed for each matrix as applicable.

*Indicates change as the result of report review.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-6325-1	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*XIV. Field Duplicates

Samples PZ-140_081210_01 AND PZ-140_081210_36 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	PZ-140_081210_01	PZ-140_081210_36			
Antimony	0.00015	0.00015	0 (≤35)	-	-
Arsenic	0.00073	0.00075	3 (≤35)	-	-
Barium	0.059	0.058	2 (≤35)	-	-

*Indicates change as the result of report review.

Analyte	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	PZ-140_081210_01	PZ-140_081210_36			
Cadmium	0.000072	0.00022	101 (≤35)	NQ	-
Copper	0.00063	0.0010	45 (≤35)	NQ	-
Iron	0.022U	0.79	189 (≤35)	NQ	-
Lead	0.00018U	0.00021	15 (≤35)	-	-
Manganese	0.079	0.082	4 (≤35)	-	-
Mercury	0.000069	0.000027U	87 (≤35)	NQ	-
Nickel	0.0030	0.0029	3 (≤35)	-	-
Silver	0.000019	0.000015U	24 (≤35)	-	-
Thallium	0.000043	0.000037	15 (≤35)	-	-
Vanadium	0.0013	0.0023	56 (≤35)	NQ	-
Zinc	0.0030	0.0057	62 (≤35)	NQ	-
Molybdenum	0.0050	0.0049	2 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Indicates change as the result of report review.

*Boeing SSFL GW 3rd Qtr
Metals - Data Qualification Summary - SDG 280-6325-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-6325-1	PZ-140_081210_01 PZ-140_081210_36	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*XII)

*Removed Field duplicates (RPD) finding.

Boeing SSFL GW 3rd Qtr
Metals - Laboratory Blank Data Qualification Summary - SDG 280-6325-1

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-6325-1	PZ-140_081210_01	Antimony Silver Thallium	0.00015U mg/L 0.000019U mg/L 0.000043U mg/L	A	B
280-6325-1	PZ-140_081210_36	Antimony Thallium	0.00015U mg/L 0.000037U mg/L	A	B

Boeing SSFL GW 3rd Qtr
Metals - Field Blank Data Qualification Summary - SDG 280-6325-1

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-6325-1	PZ-140_081210_01	Antimony Arsenic Cadmium Silver Thallium	0.00015U mg/L 0.00073U mg/L 0.000072U mg/L 0.000019U mg/L 0.000043U mg/L	A	F
280-6325-1	PZ-140_081210_36	Antimony Arsenic Lead Thallium	0.000015U mg/L 0.00075U mg/L 0.00021U mg/L 0.000037U mg/L	A	F

*Indicates change as the result of report review.

LDC #: 24029G4
SDG #: 280-6325-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 6-1-10
Page: 1 of 1
Reviewer: CR
2nd Reviewer: W

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/12/10
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	A	MS/D
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(1,2)
XV	Field Blanks	SW	FB=FB_082510-19 (280-6744-1), *EB=EB_PZ-MW_090310 (280-7064-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; *ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	PZ-140_081210_01	11	PBW	21		31	
2	PZ-140_081210_36	12		22		32	
3	PZ-140_081210_01MS	13		23		33	
4	PZ-140_081210_01MSD	14		24		34	
5	PZ-140_081210_36MS	15		25		35	
6	PZ-140_081210_36MSD	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 2402964

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer:
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1,2		Al, [✓ Sb], [✓ As], [✓ Ba], [✓ Be], [✓ Cd], Ca, [✓ Cr], [✓ Co], [✓ Cu], [✓ Fe], [✓ Pb], Mg, [✓ Mn], [✓ Hg], [✓ Ni], K, [✓ Se], [✓ Ag], Na, [✓ Tl], [✓ V], [✓ Zn], [✓ Mo], B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
QC:3,4		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
5,6		Al, Sb, As, Ba, Be, Cd, Ca, Cr, [✓ Co], Cu, [✓ Fe], Pb, Mg, [✓ Mn], Hg, Ni, K, Se, Ag, Na, Tl, [✓ V], Zn, [✓ Mo], B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, [✓ Hg], Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Analysis Method
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, [✓ Co], Cu, [✓ Fe], Pb, Mg, [✓ Mn], Hg, Ni, K, Se, Ag, Na, Tl, [✓ V], Zn, [✓ Mo], B, Si, CN^-,
ICP-MS		Al, [✓ Sb], [✓ As], [✓ Ba], [✓ Be], [✓ Cd], Ca, [✓ Cr], Co, [✓ Cu], Fe, [✓ Pb], Mg, Mn, Hg, [✓ Ni], K, [✓ Se], [✓ Ag], Na, [✓ Tl], V, [✓ Zn], Mo, B, Si, CN^-,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,

Comments: [✓ Mercury by CVAA if performed]

LDC #: 24029G4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reason: B

Reviewer: CS
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
Soil preparation factor applied: NA
Sample Concentration units, unless otherwise noted: mg/L
Associated Samples: All

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Action Limit	1	2								
Sb		0.0000907		0.0005	0.00015	0.00015								
Ag		0.0000154		0.000077	0.000019									
Tl		0.0000232		0.0001	0.000043	0.000037								

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 24029G4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW846 6010B/7000)

(X) N N/A Were field blanks identified in this SDG?
(Y) N N/A Were target analytes detected in the field blanks? Reason Code: F

Blank units: mg/L **Associated sample units:** mg/L
Sampling date: 8/26/10 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 1-2 All

Analyte	Blank ID	Sample Identification											
	FB_082510_19 (SDG#: 280-6744-1)	Action Level	1	2									
Sb	0.00010	0.0005	0.00015	0.00015									
As	0.0021	0.0105	0.00073	0.00075									
Ba	0.0019	0.0095											
Cd	0.000043	0.0002	0.000072										
Pb	0.00023	0.00115		0.00021									
Ag	0.000044	0.0002	0.000019										
Tl	0.00042	0.0021	0.000043	0.000037									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC#: 24029G4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Y/N NA Were field duplicate pairs identified in this SDG?
Y/N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	Qual parents only
	1	2		
Antimony	0.00015	0.00015	0 NA	
Arsenic	0.00073	0.00075	3	
Barium	0.059	0.058	2	
Cadmium	0.000072	0.00022	101 NA	Jdet/A (*XIV)
Copper	0.00063	0.0010	45 NA	Jdet/A (*XIV)
Iron	0.022U	0.79	189 NA	J/UJ/A (*XIV)
Lead	0.00018U	0.00021	15 NA	
Manganese	0.079	0.082	4	
Mercury	0.000069	0.000027U	87 NA	J/UJ/A (*XIV)
Nickel	0.0030	0.0029	3	
Silver	0.000019	0.000015U	24	
Thallium	0.000043	0.000037	15	
Vanadium	0.0013	0.0023	56	Jdet/A (*XIV)
Zinc	0.0030	0.0057	62	Jdet/A (*XIV)
Molybdenum	0.0050	0.0049	2	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 11, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: Wet Chemistry

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6268-1

Sample Identification

RD-46B_081110_01
RD-46B_081110_01A
RD-36B_081110_01
RD-36B_081110_36
RD-36B_081110_36A
RD-36B_081110_01A
HAR-29_081110_01
HAR-29_081110_01A
RD-06_081110_01
RD-68A_081110_01
RD-68B_081110_01
RD-59B_081110_01
RD-59A_081110_36
RD-59A_081110_01
RD-59C_081110_01
RD-46B_081110_01ADUP
RD-36B_081110_36AMS
RD-36B_081110_36AMSD
RD-36B_081110_36ADUP
HAR-29_081110_01AMS
HAR-29_081110_01AMSD
HAR-29_081110_01ADUP
RD-06_081110_01MS
RD-06_081110_01MSD
RD-68A_081110_01MS
RD-68A_081110_01MSD

*Indicates change as the result of report review.

Introduction

This data review covers 26 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 350.1 for Ammonia as Nitrogen, Standard Method 2510B for Conductivity, EPA Method 300.0 for Chloride, Fluoride, Nitrate, and Sulfate, EPA Method 314.0 for Perchlorate, EPA SW 846 Method 9040B for pH, EPA Method 180.1 for Turbidity, and Standard Method 2540C for Total Dissolved Solids.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
RD-46B_081110_01A RD-46B_081110_01ADUP	pH	49.5 hours	48 hours	J (all detects) UJ (all non-detects)	P
HAR-29_081110_01A	pH	51.25 hours	48 hours	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks.

No field blanks were identified in this SDG.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-6268-1	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*IX. Field Duplicates

Samples RD-36B_081110_01 and RD-36B_081110_36, Samples RD-36B_081110_36A and RD-36B_081110_01A, and samples RD-59A_081110_36 and RD-59A_081110_01 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD (Limits)	Flags	A or P
	RD-36B_081110_36A	RD-36B_081110_01A			
Nitrate	15 mg/L	15 mg/L	0 (≤35)	-	-
Fluoride	0.13 mg/L	0.11 mg/L	17 (≤35)	-	-
Perchlorate	0.28U ug/L	0.67 ug/L	82 (≤35)	NQ	-
pH	6.53 units	6.50 units	0 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Indicates change as the result of report review.

*Boeing SSFL GW 3rd Qtr
Wet Chemistry - Data Qualification Summary - SDG 280-6268-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-6268-1	RD-46B_081110_01A HAR-29_081110_01A	pH	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-6268-1	RD-46B_081110_01 RD-46B_081110_01A RD-36B_081110_01 RD-36B_081110_36 RD-36B_081110_36A RD-36B_081110_01A HAR-29_081110_01 HAR-29_081110_01A RD-06_081110_01 RD-68A_081110_01 RD-68B_081110_01 RD-59B_081110_01 RD-59A_081110_36 RD-59A_081110_01 RD-59C_081110_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (*VII)

*Removed Field duplicates (RPD) finding.

Boeing SSFL GW 3rd Qtr
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-6268-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-6268-1

No Sample Data Qualified in this SDG

LDC #: 24029F6
SDG #: 280-6268-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 10-1-10
Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: (Analyte) Alkalinity (SM2320B), Ammonia-N (EPA Method 350.2), Conductivity (SM2510B), Chloride, Fluoride, Nitrate-N, Sulfate (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B), Turbidity (EPA Method 180.1), TDS (SM2540C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/11/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/D
V	Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS/D
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	(3,4), (5,6), (13,14)
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	RD-46B_081110_01	11	RD-68B_081110_01	21	HAR-29_081110_01AMSD	31	PBW
2	RD-46B_081110_01A	12	RD-59B_081110_01	22	HAR-29_081110_01ADUP	32	
3	RD-36B_081110_01	13	RD-59A_081110_36	23	RD-06_081110_01MS	33	
4	RD-36B_081110_36	14	RD-59A_081110_01	24	RD-06_081110_01MSD	34	
5	RD-36B_081110_36A	15	RD-59C_081110_01	25	RD-68A_081110_01MS	35	
6	RD-36B_081110_01A	16	RD-46B_081110_01ADUP	26	RD-68A_081110_01MSD	36	
7	HAR-29_081110_01	17	RD-36B_081110_36AMS	27		37	
8	HAR-29_081110_01A	18	RD-36B_081110_36AMSD	28		38	
9	RD-06_081110_01	19	RD-36B_081110_36ADUP	29		39	
10	RD-68A_081110_01	20	HAR-29_081110_01AMS	30		40	

Notes:

LDC #: 24029F6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer:

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1,3,4,[illegible]7		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- [✓ NH_3] TKN TOC CR^{6+} ClO_4 ____ ____
2,5,6		[✓ pH] TDS Cl [✓ F NO_3] NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] ____ ____
8		[✓ pH] [✓ TDS] [✓ Cl F NO_3] NO_2 [✓ SO_4] PO_4 [✓ ALK] CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] [✓ Turb] [✓ Cond]
9		[✓ pH] TDS Cl [✓ F NO_3] NO_2 SO_4 PO_4 ALK CN^- [✓ NH_3] TKN TOC CR^{6+} [✓ ClO_4] ____ ____
10 11		pH TDS Cl [✓ F] [✓ NO_3] NO_2 SO_4 PO_4 ALK CN^- [✓ NH_3] TKN TOC CR^{6+} [✓ ClO_4] ____ ____
12-15		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
QC: 16		[✓ pH] TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
17		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] ____ ____
18		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] ____ ____
19		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] ____ ____
20		pH TDS [✓ Cl] F [✓ NO_3] NO_2 [✓ SO_4] PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
21		pH TDS [✓ Cl] F [✓ NO_3] NO_2 [✓ SO_4] PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
22		pH TDS [✓ Cl] F [✓ NO_3] NO_2 [✓ SO_4] PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 [✓ Turb] [✓ Cond]
23		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- [✓ NH_3] TKN TOC CR^{6+} ClO_4 ____ ____
24		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- [✓ NH_3] TKN TOC CR^{6+} ClO_4 ____ ____
25		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- [✓ NH_3] TKN TOC CR^{6+} ClO_4 ____ ____
26		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- [✓ NH_3] TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments: ____________________

LDC #: 24029F6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: CR
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:	9040B					
Parameters:	pH					
Technical holding time:	48hrs					

Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
2,16	8/11/10 1145	8/13/10 1322	(49.5hrs)				J/UJ/P (H)
8	↳ 10:30	↓ 1338	(51.25hrs)				↓

LDC# 24029F6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: CR
2nd Reviewer: VC

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	Qual: Parent Only
	5	6		
Nitrate	15	15	0	
Fluoride	0.13	0.11	~~17~~ NA	
Perchlorate (ug/L)	0.28U	0.67	~~82~~ NA	~~J/UJ/A (*IX)~~
pH (no units)	6.53	6.50	0	

V:\FIELD DUPLICATES\FD_inorganic\24029F6.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 9, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6162-1/A0H100485

Sample Identification

HAR-15_080910_01
HAR-30_080910_01
HAR-26_080910_01
SH-04_080910_01
HAR-33_080910_01

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
A0H110000-149B	8/11/10	Formaldehyde	10 ug/L	All samples in SDG 280-6162-1/A0H100485

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-15_080910_01	Formaldehyde	20 ug/L	50U ug/L
HAR-30_080910_01	Formaldehyde	18 ug/L	50U ug/L
HAR-26_080910_01	Formaldehyde	20 ug/L	50U ug/L
SH-04_080910_01	Formaldehyde	21 ug/L	50U ug/L
HAR-33_080910_01	Formaldehyde	33 ug/L	50U ug/L

*Indicates change as the result of report review.

Samples EB_PZ-141_090310 and EB_SH-04_090310 (both from SDG A0I40412) were identified as equipment blanks. No formaldehyde was found in these blanks with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-141_090310	9/3/10	Formaldehyde	19 ug/L	SH-04_080910_01
EB_SH-04_090310	9/3/10	Formaldehyde	20 ug/L	SH-04_080910_01

Sample FB_082510_19 (from SDG A0H260436) was identified as a field blank. No formaldehyde was found in this blank with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_082510_19	8/26/10	Formaldehyde	18 ug/L	SH-04_080910_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-155_080610_01	Formaldehyde	21 ug/L	50U ug/L

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were not required by the method.

b. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6162-1/A0H100485	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

*VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

*Removed Overall assessment of data finding.

*Boeing SSFL GW 3rd Qtr
Formaldehyde - Data Qualification Summary - SDG 280-6162-1/A0H100485

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6162-1/ A0H100485	HAR-15_080910_01 HAR-30_080910_01 HAR-26_080910_01 SH-04_080910_01 HAR-33_080910_01	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*VI)

Boeing SSFL GW 3rd Qtr
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-6162-1/A0H100485

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-6162-1/ A0H100485	HAR-15_080910_01	Formaldehyde	50U ug/L	A	B
280-6162-1/ A0H100485	HAR-30_080910_01	Formaldehyde	50U ug/L	A	B
280-6162-1/ A0H100485	HAR-26_080910_01	Formaldehyde	50U ug/L	A	B
280-6162-1/ A0H100485	SH-04_080910_01	Formaldehyde	50U ug/L	A	B
280-6162-1/ A0H100485	HAR-33_080910_01	Formaldehyde	50U ug/L	A	B

Boeing SSFL GW 3rd Qtr
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-6162-1/A0H100485

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-6162-1/ A0H100485	SH-04_080910_01	Formaldehyde	50U ug/L	A	F

*Indicates change as the result of report review.

LDC #: 24029C71 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-1-10
SDG #: 280-6162-1/A0H100485 Level V Page: 1 of 1
Laboratory: Test America Reviewer: QL
2nd Reviewer: [illegible]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/9/10
IIa.	Initial calibration	N	
IIb.	Calibration verification/ICV	N	
III.	Blanks	SW	
IVa.	Surrogate recovery	N	
IVb.	Matrix spike/Matrix spike duplicates	N	Client specified
IVc.	Laboratory control samples	A	LCS/D
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X.	Field blanks	SW	FB= FB_082510_19 (A0H260136), EB= EB_PZ-141_090310, EB_SH-04_090310 (A0I040417)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	HAR-15_080910_01	11	A0H110000-MSB	21		31	
2	HAR-30_080910_01	12		22		32	
3	HAR-26_080910_01	13		23		33	
4	SH-04_080910_01	14		24		34	
5	HAR-33_080910_01	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 24029C71
SDG #: —

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: QR
2nd Reviewer: [illegible]

METHOD: __ GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all samples associated with a given method blank?
Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
Y N N/A Was a method blank performed with each extraction batch?
Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level IV/D Only

Y N N/A (Gasoline and aromatics only)Was a method blank analyzed with each 24 hour batch?
Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 8/11/10 **Blank analysis date:** 8/12/10 **Associated samples:** All
Conc. units: ug/L

Compound	Blank ID	Sample Identification						
	AOH110ac-14MB	1	2	3	4	5		
Formaldehyde	10	20/50	18/50	20/50	21/50	33/50		

Blank extraction date:_____ **Blank analysis date:**_____ **Associated samples:**_____
Conc. units:_____

Compound	Blank ID	Sample Identification						

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 24029C71

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: h

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks? Reason Code: F

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 8/26/10 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 4

Analyte	Blank ID	Action Limit	Sample Identification							
	FB_082510_19 (SDG#: AOH260436)		4							
Formaldehyde	18	90	21 / 50							

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 9/3/10 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 4

Analyte	Blank ID	Blank ID	Action Limit	Sample Identification							
	EB_PZ-141_090310 (SDG#: A0I040412)	EB_SH-04_090310 (SDG#: A0I040412)		4							
Formaldehyde	19	20	100	21 / 50							

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-7064-1

Sample Identification

RD-33C_090310_01
TB_RD-33C_090310
ES-29_090310_01
EB_ES-29_090310
PZ-141_090310_01
EB_PZ-141_090310
TB_PZ-141_090310

*Indicates change as the result of report review.

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore

qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-30832/5	9/9/10	Methylene chloride	0.825 ug/L	All samples in SDG 280-7064-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TB_RD-33C_090310	Methylene chloride	0.40 ug/L	5.0U ug/L
PZ-141_090310_01	Methylene chloride	0.36 ug/L	5.0U ug/L
TB_PZ-141_090310	Methylene chloride	0.41 ug/L	5.0U ug/L

Samples TB_RD-33C_090310 and TB_PZ-141_090310 were identified as trip blanks. No volatile contaminants were found in these blanks with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-33C_090310	9/3/10	Methylene chloride Acetone Toluene	0.40 ug/L 2.7 ug/L 0.18 ug/L	RD-33C_090310_01
TB_PZ-141_090310	9/3/10	Methylene chloride Acetone	0.41 ug/L 2.3 ug/L	PZ-141_090310_01 EB_PZ-141_090310

Samples EB_ES-29_090310 and EB_PZ-141_090310 were identified as equipment blanks. No volatile contaminants were found in these blanks with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_ES-29_090310	9/3/10	Acetone	2.1 ug/L	ES-29_090310_01
EB_PZ-141_090310	9/3/10	Acetone	4.5 ug/L	PZ-141_090310_01

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No volatile contaminants were found in this blank.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentration6s found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-33C_090310_01	Acetone	2.5 ug/L	10U ug/L
ES-29_090310_01	Acetone	2.9 ug/L	10U ug/L
PZ-141_090310_01	Methylene chloride	0.36 ug/L	5.0U ug/L
EB_PZ-141_090310	Acetone	4.5 ug/L	10U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-7064-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-141_090310_01	All TCL compounds	R	A

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples PZ-141_090310_01 and PZ-141_090310_03 (from SDG 260237) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Benzene	0.18	1.0U	139 (≤35)	NQ	-
Chloroform	0.74	0.710	4 (≤35)	-	-
cis-1,2-Dichloroethene	2.2	2.17	1 (≤35)	-	-
Methylene chloride	0.36	5.0U	173 (≤35)	NQ	-
Trichloroethene	110	98.5	11 (≤35)	-	-
Acetone	10U	1.60	145 (≤35)	NQ	-
1,2-Dichloroethylene	1.0U	2.17	74 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples PZ-141_090310_01 and PZ-141_090310_03

Boeing SSFL GW 3rd Qtr
Volatiles - Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-7064-1	RD-33C_090310_01 TB_RD-33C_090310 ES-29_090310_01 EB_ES-29_090310 PZ-141_090310_01 EB_PZ-141_090310 TB_PZ-141_090310	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*XII)
280-7064-1	PZ-141_090310_01	All TCL compounds	R	A	Overall assessment of data (D)

Boeing SSFL GW 3rd Qtr
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-7064-1	TB_RD-33C_090310	Methylene chloride	5.0U ug/L	A	B
280-7064-1	PZ-141_090310_01	Methylene chloride	5.0U ug/L	A	B
280-7064-1	TB_PZ-141_090310	Methylene chloride	5.0U ug/L	A	B

Boeing SSFL GW 3rd Qtr
Volatiles - Field Blank Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-7064-1	RD-33C_090310_01	Acetone	10U ug/L	A	T
280-7064-1	ES-29_090310_01	Acetone	10U ug/L	A	F
280-7064-1	PZ-141_090310_01	Methylene chloride	5.0U ug/L	A	T
280-7064-1	EB_PZ-141_090310	Acetone	10U ug/L	A	T

*Indicates change as the result of report review.

LDC #: 24031B1a
SDG #: 280-7064-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 9/28-10
Page: 1 of 1
Reviewer: CR
2nd Reviewer: tn

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	FD, Split=(5, PZ-141_090310_03 (260237)) SDG#
XVII.	Field blanks	SW	TB=3,7, EB=4,6, FB=FB_082510_19 (280-6744-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Water

1	RD-33C_090310_01	11	MB 280-30832/5	21		31	
2	TB_RD-33C_090310	12		22		32	
3	ES-29_090310_01	13		23		33	
4	EB_ES-29_090310	14		24		34	
5	PZ-141_090310_01	15		25		35	
6	EB_PZ-141_090310	16		26		36	
7	TB_PZ-141_090310	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 24031B2

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: AR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank associated with every sample in this SDG?
Y N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
Y N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 9/9/10
Conc. units: ug/L
Associated Samples: All
Reason: B

Compound	Blank ID	Sample Identification								
	MB 280-30832/5	2	5	7					
Methylene chloride	0.825	0.40/5.0U	0.36/5.0U	0.41/5.0U					
~~Acetone~~									

Blank analysis date:
Conc. units:
Associated Samples:

Compound	Blank ID	Sample Identification								
Methylene chloride										
Acetone										

All results were qualified using the criteria stated below except those circled.

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 24031B1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: QR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

(Y) N /N/A Were field blanks identified in this SDG?
(Y) N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 09/13/10
Field blank type: (circle one) Field Blank / Rinsate / (Trip Blank) / Other: Associated Samples: 1 Reason: T

Compound	Blank ID	Sample Identification								
	2		1							
Methylene chloride	0.40									
Acetone	2.7		2.5/10U							
~~Chloroform~~ Toluene	0.18									

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 09/13/10
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: (EB) Associated Samples: 3 Reason: F

Compound	Blank ID	Sample Identification								
	4	3								
~~Methylene chloride~~										
Acetone	2.1	2.9/10U								
~~Chloroform~~										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 24031B1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: CR

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

(Y) N /N/A Were field blanks identified in this SDG?
(Y) N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 9/3/10
Field blank type: (circle one) Field Blank / Rinsate / (Trip Blank) / Other: Associated Samples: 5,6 Reason: T

Compound	Blank ID	Sample Identification								
	7	5	6							
Methylene chloride	0.41	0.36/5.0U								
Acetone	2.3	1.9/10U	4.5/10U							
~~Chloroform~~										

Blank units: _____ **Associated sample units:** _____
Sampling date: _____
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								
Methylene chloride										
Acetone										
Chloroform										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 24031B1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: ac
2nd Reviewer: h

METHOD: GC/MS Volatiles (EPA SW846 Method 8260B)

(Y) N N/A Were field blanks identified in this SDG?

Y N N/A Were target analytes detected in the field blanks? Reason Code: F

Blank units: ug/L **Associated sample units:** ug/L

Sampling date: 9/3/10 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: (FB) Associated Samples: 5

Analyte	Blank ID	Action Limit	Sample Identification							
	6	10X	5							
Acetone	4.5	45	1.9/10U							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 24031B1C

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: CR
2nd Reviewer:

METHOD: See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualification
	9/3/10	5	Initial sampling used from		R/A (D)
			8/2/10 because field EBs		
			and FBs were associated		

Comments: _____

LDC #: 24031B1a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: AR
2nd reviewer: ~

METHOD: GC MS ✓ HPLC _____

(Y) N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤35)
	SB5	PZ14L090310-03	
Benzene	0.18	1.0U	NA 139 (NQ)
Chloroform	0.74	0.710	J 4
cis-1,2-Dichloroethene	2.2	2.17	J 1
Methylene Chloride	0.36	5.0U	~~J~~ 173 (NQ)
Trichloroethene	110	98.5	NA 11

Compound	Concentration ( )		RPD
Acetone	10U	1.60	NA 145 (NQ)
1,2-Dichloroethylene	1.0U	2.17	~~J~~ 74

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: 1,4-Dioxane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-7064-1

Sample Identification

SH-04_090310_01
EB_SH-04_090310
TB_SH-04_090310
PZ-141_090310_01
EB_PZ-141_090310
TB_PZ-141_090310

*Indicates change as the result of report review.

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-Dioxane was found in the method blanks.

Samples TB_PZ-141_090310 and TB_SH-04_090310 were identified as trip blanks. No 1,4-Dioxane was found in these blanks.

Samples EB_SH-04_090310 and EB_PZ-141_090310 were identified as equipment blanks. No 1,4-Dioxane was found in these blanks.

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No 1,4-Dioxane was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-7064-1	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-141_090310_01	1,4-Dioxane	R	A

*Indicates change as the result of report review.

Data flags are summarized at the end of this report if data has been qualified.

***XVI. Field Duplicates**

Samples PZ-141_090310_01 and PZ-141_090310_03 (from SDG 260237) were identified as split samples. No 1,4-Dioxane was detected in any of the samples.

*Added split samples (RPD) findings text.

Boeing SSFL GW 3rd Qtr
1,4-Dioxane - Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-7064-1	SH-04_090310_01 EB_SH-04_090310 TB_SH-04_090310 PZ-141_090310_01 EB_PZ-141_090310 TB_PZ-141_090310	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)
280-7064-1	PZ-141_090310_01	1,4-Dioxane	R	A	Overall assessment of data (D)

Boeing SSFL GW 3rd Qtr
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24031B1b
SDG #: 280-7064-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 9-28-10
Page: 1 of 1
Reviewer: CR
2nd Reviewer: MA

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	Split = (4) PZ-141_090310-03 (SDG: 260237)
XVII.	Field blanks	ND	EB = 2, 5. TB = 6, 3, FB = FB:082510_19 (280-6744-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Water

1	SH-04_090310_01	11	MB 280-30359/5	21		31	
2	EB_SH-04_090310	12		22		32	
3	TB_SH-04_090310	13		23		33	
4	PZ-141_090310_01	14		24		34	
5	EB_PZ-141_090310	15		25		35	
6	TB_PZ-141_090310	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 24031B (b)

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: CR
2nd Reviewer: ✓

METHOD: See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualification
	9/3/10	4	Initial sampling used from		R/A (D)
			8/2/10 because field EBs		
			and FBs were associated		

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-7064-1

Sample Identification

PZ-141_090310_01
EB_PZ-141_090310

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-30596/1-A	9/8/10	Bis(3-ethylhexyl)phthalate	3.38 ug/L	All samples in SDG 280-7064-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
PZ-141_090310_01	Bis(3-ethylhexyl)phthalate	3.5 ug/L	11U ug/L
EB_PZ-141_090310	Bis(3-ethylhexyl)phthalate	3.2 ug/L	9.6U ug/L

Sample EB_PZ-141_090310 was identified as an equipment blank. No semivolatile contaminants were found in this blank with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-141_090310	9/3/10	Bis(3-ethylhexyl)phthalate	3.2 ug/L	PZ-141_090310_01

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank No semivolatile contaminants w4ere found in this blank.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-141_090310_01	Bis(3-ethylhexyl)phthalate	3.5 ug/L	11U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

*Indicates change as the result of report review.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-7064-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

*XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Split samples

Samples PZ-141_090310_01 and PZ-141_090310_03 (from SDG 260237) were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Bis(2-ethylhexyl)phthalate	3.5	10.4U	99 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Removed Overall assessment of data finding.
*Added split samples (RPD) findings for samples PZ-141_090310_01 and PZ-141_090310_03.

*Boeing SSFL GW 3rd Qtr
Semivolatiles - Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-7064-1	PZ-141_090310_01 EB_PZ-141_090310	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-7064-1	PZ-141_090310_01	Bis(3-ethylhexyl)phthalate	11U ug/L	A	B
280-7064-1	EB_PZ-141_090310	Bis(3-ethylhexyl)phthalate	9.6U ug/L	A	B

Boeing SSFL GW 3rd Qtr
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-7064-1	PZ-141_090310_01	Bis(3-ethylhexyl)phthalate	11U ug/L	A	F

*Indicates change as the result of report review.

LDC #: 24031B2a
SDG #: 280-7064-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 9/28/10
Page: 1 of 1
Reviewer: RR
2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A ~~ASK~~	
XVI.	Field duplicates	SW	Split (1, PZ-141_090310_03 (SDG# 260237))
XVII.	Field blanks	SW	EB=2, FB=FB_082510_19 (280-6744-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	~~PB~~ PZ-141_090310_01	11	MB 280-30596/1-A	21		31	
2	EB_PZ-141_090310	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 24031B2a

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: CR
2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 9/8/10 **Blank analysis date:** 9/18/10
Conc. units: ug/L Associated Samples: All Report: B

Compound	Blank ID	Sample Identification								
	MB 280-30596/1-A		1	2						
Bis(2-ethylhexyl)phthalate	3.38		3.5/11U	3.2/9.6U						

Blank extraction date: _____ **Blank analysis date:** _____
Conc. units: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 24031B2a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: [signature]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270)

(Y) N N/A Were field blanks identified in this SDG?

Y N N/A Were target analytes detected in the field blanks? Reason Code: F

Blank units: ug/L **Associated sample units:** ug/L

Sampling date: 9/3/10 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: (EB) Associated Samples: 1

Analyte	Blank ID	Action Limit	Sample Identification							
[redacted]	2		1							
Bis(2-ethylhexyl) phthalate	3.2	16	3.5/11U							

LDC #: 24031B72a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CC
2nd reviewer: [illegible]

METHOD: GC/MS ✓ HPLC _____

(Y) N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD
	1	B2-141_090310_03	
Bis(2-ethylhexyl)phthalate	3,5	10,4U	~~NA~~ 99 (NQ)

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-7064-1

Sample Identification

PZ-141_090310_01
EB_PZ-141_090310

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625 for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-Nitrosodimethylamine was found in the method blanks.

Sample EB_PZ-141_090310 was identified as an equipment blank. No N-Nitrosodimethylamine was found in this blank.

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No N-Nitrosodimethylamine was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-7064-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-141_090310_01	N-Nitrosodimethylamine	R	A

Data flags are summarized at the end of this report if data has been qualified.

***XVI. Field Duplicates**

Samples PZ-141_090310_01 and PZ-141_090310_03 (from SDG 260237/0I07012) were identified as split samples. No N-Nitrosodimethylamine was detected in any of the samples.

*Added split samples (RPD) findings text.

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-7064-1	PZ-141_090310_01 EB_PZ-141_090310	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)
280-7064-1	PZ-141_090310_01	N-Nitrosodimethylamine	R	A	Overall assessment of data (D)

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24031B2b

SDG #: 280-7064-1

Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 9-28-10

Page: 1 of 1

Reviewer: CR

2nd Reviewer: [illegible]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A SW	(SDG# 260257/60270 12)
XVI.	Field duplicates	ND	Split = (1, PZ-141_090310.03)
XVII.	Field blanks	ND	EB=2, FB=FB_082510-19 (280-6744-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1	PZ-141_090310_01	11	MB 280-30825/1-A	21		31	
2	EB_PZ-141_090310	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 24031B26

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: CR
2nd Reviewer: [illegible]

METHOD: See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualification
	9/3/10		Initial sampling used from		R/A (D)
			8/2/10 because field EBs		
			and FBs were associated		

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Polychlorinated Biphenyls

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-7064-1

Sample Identification

PZ-141_090310_01
EB_PZ-141_090310

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

*Indicates change as the result of report review.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample EB_PZ-141_090310 was identified as an equipment blank. No polychlorinated biphenyl contaminants were found in this blank.

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No polychlorinated biphenyl contaminants were found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-7064-1	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-141_090310_01	All TCL compounds	R	A

Data flags are summarized at the end of this report if data has been qualified.

*XIV. Field Duplicates

Samples PZ-141_090310_01 and PZ-141_090310_03 (from SDG 260237) were identified as split samples. No polychlorinated biphenyl contaminants were detected in any of the samples.

*Added split sample findings text.

Boeing SSFL GW 3rd Qtr
Polychlorinated Biphenyls - Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-7064-1	PZ-141_090310_01 EB_PZ-141_090310	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)
280-7064-1	PZ-141_090310_01	All TCL compounds	R	A	Overall assessment of data (D)

Boeing SSFL GW 3rd Qtr
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24031B3b
SDG #: 280-7064-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 9-28-10
Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	GC/ECD Instrument Performance Check	-	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	N	
XII.	Compound quantitation and reported CRQLs	N	
XIII.	Overall assessment of data	A SW	
XIV.	Field duplicates	ND	(1, PZ-141_090310_03 (SDG# 280-7744-1))
XV.	Field blanks	ND	EB=2, FB=FB_082510_19 (280-6744-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	PZ-141_090310_01	11	MB 280-30861/1-A	21		31	
2	EB_PZ-141_090310	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 24031B39

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: CR
2nd Reviewer: [illegible]

METHOD: See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualification
	9/3/10		Initial sampling used from		R/A (D)
			8/2/10 because field EBs		
			and FBs were associated		

Comments: _____

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-5927-1	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*IX. Field Duplicates

Samples HAR-09_080210_01 and HAR-09_080210_03 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD (Limits)	Flag	A or P
	HAR-09_080210_01	HAR-09_080210_03			
Alkalinity	720 mg/L	694 mg/L	4 (≤35)	-	-
Specific conductance	1300 umhos/cm	1360 umhos/cm	5 (≤35)	-	-
Total dissolved solids	830 mg/L	845 mg/L	2 (≤35)	-	-

*Indicates change as the result of report review.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Metals

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-7064-1

Sample Identification

PZ-141_090310_01
EB_PZ-141_090310
PZ-141_090310_01MS
PZ-141_090310_01MSD
EB_PZ-141_090310MS
EB_PZ-141_090310MSD

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section IV.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks.

Sample EB_PZ-141_090310 was identified as an equipment blank. No contaminant concentrations were found in this blank.

Sample FB_082510_19 (from SDG 280-0744-1) was identified as a field blank. No contaminant concentrations were found in this blank with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_082510_19	8/26/10	Antimony Arsenic Barium Cadmium Lead Silver Thallium	0.00010 mg/L 0.0021 mg/L 0.0019 mg/L 0.000043 mg/L 0.00023 mg/L 0.000044 mg/L 0.00042 mg/L	EB_PZ-141_090310

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-7064-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-141_090310_01	All TAL metals	R	A

Data flags are summarized at the end of this report if data has been qualified.

*XIV. Field Duplicates

Samples PZ-141_090310_01 and PZ-141_090310_03 (from SDG 260237) were identified as split samples. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Antimony	0.00072	0.001U	33 (≤35)	-	-
Arsenic	0.0021	0.0016U	27 (≤35)	-	-
Barium	0.014	0.0128	9 (≤35)	-	-
Chromium	0.00071	0.002U	95 (≤35)	NQ	-
Copper	0.00068	0.00228	108 (≤35)	NQ	-
Iron	0.20	0.129	43 (≤35)	NQ	-
Manganese	0.033	0.0278	17 (≤35)	-	-
Nickel	0.0014	0.00296	72 (≤35)	NQ	-
Selenium	0.00076	0.001U	27 (≤35)	-	-
Silver	0.000034	0.0002U	142 (≤35)	NQ	-
Thallium	0.000048	0.000424	159 (≤35)	NQ	-
Vanadium	0.0034	0.001U	109 (≤35)	NQ	-
Zinc	0.0023	0.003U	26 (≤35)	-	-

*Indicates change as the result of report review.

Analyte	Concentration (mg/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Molybdenum	0.0080	0.0059	30 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples PZ-141_090310_01 and PZ-141_090310_03.

Boeing SSFL GW 3rd Qtr
Metals - Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-7064-1	PZ-141_090310_01 EB_PZ-141_090310	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*XII)
280-7064-1	PZ-141_090310_01	All TAL metals	R	A	Overall assessment of data (D)

Boeing SSFL GW 3rd Qtr
Metals - Laboratory Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Metals - Field Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24031B4
SDG #: 280-7064-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 9-28-10
Page: 1 of 1
Reviewer: CR
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	A	MS/D
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS/D
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	~~A~~ SW	(SDG# 260237)
XIV.	Field Duplicates	SW	Split = (1, PZ-141_090310_03)
XV	Field Blanks	SW A*	EB=2*, FB=FB_082510_19 (280-6744-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; * ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	PZ-141_090310_01	11	RBW	21		31	
2	EB_PZ-141_090310	12		22		32	
3	PZ-141_090310_01MS	13		23		33	
4	PZ-141_090310_01MSD	14		24		34	
5	EB_PZ-141_090310MS	15		25		35	
6	EB_PZ-141_090310MSD	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 24031B4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1,2		Al, [✓ Sb, As, Ba, Be, Cd,] Ca, [✓ Cr, Co, Cu, Fe, Pb,] Mg, [✓ ~~Mn~~, Hg, Ni,] K, [✓ Se, Ag,] Na, [✓ Tl, V, Zn,] [✓ Mo,] B, Si, CN^-, [✓ Mn]
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
QC3,4		Al, [✓ Sb, As, Ba, Be, Cd,] Ca, [✓ Cr,] [✓ Co,] [✓ Cu,] [✓ Fe,] [✓ Pb,] Mg, [✓ Mn,] Hg, [✓ Ni,] K, [✓ Se, Ag,] Na, [✓ Tl,] [✓ V,] [✓ Zn,] [✓ Mo,] B, Si, CN^-,
5,6		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, [✓ Hg,] Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Analysis Method
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, [✓ Co,] Cu, [✓ Fe,] Pb, Mg, [✓ Mn,] Hg, Ni, K, Se, Ag, Na, Tl, [✓ V,] Zn, [✓ Mo,] B, Si, CN^-,
ICP-MS		Al, [✓ Sb, As, Ba, Be, Cd,] Ca, [✓ Cr,] Co, [✓ Cu,] Fe, [✓ Pb,] Mg, Mn, Hg, [✓ Ni,] K, [✓ Se, Ag,] Na, [✓ Tl,] V, [✓ Zn,] Mo, B, Si, CN^-,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,

Comments: Mercury by CVAA if performed

LDC #: 24031B4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: W

METHOD: Trace Metals (EPA SW846 6010B/7000)

(Y) N N/A Were field blanks identified in this SDG?
Y / N N/A Were target analytes detected in the field blanks? Reason Code: F

Blank units: mg/L **Associated sample units:** mg/L
Sampling date: 8/26/10 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 2

Analyte	Blank ID	Sample Identification											
	FB_082510_19 (SDG#: 280-6744-1)	Action Level	No Qualifiers (ND)										
Sb	0.00010	0.0005											
As	0.0021	0.0105											
Ba	0.0019	0.0095											
Cd	0.000043	0.0002											
Pb	0.00023	0.00115											
Ag	0.000044	0.0002											
Tl	0.00042	0.0021											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 24031B1

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: CR
2nd Reviewer: [illegible]

METHOD: See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualification
	9/3/10		Initial sampling used from		R/A (D)
			8/2/10 because field EBs		
			and FBs were associated		

Comments: _____

LDC#: 24031B4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CS
2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	1	PZ-141_090310_03		
Antimony	0.00072	0.001U	NA 33	
Arsenic	0.0021	0.0016U	NA 27	
Barium	0.014	0.0128	NA 9	
Chromium	0.00071	0.002U	NA 95	(NQ)
Copper	0.00068	0.00228	NA 108	↓
Iron	0.20	0.129	NA 43	↓
Manganese	0.033	0.0278	NA 17	
Nickel	0.0014	0.00296	NA 72	(NQ)
Selenium	0.00076	0.001U	NA 27	
Silver	0.000034	0.0002U	NA 142	(NQ)
Thallium	0.000048	0.000424	NA 159	↓
Vanadium	0.0034	0.001U	NA 109	↓
Zinc	0.0023	0.003U	NA 26	
Molybdenum	0.0080	0.0059	NA 30	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-7064-1

Sample Identification

PZ-141_090310_01
EB_PZ-141_090310

*Indicates change as the result of report review.

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Oklahoma Department of Environmental Quality Method for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

Sample EB_PZ-141_090310 was identified as an equipment blank. No diesel range organic contaminants were found in this blank.

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No diesel range organic contaminants were found in this blank.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-7064-1	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-141_090310_01	Diesel range organics	R	A

Data flags are summarized at the end of this report if data has been qualified.

*IX. Split samples

Samples PZ-141_090310_01 and PZ-141_090310_03 (from SDG 260237) were identified as split samples. No diesel range organics were detected in any of the samples.

*Added split samples (RPD) findings text.

Boeing SSFL GW 3rd Qtr
Diesel Range Organics - Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-7064-1	PZ-141_090310_01 EB_PZ-141_090310	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*VI)
280-7064-1	PZ-141_090310_01	Diesel range organics	R	A	Overall assessment of data (D)

Boeing SSFL GW 3rd Qtr
Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24031B8 **VALIDATION COMPLETENESS WORKSHEET** Date: 9-28-10
SDG #: 280-7064-1 Level IV V Page: 1 of 1
Laboratory: Test America Reviewer: GR
2nd Reviewer:

METHOD: GC Diesel Range Organics (Oklahoma Department of Environmental Quality)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
IIa.	Initial calibration	N	
IIb.	Calibration verification/ICV	N	
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	N	Client specified
IVc.	Laboratory control samples	A	LCS/D
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	~~A~~ SW	
IX.	Field duplicates	ND	Split = C1, PZ-141_090310-03 (SDG# 260237)
X.	Field blanks	ND	EB=2, FB_082510_19 (280-6744-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	PZ-141_090310_01	11	MB 280-30512/1-A	21		31	
2	EB_PZ-141_090310	12	MB 280-30874/1-A	22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 24031B6

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: CR
2nd Reviewer:

METHOD: See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualification
	9/3/10		Initial sampling used from		R/A (D)
			8/2/10 because field EBs		
			and FBs were associated		

Comments: _____

OVR.4SW

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Wet Chemistry

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-7064-1

Sample Identification

RD-33C_090310_01
SH-04_090310_01
EB_SH-04_090310
ES-29_090310_01
EB_ES-29_090310
PZ-141_090310_01
EB_PZ-141_090310
SH-04_090310MS
SH-04_090310MSD
SH-04_090310DUP
PZ-141_090310_01MS
PZ-141_090310_01MSD
PZ-141_090310_01DUP
EB_SH-04_090310DUP

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate as Phosphorus, and Sulfate, EPA SW 846 Method 7196A for Dissolved Hexavalent Chromium, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
PZ-141_090310_01	Nitrate Nitrite Orthophosphate as phosphorus	96.25 hours	48 hours	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks.

Samples EB_SH-04_090310, EB_ES-29_090310, and EB_PZ-141_090310 were identified as equipment blanks. No contaminant concentrations were found in this blank with the following exceptions:

Equipment Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB_SH-04_090310	9/3/10	pH	5.99 units	SH-04_090310_01

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No contaminant concentrations were found in this blank with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_082510_19	8/26/10	pH	5.76 units	SH-04_090310_01 EB_SH-04_090310

*Indicates change as the result of report review.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-7064-1	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-141_090310_01	All analytes	R	A

Data flags are summarized at the end of this report if data has been qualified.

*Indicates change as the result of report review.

*IX. Field Duplicates

Samples PZ-141_090310_01 and PZ-141_090310_03 (from SDG 260237/0I07012) were identified as split samples. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Bromide	0.20	0.245	20 (≤35)	-	-
Chloride	77	67.1	14 (≤35)	-	-
Fluoride	0.40	0.425	6 (≤35)	-	-
Sulfate	320	291	8 (≤35)	-	-
Dissolved hexavalent chromium	0.0055	0.0000059U	195 (≤35)	NQ	-
Nitrite	0.16U	0.101	45 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples PZ-141_090310_01 and PZ-141_090310_03.

Boeing SSFL GW 3rd Qtr
Wet Chemistry - Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-7064-1	PZ-141_090310_01	Nitrate Nitrite Orthophosphate as phosphorus	J (all detects) R (all non-detects)	P	Technical holding times (H)
280-7064-1	RD-33C_090310_01 SH-04_090310_01 EB_SH-04_090310 ES-29_090310_01 EB_ES-29_090310 PZ-141_090310_01 EB_PZ-141_090310	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*VII)
280-7064-1	PZ-141_090310_01	All analytes	R	A	Overall assessment of data (D)

Boeing SSFL GW 3rd Qtr
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24031B6 **VALIDATION COMPLETENESS WORKSHEET** Date: 9-28-10
SDG #: 280-7064-1 Level V Page: 1 of 1
Laboratory: Test America Reviewer: SR
2nd Reviewer: [illegible]

METHOD: (Analyte) Ammonia-N (EPA Method 350.1), Bromide, Chloride, Fluoride, Nitrate-N, Nitrite, Orthophosphate, Sulfate (EPA Method 300.0), Dissolved Hexavalent Chromium (EPA SW846 Method 7196A), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 9/3/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/D
V	Duplicates	A	D
VI.	Laboratory control samples	A	LCS/D
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	Split= 6, PZ-141_090310-03 (SDG: 280-7237/01010)
X.	Field blanks	SW	EB= 3, 5, 7, FB= FB_082510_19 (280-6744-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: WORN

1	RD-33C_090310_01	11	PZ-141_090310_01MS	21	PBW	31	
2	SH-04_090310_01	12	PZ-141_090310_01MSD	22		32	
3	EB_SH-04_090310	13	PZ-141_090310_01DUP	23		33	
4	ES-29_090310_01	14	EB_SH-04_090310DUP	24		34	
5	EB_ES-29_090310	15		25		35	
6	PZ-141_090310_01	16		26		36	
7	EB_PZ-141_090310	17		27		37	
8	SH-04_090310MS	18		28		38	
9	SH-04_090310MSD	19		29		39	
10	SH-04_090310DUP	20		30		40	

Notes:

LDC #: 2403B6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer:
2nd reviewer:

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] ___ ___
2,3		[✓ pH] TDS Cl [✓ F NO_3] NO_2 SO_4 PO_4 ALK CN^- [✓ NH_3] TKN TOC CR^{6+} [✓ ClO_4] ___ ___
4,5		pH TDS [✓ Cl] F [✓ NO_3] NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
6,7		pH TDS [✓ Cl F NO_3 NO_2 SO_4 PO_4] ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] ClO_4 [✓ 13C] ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
QC: 8		pH TDS [✓ Cl F] [✓ NO_3 NO_2] [✓ SO_4] [✓ PO_4] ALK CN^- [✓ NH_3] TKN TOC CR^{6+} [✓ ClO_4] [✓ 13C] ___
9		pH TDS [✓ Cl F] [✓ NO_3 NO_2] [✓ SO_4] [✓ PO_4] ALK CN^- [✓ NH_3] TKN TOC CR^{6+} [✓ ClO_4] [✓ 13C] ___
10		pH TDS [✓ Cl F] [✓ NO_3 NO_2] [✓ SO_4] [✓ PO_4] ALK CN^- NH_3 TKN TOC CR^{6+} [✓ ClO_4] [✓ 13C] ___
11		pH TDS [✓ Cl] [✓ F] [✓ NO_3 NO_2] [✓ SO_4] [✓ PO_4] ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] ClO_4 [✓ 13C] ___
12		pH TDS [✓ Cl] [✓ F] [✓ NO_3 NO_2] [✓ SO_4] [✓ PO_4] ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] ClO_4 [✓ 13C] ___
13		pH TDS [✓ Cl] [✓ F] [✓ NO_3 NO_2] [✓ SO_4] [✓ PO_4] ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] ClO_4 [✓ 13C] ___
14		[✓ pH] TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

LDC #: 24031B6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: CR
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:	300.0					
Parameters:	~~NO3 NO2~~ $NO_3, NO_2, o\text{-}PO_4$					
Technical holding time:	48hrs					

Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
6	9/3/10 1600	9/7/10 1618	(96.25hrs)				J/R/P (H)

LDC #: 24031B6

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AR
2nd Reviewer: W

METHOD: Inorganics, EPA Method See Cover
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?
Blank units: pH units **Associated sample units:** pH units
Sampling date: 9/3/10 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 2

Analyte	Blank ID	Action Limit	Sample Identification							
	3		No Qualifiers							
pH	5.99									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 24031B6

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: LA

METHOD: Inorganics, EPA Method See Cover

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?

Blank units: pH units **Associated sample units:** pH units
Sampling date: 8/26/10 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 2, 3

Analyte	Blank ID	Action Limit	Sample Identification							
	FB_082510-19 (SDG#: 280-6744-1)		No Qualifiers							
pH	5.76									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 24031B6

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: CR
2nd Reviewer: [illegible]

METHOD: See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualification
	9/3/10	6	Initial sampling used from		R/A (D)
			8/2/10 because field EBs		
			and FBs were associated		

Comments: _____

LDC#24031B6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: [illegible]
2nd Reviewer: [illegible]

Inorganics, Method See Cover

(Y N NA) Were field duplicate pairs identified in this SDG?
(Y N NA) Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	6	PZ-141_090310-03		
Bromide	0.20	0.245	~~NA~~ 20	
Chloride	77	67.1	~~14~~ 14	
Fluoride	0.40	0.425	~~NA~~ 6	
Sulfate	320	291	9	
Dissolved Hexavalent Chromium	0.0055	0.0000059U	~~NA~~ 195 (NC)	
Nitrite	0.16U	0.101	~~NA~~ 45 ↓	

V:\FIELD DUPLICATES\FD_inorganic\24031B6.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr.

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-7066-1/H0l080485

Sample Identification

PZ-141_090310_01
EB_PZ-141_090310

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Routine Calibration (Continuing)

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks.

Sample EB_PZ-141_090310 was identified as an equipment blank. No polychlorinated dioxin/dibenzofuran contaminants were found in this blank.

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found in this blank.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

Internal standards data were not reviewed for Level V.

X. Target Compound Identifications

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-7066-1/H0I080485	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

*XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*XIV. Field Duplicates

Samples PZ-141_090310_01 and PZ-141_090310_03 (from SDG 260237/12001917) were identified as split samples. No polychlorinated dioxin/dibenzofuran contaminants were detected in any of the samples.

*Removed Overall assessment of data finding.
*Added split samples (RPD) findings text.

***Boeing SSFL GW 3rd Qtr.**
Dioxins/Dibenzofurans - Data Qualification Summary - SDG 280-7066-1/H0I080485

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-7066-1/ H0I080485	PZ-141_090310_01 EB_PZ-141_090310	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XI)

Boeing SSFL GW 3rd Qtr.
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 280-7066-1/H0I080485

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr.
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 280-7066-1/H0I080485

No Sample Data Qualified in this SDG

LDC #: 24031C21 **VALIDATION COMPLETENESS WORKSHEET** Date: 9-30-10
SDG #: 280-7066-1/H0I080485 Level V Page: 1 of 1
Laboratory: Test America, Inc. Reviewer: CR
2nd Reviewer: W

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	HRGC/HRMS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Routine calibration/ICV	N	
V.	Blanks	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client specified
VII.	Laboratory control samples	A	LCS
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	N	
X.	Target compound identifications	N	
XI.	Compound quantitation and CRQLs	N	
XII.	System performance	N	
XIII.	Overall assessment of data	A	NSW
XIV.	Field duplicates	ND	Split=(1, PZ-141_090310_03(SDG:260237/1200917))
XV.	Field blanks	ND	EB=2, FB=FB_082510_19 (280-6744-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	PZ-141_090310_01	11	H0F080010-283B	21		31	
2	EB_PZ-141_090310	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-7064-1/A0I040412

Sample Identification

SH-04_090310_01
EB_SH-04_090310
PZ-141_090310_01
EB_PZ-141_090310

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
A0I040000-045B	9/4/10	Formaldehyde	20 ug/L	All samples in SDG 280-7064-1/A0I040412

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
SH-04_090310_01	Formaldehyde	15 ug/L	50U ug/L
EB_SH-04_090310	Formaldehyde	20 ug/L	50U ug/L
PZ-141_090310_01	Formaldehyde	19 ug/L	50U ug/L
EB_PZ-141_090310	Formaldehyde	19 ug/L	50U ug/L

Samples EB_SH-04_090310 and EB_PZ-141_090310 were identified as equipment blanks. No formaldehyde was found in these blanks with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_SH-04_090310	9/3/10	Formaldehyde	20 ug/L	SH-04_090310_01
EB_PZ-141_090310	9/3/10	Formaldehyde	19 ug/L	PZ-141_090310_01

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No formaldehyde was found in this blank with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_082510_19	8/26/10	Formaldehyde	18 ug/L	SH-04_090310_01 EB_SH-04_090310 EB_PZ-141_090310

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
SH-04_090310_01	Formaldehyde	15 ug/L	50U ug/L
PZ-141_090310_01	Formaldehyde	19 ug/L	50U ug/L
EB_SH-04_090310	Formaldehyde	20 ug/L	50U ug/L
EB_PZ-141_090310	Formaldehyde	19 ug/L	50U ug/L

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were not required by the method.

b. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-7064-1/A0I040412	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-141_090310_01	Formaldehyde	R	A

Data flags are summarized at the end of this report if data has been qualified.

*IX. Field Duplicates

Samples PZ-141_090310_01 and PZ-141_090310_03 (from SDG 260237) were identified as split samples. No formaldehyde was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Formaldehyde	19	12	45 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples PZ-141_090310_01 and PZ-141_090310_03.

Boeing SSFL GW 3rd Qtr
Formaldehyde - Data Qualification Summary - SDG 280-7064-1/A0I040412

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-7064-1/A0I040412	SH-04_090310_01 EB_SH-04_090310 PZ-141_090310_01 EB_PZ-141_090310	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*VI)
280-7064-1/A0I040412	PZ-141_090310_01	Formaldehyde	R	A	Overall assessment of data (D)

Boeing SSFL GW 3rd Qtr
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-7064-1/A0I040412

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-7064-1/A0I040412	SH-04_090310_01	Formaldehyde	50U ug/L	A	B
280-7064-1/A0I040412	EB_SH-04_090310	Formaldehyde	50U ug/L	A	B
280-7064-1/A0I040412	PZ-141_090310_01	Formaldehyde	50U ug/L	A	B
280-7064-1/A0I040412	EB_PZ-141_090310	Formaldehyde	50U ug/L	A	B

Boeing SSFL GW 3rd Qtr
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-7064-1/A0I040412

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-7064-1/A0I040412	SH-04_090310_01	Formaldehyde	50U ug/L	A	F
280-7064-1/A0I040412	PZ-141_090310_01	Formaldehyde	50U ug/L	A	F
280-7064-1/A0I040412	EB_SH-04_090310	Formaldehyde	50U ug/L	A	F
280-7064-1/A0I040412	EB_PZ-141_090310	Formaldehyde	50U ug/L	A	F

*Indicates change as the result of report review.

LDC #: 24031B71 **VALIDATION COMPLETENESS WORKSHEET** Date: 9-28-10

SDG #: 280-7064-1/A0I040412 Level V Page: 1 of 1

Laboratory: Test America Reviewer: AZ

2nd Reviewer: W

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
IIa.	Initial calibration	N	
IIb.	Calibration verification/ICV	N	
III.	Blanks	SW	
IVa.	Surrogate recovery	N	
IVb.	Matrix spike/Matrix spike duplicates	N	Client specified
IVc.	Laboratory control samples	A	LCS/D
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	~~A~~ SW	(SDG# 260237/120538)
IX.	Field duplicates	SW	Split = (3, PZ-141_090310_03)
X.	Field blanks	SW	EB = 2, 4, FB = FB_082510_19 (280-6744-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	SH-04 ~~RD-33C~~_090310_01	11	AQ1040000-04SB	21		31	
2	EB_SH-04_090310	12		22		32	
3	PZ-141_090310_01	13		23		33	
4	EB_PZ-141_090310	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 24031B71
SDG #:

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: CK
2nd Reviewer:

METHOD: __ GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all samples associated with a given method blank?
Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
Y N N/A Was a method blank performed with each extraction batch?
Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

2 BB

Level IV/D Only

Y N (N/A) (Gasoline and aromatics only)Was a method blank analyzed with each 24 hour batch?
Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 9/4/10 **Blank analysis date:** 9/7/10 **Associated samples:** All
Conc. units: ug/L

Compound	Blank ID	Sample Identification						
	AQI010000-015B3	1	2	3	4			
Formaldehyde	20	15/50U	20/50U	19/50U	19/50U			

Blank extraction date: _____ **Blank analysis date:** _____ **Associated samples:** _____
Conc. units: _____

Compound	Blank ID	Sample Identification						

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 24031B71

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer: [illegible]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

(Y) N N/A Were field blanks identified in this SDG?
Y (N) N/A Were target analytes detected in the field blanks? Reason Code: F

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 9/3/10 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: (EB) Associated Samples: 1

Analyte	Blank ID	Action Limit	Sample Identification							
	2		1							
Formaldehyde	20	100	15 / 50U							

Sampling date: 9/3/10 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: (EB) Associated Samples: 3

Analyte	Blank ID	Action Limit	Sample Identification							
	4		3							
Formaldehyde	19	95	19 / 50U							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 24031B71

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: CR
2nd Reviewer:

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target analytes detected in the field blanks? Reason Code: F

Blank units: ug/L **Associated sample units:** ug/L

Sampling date: 8/26/10 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 1, 2, 4

Analyte	Blank ID	Action Limit	Sample Identification							
	FB_082510-19 (SDG#: AOH260436)		1	2	4					
Formaldehyde	18	90	15 / 50	20 / 50	19 / 50					

LDC #: 24031B71

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: CR
2nd Reviewer:

METHOD: See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualification
	9/3/10	3	Initial sampling used from		R/A (D)
			8/2/10 because field EBs		
			and FBs were associated		

Comments:

LDC #: 24031B511

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: QR
2nd reviewer: ✓

METHOD: GC ✓ HPLC _____

(Y) N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤35)
	3	PZ-14_090310_03	
Formaldehyde	19	12	NA 45 (NQ)

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

***Sample Delivery Group (SDG):** 280-7064-1

Sample Identification

PZ-141_090310_01
EB_PZ-141_090310
PZ-141_090310_01MS
PZ-141_090310_01MSD

*Corrected SDG throughout report.

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound	Concentration	Associated Samples
MB 280-30470/25	9/7/10	Hydrazine	1.23 ug/L	All samples in SDG 280-7064-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X for blank contaminants) than the concentrations found in the associated method blanks.

Sample EB_PZ-141_090310 was identified as an equipment blank. No hydrazines were found in this blank.

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No hydrazines were found in this blank.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were not required by the method.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-7064-1	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-141_090310_01	All TCL compounds	R	A

Data flags are summarized at the end of this report if data has been qualified.

*IX. Field Duplicates

Samples PZ-141_090310_01 and PZ-141_090310_03 (from SDG 260237/1210538) were identified as split samples. No hydrazines were detected in any of the samples.

*Added split samples (RPD) findings text.

Boeing SSFL GW 3rd Qtr
Hydrazines - Data Qualification Summary - SDG 280-7064-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-7064-1	PZ-141_090310_01 EB_PZ-141_090310	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*VI)
280-7064-1	PZ-141_090310_01	All TCL compounds	R	A	Overall assessment of data (D)

Boeing SSFL GW 3rd Qtr
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Hydrazines - Field Blank Data Qualification Summary - SDG 280-7064-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24031B76
SDG #: 280-7064-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 9-28-10
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9-28-10 9/3/10
IIa.	Initial calibration	N	
IIb.	Calibration verification/ICV	N	
III.	Blanks	SW	
IVa.	Surrogate recovery	N	
IVb.	Matrix spike/Matrix spike duplicates	A	MS/D
IVc.	Laboratory control samples	A	LCS/D
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A SW	
IX.	Field duplicates	ND	Split = (1, PZ-141_090310_03 (SDG: 280-7237/12,10538))
X.	Field blanks	ND	EB=2, FB= FB_082510_19 (280-6744-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	PZ-141_090310_01	11	MB 280-30470/25	21		31	
2	EB_PZ-141_090310	12		22		32	
3	PZ-141_090310_01MS	13		23		33	
4	PZ-141_090310_01MSD	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 24031B76

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer:
2nd reviewer:

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter		
1,2		[✓ Hydrazine]	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
QC3,4		[✓ Hydrazine]	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine

Comments:

LDC #: 24031B76
SDG #:

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: CR
2nd Reviewer: W

METHOD: __ GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all samples associated with a given method blank?
Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
Y N N/A Was a method blank performed with each extraction batch?
Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level IV/D Only

Y N N/A (Gasoline and aromatics only)Was a method blank analyzed with each 24 hour batch?
Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date:_____ **Blank analysis date:** 9/27/10 **Associated samples:** All
Conc. units: ug/L

Compound	Blank ID	Sample Identification						
	MB280-30470/25	NO Qual (ND)						
Hydrazine	1,23							

Blank extraction date:_____ **Blank analysis date:**_____ **Associated samples:**_____
Conc. units:_____

Compound	Blank ID	Sample Identification						

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 24031B76

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: CR
2nd Reviewer: [illegible]

METHOD: See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualification
	9/3/10		Initial sampling used from		R/A (D)
			8/2/10 because field EBs		
			and FBs were associated		

Comments: _____

LDC Report# 24042C1a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 17, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6444-1

Sample Identification

RD-52A_081710_01
RD-52B_081710_01
RD-52C_081710_01
TB_RD-52C_081710
RD-58A_081710_01
TB_RD-58A_081710
TB_ES-29_081710
ES-13_081710_01
PZ-076_081710_01

*Indicates change as the result of report review.

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore

qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
280-28614-BLK	8/24/10	Methylene chloride	0.790 ug/L	RD-52A_081710_01 RD-52B_081710_01
280-28717-BLK	8/26/10	Methylene chloride	0.361 ug/L	RD-52C_081710_01 TB_RD-52C_081710 RD-58A_081710_01 TB_RD-58A_081710 TB_ES-29_081710

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-52A_081710_01 (4X)	Methylene chloride	1.4 ug/L	20U ug/L
RD-52C_081710_01	Methylene chloride	0.36 ug/L	5.0U ug/L

*Indicates change as the result of report review.

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TB_RD-52C_081710	Methylene chloride	0.47 ug/L	5.0U ug/L
RD-58A_081710_01	Methylene chloride	0.34 ug/L	5.0U ug/L
TB_RD-58A_081710	Methylene chloride	0.65 ug/L	5.0U ug/L
TB_ES-29_081710	Methylene chloride	0.67 ug/L	5.0U ug/L

Samples TB_RD-52C_081710, TB_RD-58A_081710, and TB_ES-29_081710 were identified as trip blanks. No volatile contaminants were found in these blanks with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-52C_081710	8/17/10	Methylene chloride	0.47 ug/L	RD-52A_081710_01 RD-52B_081710_01 RD-52C_081710_01
TB_RD-58A_081710	8/17/10	Methylene chloride	0.65 ug/L	RD-58A_081710_01
TB_ES-29_081710	8/17/10	Methylene chloride	0.67 ug/L	ES-13_081710_01 PZ-076_081710_01

Sample EB_PZ-141_090310 (from SDG 280-7064-1) was identified as an equipment blank. No volatile contaminants were found in this blank with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-141_090310	9/3/10	Acetone	4.5 ug/L	PZ-076_081710_01

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No volatile contaminants were found in this blank.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

*Indicates change as the result of report review.

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-52A_081710_01	Methylene chloride	1.4 ug/L	20U ug/L
RD-52C_081710_01	Methylene chloride	0.36 ug/L	5.0U ug/L
RD-58A_081710_01	Methylene chloride	0.34 ug/L	5.0U ug/L
ES-13_081710_01	Methylene chloride	0.35 ug/L	5.0U ug/L
PZ-076_081710_01	Methylene chloride	0.37 ug/L	5.0U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
RD-52A_081710_01 (4X)	Toluene-d8	116 (88-110)	All TCL compounds except cis-1,2-Dichloroethene Trichloroethene	J (all detects)	A
RD-52A_081710_01 (10X)	Toluene-d8	114 (88-110)	cis-1,2-Dichloroethene Trichloroethene	J (all detects)	A
RD-52B_081710_01	Toluene-d8	114 (88-110)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

*Indicates change as the result of report review.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6444-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

*XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

*Removed Overall assessment of data finding.

*Boeing SSFL GW 3rd Qtr
Volatiles - Data Qualification Summary - SDG 280-6444-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6444-1	RD-52A_081710_01	All TCL compounds	J (all detects)	A	Surrogate spikes (%R) (S)
280-6444-1	RD-52B_081710_01	All TCL compounds	J (all detects)	P	Surrogate spikes (%R) (S)
280-6444-1	RD-52A_081710_01 RD-52B_081710_01 RD-52C_081710_01 TB_RD-52C_081710 RD-58A_081710_01 TB_RD-58A_081710 TB_ES-29_081710 ES-13_081710_01 PZ-076_081710_01	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-6444-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-6444-1	RD-52A_081710_01 (4X)	Methylene chloride	20U ug/L	A	B
280-6444-1	RD-52C_081710_01	Methylene chloride	5.0U ug/L	A	B
280-6444-1	TB_RD-52C_081710	Methylene chloride	5.0U ug/L	A	B
280-6444-1	RD-58A_081710_01	Methylene chloride	5.0U ug/L	A	B
280-6444-1	TB_RD-58A_081710	Methylene chloride	5.0U ug/L	A	B
280-6444-1	TB_ES-29_081710	Methylene chloride	5.0U ug/L	A	B

*Indicates change as the result of report review.

Boeing SSFL GW 3rd Qtr
Volatiles - Field Blank Data Qualification Summary - SDG 280-6444-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-6444-1	RD-52A_081710_01	Methylene chloride	20U ug/L	A	T
280-6444-1	RD-52C_081710_01	Methylene chloride	5.0U ug/L	A	T
280-6444-1	RD-58A_081710_01	Methylene chloride	5.0U ug/L	A	T
280-6444-1	ES-13_081710_01	Methylene chloride	5.0U ug/L	A	T
280-6444-1	PZ-076_081710_01	Methylene chloride	5.0U ug/L	A	T

*Indicates change as the result of report review.

LDC #: 24042C1a
SDG #: 280-6444-1
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 10-5-10
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/17/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	Client Specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	~~ASW~~ A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	TB=4,6,7 FB=FB_082510_19 (SDG: 280-6444-1) EB=EB_PZ-14L_092310 (SDG: 280-7064-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

All H2O

1	RD-52A_081710_01	11		21		31	280-28614-BLK
2	RD-52B_081710_01	12		22		32	280-28717-BLK
3	RD-52C_081710_01	13		23		33	280-29112-BLK
4	TB_RD-52C_081710	14		24		34	
5	RD-58A_081710_01	15		25		35	
6	TB_RD-58A_081710	16		26		36	
7	TB_ES-29_081710	17		27		37	
8	ES-13_081710_01	18		28		38	
9	PZ-~~76~~-576_081710_01	19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Freon 113
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethene	JJ. Dichlorodifluoromethene	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 24042C1a
SDG #: [illegible]

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: RT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a method blank associated with every sample in this SDG?
(Y) N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
(Y) N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 8/24/10
Conc. units: ug/L
Associated Samples: 1-2

Compound	Blank ID	Sample Identification							
	280-28614-Blk	1 (4X)							
Methylene chloride	0.790	1.4/20 U							
Acetone									
CRQL									

Blank analysis date: 8/26/10
Conc. units: ug/L
Associated Samples: 3-7

Compound	Blank ID	Sample Identification							
	280-28717-Blk	3	4	5	6	7			
Methylene chloride	0.361	0.36/5.0 U	0.47/5.0 U	0.34/5.0 U	0.65/5.0 U	0.67/5.0 U			
Acetone									
CRQL									

All results were qualified using the criteria stated below except those circled.

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 24042c1a
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AT
2nd Reviewer: LA

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

(N) N/N/A Were field blanks identified in this SDG?
(Y) N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** ug/L
Field blank type: (circle one) Field Blank / Rinsate / (Trip Blank) / Other: Associated Samples: 1-3

Compound	Blank ID 4	Blank ID	Sample Identification							
			1	2	3					
Methylene chloride	0.47		1.4/20 U		0.36/5.0 U					
Acetone										
Chloroform										
CRQL										

Blank units: ug/L **Associated sample units:** ug/L
Field blank type: (circle one) Field Blank / Rinsate / (Trip Blank) / Other: Associated Samples: 5

Compound	Blank ID 6	Blank ID	Sample Identification							
			5							
Methylene chloride	0.65		0.34/5.0 U							
Acetone										
Chloroform										
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 24042d2
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: RF
2nd Reviewer: L

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

(Y) N /N/A Were field blanks identified in this SDG?
(Y) N N/A Were target compounds detected in the field blanks?
Blank units:_____ **Associated sample units:**_____
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other:_____ Associated Samples:_____

Compound	Blank ID	Blank ID	Sample Identification							
Methylene chloride										
Acetone										
Chloroform										
CRQL										

Blank units: ug/L **Associated sample units:** ug/L
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other:_____ Associated Samples: 8, 9

Compound	Blank ID 7	~~Blank ID~~ 8	9	Sample Identification						
Methylene chloride	0.67	0.35/5.0U	0.37/5.0U							
Acetone										
Chloroform										
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 24042e1a

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: GC/MS Volatiles (EPA SW846 Method 8260B)

(Y) N N/A Were field blanks identified in this SDG?

Y (N) N/A Were target analytes detected in the field blanks? Reason Code: F

Blank units: ug/L **Associated sample units:** ug/L

Sampling date: 9/3/10 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 9 (ND)

Analyte	Blank ID	Action Limit	Sample Identification							
	EB_PZ-141_090310 (SDG#: 280-7064-1)									
Acetone	4.5	45								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 24042C19
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Page: 1 of 1
Reviewer: MA
2nd Reviewer: L

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Were all surrogate %R within QC limits?

Y (N) N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications
		1 (4x)	TOL	116 (88-110)	J dets/A (All except QQQ, 5) (5)
		1 (10x)	TOL	114 (88-110)	~~reqd, dil 75x~~ (J dets/A QQQ 1S only) (5)
		2	TOL	114 (88-110)	J dets/P (5)

	QC Limits (Soil)	QC Limits (Water)
SMC1 (TOL) = Toluene-d8	81-117	88-110
SMC2 (BFB) = Bromofluorobenzene	74-121	86-115
SMC3 (DCE) = 1,2-Dichloroethane-d4	80-120	80-120
SMC4 (DFM) = Dibromofluoromethane	80-120	88-118

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 17, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: 1,4-Dioxane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6444-1

Sample Identification

RD-52A_081710_01
RD-52B_081710_01
RD-52C_081710_01
TB_RD-52C_081710
RD-58A_081710_01
TB_RD-58A_081710
TB_ES-29_081710
PZ-076_081710_01

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-Dioxane was found in the method blanks.

Samples TB_RD-52C_081710, TB_RD-58A_081710, and TB_ES-29_081710 were identified as trip blanks. No 1,4-Dioxane was found in these blanks.

Samples EB_PZ-141_090310 and EB_SH-04_090310 (both from SDG 280-7064-1) were identified as equipment blanks. No 1,4-Dioxane was found in these blanks.

Sample FB_082510_19 (from SDG 280-6744-1) was identified as a field blank. No 1,4-Dioxane was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6444-1	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

*XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

*Removed Overall assessment of data finding.

Boeing SSFL GW 3rd Qtr
1,4-Dioxane - Data Qualification Summary - SDG 280-6444-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6444-1	RD-52A_081710_01 RD-52B_081710_01 RD-52C_081710_01 TB_RD-52C_081710 RD-58A_081710_01 TB_RD-58A_081710 TB_ES-29_081710 PZ-076_081710_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-6444-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-6444-1

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24042C1b **VALIDATION COMPLETENESS WORKSHEET** Date: 10-5-10
SDG #: 280-6444-1 Level V Page: 1 of 1
Laboratory: Test America Reviewer: KF
2nd Reviewer: W

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/17/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB= 4,6,7 FB= FB_082510_19 (SDG: 280-6744) EB= EB_PZ-141_090310 (SDG: 280-7064-1)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank EB_SH-04_090310 (SDG: 280-7064-1)

Validated Samples:

All Waters

1	RD-52A_081710_01	11		21		31	280-28756-BLK
2	RD-52B_081710_01	12		22		32	280-28482-BLK
3	RD-52C_081710_01	13		23		33	
4	TB_RD-52C_081710	14		24		34	
5	RD-58A_081710_01	15		25		35	
6	TB_RD-58A_081710	16		26		36	
7	TB_ES-29_081710	17		27		37	
8	PZ-~~76~~-016_081710_01	18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 16, 2010

LDC Report Date: December 2, 2010

Matrix: Water

Parameters: 1,2,3-Trichloropropane

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6404-1/ITH1626

Sample Identification

HAR-16_081610_01
HAR-16_081610_36
FB_HAR-16_081610

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for 1,2,3-Trichloropropane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 30.0% for all compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-Trichloropropane was found in the method blanks.

Sample FB_HAR-16_081610 was identified as a field blank. No 1,2,3-Trichloropropane was found in this blank.

VI. Surrogate Spikes

Surrogates were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6404-1/ITH1626	All compounds reported below the RL	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-16_081610_01 and HAR-16_081610_36 were identified as field duplicates and samples HAR-16_081610_01 and HAR-16_081610_03 (from SDG 1208252) were identified as split samples. No 1,2,3-Trichloropropane was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-16_081610_01	HAR-16_081610_36			
1,2,3-Trichloropropane	0.0023	0.0031	30 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-16_081610_01	HAR-16_081610_03			
1,2,3-Trichloropropane	0.0023	0.2Y	195 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples HAR-16_081610_03 and HAR-18_081610_01.

Boeing SSFL GW 3rd Qtr
1,2,3-Trichloropropane - Data Qualification Summary - SDG 280-6404-1/ITH1626

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6404-1/ITH1626	HAR-04_080510_01 HAR-23_080510_01 RD-37_080510_01	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
1,2,3-Trichloropropane - Laboratory Blank Data Qualification Summary - SDG 280-6404-1/ITH1626

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
1,2,3-Trichloropropane - Field Blank Data Qualification Summary - SDG 280-6404-1/ITH1626

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24042B1c **VALIDATION COMPLETENESS WORKSHEET** Date: 10/24/10
SDG #: 280-6404-1/ITH1626 Level IV Page: 1 of 1
Laboratory: Test America Reviewer: SVG
2nd Reviewer: [illegible]

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/16/10
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	%RSD ≤ 20%
IV.	Continuing calibration/ICV	A	CCV/ICV ≤ 35%
V.	Blanks	A	
VI.	Surrogate spikes	N	Not reqd.
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/CRQLs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Splits	SW	D = 1, 2 S = 1 + HAR-16_081610_03
XVII.	Field blanks	ND	FB = 3 (from 120625z)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1 +	HAR-16_081610_01	11		21		31	
2 +	HAR-16_081610_36	12		22		32	
3 −	FB_HAR-16_081610	13		23		33	
4 −	10H2298-BLK1	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 24047 B1C
SDG #: See Cover

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer:

Method: Volatiles (EPA Method 524.2)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) < 20%?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) < 30%?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?			✓	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Was a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for this SDG?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 24042 B1C
SDG #: See Cover

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within +/-40% from the associated calibration standard?	✓			
Were retention times within - 30% of the last continuing calibration or +/- 50% of the initial calibration?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?				
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?				
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 25 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 240 fv B1C

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: JN
2nd reviewer: L

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)	✓	≤35% RPD
1,2,3-Trichloropropane	0.0023	0.0037	30 RPD

Split

Compound	Concentration (ug/L)	HAR-16_08610_03	≤35% RPD	Parent only
1,2,3-Trichloropropane	0.0023	0.24	195	NA

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

LDC #: 240 6r B1C

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50.0 std)	Recalculated RRF (RRF 50.0 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	08/03/10	1,2,3-TCP (1,2,3-TCP-d5)	1.071156	1.071156	1.032139	1.032139	8.696	8.696
2	GCMS 74								
3									

Conc IS/Cpd	Response cpd	Response IS
50/50	23273	21727

Conc (ng/L)	1,2,3-TCP		
5	0.932217		
10	0.914327		
20	0.972661		
50	1.071156		
100	1.094393		
200	1.114574		
500	1.125645		
S =	1.032139		
X =	0.089757		

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 24042b1C

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: JVG
2nd Reviewer:

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	T0000725-CCV1	8/19/2010	1,2,3-TCP (FBZ)	1.032139	1.021662	1.021662	1	1.0
2								
3								

		CCV1		CCV2		CCV3	
Conc IS/Cpd	Compound	Response cpd	Response IS	Response cpd	Response IS	Response cpd	Response IS
10/10	1,2,3-TCP (FBZ)	19573	19158				

LDC #: 24047b1
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Page: 1 of 1
Reviewer: JV6
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method 524.2)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = | LCS - LCSD | * 2/(LCS + LCSD) LCS = Laboratry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: 10H 2298 - BS1

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,2,3-TCP ~~1,1-Dichloroethene~~	0.005	NA	0.0050	NA	107	107	←			
Trichloroethene										
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 24047B1
SDG #: _____

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: JVL
2nd reviewer: ~

METHOD: GC/MS VOA (EPA Method 524.2)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D.: #1, 1,2,3-TCP

Conc. = $\frac{(964)(50)(\quad)}{(20211)(1.032139)(\quad)(\quad)}$

= 2.31 ng/L

= 0.00231 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: General Engineering Laboratories, Inc.

Sample Delivery Group (SDG): 260237

Sample Identification

PZ-141_090310_03
PZ-141_090310_03DL
PZ-141_090310_03MS
PZ-141_090310_03MSD

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore

qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
PZ-141_090310_03MS/MSD (PZ-141_090310_03)	Chloroethane	123 (65-120)	-	-	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. The percent recoveries (%R) were within the QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
PZ-141_090310_03	Trichloroethene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 260237	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-141_090310_03	Trichloroethene	R	A
PZ-141_090310_03DL	All TCL compounds except Trichloroethene	R	A

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples PZ-141_090310_03 and PZ-141_090310_01 (from SDG 280-7064-1) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Benzene	0.18	1.0U	139 (≤35)	NQ	-
Chloroform	0.74	0.710	4 (≤35)	-	-
cis-1,2-Dichloroethene	2.2	2.17	1 (≤35)	-	-
Methylene chloride	0.36	5.0U	173 (≤35)	NQ	-
Trichloroethene	110	98.5	11 (≤35)	-	-
Acetone	10U	1.60	145 (≤35)	NQ	-
1,2-Dichloroethylene	1.0U	2.17	74 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples PZ-141_090310_03 and PZ-141_090310_01.

Boeing SSFL GW 3rd Qtr
Volatiles - Data Qualification Summary - SDG 260237

SDG	Sample	Compound	Flag	A or P	Reason (Code)
260237	PZ-141_090310_03	Chloroethane	J (all detects)	A	Matrix spike/Matrix spike duplicates (%R) (Q)
260237	PZ-141_090310_03	Trichloroethene	J (all detects)	A	Compound quantitation and CRQLs (exceeded range) (*XII)
260237	PZ-141_090310_03 PZ-141_090310_03DL	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)
260237	PZ-141_090310_03	Trichloroethene	R	A	Overall assessment of data (D)
260237	PZ-141_090310_03DL	All TCL compounds except Trichloroethene	R	A	Overall assessment of data (D)

Boeing SSFL GW 3rd Qtr
Volatiles - Laboratory Blank Data Qualification Summary - SDG 260237

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Volatiles - Field Blank Data Qualification Summary - SDG 260237

No Sample Data Qualified in this SDG

LDC #: 24081l1a

SDG #: 260237

Laboratory: GEL Laboratories LLC

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 10-12-10

Page: 1 of 1

Reviewer: MP

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	SW	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	SW	
XVI.	Field duplicates	SW	Split= CLPZ-141_090310_01 (SDG: 280-7054-1)
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

ALL 40

1	PZ-141_090310_03	11		21		31	1025111-BLK
2	PZ-141_090310_03DL	12		22		32	
3	PZ-141_090310_03 MS	13		23		33	
4	PZ-141_090310_03 MSD	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Freon 113
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO. Allyl chloride
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP. trans-1,4-Dichloro-2-butene
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-Isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 2408/I/4
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: MT
2nd Reviewer: [illegible]

METHOD : GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have ar associated MS/MSD. Soil / Water.

(Y) N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y (N) N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		3/4	D	123 (65-120)	( )	( )	1	J dets / A (Q)
			~~II~~	~~0 (30-19)~~	~~0 (30-19)~~	( )		~~J/R/A (Q)~~
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

	Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)
H.	1,1-Dichloroethene	59-172%	≤ 22%	61-145%	≤ 14%
S.	Trichloroethene	62-137%	≤ 24%	71-120%	≤ 14%
V.	Benzene	66-142%	≤ 21%	76-127%	≤ 11%
CC.	Toluene	59-139%	≤ 21%	76-125%	≤ 13%
DD.	Chlorobenzene	60-133%	≤ 21%	75-130%	≤ 13%

LDC #: 2408I1a
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: KA
2nd Reviewer:

METHOD: X GC MS HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	S	Exceeded calibration Range	1	J all 5 / A ** **

Comments: See sample calculation verification worksheet for recalculations

LDC #: 26081I1q
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: 1st
2nd Reviewer: [illegible]

METHOD: X GC/MS HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	S	Exceeded Calib. Range	1	J/A (b)
	All except S	Dilution	2	J/A (b)

Comments: _____

LDC #: 21681Ia

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: JC
2nd reviewer: LA

METHOD: GC (MS) HPLC _____

(Y) N N/A Were field duplicate pairs identified in this SDG?
(Y) N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L) PZ-141_090310-01	Concentration (ug/L) 1	RPD (535)
Benzene	0.18	1.0U	NA 139 (NQ)
Chloroform	0.74	0.710	4
cis-1,2-Dichloroethene	2.2	2.17	1
Methylene Chloride	0.36	5.0U	173 (NQ)
Trichloroethene	110	98.5	NA 11

Compound	Concentration ( )	Concentration ( )	RPD
Acetone	10U	1.60	NA 145 (NQ)
1,2-Dichloroethylene	1.0U	2.17	74

Compound	Concentration ( )	Concentration ( )	RPD

Compound	Concentration ( )	Concentration ( )	RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: General Engineering Laboratories, Inc.

Sample Delivery Group (SDG): 260237

Sample Identification

PZ-141_090310_03
PZ-141_090310_03MS
PZ-141_090310_03MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
PZ-141_090310_03MS/MSD (PZ-141_090310_03)	N-Nitrosodimethylamine Benzidine	101 (29-86) -	91.3 (29-86) -	- 37 (≤25)	J (all detects) J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. The percent recoveries (%R) were within the QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
1022962-LCS	Benzidine	27.9 (30-145)	All samples in SDG 260237	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 260237	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples PZ-141_090310_03 and PZ-141_090310_01 (from SDG 280-7064-1) were identified as split samples. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Bis(2-ethylhexyl)phthalate	3.5	10.4U	99 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples PZ-141_090310_03 and PZ-141_090310_01.

Boeing SSFL GW 3rd Qtr
Semivolatiles - Data Qualification Summary - SDG 260237

SDG	Sample	Compound	Flag	A or P	Reason (Code)
260237	PZ-141_090310_03	N-Nitrosodimethylamine	J (all detects)	A	Matrix spike/Matrix spike duplicates (%R) (Q)
260237	PZ-141_090310_03	Benzidine	J (all detects)	A	Matrix spike/Matrix spike duplicates (RPD) (Q)
260237	PZ-141_090310_03	Benzidine	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (L)
260237	PZ-141_090310_03	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 260237

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Semivolatiles - Field Blank Data Qualification Summary - SDG 260237

No Sample Data Qualified in this SDG

LDC #: 24081l2a

SDG #: 260237

Laboratory: GEL Laboratories LLC

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 10-12-10

Page: 1 of 1

Reviewer: RT

2nd Reviewer: L

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	Split= (1, PZ-141_090310_01 (SDG# 280-7064))
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ALL

1	PZ-141_090310_03	11		21		31	1022962-BLK
2	PZ-141_090310_03MS	12		22		32	
3	PZ-141_090310_03MSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. Tributylphosphate
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU Benzidine
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: Z4081I2a
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: At
2nd Reviewer: L

METHOD: X GC MS HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

[✓ Y] N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
[✓ Y] N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
Y [✓ N] N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	2/3	OOO	101 (29-86)	93 (29-86)	( )	/	J dets/A (Q)
		~~TTT~~	~~121 (74-120)~~	( )	( )		
		UUU	( )	( )	37 (25)		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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LDC #: 24081I52a
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: JV
2nd Reviewer: L

METHOD: X GC/MS HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

[✓ Y] N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?
Y [✓ N] N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only
Y N [✓ N/A] Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	1022962-LCS	UUU	27.9 (30-145)	( )	( )	All	~~J det~~
			( )	( )	( )		J/UJ/P (L
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		

LDC #: 24081I2a **VALIDATION FINDINGS WORKSHEET**
Field Duplicates

Page: 1 of 1
Reviewer: CR
2nd reviewer: M

METHOD: GC/MS ✓ HPLC _____

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD
	PZ-141-090310-01	1	
Bis(2-ethylhexyl)phthalate	3.5	10.4U	NA 99(NQ)

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: 1,4-Dioxane

Validation Level: Level V

Laboratory: General Engineering Laboratories, Inc.

Sample Delivery Group (SDG): 260237

Sample Identification

PZ-141_090310_03
PZ-141_090310_03MS
PZ-141_090310_03MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-Dioxane was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 260237	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples PZ-141_090310_03 and PZ-141_090310_01 (from SDG 280-7064-1) were identified as split samples. No 1,4-Dioxane was detected in any of the samples.

*Added split samples (RPD) findings text.

Boeing SSFL GW 3rd Qtr
1,4-Dioxane - Data Qualification Summary - SDG 260237

SDG	Sample	Compound	Flag	A or P	Reason (Code)
260237	PZ-141_090310_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 260237

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 260237

No Sample Data Qualified in this SDG

LDC #: 24081I1b
SDG #: 260237
Laboratory: GEL Laboratories LLC

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 10-12-10
Page: 1 of 1
Reviewer: AF
2nd Reviewer:

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	~~A~~ ~~A~~ N	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	(1, PZ-141_090310-01 (SDG#: 280-7064-1))
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	PZ-141_090310_03 W	11		21		31	1025183-BLK
2	PZ-141_090310_03 MS	12		22		32	
3	PZ-141_090310_03 MSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: August 18, 2010

LDC Report Date: November 30, 2010

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-6500-1

Sample Identification

RS-34_081810_01
RS-34_081810_36
FB_RS-34_081810
HAR-01_081810_01
HAR-01_081810_36
FB_HAR-01_081810

*Indicates change as the result of report review.

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625 for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-Nitrosodimethylamine was found in the method blanks.

Samples FB_HAR-01_081810 and FB_RS-34_081810 were identified as field blanks. No N-Nitrosodimethylamine was found in these blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-6500-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples RS-34_081810_01 and RS-34_081810_36 and samples HAR-01_081810_01 and HAR-01_081810_36 were identified as field duplicates. No N-Nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RS-34_081810_01	RS-34_081810_36			
N-Nitrosodimethylamine	0.0059	0.0085	36 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Indicates change as the result of report review.

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-01_081810_01	HAR-01_081810_36			
N-Nitrosodimethylamine	0.0093	0.0085	9 (≤35)	-	-

*Indicates change as the result of report review.

***Boeing SSFL GW 3rd Qtr**
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-6500-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-6500-1	RS-34_081810_01 RS-34_081810_36 FB_RS-34_081810 HAR-01_081810_01 HAR-01_081810_36 FB_HAR-01_081810	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*XII)

*Removed Field duplicates (RPD) finding.

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary - SDG 280-6500-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-6500-1

No Sample Data Qualified in this SDG

LDC #: 24081A2b

SDG #: 280-6500-1

Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 10-14-10

Page: 1 of 1

Reviewer: AH

2nd Reviewer: 1

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/18/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	FD = 1+2, 4+5
XVII.	Field blanks	ND	FB = 6, 3

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ALL H2O

1	RS-34_081810_01	11		21		31	280-27787-BLK
2	RS-34_081810_36	12		22		32	
3	FB_RS-34_081810	13		23		33	
4	HAR-01_081810_01	14		24		34	
5	HAR-01_081810_36	15		25		35	
6	FB_HAR-01_081810	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 27001A2D

SDG #: See Cover

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: RT

2nd reviewer: [illegible]

METHOD: X GC/MS HPLC

(N) N N/A Were field duplicate pairs identified in this SDG?

(Y) N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		%RPD Limit 35	Qualification Parent only / All Samples
	1	2		
NDMA	0.0059	0.0085	36 NA	J detS/A ~~XX XV1~~

Compound	Concentration (ug/L)		%RPD Limit 35	Qualification Parent only / All Samples
	4	5		
NDMA	0.0093	0.0085	9 NA	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: General Engineering Laboratories, Inc./Weck Laboratories, Inc.

Sample Delivery Group (SDG): 260237/0I07012

Sample Identification

PZ-141_090310_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-Nitrosodimethylamine was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 260237/0I07012	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

*XVI. Field Duplicates

Samples PZ-141_090310_03 and PZ-141_090310_01 (from SDG 280-7064-1) were identified as split samples. No N-Nitrosodimethylamine was detected in any of the samples.

*Added split samples (RPD) findings text.

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Data Qualification Summary - SDG 260237/0l07012

SDG	Sample	Compound	Flag	A or P	Reason (Code)
260237/0l07012	PZ-141_090310_03	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary - SDG 260237/0l07012

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 260237/0l07012

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24081I2b

VALIDATION COMPLETENESS WORKSHEET

SDG #: 260237/0I07012

Level V

Laboratory: GEL Laboratories LLC/Weck Laboratories, Inc.

Date: 6-12-10
Page: 1 of 1
Reviewer: RT
2nd Reviewer:

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625M

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	Client Specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	(SDG#: 280-7064, 7064-1)
XVI.	Field duplicates	ND	Split = (1, PZ-141_090310_01)
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	PZ-141_090310_03 W	11		21		31	W010226-BLK
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Polychlorinated Biphenyls

Validation Level: Level V

Laboratory: General Engineering Laboratories, Inc.

Sample Delivery Group (SDG): 260237

Sample Identification

PZ-141_090310_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 260237	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*XIV. Field Duplicates

Samples PZ-141_090310_03 and PZ-141_090310_01 (from SDG 280-7064-1) were identified as split samples. No polychlorinated biphenyl contaminants were detected in any of the samples.

*Added split samples (RPD) findings text.

Boeing SSFL GW 3rd Qtr
Polychlorinated Biphenyls - Data Qualification Summary - SDG 260237

SDG	Sample	Compound	Flag	A or P	Reason (Code)
260237	PZ-141_090310_03	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XII)

Boeing SSFL GW 3rd Qtr
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 260237

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 260237

No Sample Data Qualified in this SDG

LDC #: 24081I3b
SDG #: 260237
Laboratory: GEL Laboratories LLC

VALIDATION COMPLETENESS WORKSHEET
Level V

Date: 10-12-10
Page: 1 of 1
Reviewer: RF
2nd Reviewer:

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Specified
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	N	
XII.	Compound quantitation and reported CRQLs	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	ND	Split = (1, PZ-141-090310-01 (SDG#: 280-7064-1))
XV.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	PZ-141_090310_03 W	11		21		31	1022966-BLK
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Metals

Validation Level: Level V

Laboratory: General Engineering Laboratories, LLC

Sample Delivery Group (SDG): 260237

Sample Identification

PZ-141_090310_03
PZ-141_090310_03MS
PZ-141_090310_03DUP

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section IV.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Mercury	0.066 ug/L	All samples in SDG 260237

Data qualification by the preparation blanks (PBs) was based on the maximum contaminant concentration in the PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

No field blanks were identified in this SDG.

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 260237	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*XIV. Split samples

Samples PZ-141_090310_03 and PZ-141_090310_01 (from SDG 280-7064-1) were identified as split samples. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Antimony	0.00072	0.001U	33 (≤35)	-	-
Arsenic	0.0021	0.0016U	27 (≤35)	-	-

Analyte	Concentration (mg/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Barium	0.014	0.0128	9 (≤35)	-	-
Chromium	0.00071	0.002U	95 (≤35)	NQ	-
Copper	0.00068	0.00228	108 (≤35)	NQ	-
Iron	0.20	0.129	43 (≤35)	NQ	-
Manganese	0.033	0.0278	17 (≤35)	-	-
Nickel	0.0014	0.00296	72 (≤35)	NQ	-
Selenium	0.00076	0.001U	27 (≤35)	-	-
Silver	0.000034	0.0002U	142 (≤35)	NQ	-
Thallium	0.000048	0.000424	159 (≤35)	NQ	-
Vanadium	0.0034	0.001U	109 (≤35)	NQ	-
Zinc	0.0023	0.003U	26 (≤35)	-	-
Molybdenum	0.0080	0.0059	30 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples PZ-141_090310_01 and PZ-141_090310_03.

Boeing SSFL GW 3rd Qtr
Metals - Data Qualification Summary - SDG 260237

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
260237	PZ-141_090310_03	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*XII)

Boeing SSFL GW 3rd Qtr
Metals - Laboratory Blank Data Qualification Summary - SDG 260237

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Metals - Field Blank Data Qualification Summary - SDG 260237

No Sample Data Qualified in this SDG

LDC #: 24081I4 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-13-10

SDG #: 260237 Level V Page: 1 of 1

Laboratory: GEL Laboratories LLC Reviewer: CR

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	A	D
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	CSQGW 280-7064-1
XIV.	Field Duplicates	SW	Split= (1, PZ-141-090310-01)
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: WORL

1	PZ-141_090310_03	11	PBSW	21		31	
2	PZ-141_090310_03MS	12		22		32	
3	PZ-141_090310_03DUP	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 24081I4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1		Al, [✓ Sb, As, Ba, Be, Cd] Ca, [✓ Cr, Co, Cu, Fe, Pb] Mg, [✓ Mn, Hg, Ni] K, [✓ Se, Ag] Na, [✓ Tl, V, Zn, Mo] B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
QC:2,3		Al, [✓ Sb, As, Ba, Be, Cd] Ca, [✓ Cr, Co, Cu, Fe, Pb], Mg, [✓ Mn, Hg, Ni] K, [✓ Se, Ag], Na, [✓ Tl, V, Zn, Mo] B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Analysis Method
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, [✓ Co], Cu, [✓ Fe], Pb, Mg, [✓ Mn], Hg, Ni, K, Se, Ag, Na, Tl, [✓ V], Zn, [✓ Mo], B, Si, CN^-,
ICP-MS		Al, [✓ Sb, As, Ba, Be, Cd], Ca, [✓ Cr] Co, [✓ Cu], Fe, [✓ Pb], Mg, Mn, Hg, [✓ Ni] K, [✓ Se, Ag], Na, [✓ Tl] V, [✓ Zn] Mo, B, Si, CN^-,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,

Comments: [✓ Mercury by CVAA if performed]

LDC #: 240811l4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: CR
2nd Reviewer:

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
Soil preparation factor applied: NA
Sample Concentration units, unless otherwise noted: ug/L
Associated Samples: All

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Limit	No Qual (ND)									
Hg		0.066		0.33										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 24081I4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: ___ of ___
Reviewer: ___
2nd Reviewer: ___

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	PZ-141_090310_01	1		
Antimony	0.00072	0.001U	NA 33	
Arsenic	0.0021	0.0016U	NA 27	
Barium	0.014	0.0128	NA 9	
Chromium	0.00071	0.002U	NA 95	(NQ)
Copper	0.00068	0.00228	NA 108	↓
Iron	0.20	0.129	NA 43	↓
Manganese	0.033	0.0278	NA 17	
Nickel	0.0014	0.00296	NA 72	(NQ)
Selenium	0.00076	0.001U	NA 27	
Silver	0.000034	0.0002U	NA 142	(NQ)
Thallium	0.000048	0.000424	NA 159	↓
Vanadium	0.0034	0.001U	NA 109	↓
Zinc	0.0023	0.003U	NA 26	
Molybdenum	0.0080	0.0059	NA 30	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Wet Chemistry

Validation Level: Level V

Laboratory: General Engineering Laboratories, LLC./Weck Laboratories, Inc.

Sample Delivery Group (SDG): 260237/0I07012

Sample Identification

PZ-141_090310_03
PZ-141_090310_03MS
PZ-141_090310_03MSD
PZ-141_090310_03DUP

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Bromide, Chloride, Fluoride, Nitrite as Nitrogen, Orthophosphate as Phosphorus, and Sulfate, and EPA SW 846 Method 7196A and EPA Method 218.6 for Hexavalent Chromium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
PZ-141_090310_03 PZ-141_090310_03MS PZ-141_090310_03MSD	Hexavalent chromium (7196A)	7 days	24 hours	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks.

No field blanks were identified in this SDG.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
PZ-141_090310_03MS (All samples in SDG 260237/0107012)	Orthophosphate as P	79.8 (90-110)	J (all detects) UJ (all non-detects)	A

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 260237/0l07012	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-141_090310_03	Hexavalent chromium (7196A)	R	A

Data flags are summarized at the end of this report if data has been qualified.

*IX. Field Duplicates

Samples PZ-141_090310_03 and PZ-141_090310_01 (from SDG 280-7064-1) were identified as split samples. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Bromide	0.20	0.245	20 (≤35)	-	-

*Indicates change as the result of report review.

Analyte	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Chloride	77	67.1	14 (≤35)	-	-
Fluoride	0.40	0.425	6 (≤35)	-	-
Sulfate	320	291	8 (≤35)	-	-
Dissolved hexavalent chromium	0.0055	0.0000059U	195 (≤35)	NQ	-
Nitrite	0.16U	0.101	45 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples PZ-141_090310_01 and PZ-141_090310_03.

*Indicates change as the result of report review.

Boeing SSFL GW 3rd Qtr
Wet Chemistry - Data Qualification Summary - SDG 260237/0l07012

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
260237/0l0 7012	PZ-141_090310_03	Hexavalent chromium (7196A)	J (all detects) R (all non-detects)	P	Technical holding times (H)
260237/0l0 7012	PZ-141_090310_03	Orthophosphate as P	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R) (Q)
260237/0l0 7012	PZ-141_090310_03	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (*Vll)
260237/0l0 7012	PZ-141_090310_03	Hexavalent chromium (7196A)	R	A	Overall assessment of data (D)

Boeing SSFL GW 3rd Qtr
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 260237/0l07012

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Wet Chemistry - Field Blank Data Qualification Summary - SDG 260237/0l07012

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24081I6 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-13-10

SDG #: 260237/0I07012 Level V Page: 1 of 1

Laboratory: GEL Laboratories LLC/Weck Laboratories, Inc. Reviewer: CE

2nd Reviewer: [illegible]

METHOD: (Analyte) Bromide, Chloride, Fluoride, Nitrite-N, Orthophosphate, Sulfate (EPA Method 300.0), Hexavalent Chromium (EPA SW846 Method 7196A & EPA Method 218.6)).

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 9/3/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	SW	MS/D
V	Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	SW	
IX.	Field duplicates	SW	split = (1, PZ-141-090310-01 (SDG: 280-7064-1))
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	PZ-141_090310_03	11	PBW	21		31	
2	PZ-141_090310_03MS	12		22		32	
3	PZ-141_090310_03MSD	13		23		33	
4	PZ-141_090310_03DUP (ST Ag)	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 24081I6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer:

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1		pH TDS [✓ Cl F] NO_3 [✓ NO_2] [✓ SO_4] [✓ o- PO_4] ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] ClO_4 [✓ BC] ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
QC 2		pH TDS [✓ Cl F] NO_3 [✓ NO_2 SO_4 PO_4] ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] ClO_4 [✓ BC] ___
3		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] ClO_4 ___ ___
4		pH TDS [✓ Cl F] NO_3 [✓ NO_2 SO_4 PO_4] ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 [✓ BC] ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ___ ___

Comments: ______________________________

LDC #: 24081I6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: QR
2nd reviewer:

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:	~~9040B~~	7196A				
Parameters:	~~pH~~	Cr6+				
Technical holding time:		24hrs				

Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
~~[redacted]~~ 1-3	9/3/10		9/10/10				J/R/P (HT)
						(Qualifies method 7196A only)	

DC #: 248176
DG #: ——

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Reviewer: CR
2nd Reviewer: [illegible]

ETHOD: Inorganics, Method see cover

ease see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N N/A Was a matrix spike analyzed for each matrix in this SDG?

N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

EVEL IV ONLY:

N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		2	(W)	o-PO_4-P	79.8 (90-110)	All	J/UJ/A (Q)

omments: _____

LDC #: 24085T6
SDG #: —

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualifications
		1	Cr^{6+} by Method 7196A was requested on the COC, however the holding time was grossly exceeded therefore the lab ran Cr^{6+} by 218.6 (which has a longer holding time and a lower detection limit). Both results were ND for Cr^{6+}.		R/A (Cr^{6+} by 7196A CD)

Comments:

LDC#~~24031B6~~ 81I

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CR
2nd Reviewer: LW

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	PZ-141-090310-01	1		
Bromide	0.20	0.245	~~NA~~ 20	
Chloride	77	67.1	14	
Fluoride	0.40	0.425	~~NA~~ 6	
Sulfate	320	291	9	
Dissolved Hexavalent Chromium	0.0055	0.0000059U	~~NA~~ 195 (NQ)	
Nitrite	0.16U	0.101	~~NA~~ 45 √	

V:\FIELD DUPLICATES\FD_inorganic\24031B6.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: General Engineering Laboratories, Inc.

Sample Delivery Group (SDG): 260237

Sample Identification

PZ-141_090310_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015A/B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 260237	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*IX. Field Duplicates

Samples PZ-141_090310_03 and PZ-141_090310_01 (from SDG 280-7064-1) were identified as split samples. No diesel range organics were detected in any of the samples.

*Added Split samples (RPD) findings for samples PZ-141_090310_03 and PZ-141_090310_01.

Boeing SSFL GW 3rd Qtr
Diesel Range Organics - Data Qualification Summary - SDG 260237

SDG	Sample	Compound	Flag	A or P	Reason (Code)
260237	PZ-141_090310_03	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*VI)

Boeing SSFL GW 3rd Qtr
Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 260237

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Diesel Range Organics - Field Blank Data Qualification Summary - SDG 260237

No Sample Data Qualified in this SDG

LDC #: 240818 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-12-10
SDG #: 260237 Level V Page: 1 of 1
Laboratory: GEL Laboratories LLC Reviewer: RF
2nd Reviewer:

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015A/B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
IIa.	Initial calibration	N	
IIb.	Calibration verification/ICV	N	
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	N	Client Specified
IVc.	Laboratory control samples	A	LCS/D
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A	Individual Carbon Chains not reported
IX.	Field duplicates	ND	Split= C1, PZ-141-090310-01 (SDG#: 280-7064-1))
X.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	PZ-141_090310_03 W	11		21		31	1022979-BLK
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr.

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level V

Laboratory: General Engineering Laboratories, Inc./Cape Fear Analytical LLC

Sample Delivery Group (SDG): 260237/12001917

Sample Identification

PZ-141_090310_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Routine Calibration (Continuing)

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
14873-BLK	9/20/10	1,2,3,7,8-PeCDD	1.64 pg/L	All samples in SDG 260237/12001917
		1,2,3,4,6,7,8,9-OCDD	4.88 pg/L	
		1,2,3,7,8-PeCDF	1.54 pg/L	
		2,3,4,7,8-PeCDF	1.18 pg/L	
		1,2,3,6,7,8-HxCDF	1.34 pg/L	
		1,2,3,7,8,9-HxCDF	1.68 pg/L	
		1,2,3,4,6,7,8-HpCDF	1.28 pg/L	
		Total PeCDF	1.18 pg/L	
		Total HxCDF	3.02 pg/L	

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

Internal standards data were not reviewed for Level V.

X. Target Compound Identifications

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 260237/12001917	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*XIV. Field Duplicates

Samples PZ-141_090310_03 and PZ-141_090310_01 (from SDG 280-7064-1H0l080485) were identified as split samples. No polychlorinated dioxin/dibenzofuran contaminants were detected in any of the samples.

*Added split sample findings text.

Boeing SSFL GW 3rd Qtr.
Dioxins/Dibenzofurans - Data Qualification Summary - SDG 260237/12001917

SDG	Sample	Compound	Flag	A or P	Reason (Code)
260237/12001917	PZ-141_090310_03	All compounds reported below the RL	J (all detects)	A	Compound quantitation and CRQLs (*XI)

Boeing SSFL GW 3rd Qtr.
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 260237/12001917

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr.
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 260237/12001917

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24081I21 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-12-10
SDG #: 260237/12001917 Level V Page: 1 of 1
Laboratory: GEL Laboratories LLC/Cape Fear Analytical LLC Reviewer: RT
2nd Reviewer: W

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10
II.	HRGC/HRMS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Routine calibration/ICV	N	
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	
VII.	Laboratory control samples	A	LCS/D
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	N	
X.	Target compound identifications	N	
XI.	Compound quantitation and CRQLs	N	
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	ND	Split=(1,PZ-141_090310_01 (SDG: 280-20661/1 HOI080485)
XV.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	PZ-141_090310_03 W	11		21		31	14873-BLK
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Z 1,2,3,4,6,7,8,9-OCDD

Notes:

LDC #: 24081 I 21
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: MT
2nd Reviewer: L

METHOD: ~~GC~~ ~~HPLC~~ HRGC/HRMS Dioxins

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

reason code "B"

(Y) N N/A Were all samples associated with a given method blank?
(Y) N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
(Y) N N/A Was a method blank performed with each extraction batch?
(Y) N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level IV/D Only

Y N (N/A) (Gasoline and aromatics only)Was a method blank analyzed with each 24 hour batch?
Y N (N/A) Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 9/20/10 **Blank analysis date:** 9/27/10 **Associated samples:** ALL (ND)
Conc. units: pg/L

Compound	Blank ID	Sample Identification						
	14873-BLK							
B	1.64							
Z	4.88							
I	1.54							
J	1.18							
L	1.34							
N	1.68							

Blank extraction date: 9/20/10 **Blank analysis date:** 9/27/10 **Associated samples:** ALL (ND)
Conc. units: pg/L

Compound	Blank ID	Sample Identification						
	14873-BLK							
O	1.28							
W	1.18							
X	3.02							

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 2, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Gross Alpha & Beta

Validation Level: Level V

Laboratory: General Engineering Laboratories, LLC

Sample Delivery Group (SDG): 260126

Sample Identification

RD-63_090210_03
RD-63_090210_03MS
RD-63_090210_03MSD
RD-63_090210_03DUP

Introduction

This data review covers 4 water samples listed on the cover sheet. The analyses were per EPA Method 900.0 and EPA SW 846 Method 9310 for Gross Alpha and Beta Radioactivity.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the isotope was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Although matrix spike (MS) and matrix spike duplicate (MSD) samples were not required by the method, MS and MSD samples were reported by the laboratory. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Isotope	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
RD-63_090210_03MS/MSD (All samples in SDG 260126)	Alpha	74.4 (75-125)	70.2 (75-125)	-	J (all detects) UJ (all non-detects)	A

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

VI. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 260126	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG

VII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*VIII. Field Duplicates

Samples RD-63_090210_03 and RD-63_090210_01 (from SDG 280-7068-1) were identified as split samples. No gross alpha or gross beta was detected in any of the samples with the following exceptions:

Isotopes	Concentration (pCi/L)		RPD (Limits)	Flags	A or P
	RD-63_090210_03	RD-63_090210_01			
Gross alpha	7.17	6.91	4 (≤35)	-	-
Gross beta	9.82	12.7	26 (≤35)	-	-

*Added split samples (RPD) findings for samples RD-63_090210_03 and RD-63_090210_01.

Boeing SSFL GW 3rd Qtr
Gross Alpha & Beta - Data Qualification Summary - SDG 260126

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
260126	RD-63_090210_03	Alpha	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R) (Q)
260126	RD-63_090210_03	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*VI)

Boeing SSFL GW 3rd Qtr
Gross Alpha & Beta - Laboratory Blank Data Qualification Summary - SDG 260126

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Gross Alpha & Beta - Field Blank Data Qualification Summary - SDG 260126

No Sample Data Qualified in this SDG

LDC #: 24081H22 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-13-10
SDG #: 260126 Level V Page: 1 of 1
Laboratory: GEL Laboratories LLC Reviewer: AR
2nd Reviewer: W

METHOD: Gross Alpha & Beta (EPA Method 900.0/EPA SW846 Method 9310)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/2/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IVa.	Matrix Spike/(Matrix Spike) Duplicates	SW	MS/D, DUP
IVb.	Laboratory control samples	A	LCS
V.	Minimum dectectable activity (MDA)	A	
VI.	Sample result verification	N	
VII.	Overall assessment of data	A	
VIII.	Field duplicates	SW	Split= (1, RD-63_090210-01 (SDG: 250-7068) 1/8983)
IX	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	RD-63_090210_03	11	PBW	21		31	
2	RD-63_090210_03MS	12		22		32	
3	RD-63_090210_03MSD	13		23		33	
4	RD-63_090210_03DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 24081H22
SDG #: —

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: QR
2nd Reviewer: [illegible]

METHOD: Radiochemistry (Method: See cover)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
		2/3	W	Alpha	74.4	70.2		All	J/UJ/A (Q)

Comments: _____

LDC# 24081H22

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CC
2nd Reviewer:

Radiochemistry, Method See Cover

(Y) N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Isotope	Activity (pCi/L)		RPD (≤35)	
	RD-63_090210 D	1		
Gross Alpha	7.17	6.91	~~NA~~ 4	
Gross Beta	9.82	12.7	~~NA~~ 26	

V:\FIELD DUPLICATES\FD_inorganic\24081H22.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 2, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Tritium

Validation Level: Level V

Laboratory: General Engineering Laboratories, LLC

Sample Delivery Group (SDG): 260126

Sample Identification

RD-63_090210_03
RD-63_090210_03MS
RD-63_090210_03DUP

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per EPA Method 906.0 for Tritium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the isotope was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Although matrix spike (MS) samples were not required by the method, MS samples were reported by the laboratory. Percent recoveries (%R) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

VI. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 260126	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG

VII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*VIII. Field Duplicates

Samples RD-63_090210_03 and RD-63_090210_01 (from SDG 280-7068-1/8983) were identified as split samples. No tritium was detected in any of the samples.

*Added split samples (RPD) findings text.

Boeing SSFL GW 3rd Qtr
Tritium - Data Qualification Summary - SDG 260126

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
260126	RD-63_090210_03	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*VI)

Boeing SSFL GW 3rd Qtr
Tritium - Laboratory Blank Data Qualification Summary - SDG 260126

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Tritium - Field Blank Data Qualification Summary - SDG 260126

No Sample Data Qualified in this SDG

LDC #: 24081H34 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-13-10
SDG #: 260126 Level V Page: 1 of 1
Laboratory: GEL Laboratories LLC Reviewer: cf
2nd Reviewer: [illegible]

METHOD: Tritium (EPA Method 906.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/2/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IVa.	Matrix Spike/(Matrix Spike) Duplicates	A	MS, DUP
IVb.	Laboratory control samples	A	LCS
V.	Minimum dectectable activity (MDA)	A	
VI.	Sample result verification	N	
VII.	Overall assessment of data	A	
VIII.	Field duplicates	ND	SPLIT= (1, RD-63-090210-01 (SDG: 280708-1/8983))
IX	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	RD-63_090210_03	11	PBW	21		31	
2	RD-63_090210_03MS	12		22		32	
3	RD-63_090210_03DUP	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 2, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Gamma Spectroscopy

Validation Level: Level V

Laboratory: General Engineering Laboratories, LLC

Sample Delivery Group (SDG): 260126

Sample Identification

RD-63_090210_03
RD-63_090210_03DUP

Introduction

This data review covers 2 water samples listed on the cover sheet. The analyses were per EPA Method 901.1 for Gamma Spectroscopy.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the isotope was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the isotope was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Minimum Detectable Activity

All minimum detectable activities met required detection limits.

VI. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 260126	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

VII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*VIII. Field Duplicates

Samples RD-63_090210_03 and RD-63_090210_01 (from SDG 280-7068-1) were identified as split samples. No gamma emitting radionuclides were detected in any of the samples.

*Added Split samples (RPD) findings text.

Boeing SSFL GW 3rd Qtr
Gamma Spectroscopy - Data Qualification Summary - SDG 260126

SDG	Sample	Isotope	Flag	A or P	Reason
260126	RD-63_090210_03	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*VI)

Boeing SSFL GW 3rd Qtr
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 260126

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 260126

No Sample Data Qualified in this SDG

LDC #: 24081H35 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-13-10
SDG #: 260126 Level V Page: 1 of 1
Laboratory : GEL Laboratories LLC Reviewer: CR
2nd Reviewer:

METHOD: Gamma Spectroscopy (EPA Method 901.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/2/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IVa.	Matrix Spike/(Matrix Spike) Duplicates	A	Dup
IVb.	Laboratory control samples	A	LCS
V.	Minimum dectectable activity (MDA)	A	
VI.	Sample result verification	N	
VII.	Overall assessment of data	A	
VIII.	Field duplicates	ND	Split=(1, RD-63_090210-01 (SDG: 280-7068-1 (8983))
IX	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	RD-63_090210_03	11	PBW	21		31	
2	↓ DUP	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 2, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Isotopic Uranium

Validation Level: Level V

Laboratory: General Engineering Laboratories, LLC

Sample Delivery Group (SDG): 260126

Sample Identification

RD-63_090210_03
RD-63_090210_03MS
RD-63_090210_03DUP

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per DOE EML Method HASL-300, U-02-RC modified for Isotopic Uranium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the isotope was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Although matrix spike (MS) samples were not required by the method, MS samples were reported by the laboratory. Percent recoveries (%R) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

VI. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 260126	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG

VII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*VIII. Field Duplicates

Samples RD-63_090210_03 and RD-63_090210_01 (from SDG 280-7068-1/8983) were identified as split samples. No gross alpha or gross beta was detected in any of the samples with the following exceptions:

Isotopes	Concentration (pCi/L)		RPD (Limits)	Flags	A or P
	RD-63_090210_01	RD-63_090210_03			
Uranium-233/234	5.22	4.86	7 (≤35)	-	-
Uranium-235	0.302	0.193U	44 (≤35)	NQ	-
Uranium-238	4.86	7.7	45 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples RD-63_090210_03 and RD-63_090210_01.

Sample	Isotope	Flag	A or P
All samples in SDG 260126	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG

VII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*VIII. Field Duplicates

Samples RD-63_090210_03 and RD-63_090210_01 (from SDG 280-7068-1/8983) were identified as split samples. No gross alpha or gross beta was detected in any of the samples with the following exceptions:

Isotopes	Concentration (pCi/L)		RPD (Limits)	Flags	A or P
	RD-63_090210_01	RD-63_090210_03			
Uranium-233/234	5.22	4.86	7 (≤35)	-	-
Uranium-235	0.302	0.193U	44 (≤35)	NQ	-
Uranium-238	4.86	7.7	45 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples RD-63_090210_03 and RD-63_090210_01.

Boeing SSFL GW 3rd Qtr
Isotopic Uranium - Data Qualification Summary - SDG 260126

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
260126	RD-63_090210_03	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*VI)

Boeing SSFL GW 3rd Qtr
Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 260126

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Isotopic Uranium - Field Blank Data Qualification Summary - SDG 260126

No Sample Data Qualified in this SDG

LDC #: 24081H59 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-13-10
SDG #: 260126 Level V Page: 1 of 1
Laboratory: GEL Laboratories LLC Reviewer: CR
2nd Reviewer:

METHOD: Isotopic Uranium (Method DOE EML HASL-300, U-02-RC Modified)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/2/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IVa.	Matrix Spike/(Matrix Spike) Duplicates	A	MS, Dup
IVa.	Laboratory control samples	A	LCS
V.	Tracer Recovery	A	
VI.	Minimum Detectable Activity (MDA)	A	
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	Split = (1, RD63_090210-01CS06: 280-7068-1/89831)
X	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	RD-63_090210_03	11	PBW	21		31	
2	RD-63_090210_03MS	12		22		32	
3	RD-63_090210_03DUP	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC# 24081H59

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CE
2nd Reviewer: W

Radiochemistry, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Isotope	Activity (pCi/L)		RPD (≤35)	
	RD-63_090210_01	1		
Uranium-233/234	5.22	4.86	7 ~~NA~~ NQ	
Uranium-235	0.302	0.193U	44 ~~NA~~	
Uranium-238	4.86	7.7	45 ~~NA~~	

V:\FIELD DUPLICATES\FD_inorganic\24081H59.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 2, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Strontium-90

Validation Level: Level V

Laboratory: General Engineering Laboratories, LLC

Sample Delivery Group (SDG): 260126

Sample Identification

RD-63_090210_03
RD-63_090210_03MS
RD-63_090210_03DUP

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per EPA Method 905.0 for Strontium-90.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the isotope was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Although matrix spike (MS) samples were not required by the method, MS samples were reported by the laboratory. Percent recoveries (%R) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

VI. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 260126	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG

VII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*VIII. Field Duplicates

Samples RD-63_090210_03 and RD-63_090210_01 (from SDG 280-7068-1/8983) were identified as split samples. No strontium-90 was detected in any of the samples.

*Added split samples (RPD) findings for samples RD-63_090210_03 and RD-63_090210_01.

Boeing SSFL GW 3rd Qtr
Strontium-90 - Data Qualification Summary - SDG 260126

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
260126	RD-63_090210_03	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*VI)

Boeing SSFL GW 3rd Qtr
Strontium-90 - Laboratory Blank Data Qualification Summary - SDG 260126

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Strontium-90 - Field Blank Data Qualification Summary - SDG 260126

No Sample Data Qualified in this SDG

LDC #: 24081H61 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-13-10
SDG #: 260126 Level V Page: 1 of 1
Laboratory: GEL Laboratories LLC Reviewer: CR
2nd Reviewer:

METHOD: Strontium-90 (EPA Method 905.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/2/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IVa.	Matrix Spike/(Matrix Spike) Duplicates	A	MS, Dup
IVb.	Laboratory control samples	A	LCS
IVc.	Carrier recovery	A	
V.	Minimum dectectable activity (MDA)	A	
VI.	Sample result verification	N	
VII.	Overall assessment of data	A	
VIII.	Field duplicates	ND	SPLIT (1, RD-63-090210-01 (SDG: 280-7065-1 / 8983))
XIV	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
N = Not provided/applicable R = Rinsate TB = Trip blank
SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: water

1	RD-63_090210_03	11	PBW	21		31	
2	RD-63_090210_03MS	12		22		32	
3	RD-63_090210_03DUP	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: General Engineering Laboratories, Inc./Lancaster Laboratories

Sample Delivery Group (SDG): 260237/1210538

Sample Identification

PZ-141_090310_03

*Indicates change as the result of report review.

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures.

Cooler temperatures for samples in this SDG were reported at 7.2°C upon receipt by the laboratory.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
102460018A-BLK	9/5/10	Formaldehyde	13 ug/L	All samples in SDG 260237/1210538

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-141_090310_03	Formaldehyde	12 ug/L	50U ug/L

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 260237/1210538	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*IX. Field Duplicates

Samples PZ-141_090310_03 and PZ-141_090310_01 (from SDG 280-7064-1/A0I040412) were identified as split samples. No formaldehyde was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	PZ-141_090310_01	PZ-141_090310_03			
Formaldehyde	12	19	45 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples PZ-141_090310_03 and PZ-141_090310_01.

Boeing SSFL GW 3rd Qtr
Formaldehyde - Data Qualification Summary - SDG 260237/1210538

SDG	Sample	Compound	Flag	A or P	Reason (Code)
260237/1210538	PZ-141_090310_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*VI)

Boeing SSFL GW 3rd Qtr
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 260237/1210538

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
260237/1210538	PZ-141_090310_03	Formaldehyde	50U ug/L	A	B

Boeing SSFL GW 3rd Qtr
Formaldehyde - Field Blank Data Qualification Summary - SDG 260237/1210538

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24081I71 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-12-10

SDG #: 260237/1210538 Level V Page: 1 of 1

Laboratory: GEL Laboratories LLC/Lancaster Laboratories Reviewer: AP

2nd Reviewer: W

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10 Temp = 7.2°C
IIa.	Initial calibration	N	
IIb.	Calibration verification/ICV	N	
III.	Blanks	SW	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	N	Client Specified
IVc.	Laboratory control samples	A	LCS/D
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A	(SDG# 260706-1/A05,C404,12
IX.	Field duplicates	SW	Splits = (1, PZ-141-090310-01)
X.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
N = Not provided/applicable R = Rinsate TB = Trip blank
SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

1	PZ-141_090310_03 W	11		21		31	1024600181A-BLK
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 24081I71
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: AT
2nd Reviewer:

METHOD: __ GC X HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

reason code "B"

Y N N/A Were all samples associated with a given method blank?
Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
Y N N/A Was a method blank performed with each extraction batch?
Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level IV/D Only
Y N N/A (Gasoline and aromatics only)Was a method blank analyzed with each 24 hour batch?
Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 9/5/10 Blank analysis date: 9/7/10 Associated samples: ALL
Conc. units: ug/L

Compound	Blank ID	Sample Identification						
	102460018A-MB1							
Formaldehyde	13	12/50U						

Blank extraction date: _____ Blank analysis date: _____ Associated samples: _____
Conc. units: _____

Compound	Blank ID	Sample Identification						

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 24081I71

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CR
2nd reviewer: W

METHOD: GC_____ HPLC ✓

(Y) N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤35)
	1	DZ-141-090310-01	
Formaldehyde	12	19	NA 45 (NQ)

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 3, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: General Engineering Laboratories, Inc./Lancaster Laboratories

Sample Delivery Group (SDG): 260237/1210538

Sample Identification

PZ-141_090310_03
PZ-141_090310_03MS
PZ-141_090310_03MSD

*Indicates change as the result of report review. SDG 260237/1210538

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315A for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures.

Cooler temperatures for samples in this SDG were reported at 7.2°C upon receipt by the laboratory.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Calibration Verification

Calibration verification data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were not required by the method.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 260237/1210538	All compounds reported below the RL	J (all detects)	A

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*IX. Field Duplicates

Samples PZ-141_090310_03 and PZ-141_090310_01 (from SDG 280-7064-1) were identified as split samples. No hydrazines were detected in any of the samples.

*Added split samples (RPD) findings for samples PZ-141_090310_03 and PZ-141_090310_01.

Boeing SSFL GW 3rd Qtr
Hydrazines - Data Qualification Summary - SDG 260237/1210538

SDG	Sample	Compound	Flag	A or P	Reason (Code)
260237/1210538	PZ-141_090310_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (*VI)

Boeing SSFL GW 3rd Qtr
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 260237/1210538

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Hydrazines - Field Blank Data Qualification Summary - SDG 260237/1210538

No Sample Data Qualified in this SDG

*Indicates change as the result of report review. SDG 260237/1210538

LDC #: 24081876 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-12-10
SDG #: 260237/1210538 Level V Page: 1 of 1
Laboratory: GEL Laboratories LLC/Lancaster Laboratories Reviewer: 1st
2nd Reviewer: VV

METHOD: HPLC Hydrazines (EPA SW846 Method 8315A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/3/10 Temp=7.2°C
IIa.	Initial calibration	N	
IIb.	Calibration verification/ICV	N	
III.	Blanks	A	
IVa.	Surrogate recovery	N	
IVb.	Matrix spike/Matrix spike duplicates	A	~~LCS/D~~
IVc.	Laboratory control samples	A	LCS ID
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	Split= (1, PZ-141-090310-01 (SDG 1210538-7064-1))
X.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: All #'s

1	PZ-141_090310_03	11		21		31	102580.01-BLK
2	PZ-141_090310_03MS	12		22		32	
3	PZ-141_090310_03MSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: ~~24029-76~~

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer:
2nd reviewer:

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter		
1	W	[✓ Hydrazine]	[✓ 1,1-Dimethylhydrazine]	[✓ Monomethyl Hydrazine]
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
2-3(QC)	W	[✓ Hydrazine]	[✓ 1,1-Dimethylhydrazine]	[✓ Monomethyl Hydrazine]
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine

Comments:

5.4 Completeness

Of the 509 total results reported, none of the results were rejected. The completeness for all SDGs is as follows:

Parameter	Total Analytes	No. of Rejects	% Completeness
Explosives	224	0	100
Metals	285	0	100
Total	**509**	**0**	**100**

The completeness percentage based on rejected data met the 90 percent DQO goal. A less quantifiable loss of data occurred in the application of blank qualifications as noted in Section 3.2.2.1.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 2, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Gross Alpha & Beta

Validation Level: Level V

Laboratory: TestAmerica Laboratories, Inc./Eberline Analytical

Sample Delivery Group (SDG): 280-7068-1/8983

Sample Identification

RD-33B_090210_01(D)
RD-63_090210_01(D)
RD-33B_090210_01(D)DUP

*Indicates change as the result of report review.

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per EPA Method 900.0 for Gross Alpha and Beta Radioactivity.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the isotope was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Sample EB_RD-85_082510(D) (from SDG 280-6786-1/8980) was identified as an equipment blank. No gross alpha or beta was found in these blanks.

Sample FB_082510_19(D) (from SDG 280-6786-1/8980) was identified as a field blank. No gross alpha or beta was found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

VI. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-7068-1/8983	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG

VII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*VIII. Field Duplicates

Samples RD-63_090210_01(D) and RD-63_090210_03 (from SDG 260126) were identified as split samples. No gross alpha or beta was detected in any of the samples with the following exceptions:

Compound	Concentration (pCi/L)		RPD (Limits)	Flags	A or P
	RD-63_090210_01(D)	RD-63_090210_03			
Gross alpha	7.17	6.91	4 (≤35)	-	-
Gross beta	9.82	12.7	26 (≤35)	-	-

*Added split sample findings for samples RD-63_090210_01(D) and RD-63_090210_03.

Boeing SSFL GW 3rd Qtr
Gross Alpha & Beta - Data Qualification Summary - SDG 280-7068-1/8983

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-7068-1/8983	RD-33B_090210_01(D) RD-63_090210_01(D)	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*VI)

Boeing SSFL GW 3rd Qtr
Gross Alpha & Beta - Laboratory Blank Data Qualification Summary - SDG 280-7068-1/8983

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Gross Alpha & Beta - Field Blank Data Qualification Summary - SDG 280-7068-1/8983

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24290B22 **VALIDATION COMPLETENESS WORKSHEET** Date: 1-8-10
SDG #: 280-7068-1/8983 Level V Page: 1 of 1
Laboratory: Test America Laboratories, Inc./Eberline Analytical Reviewer: CC
2nd Reviewer:

METHOD: Gross Alpha & Beta (EPA SW 846 Method 900.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/2/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IVa.	Matrix Spike/(Matrix Spike) Duplicates	A	DUP
IVb.	Laboratory control samples	A	LCS
V.	Minimum dectectable activity (MDA)	A	
VI.	Sample result verification	N	
VII.	Overall assessment of data	A	
VIII.	Field duplicates	SW	SPLIT = (3, 4 RD-63-090210-03 (SDG: 260126))
IX	Field blanks	ND	See Below

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	RD-33B_090210_01(D)	11	RBW	21		31	
~~2~~	~~RD-33B_090210_01(T)~~	12		22		32	
3	RD-63_090210_01(D)	13		23		33	
~~4~~	~~RD-63_090210_01(T)~~	14		24		34	
5	RD-33B_090210_01(D)DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: FB = FB-082510-19(D) (T)
EB = EB-RD-18-082510 (D) (T)
SDG: 280-6786-1/8980

LDC# 24081H22

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: CC
2nd Reviewer: W

Radiochemistry, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Isotope	Activity (pCi/L)		RPD (≤35)	
	FB 3	RD-63090210-03		
Gross Alpha	7.17	6.91	NA 4	
Gross Beta	9.82	12.7	NA 26	

V:\FIELD DUPLICATES\FD_inorganic\24081H22.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 2, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Gamma Spectroscopy

Validation Level: Level V

Laboratory: TestAmerica Laboratories, Inc./Eberline Analytical

Sample Delivery Group (SDG): 280-7068-1/8983

Sample Identification

RD-33B_090210_01(D)
RD-63_090210_01(D)
RD-33B_090210_01(D)DUP

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per EPA Method 901.1 for Gamma Spectroscopy.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the isotope was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the isotope was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Sample FB_082510_19(D) (from SDG 280-6786-1/8980) was identified as a field blank. No gamma emitting radionuclides were found in this blank.

Sample EB_RD-85_082510(D) (from SDG 280-6786-1/8980) was identified as an equipment blank. No gamma emitting radionuclides were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Minimum Detectable Activity

All minimum detectable activities met required detection limits.

VI. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-7068-1/8983	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG.

VII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*VIII. Field Duplicates

Samples RD-63_090210_01(D) and RD-63_090210_03 (from SDG 260126) were identified as split samples. No gamma emitting radionuclides were detected in any of the samples.

*Added split samples (RPD) findings for samples RD-63_090210_01(D) and RD-63_090210_03.

Boeing SSFL GW 3rd Qtr
Gamma Spectroscopy - Data Qualification Summary - SDG 280-7068-1/8983

SDG	Sample	Isotope	Flag	A or P	Reason
280-7068-1/8983	RD-33B_090210_01(D) RD-63_090210_01(D)	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (*VI)

Boeing SSFL GW 3rd Qtr
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 280-7068-1/8983

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 280-7068-1/8983

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24290B35 **VALIDATION COMPLETENESS WORKSHEET** Date: 11-8-10
SDG #: 280-7068-1/8983 Level V Page: 1 of 1
Laboratory: Test America Laboratories, Inc./Eberline Analytical Reviewer: CR
2nd Reviewer:

METHOD: Gamma Spectroscopy (EPA Method 901.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/2/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IVa.	Matrix Spike/(Matrix Spike) Duplicates	A	DUP
IVb.	Laboratory control samples	A	LCS
V.	Minimum dectectable activity (MDA)	A	
VI.	Sample result verification	N	
VII.	Overall assessment of data	A	
VIII.	Field duplicates	ND	Split=3, RD-63_090210_03 (SDG: 260126)
IX.	Field blanks	ND	See below

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Water

1	RD-33B_090210_01(D)	11	(FB)	21		31	
2	~~RD-33B_090210_01(F)~~	12		22		32	
3	RD-63_090210_01(D)	13		23		33	
4	~~RD-63_090210_01(F)~~	14		24		34	
5	RD-33B_090210_01(D)DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: FB = FB_082510_19 (D) ~~(F)~~
EB = EB_RD-85_082510 (D) ~~(F)~~ (ET)
280-6786-1/8980

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 2, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Tritium

Validation Level: Level V

Laboratory: TestAmerica Laboratories, Inc./Eberline Analytical

Sample Delivery Group (SDG): 280-7068-1/8983

Sample Identification

RD-33B_090210_01(T)
RD-63_090210_01(T)
RD-33B_090210_01(T)DUP

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per EPA Method 906.0 for Tritium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the isotope was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Sample FB_082510_19(T) (from SDG 280-6786-1/8980) was identified as a field blank. No tritium was found in this blank.

Sample EB_RD-85_082510(T) (from SDG 280-6786-1/8980) was identified as an equipment blank. No tritium was found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

VI. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-7068-1/8983	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG

VII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*VIII. Field Duplicates

Samples RD-63_090210_01(T) and RD-63_090210_03 (from SDG 260126) were identified as split samples. No tritium was detected in any of the samples.

*Added split samples (RPD) findings for samples RD-63_090210_01(T) and RD-63_090210_03.

Boeing SSFL GW 3rd Qtr
Tritium - Data Qualification Summary - SDG 280-7068-1/8983

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-7068-1/8983	RD-33B_090210_01(T) RD-63_090210_01(T)	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*VI)

Boeing SSFL GW 3rd Qtr
Tritium - Laboratory Blank Data Qualification Summary - SDG 280-7068-1/8983

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Tritium - Field Blank Data Qualification Summary - SDG 280-7068-1/8983

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24290B34 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/7/10
SDG #: 280-7068-1/8983 Level V Page: 1 of 1
Laboratory: Test America Laboratories, Inc./Eberline Analytical Reviewer: dc
2nd Reviewer: v

METHOD: Tritium (EPA Method 906.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/2/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IVa.	Matrix Spike/(Matrix Spike) Duplicates	A	DUP
IVb.	Laboratory control samples	A	LCS
V.	Minimum dectectable activity (MDA)	A	
VI.	Sample result verification	N	
VII.	Overall assessment of data	A	
VIII.	Field duplicates	ND	Split= (2, RD-63_090210_03 (SDG: 260126))
IX	Field blanks	ND	FB=FB_082510-19 (T) 280-6786-1/8980 EB=EB-RD-85_082510 (T)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	RD-33B_090210_01(T)	11	RFSW	21		31	
2	RD-63_090210_01(T)	12		22		32	
3	RD-33B_090210_01(T)DUP	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 2, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Isotopic Uranium

Validation Level: Level V

Laboratory: TestAmerica Laboratories, Inc./Eberline Analytical

Sample Delivery Group (SDG): 280-7068-1/8983

Sample Identification

RD-33B_090210_01(D)
RD-63_090210_01(D)
RD-33B_090210_01(D)DUP

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per EPA Method 908.0 for Isotopic Uranium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the isotope was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Sample FB_082510_19(D) (from SDG 280-6786-1/8980) was identified as a field blank. No isotopic uranium was found in this blank with the following exceptions:

Field Blank ID	Sampling Date	Isotope	Concentration	Associated Samples
FB_082510_19(D)	8/25/10	Uranium-233/234	0.085 pCi/L	RD-33B_090210_01(D) RD-63_090210_01(D)

Sample EB_RD-85_082510(D) (from SDG 280-6786-1/8980) was identified as an equipment blank. No isotopic uranium was found in this blank.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

c. Tracer Recovery

All tracer recoveries were within validation criteria.

V. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

VI. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-7068-1/8983	All analytes reported below the RL and above the MDL	J (all detects)	A

Raw data were not reviewed for this SDG

VII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*VIII. Field Duplicates

Samples RD-63_090210_01(D) and RD-63_090210_03 (from SDG 260126) were identified as split samples. No isotopic uranium was detected in any of the samples with the following exceptions:

Isotope	Concentration (pCi/L)		RPD (Limits)	Flags	A or P
	RD-63_090210_01(D)	RD-63_090210_03			
Uranium-233/234	5.22	4.86	7 (≤35)	-	-
Uranium-235	0.302	0.193U	44 (≤35)	NQ	-
Uranium-236	4.86	7.7	45 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

*Added split samples (RPD) findings for samples RD-63_090210_01(D) and RD-63_090210_03.

*Indicates change as the result of report review.

Boeing SSFL GW 3rd Qtr
Isotopic Uranium - Data Qualification Summary - SDG 280-7068-1/8983

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-7068-1/8983	RD-33B_090210_01(D) RD-63_090210_01(D)	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*VI)

Boeing SSFL GW 3rd Qtr
Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 280-7068-1/8983

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Isotopic Uranium - Field Blank Data Qualification Summary - SDG 280-7068-1/8983

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24290B59 **VALIDATION COMPLETENESS WORKSHEET** Date: 11-8-10
SDG #: 280-7068-1/8983 Level V Page: 1 of 1
Laboratory: Test America Laboratories, Inc./Eberline Analytical Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Isotopic Uranium (EPA Method 908.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/2/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IVa.	Matrix Spike/(Matrix Spike) Duplicates	A	DUP
IVa.	Laboratory control samples	A	LCS
V.	Tracer Recovery	A	
VI.	Minimum Detectable Activity (MDA)	A	
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	Split = (3, RD-63_090210_03 (506: 260126))
X	Field blanks	SW	See below

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: WATER

1	RD-33B_090210_01(D)	11	QBW	21		31	
2	~~RD-33B_090210_01(T)~~	12		22		32	
3	RD-63_090210_01(D)	13		23		33	
4	~~RD-63_090210_01(T)~~	14		24		34	
5	RD-33B_090210_01(D)DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: FB = FB_082510_19(D) (T)
EB = EB_RD-85_082510 (D) (T) 280-6780-1/8980

LDC #: 24290B59

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: OK
2nd Reviewer: [illegible]

METHOD: Radiochemistry, Method See Cover

(Y) N N/A Were field blanks identified in this SDG?
Y (N) N/A Were target analytes detected in the field blanks?

Blank units: pCi/L **Associated sample units:** pCi/L
Sampling date: 8/25/10 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: (FB) Associated Samples: 1, 3

Analyte	Blank ID	Action Limit	Sample Identification							
	FB_082510_19 (D) (SDG#: 280-6786-1 / 8980)		NoQual							
Uranium-233/234	0.085	0.425								

Field blank type: (circle one) Field Blank / Rinsate / Other: (FB) Associated Samples: 2, 4

Analyte	Blank ID	Action Limit	Sample Identification							
~~FB_082510_19 (T) (SDG#: 280-6786-1 / 8980)~~			NoQual							
Uranium-233/234	0.107	~~0.535~~								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC# 24081H59

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: SR
2nd Reviewer:

Radiochemistry, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Isotope	Activity (pCi/L)		RPD (≤35)	
	3	RD-63_090210-03		
Uranium-233/234	5.22	4.86	~~NA~~ 7	
Uranium-235	0.302	0.193U	~~NA~~ 44 (NQ)	
Uranium-238	4.86	7.7	~~NA~~ 45	↓

V:\FIELD DUPLICATES\FD_inorganic\24081H59.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr

Collection Date: September 2, 2010

LDC Report Date: December 1, 2010

Matrix: Water

Parameters: Strontium-90

Validation Level: Level V

Laboratory: TestAmerica Laboratories, Inc./Eberline Analytical

Sample Delivery Group (SDG): 280-7068-1/8983

Sample Identification

RD-33B_090210_01(D)
RD-63_090210_01(D)
RD-33B_090210_01(D)MS
RD-33B_090210_01(D)MSD
RD-33B_090210_01(D)DUP

Introduction

This data review covers 5 water samples listed on the cover sheet. The analyses were per EPA Method 905.0 for Strontium-90.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the isotope was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration data were not reviewed for Level V.

b. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

III. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Sample FB_082510_19(D) (from SDG 280-6786-1/8980) was identified as a field blank. No strontium-90 was found in this blank.

Sample EB_RD-85_082510(D) (from SDG 280-6786-1/8980) was identified as an equipment blank. No strontium-90 was found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Carrier Recovery

All carrier recoveries were within validation criteria.

VI. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

VII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-7068-1/8983	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

*IX. Field Duplicates

Samples RD-63_090210_01(D) and RD-63_090210_03 (from SDG 260126) were identified as split samples. No strontium-90 was detected in any of the samples.

*Added split samples (RPD) findings text.

Boeing SSFL GW 3rd Qtr
Strontium-90 - Data Qualification Summary - SDG 280-7068-1/8983

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-7068-1/8983	RD-33B_090210_01(D) RD-63_090210_01(D)	All analytes reported below the RL and above the MDL	J (all detects)	A	Sample result verification (*VII)

Boeing SSFL GW 3rd Qtr
Strontium-90 - Laboratory Blank Data Qualification Summary - SDG 280-7068-1/8983

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr
Strontium-90 - Field Blank Data Qualification Summary - SDG 280-7068-1/8983

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

LDC #: 24290B61 **VALIDATION COMPLETENESS WORKSHEET** Date: 11-8-10
SDG #: 280-7068-1/8983 Level V Page: 1 of 1
Laboratory: Test America Laboratories, Inc./Eberline Analytical Reviewer: CL
2nd Reviewer:

METHOD: Strontium-90 (EPA Method 905.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/2/10
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IVa.	Matrix Spike/(Matrix Spike) Duplicates	A	DUP, MS/D
IVb.	Laboratory control samples	A	LCS
IVc.	Carrier recovery	A	
V.	Minimum dectectable activity (MDA)	A	
VI.	Sample result verification	N	
VII.	Overall assessment of data	A	
VIII.	Field duplicates	ND	Split= (3, RD-63_090210_03 (SDG: 260126))
XIV	Field blanks	ND	See below

Note: A = Acceptable ND = No compounds detected D = Duplicate
N = Not provided/applicable R = Rinsate TB = Trip blank
SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: water

1	RD-33B_090210_01(D)	11	RBW	21		31	
2	RD-33B_090210_01(T)	12		22		32	
3	RD-63_090210_01(D)	13		23		33	
4	~~RD-63_090210_01(T)~~	14		24		34	
5	RD-33B_090210_01(D)MS	15		25		35	
6	RD-33B_090210_01(D)MSD	16		26		36	
7	RD-33B_090210_01(D)DUP	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: FB= FB-082510-19(D) (T)
EB= EB-RD85-082510(D) (T) 280-6786-1/8980