



A Waters Company

Larry Lem
CalScience Environmental Laboratories
7440 Lincoln Way
Garden Grove, CA 92841-1427



Air and Emissions Proficiency Testing

Air and Emissions Study

Open Date: 10/28/11

Close Date: 12/12/11

Report Issued Date: 12/29/11



A Waters Company

December 29, 2011

Larry Lem
CalScience Environmental Laboratories
7440 Lincoln Way
Garden Grove, CA 92841-1427

Enclosed is your final report for ERA's AE-18 Air and Emissions Proficiency Testing (PT) study. Your final report includes an evaluation of all results submitted by your laboratory to ERA.

All analytes in ERA's AE-18 Air and Emissions Proficiency Testing (PT) study have been evaluated using the following tiered approach: ERA has gathered proficiency testing data for air and emissions across many national and international studies. Where available, the acceptance criteria have been calculated using these studies' data. Where appropriate, ERA has based the acceptance criteria on the study means and study standard deviations. If the analyte is on the TNI FoPT table, it has been evaluated by comparing your results to the acceptance limits and evaluation criteria contained in the current TNI FoPT tables. Where these data were not available, the reported results have been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 0260).

Please note the following changes to our final reports:

- At the request of the TNI Accreditation Council, we have included a Laboratory Exception Report that includes a list of all analytes reported with less than qualifiers when the assigned value was greater than "0." In addition, because we have received many requests from laboratories, this report also includes a list of all analytes with "Not Acceptable" evaluations.
- Some states have elected not to convert to the 2009 TNI Standards at this time. If you have released your results to a state that has retained the 2003 NELAC Evaluation Criteria, your final report will include a section that evaluates the results according to the 2003 Standard in addition to the 2009 TNI Standards.

Corrective Action Help: As part of your accreditation(s), you may be required to identify the root cause of any "Not Acceptable" results, implement the necessary corrective actions, and then satisfy your PT requirements by participating in a Supplemental (QuiK™Response) or future ERA PT study. ERA's technical staff is available to help your laboratory resolve any technical issues that may be impairing your PT performance and possibly affecting your routine data quality. Our laboratory and technical staff have well over three hundred years of collective experience in performing the full range of environmental analyses. As part of our technical support, ERA offers QC samples that can be helpful in helping you work through your technical issues.

Thank you for your participation in ERA's AE-18 Air and Emissions Proficiency Testing (PT) study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

A handwritten signature in black ink that reads "Jay R. McBurney". The signature is written in a cursive, flowing style.

Jay R. McBurney
Quality Program Manager

attachments
jrm



A Waters Company

Report Recipient	Contact/Phone Number	Reporting Type	Evaluation Type
Alaska	Lance Morris / 907-375-8210	All Analytes	2009 TNI
California	Fred Choske / 510-620-3175	All Analytes	2009 TNI
DoD EDQW	Fred S McLean / 843-764-7266	All Analytes	2009 TNI
EPA Region 9	Andrew Lincoff / 510-412-2330	All Analytes	2009 TNI
Florida	Steve Arms / 904-791-1502	All Analytes	2009 TNI
Louisiana	Paul Bergeron / 225-219-1244	All Analytes	2009 TNI
Nevada	Sara Rairick / 775-687-9490	All Analytes	2003 NELAC
New York	Dan Dickinson / 518-485-5570	All Analytes	2003 NELAC
Oregon	Gary Ward / 503-693-4122	All Analytes	2009 TNI
Washington	Alan Rue / (360) 895-6178	All Analytes	2009 TNI
Perry Johnson Laboratory Accreditation, Inc.	Tracy Szerszen / 877-369-5227	All Analytes	2009 TNI

AE-18 Definitions & Study Discussion

Study Dates: 10/28/11 - 12/12/11

Report Issued: 12/29/11

AE Study Definitions

The Reported Value is the value that the laboratory reported to ERA.

The Assigned Values for ERA's Air and Emissions Proficiency Testing (PT) Standards are equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation as applicable. The assigned values are directly traceable to the commercially prepared starting materials used to manufacture the PT standards.

The Acceptance Limits are established per the 2009 TNI Standards criteria or ERA's SOP for the Generation of Performance Acceptance Limits™ as applicable.

The Performance Evaluation:

Acceptable	= Reported Value falls within the Acceptance Limits.
Not Acceptable	= Reported Value falls outside the Acceptance Limits.
No Evaluation	= Reported Value cannot be evaluated.
Not Reported	= No Value reported.

The Method Description is the method the laboratory reported to ERA.

AE Study Discussion

ERA's AE-18 Air and Emissions Proficiency Testing (PT) study has been reviewed by ERA senior management.

A full review of all homogeneity, stability and accuracy verification data was completed. All analytical verification data for all analytes in the Air and Emissions study standards met the acceptance criteria contained in the 2009 TNI PT Standards. The acceptance limits were calculated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 0260, Rev. 2.0).

The data submitted by participating laboratories was also examined for study anomalies. There were no anomalies observed during the statistical review of the data.

ERA's Air and Emissions Proficiency Testing study reports shall not be reproduced except in its entirety and not without the permission of the participating laboratory. The report must not be used by the participating laboratories to claim product endorsement any agency of the U. S. government.

The data contained herein are confidential and intended for your use only.

If you have any questions or concerns regarding your assessment in ERA's Air and Emissions Proficiency Testing program, please contact our Proficiency Testing Department at 1-800-372-0122.





AE-18 Laboratory Exception Report

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(714) 895-5494

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2009 TNI Evaluation Check: There are no values reported with < where the assigned value was greater than 0.

2009 TNI Not Acceptable Evaluations: There were no Not Acceptable evaluations for this study.

Final Report Results For Laboratory Calscience Environmental Laboratories



2009 TNI Evaluation Report

Study: **AE-18**

ERA Customer Number: **C052701**

Laboratory Name: **Calscience
Environmental
Laboratories**

Organic Results





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AE-18 2009 TNI Evaluation Final Complete Report

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NELAC Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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AE Volatiles in Gas Cylinder (cat# 1000)

4375	Benzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		8.65	9.69	
4395	Bromodichloromethane	ppbv	19.8	18.5	13.3 - 22.8	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.739	18.0	2.36	
4400	Bromoform	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		18.7	0.00	
4950	Bromomethane	ppbv	14.6	14.1	7.72 - 20.1	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.228	13.9	3.09	
4410	2-Butanone (MEK)	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		8.13	0.00	
5000	tert-Butyl methyl ether (MTBE)	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
4455	Carbon tetrachloride	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		9.89	0.00	
4475	Chlorobenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		31.3	0.00	
4575	Chlorodibromomethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.400	0.00	
4485	Chloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		6.22	0.00	
4505	Chloroform	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		12.7	0.00	
4960	Chloromethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		6.94	1.92	
4555	Cyclohexane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		4.28	2.94	
4585	1,2-Dibromoethane (EDB)	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		25.1	0.00	
4610	1,2-Dichlorobenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.840	0.323	
4620	1,4-Dichlorobenzene	ppbv	11.3	12.9	6.59 - 14.6	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.363	10.6	2.00	
4625	Dichlorodifluoromethane (Freon 12)	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
4630	1,1-Dichloroethane	ppbv	30.6	28.0	22.9 - 33.3	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.954	28.1	2.60	
4635	1,2-Dichloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		18.4	4.06	
4640	1,1-Dichloroethylene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		7.68	0.00	
4645	cis-1,2-Dichloroethylene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		11.7	0.00	





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AE Volatiles in Gas Cylinder (cat# 1000) (Continued)

4655	1,2-Dichloropropane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		13.8	0.00	
4680	cis-1,3-Dichloropropylene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		8.34	11.0	
4685	trans-1,3-Dichloropropylene	ppbv	< 1.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		21.2	0.00	
4695	1,2-Dichlorotetrafluoroethane (Freon 114)	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		6.18	0.00	
4765	Ethylbenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		9.42	15.5	
4542	p-Ethyltoluene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
4825	n-Heptane	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
4835	Hexachlorobutadiene	ppbv	12.0	14.9	4.67 - 24.2	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	-0.499	14.4	4.88	
4855	n-Hexane	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		14.6	16.6	
4860	2-Hexanone	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
4995	4-Methyl-2-pentanone (MIBK)	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
4836	Propylene	ppbv	< 10.0	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
5105	1,1,1,2-Tetrachloroethane	ppbv		< 1.00	0.00 - 1.00	Not Reported				0.00	0.00	
5110	1,1,2,2-Tetrachloroethane	ppbv	< 1.0	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		64.4	0.00	
5115	Tetrachloroethylene	ppbv	28.4	26.5	20.6 - 30.3	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	1.22	25.4	2.43	
5140	Toluene	ppbv	5.44	5.20	2.82 - 6.90	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.572	4.86	1.02	
5155	1,2,4-Trichlorobenzene	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		119	0.00	
5160	1,1,1-Trichloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		9.32	0.00	
5165	1,1,2-Trichloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		30.1	0.00	
5175	Trichlorofluoromethane (Freon 11)	ppbv	< 1.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		7.89	0.00	
5195	Trichlorotrifluoroethane (Freon 113)	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		8.23	0.00	





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AE Volatiles in Gas Cylinder (cat# 1000) (Continued)

5210	1,2,4-Trimethylbenzene	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		85.5	0.00	
5215	1,3,5-Trimethylbenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		70.2	0.00	
5230	Vinyl bromide	ppbv		< 1.00	0.00 - 1.00	Not Reported				0.00	0.00	
5235	Vinyl chloride	ppbv	21.9	21.8	14.4 - 25.4	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.725	19.9	2.74	
5260	Xylenes, total	ppbv	12.3	12.9	6.78 - 15.1	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.654	10.9	2.08	





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AE Volatiles in Gas Cylinder (cat# 1000)

4375	Benzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		8.65	9.69	
4395	Bromodichloromethane	ppbv	19.8	18.5	13.3 - 22.8	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.739	18.0	2.36	
4400	Bromoform	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		18.7	0.00	
4950	Bromomethane	ppbv	14.6	14.1	7.72 - 20.1	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.228	13.9	3.09	
4410	2-Butanone (MEK)	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		8.13	0.00	
5000	tert-Butyl methyl ether (MTBE)	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
4455	Carbon tetrachloride	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		9.89	0.00	
4475	Chlorobenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		31.3	0.00	
4575	Chlorodibromomethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.400	0.00	
4485	Chloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		6.22	0.00	
4505	Chloroform	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		12.7	0.00	
4960	Chloromethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		6.94	1.92	
4555	Cyclohexane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		4.28	2.94	
4585	1,2-Dibromoethane (EDB)	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		25.1	0.00	
4610	1,2-Dichlorobenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.840	0.323	
4620	1,4-Dichlorobenzene	ppbv	11.3	12.9	6.59 - 14.6	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.363	10.6	2.00	
4625	Dichlorodifluoromethane (Freon 12)	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
4630	1,1-Dichloroethane	ppbv	30.6	28.0	22.9 - 33.3	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.954	28.1	2.60	





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AE Volatiles in Gas Cylinder (cat# 1000) (Continued)

4635	1,2-Dichloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		18.4	4.06	
4640	1,1-Dichloroethylene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		7.68	0.00	
4645	cis-1,2-Dichloroethylene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		11.7	0.00	
4655	1,2-Dichloropropane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		13.8	0.00	
4680	cis-1,3-Dichloropropylene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		8.34	11.0	
4685	trans-1,3-Dichloropropylene	ppbv	< 1.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		21.2	0.00	
4695	1,2-Dichlorotetrafluoroethane (Freon 114)	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		6.18	0.00	
4765	Ethylbenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		9.42	15.5	
4542	p-Ethyltoluene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
4825	n-Heptane	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
4835	Hexachlorobutadiene	ppbv	12.0	14.9	4.67 - 24.2	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	-0.499	14.4	4.88	
4855	n-Hexane	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		14.6	16.6	
4860	2-Hexanone	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
4995	4-Methyl-2-pentanone (MIBK)	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
4836	Propylene	ppbv	< 10.0	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
5105	1,1,1,2-Tetrachloroethane	ppbv		< 1.00	0.00 - 1.00	Not Reported				0.00	0.00	
5110	1,1,2,2-Tetrachloroethane	ppbv	< 1.0	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		64.4	0.00	
5115	Tetrachloroethylene	ppbv	28.4	26.5	20.6 - 30.3	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	1.22	25.4	2.43	





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AE Volatiles in Gas Cylinder (cat# 1000) (Continued)

5140	Toluene	ppbv	5.44	5.20	2.82 - 6.90	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.572	4.86	1.02	
5155	1,2,4-Trichlorobenzene	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		119	0.00	
5160	1,1,1-Trichloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		9.32	0.00	
5165	1,1,2-Trichloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		30.1	0.00	
5175	Trichlorofluoromethane (Freon 11)	ppbv	< 1.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		7.89	0.00	
5195	Trichlorotrifluoroethane (Freon 113)	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		8.23	0.00	
5210	1,2,4-Trimethylbenzene	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		85.5	0.00	
5215	1,3,5-Trimethylbenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		70.2	0.00	
5230	Vinyl bromide	ppbv		< 1.00	0.00 - 1.00	Not Reported				0.00	0.00	
5235	Vinyl chloride	ppbv	21.9	21.8	14.4 - 25.4	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.725	19.9	2.74	
5260	Xylenes, total	ppbv	12.3	12.9	6.78 - 15.1	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.654	10.9	2.08	



Final Report Results For Laboratory Calscience Environmental Laboratories

2003 NELAC Evaluation Report

Study: **AE-18**

ERA Customer Number: **C052701**

Laboratory Name: **Calscience
Environmental
Laboratories**

Organic Results





A Waters Company

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AE Volatiles in Gas Cylinder (cat# 1000)

4375	Benzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		8.65	9.69	
4395	Bromodichloromethane	ppbv	19.8	18.5	13.3 - 22.8	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.739	18.0	2.36	
4400	Bromoform	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		18.7	0.00	
4950	Bromomethane	ppbv	14.6	14.1	7.72 - 20.1	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.228	13.9	3.09	
4410	2-Butanone (MEK)	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		8.13	0.00	
5000	tert-Butyl methyl ether (MTBE)	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
4455	Carbon tetrachloride	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		9.89	0.00	
4475	Chlorobenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		31.3	0.00	
4575	Chlorodibromomethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.400	0.00	
4485	Chloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		6.22	0.00	
4505	Chloroform	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		12.7	0.00	
4960	Chloromethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		6.94	1.92	
4555	Cyclohexane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		4.28	2.94	
4585	1,2-Dibromoethane (EDB)	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		25.1	0.00	
4610	1,2-Dichlorobenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.840	0.323	
4620	1,4-Dichlorobenzene	ppbv	11.3	12.9	6.59 - 14.6	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.363	10.6	2.00	
4625	Dichlorodifluoromethane (Freon 12)	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
4630	1,1-Dichloroethane	ppbv	30.6	28.0	22.9 - 33.3	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.954	28.1	2.60	
4635	1,2-Dichloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		18.4	4.06	
4640	1,1-Dichloroethylene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		7.68	0.00	
4645	cis-1,2-Dichloroethylene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		11.7	0.00	





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AE Volatiles in Gas Cylinder (cat# 1000) (Continued)

4655	1,2-Dichloropropane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		13.8	0.00	
4680	cis-1,3-Dichloropropylene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		8.34	11.0	
4685	trans-1,3-Dichloropropylene	ppbv	< 1.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		21.2	0.00	
4695	1,2-Dichlorotetrafluoroethane (Freon 114)	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		6.18	0.00	
4765	Ethylbenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		9.42	15.5	
4542	p-Ethyltoluene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
4825	n-Heptane	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
4835	Hexachlorobutadiene	ppbv	12.0	14.9	4.67 - 24.2	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	-0.499	14.4	4.88	
4855	n-Hexane	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		14.6	16.6	
4860	2-Hexanone	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
4995	4-Methyl-2-pentanone (MIBK)	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
4836	Propylene	ppbv	< 10.0	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		0.00	0.00	
5105	1,1,1,2-Tetrachloroethane	ppbv		< 1.00	0.00 - 1.00	Not Reported				0.00	0.00	
5110	1,1,2,2-Tetrachloroethane	ppbv	< 1.0	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		64.4	0.00	
5115	Tetrachloroethylene	ppbv	28.4	26.5	20.6 - 30.3	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	1.22	25.4	2.43	
5140	Toluene	ppbv	5.44	5.20	2.82 - 6.90	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.572	4.86	1.02	
5155	1,2,4-Trichlorobenzene	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		119	0.00	
5160	1,1,1-Trichloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		9.32	0.00	
5165	1,1,2-Trichloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		30.1	0.00	
5175	Trichlorofluoromethane (Freon 11)	ppbv	< 1.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		7.89	0.00	
5195	Trichlorotrifluoroethane (Freon 113)	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		8.23	0.00	





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AE Volatiles in Gas Cylinder (cat# 1000) (Continued)

5210	1,2,4-Trimethylbenzene	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		85.5	0.00	
5215	1,3,5-Trimethylbenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-15 GCMS 1999	11/21/2011		70.2	0.00	
5230	Vinyl bromide	ppbv		< 1.00	0.00 - 1.00	Not Reported				0.00	0.00	
5235	Vinyl chloride	ppbv	21.9	21.8	14.4 - 25.4	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.725	19.9	2.74	
5260	Xylenes, total	ppbv	12.3	12.9	6.78 - 15.1	Acceptable	EPA TO-15 GCMS 1999	11/21/2011	0.654	10.9	2.08	





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AE Volatiles in Gas Cylinder (cat# 1000)

4375	Benzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		8.65	9.69	
4395	Bromodichloromethane	ppbv	19.8	18.5	13.3 - 22.8	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.739	18.0	2.36	
4400	Bromoform	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		18.7	0.00	
4950	Bromomethane	ppbv	14.6	14.1	7.72 - 20.1	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.228	13.9	3.09	
4410	2-Butanone (MEK)	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		8.13	0.00	
5000	tert-Butyl methyl ether (MTBE)	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
4455	Carbon tetrachloride	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		9.89	0.00	
4475	Chlorobenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		31.3	0.00	
4575	Chlorodibromomethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.400	0.00	
4485	Chloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		6.22	0.00	
4505	Chloroform	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		12.7	0.00	
4960	Chloromethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		6.94	1.92	
4555	Cyclohexane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		4.28	2.94	
4585	1,2-Dibromoethane (EDB)	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		25.1	0.00	
4610	1,2-Dichlorobenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.840	0.323	
4620	1,4-Dichlorobenzene	ppbv	11.3	12.9	6.59 - 14.6	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.363	10.6	2.00	
4625	Dichlorodifluoromethane (Freon 12)	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
4630	1,1-Dichloroethane	ppbv	30.6	28.0	22.9 - 33.3	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.954	28.1	2.60	





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AE Volatiles in Gas Cylinder (cat# 1000) (Continued)

4635	1,2-Dichloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		18.4	4.06	
4640	1,1-Dichloroethylene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		7.68	0.00	
4645	cis-1,2-Dichloroethylene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		11.7	0.00	
4655	1,2-Dichloropropane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		13.8	0.00	
4680	cis-1,3-Dichloropropylene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		8.34	11.0	
4685	trans-1,3-Dichloropropylene	ppbv	< 1.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		21.2	0.00	
4695	1,2-Dichlorotetrafluoroethane (Freon 114)	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		6.18	0.00	
4765	Ethylbenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		9.42	15.5	
4542	p-Ethyltoluene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
4825	n-Heptane	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
4835	Hexachlorobutadiene	ppbv	12.0	14.9	4.67 - 24.2	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	-0.499	14.4	4.88	
4855	n-Hexane	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		14.6	16.6	
4860	2-Hexanone	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
4995	4-Methyl-2-pentanone (MIBK)	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
4836	Propylene	ppbv	< 10.0	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		0.00	0.00	
5105	1,1,1,2-Tetrachloroethane	ppbv		< 1.00	0.00 - 1.00	Not Reported				0.00	0.00	
5110	1,1,2,2-Tetrachloroethane	ppbv	< 1.0	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		64.4	0.00	
5115	Tetrachloroethylene	ppbv	28.4	26.5	20.6 - 30.3	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	1.22	25.4	2.43	





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AE Volatiles in Gas Cylinder (cat# 1000) (Continued)

5140	Toluene	ppbv	5.44	5.20	2.82 - 6.90	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.572	4.86	1.02	
5155	1,2,4-Trichlorobenzene	ppbv	< 2.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		119	0.00	
5160	1,1,1-Trichloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		9.32	0.00	
5165	1,1,2-Trichloroethane	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		30.1	0.00	
5175	Trichlorofluoromethane (Freon 11)	ppbv	< 1.00	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		7.89	0.00	
5195	Trichlorotrifluoroethane (Freon 113)	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		8.23	0.00	
5210	1,2,4-Trimethylbenzene	ppbv	< 1.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		85.5	0.00	
5215	1,3,5-Trimethylbenzene	ppbv	< 0.50	< 1.00	0.00 - 1.00	Acceptable	EPA TO-14A GCMS 1999	11/21/2011		70.2	0.00	
5230	Vinyl bromide	ppbv		< 1.00	0.00 - 1.00	Not Reported				0.00	0.00	
5235	Vinyl chloride	ppbv	21.9	21.8	14.4 - 25.4	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.725	19.9	2.74	
5260	Xylenes, total	ppbv	12.3	12.9	6.78 - 15.1	Acceptable	EPA TO-14A GCMS 1999	11/21/2011	0.654	10.9	2.08	

