



A Waters Company

Thekkekalathil Madhavan Chandrasekhar
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2600 Blair Stone Road
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USA

SOIL-92



Final Report

Soil/Hazardous Waste Proficiency Testing

Soil Study

Open Date: 10/19/15

Close Date: 12/03/15

Report Issued Date: 12/07/15



A Waters Company

December 7, 2015

Thekkekalathil Madhavan Chandrasekhar
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Enclosed is your final report for ERA's SOIL-92 Proficiency Testing (PT) study. Your final report includes an evaluation of all results submitted by your laboratory to ERA.

Data Evaluation Protocols: All analytes in ERA's SOIL-92 Proficiency Testing study have been evaluated using the following tiered approach. If the analyte is listed in the current TNI Fields of Proficiency Testing (FoPT) tables, the evaluation was completed by comparing the reported result to the acceptance limits generated using the criteria contained in the current TNI FoPT tables. If the analyte is not included in the TNI FoPT tables, the reported result has been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 0260).

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 many 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 useful in helping you work through your technical issues.

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.

Thank you for your participation in ERA's SOIL-92 Proficiency Testing study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

David Kilhefner
Quality Officer

attachments



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Report Recipient	Contact/Phone Number	Reporting Type	Evaluation Type
Florida	Steve Arms / 904-791-1502	All Analytes	2009 TNI



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SOIL-92 Definitions & Study Discussion

Study Dates: 10/19/15 - 12/03/15

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SOIL Study Definitions

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

The ERA Assigned Values for the Organic Proficiency Testing Standards, with the exception of Acetonitrile in the Volatiles in Soil sample, 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 ERA assigned value for Acetonitrile is equal to the mean of the study data, after the removal of outliers. The ERA assigned values for the Inorganic Proficiency Testing Standards, with the exception of the TCLP Metals in Soil and Total Organic Carbon (TOC) in the Nutrients in Soil sample, are equal to the maximum amount of the parameter available in the standard by applicable EPA methodologies. The ERA assigned values for the TCLP metals and TOC are equal to the mean of the study data, after the removal of outliers. All parameters not added to the standard are given an Assigned Value of "< PTRL", per the guidelines contained in the 2009 TNI Standards. 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 criteria contained in the most current TNI Fields of Proficiency Testing (FoPT) tables, 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.

SOIL Study Discussion

ERA's SOIL-92 Proficiency Testing (PT) study has been reviewed by ERA senior management and certified compliant with the requirements of the 2009 TNI PT Standard and the criteria contained in the most current TNI Fields of Proficiency Testing (FoPT) tables.

ERA's SOIL-92 study standards were examined for any anomalies. A full review of all homogeneity, stability and accuracy verification data was completed. All analytical verification data for all analytes in the standards met the acceptance criteria contained in the 2009 TNI PT Standard and the criteria contained in the most current TNI FoPT tables.

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 SOIL-92 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 SOIL Proficiency Testing program, please contact our Proficiency Testing Department at 1-800-372-0122.





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SOIL-92 Laboratory Exception Report

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2009 TNI Evaluation Checks

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 State of Florida DEP Chemistry Laboratory

2009 TNI Evaluation Report

Study: **SOIL-92**

ERA Customer Number: **S744803**

Laboratory Name: **State of Florida DEP
Chemistry Laboratory**

Organic Results



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SOIL-92 2009 TNI Evaluation Final Complete Report

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TNI 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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SOIL Nitroaromatics & Nitramines in Soil (cat# 871, lot# D092-920)

9306	4-Amino-2,6-dinitrotoluene	µg/kg		2330	1130 - 2560	Not Reported				1630	166	
9303	2-Amino-4,6-dinitrotoluene	µg/kg		2380	1330 - 2620	Not Reported				1970	213	
6160	1,3-Dinitrobenzene	µg/kg	6980	7000	4410 - 9190	Acceptable	EPA 8270D 2007	11/9/2015	0.229	6800	796	GHAFFARI_M
6185	2,4-Dinitrotoluene	µg/kg		6760	1570 - 10600	Not Reported				6080	784	
6190	2,6-Dinitrotoluene	µg/kg		2910	955 - 4560	Not Reported				2760	521	
9522	HMX	µg/kg		1550	910 - 1790	Not Reported				1350	147	
5015	Nitrobenzene	µg/kg		11200	2980 - 17700	Not Reported				10400	1460	
9507	2-Nitrotoluene	µg/kg		8690	6210 - 9560	Not Reported				7840	545	
9510	3-Nitrotoluene	µg/kg		9100	6790 - 10500	Not Reported				8660	623	
9513	4-Nitrotoluene	µg/kg		7780	5850 - 9560	Not Reported				7710	618	
9432	RDX	µg/kg		1700	991 - 1960	Not Reported				1480	162	
6415	Tetryl	µg/kg		< 1500	0.00 - 1500	Not Reported						
6885	1,3,5-Trinitrobenzene	µg/kg	3650	3750	2170 - 4400	Acceptable	EPA 8270D 2007	11/9/2015	0.992	3280	372	GHAFFARI_M
9651	2,4,6-Trinitrotoluene	µg/kg		3730	1550 - 4100	Not Reported				2150	201	



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL-92 2009 TNI Evaluation Final Complete Report

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SOIL Organochlorine Pesticides in Soil (cat# 468, lot# D092-728)

7025	Aldrin	µg/kg	169	250	65.7 - 297	Acceptable	EPA 8270D 2007	11/11/2015	-0.344	181	35.8	CARBONE_I
7110	alpha-BHC	µg/kg	117	155	39.7 - 207	Acceptable	EPA 8270D 2007	11/11/2015	-0.259	124	25.2	CARBONE_I
7115	beta-BHC	µg/kg	105	168	28.2 - 250	Acceptable	EPA 8270D 2007	11/11/2015	-1.08	139	31.6	CARBONE_I
7105	delta-BHC	µg/kg	149	200	47.0 - 292	Acceptable	EPA 8270D 2007	11/11/2015	-0.523	170	39.6	CARBONE_I
7120	gamma-BHC(Lindane)	µg/kg	191	219	57.9 - 309	Acceptable	EPA 8270D 2007	11/11/2015	0.194	184	37.9	CARBONE_I
7240	alpha-Chlordane	µg/kg	146	181	59.0 - 238	Acceptable	EPA 8270D 2007	11/11/2015	-0.0890	149	28.9	CARBONE_I
7245	gamma-Chlordane	µg/kg	364	461	189 - 567	Acceptable	EPA 8270D 2007	11/11/2015	-0.183	378	75.6	CARBONE_I
7355	4,4'-DDD	µg/kg	223	302	103 - 417	Acceptable	EPA 8270D 2007	11/11/2015	-0.711	260	52.5	CARBONE_I
7360	4,4'-DDE	µg/kg	241	331	112 - 441	Acceptable	EPA 8270D 2007	11/11/2015	-0.614	277	58.0	CARBONE_I
7365	4,4'-DDT	µg/kg	210	245	59.6 - 353	Acceptable	EPA 8270D 2007	11/11/2015	0.0728	206	48.9	CARBONE_I
7470	Dieldrin	µg/kg	94.3	94.1	21.5 - 141	Acceptable	EPA 8270D 2007	11/11/2015	0.810	81.1	16.3	CARBONE_I
7540	Endrin	µg/kg	117	126	39.6 - 175	Acceptable	EPA 8270D 2007	11/11/2015	0.360	107	26.7	CARBONE_I
7530	Endrin aldehyde	µg/kg	105	160	16.0 - 182	Acceptable	EPA 8270D 2007	11/11/2015	0.693	89.5	22.4	CARBONE_I
7535	Endrin ketone	µg/kg	245	293	71.1 - 391	Acceptable	EPA 8270D 2007	11/11/2015	0.279	231	49.3	CARBONE_I
7510	Endosulfan I	µg/kg	241	302	84.3 - 355	Acceptable	EPA 8270D 2007	11/11/2015	0.466	220	45.6	CARBONE_I
7515	Endosulfan II	µg/kg	307	366	78.0 - 403	Acceptable	EPA 8270D 2007	11/11/2015	1.68	224	49.6	CARBONE_I
7520	Endosulfan sulfate	µg/kg	126	160	30.2 - 229	Acceptable	EPA 8270D 2007	11/11/2015	-0.125	129	27.9	CARBONE_I
7685	Heptachlor	µg/kg	304	467	135 - 603	Acceptable	EPA 8270D 2007	11/11/2015	-0.853	369	76.1	CARBONE_I
7690	Heptachlor epoxide	µg/kg	185	245	85.6 - 329	Acceptable	EPA 8270D 2007	11/11/2015	-0.580	207	38.7	CARBONE_I
7810	Methoxychlor	µg/kg	272	358	35.8 - 528	Acceptable	EPA 8270D 2007	11/11/2015	-0.121	282	79.0	CARBONE_I



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Study # : SOIL-92





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SOIL-92 2009 TNI Evaluation Final Complete Report

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SOIL Chlordane in Soil (cat# 628, lot# D092-725)

7250	Chlordane, technical	µg/kg	807	814	161 - 1050	Acceptable	EPA 8276 2010	11/5/2015	1.36	608	147	NAGAR_V
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SOIL Toxaphene in Soil (cat# 627, lot# D092-724)

8250	Toxaphene	µg/kg	959	1450	145 - 2030	Acceptable	EPA 8276 2010	11/5/2015	-0.382	1080	317	NAGAR_V
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SOIL Organophosphorus Pesticides in Soil (cat# 878, lot# D092-925)

7075	Azinphos-methyl (Guthion)	µg/kg	414	671	27.7 - 1080	Acceptable	EPA 8141B 2000	11/3/2015	-1.04	463	47.3	BURGOS_J
7300	Chlorpyrifos	µg/kg	< 17.0	< 100	0.00 - 100	Acceptable	EPA 8141B 2000	11/3/2015				BURGOS_J
7395	Demeton-O	µg/kg		< 100	0.00 - 100	Not Reported						
7385	Demeton-S	µg/kg		< 100	0.00 - 100	Not Reported						
7410	Diazinon	µg/kg	< 17.0	< 100	0.00 - 100	Acceptable	EPA 8141B 2000	11/3/2015				BURGOS_J
8610	Dichlorvos (DDVP)	µg/kg		< 100	0.00 - 100	Not Reported						
8625	Disulfoton	µg/kg	349	537	10.2 - 632	Acceptable	EPA 8141B 2000	11/3/2015	1.73	232	67.2	BURGOS_J
7955	Ethyl Parathion	µg/kg	423	464	59.7 - 701	Acceptable	EPA 8141B 2000	11/3/2015	0.362	401	61.8	BURGOS_J
7770	Malathion	µg/kg	637	798	88.8 - 1100	Acceptable	EPA 8141B 2000	11/3/2015	1.42	521	81.4	BURGOS_J
7825	Methyl Parathion	µg/kg	180	235	28.2 - 310	Acceptable	EPA 8141B 2000	11/3/2015	1.36	146	25.2	BURGOS_J
7985	Phorate	µg/kg	184	262	33.5 - 301	Acceptable	EPA 8141B 2000	11/3/2015	0.752	170	18.9	BURGOS_J
8110	Ronnel	µg/kg		< 100	0.00 - 100	Not Reported						
8200	Stirophos (tetrachlorovinphos)	µg/kg		< 100	0.00 - 100	Not Reported						
8185	Terbufos	µg/kg	257	306	108 - 419	Acceptable	EPA 8141B 2000	11/3/2015	0.707	224	47.4	BURGOS_J



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SOIL PCBs in Soil (cat# 624, lot# D092-726)

8880	Aroclor 1016	mg/kg	< 0.000670	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	11/6/2015				CARBONE_I
8885	Aroclor 1221	mg/kg	< 0.000670	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	11/6/2015				CARBONE_I
8890	Aroclor 1232	mg/kg	< 0.000670	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	11/6/2015				CARBONE_I
8895	Aroclor 1242	mg/kg	< 0.000670	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	11/6/2015				CARBONE_I
8900	Aroclor 1248	mg/kg	< 0.000670	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	11/6/2015				CARBONE_I
8905	Aroclor 1254	mg/kg	< 0.000670	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	11/6/2015				CARBONE_I
8910	Aroclor 1260	mg/kg	1.96	2.67	0.424 - 4.34	Acceptable	EPA 8082A 2000	11/6/2015	-0.684	2.38	0.620	CARBONE_I



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

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CERTIFICATE OF EXCELLENCE

In recognition of the quality of your laboratory in proficiency testing for
SOIL-92

State of Florida DEP Chemistry Laboratory

is issued this certificate of achievement by ERA. This laboratory has been recognized as a Laboratory of Excellence for achieving 100% acceptable data in this study which included 231 participating laboratories. This achievement is a demonstration of the superior quality of the laboratory in evaluation of the standards listed below.

Chlordane in Soil

Organochlorine Pesticides in
Soil

PCBs in Soil

Nitroaromatics & Nitramines in
Soil

Organophosphorus Pesticides
in Soil

Toxaphene in Soil



David Kilhefner
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