



A Waters Company

Thekkekalathil Madhavan Chandrasekhar
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2600 Blair Stone Road
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USA

SOIL-90



Final Report

Soil/Hazardous Waste Proficiency Testing

Soil Study

Open Date: 04/20/15

Close Date: 06/04/15

Report Issued Date: 06/08/15



A Waters Company

June 8, 2015

Thekkekalathil Madhavan Chandrasekhar
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Enclosed is your final report for ERA's SOIL-90 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-90 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-90 Proficiency Testing study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

Kristina Sanchez
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-90 Definitions & Study Discussion

Study Dates: 04/20/15 - 06/04/15

Report Issued: 06/08/15

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-90 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-90 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-90 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-90 Laboratory Exception Report

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S744803
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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.



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

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Final Report Results For Laboratory State of Florida DEP Chemistry Laboratory

2009 TNI Evaluation Report

Study: **SOIL-90**

ERA Customer Number: **S744803**

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

Inorganic Results



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SOIL-90 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 Cyanide in Soil (cat# 621)

1635	Cyanide, total	mg/kg	61.7	74.6	19.3 - 85.1	Acceptable	EPA 9012B 2004	5/12/2015	0.538	52.2	17.6	BROWN_V
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported						
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported						

SOIL Ignitability/Flashpoint (cat# 874)

1780	Ignitability/Flashpoint	°F	108	106	89.0 - 123	Acceptable	EPA 1010A 2002	6/3/2015	0.0162	108	4.35	BETTINA_T
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2009 TNI Evaluation Report

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Organic Results



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SOIL-90 2009 TNI Evaluation Final Complete Report

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SOIL Nitroaromatics & Nitramines in Soil (cat# 871)

9306	4-Amino-2,6-dinitrotoluene	µg/kg		2180	970 - 2520	Not Reported				1750	259	
9303	2-Amino-4,6-dinitrotoluene	µg/kg		3110	2070 - 3420	Not Reported				2720	215	
6160	1,3-Dinitrobenzene	µg/kg	2710	3500	2550 - 3940	Acceptable	EPA 8270D 2007	5/13/2015	-2.31	3250	232	GHAFFARI_M
6185	2,4-Dinitrotoluene	µg/kg		7410	1740 - 11500	Not Reported				6600	680	
6190	2,6-Dinitrotoluene	µg/kg		3280	1060 - 4910	Not Reported				2980	338	
9522	HMX	µg/kg		< 1500	0.00 - 1500	Not Reported						
5015	Nitrobenzene	µg/kg		4260	860 - 6820	Not Reported				3840	307	
9507	2-Nitrotoluene	µg/kg		7900	3150 - 10100	Not Reported				6630	1160	
9510	3-Nitrotoluene	µg/kg		6500	5160 - 7380	Not Reported				6270	369	
9513	4-Nitrotoluene	µg/kg		8450	4610 - 10400	Not Reported				7510	968	
9432	RDX	µg/kg		1860	1320 - 2050	Not Reported				1600	90.8	
6415	Tetryl	µg/kg		< 1500	0.00 - 1500	Not Reported						
6885	1,3,5-Trinitrobenzene	µg/kg	1670	2230	1160 - 2820	Acceptable	EPA 8270D 2007	5/13/2015	-1.15	1990	277	GHAFFARI_M
9651	2,4,6-Trinitrotoluene	µg/kg		3470	1960 - 3820	Not Reported				2590	210	



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SOIL Organochlorine Pesticides in Soil (cat# 468)

7025	Aldrin	µg/kg	272	368	111 - 482	Acceptable	EPA 8270D 2007	5/13/2015	-0.509	297	48.6	CARBONE_I
7110	alpha-BHC	µg/kg	208	288	84.9 - 389	Acceptable	EPA 8270D 2007	5/13/2015	-0.628	237	46.0	CARBONE_I
7115	beta-BHC	µg/kg	247	314	65.7 - 468	Acceptable	EPA 8270D 2007	5/13/2015	-0.392	267	50.1	CARBONE_I
7105	delta-BHC	µg/kg	150	182	43.8 - 278	Acceptable	EPA 8270D 2007	5/13/2015	-0.364	161	29.8	CARBONE_I
7120	gamma-BHC(Lindane)	µg/kg	147	186	47.1 - 268	Acceptable	EPA 8270D 2007	5/13/2015	-0.375	158	28.1	CARBONE_I
7240	alpha-Chlordane	µg/kg	51.4	60.5	18.9 - 88.4	Acceptable	EPA 8270D 2007	5/13/2015	-0.199	53.7	11.5	CARBONE_I
7245	gamma-Chlordane	µg/kg	334	405	166 - 503	Acceptable	EPA 8270D 2007	5/13/2015	-0.00324	334	64.3	CARBONE_I
7355	4,4'-DDD	µg/kg	176	217	66.9 - 306	Acceptable	EPA 8270D 2007	5/13/2015	-0.365	186	28.0	CARBONE_I
7360	4,4'-DDE	µg/kg	411	485	176 - 655	Acceptable	EPA 8270D 2007	5/13/2015	-0.0578	415	76.7	CARBONE_I
7365	4,4'-DDT	µg/kg	51.9	76.2	14.6 - 123	Acceptable	EPA 8270D 2007	5/13/2015	-0.931	69.1	18.4	CARBONE_I
7470	Dieldrin	µg/kg	264	318	113 - 420	Acceptable	EPA 8270D 2007	5/13/2015	-0.0561	267	46.5	CARBONE_I
7540	Endrin	µg/kg	281	336	146 - 442	Acceptable	EPA 8270D 2007	5/13/2015	-0.229	294	57.5	CARBONE_I
7530	Endrin aldehyde	µg/kg	304	460	66.0 - 561	Acceptable	EPA 8270D 2007	5/13/2015	-0.134	313	70.1	CARBONE_I
7535	Endrin ketone	µg/kg	313	424	109 - 575	Acceptable	EPA 8270D 2007	5/13/2015	-0.385	342	75.4	CARBONE_I
7510	Endosulfan I	µg/kg	204	269	73.8 - 320	Acceptable	EPA 8270D 2007	5/13/2015	0.196	197	37.3	CARBONE_I
7515	Endosulfan II	µg/kg	127	184	38.2 - 206	Acceptable	EPA 8270D 2007	5/13/2015	0.169	122	29.1	CARBONE_I
7520	Endosulfan sulfate	µg/kg	267	327	73.0 - 479	Acceptable	EPA 8270D 2007	5/13/2015	-0.172	276	52.9	CARBONE_I
7685	Heptachlor	µg/kg	292	417	119 - 534	Acceptable	EPA 8270D 2007	5/13/2015	-0.515	327	67.6	CARBONE_I
7690	Heptachlor epoxide	µg/kg	251	298	108 - 410	Acceptable	EPA 8270D 2007	5/13/2015	-0.179	259	44.5	CARBONE_I
7810	Methoxychlor	µg/kg	362	467	52.3 - 686	Acceptable	EPA 8270D 2007	5/13/2015	-0.0701	369	99.4	CARBONE_I



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SOIL Chlordane in Soil (cat# 628)

7250	Chlordane, technical	µg/kg	559	621	125 - 831	Acceptable	EPA 8276	5/12/2015	0.629	478	129	TOPOLSKI_M
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SOIL Toxaphene in Soil (cat# 627)

8250	Toxaphene	µg/kg	841	1440	144 - 1930	Acceptable	EPA 8276	5/12/2015	-0.649	1030	299	TOPOLSKI_M
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SOIL Organophosphorus Pesticides in Soil (cat# 878)

7075	Azinphos-methyl (Guthion)	µg/kg	331	349	95.6 - 435	Acceptable	EPA 8141B 2000	5/6/2015	1.16	265	56.6	BURGOS_J
7300	Chlorpyrifos	µg/kg	< 17.0	< 100	0.00 - 100	Acceptable	EPA 8141B 2000	5/6/2015				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	5/6/2015				BURGOS_J
8610	Dichlorvos (DDVP)	µg/kg		< 100	0.00 - 100	Not Reported						
8625	Disulfoton	µg/kg	686	662	116 - 728	Acceptable	EPA 8141B 2000	5/6/2015	4.88	333	72.3	BURGOS_J
7955	Ethyl Parathion	µg/kg	970	839	92.6 - 1330	Acceptable	EPA 8141B 2000	5/6/2015	1.24	713	207	BURGOS_J
7770	Malathion	µg/kg	369	334	92.6 - 422	Acceptable	EPA 8141B 2000	5/6/2015	2.03	258	55.0	BURGOS_J
7825	Methyl Parathion	µg/kg	488	446	35.4 - 656	Acceptable	EPA 8141B 2000	5/6/2015	1.38	346	103	BURGOS_J
7985	Phorate	µg/kg	531	530	257 - 596	Acceptable	EPA 8141B 2000	5/6/2015	1.85	426	56.6	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	779	686	240 - 979	Acceptable	EPA 8141B 2000	5/6/2015	1.37	610	123	BURGOS_J



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SOIL PCBs in Soil (cat# 624)

8880	Aroclor 1016	mg/kg	< 0.000670	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	5/13/2015				CARBONE_I
8885	Aroclor 1221	mg/kg	< 0.000670	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	5/13/2015				CARBONE_I
8890	Aroclor 1232	mg/kg	< 0.000670	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	5/13/2015				CARBONE_I
8895	Aroclor 1242	mg/kg	10.5	15.1	3.96 - 22.3	Acceptable	EPA 8082A 2000	5/13/2015	-0.642	13.1	4.11	CARBONE_I
8900	Aroclor 1248	mg/kg	< 0.000670	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	5/13/2015				CARBONE_I
8905	Aroclor 1254	mg/kg	< 0.000670	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	5/13/2015				CARBONE_I
8910	Aroclor 1260	mg/kg	< 0.000670	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	5/13/2015				CARBONE_I



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CERTIFICATE OF EXCELLENCE

In recognition of the quality of your laboratory in proficiency testing for
SOIL-90

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 255 participating laboratories. This achievement is a demonstration of the superior quality of the laboratory in evaluation of the standards listed below.

Chlordane in Soil

Ignitability/Flashpoint

Organochlorine Pesticides in
Soil

PCBs in Soil

Cyanide in Soil

Nitroaromatics & Nitramines in
Soil

Organophosphorus Pesticides
in Soil

Toxaphene in Soil



Kristina Sanchez
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