



PWS_0430035_AC_20190318_Analysis Report
LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone: (512)730-6022
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March 28, 2019

ROBERT TODD
FROGNOT WSC
PO BOX 400
408 W. FM 545 STE3
Blue Ridge, TX 75424

RE: Final Analytical Report
ELS Sample Q1911123004
FROGNOT WSC

Attn:

Enclosed are the analytical results for the above referenced sample received by LCRA Environmental Laboratory Services. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This final report provides results related only to the sample as received.

Thank you for selecting ELS for your analytical needs. If you have any questions regarding this report, please contact us at (512) 356-6022. We look forward to assisting you again.

Authorized for release by:

Bhanu Acharya

bhanu.acharya@lcra.org

Project Manager

Enclosures





LCRA Environmental Laboratory Services
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SAMPLE SUMMARY

Workorder: Q1911123

Lab ID	Sample ID	matrix	Date Collected	Date Received
Q1911123004	1908472	Drinking Water	3/18/2019 10:43	3/19/2019 08:15

Report Definitions

RL	Reporting Limit
MCL	Maximum Contaminant Level
DF	Dilution Factor
Qual	Qualifiers



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ANALYTICAL RESULTS

Workorder: Q1911123

Lab ID: Q1911123004

Sample ID: 1908472

Facility: EP002

Sample TRT-TAP

Date Received: 3/19/2019 08:15

Date Collected: 3/18/2019 10:43

Location: PH

Client ID: TX0430035

Matrix: Drinking Water

Sample Type: SAMPLE

Parameter	Result	Units	MRL	LOD	MCL	DF	Prepared	By	Analyzed	By	Qual
E508.1 Pesticides by GC											
Analysis Desc: E508.1 Pesticides by GC											
Aroclor-1016	<0.07	ug/L	0.10	0.07	0.5	1	03/26/19 11:03	MO	03/28/19 00:38	MF	N
Aroclor-1221	<0.1	ug/L	0.1	0.05	0.5	1	03/26/19 11:03	MO	03/28/19 00:38	MF	N
Aroclor-1232	<0.1	ug/L	0.1	0.05	0.5	1	03/26/19 11:03	MO	03/28/19 00:38	MF	N
Aroclor-1242	<0.1	ug/L	0.1	0.05	0.5	1	03/26/19 11:03	MO	03/28/19 00:38	MF	N
Aroclor-1248	<0.1	ug/L	0.1	0.05	0.5	1	03/26/19 11:03	MO	03/28/19 00:38	MF	N
Aroclor-1254	<0.1	ug/L	0.1	0.05	0.5	1	03/26/19 11:03	MO	03/28/19 00:38	MF	N
Aroclor-1260	<0.1	ug/L	0.1	0.05	0.5	1	03/26/19 11:03	MO	03/28/19 00:38	MF	N
PCB, Total	<0.1	ug/L	0.1	0.07		1	03/26/19 11:03	MO	03/28/19 00:38	MF	
Chlordane	<0.1	ug/L	0.1	0.05	2	1	03/26/19 11:03	MO	03/28/19 00:38	MF	
Toxaphene	<0.1	ug/L	0.1	0.05	3	1	03/26/19 11:03	MO	03/28/19 00:38	MF	
4,4'-Dibromobiphenyl (S)	80.6	%				1	03/26/19 11:03	MO	03/28/19 00:38	MF	
E525.2 Pesticides by GC/MS											
Analysis Desc: E525.2 Pesticides by GC/MS											
Benzo(a)pyrene	<0.02	ug/L	0.10	0.02	0.2	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
trans-Nonachlor-chlordane	<0.1	ug/L	0.1	0.05		1	03/26/19 11:03	MO	03/26/19 23:28	BC	N
Alachlor	<0.1	ug/L	0.1	0.05	2	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
Aldrin	<0.1	ug/L	0.1	0.05		1	03/26/19 11:03	MO	03/26/19 23:28	BC	N
alpha-Chlordane	<0.1	ug/L	0.1	0.05	2	1	03/26/19 11:03	MO	03/26/19 23:28	BC	N
Atrazine	<0.1	ug/L	0.1	0.05	3	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
Bromacil	<0.1	ug/L	0.1	0.05		1	03/26/19 11:03	MO	03/26/19 23:28	BC	N
Butachlor	<0.1	ug/L	0.1	0.05		1	03/26/19 11:03	MO	03/26/19 23:28	BC	N
Dieldrin	<0.1	ug/L	0.1	0.05		1	03/26/19 11:03	MO	03/26/19 23:28	BC	N
Endrin	<0.01	ug/L	0.10	0.01	2	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
gamma-BHC (Lindane)	<0.02	ug/L	0.10	0.02	0.2	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
gamma-Chlordane	<0.1	ug/L	0.1	0.05	2	1	03/26/19 11:03	MO	03/26/19 23:28	BC	N
Heptachlor	<0.03	ug/L	0.10	0.03	0.4	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
Heptachlor epoxide	<0.02	ug/L	0.10	0.02	0.2	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
Hexachlorobenzene	<0.1	ug/L	0.1	0.05	1	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
Hexachlorocyclopentadiene	<0.1	ug/L	0.1	0.05	50	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
Methoxychlor	<0.1	ug/L	0.1	0.05	40	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
Metolachlor	<0.1	ug/L	0.1	0.05		1	03/26/19 11:03	MO	03/26/19 23:28	BC	N



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ANALYTICAL RESULTS

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Sample ID: 1908472

Facility: EP002

Sample TRT-TAP

Date Received: 3/19/2019 08:15

Date Collected: 3/18/2019 10:43

Location: PH

Client ID: TX0430035

Matrix: Drinking Water

Sample Type: SAMPLE

Parameter	Result	Units	MRL	LOD	MCL	DF	Prepared	By	Analyzed	By	Qual
Metribuzin	<0.1	ug/L	0.1	0.05		1	03/26/19 11:03	MO	03/26/19 23:28	BC	N
Propachlor	<0.1	ug/L	0.1	0.05		1	03/26/19 11:03	MO	03/26/19 23:28	BC	N
Simazine	<0.06	ug/L	0.10	0.06	4	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
Bis(2-ethylhexyl)adipate	<0.5	ug/L	0.5	0.20	400	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
Bis(2-Ethylhexyl)phthalate	<0.5	ug/L	0.5	0.20	6	1	03/26/19 11:03	MO	03/26/19 23:28	BC	
1,3-Dimethyl-2-nitrobenzene	104	%				1	03/26/19 11:03	MO	03/26/19 23:28	BC	
Perylene-d12 (S)	111	%				1	03/26/19 11:03	MO	03/26/19 23:28	BC	
Pyrene-d10 (S)	93.2	%				1	03/26/19 11:03	MO	03/26/19 23:28	BC	
Triphenyl Phosphate (S)	104	%				1	03/26/19 11:03	MO	03/26/19 23:28	BC	



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PARAMETER QUALIFIERS

Workorder: Q1911123

Parameter Qualifiers

J	Analyte Detected Below Quantitation Limit
N	N Not Accredited
SH	Spike Recovery High
SL	Spike Recovery Low



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QUALITY CONTROL

QC Batch: 86917
QC Batch Method: E508.1 Pesticides by GC
Analytical Method: E508.1 Pesticides by GC

MATRIX SPIKE: 1215959 Original Sample: Q1911123004

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qual
4,4'-Dibromobiphenyl	%				80	70-130	
Aroclor-1221	ug/L	0	.5	.53	107	70-130	

Qualifiers

SL - Spike Recovery Low

SH - Spike Recovery High

R - RPD Outside Recovery Limit

QUALITY CONTROL

QC Batch: 86858

QC Batch Method: E525.2 Pesticides by GC/MS

Analytical Method: E525.2 Pesticides by GC/MS

MATRIX SPIKE: 1215980

Original Sample: Q1911123004

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qual
Triphenyl Phosphate	%				101	70-130	
Perylene-d12	%				107	70-130	
Pyrene-d10	%				89.2	70-130	
1,3-Dimethyl-2-nitrobenzene	%				95.2	70-130	
Heptachlor epoxide	ug/L	0	5.11	5.49	108	70-130	
Bis(2-ethylhexyl)adipate	ug/L	0	5.1	5.3	104	70-130	
Bis(2-Ethylhexyl)phthalate	ug/L	0	5.1	5.6	109	70-130	
Hexachlorobenzene	ug/L	0	5.11	5.15	101	70-130	
Simazine	ug/L	0	5.11	5.93	116	70-130	
Alachlor	ug/L	0	5.1	5.8	114	70-130	
Atrazine	ug/L	0	5.11	5.92	116	70-130	
Propachlor	ug/L	0	5.1	6.2	122	70-130	
Metribuzin	ug/L	0	5.1	5.7	111	70-130	
Butachlor	ug/L	0	5.1	5.5	107	70-130	
Aldrin	ug/L	0	5.1	4.6	89.4	70-130	
Bromacil	ug/L	0	5.1	5.7	112	70-130	
trans-Nonachlor-chlordane	ug/L	0	5.1	5.3	104	70-130	
Benzo(a)pyrene	ug/L	0	5.11	5.51	108	70-130	
alpha-Chlordane	ug/L	0	5.1	5.4	106	70-130	
gamma-Chlordane	ug/L	0	5.1	5.6	110	70-130	
Metolachlor	ug/L	0	5.1	5.8	114	70-130	
gamma-BHC (Lindane)	ug/L	0	5.11	5.72	112	70-130	
Dieldrin	ug/L	0	5.1	5.4	105	70-130	
Endrin	ug/L	0	5.11	5.49	108	70-130	
Methoxychlor	ug/L	0	5.11	5.62	110	70-130	
Heptachlor	ug/L	0	5.11	5.24	103	70-130	

Qualifiers

SL - Spike Recovery Low

SH - Spike Recovery High

R - RPD Outside Recovery Limit



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QUALITY CONTROL

MATRIX SPIKE: 1215980

Original Sample: Q1911123004

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qual
Hexachlorocyclopentadiene	ug/L	0	5.11	4.17	81.6	70-130	

Qualifiers

SL - Spike Recovery Low

SH - Spike Recovery High

R - RPD Outside Recovery Limit



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QUALITY CONTROL

QC Batch: 86917
QC Batch Method: E508.1 Pesticides by GC
Analytical Method: E508.1 Pesticides by GC

LABORATORY CONTROL SAMPLE: 1215957

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qual
4,4'-Dibromobiphenyl	%	.5			90.2	83.8	70-130	7.36		
Aroclor-1221	ug/L	.5	.48	.44	95.9	88.6	70-130	8.7	30	

Qualifiers

SL - Spike Recovery Low

SH - Spike Recovery High

R - RPD Outside Recovery Limit

QUALITY CONTROL

QC Batch: 86858

QC Batch Method: E525.2 Pesticides by GC/MS

Analytical Method: E525.2 Pesticides by GC/MS

LABORATORY CONTROL SAMPLE: 1215978

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qual
Triphenyl Phosphate	%	5			102	101	70-130	1.18		
Perylene-d12	%	5			109	106	70-130	2.42		
Pyrene-d10	%	5			92	90.2	70-130	1.98		
1,3-Dimethyl-2-nitrobenzene	%	5			93.8	91.8	70-130	2.16		
Heptachlor epoxide	ug/L	5	5.35	5.29	107	106	70-130	1.13	30	
Bis(2-ethylhexyl)adipate	ug/L	5	5.3	5.2	106	105	70-130	1.9	30	
Bis(2-Ethylhexyl)phthalate	ug/L	5	5.4	5.4	108	107	70-130	0	30	
Hexachlorobenzene	ug/L	5	5.31	5.17	106	103	70-130	2.67	30	
Simazine	ug/L	5	5.96	5.79	119	116	70-130	2.89	30	
Alachlor	ug/L	5	5.6	5.5	112	110	70-130	1.8	30	
Atrazine	ug/L	5	5.79	5.76	116	115	70-130	.519	30	
Propachlor	ug/L	5	5.7	5.9	113	118	70-130	3.45	30	
Metribuzin	ug/L	5	5.6	5.7	113	113	70-130	1.77	30	
Butachlor	ug/L	5	5.4	5.3	108	106	70-130	1.87	30	
Aldrin	ug/L	5	4.8	4.8	97	96.8	70-130	0	30	
Bromacil	ug/L	5	5.6	5.6	112	113	70-130	0	30	
trans-Nonachlor-chlordane	ug/L	5	5.2	5.2	104	105	70-130	0	30	
Benzo(a)pyrene	ug/L	5	5.62	5.42	112	108	70-130	3.62	30	
alpha-Chlordane	ug/L	5	5.1	5.2	102	104	70-130	1.94	30	
gamma-Chlordane	ug/L	5	5.3	5.2	107	104	70-130	1.9	30	
Metolachlor	ug/L	5	5.6	5.5	111	110	70-130	1.8	30	
gamma-BHC (Lindane)	ug/L	5	5.48	5.63	110	113	70-130	2.7	30	
Dieldrin	ug/L	5	5.2	5.2	105	103	70-130	0	30	
Endrin	ug/L	5	5.34	5.28	107	106	70-130	1.13	30	
Methoxychlor	ug/L	5	5.54	5.53	111	111	70-130	.181	30	

Qualifiers

SL - Spike Recovery Low

SH - Spike Recovery High

R - RPD Outside Recovery Limit



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QUALITY CONTROL

LABORATORY CONTROL SAMPLE: 1215978

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qual
Heptachlor	ug/L	5	5.55	5.41	111	108	70-130	2.55	30	
Hexachlorocyclopentadiene	ug/L	5	4.52	4.25	90.4	85	70-130	6.16	30	

Qualifiers

SL - Spike Recovery Low

SH - Spike Recovery High

R - RPD Outside Recovery Limit

QUALITY CONTROL

QC Batch: 86917
QC Batch Method: E508.1 Pesticides by GC
Analytical Method: E508.1 Pesticides by GC

MRL: 1216392

Parameter	Units	Spike Conc.	MRL Result	MRL % Rec	% Rec Limit	Qual
Aroclor-1221	ug/L	.1	.132	132	50-150	

Qualifiers

SL - Spike Recovery Low

SH - Spike Recovery High

R - RPD Outside Recovery Limit

QUALITY CONTROL

QC Batch: 86858

QC Batch Method: E525.2 Pesticides by GC/MS

Analytical Method: E525.2 Pesticides by GC/MS

MRL: 1215948

Parameter	Units	Spike Conc.	MRL Result	MRL % Rec	% Rec Limit	Qual
Heptachlor epoxide	ug/L	.1	.08	80	50-150	
Bis(2-ethylhexyl)adipate	ug/L	.1	.07	70	50-150	
Bis(2-Ethylhexyl)phthalate	ug/L	.1	.05	50	50-150	
Hexachlorobenzene	ug/L	.1	.09	90	50-150	
Simazine	ug/L	.1	.06	60	50-150	
Alachlor	ug/L	.1	.06	60	50-150	
Atrazine	ug/L	.1	.05	50	50-150	
Propachlor	ug/L	.1	.07	70	50-150	
Metribuzin	ug/L	.1	.05	50	50-150	
Butachlor	ug/L	.1	.09	90	50-150	
Aldrin	ug/L	.1	.08	80	50-150	
Bromacil	ug/L	.1	.05	50	50-150	
trans-Nonachlor-chlordane	ug/L	.1	.08	80	50-150	
Benzo(a)pyrene	ug/L	.1	.05	50	50-150	
alpha-Chlordane	ug/L	.1	.08	80	50-150	
gamma-Chlordane	ug/L	.1	.09	90	50-150	
Metolachlor	ug/L	.1	.05	50	50-150	
gamma-BHC (Lindane)	ug/L	.1	.08	80	50-150	
Dieldrin	ug/L	.1	.1	100	50-150	
Methoxychlor	ug/L	.1	.05	50	50-150	
Heptachlor	ug/L	.1	.06	60	50-150	
Hexachlorocyclopentadiene	ug/L	.1	.07	70	50-150	
Endrin	ug/L	.1	.12	120	50-150	

Qualifiers

SL - Spike Recovery Low

SH - Spike Recovery High

R - RPD Outside Recovery Limit

QUALITY CONTROL

METHOD BLANK: 1215977

Parameter	Units	Blank Result	Reporting Limit	Qual
Simazine	ug/L	<0.06	0.06	
Propachlor	ug/L	<0.1	0.1	
Metribuzin	ug/L	<0.1	0.1	
Metolachlor	ug/L	<0.1	0.1	
Methoxychlor	ug/L	<0.1	0.1	
Hexachlorocyclopentadiene	ug/L	<0.1	0.1	
Hexachlorobenzene	ug/L	<0.1	0.1	
Heptachlor epoxide	ug/L	<0.02	0.02	
Heptachlor	ug/L	<0.03	0.03	
gamma-Chlordane	ug/L	<0.1	0.1	
gamma-BHC (Lindane)	ug/L	<0.02	0.02	
Endrin	ug/L	<0.01	0.01	
Dieldrin	ug/L	<0.1	0.1	
Butachlor	ug/L	<0.1	0.1	
Bromacil	ug/L	<0.1	0.1	
Bis(2-Ethylhexyl)phthalate	ug/L	<0.5	0.5	
Bis(2-ethylhexyl)adipate	ug/L	<0.5	0.5	
Benzo(a)pyrene	ug/L	<0.02	0.02	
Atrazine	ug/L	<0.1	0.1	
alpha-Chlordane	ug/L	<0.1	0.1	
Aldrin	ug/L	<0.1	0.1	
Alachlor	ug/L	<0.1	0.1	
trans-Nonachlor-chlordane	ug/L	<0.1	0.1	

Qualifiers

SL - Spike Recovery Low

SH - Spike Recovery High

R - RPD Outside Recovery Limit

QUALITY CONTROL

QC Batch: 86917

QC Batch Method: E508.1 Pesticides by GC

Analytical Method: E508.1 Pesticides by GC

METHOD BLANK: 1215956

Parameter	Units	Blank Result	Reporting Limit	Qual
Aroclor-1260	ug/L	<0.1	0.1	
Aroclor-1254	ug/L	<0.1	0.1	
Aroclor-1248	ug/L	<0.1	0.1	
Aroclor-1242	ug/L	<0.1	0.1	
Aroclor-1232	ug/L	<0.1	0.1	
Aroclor-1221	ug/L	<0.1	0.1	
Aroclor-1016	ug/L	<0.07	0.07	
Toxaphene	ug/L	<0.1	0.1	
Chlordane	ug/L	<0.1	0.1	
4,4'-Dibromobiphenyl	%	85.2	70-130	

Qualifiers

SL - Spike Recovery Low

SH - Spike Recovery High

R - RPD Outside Recovery Limit



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QUALITY CONTROL

QC Batch: 86858
QC Batch Method: E525.2 Pesticides by GC/MS
Analytical Method: E525.2 Pesticides by GC/MS

METHOD BLANK: 1215977

Parameter	Units	Blank Result	Reporting Limit	Qual
Triphenyl Phosphate	%	102	70-130	
Perylene-d12	%	110	70-130	
Pyrene-d10	%	95	70-130	
1,3-Dimethyl-2-nitrobenzene	%	96	70-130	

Qualifiers

SL - Spike Recovery Low

SH - Spike Recovery High

R - RPD Outside Recovery Limit