Sconza Candy Company
Candy Manufacturers Since 1939

1 Sconza Candy Lane ● Oakdale, California 95631 ● TEL: (209) 845-3700 ● FAX: (209) 845-3779

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CVRWQCB
11 OCT 28 PM 12:45

October 27, 2011
Mr. Victor Vasquez
California Regional Water Board
Central Valley Region RWQCB
11020 Sun Center Drive #200
Rancho Cordova, CA 95670

Victor:

Attached are the results of monitoring for the month of September 2011, for effluent water for Sconza Candy Company at their Oakdale facility at One Sconza Candy Lane. This property was previously held by Hershey Chocolate & Confectionery Corp., operating under Waste Discharge Monitoring and Reporting Program Order No. R5-2002-0111 and for NPDES No. CA0004146.
JL Analytical Services, Inc. in Modesto completed all monthly/bi-monthly tests.
Also included are the laboratory results for our annual Chronic Toxicity testing, with sampling done from 9/07/11 to 9/14/11. The testing was done by Sierra Foothill Laboratory.
Please let me know if there are any concerns.
Jesse Hodges Cell # 209 918-0140

"I certify under penalty of the law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Sincerely,

Ron Sconza
Chief Executive Officer
Sconza Candy Company

SDK 11/10/11

Sconza Candy Company
September 2011 Weekly/Monthly Monitoring
EFFLUENT MONITORING (NON-CONTACT COOLING WATER)

DATE (2011)	BOD *Twice per month*		COD *Twice per month*		TURBIDITY (NTU) *Monthly*	Oil & Grease *Twice per month*		ACUTE TOXICITY (% Survival) *Monthly*
	Mg/l	*lb/day*	*Mg/l*	*lb/day*		*Mg/l*	*lb/day*	
9/1	4	70.0	<5	<87.6	NT	<5	<87.6	NT
9/12	2	28.1	<5	<70.1	0.1	<5	<70.1	NT
								100
30 day avg.	3.0	49.1	<5	<78.9		<5	<78.9	

DATE (2011)	FLOW (MGD) *Continuous* Well flow- Sewer- landscape watering = Flow to OID canal in MGD	pH *Weekly*	CHLORINE RESIDUAL *Weekly*		TEMP. (°F) *Weekly*	DISSOLVED OXYGEN (mg/l) *Weekly*	SPECIFIC CONDUCTIVITY (µmhos/cm) *Weekly*
			mg/l	lb/day			
9/1	2.39- 0.13 – 0.15 = 2.11 MGD	6.83	0.00	0.00	78.1	8.95	248.7
9/9	1.97- 0.13 – 0.15 = 1.69 MGD	7.61	0.00	0.00	78.4	9.71	249.9
9/16	2.30- 0.13 – 0.15 = 2.02 MGD	7.76	0.00	0.00	77.4	11.27	246.0
9/23	2.23- 0.13 – 0.15 = 1.95 MGD	7.97	0.01	0.16	78.3	9.27	246.1
9/30	2.26- 0.13 – 0.15 = 1.98 MGD	7.99	0.00	0.00	75.6	8.33	246.2
30 day avg.	1.95 MGD		0.002	0.03			

RECEIVING WATER (OAKDALE IRRIGATION DISTRICT CANAL)

DATE (2011)	FLOW (cubic ft/min) *weekly*		pH *Weekly*		CHLORINE RESIDUAL (mg/l) *Weekly*		TURBIDITY (NTU) *Monthly (9/12)*		TEMP. (°F) *Weekly*		DISSOLVED OXYGEN (mg/l) *Weekly*		SPECIFIC CONDUCTIVITY (µmhos/cm) *Weekly*	
	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2
9/1	4145	as R1	6.97	6.90	0.00	0.00	2.2	2.0	58.6	59.2	9.77	9.81	55.82	69.42
9/9	4035	"	7.75	7.86	0.00	0.00			58.8	60.3	9.50	10.06	55.99	69.12
9/16	4383	"	8.15	8.27	0.00	0.00			60.4	61.2	11.27	9.27	56.00	65.21
9/23	4467	"	7.46	7.84	0.02	0.00			61.2	62.2	10.21	10.28	57.15	65.60
9/30	4241	"	7.63	7.91	0.00	0.00			61.3	61.9	9.74	9.01	57.11	69.49
30 day avg.					0.004	0.00								

Sconza Candy Company

September 2011 Monitoring

WATER CONDITIONS BOUNDED BY R1 AND R2

DATE: (2011)	9/1	9/9	9/16	9/23	9/30
FLOATING OR SUSPENDED MATERIAL	Weed litter	Weed litter	Weed litter, pieces of water plant	Weed litter	Weed litter
DISCOLORATION	Greenish	Greenish	Greenish	Greenish	Greenish
BOTTOM DEPOSITS	Mud/silt	Mud/silt	Mud/silt	Mud/silt	Mud/silt
AQUATIC LIFE	Aquatic plants, moss	Aquatic plants, Damselflies, small invert, moss	Aquatic plants, Dragonflies, moss, snail	Aquatic plants, Damselflies, Dragonflies	Aquatic plants, Dragonflies, small invert, snail
VISIBLE FILM, SHEEN OR COATINGS	None	None	None	None	
FUNGI, SLIMES OR OBJECTIONABLE GROWTH	None	None	None	None	
POTENTIAL NUISANCE CONDITIONS	None	None	None	None	
PRESENCE OR ABSENCE OF SALMONIDS	Absent	Absent	Absent	Absent	
COMMENTS			Water not turbid		

DATE SAMPLED	FLOATING/SUSPENDED MATTER	DISCOLORATION	BOTTOM DEPOSITS	AQUATIC LIFE	VISIBLE FILMS, SHEENS OR COATINGS	FUNGI, SLIMES OR OBJECTIONABLE GROWTH	POTENTIAL NUISANCE CONDITIONS	PRESENCE/ABSENCE OF SALMONIDS	COMMENTS:
9/1/11	Weed litter	Greenish	~~Aquatic Plants moss algae~~ mud/silty	Aquatic Plants moss	None	None	None	Absent	
9/9/11	Weed litter	Greenish	~~Aquatic Plants moss Dragonfly~~ mud/silt	Aquatic Plants moss Dragonfly small insects	None	None	None	Absent	
9/16/11	weed litter pieces of water plants	Greenish	mud/silt	Aquatic Plants moss Dragonflies snails	None	None	None	Absent	water not Turbid
9/23/11	Weed litter	Greenish	mud/silt	Aquatic plants Dragonflies Damsel flies	None	None	None	Absent	
9/30/11	Weed litter	Greenish	mud/silt	aquatic plants small insects snail Dragonfly	None	None	None	Absent	

J L ANALYTICAL SERVICES, INC.

217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

Sconza Candy Company
Attn: Jesse Hodges
1 Sconza Candy Lane
Oakdale,CA 95361

Report # L2.2-14R14229
Report Date: 09/13/2011
Received Date: 09/01/2011
Work Order: 248588

Laboratory Number: 24858801
Description: Water, Pond Effluent, 9/1/11, 635

Analytical Results

Constituent		Result		Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
BOD		4	mg/l	2.0	1.0	SM 5210B	09/01/2011	08:00	NH
COD, titrametric	<	5	mg/l	5.0	3.0	SM 5220C	09/09/2011	12:45	GP
Oil & Grease	<	5	mg/l	5.0	1.5	EPA 1664A	09/02/2011	10:10	JP

QC Results

Constituent	QC Units	Blank	Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
BOD	mg/l	< 2	1700	2000	2600	2700	1800	2.1	94.8	91.2
COD, titrametric	mg/l	< 5	< 5	500	30	31	560	3.8	112.2	111.6
Oil & Grease	mg/l	< 5	< 5	80	72	67	75	8.1	86.1	92.3

Notes

Authorized By: Amy Ballinger 09/13/2011
Amy Ballinger Chemist

ELAP Accreditation Laboratory Certificate #1203. These results relate only to the samples tested. This report shall not be reproduced except in fullwithout written approval of the laboratory.

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Sconza Candy Company
Attn: Jesse Hodges
1 Sconza Candy Lane
Oakdale,CA 95361

Report # L2.2-14R14347
Report Date: 09/20/2011
Received Date: 09/12/2011
Work Order: 249273

Laboratory Number: 24927301
Description: Water, Pond Effluent, 9/12/11, 805

Analytical Results

Constituent		Result		Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
BOD		2	mg/l	2.0	1.0	SM 5210B	09/12/2011	07:45	NH
COD, titrametric	<	5	mg/l	5.0	3.0	SM 5220C	09/16/2011	13:15	GP
Oil & Grease	<	5	mg/l	5.0	1.5	EPA 1664A	09/16/2011	11:00	JP
Turbidity		0.1	NTU	0.1	0.04	SM 2130B	09/13/2011	12:20	GP

QC Results

Constituent	QC Units	Blank		Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
BOD	mg/l	<	2	2200	2000	3200	3100	1700	1.0	89.3	86.8
COD, titrametric	mg/l	<	5	< 5	500	31	32	550	3.8	114.5	109.8
Oil & Grease	mg/l	<	5	< 5	80	81	79	70	2.8	96.1	83.9
Turbidity	NTU	<	0.1	1.3	40	44	45	43	1.4	107.6	107.8

Notes

Authorized By: Amos Snider 09/20/2011

Amos Snider Laboratory Supervisor

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Sconza Candy Company
Attn: Jesse Hodges
1 Sconza Candy Lane
Oakdale,CA 95361

Report # L2.2-14R14347
Report Date: 09/20/2011
Received Date: 09/12/2011
Work Order: 249273

Laboratory Number: 24927302
Description: Water, Receiving Water R1, 9/12/11, 745

Analytical Results

Constituent	Result	Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Turbidity	1.1 NTU	0.1	0.04	SM 2130B	09/13/2011	12:20	GP

QC Results

Constituent	QC Units	Blank	Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Turbidity	NTU	< 0.1	1.3	40	44	45	43	1.4	107.6	107.8

Notes

Authorized By: Amos Snider 09/20/2011

Amos Snider Laboratory Supervisor

ELAP Accreditation Laboratory Certificate #2776. These results relate only to the samples tested. This report shall not be reproduced except in fullwithout written approval of the laboratory.

J L ANALYTICAL SERVICES, INC.

217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

Sconza Candy Company
Attn: Jesse Hodges
1 Sconza Candy Lane
Oakdale,CA 95361

Report # L2.2-14R14347
Report Date: 09/20/2011
Received Date: 09/12/2011
Work Order: 249273

Laboratory Number: 24927303
Description: Water, Receiving Water R2, 9/12/11, 755

Analytical Results

Constituent	Result	Minimum Level	Method Detection Limit	Method Reference	Analysis Date	Analysis Time	Analyst
Turbidity	1.3 NTU	0.1	0.04	SM 2130B	09/13/2011	12:20	GP

QC Results

Constituent	QC Units	Blank	Matrix	Theoretical Spike	Matrix Spike	Matrix Spike Duplicate	Lab Control Spike	Precision %	Accuracy %	Response %
Turbidity	NTU	< 0.1	1.3	40	44	45	43	1.4	107.6	107.8

Notes

Authorized By: Amos Snider 09/20/2011

Amos Snider Laboratory Supervisor

ELAP Accreditation Laboratory Certificate #2776. These results relate only to the samples tested. This report shall not be reproduced except in fullwithout written approval of the laboratory.

Sample Site	Time	Date	Temperature °C	Temperature °F	Conductivity	pH	Dissolved -O2 mg/L	Residual Chlorine PPM	Remarks: Conditions, outside tests, Storm water observations
R_1	3:30	9/16/11	15.8	60.4	56.00	8.15	11.70	0.00	down 21" Flow 1.05 = 4383 cfm
E	3:45		25.2	77.4	246.0	7.76	11.27	0.00	Clear
R_2	3:55	↓	16.1	61.0	65.21	8.27	11.25	0.00	SW No flow
R_1	2:05	9/23/11	16.2	61.2	57.15	7.46	10.21	0.02	Flow 1.09 Down 22" = 4467 cfm
E	2:20		25.7	78.3	246.1	7.97	9.27	0.01	
R_2	2:40	↓	16.8	62.2	65.60	7.84	10.28	0.00	SW – Flow lowered – O.K
R_1	4:00	9/30/11	16.3	61.3	57.11	7.63	9.74	0.00	Flow 0.98 down 19" = 4241 cfm
E	4:00		24.2	75.6	246.2	7.99	8.33	0.00	Clear
R_2	4:40	↓	16.6	61.9	69.49	7.91	9.01	0.00	SW – No flow
Well 3	6:00	10/3/11	17.8		280	—	—	—	Coliforms – Inorganics Well 4 No Sample
Beam Building	6:15							0.01	Coliforms
Conch Hall	6:30							0.01	Coliforms
R_1	8:15								Turbidity
E	8:25								O&G, BOD, COD, Turbidity
R_2	8:20								Turbidity

Sample Site	Time	Date	Temperature °C	Temperature °F	Conductivity	pH	Dissolved -O2 mg/L	Residual Chlorine PPM	Remarks: Conditions, outside tests, Storm water observations
Well #2		9/1/11	Did not start						Coliforms to JTA
Well #3	5:10		18.4		275				
Well #4	4:50		20.6		277				
R1	6:30		14.8	58.6	55.82	6.97	9.77	0.00	Dam 25" Flow 1.07 - flow 4145 cfm
E	6:35		25.6	78.1	248.7	6.83	8.95	0.00	Clear
R2	6:45		15.1	59.2	69.42	6.90	9.81	0.00	SW - No flow
R1	6:55	9/5/11							Chronic Toxicity to SFL
E	7:15								
R1	9:50	9/8/11							
E	10:10								
R1	4:10	9/9/11	14.9	58.8	55.99	7.75	9.50	0.00	Dam 25½" Flow 1.13 - 4035 cfm
E	4:35		25.8	78.4	249.9	7.61	9.71	0.00	
R2	4:45		15.7	60.3	69.12	7.86	10.06	0.00	
R1	7:45	9/12/11	—						Chronic TOX Turbidity
E	8:05								Chronic Tox, Turbidity Oil & grease COD BOD
R2	7:55								SW flowing-ok Turbidity

SIERRA FOOTHILL LABORATORY Inc

REPORT

255 SCOTTSVILLE BLVD.
P.O. BOX 1268 JACKSON, CA 95642
(209) 223 – 2800
sandy@sierralab.com

9/12/2011

J L Analytical Services Inc
217 Primo Way, Ste 2
Modesto CA 95358

96h Static Screening Acute Bioassay with Fathead Minnow 9/01/11-9/05/11
Sconza Candy Effluent collected 9/01/11 0635
Laboratory # 727598
NPDES# CA000416

Sample description:

One 1-gallon plastic container of Sconza Candy Effluent sample collected 9/01/11 0635 was received at the 9/01/11 1245 via SFL courier. The sample was iced, 2.2C and in good condition. Laboratory # 737598 was assigned to the effluent, and chemical measurements made are summarized on the following report page.

Control/ comparison water was Diluted Mineral Water (dMW) prepared 8/26/11 using 26% Evian and 74% Arrowhead Distilled. Organisms are cultured in dMW.

Testing method closely followed:

EPA 600/4-90/027F Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms. 4th edition.

Endpoint of test is death or 96h. The testing began 9/01/11 1350 and ended 9/05/11 1200. Test chambers were 500ml plastic containing 300ml of test solution. There were two replicate chambers per treatment, with 10 fish per chamber. *Pimephales promelas* (fathead minnow) obtained from EnviroScience, hatched 8/29/11 were used. Organism age was 3d. Temperature was 25C ± 1C. KCl reference toxicant test date was 9/01/11 and data were in control. Test ran without incidence for 96h.

Results:

Treatment	# Organisms	# Replicates	96h % Survival
100% Sconza Candy Pond Effluent collected 9/01/11 0635	20	2	100
dMW Lab Control	20	2	100

Sierra Foothill Laboratory Inc certifies that test results meet all applicable ELAP requirements unless stated otherwise.
Results are specific to the sample(s) as submitted and only to the parameters reported.
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ELAP #2784, 1113A, 1881

SIERRA
FOOTHILL LABORATORY Inc

255 SCOTTSVILLE BLVD.
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REPORT

9/12/2011

J L Analytical Services Inc
217 Primo Way, Ste 2
Modesto CA 95358

96h Static Screening Acute Bioassay with Fathead Minnow 9/01/11-9/05/11
Sconza Candy Effluent collected 9/01/11 0635
Laboratory # 727598
NPDES# CA000416

Summary:

On 9/01/11 1350, 3d old fathead minnows were exposed to Sconza Candy Effluent collected 9/01/11 0635. The effluent sample was 7h old at test initiation. At 96h test termination, there was 100% survival of organisms exposed to Sconza Candy Effluent collected 9/01/11 0635. There was 100% survival of organisms exposed to laboratory control.

Percent survival of organisms exposed to the Sconza Candy Effluent collected 9/01/11 0635 was not significantly reduced from survival of organisms in lab control.

Summary prepared by:

Sandy Nurse

Sandy Nurse

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ELAP #2784, 1113A, 1881

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P O Box 1268/ 255 Scottsville Blvd
Jackson CA 95642
(T) 209 223-2800 (F) 209 223-2747

JLAN

CUSTOMER NAME: J&L ANALYTICAL for Sconza Candy

ADDRESS: (SHIP) 1400 SOUTH YOSEMITE AVE (MAIL)217 PRIMO WAY

CITY, STATE, ZIP: OAKDALE CA 95361 MODESTO CA 95358

ATTN: JESSE HODGES TERRY MOONEY

NPDES# CA000416

SFL ID#	SOURCE DESCRIPTION	ANALYSIS (x)		SAMPLING & CONTAINER INFORMATION:			
		Chronic*	Acute**	MATRIX	P/G	DATE/HR COLLECTED	BY
727598-01	Sconza Candy		X	WW	Gal P	9/1/2011 6:35a.m.	[illegible]

* *Acute 96h screening bioassay with fathead minnows, EPA 600/4-90/027F

2.2 [illegible]

Collection for September 2011 is as follows:

Date		Amt. effluent to collect
Thurs 9/01/2011	lab picks up on route a City of Oakdale WWTP	1 gallon AFSc

Transportation notes: Ice sample after collection. Lab will pickup on route at City of Oakdale WWTP, ice must be present in chest to indicate cooling.

RELINQUISHED BY: [signature] DATE/TIME: 9/1/11 7:15

RECEIVED BY: Lovanna Brown DATE/TIME: 9/1/11 0925

RELINQUISHED BY: Lovanna Brown DATE/TIME: 9/1/11 1015

RECEIVED BY: [signature] DATE/TIME: 9.1.11 1015

Rel [signature] 9.1.11 1245

Rec [signature] 9/1/11 1245

[signature] 9.1.11

Sierra Foothill Laboratory, Inc.

255 Scottsville Blvd
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Phone 209/223-2800
Fax 209/223-2747
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Client: **JLAN**

J L Analytical Services, Inc.
217 Primo Way, Ste 2
Modesto, CA 95358-

Project Report: **201659**

Results for Project 201659

727598 SCONZA CANDY Liquid Taken: 09/01/2011 0635 By: JH Rec:09/01/2011

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
Acute tox 96h fathead, 4th ed	See Report	%survival			600/4-90/027F,1993	09/02/2011 1100	SFL	
Specific Conductance	258	umhos/cm		1.00	EPA120.1/SM2510B	09/01/2011 0940	L&R	
Alkalinity, Total as CaCO3	92	mg/L		5.0	EPA310.1/SM2320B	09/08/2011 1025	LV	
Hardness as CaCO3	83	mg/L		5.0	SM2340C	09/06/2011 1045	LV	
pH, Lab*	8.1	unit		0.1	SM4500-H+B	09/01/2011 1205	L&R	*past hold
Oxygen, Dissolved, Lab*	7.9	mg/L		0.1	SM4500-O G	09/01/2011 1150	L&R	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/01/2011 0920	L&R	*past hold

Sample Preparation Steps for Project 201659

727598 SCONZA CANDY Liquid Taken: 09/01/2011 0635 By: JH Rec:09/01/2011

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/01/2011 1100	LV

SET Quality Control/Quality Assurance for Project 201659

Alkalinity, Total as CaCO3 (Analyzed: 09/08/2011 1025 LV Verified: 09/09/2011 14:19 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	460	465	mg/L	98.9	
	Blank	<5		mg/L		
727560	Duplicate	192	192	mg/L		0.0
727655	Duplicate	72	76	mg/L		5.4
727671	Duplicate	77	76	mg/L		1.3
727463	Matrix SPK	68.3	69	mg/L	99	
727656	Matrix SPK	68.3	69	mg/L	99	
727672	Matrix SPK	68.3	69	mg/L	99	

Chlorine Residual,Total, Lab* (Analyzed: 09/01/2011 0920 L&R Verified: 09/02/2011 16:51 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Blank	<0.10		mg/L		
727536	Duplicate	<0.10	<0.10	mg/L		0.0

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Continued

Sierra Foothill Laboratory, Inc.

255 Scottsville Blvd
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Jackson, CA 95642

Phone 209/223-2800
Fax 209/223-2747
Email info@sierralab.com

Client: **JLAN**
Project Report: **201659**

SET Quality Control/Quality Assurance for Project 201659

Oxygen, Dissolved, Lab*

(Analyzed: 09/01/2011 1150 L&R Verified: 09/02/2011 16:52 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
727584	Duplicate	8.4	8.4	mg/L		0.0

Specific Conductance

(Analyzed: 09/01/2011 0940 L&R Verified: 09/02/2011 16:52 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	102	100	umho/cm	102.0	
727536	Duplicate	290	292	umho/cm		0.7
727589	Duplicate	578	577	umho/cm		0.2

Hardness as CaCO3

(Analyzed: 09/06/2011 1045 LV Verified: 09/07/2011 16:46 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	595	598	mg/L	99.5	
	Blank	<5.0		mg/L		
727479	Duplicate	139	143	mg/L		2.8
727607	Duplicate	67	67	mg/L		0.0
727509	Matrix SPK	80.1	88	mg/L	91	
727533	Matrix SPK	80.1	88	mg/L	91	

pH, Lab*

(Analyzed: 09/01/2011 1205 L&R Verified: 09/02/2011 16:50 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	7.4	7.4	unit	100.0	
727584	Duplicate	7.8	7.8	unit		0.0

ELAP #2784, #1113A, #1881

Sandy Nurse

Sandy Nurse, Lab Director

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Sierra Foothill Laboratory, Inc.
255 Scottsville Blvd.
Jackson, CA 95642

Client: J&L Analytical Sconza Candy 727598

Test Conducted By: LG/SN/JCM

Exposure Chamber: Capacity 500 mL
Test Solution Volume 300 mL

Feeding Schedule: Not Fed ____
Fed Daily, Siphon Debris Daily X
Fed Irregularly (.1 mL @46h; Siphon @ 48h) ____

Test Period:
Beginning: Date 09-01-11 Time 1350
Ending: Date 09-05-11 Time 1200

Food Used: <24h Artemia Code: 6425
Exposed Organisms: 10/test exposure chamber
Renewal Volume and Date: 100 mLs @ 48h
☒ EPA 600/4-90/027F ☒ EPA 821-R02-012
Temp: 25°C +/- 1 Temp: max.- min. ≤ 3° C

Test Organism:
Species: Pimephales promelas
Age: Hatch Date 8-29-11 3 day old
Source: Enviro Science
Control Water: dMW of 08-26-11
Reference Toxicant Test Date: 09-01-11 Prep Date: 08-29-11
KCl Reagent Code 6391 Prep Code 0811-66

Conc or %	Test Container #	# Dead:				Dissolved oxygen (mg/L):					pH (unit):					EC (µmho/cm):		
		24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	48	96
EFF	3011	0	0	0	0	7.9	7.3	7.5	7.5	7.5	8.2	8.4	8.4	8.4	8.4	258	279	282
	3012	0	0	0	0													
Mortality Check Time/Initials																		

Lab Comments:

Sierra Foothill Laboratory, Inc.
255 Scottsville Blvd.
Jackson, CA 95642

Client: J&L Analytical Sconza Candy

Test Conducted By: LG/SN/JCM

Exposure Chamber: Capacity 500 mL
Test Solution Volume 300 mL

Feeding Schedule: Not Fed ____
Fed Daily, Siphon Debris Daily X
Fed Irregularly (.1 mL @46h; Siphon @ 48h) ____

Food Used: <24h Artemia **Code:** 6425

 # Exposed Organisms: 10/test exposure chamber

Renewal Volume and Date: 100 mLs @ 48h

☒ EPA 600/4-90/027F ☐ EPA 821-R02-012

Temp: 25°C +/- 1 **Temp: max.- min.** ≤ 3° C

Test Period:
Beginning: Date 09-01-11 Time 1350
Ending: Date 09-05-11 Time 1200

Test Organism:
Species: Pimephales promelas
Age: Hatch Date 08-29-11 3 day old
Source: Enviro Science
Control Water: dMW of 08-26-11

Reference Toxicant Test Date: 09-01-11 **Prep Date:** 08-29-11
KCl Reagent Code: 6391 **Prep Code:** 0811-66

Test Cont. number	0h Temp	24h Temp	48h Temp	72h Temp	96h Temp	Total Alkalinity (mg/L as $CaCO_3$) 0h	Total Hardness (mg/L as $CaCO_3$) 0h	Cl_2 (mg/L) 0h	NH_3P (mg/L) 0h
3011 Initial	24.0	23.6	25.0	25.5	25.0	92	83	<.1	<.5

Sierra Foothill Laboratory, Inc.
255 Scottsville Blvd.
Jackson, CA 95642

Client: dMW/Ref Tox

Test Conducted By: LG/SN/JCM

Exposure Chamber: Capacity 500 mL
Test Solution Volume 300 mL
Feeding Schedule: Not Fed ____
Fed Daily, Siphon Debris Daily __X__
Fed Irregularly (.1 mL @46h; Siphon @ 48h) ____

Test Period:
Beginning: Date 09-01-11 Time 1350
Ending: Date 09-05-11 Time 1200

Food Used: <24h Artemia Code: 6425
Exposed Organisms: 10/test exposure chamber
Renewal Volume and Date: 100 mLs @ 48h
X☐ EPA 600/4-90/027F X☐ EPA 821-R02-012
Temp: 25°C +/- 1 Temp: max.- min. ≤ 3° C

Test Organism:
Species: Pimephales promelas
Age: Hatch Date 08-29-11 3 day old
Source: Enviro Science
Control Water: dMW of 08-26-11
Reference Toxicant Test Date : 09-01-11 Prep Date: 08-29-11
KCl Reagent Code: 6391 Prep Code: 0811-66

Conc or %	Test Container #	# Dead:				Dissolved oxygen (mg/L):					pH (unit):					EC (µmho/cm):		
		24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	48	96
dMW	3001	0	0	0	0	8.0	7.4	7.6	7.4	7.5	8.4	8.3	8.4	8.4	8.4	175	193	186
	3002	0	0	0	0													
KCl 0.25 g/L	3003	0	0	0	0	7.9	7.3	7.6	7.5	7.5	8.4	8.3	8.4	8.4	8.4	653	646	652
	3004	0	0	0	0													
KCl 0.50 g/L	3005	0	0	0	0	7.9	7.3	7.5	7.4	7.5	8.4	8.3	8.3	8.4	8.4	1100	1094	1110
	3006	0	0	0	0													
KCl 1.0 g/L	3007	3	3	0	0	7.9	7.2	7.5	7.4	7.5	8.3	8.2	8.3	8.3	8.4	1930	1948	1964
	3008	3	3	0	0													
KCl 2.0 g/L	3009	10	—	—	—	7.9	7.2	—	—	—	8.3	8.2	—	—	—	3470	—	—
	3010	10	—	—	—			—	—	—			—	—	—		—	—
Mortality Check Time/Initials			1100	1115	1200	1525 JCM	1055 JCM				1525 JCM	1100 JCM						

Fathead Minnow 96-h Acute Survival Test — **Sierra Foothill Laboratory Inc.**

Batch ID:	14-7687-1121	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	01 Sep-11 13:50	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	
Ending Date:	05 Sep-11 12:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	94h	**Source:**	Enviro Sciences Inc, TX	**Age:**	3d
Sample ID:	07-4986-3764	**Code:**	0811-66	**Client:**	Sierra Foothill Laboratory
Sample Date:	01 Sep-11	**Material:**	Potassium chloride	**Project:**	
Receive Date:	01 Sep-11	**Source:**	KCl Reference Toxicant		
Sample Age:	14h	**Station:**			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
08-2055-9664	96h Survival Rate	0.5	1	0.7071	N/A		Fisher Exact Test

Point Estimate Summary

Analysis ID	Endpoint	Level	gm/L	95% LCL	95% UCL	TU	Method
04-5542-3379	96h Survival Rate	EC50	0.933	0.8016	1.086		Spearman-Kärber

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
04-5542-3379	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptibility Criteria
08-2055-9664	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptibility Criteria

96h Survival Rate Summary

Conc-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	2	1	1	1	1	1	0	0	0.0%	0.0%
0.25		2	1	1	1	1	1	0	0	0.0%	0.0%
0.5		2	1	1	1	1	1	0	0	0.0%	0.0%
1		2	0.4	0.4	0.4	0.4	0.4	0	0	0.0%	60.0%
2		2	0	0	0	0	0	0	0		100.0%

96h Survival Rate Detail

Conc-gm/L	Control Type	Rep 1	Rep 2
0	DMW	1	1
0.25		1	1
0.5		1	1
1		0.4	0.4
2		0	0

CETIS Analytical Report

Test Code: 090111PA5LRT1 | 08-1396-7018

Fathead Minnow 96-h Acute Survival Test — **Sierra Foothill Laboratory Inc.**

Analysis ID:	04-5542-3379	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	12 Sep-11 11:38	**Analysis:**	Untrimmed Spearman-Kärber	**Official Results:**	Yes
Batch ID:	14-7687-1121	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	01 Sep-11 13:50	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	
Ending Date:	05 Sep-11 12:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	94h	**Source:**	Enviro Sciences Inc, TX	**Age:**	3d
Sample ID:	07-4986-3764	**Code:**	0811-66	**Client:**	Sierra Foothill Laboratory
Sample Date:	01 Sep-11	**Material:**	Potassium chloride	**Project:**	
Receive Date:	01 Sep-11	**Source:**	KCl Reference Toxicant		
Sample Age:	14h	**Station:**			

Spearman-Kärber Estimates

Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0	0.00%	-0.0301	0.03298	0.933	0.8016	1.086

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptibility Criteria

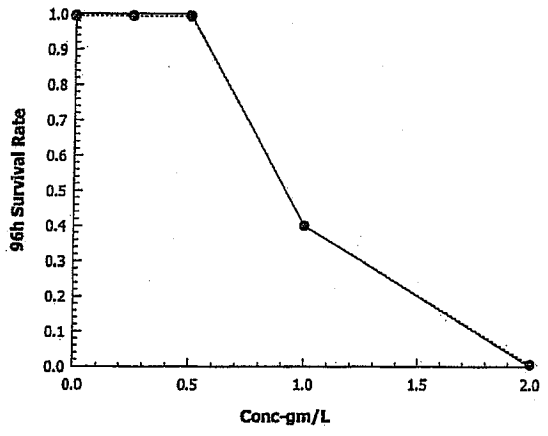
96h Survival Rate Summary

			Calculated Variate(A/B)								
Conc-gm/L	**Control Type**	**Count**	**Mean**	**Min**	**Max**	**Std Err**	**Std Dev**	**CV%**	**%Effect**	**A**	**B**
0	DMW	2	1	1	1	0	0	0.0%	0.0%	20	20
0.25		2	1	1	1	0	0	0.0%	0.0%	20	20
0.5		2	1	1	1	0	0	0.0%	0.0%	20	20
1		2	0.4	0.4	0.4	0	0	0.0%	60.0%	8	20
2		2	0	0	0	0	0		100.0%	0	20

96h Survival Rate Detail

Conc-gm/L	Control Type	Rep 1	Rep 2
0	DMW	1	1
0.25		1	1
0.5		1	1
1		0.4	0.4
2		0	0

Graphics



CETIS Analytical Report

Test Code: 090111PA5LRT1 | 08-1396-7018

Fathead Minnow 96-h Acute Survival Test — **Sierra Foothill Laboratory Inc.**

Analysis ID:	08-2055-9664	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	12 Sep-11 11:38	**Analysis:**	Single 2x2 Contingency Table	**Official Results:**	Yes
Batch ID:	14-7687-1121	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	01 Sep-11 13:50	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	
Ending Date:	05 Sep-11 12:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	94h	**Source:**	Enviro Sciences Inc, TX	**Age:**	3d
Sample ID:	07-4986-3764	**Code:**	0811-66	**Client:**	Sierra Foothill Laboratory
Sample Date:	01 Sep-11	**Material:**	Potassium chloride	**Project:**	
Receive Date:	01 Sep-11	**Source:**	KCl Reference Toxicant		
Sample Age:	14h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	NOEL	LOEL	TOEL	TU
Untransformed		C > T	Not Run	0.5	1	0.7071	

Fisher Exact Test

Control	vs	Conc-gm/L	Test Stat	P-Value	Decision(0.05)
DMW		0.25	1	1.0000	Non-Significant Effect
		0.5	1	1.0000	Non-Significant Effect
		1	2.26E-05	<0.0001	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptibility Criteria

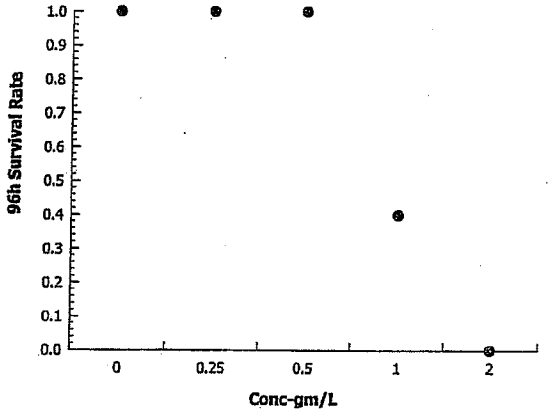
Data Summary

Conc-gm/L	Control Type	No-Resp	Resp	Total
0	DMW	20	0	20
0.25		20	0	20
0.5		20	0	20
1		8	12	20
2		0	20	20

96h Survival Rate Detail

Conc-gm/L	Control Type	Rep 1	Rep 2
0	DMW	1	1
0.25		1	1
0.5		1	1
1		0.4	0.4
2		0	0

Graphics



Analyst:_____ QA:_____

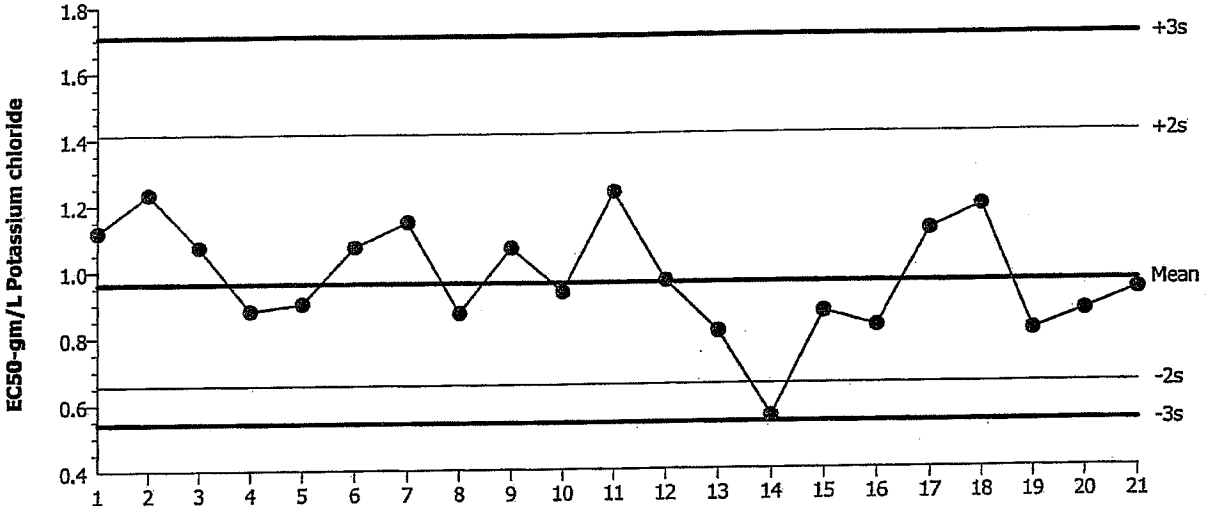
CETIS QC Plot

Report Date: 12 Sep-11 11:42 (1 of 1)

Fathead Minnow 96-h Acute Survival Test — **Sierra Foothill Laboratory Inc.**

Test Type:	Survival (96h)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Potassium chloride
Protocol:	EPA/821/R-02-012 (2002)	**Endpoint:**	96h Survival Rate	**Source:**	KCl Reference Toxicant-RT1

Fathead Minnow 96-h Acute Survival Test



Mean:	0.9614	**Count:**	20	**-2s Warning Limit:**	0.6553	**-3s Action Limit:**	0.5411
Sigma:	N/A	**CV:**	21.10%	**+2s Warning Limit:**	1.41	**+3s Action Limit:**	1.708

Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Mar	1	1.118	0.1567	0.7881			05-1161-5369	13-0338-0834
2			9	1.231	0.2698	1.291			20-3224-9970	15-7695-3646
3			15	1.072	0.1104	0.5674			11-6948-7973	01-4706-2655
4			16	0.8805	-0.08084	-0.4584			04-5563-5050	02-5202-1790
5		Apr	6	0.9013	-0.06013	-0.3371			15-5427-6829	07-6291-6658
6			12	1.072	0.1104	0.5674			10-0204-4934	15-6996-7495
7			19	1.146	0.1845	0.9162			12-9769-3312	08-5775-0461
8			26	0.8706	-0.09083	-0.518			04-9029-1617	01-3987-8470
9		May	5	1.066	0.105	0.5408			11-3091-3534	20-6934-7500
10			10	0.933	-0.02834	-0.1562			20-6137-7443	14-2897-3259
11			18	1.234	0.2724	1.302			12-6961-7174	06-0019-4189
12		Jun	15	0.9659	0.004561	0.0247			12-0730-1833	14-5946-3582
13			22	0.8123	-0.1491	-0.8797			18-1456-7630	07-7482-2179
14		Jul	8	0.5578	-0.4035	-2.841	(-)		06-8630-9874	04-8748-1038
15			12	0.8706	-0.09083	-0.518			15-1677-0590	02-8297-3214
16			20	0.8265	-0.1349	-0.7893			07-3024-4152	13-2771-3933
17			26	1.118	0.1567	0.7881			16-1357-1431	14-7727-9868
18		Aug	4	1.189	0.2278	1.11			01-5259-8065	02-2413-7985
19			9	0.8123	-0.1491	-0.8797			09-4326-1853	13-7897-6149
20			17	0.8706	-0.09083	-0.518			15-5253-5961	02-3817-2441
21		Sep	1	0.933	-0.02834	-0.1562			08-1396-7018	04-5542-3379

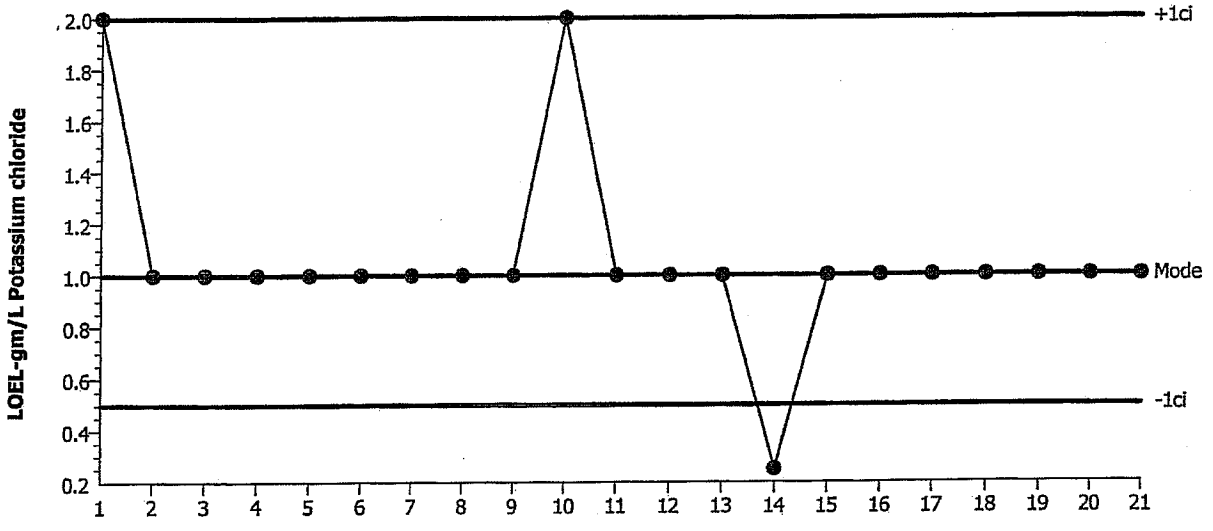
CETIS QC Plot

Report Date: 12 Sep-11 11:42 (1 of 1)

Fathead Minnow 96-h Acute Survival Test — **Sierra Foothill Laboratory Inc.**

Test Type:	Survival (96h)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Potassium chloride
Protocol:	EPA/821/R-02-012 (2002)	**Endpoint:**	96h Survival Rate	**Source:**	KCl Reference Toxicant-RT1

Fathead Minnow 96-h Acute Survival Test



Mode: 1 **Count:** 20 **-1ci Action Limit:** 0.5
Dil Fact: 0.5 **+1ci Action Limit:** 2

Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Mar	9	2	1				20-3224-9970	15-8757-2597
2			15	1	0				11-6948-7973	14-4618-6875
3			16	1	0				04-5563-5050	05-8801-1472
4		Apr	6	1	0				15-5427-6829	05-3552-9022
5			12	1	0				10-0204-4934	03-4729-3336
6			19	1	0				12-9769-3312	19-7871-1296
7			26	1	0				04-9029-1617	07-2802-1526
8		May	5	1	0				11-3091-3534	12-7375-8874
9			10	1	0				20-6137-7443	09-7249-2003
10			18	2	1				12-6961-7174	10-6070-1201
11		Jun	2	1	0				21-4067-6835	15-6468-1871
12			15	1	0				12-0730-1833	08-0814-2808
13			22	1	0				18-1456-7630	01-4648-4358
14		Jul	8	0.25	-0.75			(-)	06-8630-9874	13-2826-8855
15			12	1	0				15-1677-0590	01-9307-8648
16			20	1	0				07-3024-4152	06-7443-7224
17			26	1	0				16-1357-1431	19-1940-6355
18		Aug	4	1	0				01-5259-8065	17-6299-7604
19			9	1	0				09-4326-1853	13-3121-6469
20			17	1	0				15-5253-5961	01-6085-5310
21		Sep	1	1	0				08-1396-7018	08-2055-9664

Sierra Foothill Laboratory, Inc.

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Fax 209/223-2747
Email info@sierralab.com

September 19, 2011

J&L Analytical Services
217 Primo Way Ste 2
Modesto CA 95358

NPDES: CA000416 TEST SUMMARY

RE: Definitive static-renewal chronic toxicity testing of Sconza Candy Effluent diluted with OID Riverbank Lateral Receiving 09-07-11 to 09-14-11
Method = EPA 600/4-91/002 Effluent Lab# 728085 728267 728475
Receiving Lab# 728086 728268 728476

WATER:
The three sets of effluent samples were similar for the chemical parameters measured.

1000.0 Fathead Minnow (Pimephales promelas) Larval Survival and Growth Test

Treatment	7 day % Survival	Avg Dry Wt (mg)
100% Effl	100.0	0.46
75% Effl in Rec	86.7	0.36*
50% Effl in Rec	96.7	0.43
25% Effl in Rec	40.0*	0.23*
12.5% Effl in Rec	23.3*	0.21*
-Receiving water	30.0*	0.20*
+DMW Lab Control	100.0	0.50

Receiving water (diluent) did not meet acceptability criteria as a control, therefore dose-response endpoints are not meaningful. A comparison restricted to 100% effluent vs DMW control concluded that neither survival nor growth of fatheads in 100% effluent was significantly reduced from that in the DMW laboratory control.

1002.0 Ceriodaphnia dubia Survival and Reproduction Test

Treatment	6 day % Survival	Avg Young/Female (ON)
100% Effl	100.0	25.7
75% Effl in Rec	100.0	26.6
50% Effl in Rec	100.0	25.1
25% Effl in Rec	100.0	25.1
12.5% Effl in Rec	100.0	24.1
+Receiving water	90.0	21.5
+DMW Lab Control	100.0	23.6

Endpoints below are calculated using the Receiving Water control

6d LC50 = >100%
NOAEC, Survival = 100% LOAEC, Survival = >100%
NOAEC, Reproduction = 100% LOAEC, Reproduction = >100%
IC50 = >100% IC25 = >100%

Sierra Foothill Laboratory certifies that test results meet all applicable ELAP requirements unless stated otherwise.
Results are specific to the sample(s) as submitted and only to the parameter(s) reported.
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ELAP # 2784, 1113A, 1881

Sierra Foothill Laboratory, Inc.

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PO Box 1268
Jackson, CA 95642

Phone 209/223-2800
Fax 209/223-2747
Email info@sierralab.com

September 19, 2011

RE: Definitive static-renewal chronic toxicity testing of Sconza Candy Effluent diluted with OID Riverbank Lateral Receiving 09-07-11 to 09-14-11

1003.0 Algae (Selenastrum capricornutum) Growth Test

Treatment	96h cells/mL (million)
100% Effl	3.88
75% Effl in Rec	3.48
50% Effl in Rec	3.24
25% Effl in Rec	2.30
12.5% Effl in Rec	1.91
+Receiving water	1.30
+DMW Lab Control	1.69

Endpoints below are calculated using the Receiving Water control

IC50 = >100% IC25 = >100%
NOAEC = 100% LOAEC = >100%

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

Summary prepared by:

Sandy Nurse

Sandy Nurse

Sierra Foothill Laboratory certifies that test results meet all applicable ELAP requirements unless stated otherwise.
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ELAP # 2784, 1113A, 1881

Sierra Foothill Laboratory, Inc.

255 Scottsville Blvd
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Fax 209/223-2747
Email info@sierralab.com

September 19, 2011

J&L Analytical Services
217 Primo Way Ste 2
Modesto CA 95358

FATHEAD MINNOW (Pimephales promelas), 1000.0

RE: Definitive static-renewal chronic toxicity testing of Sconza Candy Effluent diluted with OID Riverbank Lateral Receiving Started 09-07-11 15:15 Ended 09-14-11 15:00
The testing method used closely followed EPA 600/4-91/002. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 3rd Edition.

Sconza Candy Effluent Lab# 728085 728267 728475 collected 09-06-11 09-08-11 09-12-11
Dilution water: Receiving Lab# 728086 728268 728476 collected 09-06-11 09-08-11 09-12-11
Pimephales promelas (fathead minnow) positively identified to species 01-10-11
Organism age: 1 d from EnviroScience
Test chambers: 500 mL size plastic, containing 300 mL test solution
Solution renewal: 250 mL daily
Feeding: twice daily with 0.1 mL <24 h old live brine shrimp
Test temperature (25C) did not range more than 3C during the test
KCl reference toxicant test date: 09-07-11

RESULTS:

Treatment	# Larvae	# Replicates	% Survival 7 day	Avg Dry Wt (mg)
100% Effl	30	3	100.0	0.46
75% Effl in Rec	30	3	86.7	0.36*
50% Effl in Rec	30	3	96.7	0.43
25% Effl in Rec	30	3	40.0*	0.23*
12.5% Effl in Rec	30	3	23.3*	0.21*
-Receiving water	30	3	30.0*	0.20*
+DMW Lab Control	39	4	100.0	0.50

Data meet EPA criteria for acceptability using DMW lab control.

Receiving water (diluent) did not meet acceptability criteria as a control, therefore dose-response endpoints are not meaningful. A comparison restricted to 100% effluent vs DMW control concluded that neither survival nor growth of fatheads in 100% effluent was significantly reduced from that in the DMW laboratory control.

Effluent groups vs DMW
Survival: Bonferroni Adj t Test PMSD = 34
Growth: Bonferroni Adj t Test PMSD = 20
Receiving Water vs DMW
Survival: Unequal Variance t Test PMSD = 12
Growth: Equal Variance t Test PMSD = 20

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ELAP # 2784, 1113A, 1881

Sierra Foothill Laboratory, Inc.

255 Scottsville Blvd
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Email info@sierralab.com

September 19, 2011

J&L Analytical Services
217 Primo Way Ste 2
Modesto CA 95358

CERIODAPHNIA (Ceriodaphnia dubia), 2000.0

RE: Definitive static-renewal chronic toxicity testing of Sconza Candy Effluent diluted with OID Riverbank Lateral Receiving Started 09-07-11 15:00 Ended 09-13-11 17:00
The testing method used closely followed EPA 600/4-91/002. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 3rd Edition.

Sconza Candy Effluent Lab# 728085 728267 728475 collected 09-06-11 09-08-11 09-12-11
Dilution water: Receiving Lab# 728086 728268 728476 collected 09-06-11 09-08-11 09-12-11
Ceriodaphnia dubia (water flea) positively identified to species 01-10-11
Organism age: <8h from Sierra Foothill Laboratory
Test chambers: 30 mL size glass, containing 15 mL test solution
Solution renewal: daily
Feeding: daily with .1 mL YCT prepared 08-25-11 + .1 mL algae prepared 09-02-11
Test temperature (25C) did not range more than 3C during the test
ZnSO4 reference toxicant test date 09-07-11

RESULTS:

Treatment	# Neonates/ # Replicates	% Survival 6 day	Average young per female (ON)
100% Effl	10 / 10	100.0	25.7
75% Effl in Rec	10 / 10	100.0	26.6
50% Effl in Rec	10 / 10	100.0	25.1
25% Effl in Rec	10 / 10	100.0	25.1
12.5% Effl in Rec	10 / 10	100.0	24.1
+Receiving water	10 / 10	90.0	21.5
+DMW Lab Control	10 / 10	100.0	23.6

Data meet EPA criteria for acceptability using Receiving water control.

Survival
6d LC50 = >100% Linear Interpolation
NOAEC, Survival = 100% Fisher Exact Test PMSD = NA
LOAEC, Survival = >100%

Reproduction
IC50 = >100% IC25 = >100% Linear Interpolation
NOAEC, Reproduction = 100% Steel Many-One Rank Test PMSD = 17
LOAEC, Reproduction = >100%

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September 19, 2011

J&L Analytical Services
217 Primo Way Ste 2
Modesto CA 95358

ALGAE (Selenastrum capricornutum), 1003.0

RE: Definitive static chronic toxicity testing of Sconza Candy Effluent diluted with OID Riverbank Lateral Receiving Started 09-09-11 15:30 Ended 09-13-11 13:30
The testing method used closely followed EPA 600/4-91/002. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 3rd Edition.

Sconza Candy Effluent Laboratory # 728267 collected 09-08-11
Dilution water was Receiving Laboratory # 728268 collected 09-08-11
Sample and dilution water were filtered prior to preparation of test concentrations using cellulose nitrate .45u pore size filters
Selenastrum capricornutum (algae) positively identified to species 07-07-11
Organism age: 7d from Sierra Foothill Laboratory, UTEX 10-19-09, subcultured 09-02-11 to 09-09-11. Unialgal microscopic exam by SFL on 09-09-11
Nutrient spike: 1 mL/100 mL Bolds Basal Medium with EDTA
Test chambers: 250 mL size glass containing 100 mL test solution; continuous light and shaking
Test temperature (25C nominal) did not range more than 3C during the test
Cell density determined by spectrophotometric turbidity method
Four replicates were initiated; one of which was used solely for daily chemistry measurements.
Boron reference toxicant test date 09-09-11

RESULTS:

Treatment	# cells/mL in inoculum	initial # replicates	96h cells/mL (million)
100% Effl	10000	4	3.88
75% Effl in Rec	10000	4	3.48
50% Effl in Rec	10000	4	3.24
25% Effl in Rec	10000	4	2.30
12.5% Effl in Rec	10000	4	1.91
+Receiving water	10000	4	1.30
+DMW Lab Control	10000	4	1.69

Data meet EPA criteria for acceptability using Receiving water control.

Growth
IC50 = >100% Linear Interpolation
IC25 = >100%
NOAEC = 100% Dunnett's Multiple Comparison Test PMSD = 17
LOAEC = >100%

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group
- Does not meet EPA criteria for acceptability as control group

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JLAN

CUSTOMER NAME: JESSE HODGES J&L ANALYTICAL for Sconza Candy
SHIP TO:
ADDRESS: 1400 SOUTH YOSEMITE AVE 217 PRIMO WAY

CITY, STATE, ZIP: OAKDALE CA 95361 MODESTO CA 95358

ATTN: JESSE HODGES
NPDES# CA000416

SFL ID#	SOURCE DESCRIPTION	ANALYSIS (x)		SAMPLING & CONTAINER INFORMATION:			
		Chronic*	Acute**	MATRIX	P/G	DATE/HR COLLECTED	BY
728085-01	Effluent	X		WW	Gal P 2	9/6/11 * 0715	
728086-01	Oakdale Irrigation District Riverbank lateral- Receiving water R.	X		W	3	9/6/11 * 0655	
						+NO sample time on	
						Bts. or COC	

*Chronic 3species aquatic toxicity, EPA 600/4-91/002, testing effluent concentrations 100, 75, 50, 25, 12.5% diluted with receiving water. Annual.

5.4c
+6 Sch.

Collection for September 2011 is as follows:

Date		Amt. effluent to collect		Amt receiving to collect	
Tues	9//06/11	2 gallon	CT31	3 gallon	ct31
Thurs	9/08/11	3 gallon	ct31	4 gallon	ct31
Mon	9/12/11	1 gallon	ct31	2 gallon	ct31

Transportation notes: Ice and Ship or Transport for next day receipt at lab, sample temp 4-6C.
Maximum hold time to first use of samples is 36 hours from time of collection.

X RELINQUISHED BY: A Cortez DATE/TIME: 9-6-11 8:35 am
RECEIVED BY: Anne DATE/TIME: 9.7.11 1415 (Index)
RELINQUISHED BY: DATE/TIME:
RECEIVED BY: DATE/TIME:

Anne 9/7/11

Sierra Foothill Laboratory, Inc.

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Client: **JLAN**

J L Analytical Services, Inc.
217 Primo Way, Ste 2
Modesto, CA 95358-

Project Report: **201923**

Results for Project 201923

728085 EFFLUENT Liquid Taken: 09/06/2011 0715 By: Client Rec:09/07/2011

THIS SAMPLE SET: NO SAMPLE TIME ON BOTTLES OR COC, LINDA EMAILED JESSE HODGES FOR SAMPLE TIMES.

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
Chronic Tox. 3sp/5conc, 3rd e	See Report	5endpts			600/4-91/002	09/08/2011 1400	SFL	
Specific Conductance	252	umhos/cm		1.00	EPA120.1/SM2510B	09/07/2011 0910	R&L	
Alkalinity, Total as CaCO3	88	mg/L		5.0	EPA310.1/SM2320B	09/19/2011 1035	RK	
Hardness as CaCO3	83	mg/L		5.0	SM2340C	09/19/2011 1100	TN	
pH, Lab*	8.0	unit		0.1	SM4500-H+B	09/07/2011 1025	R&L	*past hold
Oxygen, Dissolved, Lab*	8.2	mg/L		0.1	SM4500-O G	09/07/2011 1020	L&R	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/07/2011 1040	L&R	*past hold

728086 RECEIVING WATER Liquid Taken: 09/06/2011 0655 By: Client Rec:09/07/2011

OAKDALE IRRIGATION DISTRICT RIVERBANK LATERAL-RECEIVING WATER

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
3sp chronic toxicity 3rd ed	See Report					09/08/2011 1400	SFL	
Specific Conductance	56.7	umhos/cm		1.00	EPA120.1/SM2510B	09/07/2011 0910	R&L	
Alkalinity, Total as CaCO3	24	mg/L		5.0	EPA310.1/SM2320B	09/19/2011 1035	RK	
Hardness as CaCO3	28	mg/L		5.0	SM2340C	09/19/2011 1100	TN	
pH, Lab*	7.7	unit		0.1	SM4500-H+B	09/07/2011 1025	R&L	*past hold
Oxygen, Dissolved, Lab*	10.7	mg/L		0.1	SM4500-O G	09/07/2011 1020	L&R	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/07/2011 1040	L&R	*past hold

Sample Preparation Steps for Project 201923

728085 EFFLUENT Liquid Taken: 09/06/2011 0715 By: Client Rec:09/07/2011

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/07/2011 1100	R&L

728086 RECEIVING WATER Liquid Taken: 09/06/2011 0655 By: Client Rec:09/07/2011

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/07/2011 1100	R&L

SET Quality Control/Quality Assurance for Project 201923

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SET Quality Control/Quality Assurance for Project 201923

Alkalinity, Total as CaCO3

(Analyzed: 09/19/2011 1035 RK Verified: 09/20/2011 10:23 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	460	465	mg/L	98.9	
	Blank	<5.0		mg/L		
728098	Duplicate	10	10	mg/L		0.0
728218	Duplicate	68	68	mg/L		0.0
728235	Duplicate	8.0	8.0	mg/L		0.0
728263	Duplicate	140	138	mg/L		1.4
728275	Duplicate	72	72	mg/L		0.0
728277	Duplicate	8.0	8.0	mg/L		0.0
728343	Duplicate	124	124	mg/L		0.0
728350	Duplicate	14	14	mg/L		0.0
728085	Matrix SPK	67.6	69	mg/L	98	
728213	Matrix SPK	66.2	69	mg/L	96	
728246	Matrix SPK	67.6	69	mg/L	98	
728265	Matrix SPK	67.6	69	mg/L	98	
728273	Matrix SPK	67.6	69	mg/L	98	
728282	Matrix SPK	67.6	69	mg/L	98	
728347	Matrix SPK	66.2	69	mg/L	96	
728354	Matrix SPK	34.0	34	mg/L	100	

Chlorine Residual,Total, Lab*

(Analyzed: 09/07/2011 1040 L&R Verified: 09/08/2011 12:55 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Blank	<0.10		mg/L		
727936	Duplicate	<0.10	<0.10	mg/L		0.0
727974	Duplicate	<0.10	<0.10	mg/L		0.0

Oxygen, Dissolved, Lab*

(Analyzed: 09/07/2011 1020 L&R Verified: 09/08/2011 12:54 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
727936	Duplicate	9.2	9.3	mg/L		1.1
728038	Duplicate	8.5	8.5	mg/L		0.0

Specific Conductance

(Analyzed: 09/07/2011 0910 R&L Verified: 09/08/2011 12:53 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	104	100	umho/cm	104.0	
727934	Duplicate	441	447	umho/cm		1.4
727935	Duplicate	447	447	umho/cm		0.0
727963	Duplicate	23.1	23.1	umho/cm		0.0
728041	Duplicate	339	340	umho/cm		0.3

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SET Quality Control/Quality Assurance for Project 201923

Hardness as CaCO3

(Analyzed: 09/19/2011 1100 TN Verified: 09/20/2011 10:27 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	575	598	mg/L	96.2	
	Blank	<5.0		mg/L		
728214	Duplicate	44	44	mg/L		0.0
728247	Duplicate	83	79	mg/L		4.9
728345	Duplicate	143	147	mg/L		2.8
728737	Duplicate	36	32	mg/L		11.8
728159	Matrix SPK	55.1	53	mg/L	104	
728230	Matrix SPK	48.2	53	mg/L	91	
728249	Matrix SPK	50.9	53	mg/L	96	
728738	Matrix SPK	55.1	53	mg/L	104	

pH, Lab*

(Analyzed: 09/07/2011 1025 R&L Verified: 09/08/2011 12:44 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	7.5	7.4	unit	101.4	
727936	Duplicate	6.9	6.9	unit		0.0
727983	Duplicate	7.0	7.0	unit		0.0
728085	Duplicate	8.0	8.1	unit		1.2

ELAP #2784, #1113A, #1881

Sandy Nurse

Sandy Nurse, Lab Director

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JLAN

CUSTOMER NAME: JESSE HODGES
SHIP TO:
ADDRESS: 1400 SOUTH YOSEMITE AVE
CITY, STATE, ZIP: OAKDALE CA 95361

J&L ANALYTICAL for Sconza Candy
217 PRIMO WAY
MODESTO CA 95358

ATTN: JESSE HODGES
NPDES# CA000416

SFL ID#	SOURCE DESCRIPTION	ANALYSIS (x)		SAMPLING & CONTAINER INFORMATION:			
		Chronic*	Acute**	MATRIX	P/G	DATE/HR COLLECTED	BY
728267-01	Effluent	X		WW	Gal P	9/8/11 10:10am	
728268-01	Oakdale Irrigation District Riverbank lateral- Receiving water	X		W		9/8/11 9:50am	

*Chronic 3species aquatic toxicity, EPA 600/4-91/002, testing effluent concentrations 100, 75, 50, 25, 12.5% diluted with receiving water. Annual.

Collection for September 2011 is as follows:

Date	Amt. effluent to collect		Amt receiving to collect	
Tues 9//06/11	2 gallon	CT31	3 gallon	ct31
Thurs 9/08/11	3 gallon	ct31	4 gallon	ct31
Mon 9/12/11	1 gallon	ct31	2 gallon	ct31

Transportation notes: Ice and Ship or Transport for next day receipt at lab, sample temp 4-6C. Maximum hold time to first use of samples is 36 hours from time of collection.

5.3 200 TO

RELINQUISHED BY: _____ DATE/TIME: 9/8/11 10:45am
RECEIVED BY: Kelly FED EX DATE/TIME: 9.9.11 1430
RELINQUISHED BY: _____ DATE/TIME: _____
RECEIVED BY: _____ DATE/TIME: _____

Kel 9.9.11

Sierra Foothill Laboratory, Inc.
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ORIGIN ID: SCKA (209) 845-3750
ANA COSME
SCONZA CANDY COMPANY
1 SCONZA CANDY LN

OAKDALE, CA 95361
UNITED STATES US

SHIP DATE: 08SEP11
ACTWGT: 60.0 LB MAN
CAD: 574345/CAFE2472

BILL SENDER

TO

SIERRA FOOTHILL LAB
255 SCOTTSVILLE BLVD

JACKSON CA 95642
(209) 223-2747 REF: JESSE HODGES
DEPT: RESEARCH AND DEVELOPMENT

FedEx Express

TRK# 0201 **4189 2581 7053**

FRI - 09 SEP A6
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J L Analytical Services, Inc.
217 Primo Way, Ste 2
Modesto, CA 95358-

Project Report: **202023**

Results for Project 202023

728267 EFFLUENT Liquid Taken: 09/08/2011 1010 By: JH Rec:09/09/2011

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
3sp chronic toxicity 3rd ed	See Report					09/12/2011 1400	SFL	
Specific Conductance	253	umhos/cm		1.00	EPA120.1/SM2510B	09/09/2011 1055	LV	
Alkalinity, Total as CaCO3	88	mg/L		5.0	EPA310.1/SM2320B	09/19/2011 1035	RK	
Hardness as CaCO3	89	mg/L		5.0	SM2340C	09/20/2011 1240	RK	
pH, Lab*	8.1	unit		0.1	SM4500-H+B	09/09/2011 1055	LV	*past hold
Oxygen, Dissolved, Lab*	8.8	mg/L		0.1	SM4500-O G	09/09/2011 0935	LV	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/09/2011 0940	L&R	*past hold

728268 RECEIVING, Oakdale Irrigation Liquid Taken: 09/08/2011 0950 By: JH Rec:09/09/2011

Oakdale Irrigation District Riverbank lateral-Receiving water

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
3sp chronic toxicity 3rd ed	See Report					09/12/2011 1400	SFL	
Specific Conductance	57.7	umhos/cm		1.00	EPA120.1/SM2510B	09/09/2011 1055	LV	
Alkalinity, Total as CaCO3	24	mg/L		5.0	EPA310.1/SM2320B	09/19/2011 1035	RK	
Hardness as CaCO3	28	mg/L		5.0	SM2340C	09/20/2011 1240	RK	
pH, Lab*	7.7	unit		0.1	SM4500-H+B	09/09/2011 1055	LV	*past hold
Oxygen, Dissolved, Lab*	11.6	mg/L		0.1	SM4500-O G	09/09/2011 0935	LV	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/09/2011 0940	L&R	*past hold

Sample Preparation Steps for Project 202023

728267 EFFLUENT Liquid Taken: 09/08/2011 1010 By: JH Rec:09/09/2011

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	<0.50	mg/L	0.50	SFL SOP 125	09/12/2011 1100	RK

728268 RECEIVING, Oakdale Irrigation Liquid Taken: 09/08/2011 0950 By: JH Rec:09/09/2011

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	<0.50	mg/L	0.50	SFL SOP 125	09/12/2011 1100	RK

SET Quality Control/Quality Assurance for Project 202023

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SET Quality Control/Quality Assurance for Project 202023

Alkalinity, Total as CaCO3

(Analyzed: 09/19/2011 1035 RK Verified: 09/20/2011 10:23 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	460	465	mg/L	98.9	
	Blank	<5.0		mg/L		
728098	Duplicate	10	10	mg/L		0.0
728218	Duplicate	68	68	mg/L		0.0
728235	Duplicate	8.0	8.0	mg/L		0.0
728263	Duplicate	140	138	mg/L		1.4
728275	Duplicate	72	72	mg/L		0.0
728277	Duplicate	8.0	8.0	mg/L		0.0
728343	Duplicate	124	124	mg/L		0.0
728350	Duplicate	14	14	mg/L		0.0
728085	Matrix SPK	67.6	69	mg/L	98	
728213	Matrix SPK	66.2	69	mg/L	96	
728246	Matrix SPK	67.6	69	mg/L	98	
728265	Matrix SPK	67.6	69	mg/L	98	
728273	Matrix SPK	67.6	69	mg/L	98	
728282	Matrix SPK	67.6	69	mg/L	98	
728347	Matrix SPK	66.2	69	mg/L	96	
728354	Matrix SPK	34.0	34	mg/L	100	

Chlorine Residual,Total, Lab*

(Analyzed: 09/09/2011 0940 L&R Verified: 09/12/2011 09:32 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Blank	<0.10		mg/L		
728211	Duplicate	<0.10	<0.10	mg/L		0.0
728230	Duplicate	<0.10	<0.10	mg/L		0.0
728231	Duplicate	<0.10	<0.10	mg/L		0.0

Oxygen, Dissolved, Lab*

(Analyzed: 09/09/2011 0935 LV Verified: 09/12/2011 10:03 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
728211	Duplicate	10.5	10.5	mg/L		0.0
728230	Duplicate	10.1	10.2	mg/L		1.0

Specific Conductance

(Analyzed: 09/09/2011 1055 LV Verified: 09/12/2011 10:02 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	102	100	umhos/cm	102.0	
728211	Duplicate	296	293	umhos/cm		1.0
728230	Duplicate	494	490	umhos/cm		0.8
728249	Duplicate	124	123	umhos/cm		0.8

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SET Quality Control/Quality Assurance for Project 202023

Hardness as CaCO3

(Analyzed: 09/20/2011 1240 RK Verified: 09/20/2011 16:25 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	575	598	mg/L	96.2	
	Blank	<5.0		mg/L		
728261	Duplicate	123	123	mg/L		0.0
728289	Duplicate	103	103	mg/L		0.0
728410	Duplicate	16	14	mg/L		13.3
728610	Duplicate	99	97	mg/L		2.0
728616	Duplicate	115	115	mg/L		0.0
728667	Duplicate	83	83	mg/L		0.0
728743	Duplicate	119	123	mg/L		3.3
728264	Matrix SPK	82.7	88	mg/L	94	
728268	Matrix SPK	77.4	88	mg/L	88	
728285	Matrix SPK	81.8	88	mg/L	93	
728473	Matrix SPK	83.6	88	mg/L	95	
728610	Matrix SPK	85.4	88	mg/L	97	
728665	Matrix SPK	83.6	88	mg/L	95	
728774	Matrix SPK	85.4	88	mg/L	97	

pH, Lab*

(Analyzed: 09/09/2011 1055 LV Verified: 09/12/2011 09:34 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	7.4	7.4	unit	100.0	
728211	Duplicate	8.3	8.3	unit		0.0
728220	Duplicate	8.4	8.4	unit		0.0
728261	Duplicate	7.0	7.0	unit		0.0

ELAP #2784, #1113A, #1881

Sandy Nurse

Sandy Nurse, Lab Director

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JLAN

CUSTOMER NAME: JESSE HODGES J&L ANALYTICAL for Sconza Candy
SHIP TO:
ADDRESS: 1400 SOUTH YOSEMITE AVE 217 PRIMO WAY
CITY, STATE, ZIP: OAKDALE CA 95361 MODESTO CA 95358
ATTN: JESSE HODGES
NPDES# CA000416

SFL ID#	SOURCE DESCRIPTION	ANALYSIS (x)		SAMPLING & CONTAINER INFORMATION:			
		Chronic*	Acute**	MATRIX	P/G	DATE/HR COLLECTED	BY
728475-01	Effluent	X		WW	Gal P	9/12/11 8:05	[illegible]
728476-01	Oakdale Irrigation District Riverbank lateral- Receiving water	X		W		9/12/11 7:45	[illegible]

*Chronic 3species aquatic toxicity, EPA 600/4-91/002, testing effluent concentrations 100, 75, 50, 25, 12.5% diluted with receiving water. Annual.

1.7c
+6
[illegible]

Collection for September 2011 is as follows:

Date		Amt. effluent to collect		Amt receiving to collect	
Tues	9//06/11	2 gallon	CT31	3 gallon	ct31
Thurs	9/08/11	3 gallon	ct31	4 gallon	ct31
Mon	9/12/11	1 gallon	ct31	2 gallon	ct31

Transportation notes: Ice and Ship or Transport for next day receipt at lab, sample temp 4-6C. Maximum hold time to first use of samples is 36 hours from time of collection.

RELINQUISHED BY: [signature] DATE/TIME: 9/12/11 8:45
RECEIVED BY: [signature] DATE/TIME: 9.13.11 1315 (Fedex)
RELINQUISHED BY: DATE/TIME:
RECEIVED BY: DATE/TIME:

[initials] 9.13.11

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ORIGIN ID: SCKA (209) 845-3750
ANA COSME
SCONZA CANDY COMPANY
1 SCONZA CANDY LN

OAKDALE, CA 95361
UNITED STATES US

SHIP DATE: 12SEP11
ACTWGT: 60.0 LB MAN
CAD: 574345/CAFE2472

BILL SENDER

TO

SIERRA FOOTHILL LAB
255 SCOTTSVILLE BLVD

JACKSON CA 95642
(209) 223-2747 REF: JESSE HODGES
DEPT: RESEARCH AND DEVELOPMENT

FedEx Express

TUE - 13 SEP A6
PRIORITY OVERNIGHT

TRK# 0201 4189 2581 7215

95642
CA-US
SMF

WD MHRA

Part # 150148-434 RIT2 06/11

505C2/4299/DR47

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J L Analytical Services, Inc.
217 Primo Way, Ste 2
Modesto, CA 95358-

Project Report: **202124**

Results for Project 202124

728475 EFFLUENT Liquid Taken: 09/12/2011 0805 By: JH Rec:09/13/2011

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
3sp chronic toxicity 3rd ed	See Report					09/15/2011 1100	SFL	
Specific Conductance	255	umhos/cm		1.00	EPA120.1/SM2510B	09/13/2011 1110	L&R	
Alkalinity, Total as CaCO3	92	mg/L		5.0	EPA310.1/SM2320B	09/20/2011 1225	LV	
Hardness as CaCO3	95	mg/L		5.0	SM2340C	09/20/2011 1240	RK	
pH, Lab*	8.1	unit		0.1	SM4500-H+B	09/13/2011 1105	L&R	*past hold
Oxygen, Dissolved, Lab*	7.8	mg/L		0.1	SM4500-O G	09/13/2011 1015	L&R	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/13/2011 1050	L&R	*past hold

728476 RECEIVING, Oakdale Irrigation Liquid Taken: 09/12/2011 0745 By: JH Rec:09/13/2011

Oakdale Irrigation District Riverbank lateral-Receiving water

Parameter	Result	Unit	Flag	RL	Method	Analyzed	By	CAS
3sp chronic toxicity 3rd ed	See Report					09/15/2011 1100	SFL	
Specific Conductance	57.8	umhos/cm		1.00	EPA120.1/SM2510B	09/13/2011 1110	L&R	
Alkalinity, Total as CaCO3	22	mg/L		5.0	EPA310.1/SM2320B	09/20/2011 1225	LV	
Hardness as CaCO3	28	mg/L		5.0	SM2340C	09/20/2011 1240	RK	
pH, Lab*	7.6	unit		0.1	SM4500-H+B	09/13/2011 1105	L&R	*past hold
Oxygen, Dissolved, Lab*	10.4	mg/L		0.1	SM4500-O G	09/13/2011 1015	L&R	*past hold
Chlorine Residual,Total, Lab*	<0.10	mg/L		0.10	SM4500Cl G	09/13/2011 1050	L&R	*past hold

Sample Preparation Steps for Project 202124

728475 EFFLUENT Liquid Taken: 09/12/2011 0805 By: JH Rec:09/13/2011

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/13/2011 1100	L&R

728476 RECEIVING, Oakdale Irrigation Liquid Taken: 09/12/2011 0745 By: JH Rec:09/13/2011

Parameter	Result	Unit		Method	Analyzed	By
Nitrogen, Ammonia-N Screen	ND	mg/L	0.50	SFL SOP 125	09/13/2011 1100	L&R

SET Quality Control/Quality Assurance for Project 202124

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SET Quality Control/Quality Assurance for Project 202124

Alkalinity, Total as CaCO3

(Analyzed: 09/20/2011 1225 LV Verified: 09/21/2011 09:14 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	465	465	mg/L	100.0	
	Blank	<5.0		mg/L		
728416	Duplicate	29	28	mg/L		3.5
728477	Duplicate	136	132	mg/L		3.0
728616	Duplicate	172	172	mg/L		0.0
728415	Matrix SPK	68.3	69	mg/L	99	
728478	Matrix SPK	71.8	69	mg/L	104	
728615	Matrix SPK	68.3	69	mg/L	99	

Chlorine Residual,Total, Lab*

(Analyzed: 09/13/2011 1050 L&R Verified: 09/14/2011 14:19 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Blank	<0.10		mg/L		
728408	Duplicate	<0.10	<0.10	mg/L		0.0
728453	Duplicate	0.21	0.20	mg/L		4.9
728514	Duplicate	<0.10	<0.10	mg/L		0.0

Oxygen, Dissolved, Lab*

(Analyzed: 09/13/2011 1015 L&R Verified: 09/14/2011 14:18 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
728405	Duplicate	6.2	6.3	mg/L		1.6
728473	Duplicate	8.4	8.5	mg/L		1.2

Specific Conductance

(Analyzed: 09/13/2011 1110 L&R Verified: 09/14/2011 14:17 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	103	100	umho/cm	103.0	
728410	Duplicate	21.6	21.4	umho/cm		0.9
728415	Duplicate	111	113	umho/cm		1.8
728478	Duplicate	116	115	umho/cm		0.9

Hardness as CaCO3

(Analyzed: 09/20/2011 1240 RK Verified: 09/20/2011 16:25 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	575	598	mg/L	96.2	
	Blank	<5.0		mg/L		
728261	Duplicate	123	123	mg/L		0.0
728289	Duplicate	103	103	mg/L		0.0
728410	Duplicate	16	14	mg/L		13.3
728610	Duplicate	99	97	mg/L		2.0
728616	Duplicate	115	115	mg/L		0.0
728667	Duplicate	83	83	mg/L		0.0
728743	Duplicate	119	123	mg/L		3.3

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SET Quality Control/Quality Assurance for Project 202124

Hardness as CaCO3

(Analyzed: 09/20/2011 1240 RK Verified: 09/20/2011 16:25 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
728264	Matrix SPK	82.7	88	mg/L	94	
728268	Matrix SPK	77.4	88	mg/L	88	
728285	Matrix SPK	81.8	88	mg/L	93	
728473	Matrix SPK	83.6	88	mg/L	95	
728610	Matrix SPK	85.4	88	mg/L	97	
728665	Matrix SPK	83.6	88	mg/L	95	
728774	Matrix SPK	85.4	88	mg/L	97	

pH, Lab*

(Analyzed: 09/13/2011 1105 L&R Verified: 09/14/2011 14:12 KL)

Sample	Type	Result	Value	Unit	Recovery (%)	RPD
	Standard	7.4	7.4	unit	100.0	
728408	Duplicate	6.7	6.7	unit		0.0
728426	Duplicate	7.7	7.7	unit		0.0

ELAP #2784, #1113A, #1881

Sandy Nurse

Sandy Nurse, Lab Director

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CETIS Summary Report

Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Batch ID:	16-8621-1537	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	728267	08 Sep-11 10:10	09 Sep-11	09 Sep-11	
2	728475	12 Sep-11 08:05	13 Sep-11	13 Sep-11	

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
05-4026-7253	7d Survival Rate	<0	0		11.6%		Unequal Variance t Two-Sample Test
17-5222-5953		100	>100	N/A	N/A	1	TST-Welch's t Test
06-7435-9245		100	>100	N/A	33.7%	1	Bonferroni Adj t Test
03-4815-2572	Mean Dry Biomass-mg	<0	0		20.3%		Equal Variance t Two-Sample Test
08-8744-0713		100	>100	N/A	N/A	1	TST-Welch's t Test
01-7191-6915		100	>100	N/A	20.4%	1	Bonferroni Adj t Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
10-3273-3473	7d Survival Rate	EC50	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
07-5277-4654	Mean Dry Biomass-mg	IC25	9.495	4.217	N/A	10.53	Linear Interpolation (ICPIN)
		IC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
05-4026-7253	7d Survival Rate	Control Resp	0.3	0.8 - NL	Yes	Below Acceptibility Criteria
	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria
06-7435-9245	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria
10-3273-3473	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria
17-5222-5953	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria
01-7191-6915	Mean Dry Biomass-mg	Control Resp	0.5008	0.25 - NL	Yes	Passes Acceptibility Criteria
03-4815-2572	Mean Dry Biomass-mg	Control Resp	0.2033	0.25 - NL	Yes	Below Acceptibility Criteria
	Mean Dry Biomass-mg	Control Resp	0.5008	0.25 - NL	Yes	Passes Acceptibility Criteria
07-5277-4654	Mean Dry Biomass-mg	Control Resp	0.5008	0.25 - NL	Yes	Passes Acceptibility Criteria
08-8744-0713	Mean Dry Biomass-mg	Control Resp	0.5008	0.25 - NL	Yes	Passes Acceptibility Criteria

Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — Sierra Foothill Laboratory Inc.

7d Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Receiving Water	3	0.3	0.2627	0.3373	0.2	0.4	0.05774	0.1	33.33%	70.0%
12.5		3	0.2333	0.1471	0.3196	0.1	0.5	0.1333	0.2309	98.97%	76.67%
25		3	0.4	0.2654	0.5346	0.1	0.8	0.2082	0.3606	90.14%	60.0%
50		3	0.9667	0.9451	0.9882	0.9	1	0.03333	0.05774	5.97%	3.33%
75		3	0.8667	0.7804	0.9529	0.6	1	0.1333	0.2309	26.65%	13.33%
100		3	1	1	1	1	1	0	0	0.0%	0.0%

Mean Dry Biomass-mg Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	0.5008	0.4789	0.5228	0.4333	0.55	0.02935	0.05871	11.72%	0.0%
0	Receiving Water	3	0.2033	0.1751	0.2316	0.15	0.29	0.04372	0.07572	37.24%	59.4%
12.5		3	0.2067	0.1569	0.2564	0.12	0.36	0.07688	0.1332	64.44%	58.74%
25		3	0.2267	0.1578	0.2956	0.07	0.43	0.1065	0.1845	81.39%	54.74%
50		3	0.43	0.4201	0.4399	0.4	0.45	0.01528	0.02646	6.15%	14.14%
75		3	0.36	0.3274	0.3925	0.26	0.42	0.05033	0.08718	24.22%	28.12%
100		3	0.4567	0.4447	0.4687	0.42	0.48	0.01856	0.03215	7.04%	8.82%

7d Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
0	Receiving Water	0.2	0.4	0.3	
12.5		0.1	0.5	0.1	
25		0.1	0.3	0.8	
50		0.9	1	1	
75		1	0.6	1	
100		1	1	1	

Mean Dry Biomass-mg Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.4333	0.47	0.55	0.55
0	Receiving Water	0.15	0.29	0.17	
12.5		0.12	0.36	0.14	
25		0.07	0.18	0.43	
50		0.4	0.45	0.44	
75		0.42	0.26	0.4	
100		0.48	0.47	0.42	

Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	08-8744-0713	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:47	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes
Batch ID:	16-8621-1537	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	TST b	NOEL	LOEL	TOEL	TU
Untransformed	0	C*b > T	Not Run	0.75	100	>100	N/A	1

TST-Welch's t Test

Control	vs	Conc-%	Test Stat	Critical	DF	MSD	P-Value	Decision(α:25%)
DMW		12.5	-2.113	0.8165	2		0.9155	Significant Effect
		25	-1.37	0.8165	2		0.8478	Significant Effect
		50*	2.029	0.7407	4		0.0562	Non-Significant Effect
		75	-0.2845	0.8165	2		0.5986	Significant Effect
		100*	2.814	0.7407	4		0.0240	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.5008	0.25 - NL	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		2.37	2.681	0.1938	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.2437602	0.04875205	5	4.782	0.0107	Significant Effect
Error	0.1325421	0.01019555	13			
Total	0.3763024	0.0589476	18			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	8.665	15.09	0.1232	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9595	0.8605	0.5634	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	0.5008	0.4785	0.5232	0.4333	0.55	0.02935	0.05871	11.72%	0.0%
12.5		3	0.2067	0.156	0.2573	0.12	0.36	0.07688	0.1332	64.44%	58.74%
25		3	0.2267	0.1565	0.2968	0.07	0.43	0.1065	0.1845	81.39%	54.74%
50		3	0.43	0.4199	0.4401	0.4	0.45	0.01528	0.02646	6.15%	14.14%
75		3	0.36	0.3268	0.3932	0.26	0.42	0.05033	0.08718	24.22%	28.12%
100		3	0.4567	0.4444	0.4689	0.42	0.48	0.01856	0.03215	7.04%	8.82%

Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec)

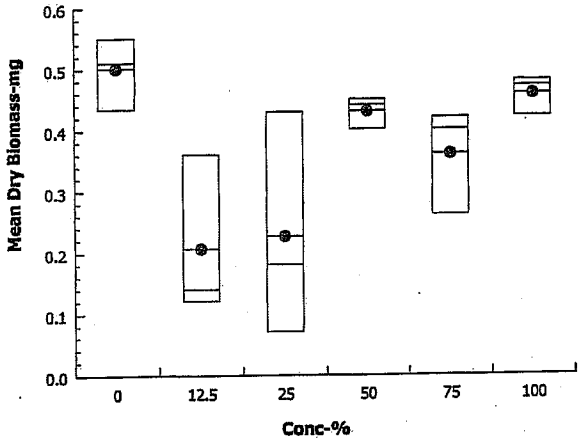
Sierra Foothill Laboratory Inc.

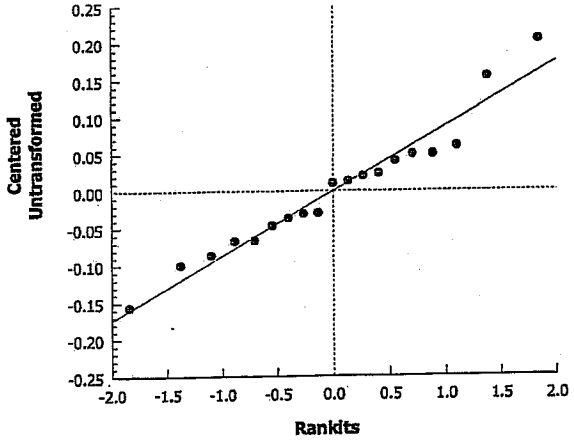
Analysis ID:	08-8744-0713	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:47	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Mean Dry Biomass-mg Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.4333	0.47	0.55	0.55
12.5		0.12	0.36	0.14	
25		0.07	0.18	0.43	
50		0.4	0.45	0.44	
75		0.42	0.26	0.4	
100		0.48	0.47	0.42	

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	17-5222-5953	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:46	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes
Batch ID:	16-8621-1537	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	TST b	NOEL	LOEL	TOEL	TU
Angular (Corrected)	0	C*b > T	Not Run	0.75	100	>100	N/A	1

TST-Welch's t Test

Control	vs	Conc-%	Test Stat	Critical	DF	MSD	P-Value	Decision(α:25%)
DMW		12.5	-3.76	0.8165	2		0.9680	Significant Effect
		25	-1.678	0.8165	2		0.8823	Significant Effect
		50*	5.526	0.8165	2		0.0156	Non-Significant Effect
		75*	1.023	0.8165	2		0.2070	Non-Significant Effect
		100*	218.2	0.7649	3		<0.0001	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		2.275	2.681	0.2754	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.652308	0.5304615	5	10.35	0.0004	Significant Effect
Error	0.6660241	0.05123262	13			
Total	3.318332	0.5816942	18			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1.607	6.632	0.2620	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9367	0.8605	0.2294	Normal Distribution

Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	17-5222-5953	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:46	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

7d Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		3	0.2333	0.1455	0.3212	0.1	0.5	0.1333	0.2309	98.97%	76.67%
25		3	0.4	0.2629	0.5371	0.1	0.8	0.2082	0.3606	90.14%	60.0%
50		3	0.9667	0.9447	0.9886	0.9	1	0.03333	0.05773	5.97%	3.33%
75		3	0.8667	0.7788	0.9545	0.6	1	0.1333	0.2309	26.65%	13.33%
100		3	1	1	1	1	1	0	0	0.0%	0.0%

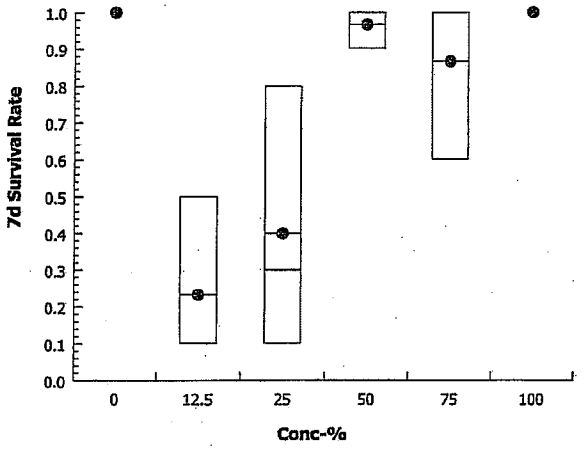
Angular (Corrected) Transformed Summary

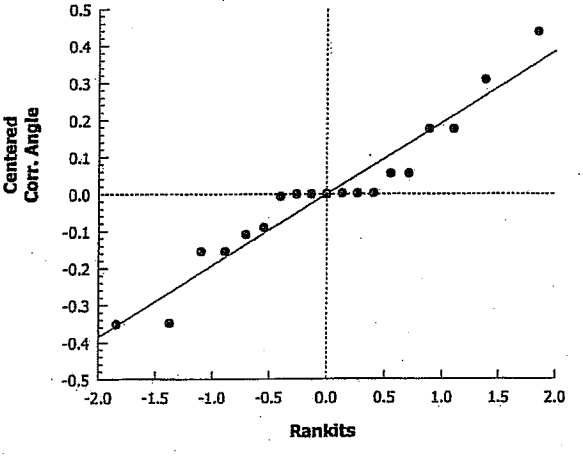
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	1.41	1.408	1.412	1.403	1.412	0.002171	0.004341	0.31%	0.0%
12.5		3	0.4763	0.3745	0.5781	0.3218	0.7854	0.1545	0.2677	56.2%	66.22%
25		3	0.6695	0.5172	0.8218	0.3218	1.107	0.2311	0.4003	59.8%	52.51%
50		3	1.358	1.322	1.393	1.249	1.412	0.05432	0.09409	6.93%	3.7%
75		3	1.237	1.121	1.352	0.8861	1.412	0.1753	0.3037	24.55%	12.28%
100		3	1.412	1.412	1.412	1.412	1.412	0	0	0.0%	-0.15%

7d Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
12.5		0.1	0.5	0.1	
25		0.1	0.3	0.8	
50		0.9	1	1	
75		1	0.6	1	
100		1	1	1	

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	03-4815-2572	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:46	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes
Batch ID:	16-8621-1537	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample fails mean dry biomass-mg endpoint	20.3%

Equal Variance t Two-Sample Test

Control	vs	Control	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
DMW		Receiving Water	5.898	2.015	5	0.1016	0.0010	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.2033	0.25 - NL	Yes	Below Acceptibility Criteria
Control Resp	0.5008	0.25 - NL	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		1.438	2.02	0.8843	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.151721	0.151721	1	34.79	0.0020	Significant Effect
Error	0.02180677	0.004361354	5			
Total	0.1735278	0.1560823	6			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.663	49.8	0.6531	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8829	0.5629	0.2398	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	3	0.2033	0.1745	0.2321	0.15	0.29	0.04372	0.07572	37.24%	0.0%
0	DMW	4	0.5008	0.4785	0.5232	0.4333	0.55	0.02935	0.05871	11.72%	-146.3%

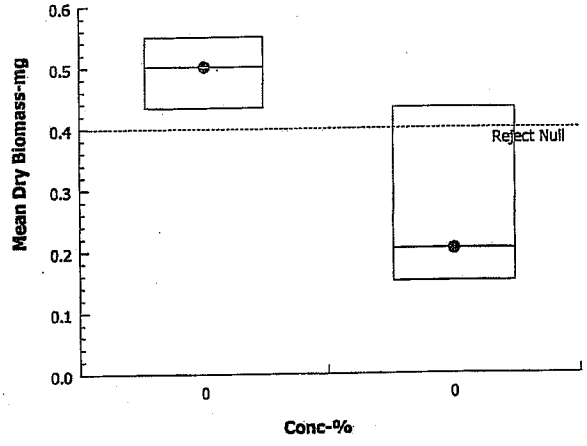
Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

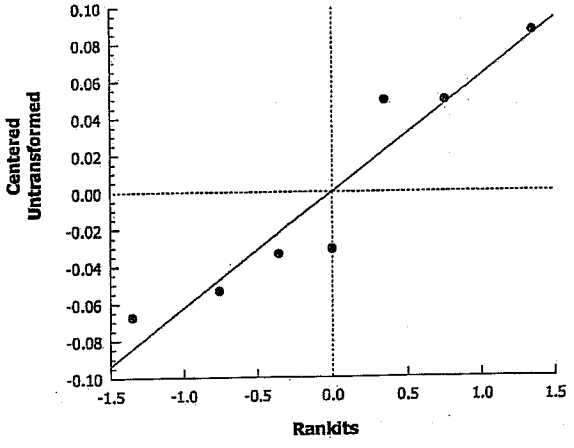
Analysis ID:	03-4815-2572	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:46	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Mean Dry Biomass-mg Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.4333	0.47	0.55	0.55
0	Receiving Water	0.15	0.29	0.17	

Graphics





CETIS Analytical Report

Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — Sierra Foothill Laboratory Inc.

Analysis ID:	05-4026-7253	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:46	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes
Batch ID:	16-8621-1537	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample fails 7d survival rate endpoint	11.6%

Unequal Variance t Two-Sample Test

Control	vs	Control	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
DMW		Receiving Water	13.05	2.92	2	0.1865	0.0029	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.3	0.8 - NL	Yes	Below Acceptibility Criteria
Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		1.758	2.02	0.2844	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.191944	1.191944	1	243.1	<0.0001	Significant Effect
Error	0.02451252	0.004902504	5			
Total	1.216457	1.196847	6			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	651	49.8	0.0002	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.809	0.5629	0.0503	Normal Distribution

7d Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	3	0.3	0.262	0.338	0.2	0.4	0.05774	0.1	33.33%	0.0%
0	DMW	4	1	1	1	1	1	0	0	0.0%	-233.3%

Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Wate	3	0.576	0.5339	0.6181	0.4636	0.6847	0.06384	0.1106	19.2%	0.0%
0	DMW	4	1.41	1.408	1.412	1.403	1.412	0.002171	0.004341	0.31%	-144.8%

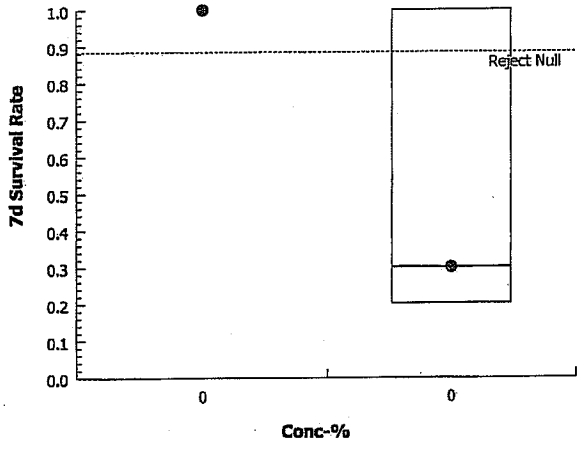
Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

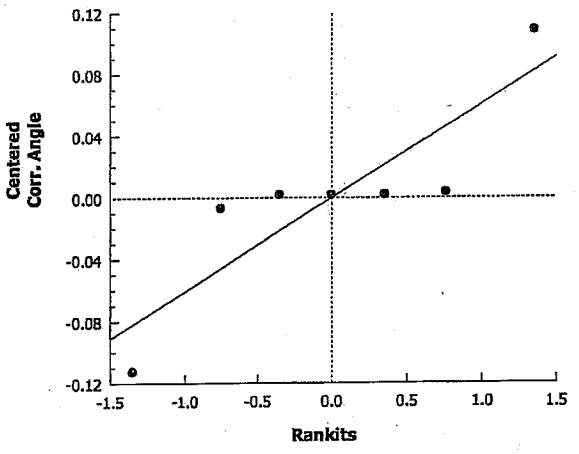
Analysis ID:	05-4026-7253	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:46	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

7d Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
0	Receiving Water	0.2	0.4	0.3	

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	01-7191-6915	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:43	**Analysis:**	Parametric-Multiple Comparison	**Official Results:**	Yes
Batch ID:	16-8621-1537	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	NOEL	LOEL	TOEL	TU	PMSD
Power(Y^Z)	3	C > T	Not Run	100	>100	N/A	1	20.4%

Bonferroni Adj t Test

Control	vs	Conc-%	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
DMW		12.5*	4.503	2.65	5	0.06618	0.0015	Significant Effect
		25*	4.042	2.65	5	0.06618	0.0035	Significant Effect
		50	1.977	2.65	5	0.06618	0.1740	Non-Significant Effect
		75*	3.107	2.65	5	0.06618	0.0208	Significant Effect
		100	1.334	2.65	5	0.06618	0.5127	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.5008	0.25 - NL	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		1.834	2.681	1.0000	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.03105914	0.006211828	5	5.811	0.0049	Significant Effect
Error	0.0138969	0.001068993	13			
Total	0.04495604	0.00728082	18			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	3.184	15.09	0.6716	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9617	0.8605	0.6064	Normal Distribution

Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	01-7191-6915	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:43	**Analysis:**	Parametric-Multiple Comparison	**Official Results:**	Yes

Mean Dry Biomass-mg Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	0.5008	0.4785	0.5232	0.4333	0.55	0.02935	0.05871	11.72%	0.0%
12.5		3	0.2067	0.156	0.2573	0.12	0.36	0.07688	0.1332	64.44%	58.74%
25		3	0.2267	0.1565	0.2968	0.07	0.43	0.1065	0.1845	81.39%	54.74%
50		3	0.43	0.4199	0.4401	0.4	0.45	0.01528	0.02646	6.15%	14.14%
75		3	0.36	0.3268	0.3932	0.26	0.42	0.05033	0.08718	24.22%	28.12%
100		3	0.4567	0.4444	0.4689	0.42	0.48	0.01856	0.03215	7.04%	8.82%

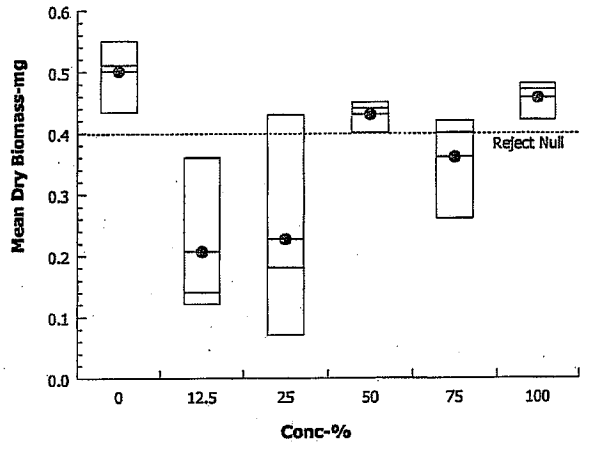
Power(Y^Z) Transformed Summary

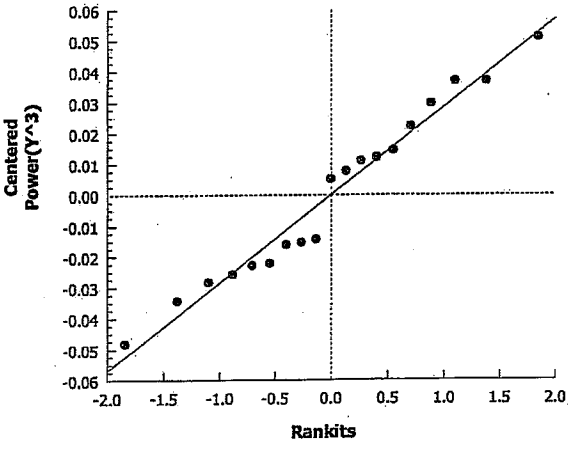
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	0.1295	0.1129	0.1461	0.08137	0.1664	0.02178	0.04357	33.65%	0.0%
12.5		3	0.01704	0.007285	0.0268	0.001728	0.04666	0.01481	0.02565	150.5%	86.84%
25		3	0.02856	0.01175	0.04538	0.000343	0.07951	0.02552	0.04421	154.8%	77.94%
50		3	0.0801	0.07468	0.08553	0.064	0.09113	0.008233	0.01426	17.8%	38.14%
75		3	0.05189	0.04042	0.06335	0.01758	0.07409	0.0174	0.03014	58.09%	59.93%
100		3	0.09617	0.08878	0.1036	0.07409	0.1106	0.01121	0.01942	20.2%	25.73%

Mean Dry Biomass-mg Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.4333	0.47	0.55	0.55
12.5		0.12	0.36	0.14	
25		0.07	0.18	0.43	
50		0.4	0.45	0.44	
75		0.42	0.26	0.4	
100		0.48	0.47	0.42	

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec)

Sierra Foothill Laboratory Inc.

Analysis ID:	06-7435-9245	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:41	**Analysis:**	Parametric-Multiple Comparison	**Official Results:**	Yes
Batch ID:	16-8621-1537	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	0	C > T	Not Run	100	>100	N/A	1	33.7%

Bonferroni Adj t Test

Control	vs	Conc-%	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
DMW		12.5*	5.4	2.65	5	0.4582	0.0003	Significant Effect
		25*	4.282	2.65	5	0.4582	0.0022	Significant Effect
		50	0.3017	2.65	5	0.4582	1.0000	Non-Significant Effect
		75	1.002	2.65	5	0.4582	0.8371	Non-Significant Effect
		100	-0.01253	2.65	5	0.4582	1.0000	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		2.275	2.681	0.2754	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.652308	0.5304615	5	10.35	0.0004	Significant Effect
Error	0.6660241	0.05123262	13			
Total	3.318332	0.5816942	18			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1.607	6.632	0.2620	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9367	0.8605	0.2294	Normal Distribution

Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	06-7435-9245	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:41	**Analysis:**	Parametric-Multiple Comparison	**Official Results:**	Yes

7d Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		3	0.2333	0.1455	0.3212	0.1	0.5	0.1333	0.2309	98.97%	76.67%
25		3	0.4	0.2629	0.5371	0.1	0.8	0.2082	0.3606	90.14%	60.0%
50		3	0.9667	0.9447	0.9886	0.9	1	0.03333	0.05773	5.97%	3.33%
75		3	0.8667	0.7788	0.9545	0.6	1	0.1333	0.2309	26.65%	13.33%
100		3	1	1	1	1	1	0	0	0.0%	0.0%

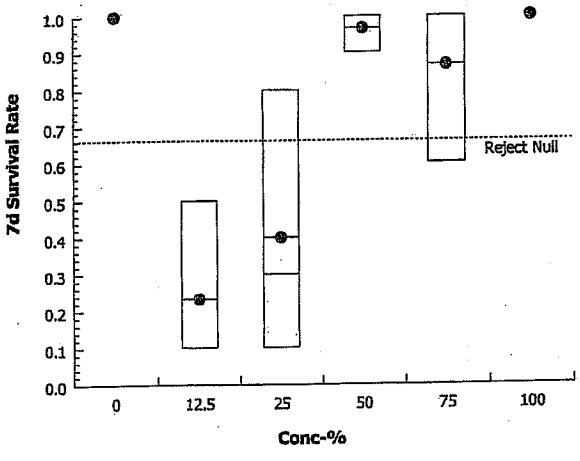
Angular (Corrected) Transformed Summary

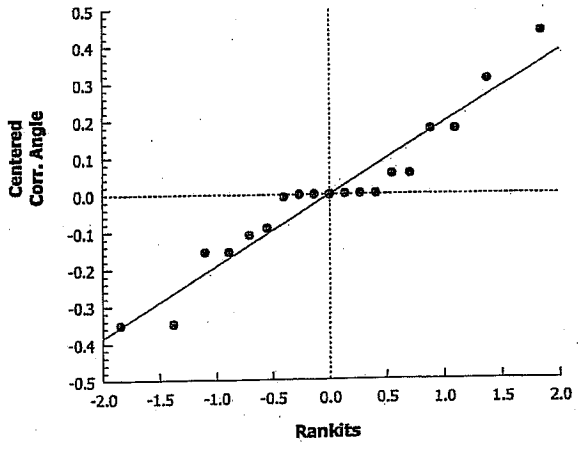
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	1.41	1.408	1.412	1.403	1.412	0.002171	0.004341	0.31%	0.0%
12.5		3	0.4763	0.3745	0.5781	0.3218	0.7854	0.1545	0.2677	56.2%	66.22%
25		3	0.6695	0.5172	0.8218	0.3218	1.107	0.2311	0.4003	59.8%	52.51%
50		3	1.358	1.322	1.393	1.249	1.412	0.05432	0.09409	6.93%	3.7%
75		3	1.237	1.121	1.352	0.8861	1.412	0.1753	0.3037	24.55%	12.28%
100		3	1.412	1.412	1.412	1.412	1.412	0	0	0.0%	-0.15%

7d Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
12.5		0.1	0.5	0.1	
25		0.1	0.3	0.8	
50		0.9	1	1	
75		1	0.6	1	
100		1	1	1	

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	07-5277-4654	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:43	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	16-8621-1537	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	816847390	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.5008	0.25 - NL	Yes	Passes Acceptibility Criteria

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value	Grubbs Extreme Value	2.37	2.681	0.1938	No Outliers Detected

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	9.495	4.217	N/A	10.53	N/A	23.71
IC50	>100	N/A	N/A	<1	N/A	N/A

Mean Dry Biomass-mg Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	0.5008	0.4333	0.55	0.02935	0.05871	11.72%	0.0%
12.5		3	0.2067	0.12	0.36	0.07688	0.1332	64.44%	58.74%
25		3	0.2267	0.07	0.43	0.1065	0.1845	81.39%	54.74%
50		3	0.43	0.4	0.45	0.01528	0.02646	6.15%	14.14%
75		3	0.36	0.26	0.42	0.05033	0.08718	24.22%	28.12%
100		3	0.4567	0.42	0.48	0.01856	0.03215	7.04%	8.82%

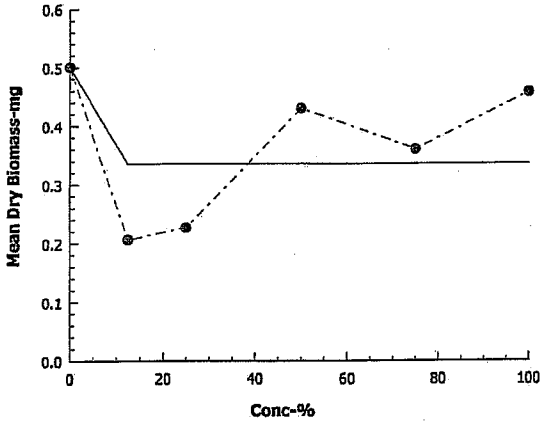
Mean Dry Biomass-mg Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.4333	0.47	0.55	0.55
12.5		0.12	0.36	0.14	
25		0.07	0.18	0.43	
50		0.4	0.45	0.44	
75		0.42	0.26	0.4	
100		0.48	0.47	0.42	

Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	07-5277-4654	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:43	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	10-3273-3473	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:41	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	16-8621-1537	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1.003E+09	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value	Grubbs Extreme Value	2.275	2.681	0.2754	No Outliers Detected

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC50	>100	N/A	N/A	<1	N/A	N/A

7d Survival Rate Summary

			Calculated Variate(A/B)								
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	DMW	4	1	1	1	0	0	0.0%	0.0%	39	39
12.5		3	0.2333	0.1	0.5	0.1333	0.2309	98.97%	76.67%	7	30
25		3	0.4	0.1	0.8	0.2082	0.3606	90.14%	60.0%	12	30
50		3	0.9667	0.9	1	0.03333	0.05773	5.97%	3.33%	29	30
75		3	0.8667	0.6	1	0.1333	0.2309	26.65%	13.33%	26	30
100		3	1	1	1	0	0	0.0%	0.0%	30	30

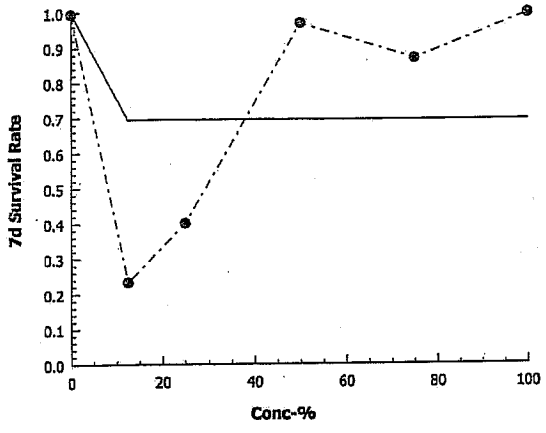
7d Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
12.5		0.1	0.5	0.1	
25		0.1	0.3	0.8	
50		0.9	1	1	
75		1	0.6	1	
100		1	1	1	

Fathead Minnow 7-d Larval Surv and Growth (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	10-3273-3473	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:41	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Summary Report

Test Code: 090711CC3RJLAN | 07-7499-9994

Ceriodaphnia Surv and Reprod Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Batch ID:	02-5581-5935	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	07 Sep-11 15:00	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	13 Sep-11 17:00	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	6d 2h	**Source:**	In-House Culture	**Age:**	<8h
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	728267	08 Sep-11 10:10	09 Sep-11	09 Sep-11	
2	728475	12 Sep-11 08:05	13 Sep-11	13 Sep-11	

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
08-5469-4873	6d Survival Rate	100	>100	N/A	N/A	1	Fisher Exact Test
18-7926-5844	Reproduction	100	>100	N/A	16.9%	1	Steel Many-One Rank Test
09-7595-2430		100	>100	N/A	N/A	1	TST-Welch's t Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
18-9865-3508	6d Survival Rate	LC50	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
08-4787-6954	Reproduction	EC25	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
08-5469-4873	6d Survival Rate	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptibility Criteria
18-9865-3508	6d Survival Rate	Control Resp	0.9	0.8 - NL	Yes	Passes Acceptibility Criteria
08-4787-6954	Reproduction	Control Resp	21.5	15 - NL	Yes	Passes Acceptibility Criteria
09-7595-2430	Reproduction	Control Resp	21.5	15 - NL	Yes	Passes Acceptibility Criteria
18-7926-5844	Reproduction	Control Resp	21.5	15 - NL	Yes	Passes Acceptibility Criteria

6d Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	10	0.9	0.7819	1	0	1	0.1	0.3162	35.14%	0.0%
0	dMW1	10	1	1	1	1	1	0	0	0.0%	-11.11%
12.5		10	1	1	1	1	1	0	0	0.0%	-11.11%
25		10	1	1	1	1	1	0	0	0.0%	-11.11%
50		10	1	1	1	1	1	0	0	0.0%	-11.11%
75		10	1	1	1	1	1	0	0	0.0%	-11.11%
100		10	1	1	1	1	1	0	0	0.0%	-11.11%

Reproduction Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	10	21.5	18.62	24.38	0	28	2.442	7.721	35.91%	0.0%
0	dMW1	10	23.6	23.07	24.13	22	26	0.4522	1.43	6.06%	-9.77%
12.5		10	24.1	23.53	24.67	22	26	0.4819	1.524	6.32%	-12.09%
25		10	25.1	24.27	25.93	21	28	0.7063	2.234	8.9%	-16.74%
50		10	25.1	24.28	25.92	20	27	0.6904	2.183	8.7%	-16.74%
75		10	26.6	26.1	27.1	24	28	0.4269	1.35	5.08%	-23.72%
100		10	25.7	25.2	26.2	24	29	0.423	1.337	5.2%	-19.53%

Ceriodaphnia Surv and Reprod Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

6d Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	1	1	1	1	1	0	1	1	1	1
0	dMW1	1	1	1	1	1	1	1	1	1	1
12.5		1	1	1	1	1	1	1	1	1	1
25		1	1	1	1	1	1	1	1	1	1
50		1	1	1	1	1	1	1	1	1	1
75		1	1	1	1	1	1	1	1	1	1
100		1	1	1	1	1	1	1	1	1	1

Reproduction Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	28	23	24	22	24	0	24	23	24	23
0	dMW1	22	23	23	24	25	22	25	24	26	22
12.5		25	22	25	26	23	22	25	23	24	26
25		26	27	26	25	22	21	28	27	24	25
50		26	27	27	20	27	25	23	25	26	25
75		28	27	28	25	24	26	27	28	26	27
100		29	25	25	26	26	25	24	26	26	25

CETIS Analytical Report

Test Code: 090711CC3RJLAN | 07-7499-9994

Sierra Foothill Laboratory Inc.

Ceriodaphnia Surv and Reprod Test (Dil: Rec)

Analysis ID:	09-7595-2430	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:34	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes
Batch ID:	02-5581-5935	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	07 Sep-11 15:00	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	13 Sep-11 17:00	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	6d 2h	**Source:**	In-House Culture	**Age:**	<8h
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	TST b	NOEL	LOEL	TOEL	TU
Untransformed	0	C*b > T	Not Run	0.75	100	>100	N/A	1

TST-Welch's t Test

Control	vs	Conc-%	Test Stat	Critical	DF	MSD	P-Value	Decision(α:20%)
Receiving Water		12.5*	4.212	0.8791	10		0.0009	Non-Significant Effect
		25*	4.573	0.8755	11		0.0004	Non-Significant Effect
		50*	4.586	0.8755	11		0.0004	Non-Significant Effect
		75*	5.571	0.8834	9		0.0002	Non-Significant Effect
		100*	5.095	0.8834	9		0.0003	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	21.5	15 - NL	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		6.344	3.2	<0.0001	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	155.2833	31.05667	5	2.475	0.0433	Significant Effect
Error	677.7	12.55	54			
Total	832.9833	43.60667	59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	50.88	15.09	<0.0001	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.616	0.9459	<0.0001	Non-normal Distribution

Reproduction Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	10	21.5	18.56	24.44	0	28	2.442	7.721	35.91%	0.0%
12.5		10	24.1	23.52	24.68	22	26	0.4819	1.524	6.32%	-12.09%
25		10	25.1	24.25	25.95	21	28	0.7063	2.234	8.9%	-16.74%
50		10	25.1	24.27	25.93	20	27	0.6904	2.183	8.7%	-16.74%
75		10	26.6	26.09	27.11	24	28	0.4269	1.35	5.08%	-23.72%
100		10	25.7	25.19	26.21	24	29	0.423	1.337	5.2%	-19.53%

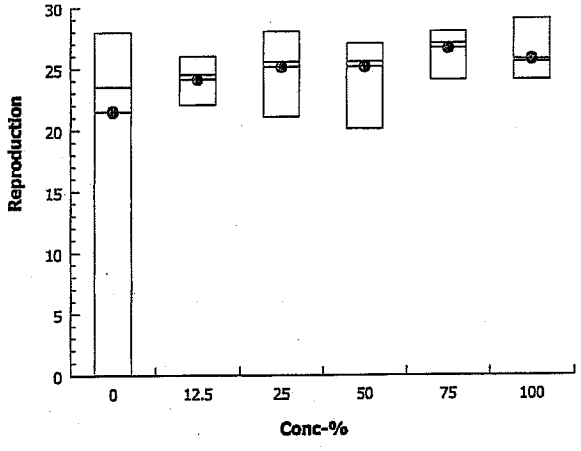
Ceriodaphnia Surv and Reprod Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

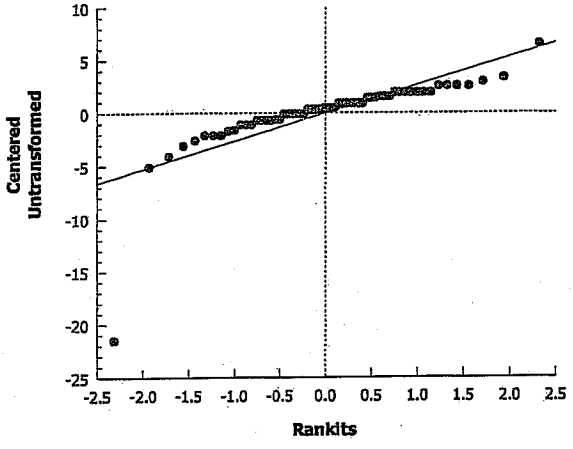
Analysis ID:	09-7595-2430	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:34	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Reproduction Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	28	23	24	22	24	0	24	23	24	23
12.5		25	22	25	26	23	22	25	23	24	26
25		26	27	26	25	22	21	28	27	24	25
50		26	27	27	20	27	25	23	25	26	25
75		28	27	28	25	24	26	27	28	26	27
100		29	25	25	26	26	25	24	26	26	25

Graphics





Ceriodaphnia Surv and Reprod Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	18-7926-5844	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:33	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes
Batch ID:	02-5581-5935	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	07 Sep-11 15:00	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	13 Sep-11 17:00	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	6d 2h	**Source:**	In-House Culture	**Age:**	<8h
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	0	C > T	Not Run	100	>100	N/A	1	16.9%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	DF	Ties	P-Value	Decision(α:5%)
Receiving Water		12.5	117	75	18	3	0.9802	Non-Significant Effect
		25	128	75	18	3	0.9989	Non-Significant Effect
		50	131.5	75	18	1	0.9996	Non-Significant Effect
		75	144.5	75	18	2	1.0000	Non-Significant Effect
		100	144	75	18	1	1.0000	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	21.5	15 - NL	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		6.344	3.2	<0.0001	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	155.2833	31.05667	5	2.475	0.0433	Significant Effect
Error	677.7	12.55	54			
Total	832.9833	43.60667	59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	50.88	15.09	<0.0001	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.616	0.9459	<0.0001	Non-normal Distribution

Reproduction Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	10	21.5	18.56	24.44	0	28	2.442	7.721	35.91%	0.0%
12.5		10	24.1	23.52	24.68	22	26	0.4819	1.524	6.32%	-12.09%
25		10	25.1	24.25	25.95	21	28	0.7063	2.234	8.9%	-16.74%
50		10	25.1	24.27	25.93	20	27	0.6904	2.183	8.7%	-16.74%
75		10	26.6	26.09	27.11	24	28	0.4269	1.35	5.08%	-23.72%
100		10	25.7	25.19	26.21	24	29	0.423	1.337	5.2%	-19.53%

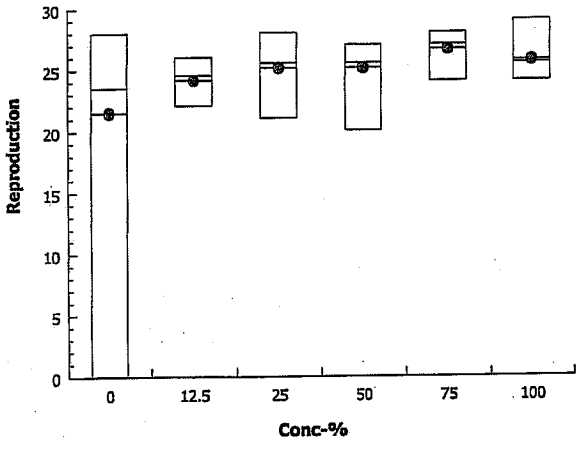
Ceriodaphnia Surv and Reprod Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

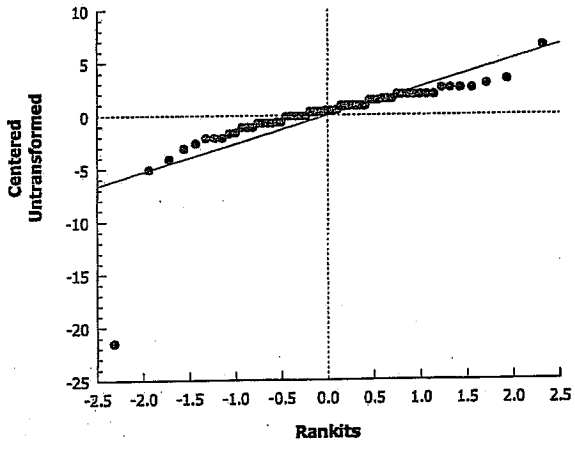
Analysis ID:	18-7926-5844	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:33	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Reproduction Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	28	23	24	22	24	0	24	23	24	23
12.5		25	22	25	26	23	22	25	23	24	26
25		26	27	26	25	22	21	28	27	24	25
50		26	27	27	20	27	25	23	25	26	25
75		28	27	28	25	24	26	27	28	26	27
100		29	25	25	26	26	25	24	26	26	25

Graphics





CETIS Analytical Report

Ceriodaphnia Surv and Reprod Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	08-4787-6954	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:34	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	02-5581-5935	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	07 Sep-11 15:00	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	13 Sep-11 17:00	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	6d 2h	**Source:**	In-House Culture	**Age:**	<8h
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	2.046E+09	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	21.5	15 - NL	Yes	Passes Acceptibility Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC25	>100	N/A	N/A	<1	N/A	N/A
EC50	>100	N/A	N/A	<1	N/A	N/A

Reproduction Summary

			Calculated Variate						
Conc-%	**Control Type**	**Count**	**Mean**	**Min**	**Max**	**Std Err**	**Std Dev**	**CV%**	**%Effect**
0	Receiving Water	10	21.5	0	28	2.442	7.721	35.91%	0.0%
12.5		10	24.1	22	26	0.4819	1.524	6.32%	-12.09%
25		10	25.1	21	28	0.7063	2.234	8.9%	-16.74%
50		10	25.1	20	27	0.6904	2.183	8.7%	-16.74%
75		10	26.6	24	28	0.4269	1.35	5.08%	-23.72%
100		10	25.7	24	29	0.423	1.337	5.2%	-19.53%

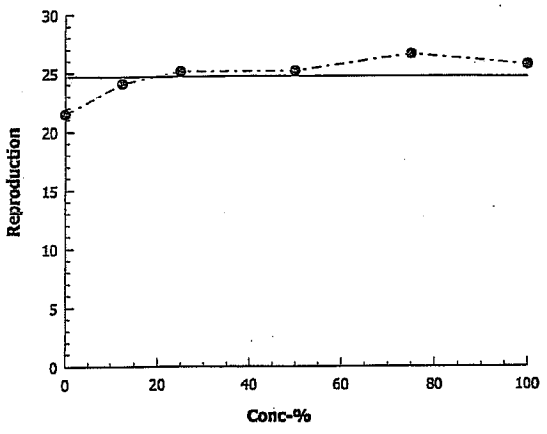
Reproduction Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	28	23	24	22	24	0	24	23	24	23
12.5		25	22	25	26	23	22	25	23	24	26
25		26	27	26	25	22	21	28	27	24	25
50		26	27	27	20	27	25	23	25	26	25
75		28	27	28	25	24	26	27	28	26	27
100		29	25	25	26	26	25	24	26	26	25

Ceriodaphnia Surv and Reprod Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	08-4787-6954	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:34	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Analytical Report

Ceriodaphnia Surv and Reprod Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	18-9865-3508	**Endpoint:**	6d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:32	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	02-5581-5935	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	07 Sep-11 15:00	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	13 Sep-11 17:00	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	6d 2h	**Source:**	In-House Culture	**Age:**	<8h
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1.872E+09	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.9	0.8 - NL	Yes	Passes Acceptibility Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	N/A	N/A	<1	N/A	N/A

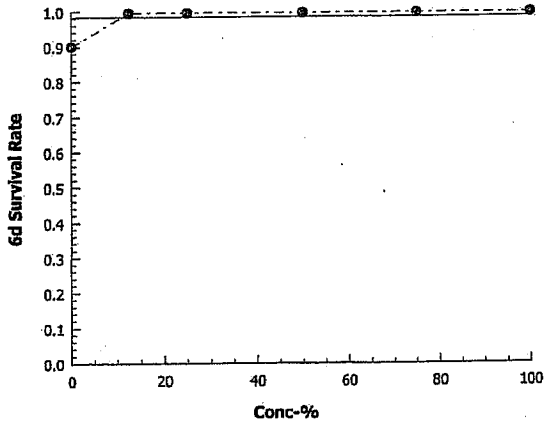
6d Survival Rate Summary

			Calculated Variate(A/B)								
Conc-%	**Control Type**	**Count**	**Mean**	**Min**	**Max**	**Std Err**	**Std Dev**	**CV%**	**%Effect**	**A**	**B**
0	Receiving Water	10	0.9	0	1	0.1	0.3162	35.14%	0.0%	9	10
12.5		10	1	1	1	0	0	0.0%	-11.11%	10	10
25		10	1	1	1	0	0	0.0%	-11.11%	10	10
50		10	1	1	1	0	0	0.0%	-11.11%	10	10
75		10	1	1	1	0	0	0.0%	-11.11%	10	10
100		10	1	1	1	0	0	0.0%	-11.11%	10	10

6d Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	1	1	1	1	1	0	1	1	1	1
12.5		1	1	1	1	1	1	1	1	1	1
25		1	1	1	1	1	1	1	1	1	1
50		1	1	1	1	1	1	1	1	1	1
75		1	1	1	1	1	1	1	1	1	1
100		1	1	1	1	1	1	1	1	1	1

Graphics



CETIS Analytical Report

Ceriodaphnia Surv and Reprod Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	08-5469-4873	**Endpoint:**	6d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:32	**Analysis:**	Single 2x2 Contingency Table	**Official Results:**	Yes
Batch ID:	02-5581-5935	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	07 Sep-11 15:00	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	13 Sep-11 17:00	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	6d 2h	**Source:**	In-House Culture	**Age:**	<8h
Sample ID:	07-8070-1155	**Code:**	728085	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	06 Sep-11 07:15	**Material:**	POTW Effluent	**Project:**	
Receive Date:	07 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	32h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	NOEL	LOEL	TOEL	TU
Untransformed		C > T	Not Run	100	>100	N/A	1

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Value	Decision(0.05)
Receiving Water		12.5	1	1.0000	Non-Significant Effect
		25	1	1.0000	Non-Significant Effect
		50	1	1.0000	Non-Significant Effect
		75	1	1.0000	Non-Significant Effect
		100	1	1.0000	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.9	0.8 - NL	Yes	Passes Acceptibility Criteria

Data Summary

Conc-%	Control Type	No-Resp	Resp	Total
0	Receiving Wate	9	1	10
12.5		10	0	10
25		10	0	10
50		10	0	10
75		10	0	10
100		10	0	10

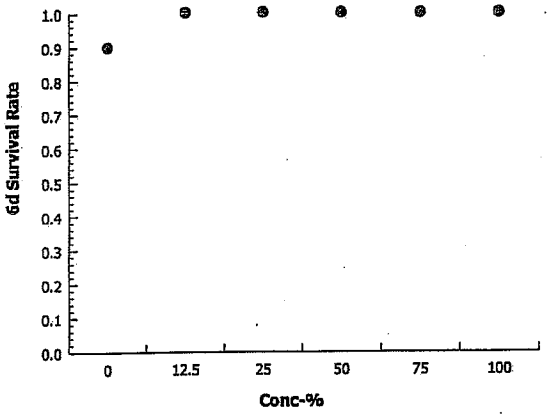
6d Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	1	1	1	1	1	0	1	1	1	1
12.5		1	1	1	1	1	1	1	1	1	1
25		1	1	1	1	1	1	1	1	1	1
50		1	1	1	1	1	1	1	1	1	1
75		1	1	1	1	1	1	1	1	1	1
100		1	1	1	1	1	1	1	1	1	1

Ceriodaphnia Surv and Reprod Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	08-5469-4873	**Endpoint:**	6d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:32	**Analysis:**	Single 2x2 Contingency Table	**Official Results:**	Yes

Graphics



CETIS Summary Report

Test Code: 090911SC3RJLAN | 03-5153-5143

Selenastrum Growth Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Batch ID:	06-7748-9948	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	09 Sep-11 00:01	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	13 Sep-11	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	96h	**Source:**	In-House Culture	**Age:**	7d
Sample ID:	18-2712-0548	**Code:**	728267	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	08 Sep-11 10:10	**Material:**	POTW Effluent	**Project:**	
Receive Date:	09 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	14h	**Station:**			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
17-4032-7795	Cell Density	<0	0		5.38%		Equal Variance t Two-Sample Test
06-5586-3511		100	>100	N/A	N/A	1	TST-Welch's t Test
01-8435-3525		100	>100	N/A	17.4%	1	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
00-9650-2788	Cell Density	IC25	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		IC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
00-9650-2788	Cell Density	Control CV	0.03121	NL - 0.2	Yes	Passes Acceptibility Criteria
01-8435-3525	Cell Density	Control CV	0.03121	NL - 0.2	Yes	Passes Acceptibility Criteria
06-5586-3511	Cell Density	Control CV	0.03121	NL - 0.2	Yes	Passes Acceptibility Criteria
17-4032-7795	Cell Density	Control CV	0.03121	NL - 0.2	Yes	Passes Acceptibility Criteria
	Cell Density	Control CV	0.0365	NL - 0.2	Yes	Passes Acceptibility Criteria
00-9650-2788	Cell Density	Control Resp	1.30E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria
01-8435-3525	Cell Density	Control Resp	1.30E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria
06-5586-3511	Cell Density	Control Resp	1.30E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria
17-4032-7795	Cell Density	Control Resp	1.30E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria
	Cell Density	Control Resp	1.69E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	MHSFW Lab Co	4	1.100E+6	1.093E+6	1.108E+6	1.077E+6	1.123E+6	9.821E+3	1.964E+4	1.79%	0.0%
0	DMW	4	1.650E+6	1.614E+6	1.685E+6	1.528E+6	1.758E+6	4.766E+4	9.532E+4	5.78%	-49.91%
0	Receiving Water	4	1.317E+6	1.301E+6	1.333E+6	1.260E+6	1.356E+6	2.118E+4	4.235E+4	3.22%	-19.67%
12.5		4	1.928E+6	1.903E+6	1.953E+6	1.870E+6	1.995E+6	3.361E+4	6.723E+4	3.49%	-75.23%
25		4	2.316E+6	2.295E+6	2.336E+6	2.263E+6	2.379E+6	2.737E+4	5.473E+4	2.36%	-110.4%
50		4	3.159E+6	3.095E+6	3.222E+6	2.924E+6	3.305E+6	8.492E+4	1.698E+5	5.38%	-187.1%
75		4	3.510E+6	3.442E+6	3.577E+6	3.331E+6	3.727E+6	9.064E+4	1.813E+5	5.17%	-219.0%
100		4	4.012E+6	3.855E+6	4.169E+6	3.568E+6	4.393E+6	2.100E+5	4.201E+5	10.47%	-264.6%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	MHSFW Lab Co	1.108E+6	1.094E+6	1.077E+6	1.123E+6
0	DMW	1.758E+6	1.638E+6	1.675E+6	1.528E+6
0	Receiving Water	1.340E+6	1.260E+6	1.311E+6	1.356E+6
12.5		1.870E+6	1.995E+6	1.870E+6	1.977E+6
25		2.343E+6	2.278E+6	2.263E+6	2.379E+6
50		3.259E+6	3.305E+6	3.148E+6	2.924E+6
75		3.331E+6	3.727E+6	3.394E+6	3.587E+6
100		3.568E+6	3.740E+6	4.348E+6	4.393E+6

CETIS Analytical Report

Selenastrum Growth Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	17-4032-7795	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 13:10	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes
Batch ID:	06-7748-9948	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	09 Sep-11 00:01	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	13 Sep-11	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	96h	**Source:**	In-House Culture	**Age:**	7d
Sample ID:	18-2712-0548	**Code:**	728267	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	08 Sep-11 10:10	**Material:**	POTW Effluent	**Project:**	
Receive Date:	09 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	14h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample fails cell density endpoint	5.38%

Equal Variance t Two-Sample Test

Control	vs	Control	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
DMW		Receiving Water	9.056	2.132	4	90950	0.0004	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control CV	0.03121	NL - 0.2	Yes	Passes Acceptibility Criteria
Control CV	0.0365	NL - 0.2	Yes	Passes Acceptibility Criteria
Control Resp	1.30E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria
Control Resp	1.69E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		1.454	1.887	0.6739	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.239393E+11	2.239393E+11	1	82.02	0.0008	Significant Effect
Error	10921730000	2730432000	4			
Total	2.34861E+11	2.266697E+11	5			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.298	199	0.6063	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9527	0.43	0.7625	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	3	1.304E+6	1.288E+6	1.319E+6	1.260E+6	1.340E+6	2.349E+4	4.069E+4	3.12%	0.0%
0	DMW	3	1.690E+6	1.667E+6	1.714E+6	1.638E+6	1.758E+6	3.561E+4	6.169E+4	3.65%	-29.64%

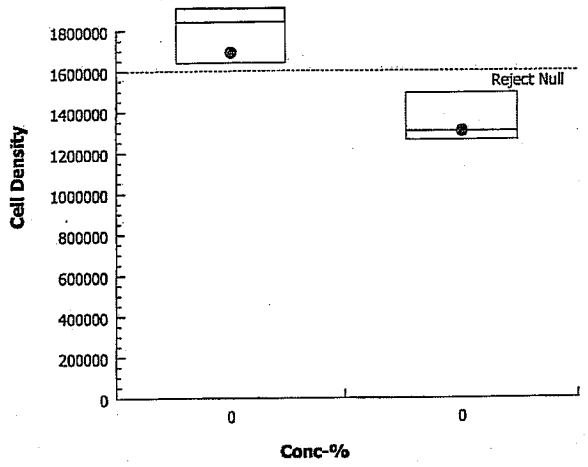
Selenastrum Growth Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

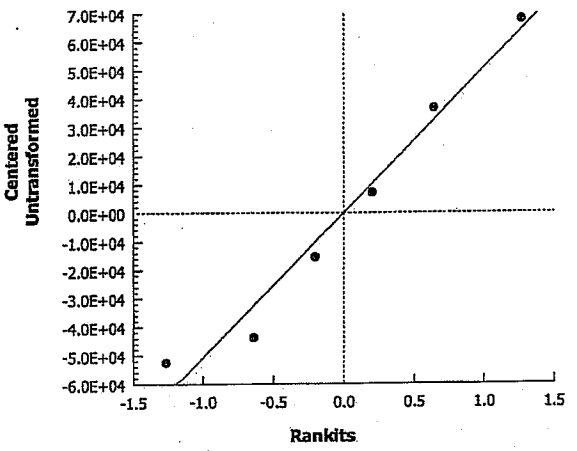
Analysis ID:	17-4032-7795	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 13:10	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1.758E+6	1.638E+6	1.675E+6	
0	Receiving Water	1.340E+6	1.260E+6	1.311E+6	

Graphics





Selenastrum Growth Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	06-5586-3511	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 13:08	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes
Batch ID:	06-7748-9948	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	09 Sep-11 00:01	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	13 Sep-11	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	96h	**Source:**	In-House Culture	**Age:**	7d
Sample ID:	18-2712-0548	**Code:**	728267	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	08 Sep-11 10:10	**Material:**	POTW Effluent	**Project:**	
Receive Date:	09 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	14h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	TST b	NOEL	LOEL	TOEL	TU
Untransformed	0	C*b > T	Not Run	0.75	100	>100	N/A	1

TST-Welch's t Test

Control	vs	Conc-%	Test Stat	Critical	DF	MSD	P-Value	Decision(α:25%)
Receiving Water		12.5*	20.67	0.8165	2		0.0012	Non-Significant Effect
		25*	43.3	0.7649	3		<0.0001	Non-Significant Effect
		50*	45.47	0.8165	2		0.0002	Non-Significant Effect
		75*	20.19	0.8165	2		0.0012	Non-Significant Effect
		100*	12.26	0.8165	2		0.0033	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control CV	0.03121	NL - 0.2	Yes	Passes Acceptibility Criteria
Control Resp	1.30E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		2.823	2.652	0.0198	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.512469E+13	3.024939E+12	5	79.47	<0.0001	Significant Effect
Error	4.567412E+11	38061760000	12			
Total	1.558144E+13	3.063001E+12	17			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	13.84	15.09	0.0166	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8958	0.8546	0.0485	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	3	1.304E+6	1.288E+6	1.319E+6	1.260E+6	1.340E+6	2.349E+4	4.069E+4	3.12%	0.0%
12.5		3	1.912E+6	1.885E+6	1.939E+6	1.870E+6	1.995E+6	4.161E+4	7.207E+4	3.77%	-46.66%
25		3	2.295E+6	2.278E+6	2.311E+6	2.263E+6	2.343E+6	2.478E+4	4.292E+4	1.87%	-76.0%
50		3	3.237E+6	3.206E+6	3.268E+6	3.148E+6	3.305E+6	4.646E+4	8.047E+4	2.49%	-148.3%
75		3	3.484E+6	3.403E+6	3.565E+6	3.331E+6	3.727E+6	1.229E+5	2.128E+5	6.11%	-167.2%
100		3	3.885E+6	3.729E+6	4.041E+6	3.568E+6	4.348E+6	2.366E+5	4.098E+5	10.55%	-198.0%

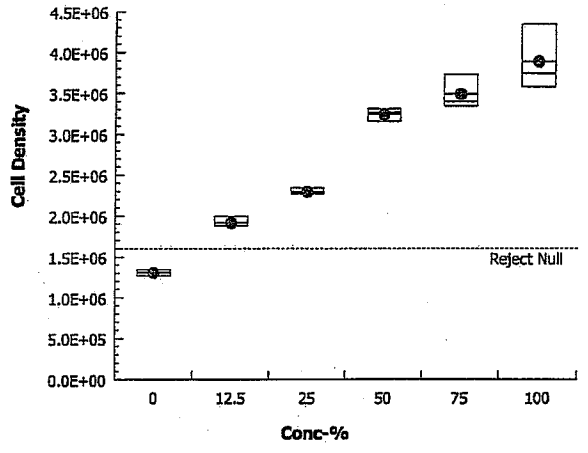
Selenastrum Growth Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

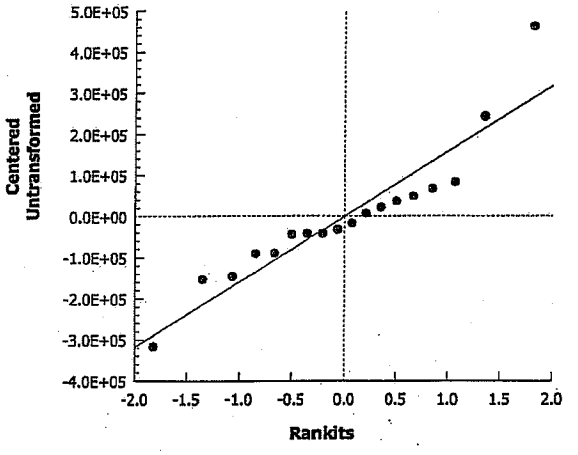
Analysis ID:	06-5586-3511	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 13:08	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Receiving Water	1.340E+6	1.260E+6	1.311E+6	
12.5		1.870E+6	1.995E+6	1.870E+6	
25		2.343E+6	2.278E+6	2.263E+6	
50		3.259E+6	3.305E+6	3.148E+6	
75		3.331E+6	3.727E+6	3.394E+6	
100		3.568E+6	3.740E+6	4.348E+6	

Graphics





Selenastrum Growth Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	01-8435-3525	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 12:34	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes
Batch ID:	06-7748-9948	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	09 Sep-11 00:01	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	13 Sep-11	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	96h	**Source:**	In-House Culture	**Age:**	7d
Sample ID:	18-2712-0548	**Code:**	728267	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	08 Sep-11 10:10	**Material:**	POTW Effluent	**Project:**	
Receive Date:	09 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	14h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	NOEL	LOEL	TOEL	TU	PMSD
Power(Y^Z)	0.5	C > T	Not Run	100	>100	N/A	1	17.4%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
Receiving Water		12.5	-5.811	2.502	4	103.7	1.0000	Non-Significant Effect
		25	-8.999	2.502	4	103.7	1.0000	Non-Significant Effect
		50	-15.86	2.502	4	103.7	1.0000	Non-Significant Effect
		75	-17.47	2.502	4	103.7	1.0000	Non-Significant Effect
		100	-19.97	2.502	4	103.7	1.0000	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control CV	0.03121	NL - 0.2	Yes	Passes Acceptibility Criteria
Control Resp	1.30E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		2.716	2.652	0.0359	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1531311	306262.3	5	118.8	<0.0001	Significant Effect
Error	30929.54	2577.461	12			
Total	1562241	308839.8	17			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	10.04	15.09	0.0740	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9233	0.8546	0.1481	Normal Distribution

CETIS Analytical Report

Sierra Foothill Laboratory Inc.

Selenastrum Growth Test (Dil: Rec)

Analysis ID:	01-8435-3525	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 12:34	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	3	1.304E+6	1.288E+6	1.319E+6	1.260E+6	1.340E+6	2.349E+4	4.069E+4	3.12%	0.0%
12.5		3	1.912E+6	1.885E+6	1.939E+6	1.870E+6	1.995E+6	4.161E+4	7.207E+4	3.77%	-46.66%
25		3	2.295E+6	2.278E+6	2.311E+6	2.263E+6	2.343E+6	2.478E+4	4.292E+4	1.87%	-76.0%
50		3	3.237E+6	3.206E+6	3.268E+6	3.148E+6	3.305E+6	4.646E+4	8.047E+4	2.49%	-148.3%
75		3	3.484E+6	3.403E+6	3.565E+6	3.331E+6	3.727E+6	1.229E+5	2.128E+5	6.11%	-167.2%
100		3	3.885E+6	3.729E+6	4.041E+6	3.568E+6	4.348E+6	2.366E+5	4.098E+5	10.55%	-198.0%

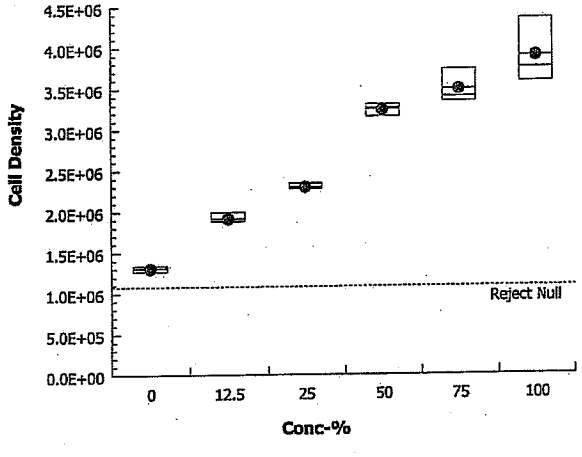
Power(Y^Z) Transformed Summary

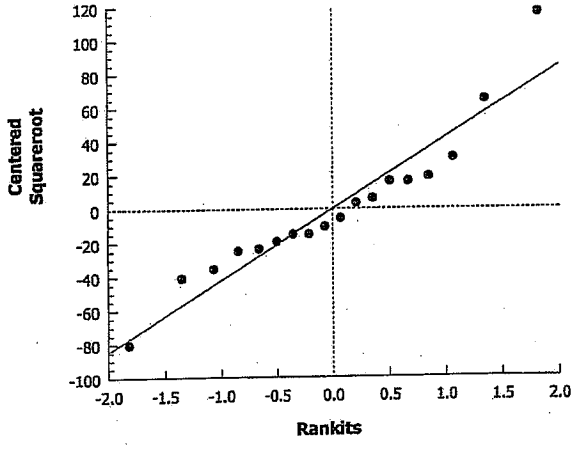
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Wate	3	1142	1135	1148	1122	1158	10.31	17.86	1.56%	0.0%
12.5		3	1383	1373	1392	1368	1413	14.97	25.93	1.88%	-21.1%
25		3	1515	1509	1520	1504	1531	8.162	14.14	0.93%	-32.67%
50		3	1799	1791	1808	1774	1818	12.94	22.41	1.25%	-57.58%
75		3	1866	1844	1887	1825	1931	32.66	56.58	3.03%	-63.44%
100		3	1969	1930	2008	1889	2085	59.36	102.8	5.22%	-72.49%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Receiving Water	1.340E+6	1.260E+6	1.311E+6	
12.5		1.870E+6	1.995E+6	1.870E+6	
25		2.343E+6	2.278E+6	2.263E+6	
50		3.259E+6	3.305E+6	3.148E+6	
75		3.331E+6	3.727E+6	3.394E+6	
100		3.568E+6	3.740E+6	4.348E+6	

Graphics





CETIS Analytical Report

Selenastrum Growth Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	00-9650-2788	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 12:34	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	06-7748-9948	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	09 Sep-11 00:01	**Protocol:**	EPA/600/4-91/002 (1994)	**Diluent:**	Receiving Water
Ending Date:	13 Sep-11	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	96h	**Source:**	In-House Culture	**Age:**	7d
Sample ID:	18-2712-0548	**Code:**	728267	**Client:**	J&L Analytical for Sconza Candy
Sample Date:	08 Sep-11 10:10	**Material:**	POTW Effluent	**Project:**	
Receive Date:	09 Sep-11	**Source:**	Sconza Candy Effluent (CA000416)		
Sample Age:	14h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	377571557	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control CV	0.03121	NL - 0.2	Yes	Passes Acceptibility Criteria
Control Resp	1.30E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>100	N/A	N/A	<1	N/A	N/A
IC50	>100	N/A	N/A	<1	N/A	N/A

Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	3	1.304E+6	1.260E+6	1.340E+6	2.349E+4	4.069E+4	3.12%	0.0%
12.5		3	1.912E+6	1.870E+6	1.995E+6	4.161E+4	7.207E+4	3.77%	-46.66%
25		3	2.295E+6	2.263E+6	2.343E+6	2.478E+4	4.292E+4	1.87%	-76.0%
50		3	3.237E+6	3.148E+6	3.305E+6	4.646E+4	8.047E+4	2.49%	-148.3%
75		3	3.484E+6	3.331E+6	3.727E+6	1.229E+5	2.128E+5	6.11%	-167.2%
100		3	3.885E+6	3.568E+6	4.348E+6	2.366E+5	4.098E+5	10.55%	-198.0%

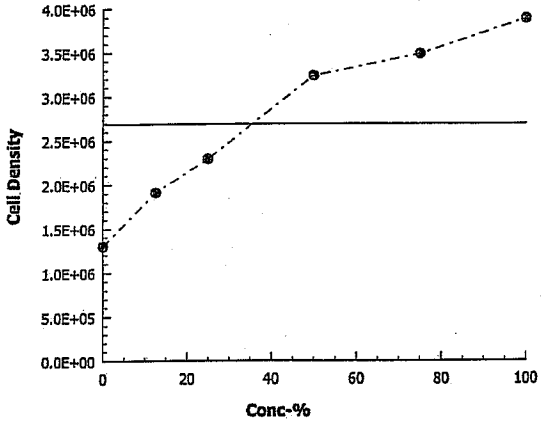
Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Receiving Water	1.340E+6	1.260E+6	1.311E+6	
12.5		1.870E+6	1.995E+6	1.870E+6	
25		2.343E+6	2.278E+6	2.263E+6	
50		3.259E+6	3.305E+6	3.148E+6	
75		3.331E+6	3.727E+6	3.394E+6	
100		3.568E+6	3.740E+6	4.348E+6	

Selenastrum Growth Test (Dil: Rec) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	00-9650-2788	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 12:34	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



SIERRA
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REPORT

Reference Toxicant Test Data Report
9-7-11

Sierra Foothill Laboratory, Inc.

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September 19, 2011

SFL

TEST SUMMARY

RE: Definitive static-renewal chronic toxicity testing of KCl Reference Toxicant / Fish diluted with DMW Laboratory Control Water 09-07-11 to 09-14-11
Method = EPA-821-R-02-013 Lab# 0911-08

1000.0 Fathead Minnow (Pimephales promelas) Larval Survival and Growth Test

Treatment	7 day % Survival	Avg Dry Wt (mg)
2.0g/L KCl in Lab	0.0*	0.00*
1.0g/L KCl in Lab	12.5*	0.09*
0.5g/L KCl in Lab	100.0	0.53
0.25g/L KCl in Lab	100.0	0.54
+DMW Lab Control	100.0	0.50

7d LC50 = 0.771g/L
NOAEC, Survival = 0.5g/L LOAEC, Survival = 1.0g/L
Dose-Response (Survival): Type 1
IC50 = 0.804g/L IC25 = 0.652g/L
NOAEC, Growth = 0.5g/L LOAEC, Growth = 1.0g/L
Dose-Response (Growth): Type 1

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

Summary prepared by:
Sandy Nurse
Sandy Nurse

Dose-Response Relationship Types (EPA 821-B-00-004, with page reference)
Type 1: Ideal concentration-response relationship. p4-6.

Sierra Foothill Laboratory certifies that test results meet all applicable ELAP requirements unless stated otherwise.
Results are specific to the sample(s) as submitted and only to the parameter(s) reported.
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September 19, 2011

SFL

FATHEAD MINNOW (Pimephales promelas), 1000.0

RE: Definitive static-renewal chronic toxicity testing of KCl Reference Toxicant / Fish diluted with DMW Laboratory Control Water Started 09-07-11 15:15 Ended 09-14-11 15:00
The testing method used closely followed EPA-821-R-02-013. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 4th Edition.

KCl Reference Toxicant / Fish Laboratory # 0911-08 prepared 09-06-11
Dilution/control water was DMW (diluted mineral water: 26% Evian Spring + 74% Arrowhead Distilled) prepared 09-02-11
Pimephales promelas (fathead minnow) positively identified to species 01-10-11
Organism age: 1 d from EnviroScience
Test chambers: 500 mL size plastic, containing 300 mL test solution
Solution renewal: 250 mL daily
Feeding: twice daily with 0.1 mL <24 h old live brine shrimp
Test temperature (25C) did not range more than 3C during the test

RESULTS:

Treatment	# Larvae	# Replicates	% Survival 7 day	Avg Dry Wt (mg)
2.0g/L KCl in Lab	40	4	0.0*	0.00*
1.0g/L KCl in Lab	40	4	12.5*	0.09*
0.5g/L KCl in Lab	40	4	100.0	0.53
0.25g/L KCl in Lab	40	4	100.0	0.54
+DMW Lab Control	39	4	100.0	0.50

Data meet EPA criteria for acceptability using DMW lab control.

Survival
7d LC50 = 0.771g/L — Spearman-Karber
NOAEC, Survival = 0.5g/L — Steel Many-One Rank Test PMSD = 7.6
LOAEC, Survival = 1.0g/L
Dose-Response (Survival): Type 1

Growth
IC50 = 0.804g/L IC25 = 0.652g/L — Linear Interpolation
NOAEC, Growth = 0.5g/L — Dunnett's Multiple Comparison Test PMSD = 19
LOAEC, Growth = 1.0g/L
Dose-Response (Growth): Type 1

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

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September 19, 2011

SFL

TEST SUMMARY

RE: Definitive static-renewal chronic toxicity testing of Zinc Sulfate.7H2O Ref Toxicant / Cerio diluted with DMW Laboratory Control Water 09-07-11 to 09-13-11
Method = EPA-821-R-02-013 Lab# 0911-902

1002.0 Ceriodaphnia dubia Survival and Reproduction Test

Treatment	6 day % Survival	Avg Young/Female (ON)
1.7mg/L ZnSO4 in Lab	0.0*	0.0*
0.85mg/L ZnSO4 in Lab	100.0	4.8*
0.43mg/L ZnSO4 in Lab	100.0	15.1*
0.21mg/L ZnSO4 in Lab	100.0	23.5
0.11mg/L ZnSO4 in Lab	100.0	24.2
0.053mg/L ZnSO4 in Lab	100.0	23.6
+DMW Lab Control	100.0	23.6

6d LC50 = 1.202mg/L
NOAEC, Survival = 0.85mg/L LOAEC, Survival = 1.7mg/L
Dose-Response (Survival): Type 2
IC50 = 0.560mg/L IC25 = 0.358mg/L
NOAEC, Reproduction = 0.21mg/L LOAEC, Reproduction = 0.43mg/L
Dose-Response (Reproduction): Type 1

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

Summary prepared by:

Sandy Nurse

Sandy Nurse

Dose-Response Relationship Types (EPA 821-B-00-004, with page reference)
Type 1: Ideal concentration-response relationship. p4-6.
Type 2: All or nothing response. P 4-6

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September 19, 2011

SFL

CERIODAPHNIA (Ceriodaphnia dubia), 2000.0

RE: Definitive static-renewal chronic toxicity testing of Zinc Sulfate.7H2O Ref Toxicant / Cerio diluted with DMW Laboratory Control Water
Started 09-07-11 15:00 Ended 09-13-11 17:00
The testing method used closely followed EPA-821-R-02-013. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 4th Edition.

Zinc Sulfate.7H2O Ref Toxicant / Cerio Laboratory # 0911-902 prepared 09-06-11
Dilution/control water was DMW (diluted mineral water: 26% Evian Spring + 74% Arrowhead Distilled) prepared 09-02-11
Ceriodaphnia dubia (water flea) positively identified to species 01-10-11
Organism age: <8h from Sierra Foothill Laboratory
Test chambers: 30 mL size glass, containing 15 mL test solution
Solution renewal: daily
Feeding: daily with .1 mL YCT prepared 08-25-11 + .1 mL algae prepared 09-02-11
Test temperature (25C) did not range more than 3C during the test

RESULTS:

Treatment	# Neonates/ # Replicates	% Survival 6 day	Average young per female (ON)
1.7mg/L ZnSO4 in Lab	10 / 10	0.0*	0.0*
0.85mg/L ZnSO4 in Lab	10 / 10	100.0	4.8*
0.43mg/L ZnSO4 in Lab	10 / 10	100.0	15.1*
0.21mg/L ZnSO4 in Lab	10 / 10	100.0	23.5
0.11mg/L ZnSO4 in Lab	10 / 10	100.0	24.2
0.053mg/L ZnSO4 in Lab	10 / 10	100.0	23.6
+DMW Lab Control	10 / 10	100.0	23.6

Data meet EPA criteria for acceptability using DMW lab control.

Survival
6d LC50 = 1.202mg/L — Binomial
NOAEC, Survival = 0.85mg/L — Fishers Exact Test PMSD = NA
LOAEC, Survival = 1.7mg/L
Dose-Response (Survival): Type 2

Reproduction
IC50 = 0.560mg/L IC25 = 0.358mg/L — Linear Interpolation
NOAEC, Reproduction = 0.21mg/L — Steel Many-One Rank Test PMSD = 12
LOAEC, Reproduction = 0.43mg/L
Dose-Response (Reproduction): Type 1

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

Sierra Foothill Laboratory certifies that test results meet all applicable ELAP requirements unless stated otherwise.
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September 19, 2011

SFL

TEST SUMMARY

RE: Definitive static-renewal chronic toxicity testing of Boron Reference Toxicant / Algae diluted with DMW Laboratory Control Water 09-09-11 to 09-13-11
Method = EPA-821-R-02-013 Lab# 0911-903

1003.0 Algae (Selenastrum capricornutum) Growth Test

Treatment	96h cells/mL (million)
50mg/L Boron in Lab	.166*
25mg/L Boron in Lab	.894*
12.5mg/L Boron in Lab	1.50
6.25mg/L Boron in Lab	1.55
+DMW Lab Control	1.69

IC50 = 26.7mg/L IC25 = 17.4mg/L
NOAEC = 12.5mg/L LOAEC = 25mg/L
Dose-Response (Growth): Type 1

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

Summary prepared by:

Sandy Nurse

Sandy Nurse

Dose-Response Relationship Types (EPA 821-B-00-004, with page reference)
Type 1: Ideal concentration-response relationship. p4-6.

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September 19, 2011

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ALGAE (Selenastrum capricornutum), 1003.0

RE: Definitive static chronic toxicity testing of Boron Reference Toxicant / Algae diluted with DMW Laboratory Control Water Started 09-09-11 15:30 Ended 09-13-11 13:30
The testing method used closely followed EPA-821-R-02-013. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. 4th Edition.

Boron Reference Toxicant / Algae Laboratory # 0911-903 prepared 09-09-11
Dilution/control water was DMW (diluted mineral water: 26% Evian Spring + 74% Arrowhead Distilled) prepared 09-02-11
Sample and dilution water were filtered prior to preparation of test concentrations using cellulose nitrate .45u pore size filters
Selenastrum capricornutum (algae) positively identified to species 07-07-11
Organism age: 7d from Sierra Foothill Laboratory, UTEX 10-19-09, subcultured 09-02-11 to 09-09-11. Unialgal microscopic exam by SFL on 09-09-11
Nutrient spike: 1 mL/100 mL Bolds Basal Medium with EDTA
Test chambers: 250 mL size glass containing 100 mL test solution; continuous light and shaking
Test temperature (25C nominal) did not range more than 3C during the test
Cell density determined by spectrophotometric turbidity method
Four replicates were initiated; one of which was used solely for daily chemistry measurements.

RESULTS:

Treatment	# cells/mL in inoculum	initial # replicates	96h cells/mL (million)
50mg/L Boron in Lab	10000	4	.166*
25mg/L Boron in Lab	10000	4	.894*
12.5mg/L Boron in Lab	10000	4	1.50
6.25mg/L Boron in Lab	10000	4	1.55
+DMW Lab Control	10000	4	1.69

Data meet EPA criteria for acceptability using DMW lab control.

Growth
IC50 = 26.7mg/L IC25 = 17.4mg/L Linear Interpolation
NOAEC = 12.5mg/L Dunnetts Multiple Comparison PMSD = 28
LOAEC = 25mg/L
Dose-Response (Growth): Type 1

Note: * Significantly reduced from control
+ Meets EPA criteria for acceptability as control group

Sierra Foothill Laboratory certifies that test results meet all applicable ELAP requirements unless stated otherwise.
Results are specific to the sample(s) as submitted and only to the parameter(s) reported.
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ELAP # 2784, 1113A, 1881

CETIS Summary Report

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Batch ID:	15-4785-3323	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	10-8359-0650	**Code:**	0911-08	**Client:**	Sierra Foothill Laboratory
Sample Date:	06 Sep-11	**Material:**	Potassium chloride	**Project:**	
Receive Date:	06 Sep-11	**Source:**	KCl Reference Toxicant		
Sample Age:	39h	**Station:**			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
17-3055-9554	7d Survival Rate	0.5	1	0.7071	7.55%		Steel Many-One Rank Test
12-9511-4057	Mean Dry Biomass-mg	0.5	1	0.7071	19.0%		Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis ID	Endpoint	Level	gm/L	95% LCL	95% UCL	TU	Method
03-0320-0120	7d Survival Rate	EC50	0.7711	0.7172	0.8291		Spearman-Kärber
11-2136-7377	Mean Dry Biomass-mg	IC25	0.6519	0.57	0.6736		Linear Interpolation (ICPIN)
		IC50	0.8037	0.7236	0.8472		

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
03-0320-0120	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria
17-3055-9554	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria
11-2136-7377	Mean Dry Biomass-mg	Control Resp	0.5008	0.25 - NL	Yes	Passes Acceptibility Criteria
12-9511-4057	Mean Dry Biomass-mg	Control Resp	0.5008	0.25 - NL	Yes	Passes Acceptibility Criteria
12-9511-4057	Mean Dry Biomass-mg	PMSD	0.1904	0.12 - 0.3	Yes	Passes Acceptibility Criteria

7d Survival Rate Summary

Conc-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	1	1	1	1	1	0	0	0.0%	0.0%
0.25		4	1	1	1	1	1	0	0	0.0%	0.0%
0.5		4	1	1	1	1	1	0	0	0.0%	0.0%
1		4	0.125	0.08925	0.1608	0	0.2	0.04787	0.09574	76.59%	87.5%
2		4	0	0	0	0	0	0	0		100.0%

Mean Dry Biomass-mg Summary

Conc-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	0.5008	0.4789	0.5228	0.4333	0.55	0.02935	0.05871	11.72%	0.0%
0.25		4	0.5375	0.5255	0.5495	0.49	0.56	0.01601	0.03202	5.96%	-7.32%
0.5		4	0.53	0.5022	0.5578	0.46	0.63	0.03719	0.07439	14.04%	-5.82%
1		4	0.0925	0.0692	0.1158	0	0.13	0.03119	0.06238	67.44%	81.53%
2		4	0	0	0	0	0	0	0		100.0%

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) **Sierra Foothill Laboratory Inc.**

7d Survival Rate Detail

Conc-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
0.25		1	1	1	1
0.5		1	1	1	1
1		0.2	0.2	0	0.1
2		0	0	0	0

Mean Dry Biomass-mg Detail

Conc-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.4333	0.47	0.55	0.55
0.25		0.55	0.55	0.49	0.56
0.5		0.63	0.54	0.49	0.46
1		0.13	0.13	0	0.11
2		0	0	0	0

CETIS Analytical Report

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	12-9511-4057	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:33	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes
Batch ID:	15-4785-3323	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	10-8359-0650	**Code:**	0911-08	**Client:**	Sierra Foothill Laboratory
Sample Date:	06 Sep-11	**Material:**	Potassium chloride	**Project:**	
Receive Date:	06 Sep-11	**Source:**	KCl Reference Toxicant		
Sample Age:	39h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	0	C > T	Not Run	0.5	1	0.7071		19.0%

Dunnett's Multiple Comparison Test

Control	vs	Conc-gm/L	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
DMW		0.25	-0.8799	2.287	6	0.09534	0.9488	Non-Significant Effect
		0.5	-0.6999	2.287	6	0.09534	0.9257	Non-Significant Effect
		1*	9.797	2.287	6	0.09534	<0.0001	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.5008	0.25 - NL	Yes	Passes Acceptibility Criteria
PMSD	0.1904	0.12 - 0.3	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		1.897	2.586	0.7295	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.558428	0.1861427	3	53.58	<0.0001	Significant Effect
Error	0.0416916	0.0034743	12			
Total	0.6001196	0.189617	15			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	1.711	11.34	0.6344	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9541	0.8408	0.5566	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	0.5008	0.4785	0.5232	0.4333	0.55	0.02935	0.05871	11.72%	0.0%
0.25		4	0.5375	0.5253	0.5497	0.49	0.56	0.01601	0.03202	5.96%	-7.32%
0.5		4	0.53	0.5017	0.5583	0.46	0.63	0.03719	0.07439	14.04%	-5.82%
1		4	0.0925	0.06877	0.1162	0	0.13	0.03119	0.06238	67.44%	81.53%
2		4	0	0	0	0	0	0	0		100.0%

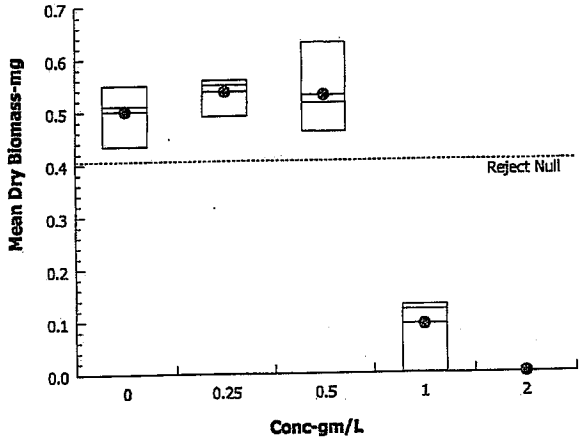
Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

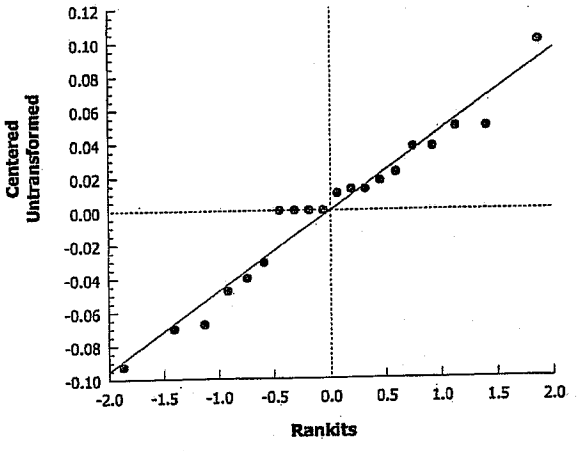
Analysis ID:	12-9511-4057	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:33	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Mean Dry Biomass-mg Detail

Conc-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.4333	0.47	0.55	0.55
0.25		0.55	0.55	0.49	0.56
0.5		0.63	0.54	0.49	0.46
1		0.13	0.13	0	0.11
2		0	0	0	0

Graphics





Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	17-3055-9554	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:32	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes
Batch ID:	15-4785-3323	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	10-8359-0650	**Code:**	0911-08	**Client:**	Sierra Foothill Laboratory
Sample Date:	06 Sep-11	**Material:**	Potassium chloride	**Project:**	
Receive Date:	06 Sep-11	**Source:**	KCl Reference Toxicant		
Sample Age:	39h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	0	C > T	Not Run	0.5	1	0.7071		7.55%

Steel Many-One Rank Test

Control	vs	Conc-gm/L	Test Stat	Critical	DF	Ties	P-Value	Decision(α:5%)
DMW		0.25	18	10	6	1	0.7500	Non-Significant Effect
		0.5	18	10	6	1	0.7500	Non-Significant Effect
		1*	10	10	6	0	0.0277	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		2.975	2.586	0.0039	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	3.366599	1.1222	3	213	<0.0001	Significant Effect
Error	0.06323563	0.005269636	12			
Total	3.429835	1.127469	15			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	7.4	5.953	0.0046	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.6568	0.8408	<0.0001	Non-normal Distribution

7d Survival Rate Summary

Conc-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	1	1	1	1	1	0	0	0.0%	0.0%
0.25		4	1	1	1	1	1	0	0	0.0%	0.0%
0.5		4	1	1	1	1	1	0	0	0.0%	0.0%
1		4	0.125	0.08858	0.1614	0	0.2	0.04787	0.09574	76.59%	87.5%
2		4	0	0	0	0	0	0	0		100.0%

Angular (Corrected) Transformed Summary

Conc-gm/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	1.41	1.408	1.412	1.403	1.412	0.002171	0.004341	0.31%	0.0%
0.25		4	1.412	1.412	1.412	1.412	1.412	0	0	0.0%	-0.15%
0.5		4	1.412	1.412	1.412	1.412	1.412	0	0	0.0%	-0.15%
1		4	0.352	0.2968	0.4072	0.1588	0.4636	0.07256	0.1451	41.23%	75.04%
2		4	0.1588	0.1588	0.1588	0.1588	0.1588	0	0	0.0%	88.74%

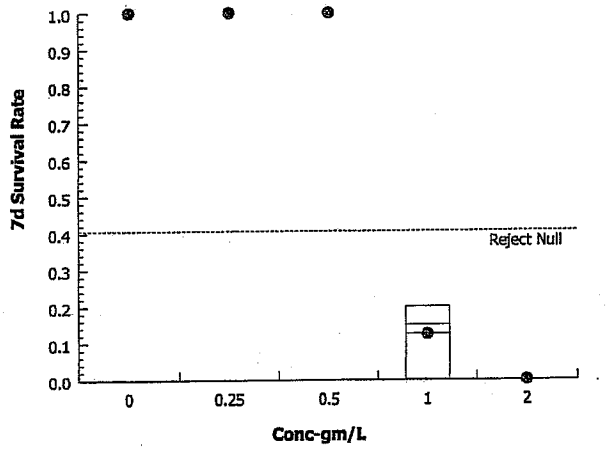
Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

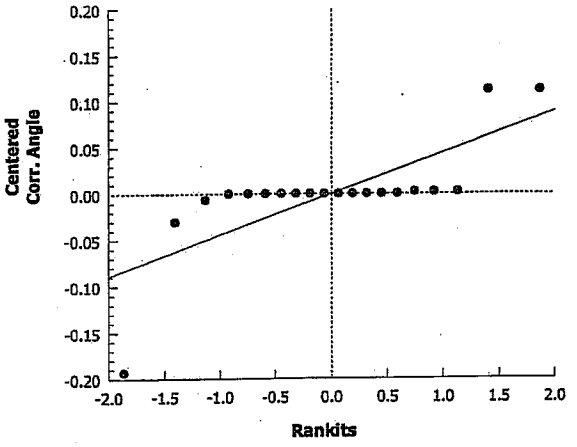
Analysis ID:	17-3055-9554	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:32	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

7d Survival Rate Detail

Conc-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
0.25		1	1	1	1
0.5		1	1	1	1
1		0.2	0.2	0	0.1
2		0	0	0	0

Graphics





CETIS Analytical Report

Test Code: 090711PC4LRT1 | 16-4220-3897

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	11-2136-7377	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:33	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	15-4785-3323	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	10-8359-0650	**Code:**	0911-08	**Client:**	Sierra Foothill Laboratory
Sample Date:	06 Sep-11	**Material:**	Potassium chloride	**Project:**	
Receive Date:	06 Sep-11	**Source:**	KCl Reference Toxicant		
Sample Age:	39h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	512698329	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.5008	0.25 - NL	Yes	Passes Acceptibility Criteria

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value	Grubbs Extreme Value	2.135	2.708	0.4788	No Outliers Detected

Point Estimates

Level	gm/L	95% LCL	95% UCL
IC25	0.6519	0.57	0.6736
IC50	0.8037	0.7236	0.8472

Mean Dry Biomass-mg Summary

			Calculated Variate						
Conc-gm/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	4	0.5008	0.4333	0.55	0.02935	0.05871	11.72%	0.0%
0.25		4	0.5375	0.49	0.56	0.01601	0.03202	5.96%	-7.32%
0.5		4	0.53	0.46	0.63	0.03719	0.07439	14.04%	-5.82%
1		4	0.0925	0	0.13	0.03119	0.06238	67.44%	81.53%
2		4	0	0	0	0	0		100.0%

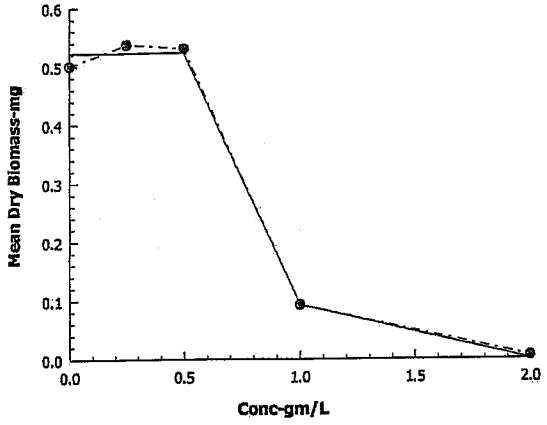
Mean Dry Biomass-mg Detail

Conc-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	0.4333	0.47	0.55	0.55
0.25		0.55	0.55	0.49	0.56
0.5		0.63	0.54	0.49	0.46
1		0.13	0.13	0	0.11
2		0	0	0	0

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	11-2136-7377	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:33	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Analytical Report

Test Code: 090711PC4LRT1 | 16-4220-3897

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	03-0320-0120	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 8:32	**Analysis:**	Untrimmed Spearman-Kärber	**Official Results:**	Yes
Batch ID:	15-4785-3323	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	07 Sep-11 15:15	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	14 Sep-11 15:00	**Species:**	Pimephales promelas	**Brine:**	
Duration:	7d	**Source:**	Enviro Sciences Inc, TX	**Age:**	1d
Sample ID:	10-8359-0650	**Code:**	0911-08	**Client:**	Sierra Foothill Laboratory
Sample Date:	06 Sep-11	**Material:**	Potassium chloride	**Project:**	
Receive Date:	06 Sep-11	**Source:**	KCl Reference Toxicant		
Sample Age:	39h	**Station:**			

Spearman-Kärber Estimates

Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0	0.00%	-0.1129	0.01574	0.7711	0.7172	0.8291

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria

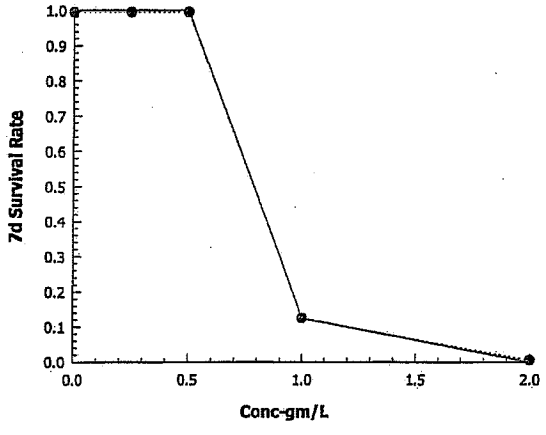
7d Survival Rate Summary

			Calculated Variate(A/B)								
Conc-gm/L	**Control Type**	**Count**	**Mean**	**Min**	**Max**	**Std Err**	**Std Dev**	**CV%**	**%Effect**	**A**	**B**
0	DMW	4	1	1	1	0	0	0.0%	0.0%	39	39
0.25		4	1	1	1	0	0	0.0%	0.0%	40	40
0.5		4	1	1	1	0	0	0.0%	0.0%	40	40
1		4	0.125	0	0.2	0.04787	0.09574	76.59%	87.5%	5	40
2		4	0	0	0	0	0		100.0%	0	40

7d Survival Rate Detail

Conc-gm/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1	1	1	1
0.25		1	1	1	1
0.5		1	1	1	1
1		0.2	0.2	0	0.1
2		0	0	0	0

Graphics

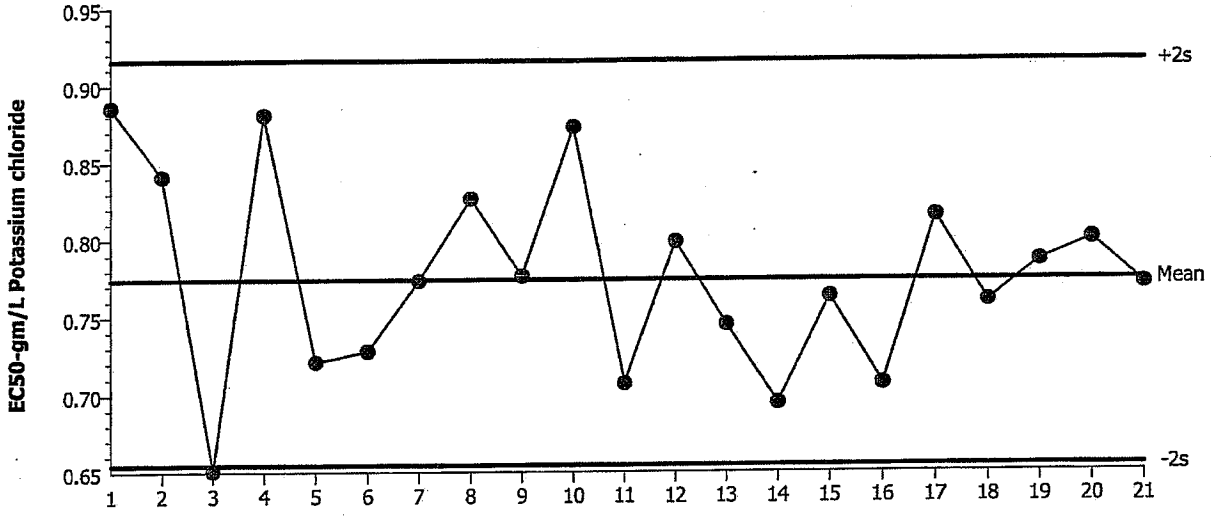


CETIS QC Plot

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Test Type:	Growth-Survival (7d)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Potassium chloride
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	7d Survival Rate	**Source:**	KCl Reference Toxicant-RT1

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab)



Mean:	0.774	**Count:**	20	**-2s Warning Limit:**	0.6542	**-2s Action Limit:**	0.6542
Sigma:	N/A	**CV:**	8.77%	**+2s Warning Limit:**	0.9158	**+2s Action Limit:**	0.9158

Quality Control Data

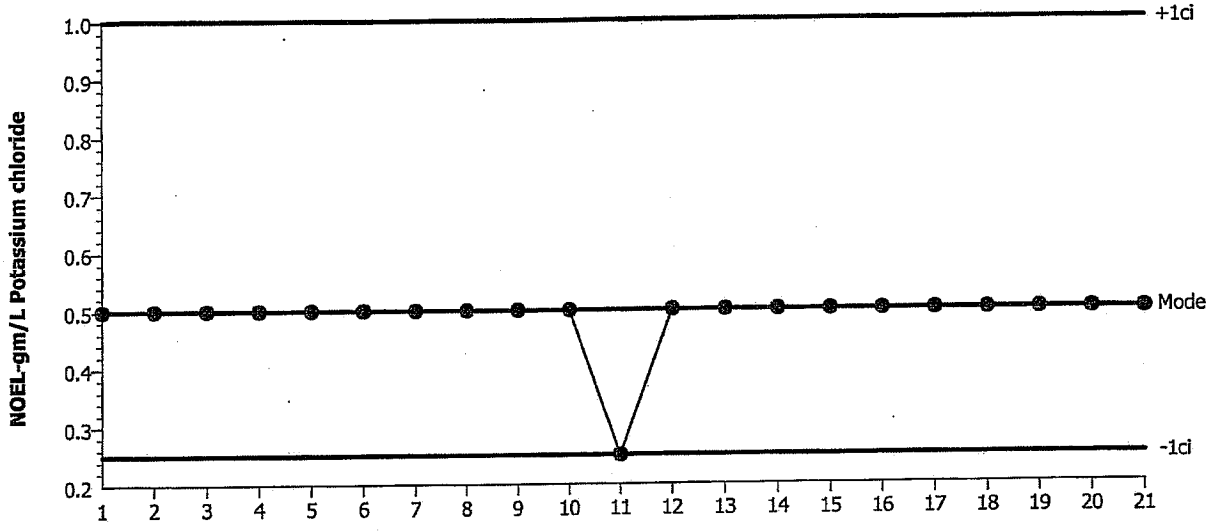
Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Jan	25	0.8856	0.1116	1.601			12-6003-2349	10-3011-4788
2		Feb	8	0.8409	0.06691	0.9859			01-6763-6207	14-4369-0184
3			15	0.6507	-0.1233	-2.064	(-)	(-)	13-5022-8026	06-6815-5745
4		Mar	1	0.8805	0.1065	1.534			20-9177-7113	12-3960-7004
5			15	0.7209	-0.05305	-0.8443			02-2280-8682	16-1679-9722
6			29	0.728	-0.04594	-0.7276			01-5745-0821	01-1151-4269
7		Apr	5	0.7734	-0.00057	-0.00883			01-3825-9352	06-8270-6048
8			12	0.8265	0.05246	0.7798			02-8815-4050	00-3470-3893
9			19	0.7765	0.002562	0.0393			17-9066-8702	13-1014-7112
10			26	0.8728	0.09876	1.428			10-5040-0148	09-6106-2698
11		May	10	0.7071	-0.06688	-1.075			17-1274-7940	12-4281-7273
12			24	0.7983	0.02431	0.3677			00-0955-9897	14-8601-0781
13		Jun	15	0.7448	-0.02915	-0.4565			10-0072-0547	09-1397-4106
14		Jul	6	0.6943	-0.07966	-1.291			06-0321-8793	15-2951-1507
15			12	0.7629	-0.01106	-0.1712			00-3725-1733	18-2645-5264
16			19	0.7071	-0.06688	-1.075			20-2029-8369	19-8242-9505
17			26	0.8151	0.04116	0.6161			02-9189-1520	04-7319-1225
18		Aug	9	0.7602	-0.01382	-0.2142			16-6750-4577	05-5378-6582
19			16	0.7859	0.01195	0.1821			13-2063-6105	20-9901-0615
20			30	0.7999	0.02595	0.3922			16-4965-7742	20-4858-2393
21		Sep	7	0.7711	-0.00288	-0.04435			16-4220-3897	03-0320-0120

CETIS QC Plot

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Test Type:	Growth-Survival (7d)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Potassium chloride
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	7d Survival Rate	**Source:**	KCl Reference Toxicant-RT1

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab)



Mode: 0.5 **Count:** 20 **-1ci Action Limit:** 0.25
Dil Fact: 0.5 **+1ci Action Limit:** 1

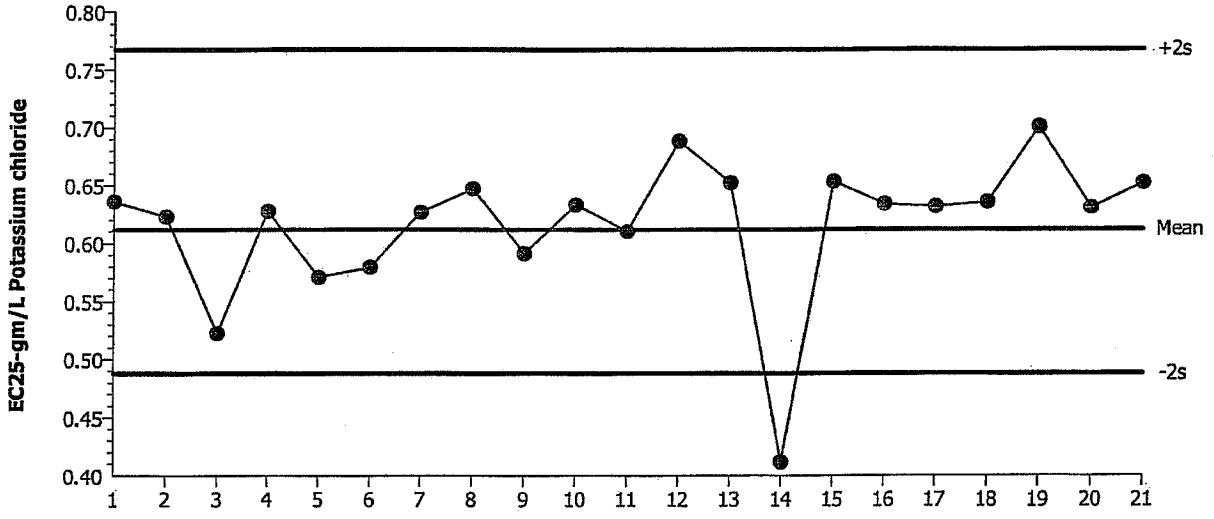
Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Jan	25	0.5	0				12-6003-2349	12-5095-4968
2		Feb	8	0.5	0				01-6763-6207	02-2077-0882
3			15	0.5	0				13-5022-8026	00-5512-0859
4		Mar	1	0.5	0				20-9177-7113	14-4454-6361
5			15	0.5	0				02-2280-8682	10-4397-2399
6			29	0.5	0				01-5745-0821	13-2419-9921
7		Apr	5	0.5	0				01-3825-9352	09-5151-2269
8			12	0.5	0				02-8815-4050	13-4055-3076
9			19	0.5	0				17-9066-8702	08-1964-7647
10			26	0.5	0				10-5040-0148	13-8968-3631
11		May	10	0.25	-0.25				17-1274-7940	09-9904-3376
12			24	0.5	0				00-0955-9897	13-8753-8555
13		Jun	15	0.5	0				10-0072-0547	16-9718-7295
14		Jul	6	0.5	0				06-0321-8793	10-2094-2611
15			12	0.5	0				00-3725-1733	20-7549-9627
16			19	0.5	0				20-2029-8369	05-6461-4285
17			26	0.5	0				02-9189-1520	17-7787-4535
18		Aug	9	0.5	0				16-6750-4577	08-6816-4283
19			16	0.5	0				13-2063-6105	09-6915-1314
20			30	0.5	0				16-4965-7742	18-7219-5726
21		Sep	7	0.5	0				16-4220-3897	17-3055-9554

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) **Sierra Foothill Laboratory Inc.**

Test Type:	Growth-Survival (7d)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Potassium chloride
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	Mean Dry Biomass-mg	**Source:**	KCl Reference Toxicant-RT1

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab)



Mean:	0.6118	**Count:**	20	**-2s Warning Limit:**	0.4878	**-2s Action Limit:**	0.4878
Sigma:	N/A	**CV:**	12.00%	**+2s Warning Limit:**	0.7674	**+2s Action Limit:**	0.7674

Quality Control Data

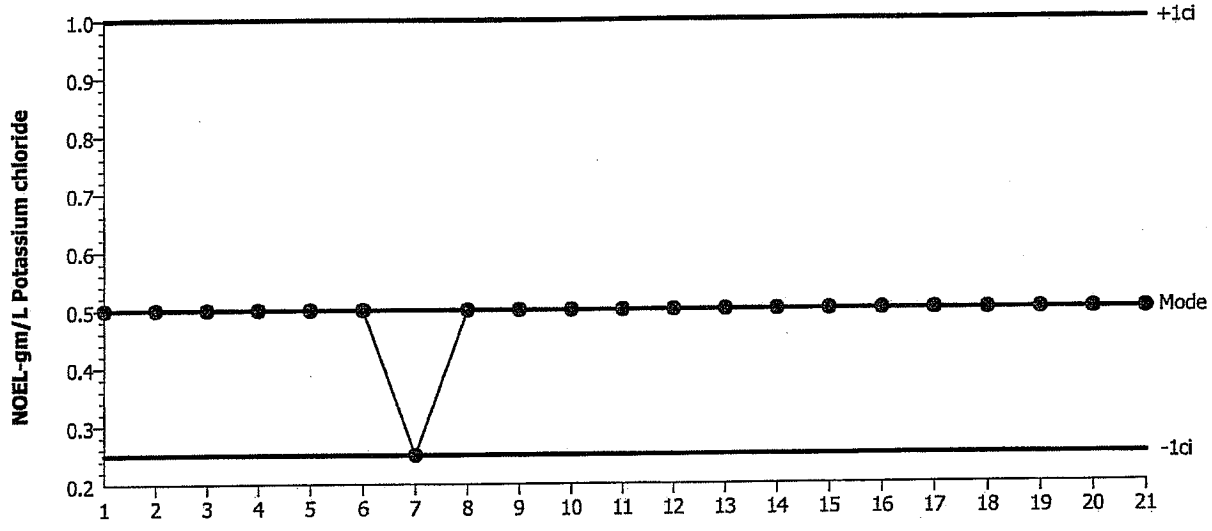
Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Jan	25	0.636	0.02415	0.3417			12-6003-2349	14-5494-5407
2		Feb	8	0.6229	0.01105	0.158			01-6763-6207	12-8709-3739
3			15	0.5225	-0.08933	-1.393			13-5022-8026	18-9936-1319
4		Mar	1	0.6277	0.01583	0.2255			20-9177-7113	08-8883-0372
5			15	0.5708	-0.041	-0.6123			02-2280-8682	12-8182-6855
6			29	0.5795	-0.03234	-0.4793			01-5745-0821	14-3840-3645
7		Apr	5	0.6268	0.01498	0.2135			01-3825-9352	15-1207-9422
8			12	0.6468	0.03501	0.4912			02-8815-4050	04-5388-0559
9			19	0.5912	-0.02062	-0.3025			17-9066-8702	21-4572-9221
10			26	0.6332	0.02135	0.3028			10-5040-0148	04-8083-7521
11		May	10	0.61	-0.00181	-0.0261			17-1274-7940	00-7152-7877
12			24	0.6882	0.07637	1.038			00-0955-9897	14-0815-3431
13		Jun	15	0.6524	0.04059	0.5669			10-0072-0547	12-5915-3727
14		Jul	6	0.4115	-0.2004	-3.502	(-)	(-)	06-0321-8793	11-9317-0460
15			12	0.6534	0.04153	0.5797			00-3725-1733	00-5035-6607
16			19	0.634	0.02221	0.3148			20-2029-8369	08-4659-3383
17			26	0.6318	0.01999	0.2837			02-9189-1520	20-4310-0295
18		Aug	9	0.6354	0.02362	0.3343			16-6750-4577	11-0674-7345
19			16	0.7005	0.08871	1.195			13-2063-6105	03-1477-5651
20			30	0.6306	0.01876	0.2666			16-4965-7742	03-8849-8279
21		Sep	7	0.6519	0.04004	0.5595			16-4220-3897	11-2136-7377

CETIS QC Plot

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Test Type:	Growth-Survival (7d)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Potassium chloride
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	Mean Dry Biomass-mg	**Source:**	KCl Reference Toxicant-RT1

Fathead Minnow 7-d Larval Surv and Growth (Dil: Lab)



Mode: 0.5 **Count:** 20 **-1ci Action Limit:** 0.25
Dil Fact: 0.5 **+1ci Action Limit:** 1

Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Jan	11	0.5	0				11-2599-0754	07-6111-1339
2			25	0.5	0				12-6003-2349	16-6566-5688
3		Feb	8	0.5	0				01-6763-6207	21-2734-9796
4			15	0.5	0				13-5022-8026	18-2460-9138
5		Mar	1	0.5	0				20-9177-7113	19-1299-1822
6			15	0.5	0				02-2280-8682	03-8901-8549
7			29	0.25	-0.25				01-5745-0821	13-2353-6217
8		Apr	5	0.5	0				01-3825-9352	20-8867-6534
9			12	0.5	0				02-8815-4050	18-8903-4437
10			19	0.5	0				17-9066-8702	11-0662-5176
11			26	0.5	0				10-5040-0148	04-7152-3555
12		May	10	0.5	0				17-1274-7940	06-4160-2911
13			24	0.5	0				00-0955-9897	15-3205-0506
14		Jun	15	0.5	0				10-0072-0547	07-6753-4397
15		Jul	12	0.5	0				00-3725-1733	18-9641-7306
16			19	0.5	0				20-2029-8369	06-4826-4286
17			26	0.5	0				02-9189-1520	06-0782-8968
18		Aug	9	0.5	0				16-6750-4577	19-5323-4041
19			16	0.5	0				13-2063-6105	04-0991-5366
20			30	0.5	0				16-4965-7742	01-9177-6899
21		Sep	7	0.5	0				16-4220-3897	12-9511-4057

CETIS Analytical Report

Test Code: 090711CC4LRT2 | 18-0401-9552

Ceriodaphnia Surv and Reprod Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	06-1501-6267	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:20	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes
Batch ID:	09-7725-1570	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	07 Sep-11 15:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	13 Sep-11 17:00	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	6d 2h	**Source:**	In-House Culture	**Age:**	<8h
Sample ID:	11-4697-3292	**Code:**	0911-902	**Client:**	Sierra Foothill Laboratory
Sample Date:	06 Sep-11	**Material:**	Zinc sulfate	**Project:**	
Receive Date:	06 Sep-11	**Source:**	ZnSO4.7H2O Reference Toxicant		
Sample Age:	39h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	0	C > T	Not Run	0.21	0.43	0.3005		11.6%

Steel Many-One Rank Test

Control	vs	Conc-mg/L	Test Stat	Critical	DF	Ties	P-Value	Decision(α:5%)
dMW1		0.053	106.5	75	18	3	0.8650	Non-Significant Effect
		0.11	116.5	75	18	3	0.9780	Non-Significant Effect
		0.21	98.5	75	18	3	0.6489	Non-Significant Effect
		0.43*	61	75	18	1	0.0021	Significant Effect
		0.85*	55	75	18	0	0.0004	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	23.6	15 - NL	Yes	Passes Acceptibility Criteria
PMSD	0.1162	0.13 - 0.47	Yes	Below Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		3.59	3.2	0.0086	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	3063.533	612.7067	5	85.41	<0.0001	Significant Effect
Error	387.4	7.174074	54			
Total	3450.933	619.8807	59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	20.21	15.09	0.0011	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.8967	0.9459	<0.0001	Non-normal Distribution

Reproduction Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	dMW1	10	23.6	23.06	24.14	22	26	0.4522	1.43	6.06%	0.0%
0.053		10	23.6	23.12	24.08	21	26	0.4	1.265	5.36%	0.0%
0.11		10	24.2	23.56	24.84	21	27	0.5333	1.687	6.97%	-2.54%
0.21		10	23.5	22.56	24.44	21	28	0.7782	2.461	10.47%	0.42%
0.43		10	15.1	13.62	16.58	9	24	1.233	3.9	25.83%	36.02%
0.85		10	4.8	3.313	6.287	1	14	1.236	3.91	81.46%	79.66%
1.7		10	0	0	0	0	0	0	0		100.0%

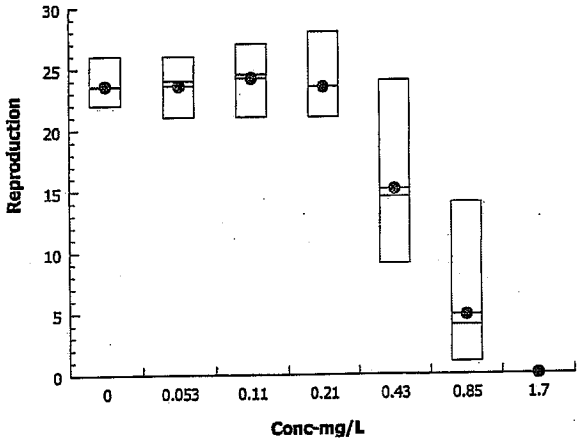
Ceriodaphnia Surv and Reprod Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

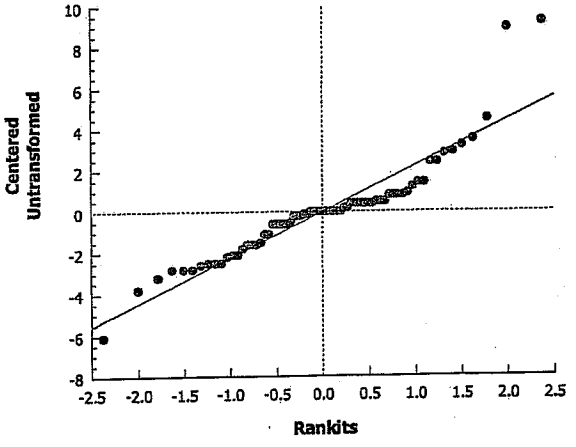
Analysis ID: 06-1501-6267 **Endpoint:** Reproduction **CETIS Version:** CETISv1.8.0
Analyzed: 16 Sep-11 10:20 **Analysis:** Nonparametric-Control vs Treatments **Official Results:** Yes

Reproduction Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW1	22	23	23	24	25	22	25	24	26	22
0.053		24	24	24	26	24	24	23	21	23	23
0.11		24	25	24	24	25	27	22	21	25	25
0.21		27	28	24	24	23	21	22	21	24	21
0.43		24	16	18	15	14	14	15	13	13	9
0.85		14	8	6	5	5	3	1	2	2	2
1.7		0	0	0	0	0	0	0	0	0	0

Graphics





CETIS Analytical Report

Test Code: 090711CC4LRT2 | 18-0401-9552

Ceriodaphnia Surv and Reprod Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	16-0952-0988	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:21	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	09-7725-1570	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	07 Sep-11 15:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	13 Sep-11 17:00	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	6d 2h	**Source:**	In-House Culture	**Age:**	<8h
Sample ID:	11-4697-3292	**Code:**	0911-902	**Client:**	Sierra Foothill Laboratory
Sample Date:	06 Sep-11	**Material:**	Zinc sulfate	**Project:**	
Receive Date:	06 Sep-11	**Source:**	ZnSO4.7H2O Reference Toxicant		
Sample Age:	39h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	655504521	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	23.6	15 - NL	Yes	Passes Acceptibility Criteria

Point Estimates

Level	mg/L	95% LCL	95% UCL
EC25	0.358	0.3178	0.4199
EC50	0.5605	0.4747	0.6236

Reproduction Summary

			Calculated Variate						
Conc-mg/L	**Control Type**	**Count**	**Mean**	**Min**	**Max**	**Std Err**	**Std Dev**	**CV%**	**%Effect**
0	dMW1	10	23.6	22	26	0.4522	1.43	6.06%	0.0%
0.053		10	23.6	21	26	0.4	1.265	5.36%	0.0%
0.11		10	24.2	21	27	0.5333	1.687	6.97%	-2.54%
0.21		10	23.5	21	28	0.7782	2.461	10.47%	0.42%
0.43		10	15.1	9	24	1.233	3.9	25.83%	36.02%
0.85		10	4.8	1	14	1.236	3.91	81.46%	79.66%
1.7		10	0	0	0	0	0		100.0%

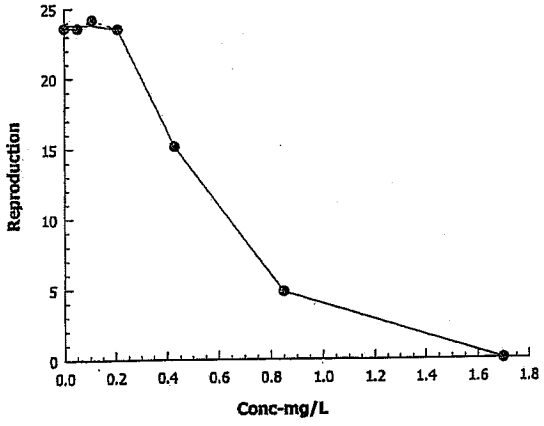
Reproduction Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW1	22	23	23	24	25	22	25	24	26	22
0.053		24	24	24	26	24	24	23	21	23	23
0.11		24	25	24	24	25	27	22	21	25	25
0.21		27	28	24	24	23	21	22	21	24	21
0.43		24	16	18	15	14	14	15	13	13	9
0.85		14	8	6	5	5	3	1	2	2	2
1.7		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia Surv and Reprod Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	16-0952-0988	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:21	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Analytical Report

Test Code: 090711CC4LRT2 | 18-0401-9552

Ceriodaphnia Surv and Reprod Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	02-4618-1820	**Endpoint:**	6d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:20	**Analysis:**	Binomial Method	**Official Results:**	Yes
Batch ID:	09-7725-1570	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	07 Sep-11 15:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	13 Sep-11 17:00	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	6d 2h	**Source:**	In-House Culture	**Age:**	<8h
Sample ID:	11-4697-3292	**Code:**	0911-902	**Client:**	Sierra Foothill Laboratory
Sample Date:	06 Sep-11	**Material:**	Zinc sulfate	**Project:**	
Receive Date:	06 Sep-11	**Source:**	ZnSO4.7H2O Reference Toxicant		
Sample Age:	39h	**Station:**			

Binomial/Graphical Estimates

Threshold Option	Threshold	Trim	Mu	Sigma	LC50	95% LCL	95% UCL
Control Threshold	0	0.00%	0.07993	0	1.202	0.9655	1.497

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria

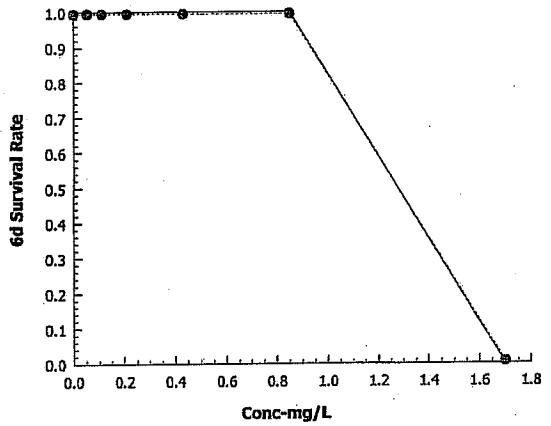
6d Survival Rate Summary

			Calculated Variate(A/B)								
Conc-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	dMW1	10	1	1	1	0	0	0.0%	0.0%	10	10
0.053		10	1	1	1	0	0	0.0%	0.0%	10	10
0.11		10	1	1	1	0	0	0.0%	0.0%	10	10
0.21		10	1	1	1	0	0	0.0%	0.0%	10	10
0.43		10	1	1	1	0	0	0.0%	0.0%	10	10
0.85		10	1	1	1	0	0	0.0%	0.0%	10	10
1.7		10	0	0	0	0	0		100.0%	0	10

6d Survival Rate Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW1	1	1	1	1	1	1	1	1	1	1
0.053		1	1	1	1	1	1	1	1	1	1
0.11		1	1	1	1	1	1	1	1	1	1
0.21		1	1	1	1	1	1	1	1	1	1
0.43		1	1	1	1	1	1	1	1	1	1
0.85		1	1	1	1	1	1	1	1	1	1
1.7		0	0	0	0	0	0	0	0	0	0

Graphics



CETIS Analytical Report

Ceriodaphnia Surv and Reprod Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	01-8421-9637	**Endpoint:**	6d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:20	**Analysis:**	Single 2x2 Contingency Table	**Official Results:**	Yes
Batch ID:	09-7725-1570	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	07 Sep-11 15:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	13 Sep-11 17:00	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	6d 2h	**Source:**	In-House Culture	**Age:**	<8h
Sample ID:	11-4697-3292	**Code:**	0911-902	**Client:**	Sierra Foothill Laboratory
Sample Date:	06 Sep-11	**Material:**	Zinc sulfate	**Project:**	
Receive Date:	06 Sep-11	**Source:**	ZnSO4.7H2O Reference Toxicant		
Sample Age:	39h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	NOEL	LOEL	TOEL	TU
Untransformed		C > T	Not Run	0.85	1.7	1.202	

Fisher Exact Test

Control	vs	Conc-mg/L	Test Stat	P-Value	Decision(0.05)
dMW1		0.053	1	1.0000	Non-Significant Effect
		0.11	1	1.0000	Non-Significant Effect
		0.21	1	1.0000	Non-Significant Effect
		0.43	1	1.0000	Non-Significant Effect
		0.85	1	1.0000	Non-Significant Effect
		1.7	5.41E-06	<0.0001	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria

Data Summary

Conc-mg/L	Control Type	No-Resp	Resp	Total
0	dMW1	10	0	10
0.053		10	0	10
0.11		10	0	10
0.21		10	0	10
0.43		10	0	10
0.85		10	0	10
1.7		0	10	10

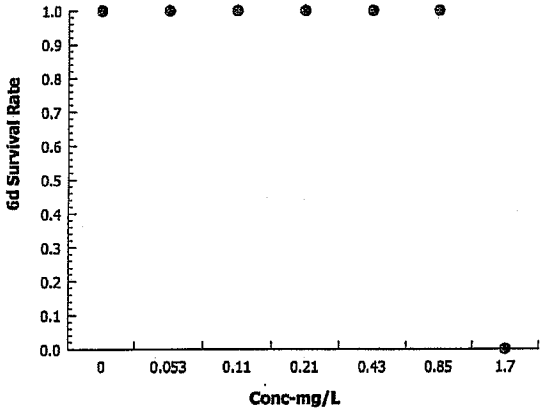
6d Survival Rate Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW1	1	1	1	1	1	1	1	1	1	1
0.053		1	1	1	1	1	1	1	1	1	1
0.11		1	1	1	1	1	1	1	1	1	1
0.21		1	1	1	1	1	1	1	1	1	1
0.43		1	1	1	1	1	1	1	1	1	1
0.85		1	1	1	1	1	1	1	1	1	1
1.7		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia Surv and Reprod Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	01-8421-9637	**Endpoint:**	6d Survival Rate	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 10:20	**Analysis:**	Single 2x2 Contingency Table	**Official Results:**	Yes

Graphics



Ceriodaphnia Surv and Reprod Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Batch ID:	09-7725-1570	**Test Type:**	Reproduction-Survival (2-8d)	**Analyst:**	
Start Date:	07 Sep-11 15:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	13 Sep-11 17:00	**Species:**	Ceriodaphnia dubia	**Brine:**	
Duration:	6d 2h	**Source:**	In-House Culture	**Age:**	<8h
Sample ID:	11-4697-3292	**Code:**	0911-902	**Client:**	Sierra Foothill Laboratory
Sample Date:	06 Sep-11	**Material:**	Zinc sulfate	**Project:**	
Receive Date:	06 Sep-11	**Source:**	ZnSO4.7H2O Reference Toxicant		
Sample Age:	39h	**Station:**			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
01-8421-9637	6d Survival Rate	0.85	1.7	1.202	N/A		Fisher Exact Test
06-1501-6267	Reproduction	0.21	0.43	0.3005	11.6%		Steel Many-One Rank Test

Point Estimate Summary

Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
02-4618-1820	6d Survival Rate	LC50	1.202	0.9655	1.497		Binomial/Graphical
16-0952-0988	Reproduction	EC25	0.358	0.3178	0.4199		Linear Interpolation (ICPIN)
		EC50	0.5605	0.4747	0.6236		

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
01-8421-9637	6d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria
02-4618-1820	6d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptibility Criteria
06-1501-6267	Reproduction	Control Resp	23.6	15 - NL	Yes	Passes Acceptibility Criteria
16-0952-0988	Reproduction	Control Resp	23.6	15 - NL	Yes	Passes Acceptibility Criteria
06-1501-6267	Reproduction	PMSD	0.1162	0.13 - 0.47	Yes	Below Acceptibility Criteria

6d Survival Rate Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	dMW1	10	1	1	1	1	1	0	0	0.0%	0.0%
0.053		10	1	1	1	1	1	0	0	0.0%	0.0%
0.11		10	1	1	1	1	1	0	0	0.0%	0.0%
0.21		10	1	1	1	1	1	0	0	0.0%	0.0%
0.43		10	1	1	1	1	1	0	0	0.0%	0.0%
0.85		10	1	1	1	1	1	0	0	0.0%	0.0%
1.7		10	0	0	0	0	0	0	0		100.0%

Reproduction Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	dMW1	10	23.6	23.07	24.13	22	26	0.4522	1.43	6.06%	0.0%
0.053		10	23.6	23.13	24.07	21	26	0.4	1.265	5.36%	0.0%
0.11		10	24.2	23.57	24.83	21	27	0.5333	1.687	6.97%	-2.54%
0.21		10	23.5	22.58	24.42	21	28	0.7782	2.461	10.47%	0.42%
0.43		10	15.1	13.64	16.56	9	24	1.233	3.9	25.83%	36.02%
0.85		10	4.8	3.34	6.26	1	14	1.236	3.91	81.46%	79.66%
1.7		10	0	0	0	0	0	0	0		100.0%

Ceriodaphnia Surv and Reprod Test (Dil: Lab) **Sierra Foothill Laboratory Inc.**

6d Survival Rate Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW1	1	1	1	1	1	1	1	1	1	1
0.053		1	1	1	1	1	1	1	1	1	1
0.11		1	1	1	1	1	1	1	1	1	1
0.21		1	1	1	1	1	1	1	1	1	1
0.43		1	1	1	1	1	1	1	1	1	1
0.85		1	1	1	1	1	1	1	1	1	1
1.7		0	0	0	0	0	0	0	0	0	0

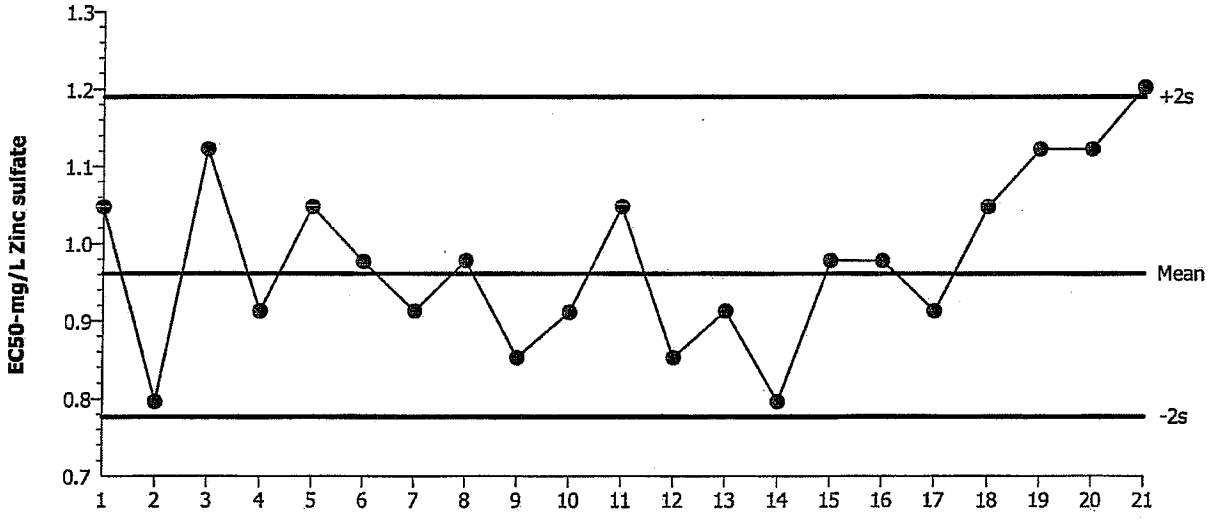
Reproduction Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	dMW1	22	23	23	24	25	22	25	24	26	22
0.053		24	24	24	26	24	24	23	21	23	23
0.11		24	25	24	24	25	27	22	21	25	25
0.21		27	28	24	24	23	21	22	21	24	21
0.43		24	16	18	15	14	14	15	13	13	9
0.85		14	8	6	5	5	3	1	2	2	2
1.7		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia Surv and Reprod Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Test Type:	Reproduction-Survival (2-8d)	**Organism:**	Ceriodaphnia dubia (Water Flea)	**Material:**	Zinc sulfate
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	6d Survival Rate	**Source:**	ZnSO4.7H2O Reference Toxicant-R

Ceriodaphnia Surv and Reprod Test (Dil: Lab)



Mean:	0.9613	**Count:**	20	**-2s Warning Limit:**	0.7765	**-2s Action Limit:**	0.7765
Sigma:	N/A	**CV:**	11.30%	**+2s Warning Limit:**	1.19	**+2s Action Limit:**	1.19

Quality Control Data

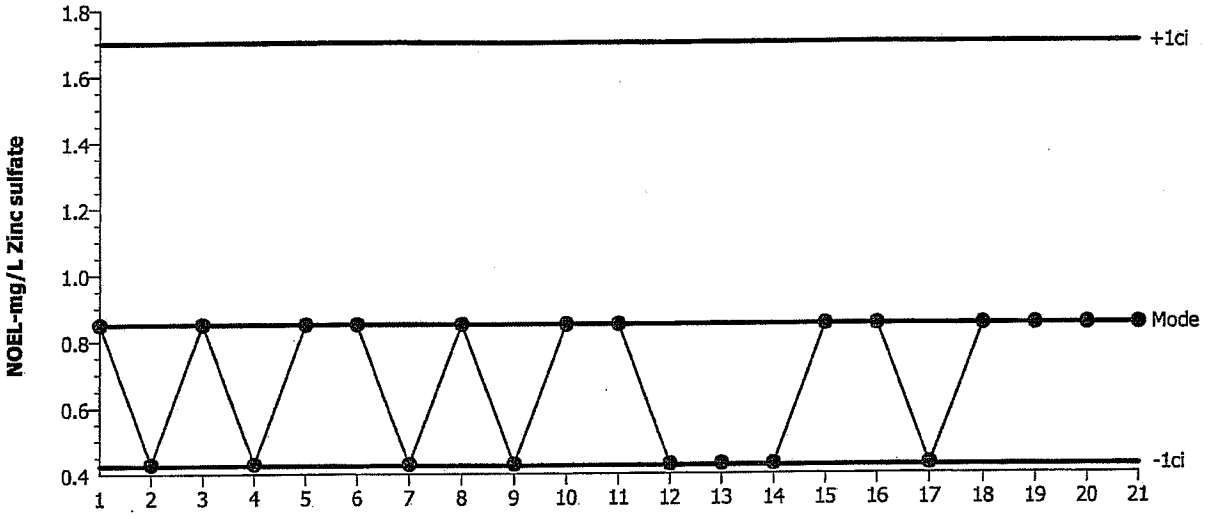
Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2010	Oct	5	1.048	0.08644	0.807			12-4281-6567	15-5374-3023
2			19	0.7959	-0.1654	-1.77			18-5308-1249	06-1820-5857
3		Nov	8	1.122	0.161	1.451			16-0416-7354	05-3030-5514
4			16	0.9131	-0.04812	-0.4813			06-3377-7386	13-4698-0039
5		Dec	7	1.048	0.08644	0.807			10-8826-3177	14-2395-7232
6	2011	Jan	11	0.9766	0.01532	0.1482			09-0373-7402	02-6848-8967
7			25	0.9131	-0.04812	-0.4813			06-3327-1113	08-9560-2044
8		Feb	8	0.9781	0.01685	0.1628			18-0646-3547	18-4366-5529
9		Mar	15	0.8525	-0.1088	-1.125			14-8790-4430	04-8340-3700
10			29	0.911	-0.05027	-0.5034			08-2725-8228	08-0627-1876
11		Apr	5	1.048	0.08644	0.807			15-1786-4040	13-9373-0875
12			19	0.8525	-0.1088	-1.125			07-2742-4233	00-4117-6535
13			26	0.9131	-0.04812	-0.4813			09-9455-5540	06-8888-2020
14		May	10	0.7959	-0.1654	-1.77			13-0920-7782	11-5998-4424
15			24	0.9781	0.01685	0.1628			15-3991-9696	05-8238-5457
16		Jun	14	0.9781	0.01685	0.1628			07-6012-4929	13-9935-8615
17		Jul	12	0.9131	-0.04812	-0.4813			05-0934-6846	15-8098-0393
18			26	1.048	0.08644	0.807			02-5983-8613	13-7057-2670
19		Aug	9	1.122	0.161	1.451			16-0571-5674	19-8583-3574
20			30	1.122	0.161	1.451			05-2972-6541	05-8967-5827
21		Sep	7	1.202	0.2408	2.095	(+)	(+)	18-0401-9552	02-4618-1820

CETIS QC Plot

Ceriodaphnia Surv and Reprod Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Test Type: Reproduction-Survival (2-8d) **Organism:** Ceriodaphnia dubia (Water Flea) **Material:** Zinc sulfate
Protocol: EPA/821/R-02-013 (2002) **Endpoint:** 6d Survival Rate **Source:** ZnSO4.7H2O Reference Toxicant-R

Ceriodaphnia Surv and Reprod Test (Dil: Lab)



Mode: 0.85000 **Count:** 20 **-1ci Action Limit:** 0.425
Dil Fact: 0.5 **+1ci Action Limit:** 1.7

Quality Control Data

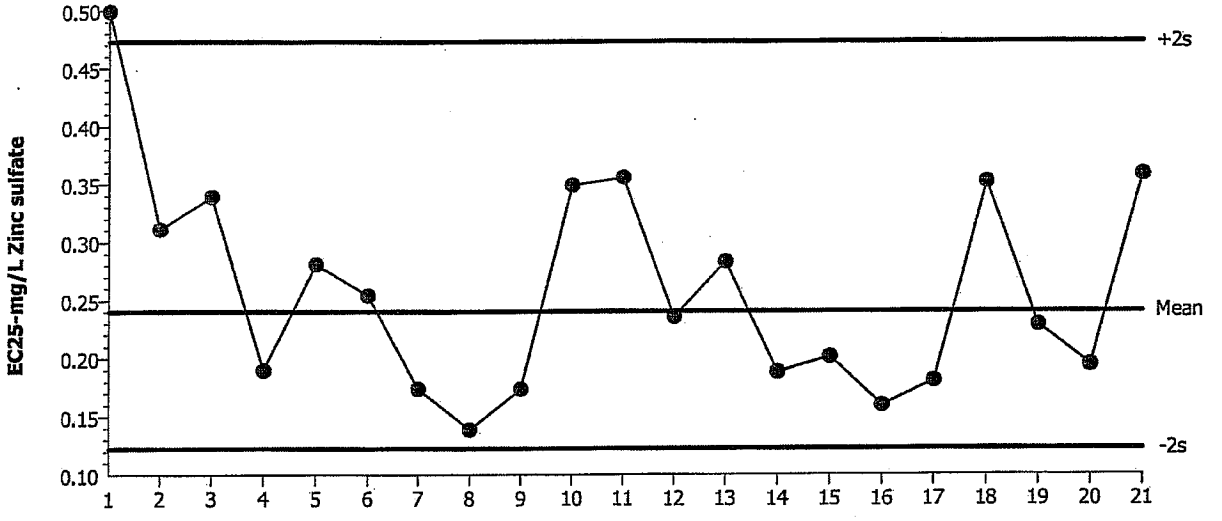
Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2010	Oct	5	0.85	-2.4E-08				12-4281-6567	00-2661-6854
2			19	0.43	-0.42000				18-5308-1249	16-0974-3705
3		Nov	8	0.85	-2.4E-08				16-0416-7354	12-4276-4623
4			16	0.43	-0.42000				06-3377-7386	17-0524-7588
5		Dec	7	0.85	-2.4E-08				10-8826-3177	03-8319-9041
6	2011	Jan	11	0.85	-2.4E-08				09-0373-7402	02-8377-8090
7			25	0.43	-0.42000				06-3327-1113	15-5819-6950
8		Feb	8	0.85	-2.4E-08				18-0646-3547	21-2298-9207
9		Mar	15	0.43	-0.42000				14-8790-4430	20-5124-2655
10			29	0.85	-2.4E-08				08-2725-8228	03-1545-3583
11		Apr	5	0.85	-2.4E-08				15-1786-4040	20-8314-8516
12			19	0.43	-0.42000				07-2742-4233	01-8424-2281
13			26	0.43	-0.42000				09-9455-5540	19-0382-6026
14		May	10	0.43	-0.42000				13-0920-7782	19-7382-5300
15			24	0.85	-2.4E-08				15-3991-9696	07-0342-5465
16		Jun	14	0.85	-2.4E-08				07-6012-4929	14-8114-4613
17		Jul	12	0.43	-0.42000				05-0934-6846	10-3088-3156
18			26	0.85	-2.4E-08				02-5983-8613	16-9772-0839
19		Aug	9	0.85	-2.4E-08				16-0571-5674	10-0168-2677
20			30	0.85	-2.4E-08				05-2972-6541	07-9867-9841
21		Sep	7	0.85	-2.4E-08				18-0401-9552	01-8421-9637

CETIS QC Plot

Ceriodaphnia Surv and Reprod Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Test Type:	Reproduction-Survival (2-8d)	**Organism:**	Ceriodaphnia dubia (Water Flea)	**Material:**	Zinc sulfate
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	Reproduction	**Source:**	ZnSO4.7H2O Reference Toxicant-R

Ceriodaphnia Surv and Reprod Test (Dil: Lab)



Mean:	0.2405	**Count:**	20	**-2s Warning Limit:**	0.1224	**-2s Action Limit:**	0.1224
Sigma:	N/A	**CV:**	40.20%	**+2s Warning Limit:**	0.4727	**+2s Action Limit:**	0.4727

Quality Control Data

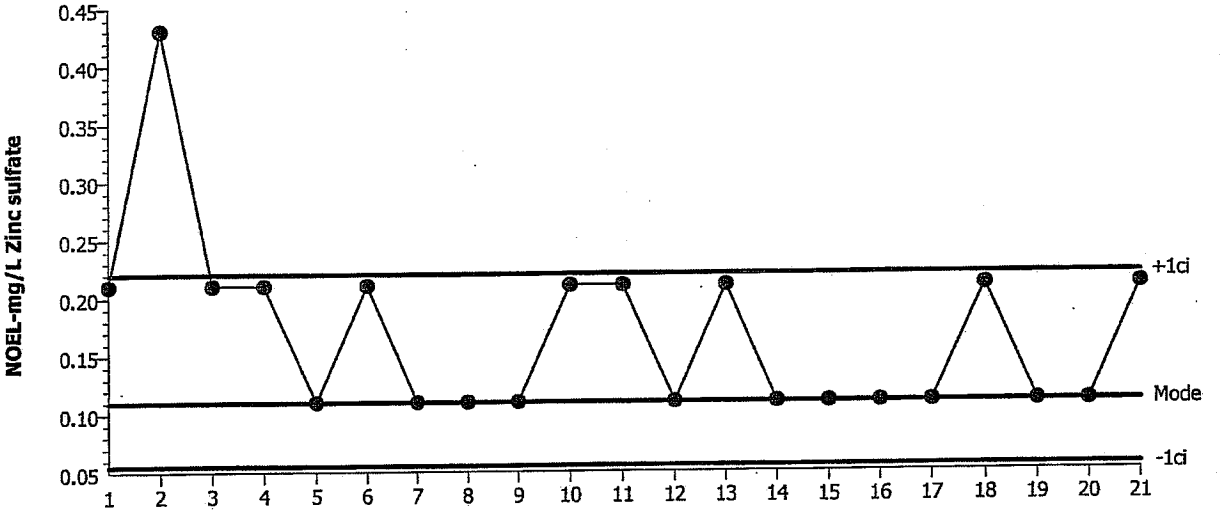
Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2010	Oct	19	0.4991	0.2586	2.161	(+)	(+)	18-5308-1249	07-1817-7100
2		Nov	8	0.311	0.07045	0.7603			16-0416-7354	01-6168-2418
3			16	0.339	0.09852	1.016			06-3377-7386	17-8247-2274
4		Dec	7	0.1897	-0.05084	-0.7028			10-8826-3177	09-7859-1451
5	2011	Jan	11	0.281	0.04051	0.4607			09-0373-7402	17-5567-1991
6			25	0.2541	0.01356	0.1623			06-3327-1113	17-7364-8819
7		Feb	8	0.1739	-0.06662	-0.9599			18-0646-3547	07-0769-4882
8		Mar	15	0.1386	-0.1019	-1.632			14-8790-4430	17-8923-7786
9			29	0.1736	-0.06696	-0.9656			08-2725-8228	06-7561-5672
10		Apr	5	0.3489	0.1084	1.101			15-1786-4040	02-2960-6621
11			12	0.3553	0.1148	1.155			20-5431-8629	12-6606-1445
12			19	0.2352	-0.00526	-0.06547			07-2742-4233	11-8163-1080
13			26	0.2828	0.04229	0.4793			09-9455-5540	19-1097-0127
14		May	10	0.188	-0.05253	-0.7294			13-0920-7782	02-8612-8104
15			24	0.2011	-0.03938	-0.5292			15-3991-9696	07-8914-6713
16		Jun	14	0.1595	-0.08098	-1.215			07-6012-4929	08-8006-3099
17		Jul	12	0.1808	-0.05968	-0.844			05-0934-6846	05-8762-7034
18			26	0.3518	0.1112	1.125			02-5983-8613	01-3388-8653
19		Aug	9	0.2287	-0.01185	-0.1495			16-0571-5674	15-4775-4771
20			30	0.1941	-0.04643	-0.6348			05-2972-6541	00-4051-6985
21		Sep	7	0.358	0.1175	1.177			18-0401-9552	16-0952-0988

CETIS QC Plot

Ceriodaphnia Surv and Reprod Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Test Type: Reproduction-Survival (2-8d) **Organism:** Ceriodaphnia dubia (Water Flea) **Material:** Zinc sulfate
Protocol: EPA/821/R-02-013 (2002) **Endpoint:** Reproduction **Source:** ZnSO4.7H2O Reference Toxicant-R

Ceriodaphnia Surv and Reprod Test (Dil: Lab)



Mode: 0.11 **Count:** 20 **-1ci Action Limit:** 0.055
Dil Fact: 0.5 **+1ci Action Limit:** 0.22

Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2010	Oct	5	0.21	0.100000				12-4281-6567	16-5588-9262
2			19	0.43	0.320000			(+)	18-5308-1249	00-3141-4501
3		Nov	8	0.21	0.100000				16-0416-7354	13-9549-6136
4			16	0.21	0.100000				06-3377-7386	15-9371-2032
5		Dec	7	0.11	5.96E-10				10-8826-3177	16-0370-3250
6	2011	Jan	11	0.21	0.100000				09-0373-7402	07-0177-3861
7			25	0.11	5.96E-10				06-3327-1113	02-2860-9294
8		Feb	8	0.11	5.96E-10				18-0646-3547	13-0059-5467
9		Mar	29	0.11	5.96E-10				08-2725-8228	14-0035-3205
10		Apr	5	0.21	0.100000				15-1786-4040	17-3767-8850
11			12	0.21	0.100000				20-5431-8629	05-2206-7787
12			19	0.11	5.96E-10				07-2742-4233	08-1136-8225
13			26	0.21	0.100000				09-9455-5540	09-6161-1822
14		May	10	0.11	5.96E-10				13-0920-7782	17-1838-4736
15			24	0.11	5.96E-10				15-3991-9696	14-8616-8647
16		Jun	14	0.11	5.96E-10				07-6012-4929	16-3779-4554
17		Jul	12	0.11	5.96E-10				05-0934-6846	02-4953-2262
18			26	0.21	0.100000				02-5983-8613	08-3021-9007
19		Aug	9	0.11	5.96E-10				16-0571-5674	01-8779-9299
20			30	0.11	5.96E-10				05-2972-6541	13-2231-9576
21		Sep	7	0.21	0.100000				18-0401-9552	06-1501-6267

CETIS Summary Report

Test Code: 090911SC4LRT3 | 20-1112-6740

Selenastrum Growth Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Batch ID:	09-6947-9297	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	09 Sep-11 15:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	13 Sep-11 13:30	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	94h	**Source:**	In-House Culture	**Age:**	7d
Sample ID:	18-3154-5147	**Code:**	0911-903	**Client:**	Sierra Foothill Laboratory
Sample Date:	09 Sep-11	**Material:**	Boron	**Project:**	
Receive Date:	09 Sep-11	**Source:**	Boron Reference Toxicant		
Sample Age:	16h	**Station:**			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
01-4775-5305	Cell Density	12.5	25	17.68	28.4%		Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
00-3684-1109	Cell Density	IC25	17.36	15.46	18.99		Linear Interpolation (ICPIN)
		IC50	26.69	24.37	28.58		

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
00-3684-1109	Cell Density	Control CV	0.0365	NL - 0.2	Yes	Passes Acceptibility Criteria
01-4775-5305	Cell Density	Control CV	0.0365	NL - 0.2	Yes	Passes Acceptibility Criteria
00-3684-1109	Cell Density	Control Resp	1.69E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria
01-4775-5305	Cell Density	Control Resp	1.69E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria
01-4775-5305	Cell Density	PMSD	0.2839	0.091 - 0.29	Yes	Passes Acceptibility Criteria

Cell Density Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	MHSFW Lab Co	4	1.100E+6	1.093E+6	1.108E+6	1.077E+6	1.123E+6	9.821E+3	1.964E+4	1.79%	0.0%
0	DMW	4	1.650E+6	1.614E+6	1.685E+6	1.528E+6	1.758E+6	4.766E+4	9.532E+4	5.78%	-49.91%
6.25		4	1.571E+6	1.558E+6	1.583E+6	1.549E+6	1.620E+6	1.675E+4	3.349E+4	2.13%	-42.72%
12.5		4	1.515E+6	1.506E+6	1.524E+6	1.493E+6	1.545E+6	1.238E+4	2.475E+4	1.63%	-37.69%
25		4	9.111E+5	8.980E+5	9.241E+5	8.819E+5	9.618E+5	1.748E+4	3.496E+4	3.84%	17.2%
50		4	1.695E+5	1.672E+5	1.719E+5	1.655E+5	1.790E+5	3.178E+3	6.355E+3	3.75%	84.59%

Cell Density Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	MHSFW Lab Co	1.108E+6	1.094E+6	1.077E+6	1.123E+6
0	DMW	1.758E+6	1.638E+6	1.675E+6	1.528E+6
6.25		1.550E+6	1.549E+6	1.563E+6	1.620E+6
12.5		1.497E+6	1.493E+6	1.525E+6	1.545E+6
25		8.976E+5	9.031E+5	8.819E+5	9.618E+5
50		1.672E+5	1.664E+5	1.655E+5	1.790E+5

CETIS Analytical Report

Test Code: 090911SC4LRT3 | 20-1112-6740

Selenastrum Growth Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	01-4775-5305	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 12:28	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes
Batch ID:	09-6947-9297	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	09 Sep-11 15:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	13 Sep-11 13:30	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	94h	**Source:**	In-House Culture	**Age:**	7d
Sample ID:	18-3154-5147	**Code:**	0911-903	**Client:**	Sierra Foothill Laboratory
Sample Date:	09 Sep-11	**Material:**	Boron	**Project:**	
Receive Date:	09 Sep-11	**Source:**	Boron Reference Toxicant		
Sample Age:	16h	**Station:**			

Data Transform	Zeta	Alt Hyp	MC Trials	NOEL	LOEL	TOEL	TU	PMSD
Power(Y^Z)	-2	C > T	Not Run	12.5	25	17.68		28.4%

Dunnett's Multiple Comparison Test

Control	vs	Conc-mg/L	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
DMW		6.25	0.4688	2.466	4	3.32E-13	0.6196	Non-Significant Effect
		12.5	0.6733	2.466	4	3.32E-13	0.5293	Non-Significant Effect
		25*	6.691	2.466	4	3.32E-13	<0.0001	Significant Effect
		50*	265.9	2.466	4	3.32E-13	<0.0001	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control CV	0.0365	NL - 0.2	Yes	Passes Acceptibility Criteria
Control Resp	1.69E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria
PMSD	0.2839	0.091 - 0.29	Yes	Passes Acceptibility Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		2.636	2.548	0.0306	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	3.027913E-21	7.569782E-22	4	27890	<0.0001	Significant Effect
Error	2.714293E-25	2.714293E-26	10			
Total	3.028184E-21	7.570054E-22	14			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	30.65	13.28	<0.0001	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.6372	0.8328	<0.0001	Non-normal Distribution

Cell Density Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	3	1.690E+6	1.667E+6	1.714E+6	1.638E+6	1.758E+6	3.561E+4	6.169E+4	3.65%	0.0%
6.25		3	1.554E+6	1.551E+6	1.557E+6	1.549E+6	1.563E+6	4.603E+3	7.973E+3	0.51%	8.05%
12.5		3	1.505E+6	1.498E+6	1.512E+6	1.493E+6	1.525E+6	1.015E+4	1.758E+4	1.17%	10.95%
25		3	8.942E+5	8.900E+5	8.984E+5	8.819E+5	9.031E+5	6.352E+3	1.100E+4	1.23%	47.09%
50		3	1.664E+5	1.661E+5	1.667E+5	1.655E+5	1.672E+5	4.866E+2	8.428E+2	0.51%	90.16%

Power(Y^Z) Transformed Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	3	3.51E-13	3.42E-13	3.61E-13	3.24E-13	3.73E-13	1.45E-14	2.51E-14	7.16%	0.0%
6.25		3	4.14E-13	4.13E-13	4.16E-13	4.09E-13	4.17E-13	2.44E-15	4.23E-15	1.02%	-17.96%
12.5		3	4.42E-13	4.38E-13	4.46E-13	4.3E-13	4.49E-13	5.9E-15	1.02E-14	2.31%	-25.8%
25		3	1.25E-12	1.24E-12	1.26E-12	1.23E-12	1.29E-12	1.79E-14	3.10E-14	2.48%	-256.4%
50		3	3.61E-11	3.6E-11	3.63E-11	3.58E-11	3.65E-11	2.11E-13	3.66E-13	1.01%	-10190.0%

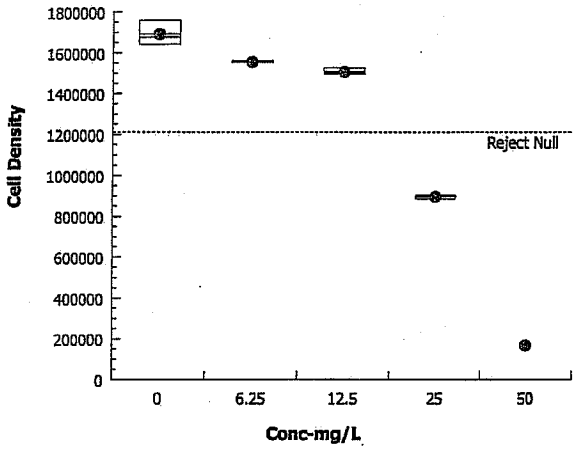
Selenastrum Growth Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

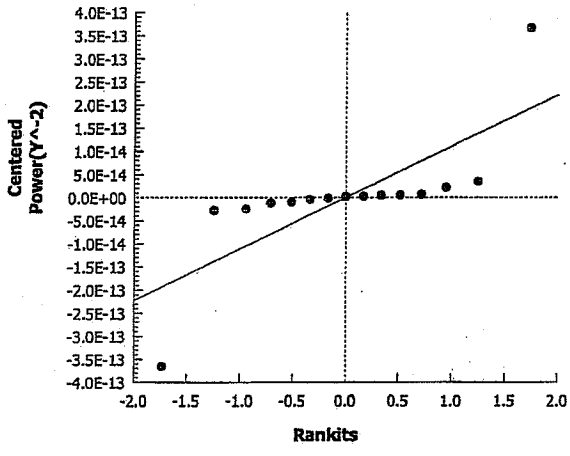
Analysis ID:	01-4775-5305	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 12:28	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Cell Density Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1.758E+6	1.638E+6	1.675E+6	
6.25		1.550E+6	1.549E+6	1.563E+6	
12.5		1.497E+6	1.493E+6	1.525E+6	
25		8.976E+5	9.031E+5	8.819E+5	
50		1.672E+5	1.664E+5	1.655E+5	

Graphics





CETIS Analytical Report

Test Code: 090911SC4LRT3 | 20-1112-6740

Selenastrum Growth Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Analysis ID:	00-3684-1109	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.8.0
Analyzed:	16 Sep-11 12:28	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	09-6947-9297	**Test Type:**	Cell Growth	**Analyst:**	
Start Date:	09 Sep-11 15:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Diluted Mineral Water
Ending Date:	13 Sep-11 13:30	**Species:**	Selenastrum capricornutum	**Brine:**	
Duration:	94h	**Source:**	In-House Culture	**Age:**	7d
Sample ID:	18-3154-5147	**Code:**	0911-903	**Client:**	Sierra Foothill Laboratory
Sample Date:	09 Sep-11	**Material:**	Boron	**Project:**	
Receive Date:	09 Sep-11	**Source:**	Boron Reference Toxicant		
Sample Age:	16h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1.437E+09	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control CV	0.0365	NL - 0.2	Yes	Passes Acceptibility Criteria
Control Resp	1.69E+6	1.00E+6 - NL	Yes	Passes Acceptibility Criteria

Point Estimates

Level	mg/L	95% LCL	95% UCL
IC25	17.36	15.46	18.99
IC50	26.69	24.37	28.58

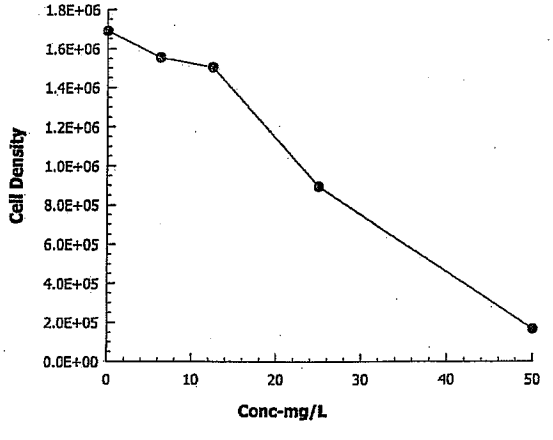
Cell Density Summary

			Calculated Variate						
Conc-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	DMW	3	1.690E+6	1.638E+6	1.758E+6	3.561E+4	6.169E+4	3.65%	0.0%
6.25		3	1.554E+6	1.549E+6	1.563E+6	4.603E+3	7.973E+3	0.51%	8.05%
12.5		3	1.505E+6	1.493E+6	1.525E+6	1.015E+4	1.758E+4	1.17%	10.95%
25		3	8.942E+5	8.819E+5	9.031E+5	6.352E+3	1.100E+4	1.23%	47.09%
50		3	1.664E+5	1.655E+5	1.672E+5	4.866E+2	8.428E+2	0.51%	90.16%

Cell Density Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	DMW	1.758E+6	1.638E+6	1.675E+6	
6.25		1.550E+6	1.549E+6	1.563E+6	
12.5		1.497E+6	1.493E+6	1.525E+6	
25		8.976E+5	9.031E+5	8.819E+5	
50		1.672E+5	1.664E+5	1.655E+5	

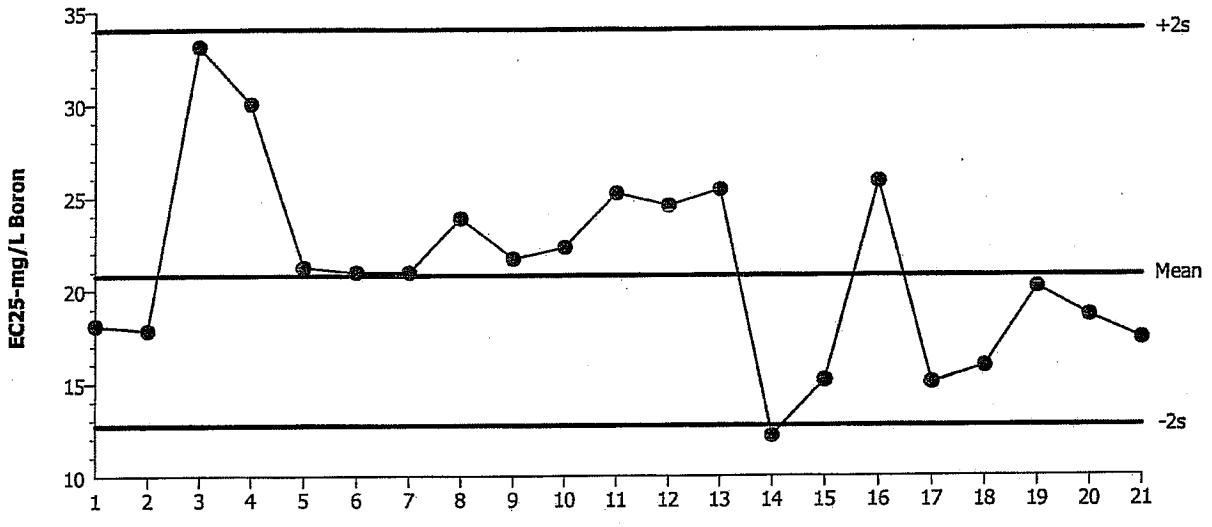
Graphics



Selenastrum Growth Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Test Type:	Cell Growth	**Organism:**	Selenastrum capricornutum (Green	**Material:**	Boron
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	Cell Density	**Source:**	Boron Reference Toxicant-RT3

Selenastrum Growth Test (Dil: Lab)



Mean:	20.8	**Count:**	20	**-2s Warning Limit:**	12.71	**-2s Action Limit:**	12.71
Sigma:	N/A	**CV:**	28.00%	**+2s Warning Limit:**	34.06	**+2s Action Limit:**	34.06

Quality Control Data

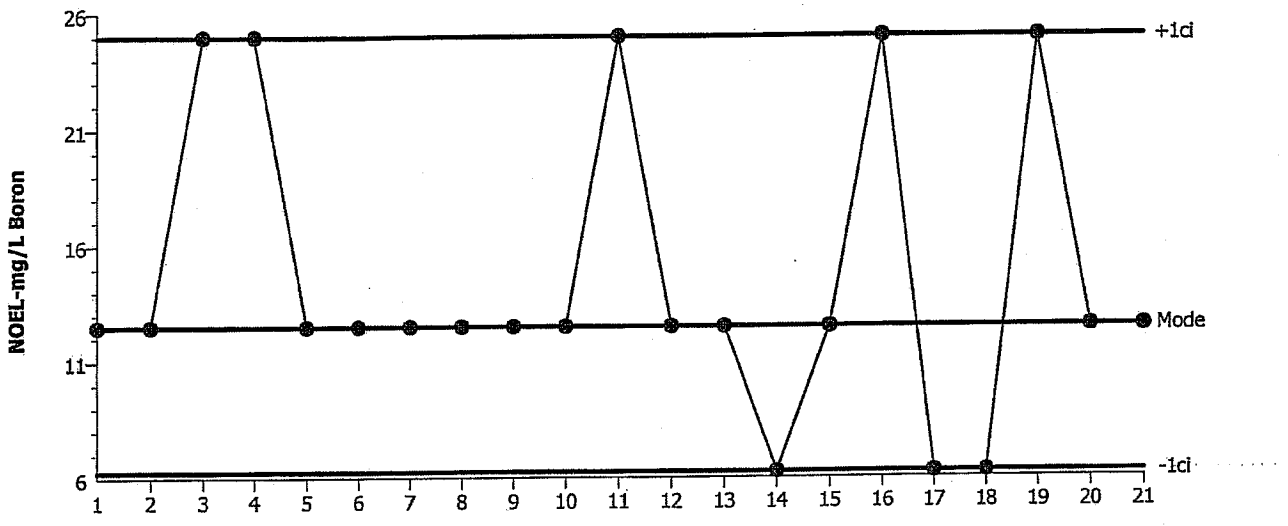
Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Jan	28	18.11	-2.692	-0.5623			04-8906-1439	02-3033-7783
2		Feb	11	17.82	-2.983	-0.628			03-3156-5084	03-7753-4966
3			16	33.12	12.32	1.887			16-9241-7630	19-0570-4660
4		Mar	16	30.03	9.232	1.49			02-0103-8901	01-1541-5172
5			18	21.21	0.406	0.07841			09-4111-0664	10-2055-8468
6		Apr	1	20.95	0.1506	0.02926			07-7274-2845	14-2771-5038
7			15	20.96	0.1567	0.03044			10-7535-5877	06-9547-8557
8			22	23.85	3.049	0.5548			13-2616-3100	18-1077-0781
9			29	21.69	0.8932	0.1706			09-8637-6919	12-0742-7300
10		May	13	22.29	1.493	0.2811			13-1624-5102	18-3727-8607
11			18	25.21	4.405	0.7793			05-1159-2433	16-5631-8616
12			27	24.54	3.742	0.6711			05-5067-4453	14-6545-4436
13		Jun	17	25.4	4.604	0.8111			19-7045-5952	08-3352-4350
14			22	12.15	-8.654	-2.182	(-)	(-)	14-9021-7234	04-0961-8280
15		Jul	15	15.15	-5.654	-1.287			11-2808-8508	04-0409-1605
16			20	25.82	5.023	0.8776			21-1517-0444	16-6793-4639
17			29	15.01	-5.793	-1.324			03-2994-7709	13-3224-1904
18		Aug	12	15.88	-4.921	-1.095			02-0879-8912	13-7532-1000
19			17	20.14	-0.6577	-0.1303			12-2424-4682	05-8367-3494
20		Sep	2	18.61	-2.195	-0.4523			00-8555-7063	11-7546-1325
21			9	17.36	-3.441	-0.7337			20-1112-6740	00-3684-1109

CETIS QC Plot

Selenastrum Growth Test (Dil: Lab) — **Sierra Foothill Laboratory Inc.**

Test Type:	Cell Growth	**Organism:**	Selenastrum capricornutum (Green	**Material:**	Boron
Protocol:	EPA/821/R-02-013 (2002)	**Endpoint:**	Cell Density	**Source:**	Boron Reference Toxicant-RT3

Selenastrum Growth Test (Dil: Lab)



Mode: 12.5 **Count:** 20 **-1ci Action Limit:** 6.25

Dil Fact: 0.5 **+1ci Action Limit:** 25

Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2011	Jan	28	12.5	0				04-8906-1439	08-6705-7340
2		Feb	11	12.5	0				03-3156-5084	15-7369-5889
3			16	25	12.5				16-9241-7630	17-1419-5770
4		Mar	16	25	12.5				02-0103-8901	08-9743-6319
5			18	12.5	0				09-4111-0664	11-1994-1681
6		Apr	1	12.5	0				07-7274-2845	11-4971-9423
7			15	12.5	0				10-7535-5877	09-1013-1222
8			22	12.5	0				13-2616-3100	00-5214-9548
9			29	12.5	0				09-8637-6919	13-8679-9060
10		May	13	12.5	0				13-1624-5102	11-7690-9315
11			18	25	12.5				05-1159-2433	15-2016-4770
12			27	12.5	0				05-5067-4453	06-8327-2423
13		Jun	17	12.5	0				19-7045-5952	04-8998-9576
14			22	6.25	-6.25				14-9021-7234	05-4296-0617
15		Jul	15	12.5	0				11-2808-8508	03-7641-7402
16			20	25	12.5				21-1517-0444	06-9211-7020
17			29	6.25	-6.25				03-2994-7709	15-7756-4261
18		Aug	12	6.25	-6.25				02-0879-8912	14-9359-0188
19			17	25	12.5				12-2424-4682	10-3673-1098
20		Sep	2	12.5	0				00-8555-7063	10-7209-6954
21			9	12.5	0				20-1112-6740	01-4775-5305