TOXICOLOGICAL EVALUATION
OF FRESHWATER SEDIMENT SAMPLES

FC 1640 LVR Toxicity Test

28 Day *Hyalella azteca*
Survival and Growth Sediment Toxicity Test

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1.0 INTRODUCTION

This report presents the results of chronic exposure toxicity tests conducted on sediment samples collected for the FC 1640 LVR Toxicity Test. Samples were provided by Geosyntec Consultants, Chicago, Illinois. Testing was based on programs and protocols developed by the ASTM (2010) and US EPA (2000). The toxicity of the samples was assessed by conducting survival and growth tests using the freshwater amphipod, *Hyalella azteca*. Toxicity tests and supporting analyses were performed at EnviroSystems, Incorporated (ESI), Hampton, New Hampshire.

Toxicity tests expose groups of organisms to environmental samples, a laboratory control and field reference sites for a specified period to assess potential impacts on a variety of endpoints, such as survival, growth or reproduction. Analysis of variance techniques are used to determine the relative toxicity of the samples as compared to the laboratory control and/or field reference sites. Endpoints for this study included survival and growth (measured as dry weight and dry biomass).

2.0 MATERIALS AND METHODS

2.1 General Methods, Biological Evaluations

Toxicological and analytical protocols used in this program follow procedures outlined in *Test Methods for Measuring the Toxicity of Sediment-Associated Contaminants with Freshwater Invertebrates* (ASTM Method E 1706-05, 2010), *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates* (US EPA 2000) and *Standard Methods for the Examination of Water and Wastewater*, 20th Edition (APHA 1998). These protocols provide standard approaches for physical and chemical analysis and for the evaluation of toxicological effects of sediments on aquatic invertebrates.

2.2 Test Species

H. azteca were obtained from Aquatic Research Organisms, Hampton, New Hampshire. Organisms used in the 28 day exposure assay were approximately 7 days old at the start of the assay.

2.3 Test Samples and Laboratory Control Sediment

Sediment samples collected for the FC 1640 LVR project were received at ESI under chain of custody. Once received, samples were inspected to determine integrity, given unique sample numbers and logged into the laboratory sample management database. Once logged in the samples were placed in a secure refrigerated, 2 - 4 °C, storage area. A listing of sample sites, sample collection, and receipt information is summarized in Table 1.

The control substrate was an artificial sediment prepared according to guidance presented in the EPA/ASTM method. Organic detritus from chironomid cultures and disintegrated paper pulp were used to provide organic content. Overlying water for the sediment toxicity tests was a 50:50 mixture of natural surface water, collected from the upper portion of the Taylor River watershed in Hampton Falls, New Hampshire, and moderately hard reconstituted water. Use of natural surface water mixed with artificial reconstituted water is recommended by the protocol (US EPA 2000, ASTM 2010).

2.4 *Hyalella azteca* Survival and Growth Toxicity Tests

Sediment was homogenized and then placed in test chambers. Overlying water was added immediately and then the chambers were allowed to stabilize. The chambers received two volume additions twice a day until organisms were added.

Test vessels were 400 mL glass beakers containing 100 mL of sediment and approximately 225 mL of overlying water. Test vessels were drilled at a consistent height above their bases and the hole covered with Nytex® screen. The screened hole facilitates water exchange while retaining test organisms. Vessels were maintained in a water bath during the test. Depth of the water in the bath was set below the drain hole in the test vessel to eliminate flow of water from the bath into the test vessel. Test chambers were randomly placed in the water bath after addition of test sediments. Placement locations were generated by the CETIS® software program. The block randomized position assignments are found on the Component Test Data Worksheet included in the data appendix. The water bath was maintained in a limited access, temperature controlled room. Temperatures in the room and water bath were independently set at a temperature of 23°C. Temperature was recorded on an hourly frequency using a temperature logger placed in a surrogate vessel. The photoperiod in the test chamber was set at 16:8 hour light:dark. Lighting was supplied by cool white fluorescent bulbs. All test chambers were aerated throughout the assay and dissolved oxygen levels were maintained at 60% saturation or greater.

On day 0, amphipods were randomly selected from the pool of organisms and added to test vessels. Each treatment group included 8 replicates with 10 organisms per replicate and a surrogate test chamber that was used to obtain water qualities during the assay without disturbing the test animals. The surrogate chamber was treated the same as actual test chambers with the addition of animals and food, but was not used to determine endpoint data.

Prior to the morning overlying water renewal, dissolved oxygen, pH, specific conductance and temperature were measured in the surrogate chamber for each treatment. Overlying water in each replicate was then renewed with approximately two volume additions. Test chambers were also renewed again in the afternoon with another two volume additions. Water exchanges were facilitated by use of a distribution system designed to provide equal, regulated flow to each chamber. The system was activated manually by the addition of water during the assay. After the afternoon overlying water renewal each replicate was fed 1.0 mL of a yeast/trout chow/alfalfa suspension. Alkalinity, ammonia and hardness of the overlying water were measured on days 0, 7, 14, 21 and 28. The total organic carbon of the overlying water was measured on days 0 and 28. Overlying water quality records are available in Appendix A.

After 28 days exposure, replicates of each test treatment were terminated to collect data for the survival and growth endpoints. Each test chamber was gently swirled to loosen the sediments and the test material was emptied into a stainless steel sieve. The sediments were washed through the sieve using fresh water and material left on the screen was sorted to recover the organisms. This process was continued until the entire sample was evaluated. Surviving amphipods were placed on tared weighing pans. Pans were dried overnight at 104°C to obtain dry weight to the nearest 0.01 mg. The mean dry weight of surviving organisms was determined to assess growth.

2.5 Statistical Analysis

Survival and growth were analyzed using CETIS® software to determine significant differences between the test sediments and the reference site sediment. Data sets were evaluated to determine normality of distribution and homogeneity of sample variance. Data sets were subsequently evaluated using the appropriate parametric or non-parametric Analysis of Variance (ANOVA) statistic. Statistical comparisons were made for the following endpoints; day 28 survival, dry weight and dry biomass. Pair-wise comparisons were made using the appropriate statistical evaluation. Each Reach was treated as a sample, so that Reach 1 through 3 was individually compared against Reach 4 data. Statistical difference was evaluated at $\alpha=0.05$.

2.6 Quality Control

As part of the laboratory quality control program, reference toxicant evaluations are conducted by ESI on a regular basis for each test species. These results provide relative health and response data while allowing for comparison with historic data sets. Results are summarized in Table 2.

2.7 Protocol Deviations

Review of data generated during the 28-day exposure period documented one minor deviation. There was 1 test chamber that had more than 10 animals loaded at the start of the assay. It is the opinion of ESI's study director that this deviation did not adversely affect the outcome of the assay.

3.0 RESULTS AND DISCUSSION

3.1 Laboratory Control and Project Reference Site Performance

At the end of the 28 day exposure period, mean survival in laboratory control sediment was 98.75% with a coefficient of variation (CV) of 3.58%. Amphipods recovered from laboratory control sediment had a mean dry weight of 1.242 mg/amphipod, with a CV of 8.98%. The dry weight of a representative group of amphipods at the start of the assay was 0.002 mg/individual. The minimum test acceptability criteria for survival in the laboratory control is ≥80%. The minimum acceptable criteria for growth is a demonstration of increased dry weight after 28 days exposure. Table 3 provides a summary of assay acceptability criteria and laboratory control achievement. Table 4 summarizes the reference site performance.

During daily water quality observations the temperature recorded for the assay had a mean value of 22.90°C with a range of 20.34 to 24.50°C. Confirmation temperature data collected in a surrogate replicate documented a mean temperature of 23.2°C with a range of 20.2 to 25.2°C. In accordance with ASTM Method 1706-05, test acceptability criteria requires a mean temperature of 23±1°C, with maximum temporary fluctuations of 23±3°C.

3.2 Summary

This program utilized protocols developed by the US EPA and ASTM to assess the potential toxicological impacts that exposure to the FC 1640 LVR project sediments would have on freshwater invertebrates. Table 5 provides a summary of demonstrated effects, based on comparison with the reference site. Tables 6 through 8 provide summaries of assay endpoints and detailed statistical results for each sample location. Table 9 summarizes overlying water qualities measured during the test. Laboratory bench sheets, water quality data, detailed summaries of survival, dry weights and associated statistical support data are included in Appendix A.

4.0 REFERENCES

APHA. 1998. *Standard Methods for the Examination of Water and Wastewater*, 20th Edition. Washington D.C.

ASTM. 2010. Annual Book of ASTM Standards. Volume 11.06. *Test Methods for Measuring the Toxicity of Sediment-Associated Contaminants with Freshwater Invertebrates*. E 1706-05. ASTM, West Conshohocken, PA.

US EPA. 2000. *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates.* Second Edition. EPA/600-R-99/064.

Table 1. Summary of Sample Collection and Receipt Information. FC 1640 LVR Toxicity Test. *Hyalella azteca* Sediment Assay. September 2011.

Field ID	Sample Designation	ESI Code	Sample Number	Sample Collected Date	Sample Collected Time	Sample Received Date	Sample Received Time
OUI-SE-LVR609-110822	Reach 3	21319-001	001	08/22/11	1715	08/24/11	0950
OUI-SE-LVR607-110822	Reach 3	21319-002	002	08/22/11	1649	08/24/11	0950
OUI-SE-LVR608-110823	Reach 3	21319-003	003	08/23/11	0900	08/24/11	0950
OUI-SE-LVR604-110824	Reach 2	21319-004	004	08/24/11	1115	08/25/11	1115
OUI-SE-LVR605-110824	Reach 2	21319-005	005	08/24/11	1000	08/25/11	1115
OUI-SE-LVR606-110824	Reach 2	21319-006	006	08/24/11	1030	08/25/11	1115
OUI-SE-LVR610-110823	Reach 4	21319-007	007	08/23/11	1650	08/25/11	1115
OUI-SE-LVR611-110823	Reach 4	21319-008	008	08/23/11	1715	08/25/11	1115
OUI-SE-LVR612-110823	Reach 4	21319-009	009	08/23/11	1540	08/25/11	1115
OUI-SE-LVR602-110825	Reach 1	21319-010	010	08/25/11	0900	08/26/11	0930
OUI-SE-LVR603-110825	Reach 1	21319-011	011	08/25/11	0820	08/26/11	0930

Table 2. Reference Toxicant Evaluation. FC 1640 LVR Toxicity Test. *Hyalella azteca* Sediment Assay. September 2011.

Date	Endpoint		Value	Historic Mean/ Central Tendency	Acceptable Range	Reference Toxicant
Hyalella azteca						
09/19/11	Survival	LC-50	0.0250	0.0109	0.000 - 0.028	Cadmium (mg/L)

Table 3. Summary of Acceptable Endpoints and Measurements. FC 1640 LVR Toxicity Test. *Hyalella azteca* Sediment Assay. September 2011.

Endpoint / Measurement	Protocol Criteria		
Survival	lab mean ≥ 80%	Mean Survival %	98.75
		Protocol Met	Yes
Growth	Measured Growth	start dry wt. (mg)	0.002
		end dry wt. (mg)	1.242
		Protocol Met	Yes
Temperature	Mean: 23°±1°C	daily / hourly	22.90 / 23.2
	Minimum: 20°C	daily / hourly	20.34 / 20.2
	Maximum: 26°C	daily / hourly	24.50 / 25.2
		Protocol Met	Yes / Yes

Table 4. Summary of Project Reference Site Performance. FC 1640 LVR Toxicity Test. *Hyalella azteca* Sediment Assay. September 2011.

Field ID	ESI Code	Sample Number	Survival (%) Mean	Survival (%) CV	Growth - Weight (mg) Mean	Growth - Weight (mg) CV	Growth - Biomass (mg) Mean	Growth - Biomass (mg) CV
OUI-SE-LVR610-110823	21319-007	007	93.75	9.77%	0.559	18.95%	0.526	23.63%
OUI-SE-LVR611-110823	21319-008	008	86.25	10.62%	0.537	21.23%	0.466	26.94%
OUI-SE-LVR612-110823	21319-009	009	93.75	9.77%	0.562	18.60%	0.528	22.17%

Table 5. Summary of Significant Endpoints. FC 1640 LVR Toxicity Test. *Hyalella azteca* Sediment Assay. September 2011.

Field ID	ESI Code	Sample Number		survival	dry wt	dry biomass
OUI-SE-LVR609-110822	21319-001	001				
OUI-SE-LVR607-110822	21319-002	002	Reach 3	No	Yes	No
OUI-SE-LVR608-110823	21319-003	003				
OUI-SE-LVR604-110824	21319-004	004				
OUI-SE-LVR605-110824	21319-005	005	Reach 2	No	No	No
OUI-SE-LVR606-110824	21319-006	006				
OUI-SE-LVR602-110825	21319-010	010	Reach 1	No	No	No
OUI-SE-LVR603-110825	21319-011	011				

Table 6. Day 28 *Hyalella azteca* Survival Summary and Statistical Analysis. FC 1640 LVR Toxicity Test. *Hyalella azteca* Sediment Assay. September 2011.

Day 28 Survival Summary - Component Summary

Field ID	ESI Code	Sample Number		Reps Analyzed	Mean	Minimum	Maximum	CV
Laboratory Control	21319-000	000		8	98.75%	90%	100%	3.58%
OUI-SE-LVR610-110823	21319-007	007	Reach 4	8	93.75%	80%	100%	9.77%
OUI-SE-LVR611-110823	21319-008	008	Reach 4	8	86.25%	80%	100%	10.62%
OUI-SE-LVR612-110823	21319-009	009	Reach 4	8	93.75%	80%	100%	9.77%
OUI-SE-LVR609-110822	21319-001	001	Reach 3	8	92.50%	80%	100%	7.64%
OUI-SE-LVR607-110822	21319-002	002	Reach 3	8	93.75%	80%	100%	7.94%
OUI-SE-LVR608-110823	21319-003	003	Reach 3	8	97.50%	90%	100%	4.75%
OUI-SE-LVR604-110824	21319-004	004	Reach 2	8	93.75%	80%	100%	7.94%
OUI-SE-LVR605-110824	21319-005	005	Reach 2	8	95.00%	70%	100%	11.25%
OUI-SE-LVR606-110824	21319-006	006	Reach 2	8	91.25%	70%	100%	12.34%
OUI-SE-LVR602-110825	21319-010	010	Reach 1	8	92.50%	80%	100%	9.58%
OUI-SE-LVR603-110825	21319-011	011	Reach 1	8	90.00%	70%	100%	11.88%

Day 28 Survival Summary - Reach Summary

Field ID	ESI Code	Sample Number		Mean	Minimum	Maximum	CV	Reject Null
OUI-SE-LVR610-110823	21319-007	007						
OUI-SE-LVR611-110823	21319-008	008	Reach 4	91.25%	80%	100%	10.38%	-
OUI-SE-LVR612-110823	21319-009	009						
OUI-SE-LVR609-110822	21319-001	001						
OUI-SE-LVR607-110822	21319-002	002	Reach 3	94.58%	80%	100%	6.96%	No
OUI-SE-LVR608-110823	21319-003	003						
OUI-SE-LVR604-110824	21319-004	004						
OUI-SE-LVR605-110824	21319-005	005	Reach 2	93.33%	70%	100%	10.32%	No
OUI-SE-LVR606-110824	21319-006	006						
OUI-SE-LVR602-110825	21319-010	010	Reach 1	91.25%	70%	100%	10.49%	No
OUI-SE-LVR603-110825	21319-011	011						

Table 7. Day 28 *Hyalella azteca* Dry Weight Summary and Statistical Analysis. FC 1640 LVR Toxicity Test. *Hyalella azteca* Sediment Assay. September 2011.

Day 28 Dry Weight Summary - Component Summary

Field ID	ESI Code	Sample Number		Reps Analyzed	Mean	Minimum	Maximum	CV
Laboratory Control	21319-000	000		8	1.242	1.094	1.401	8.98%
OUI-SE-LVR610-110823	21319-007	007	Reach 4	8	0.559	0.462	0.793	18.95%
OUI-SE-LVR611-110823	21319-008	008	Reach 4	8	0.537	0.404	0.691	21.23%
OUI-SE-LVR612-110823	21319-009	009	Reach 4	8	0.562	0.425	0.723	18.60%
OUI-SE-LVR609-110822	21319-001	001	Reach 3	8	0.558	0.418	0.858	26.83%
OUI-SE-LVR607-110822	21319-002	002	Reach 3	8	0.532	0.361	0.881	29.30%
OUI-SE-LVR608-110823	21319-003	003	Reach 3	8	0.442	0.334	0.563	18.62%
OUI-SE-LVR604-110824	21319-004	004	Reach 2	8	0.520	0.342	0.644	19.64%
OUI-SE-LVR605-110824	21319-005	005	Reach 2	8	0.503	0.409	0.599	11.29%
OUI-SE-LVR606-110824	21319-006	006	Reach 2	8	0.590	0.415	0.756	20.75%
OUI-SE-LVR602-110825	21319-010	010	Reach 1	8	0.642	0.509	1.081	28.70%
OUI-SE-LVR603-110825	21319-011	011	Reach 1	8	0.527	0.461	0.666	13.52%

Day 28 Dry Weight - Reach Summary

Field ID	ESI Code	Sample Number		Mean	Minimum	Maximum	CV	Reject Null
OUI-SE-LVR610-110823	21319-007	007						
OUI-SE-LVR611-110823	21319-008	008	Reach 4	0.553	0.404	0.793	18.83%	-
OUI-SE-LVR612-110823	21319-009	009						
OUI-SE-LVR609-110822	21319-001	001						
OUI-SE-LVR607-110822	21319-002	002	Reach 3	0.510	0.334	0.881	26.89%	Yes
OUI-SE-LVR608-110823	21319-003	003						
OUI-SE-LVR604-110824	21319-004	004						
OUI-SE-LVR605-110824	21319-005	005	Reach 2	0.538	0.342	0.756	18.80%	No
OUI-SE-LVR606-110824	21319-006	006						
OUI-SE-LVR602-110825	21319-010	010	Reach 1	0.585	0.461	1.081	25.21%	*No
OUI-SE-LVR603-110825	21319-011	011						

"*" Indicates that an outlier was detected and the significance of the analysis was unchanged when it was excluded from the analysis.

Table 8. Day 28 *Hyalella azteca* Dry Biomass Summary and Statistical Analysis. FC 1640 LVR Toxicity Test. *Hyalella azteca* Sediment Assay. September 2011.

Day 28 Dry Biomass Summary - Component Summary

Field ID	ESI Code	Sample Number		Reps Analyzed	Mean	Minimum	Maximum	CV
Laboratory Control	21319-000	000		8	1.225	1.094	1.401	9.01%
OUI-SE-LVR610-110823	21319-007	007	Reach 4	8	0.526	0.421	0.793	23.63%
OUI-SE-LVR611-110823	21319-008	008	Reach 4	8	0.466	0.323	0.681	26.94%
OUI-SE-LVR612-110823	21319-009	009	Reach 4	8	0.528	0.343	0.723	22.17%
OUI-SE-LVR609-110822	21319-001	001	Reach 3	8	0.508	0.388	0.686	19.94%
OUI-SE-LVR607-110822	21319-002	002	Reach 3	8	0.499	0.289	0.793	28.70%
OUI-SE-LVR608-110823	21319-003	003	Reach 3	8	0.431	0.334	0.563	20.63%
OUI-SE-LVR604-110824	21319-004	004	Reach 2	8	0.482	0.308	0.613	22.30%
OUI-SE-LVR605-110824	21319-005	005	Reach 2	8	0.478	0.357	0.599	16.97%
OUI-SE-LVR606-110824	21319-006	006	Reach 2	8	0.536	0.409	0.722	22.81%
OUI-SE-LVR602-110825	21319-010	010	Reach 1	8	0.591	0.452	0.973	27.56%
OUI-SE-LVR603-110825	21319-011	011	Reach 1	8	0.474	0.335	0.607	16.83%

Day 28 Dry Biomass - Reach Summary

Field ID	ESI Code	Sample Number		Mean	Minimum	Maximum	CV	Reject Null
OUI-SE-LVR610-110823	21319-007	007						
OUI-SE-LVR611-110823	21319-008	008	Reach 4	0.507	0.323	0.793	23.78%	-
OUI-SE-LVR612-110823	21319-009	009						
OUI-SE-LVR609-110822	21319-001	001						
OUI-SE-LVR607-110822	21319-002	002	Reach 3	0.479	0.289	0.793	23.77%	No
OUI-SE-LVR608-110823	21319-003	003						
OUI-SE-LVR604-110824	21319-004	004						
OUI-SE-LVR605-110824	21319-005	005	Reach 2	0.499	0.308	0.722	20.84%	No
OUI-SE-LVR606-110824	21319-006	006						
OUI-SE-LVR602-110825	21319-010	010	Reach 1	0.532	0.335	0.973	25.86%	*No
OUI-SE-LVR603-110825	21319-011	011						

"*" Indicates that an outlier was detected and the significance of the analysis was unchanged when it was excluded from the analysis.

Table 9. Summary of Overlying Water Qualities. FC 1640 LVR Toxicity Test. *Hyalella azteca* Sediment Assay. September 2011.

Field ID	ESI Code	Sample Number	Day	Date Sampled	Conductivity (uS/cm)	Alkalinity (mg/L)	Hardness (mg/L)	Ammonia (mg/L)
Laboratory Control	21319-000	000	0	09/13/11	305	64	72	<0.1
OUI-SE-LVR609-110822	21319-001	001	0	09/13/11	345	91	100	<0.1
OUI-SE-LVR607-110822	21319-002	002	0	09/13/11	301	67	84	<0.1
OUI-SE-LVR608-110823	21319-003	003	0	09/13/11	291	61	79	<0.1
OUI-SE-LVR604-110824	21319-004	004	0	09/13/11	291	60	78	<0.1
OUI-SE-LVR605-110824	21319-005	005	0	09/13/11	288	60	78	<0.1
OUI-SE-LVR606-110824	21319-006	006	0	09/13/11	289	59	77	<0.1
OUI-SE-LVR610-110823	21319-007	007	0	09/13/11	295	63	81	<0.1
OUI-SE-LVR611-110823	21319-008	008	0	09/13/11	327	85	100	<0.1
OUI-SE-LVR612-110823	21319-009	009	0	09/13/11	289	60	78	<0.1
OUI-SE-LVR602-110825	21319-010	010	0	09/13/11	287	59	76	<0.1
OUI-SE-LVR603-110825	21319-011	011	0	09/13/11	286	59	77	<0.1
Laboratory Control	21319-000	000	7	09/20/11	287	60	73	<0.1
OUI-SE-LVR609-110822	21319-001	001	7	09/20/11	341	89	99	<0.1
OUI-SE-LVR607-110822	21319-002	002	7	09/20/11	323	75	79	<0.1
OUI-SE-LVR608-110823	21319-003	003	7	09/20/11	301	64	72	<0.1
OUI-SE-LVR604-110824	21319-004	004	7	09/20/11	297	61	71	<0.1
OUI-SE-LVR605-110824	21319-005	005	7	09/20/11	296	62	75	<0.1
OUI-SE-LVR606-110824	21319-006	006	7	09/20/11	295	62	74	<0.1
OUI-SE-LVR610-110823	21319-007	007	7	09/20/11	296	60	75	<0.1
OUI-SE-LVR611-110823	21319-008	008	7	09/20/11	332	84	97	<0.1
OUI-SE-LVR612-110823	21319-009	009	7	09/20/11	306	66	82	<0.1
OUI-SE-LVR602-110825	21319-010	010	7	09/20/11	294	60	75	<0.1
OUI-SE-LVR603-110825	21319-011	011	7	09/20/11	294	60	74	<0.1
Laboratory Control	21319-000	000	14	09/27/11	281	56	61	<0.1
OUI-SE-LVR609-110822	21319-001	001	14	09/27/11	321	83	90	<0.1
OUI-SE-LVR607-110822	21319-002	002	14	09/27/11	300	67	82	<0.1
OUI-SE-LVR608-110823	21319-003	003	14	09/27/11	293	64	76	<0.1
OUI-SE-LVR604-110824	21319-004	004	14	09/27/11	291	62	73	<0.1
OUI-SE-LVR605-110824	21319-005	005	14	09/27/11	290	63	74	<0.1
OUI-SE-LVR606-110824	21319-006	006	14	09/27/11	290	63	79	<0.1
OUI-SE-LVR610-110823	21319-007	007	14	09/27/11	288	61	77	<0.1
OUI-SE-LVR611-110823	21319-008	008	14	09/27/11	321	79	95	<0.1
OUI-SE-LVR612-110823	21319-009	009	14	09/27/11	299	66	83	<0.1
OUI-SE-LVR602-110825	21319-010	010	14	09/27/11	288	61	77	<0.1
OUI-SE-LVR603-110825	21319-011	011	14	09/27/11	287	61	77	<0.1
Laboratory Control	21319-000	000	21	10/04/11	279	57	60	<0.1
OUI-SE-LVR609-110822	21319-001	001	21	10/04/11	338	84	91	<0.1
OUI-SE-LVR607-110822	21319-002	002	21	10/04/11	315	70	73	<0.1
OUI-SE-LVR608-110823	21319-003	003	21	10/04/11	308	65	71	<0.1
OUI-SE-LVR604-110824	21319-004	004	21	10/04/11	310	64	69	<0.1
OUI-SE-LVR605-110824	21319-005	005	21	10/04/11	305	65	70	<0.1
OUI-SE-LVR606-110824	21319-006	006	21	10/04/11	307	66	68	<0.1
OUI-SE-LVR610-110823	21319-007	007	21	10/04/11	303	64	68	<0.1
OUI-SE-LVR611-110823	21319-008	008	21	10/04/11	334	83	85	<0.1
OUI-SE-LVR612-110823	21319-009	009	21	10/04/11	313	69	70	<0.1
OUI-SE-LVR602-110825	21319-010	010	21	10/04/11	302	64	68	<0.1
OUI-SE-LVR603-110825	21319-011	011	21	10/04/11	306	67	72	<0.1

Field ID	ESI Code	Sample Number	Day	Date Sampled	Conductivity (uS/cm)	Alkalinity (mg/L)	Hardness (mg/L)	Ammonia (mg/L)
Laboratory Control	21319-000	000	28	10/11/11	282	53	70	0.21
OUI-SE-LVR609-110822	21319-001	001	28	10/11/11	318	72	94	<0.1
OUI-SE-LVR607-110822	21319-002	002	28	10/11/11	298	62	79	<0.1
OUI-SE-LVR608-110823	21319-003	003	28	10/11/11	290	58	74	<0.1
OUI-SE-LVR604-110824	21319-004	004	28	10/11/11	291	59	74	<0.1
OUI-SE-LVR605-110824	21319-005	005	28	10/11/11	285	58	72	<0.1
OUI-SE-LVR606-110824	21319-006	006	28	10/11/11	283	52	72	<0.1
OUI-SE-LVR610-110823	21319-007	007	28	10/11/11	283	52	71	<0.1
OUI-SE-LVR611-110823	21319-008	008	28	10/11/11	302	64	83	<0.1
OUI-SE-LVR612-110823	21319-009	009	28	10/11/11	289	54	74	<0.1
OUI-SE-LVR602-110825	21319-010	010	28	10/11/11	282	52	71	<0.1
OUI-SE-LVR603-110825	21319-011	011	28	10/11/11	275	53	72	<0.1

Additional water quality data are provided in Appendix A**.**

APPENDIX A: RAW DATA AND STATISTICAL SUPPORT

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Hyalella azteca 28 Day Sediment Assay

Study: 21320	Client: Geosyntec Consultants	Project: FC 1640 LVR Toxicity Test

Day	Date	am Water Qualities & Renew	pm Renew & Feed	Notes
		Initial	Initial	
0	09/13/11	✓/✓ AM		
1	09/14/11	✓/✓ JTP	✓/✓ JTP/LB	
2	9-15-11	✓/✓ DM	✓/✓ JTP	
3	09/16/11	✓/✓ JTP	✓/✓ JTP	
4	9/17/11	✓/✓ SJ/BS	✓/✓ SJ/CS	
5	9/18/11	✓/✓ SJ	✓/✓ SJ/CS	
6	09/19/11	✓/✓ JTP	✓/✓ JTP	
7	09/20/11	✓/✓ JTP	✓/✓ JTP	
8	09/21/11	✓/✓ JTP	✓/✓ JTP/RAM	
9	09/22/11	✓/✓ DM	✓/✓ JTP	
10	09/23/11	✓/✓ JTP/RAM	✓/✓ JTP	
11	9-24	✓/✓ DM/CS	✓/✓ DM/CS	
12	09/25/11	✓/✓ JTP	✓/✓ DM	
13	09/26/11	✓/✓ RAM/BS	✓/✓ RAM/BS	
14	09/27/11	✓/✓ AM/JTP	✓/✓ JTP	
15	09/28/11	✓/✓ EAL/AM	✓/✓ AM/RAM	
16	09/29/11	✓/✓ AM	✓/✓ AM	
17	09/30/11	✓/✓ AM	✓/✓ AM/RAM	
18	10/1/11	✓/✓ AM/CS	✓/✓ CS	
19	10/2/11	✓/✓ SJ/DM	✓/✓ DM	
20	10/3/11	✓/✓ AM	✓/✓ AM	
21	10/4/11	✓/✓ AM	✓/✓ AM	
22	10/5/11	✓/✓ AM	✓/✓ AM	
23	10/6/11	✓/✓ AM/BS	✓/✓ AM/BS	
24	10/7/11	✓/✓ AM	✓/✓ AM	
25	10/8/11	✓/✓ AM	✓/✓ AM	
26	10-9-11	✓/✓ DM	✓/✓ DM	
27	10/10/11	✓/✓ AM	✓/✓ AM	
28	10/11/11	-/-	-/-	

Alkalinity, Hardness & Ammonia on Days 0, 7, 14, 21, 28 TOC on Days 0 and 28	Day 0	Initial:
	Day 7	Initial: JTP
	Day 14	Initial: JTP/AM
	Day 21	Initial: AM
	Day 28	Initial: AM

Notes: 23 °C	Feed 1 mL of YCT food mixture	Aerate if DO is below 2.5 mg/L	Two Volume Additions Daily

Component Test Data Worksheet
The position number on these pages were used during assay conduct.

CETIS Test Data Worksheet

Report Date: 20 Dec-11 13:03 (p 1 of 2)
Test Code: 21-0183-8121/21320Ha

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Start Date: 13 Sep-11 12:00 **Species:** Hyalella azteca **Sample Code:** 21319-000
End Date: 11 Oct-11 12:00 **Protocol:** EPA/600/R-99/064 (2000) **Sample Source:** FC1640 LVR Toxicity Test
Sample Date: 31 Aug-11 12:00 **Material:** Freshwater Sediment **Sample Station:** Laboratory Control

Sample Code	Rep	Pos	# Exposed	# Survived	Total Weight-mg	Tare Weight-mg	Pan Count	Mean Length-mm
21319-009	1	1	10	10	214.22	209.13	10	
21319-005	1	2	10	7	213.13	209.56	7	
21319-011	1	3	10	9	214.09	209.55	9	
21319-003	1	4	10	10	214.37	209.45	10	
21319-002	1	5	10	10	214.03	209.34	10	
21319-010	1	6	10	10	215.37	209.8	10	
21319-000	1	7	10	10	221.73	209.41	10	
21319-008	1	8	10	10	216.44	209.63	10	
21319-006	1	9	10	8	217.45	211.4	8	
21319-004	1	10	10	10	216.64	210.84	9	
21319-007	1	11	10	9	214.52	210.2	9	
21319-001	1	12	10	9	215.82	210.47	9	
21319-001	2	13	10	10	214.46	210.06	10	
21319-010	2	14	10	9	214.57	209.51	9	
21319-003	2	15	10	10	212.75	209.41	10	
21319-009	2	16	10	10	217.32	210.09	10	
21319-002	2	17	10	10	214.07	209.33	10	
21319-005	2	18	10	10	214.36	209.24	10	
21319-006	2	19	10	9	214.11	210.02	9	
21319-000	2	20	10	10	221.75	209.94	10	
21319-011	2	21	10	10	215.76	209.69	10	
21319-007	2	22	10	10	215.26	209.49	10	
21319-008	2	23	10	8	214.68	209.15	8	
21319-004	2	24	10	10	215.72	209.59	10	
21319-006	3	25	10	9	214.69	209.52	9	
21319-007	3	26	10	10	215.14	209.32	10	
21319-002	3	27	10	8	213.51	210.62	8	
21319-008	3	28	10	8	214.46	210.96	8	
21319-010	3	29	10	10	214.33	209.24	10	
21319-004	3	30	10	9	213	209.16	9	
21319-003	3	31	10	9	213.05	209.35	9	
21319-009	3	32	10	8	213.23	209.8	8	
21319-005	3	33	10	10	216.51	211.36	10	
21319-001	3	34	10	9	215.15	210.54	9	
21319-011	3	35	10	10	215.11	209.97	10	
21319-000	3	36	10	10	220.2	209.09	10	
21319-000	4	37	10	9	221.16	209.41	9	
21319-002	4	38	10	9	213.72	209.5	9	
21319-010	4	39	10	10	215.11	209.5	10	
21319-006	4	40	10	10	215.99	210.67	10	
21319-001	4	41	11	11	214.48	209.88	11	
21319-004	4	42	10	9	213.11	210.03	9	
21319-011	4	43	10	9	214.3	209.95	9	
21319-003	4	44	10	9	213.15	209.53	9	
21319-005	4	45	10	10	215.36	210.36	10	
21319-008	4	46	10	9	215.94	210.34	9	
21319-009	4	47	10	8	214.97	209.8	8	

Component Test Data Worksheet
The position number on these pages were used during assay conduct.

CETIS Test Data Worksheet

Report Date: 20 Dec-11 13:03 (p 2 of 2)
Test Code: 21-0183-8121/21320Ha

Sample Code	Rep	Pos	# Exposed	# Survived	Total Weight-mg	Tare Weight-mg	Pan Count	Mean Length-mm
21319-007	4	48	10	10	217.36	209.43	10	
21319-005	5	49	10	9	214.44	210.43	9	
21319-008	5	50	10	10	214.72	209.91	10	
21319-009	5	51	10	9	214.53	209.51	9	
21319-006	5	52	10	10	217.74	210.52	10	
21319-007	5	53	10	8	214.23	209.67	8	
21319-011	5	54	10	10	214.16	209.55	10	
21319-002	5	55	10	10	215.27	209.68	10	
21319-004	5	56	10	10	215.76	209.87	10	
21319-003	5	57	10	10	213.69	210.07	10	
21319-000	5	58	10	10	220.14	209.2	10	
21319-001	5	59	10	9	213.35	209.47	9	
21319-010	5	60	10	10	215.62	209.34	10	
21319-007	6	61	10	10	215.36	210.74	10	
21319-000	6	62	10	10	224.28	210.64	10	
21319-010	6	63	10	8	215.71	210.33	8	
21319-001	6	64	10	8	216.98	210.12	8	
21319-009	6	65	10	10	214.94	210.69	10	
21319-011	6	66	10	9	215.28	210.74	9	
21319-008	6	67	10	8	213.52	210.29	8	
21319-003	6	68	10	10	213.62	209.33	10	
21319-005	6	69	10	10	215.23	211.14	10	
21319-006	6	70	10	7	214.41	210.26	7	
21319-002	6	71	10	10	209.86	205.23	10	
21319-004	6	72	10	10	214.84	210.19	10	
21319-001	7	73	10	10	215	209.67	10	
21319-010	7	74	10	8	215.58	211.06	8	
21319-006	7	75	10	10	215.19	211.04	10	
21319-004	7	76	10	9	213.74	208.92	9	
21319-000	7	77	10	10	222.77	210.31	10	
21319-007	7	78	10	10	215.76	210.95	10	
21319-005	7	79	10	10	215.91	210.57	10	
21319-003	7	80	10	10	216.33	210.94	10	
21319-011	7	81	10	7	214.61	211.26	7	
21319-002	7	82	10	9	214.67	209.48	9	
21319-008	7	83	10	8	214.13	209.89	8	
21319-009	7	84	10	10	216.14	210.31	10	
21319-007	8	85	10	8	214.04	209.83	8	
21319-009	8	86	10	10	215.57	209.35	10	
21319-008	8	87	10	8	213.05	209.48	8	
21319-010	8	88	10	9	219.26	209.53	9	
21319-003	8	89	10	10	215.78	210.15	10	
21319-005	8	90	10	10	216.76	210.77	10	
21319-001	8	91	10	9	216.13	210.07	9	
21319-004	8	92	10	8	214.76	210.43	8	
21319-011	8	93	10	8	215.05	209.72	8	
21319-006	8	94	10	10	216.97	210.21	10	
21319-000	8	95	10	10	223.33	209.32	10	
21319-002	8	96	10	9	217.88	209.95	9	

The position number here does not correspond with the position number originally assigned to the test. That can be found on the Component Test Data Worksheet.

CETIS Test Data Worksheet

Report Date: 20 Dec-11 13:02 (p 1 of 2)
Test Code: 10-5917-7552/21319Ha

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Start Date: 13 Sep-11 12:00 **Species:** Hyalella azteca **Sample Code:** 21319-000
End Date: 11 Oct-11 12:00 **Protocol:** EPA/600/R-99/064 (2000) **Sample Source:** FC1640 LVR Toxicity Test
Sample Date: 13 Sep-11 12:00 **Material:** Freshwater Sediment **Sample Station:** Laboratory Control

Sample Code	Rep	Pos	# Exposed	# Survived	Total Weight-mg	Tare Weight-mg	Pan Count	Mean Length-mm
21319-000	1	5	10	10	221.73	209.41	10	
21319-000	2	82	10	10	221.75	209.94	10	
21319-000	3	65	10	10	220.2	209.09	10	
21319-000	4	2	10	9	221.16	209.41	9	
21319-000	5	56	10	10	220.14	209.2	10	
21319-000	6	95	10	10	224.28	210.64	10	
21319-000	7	34	10	10	222.77	210.31	10	
21319-000	8	89	10	10	223.33	209.32	10	
21319Reach 4	1	93	10	9	214.52	210.2	9	
21319Reach 4	2	76	10	10	215.26	209.49	10	
21319Reach 4	3	30	10	10	215.14	209.32	10	
21319Reach 4	4	54	10	10	217.36	209.43	10	
21319Reach 4	5	12	10	8	214.23	209.67	8	
21319Reach 4	6	15	10	10	215.36	210.74	10	
21319Reach 4	7	86	10	10	215.76	210.95	10	
21319Reach 4	8	69	10	8	214.04	209.83	8	
21319Reach 4	9	4	10	10	216.44	209.63	10	
21319Reach 4	10	25	10	8	214.68	209.15	8	
21319Reach 4	11	32	10	8	214.46	210.96	8	
21319Reach 4	12	94	10	9	215.94	210.34	9	
21319Reach 4	13	83	10	10	214.72	209.91	10	
21319Reach 4	14	77	10	8	213.52	210.29	8	
21319Reach 4	15	81	10	8	214.13	209.89	8	
21319Reach 4	16	22	10	8	213.05	209.48	8	
21319Reach 4	17	10	10	10	214.22	209.13	10	
21319Reach 4	18	28	10	10	217.32	210.09	10	
21319Reach 4	19	78	10	8	213.23	209.8	8	
21319Reach 4	20	39	10	8	214.97	209.8	8	
21319Reach 4	21	96	10	9	214.53	209.51	9	
21319Reach 4	22	36	10	10	214.94	210.69	10	
21319Reach 4	23	91	10	10	216.14	210.31	10	
21319Reach 4	24	84	10	10	215.57	209.35	10	
21319Reach 3	1	92	10	9	215.82	210.47	9	
21319Reach 3	2	66	10	10	214.46	210.06	10	
21319Reach 3	3	8	10	9	215.15	210.54	9	
21319Reach 3	4	67	11	11	214.48	209.88	11	
21319Reach 3	5	27	10	9	213.35	209.47	9	
21319Reach 3	6	33	10	8	216.98	210.12	8	
21319Reach 3	7	6	10	10	215	209.67	10	
21319Reach 3	8	16	10	9	216.13	210.07	9	
21319Reach 3	9	23	10	10	214.03	209.34	10	
21319Reach 3	10	17	10	10	214.07	209.33	10	
21319Reach 3	11	51	10	8	213.51	210.62	8	
21319Reach 3	12	72	10	9	213.72	209.5	9	
21319Reach 3	13	68	10	10	215.27	209.68	10	
21319Reach 3	14	46	10	10	209.86	205.23	10	
21319Reach 3	15	88	10	9	214.67	209.48	9	

The position number here does not correspond with the position number originally assigned to the test. That can be found on the Component Test Data Worksheet.

CETIS Test Data Worksheet

Report Date: 20 Dec-11 13:02 (p 2 of 2)
Test Code: 10-5917-7552/21319Ha

Sample Code	Rep	Pos	# Exposed	# Survived	Total Weight-mg	Tare Weight-mg	Pan Count	Mean Length-mm
21319Reach 3	16	80	10	9	217.88	209.95	9	
21319Reach 3	17	43	10	10	214.37	209.45	10	
21319Reach 3	18	58	10	10	212.75	209.41	10	
21319Reach 3	19	44	10	9	213.05	209.35	9	
21319Reach 3	20	18	10	9	213.15	209.53	9	
21319Reach 3	21	61	10	10	213.69	210.07	10	
21319Reach 3	22	64	10	10	213.62	209.33	10	
21319Reach 3	23	87	10	10	216.33	210.94	10	
21319Reach 3	24	1	10	10	215.78	210.15	10	
21319Reach 2	1	90	10	10	216.64	210.84	9	
21319Reach 2	2	19	10	10	215.72	209.59	10	
21319Reach 2	3	50	10	9	213	209.16	9	
21319Reach 2	4	70	10	9	213.11	210.03	9	
21319Reach 2	5	71	10	10	215.76	209.87	10	
21319Reach 2	6	29	10	10	214.84	210.19	10	
21319Reach 2	7	20	10	9	213.74	208.92	9	
21319Reach 2	8	79	10	8	214.76	210.43	8	
21319Reach 2	9	41	10	7	213.13	209.56	7	
21319Reach 2	10	60	10	10	214.36	209.24	10	
21319Reach 2	11	7	10	10	216.51	211.36	10	
21319Reach 2	12	11	10	10	215.36	210.36	10	
21319Reach 2	13	38	10	9	214.44	210.43	9	
21319Reach 2	14	59	10	10	215.23	211.14	10	
21319Reach 2	15	63	10	10	215.91	210.57	10	
21319Reach 2	16	13	10	10	216.76	210.77	10	
21319Reach 2	17	47	10	8	217.45	211.4	8	
21319Reach 2	18	75	10	9	214.11	210.02	9	
21319Reach 2	19	53	10	9	214.69	209.52	9	
21319Reach 2	20	57	10	10	215.99	210.67	10	
21319Reach 2	21	3	10	10	217.74	210.52	10	
21319Reach 2	22	9	10	7	214.41	210.26	7	
21319Reach 2	23	62	10	10	215.19	211.04	10	
21319Reach 2	24	74	10	10	216.97	210.21	10	
21319Reach 1	1	85	10	10	215.37	209.8	10	
21319Reach 1	2	24	10	9	214.57	209.51	9	
21319Reach 1	3	49	10	10	214.33	209.24	10	
21319Reach 1	4	35	10	10	215.11	209.5	10	
21319Reach 1	5	14	10	10	215.62	209.34	10	
21319Reach 1	6	21	10	8	215.71	210.33	8	
21319Reach 1	7	42	10	8	215.58	211.06	8	
21319Reach 1	8	40	10	9	219.26	209.53	9	
21319Reach 1	9	73	10	9	214.09	209.55	9	
21319Reach 1	10	37	10	10	215.76	209.69	10	
21319Reach 1	11	48	10	10	215.11	209.97	10	
21319Reach 1	12	45	10	9	214.3	209.95	9	
21319Reach 1	13	31	10	10	214.16	209.55	10	
21319Reach 1	14	55	10	9	215.28	210.74	9	
21319Reach 1	15	26	10	7	214.61	211.26	7	
21319Reach 1	16	52	10	8	215.05	209.72	8	

YSI 556 MPS Sample Reading Order

Study: 21320

Client: Geosyntec Consultants

Project: FC 1640 LVR Toxicity Test

Reading Number	Field ID	Receipt Number	Sample Number
0	Laboratory Control	21319-000	000
1	OUI-SE-LVR609-110822	21319-001	001
2	OUI-SE-LVR607-110822	21319-002	002
3	OUI-SE-LVR608-110823	21319-003	003
4	OUI-SE-LVR604-110824	21319-004	004
5	OUI-SE-LVR605-110824	21319-005	005
6	OUI-SE-LVR606-110824	21319-006	006
7	OUI-SE-LVR610-110823	21319-007	007
8	OUI-SE-LVR611-110823	21319-008	008
9	OUI-SE-LVR612-110823	21319-009	009
10	OUI-SE-LVR602-110825	21319-010	010
11	OUI-SE-LVR603-110825	21319-011	011

STUDY: 21320
CLIENT: Geosyntec Consultants
PROJECT: FC 1640 LVR Toxicity Test
ASSAY: Hyalella azteca Sediment Assay
TASK: Daily Overlying Water Summary

	Temp	DO Conc	pH	SpCond	Salinity	DO%
Minimum:	20.34	4.62	6.78	235	0.11	55.10
Mean:	22.90	8.06		299	0.14	93.72
Maximum:	24.50	8.93	8.36	356	0.17	102.50

Field ID	Sample Number	Day	DateTime M/D/Y	Temp C	DO Conc mg/L	pH SU	SpCond uS/cm	Salinity ppt	DO% %
Laboratory Control	000	0	09/13/11 07:13:04	22.56	7.99	7.48	305	0.14	92.4
OUI-SE-LVR609-110822	001	0	09/13/11 07:13:55	22.68	8.07	8.07	345	0.16	93.6
OUI-SE-LVR607-110822	002	0	09/13/11 07:14:07	22.67	8.15	8.13	301	0.14	94.5
OUI-SE-LVR608-110823	003	0	09/13/11 07:14:21	22.66	8.28	8.09	291	0.14	96.0
OUI-SE-LVR604-110824	004	0	09/13/11 07:14:37	22.67	8.31	8.04	291	0.14	96.4
OUI-SE-LVR605-110824	005	0	09/13/11 07:14:50	22.68	8.29	8.01	288	0.14	96.1
OUI-SE-LVR606-110824	006	0	09/13/11 07:15:06	22.67	8.29	7.99	289	0.14	96.1
OUI-SE-LVR610-110823	007	0	09/13/11 07:15:24	22.70	8.29	7.99	295	0.14	96.2
OUI-SE-LVR611-110823	008	0	09/13/11 07:15:38	22.66	8.28	8.03	327	0.16	95.9
OUI-SE-LVR612-110823	009	0	09/13/11 07:16:00	22.70	8.22	8.08	289	0.14	95.3
OUI-SE-LVR602-110825	010	0	09/13/11 07:16:13	22.68	8.18	8.04	287	0.14	94.8
OUI-SE-LVR603-110825	011	0	09/13/11 07:16:35	22.67	8.26	8.00	286	0.14	95.8
Laboratory Control	000	1	09/14/11 08:27:24	23.25	7.73	7.94	309	0.15	90.6
OUI-SE-LVR609-110822	001	1	09/14/11 08:28:02	23.33	7.71	8.35	350	0.17	90.5
OUI-SE-LVR607-110822	002	1	09/14/11 08:28:20	23.35	7.83	8.36	302	0.14	92.0
OUI-SE-LVR608-110823	003	1	09/14/11 08:28:36	23.35	7.93	8.25	300	0.14	93.2
OUI-SE-LVR604-110824	004	1	09/14/11 08:28:59	23.34	7.96	8.20	301	0.14	93.4
OUI-SE-LVR605-110824	005	1	09/14/11 08:29:20	23.36	7.89	8.18	298	0.14	92.7
OUI-SE-LVR606-110824	006	1	09/14/11 08:29:40	23.35	7.89	8.17	297	0.14	92.6
OUI-SE-LVR610-110823	007	1	09/14/11 08:29:59	23.33	7.91	8.17	304	0.14	92.8
OUI-SE-LVR611-110823	008	1	09/14/11 08:30:17	23.29	7.89	8.34	335	0.16	92.5
OUI-SE-LVR612-110823	009	1	09/14/11 08:30:43	23.33	7.85	8.26	300	0.14	92.2
OUI-SE-LVR602-110825	010	1	09/14/11 08:31:09	23.31	7.90	8.18	294	0.14	92.7
OUI-SE-LVR603-110825	011	1	09/14/11 08:31:33	23.31	7.95	8.16	293	0.14	93.3
Laboratory Control	000	2	09/15/11 08:39:55	23.22	7.58	7.75	312	0.15	88.8
OUI-SE-LVR609-110822	001	2	09/15/11 08:41:10	23.33	7.84	8.18	347	0.17	92.0
OUI-SE-LVR607-110822	002	2	09/15/11 08:41:43	23.34	8.15	8.11	295	0.14	95.6
OUI-SE-LVR608-110823	003	2	09/15/11 08:42:06	23.34	8.24	8.06	292	0.14	96.7
OUI-SE-LVR604-110824	004	2	09/15/11 08:42:31	23.30	8.30	8.03	292	0.14	97.4
OUI-SE-LVR605-110824	005	2	09/15/11 08:42:56	23.32	8.25	7.99	289	0.14	96.9
OUI-SE-LVR606-110824	006	2	09/15/11 08:43:39	23.32	8.16	8.00	289	0.14	95.7
OUI-SE-LVR610-110823	007	2	09/15/11 08:43:58	23.31	8.29	8.00	293	0.14	97.3
OUI-SE-LVR611-110823	008	2	09/15/11 08:44:39	23.26	8.07	8.24	325	0.15	94.6
OUI-SE-LVR612-110823	009	2	09/15/11 08:45:22	23.30	8.14	8.09	289	0.14	95.4
OUI-SE-LVR602-110825	010	2	09/15/11 08:45:40	23.30	8.20	8.04	284	0.13	96.2
OUI-SE-LVR603-110825	011	2	09/15/11 08:46:12	23.31	8.33	8.00	284	0.13	97.8
Laboratory Control	000	3	09/16/11 08:42:49	20.34	8.08	7.89	286	0.14	89.6
OUI-SE-LVR609-110822	001	3	09/16/11 08:43:38	20.39	8.14	8.15	337	0.16	90.3
OUI-SE-LVR607-110822	002	3	09/16/11 08:44:00	20.37	8.30	8.15	295	0.14	92.0
OUI-SE-LVR608-110823	003	3	09/16/11 08:44:22	20.39	8.37	8.08	291	0.14	92.8

Field ID	Sample Number	Day	DateTime M/D/Y	Temp C	DO Conc mg/L	pH SU	SpCond uS/cm	Salinity ppt	DO% %
OUI-SE-LVR604-110824	004	3	09/16/11 08:44:45	20.38	8.39	8.06	289	0.14	93.0
OUI-SE-LVR605-110824	005	3	09/16/11 08:45:08	20.37	8.33	8.02	287	0.14	92.4
OUI-SE-LVR606-110824	006	3	09/16/11 08:45:30	20.37	8.35	8.03	288	0.14	92.5
OUI-SE-LVR610-110823	007	3	09/16/11 08:45:53	20.38	8.40	8.03	289	0.14	93.1
OUI-SE-LVR611-110823	008	3	09/16/11 08:46:16	20.37	8.39	8.19	321	0.15	93.1
OUI-SE-LVR612-110823	009	3	09/16/11 08:46:38	20.43	8.39	8.14	289	0.14	93.1
OUI-SE-LVR602-110825	010	3	09/16/11 08:47:01	20.41	8.38	8.06	284	0.13	93.0
OUI-SE-LVR603-110825	011	3	09/16/11 08:47:22	20.43	8.38	8.05	283	0.13	93.0
Laboratory Control	000	4	09/17/11 07:44:37	21.15	7.18	6.78	256	0.12	80.8
OUI-SE-LVR609-110822	001	4	09/17/11 07:45:48	21.44	8.27	7.98	296	0.14	93.6
OUI-SE-LVR607-110822	002	4	09/17/11 07:46:03	21.44	8.38	8.05	265	0.13	94.9
OUI-SE-LVR608-110823	003	4	09/17/11 07:46:18	21.44	8.57	8.00	258	0.12	97.0
OUI-SE-LVR604-110824	004	4	09/17/11 07:46:30	21.44	8.80	7.96	257	0.12	99.6
OUI-SE-LVR605-110824	005	4	09/17/11 07:46:42	21.47	8.71	7.96	256	0.12	98.6
OUI-SE-LVR606-110824	006	4	09/17/11 07:47:05	21.52	8.65	7.88	256	0.12	98.1
OUI-SE-LVR610-110823	007	4	09/17/11 07:47:14	21.49	8.73	7.92	256	0.12	98.9
OUI-SE-LVR611-110823	008	4	09/17/11 07:47:27	21.44	8.68	7.97	282	0.13	98.3
OUI-SE-LVR612-110823	009	4	09/17/11 07:47:38	21.40	8.70	8.10	257	0.12	98.4
OUI-SE-LVR602-110825	010	4	09/17/11 07:47:50	21.44	8.65	8.02	252	0.12	97.9
OUI-SE-LVR603-110825	011	4	09/17/11 07:48:02	21.47	8.64	7.96	252	0.12	97.8
Laboratory Control	000	5	09/18/11 07:48:34	21.54	8.13	7.25	248	0.12	na
OUI-SE-LVR609-110822	001	5	09/18/11 07:49:39	21.76	8.13	8.16	282	0.13	na
OUI-SE-LVR607-110822	002	5	09/18/11 07:49:54	21.77	8.21	8.20	268	0.13	na
OUI-SE-LVR608-110823	003	5	09/18/11 07:50:06	21.78	8.32	8.15	255	0.12	na
OUI-SE-LVR604-110824	004	5	09/18/11 07:50:21	21.78	8.38	8.10	251	0.12	na
OUI-SE-LVR605-110824	005	5	09/18/11 07:50:36	21.77	8.49	8.06	235	0.11	na
OUI-SE-LVR606-110824	006	5	09/18/11 07:50:51	21.76	8.47	8.04	263	0.12	na
OUI-SE-LVR610-110823	007	5	09/18/11 07:51:04	21.78	8.47	8.06	282	0.13	na
OUI-SE-LVR611-110823	008	5	09/18/11 07:51:20	21.72	8.41	8.15	292	0.14	na
OUI-SE-LVR612-110823	009	5	09/18/11 07:51:32	21.70	8.39	8.26	262	0.12	na
OUI-SE-LVR602-110825	010	5	09/18/11 07:51:44	21.75	8.35	8.17	277	0.13	na
OUI-SE-LVR603-110825	011	5	09/18/11 07:51:54	21.76	8.36	8.11	277	0.13	na
Laboratory Control	000	6	09/19/11 08:00:47	20.91	8.19	7.69	295	0.14	91.8
OUI-SE-LVR609-110822	001	6	09/19/11 08:01:20	20.97	8.33	8.07	342	0.16	93.5
OUI-SE-LVR607-110822	002	6	09/19/11 08:01:38	20.99	8.55	8.12	316	0.15	96.0
OUI-SE-LVR608-110823	003	6	09/19/11 08:01:56	21.00	8.64	8.08	295	0.14	97.0
OUI-SE-LVR604-110824	004	6	09/19/11 08:02:12	21.00	8.66	8.05	293	0.14	97.3
OUI-SE-LVR605-110824	005	6	09/19/11 08:02:33	20.98	8.61	8.03	287	0.14	96.6
OUI-SE-LVR606-110824	006	6	09/19/11 08:02:53	21.00	8.66	8.04	287	0.14	97.2
OUI-SE-LVR610-110823	007	6	09/19/11 08:03:15	20.99	8.68	8.05	291	0.14	97.4
OUI-SE-LVR611-110823	008	6	09/19/11 08:03:35	20.96	8.63	8.20	326	0.16	96.9
OUI-SE-LVR612-110823	009	6	09/19/11 08:03:54	20.99	8.59	8.15	295	0.14	96.4
OUI-SE-LVR602-110825	010	6	09/19/11 08:04:15	21.02	8.63	8.08	292	0.14	96.9
OUI-SE-LVR603-110825	011	6	09/19/11 08:04:40	21.02	8.64	8.07	289	0.14	97.0
Laboratory Control	000	7	09/20/11 08:21:17	22.40	7.82	7.86	287	0.14	90.2
OUI-SE-LVR609-110822	001	7	09/20/11 08:21:56	22.47	8.09	8.16	341	0.16	93.5
OUI-SE-LVR607-110822	002	7	09/20/11 08:22:13	22.51	7.99	8.20	323	0.15	92.3
OUI-SE-LVR608-110823	003	7	09/20/11 08:22:29	22.52	7.99	8.15	301	0.14	92.4
OUI-SE-LVR604-110824	004	7	09/20/11 08:22:48	22.53	8.15	8.11	297	0.14	94.2
OUI-SE-LVR605-110824	005	7	09/20/11 08:23:39	22.50	8.13	8.01	296	0.14	94.0

Field ID	Sample Number	Day	DateTime M/D/Y	Temp C	DO Conc mg/L	pH SU	SpCond uS/cm	Salinity ppt	DO% %
OUI-SE-LVR606-110824	006	7	09/20/11 08:23:55	22.51	8.29	8.06	295	0.14	95.8
OUI-SE-LVR610-110823	007	7	09/20/11 08:24:13	22.51	8.19	8.09	296	0.14	94.7
OUI-SE-LVR611-110823	008	7	09/20/11 08:24:28	22.46	8.13	8.15	332	0.16	93.9
OUI-SE-LVR612-110823	009	7	09/20/11 08:24:47	22.49	8.12	8.15	306	0.15	93.8
OUI-SE-LVR602-110825	010	7	09/20/11 08:25:08	22.51	8.19	8.06	294	0.14	94.7
OUI-SE-LVR603-110825	011	7	09/20/11 08:25:26	22.52	8.12	8.07	294	0.14	93.9
Laboratory Control	000	8	09/21/11 08:20:44	22.79	7.52	7.79	279	0.13	87.4
OUI-SE-LVR609-110822	001	8	09/21/11 08:21:26	22.81	7.85	8.11	347	0.17	91.3
OUI-SE-LVR607-110822	002	8	09/21/11 08:21:44	22.85	7.97	8.14	311	0.15	92.7
OUI-SE-LVR608-110823	003	8	09/21/11 08:21:59	22.88	7.99	8.11	297	0.14	93.0
OUI-SE-LVR604-110824	004	8	09/21/11 08:22:14	22.90	7.99	8.07	292	0.14	93.1
OUI-SE-LVR605-110824	005	8	09/21/11 08:22:27	22.90	8.00	8.03	293	0.14	93.2
OUI-SE-LVR606-110824	006	8	09/21/11 08:22:47	22.89	8.03	8.03	293	0.14	93.5
OUI-SE-LVR610-110823	007	8	09/21/11 08:23:09	22.85	8.13	8.03	287	0.14	94.6
OUI-SE-LVR611-110823	008	8	09/21/11 08:23:26	22.81	8.19	8.15	329	0.16	95.2
OUI-SE-LVR612-110823	009	8	09/21/11 08:23:44	22.88	8.13	8.13	302	0.14	94.6
OUI-SE-LVR602-110825	010	8	09/21/11 08:24:01	22.88	8.08	8.10	286	0.14	94.0
OUI-SE-LVR603-110825	011	8	09/21/11 08:24:15	22.89	8.11	8.09	291	0.14	94.4
Laboratory Control	000	9	09/22/11 08:54:16	24.36	6.80	7.84	281	0.13	81.4
OUI-SE-LVR609-110822	001	9	09/22/11 08:55:30	24.41	7.11	8.23	336	0.16	85.2
OUI-SE-LVR607-110822	002	9	09/22/11 08:55:52	24.43	7.40	8.25	305	0.14	88.7
OUI-SE-LVR608-110823	003	9	09/22/11 08:56:19	24.39	7.49	8.18	299	0.14	89.7
OUI-SE-LVR604-110824	004	9	09/22/11 08:56:55	24.44	7.35	8.15	293	0.14	88.1
OUI-SE-LVR605-110824	005	9	09/22/11 08:57:18	24.42	7.41	8.10	295	0.14	88.8
OUI-SE-LVR606-110824	006	9	09/22/11 08:57:34	24.43	7.47	8.11	295	0.14	89.5
OUI-SE-LVR610-110823	007	9	09/22/11 08:58:04	24.38	7.80	8.15	290	0.14	93.4
OUI-SE-LVR611-110823	008	9	09/22/11 08:58:39	24.31	7.75	8.31	332	0.16	92.7
OUI-SE-LVR612-110823	009	9	09/22/11 08:59:04	24.37	7.69	8.26	301	0.14	92.1
OUI-SE-LVR602-110825	010	9	09/22/11 08:59:25	24.38	7.68	8.25	289	0.14	91.9
OUI-SE-LVR603-110825	011	9	09/22/11 09:00:11	24.41	7.65	8.22	290	0.14	91.6
Laboratory Control	000	10	09/23/11 09:36:51	24.40	7.73	7.67	281	0.13	92.6
OUI-SE-LVR609-110822	001	10	09/23/11 09:38:12	24.45	7.86	8.17	337	0.16	94.2
OUI-SE-LVR607-110822	002	10	09/23/11 09:38:40	24.50	7.94	8.12	307	0.15	95.3
OUI-SE-LVR608-110823	003	10	09/23/11 09:39:08	24.46	7.90	8.05	299	0.14	94.7
OUI-SE-LVR604-110824	004	10	09/23/11 09:39:30	24.50	7.89	8.05	294	0.14	94.7
OUI-SE-LVR605-110824	005	10	09/23/11 09:39:55	24.50	7.84	7.99	297	0.14	94.0
OUI-SE-LVR606-110824	006	10	09/23/11 09:40:21	24.48	7.88	8.05	298	0.14	94.5
OUI-SE-LVR610-110823	007	10	09/23/11 09:40:49	24.42	7.93	8.04	294	0.14	95.0
OUI-SE-LVR611-110823	008	10	09/23/11 09:41:34	24.36	8.02	8.28	339	0.16	96.0
OUI-SE-LVR612-110823	009	10	09/23/11 09:42:16	24.43	7.84	8.08	306	0.14	94.0
OUI-SE-LVR602-110825	010	10	09/23/11 09:42:49	24.45	7.91	8.12	291	0.14	94.8
OUI-SE-LVR603-110825	011	10	09/23/11 09:43:14	24.45	7.93	8.12	292	0.14	95.1
Laboratory Control	000	11	09/24/11 10:25:55	24.36	6.97	7.75	280	0.13	83.5
OUI-SE-LVR609-110822	001	11	09/24/11 10:27:01	24.35	7.37	8.19	335	0.16	88.2
OUI-SE-LVR607-110822	002	11	09/24/11 10:27:28	24.38	7.60	8.18	304	0.14	90.9
OUI-SE-LVR608-110823	003	11	09/24/11 10:27:49	24.32	7.65	8.12	298	0.14	91.5
OUI-SE-LVR604-110824	004	11	09/24/11 10:28:17	24.39	7.68	8.11	292	0.14	92.0
OUI-SE-LVR605-110824	005	11	09/24/11 10:28:43	24.40	7.63	8.05	294	0.14	91.3
OUI-SE-LVR606-110824	006	11	09/24/11 10:29:20	24.38	7.67	8.12	294	0.14	91.8
OUI-SE-LVR610-110823	007	11	09/24/11 10:29:52	24.34	7.66	8.09	294	0.14	91.7

Field ID	Sample Number	Day	DateTime M/D/Y	Temp C	DO Conc mg/L	pH SU	SpCond uS/cm	Salinity ppt	DO% %
OUI-SE-LVR611-110823	008	11	09/24/11 10:30:26	24.27	7.66	8.30	338	0.16	91.5
OUI-SE-LVR612-110823	009	11	09/24/11 10:30:59	24.33	7.71	8.15	305	0.14	92.2
OUI-SE-LVR602-110825	010	11	09/24/11 10:31:29	24.30	7.87	8.18	291	0.14	94.0
OUI-SE-LVR603-110825	011	11	09/24/11 10:32:24	24.33	7.72	8.21	292	0.14	92.3
Laboratory Control	000	12	09/25/11 08:13:11	24.42	7.79	7.58	287	0.14	93.3
OUI-SE-LVR609-110822	001	12	09/25/11 08:13:45	24.43	7.39	7.84	334	0.16	88.5
OUI-SE-LVR607-110822	002	12	09/25/11 08:14:16	24.48	7.86	8.05	306	0.15	94.2
OUI-SE-LVR608-110823	003	12	09/25/11 08:14:37	24.45	8.00	8.05	302	0.14	95.9
OUI-SE-LVR604-110824	004	12	09/25/11 08:15:03	24.48	8.04	8.04	296	0.14	96.5
OUI-SE-LVR605-110824	005	12	09/25/11 08:15:21	24.49	8.02	8.00	296	0.14	96.2
OUI-SE-LVR606-110824	006	12	09/25/11 08:15:44	24.46	8.02	8.02	296	0.14	96.2
OUI-SE-LVR610-110823	007	12	09/25/11 08:16:09	24.42	8.10	8.02	292	0.14	97.0
OUI-SE-LVR611-110823	008	12	09/25/11 08:16:24	24.44	8.05	8.09	330	0.16	96.5
OUI-SE-LVR612-110823	009	12	09/25/11 08:16:44	24.46	8.08	8.10	300	0.14	96.9
OUI-SE-LVR602-110825	010	12	09/25/11 08:17:08	24.43	7.81	7.98	290	0.14	93.6
OUI-SE-LVR603-110825	011	12	09/25/11 08:17:43	24.47	8.05	8.05	290	0.14	96.5
Laboratory Control	000	13	09/26/11 11:09:11	24.29	7.26	7.77	275	0.13	86.7
OUI-SE-LVR609-110822	001	13	09/26/11 11:10:37	24.23	4.62	7.87	332	0.16	55.1
OUI-SE-LVR607-110822	002	13	09/26/11 11:11:36	24.29	7.64	8.14	301	0.14	91.4
OUI-SE-LVR608-110823	003	13	09/26/11 11:12:01	24.25	7.75	8.14	294	0.14	92.6
OUI-SE-LVR604-110824	004	13	09/26/11 11:12:26	24.31	7.84	8.11	291	0.14	93.7
OUI-SE-LVR605-110824	005	13	09/26/11 11:12:57	24.31	7.43	7.99	292	0.14	88.9
OUI-SE-LVR606-110824	006	13	09/26/11 11:13:29	24.29	7.69	8.07	293	0.14	91.9
OUI-SE-LVR610-110823	007	13	09/26/11 11:13:51	24.27	7.71	8.07	291	0.14	92.1
OUI-SE-LVR611-110823	008	13	09/26/11 11:14:23	24.25	7.74	8.28	333	0.16	92.4
OUI-SE-LVR612-110823	009	13	09/26/11 11:15:02	24.29	7.78	8.13	302	0.14	93.0
OUI-SE-LVR602-110825	010	13	09/26/11 11:15:34	24.26	8.10	8.28	288	0.14	96.8
OUI-SE-LVR603-110825	011	13	09/26/11 11:16:09	24.19	8.06	8.24	288	0.14	96.2
Laboratory Control	000	14	09/27/11 07:53:48	23.83	7.33	7.45	281	0.13	86.8
OUI-SE-LVR609-110822	001	14	09/27/11 07:54:29	23.84	7.36	7.64	321	0.15	87.2
OUI-SE-LVR607-110822	002	14	09/27/11 07:54:43	23.93	7.51	7.80	300	0.14	89.2
OUI-SE-LVR608-110823	003	14	09/27/11 07:54:53	23.91	7.79	7.87	293	0.14	92.4
OUI-SE-LVR604-110824	004	14	09/27/11 07:55:03	23.91	7.96	7.92	291	0.14	94.5
OUI-SE-LVR605-110824	005	14	09/27/11 07:55:12	23.94	8.02	7.93	290	0.14	95.3
OUI-SE-LVR606-110824	006	14	09/27/11 07:55:22	23.96	8.04	7.93	290	0.14	95.5
OUI-SE-LVR610-110823	007	14	09/27/11 07:55:33	23.94	8.09	7.94	288	0.14	96.1
OUI-SE-LVR611-110823	008	14	09/27/11 07:55:42	23.90	8.11	7.95	321	0.15	96.2
OUI-SE-LVR612-110823	009	14	09/27/11 07:55:54	23.90	8.09	8.00	299	0.14	96.0
OUI-SE-LVR602-110825	010	14	09/27/11 07:56:03	23.90	8.09	7.99	288	0.14	96.0
OUI-SE-LVR603-110825	011	14	09/27/11 07:56:13	23.92	8.19	8.02	287	0.14	97.2
Laboratory Control	000	15	09/28/11 07:55:48	22.74	7.34	7.73	278	0.13	85.2
OUI-SE-LVR609-110822	001	15	09/28/11 07:56:31	22.79	7.37	7.71	323	0.15	85.7
OUI-SE-LVR607-110822	002	15	09/28/11 07:56:41	22.92	7.08	7.78	301	0.14	82.5
OUI-SE-LVR608-110823	003	15	09/28/11 07:56:54	23.01	7.62	7.91	294	0.14	88.9
OUI-SE-LVR604-110824	004	15	09/28/11 07:57:03	23.00	7.89	7.98	293	0.14	92.0
OUI-SE-LVR605-110824	005	15	09/28/11 07:57:11	23.00	8.04	8.00	291	0.14	93.8
OUI-SE-LVR606-110824	006	15	09/28/11 07:57:24	22.99	8.16	8.02	292	0.14	95.2
OUI-SE-LVR610-110823	007	15	09/28/11 07:57:34	22.98	8.23	8.03	290	0.14	96.0
OUI-SE-LVR611-110823	008	15	09/28/11 07:57:41	22.96	8.23	8.03	319	0.15	95.9
OUI-SE-LVR612-110823	009	15	09/28/11 07:57:47	22.94	8.25	8.03	300	0.14	96.2

Field ID	Sample Number	Day	DateTime M/D/Y	Temp C	DO Conc mg/L	pH SU	SpCond uS/cm	Salinity ppt	DO% %
OUI-SE-LVR602-110825	010	15	09/28/11 07:57:54	22.95	8.27	8.05	287	0.14	96.4
OUI-SE-LVR603-110825	011	15	09/28/11 07:58:00	22.98	8.29	8.06	288	0.14	96.7
Laboratory Control	000	16	09/29/11 08:11:47	23.19	7.76	7.70	280	0.13	90.8
OUI-SE-LVR609-110822	001	16	09/29/11 08:12:32	23.19	8.11	7.97	328	0.16	95.0
OUI-SE-LVR607-110822	002	16	09/29/11 08:12:45	23.15	8.23	8.01	305	0.14	96.3
OUI-SE-LVR608-110823	003	16	09/29/11 08:13:00	23.16	8.23	8.00	299	0.14	96.3
OUI-SE-LVR604-110824	004	16	09/29/11 08:13:13	23.18	8.36	8.03	297	0.14	97.8
OUI-SE-LVR605-110824	005	16	09/29/11 08:13:37	23.17	8.36	7.97	297	0.14	97.9
OUI-SE-LVR606-110824	006	16	09/29/11 08:13:48	23.17	8.34	7.99	297	0.14	97.6
OUI-SE-LVR610-110823	007	16	09/29/11 08:14:14	23.13	7.91	7.85	293	0.14	92.4
OUI-SE-LVR611-110823	008	16	09/29/11 08:14:26	23.10	7.73	7.79	318	0.15	90.3
OUI-SE-LVR612-110823	009	16	09/29/11 08:14:46	23.08	7.93	7.95	302	0.14	92.7
OUI-SE-LVR602-110825	010	16	09/29/11 08:15:14	23.10	7.33	7.84	293	0.14	85.7
OUI-SE-LVR603-110825	011	16	09/29/11 08:15:37	23.17	7.67	7.86	294	0.14	89.8
Laboratory Control	000	17	09/30/11 10:26:39	22.67	7.71	7.73	287	0.14	89.3
OUI-SE-LVR609-110822	001	17	09/30/11 10:27:15	22.68	7.78	7.86	333	0.16	90.2
OUI-SE-LVR607-110822	002	17	09/30/11 10:27:29	22.70	8.11	7.99	310	0.15	94.1
OUI-SE-LVR608-110823	003	17	09/30/11 10:27:50	22.70	8.27	8.07	304	0.14	95.9
OUI-SE-LVR604-110824	004	17	09/30/11 10:27:59	22.68	8.34	8.08	302	0.14	96.7
OUI-SE-LVR605-110824	005	17	09/30/11 10:28:07	22.68	8.41	8.07	301	0.14	97.5
OUI-SE-LVR606-110824	006	17	09/30/11 10:28:16	22.68	8.43	8.06	301	0.14	97.8
OUI-SE-LVR610-110823	007	17	09/30/11 10:28:25	22.64	8.49	8.08	297	0.14	98.3
OUI-SE-LVR611-110823	008	17	09/30/11 10:28:33	22.60	8.47	8.05	324	0.15	98.1
OUI-SE-LVR612-110823	009	17	09/30/11 10:28:45	22.60	7.95	8.06	304	0.14	92.0
OUI-SE-LVR602-110825	010	17	09/30/11 10:29:09	22.59	8.49	8.11	295	0.14	98.2
OUI-SE-LVR603-110825	011	17	09/30/11 10:29:19	22.58	8.55	8.11	295	0.14	99.0
Laboratory Control	000	18	10/01/11 07:20:52	22.96	7.40	7.70	294	0.14	86.2
OUI-SE-LVR609-110822	001	18	10/01/11 07:21:22	22.96	7.19	7.64	342	0.16	83.8
OUI-SE-LVR607-110822	002	18	10/01/11 07:21:32	22.98	6.96	7.68	321	0.15	81.1
OUI-SE-LVR608-110823	003	18	10/01/11 07:21:44	23.03	6.74	7.76	313	0.15	78.6
OUI-SE-LVR604-110824	004	18	10/01/11 07:21:56	23.02	7.56	7.87	312	0.15	88.2
OUI-SE-LVR605-110824	005	18	10/01/11 07:22:07	23.03	7.93	7.91	311	0.15	92.5
OUI-SE-LVR606-110824	006	18	10/01/11 07:22:14	23.04	8.04	7.93	312	0.15	93.8
OUI-SE-LVR610-110823	007	18	10/01/11 07:22:23	23.02	8.14	7.97	306	0.15	95.0
OUI-SE-LVR611-110823	008	18	10/01/11 07:22:30	23.00	8.18	7.95	332	0.16	95.5
OUI-SE-LVR612-110823	009	18	10/01/11 07:22:38	22.99	7.62	7.93	313	0.15	88.8
OUI-SE-LVR602-110825	010	18	10/01/11 07:22:53	22.99	7.79	7.93	303	0.14	90.8
OUI-SE-LVR603-110825	011	18	10/01/11 07:23:05	22.96	8.05	7.93	306	0.15	93.8
Laboratory Control	000	19	10/02/11 09:03:48	22.43	7.59	7.29	253	0.12	87.5
OUI-SE-LVR609-110822	001	19	10/02/11 09:04:36	22.40	7.53	7.52	296	0.14	86.9
OUI-SE-LVR607-110822	002	19	10/02/11 09:04:52	22.44	6.92	7.74	272	0.13	79.9
OUI-SE-LVR608-110823	003	19	10/02/11 09:05:04	22.49	6.91	7.82	268	0.13	79.8
OUI-SE-LVR604-110824	004	19	10/02/11 09:05:16	22.50	7.66	7.89	268	0.13	88.5
OUI-SE-LVR605-110824	005	19	10/02/11 09:05:27	22.50	8.20	7.92	265	0.13	94.7
OUI-SE-LVR606-110824	006	19	10/02/11 09:05:39	22.52	8.42	7.95	268	0.13	97.3
OUI-SE-LVR610-110823	007	19	10/02/11 09:05:50	22.52	8.58	7.98	266	0.13	99.1
OUI-SE-LVR611-110823	008	19	10/02/11 09:06:03	22.49	8.53	7.97	292	0.14	98.5
OUI-SE-LVR612-110823	009	19	10/02/11 09:06:11	22.49	8.33	8.01	273	0.13	96.3
OUI-SE-LVR602-110825	010	19	10/02/11 09:06:26	22.52	8.29	8.04	266	0.13	95.8
OUI-SE-LVR603-110825	011	19	10/02/11 09:06:44	22.53	8.87	8.11	271	0.13	102.5

Field ID	Sample Number	Day	DateTime M/D/Y	Temp C	DO Conc mg/L	pH SU	SpCond uS/cm	Salinity ppt	DO% %
Laboratory Control	000	20	10/03/11 11:04:40	23.02	7.87	7.84	275	0.13	91.9
OUI-SE-LVR609-110822	001	20	10/03/11 11:05:06	23.04	7.81	7.78	337	0.16	91.2
OUI-SE-LVR607-110822	002	20	10/03/11 11:05:19	23.07	8.18	8.00	321	0.15	95.6
OUI-SE-LVR608-110823	003	20	10/03/11 11:05:33	23.09	8.35	8.07	308	0.15	97.5
OUI-SE-LVR604-110824	004	20	10/03/11 11:05:43	23.08	8.37	8.08	312	0.15	97.8
OUI-SE-LVR605-110824	005	20	10/03/11 11:05:53	23.09	8.42	8.08	301	0.14	98.4
OUI-SE-LVR606-110824	006	20	10/03/11 11:06:05	23.08	8.50	8.09	304	0.14	99.4
OUI-SE-LVR610-110823	007	20	10/03/11 11:06:17	23.06	8.51	8.09	304	0.14	99.3
OUI-SE-LVR611-110823	008	20	10/03/11 11:06:38	22.96	8.58	8.11	336	0.16	100.1
OUI-SE-LVR612-110823	009	20	10/03/11 11:06:46	23.03	8.56	8.15	314	0.15	99.9
OUI-SE-LVR602-110825	010	20	10/03/11 11:06:55	23.07	8.57	8.21	302	0.14	100.1
OUI-SE-LVR603-110825	011	20	10/03/11 11:07:07	23.09	8.74	8.28	307	0.15	102.1
Laboratory Control	000	21	10/04/11 11:31:34	22.77	7.47	7.76	279	0.13	86.7
OUI-SE-LVR609-110822	001	21	10/04/11 11:31:57	22.79	7.49	7.80	338	0.16	87.1
OUI-SE-LVR607-110822	002	21	10/04/11 11:32:15	22.79	7.90	8.00	315	0.15	91.9
OUI-SE-LVR608-110823	003	21	10/04/11 11:32:26	22.8	8.05	8.02	308	0.15	93.6
OUI-SE-LVR604-110824	004	21	10/04/11 11:32:35	22.79	8.11	7.96	310	0.15	94.2
OUI-SE-LVR605-110824	005	21	10/04/11 11:32:43	22.8	8.14	8.02	305	0.15	94.6
OUI-SE-LVR606-110824	006	21	10/04/11 11:32:52	22.8	8.21	8.06	307	0.15	95.4
OUI-SE-LVR610-110823	007	21	10/04/11 11:33:02	22.77	8.23	8.07	303	0.14	95.6
OUI-SE-LVR611-110823	008	21	10/04/11 11:33:12	22.73	8.22	8.08	334	0.16	95.4
OUI-SE-LVR612-110823	009	21	10/04/11 11:33:23	22.77	8.18	8.10	313	0.15	95.0
OUI-SE-LVR602-110825	010	21	10/04/11 11:33:31	22.8	8.10	8.15	302	0.14	94.2
OUI-SE-LVR603-110825	011	21	10/04/11 11:33:42	22.82	8.21	8.20	306	0.15	95.5
Laboratory Control	000	22	10/05/11 11:07:05	22.39	7.99	7.61	281	0.13	92.2
OUI-SE-LVR609-110822	001	22	10/05/11 11:07:29	22.41	7.8	7.71	348	0.17	89.9
OUI-SE-LVR607-110822	002	22	10/05/11 11:07:40	22.43	8.11	7.91	306	0.15	93.5
OUI-SE-LVR608-110823	003	22	10/05/11 11:07:51	22.46	8.31	8.01	310	0.15	96.0
OUI-SE-LVR604-110824	004	22	10/05/11 11:07:59	22.45	8.39	8.04	308	0.15	96.9
OUI-SE-LVR605-110824	005	22	10/05/11 11:08:10	22.48	8.83	8.06	307	0.15	102.0
OUI-SE-LVR606-110824	006	22	10/05/11 11:08:19	22.48	8.66	8.08	306	0.15	100.0
OUI-SE-LVR610-110823	007	22	10/05/11 11:08:26	22.46	8.6	8.09	304	0.14	99.3
OUI-SE-LVR611-110823	008	22	10/05/11 11:08:38	22.42	8.56	8.09	334	0.16	98.8
OUI-SE-LVR612-110823	009	22	10/05/11 11:08:52	22.42	8.48	8.06	314	0.15	97.9
OUI-SE-LVR602-110825	010	22	10/05/11 11:09:05	22.41	8.45	8.06	304	0.14	97.5
OUI-SE-LVR603-110825	011	22	10/05/11 11:09:14	22.41	8.54	8.06	305	0.14	98.6
Laboratory Control	000	23	10/06/11 09:19:32	20.63	8.06	7.71	285	0.14	89.8
OUI-SE-LVR609-110822	001	23	10/06/11 09:19:54	20.66	7.95	7.78	340	0.16	88.6
OUI-SE-LVR607-110822	002	23	10/06/11 09:20:18	20.72	8.53	8.06	319	0.15	95.2
OUI-SE-LVR608-110823	003	23	10/06/11 09:20:27	20.74	8.59	8.11	311	0.15	96.0
OUI-SE-LVR604-110824	004	23	10/06/11 09:20:43	20.72	8.74	8.13	297	0.14	97.6
OUI-SE-LVR605-110824	005	23	10/06/11 09:20:53	20.76	8.82	8.14	308	0.15	98.5
OUI-SE-LVR606-110824	006	23	10/06/11 09:21:09	20.79	8.93	8.20	305	0.15	99.9
OUI-SE-LVR610-110823	007	23	10/06/11 09:21:20	20.74	8.92	8.18	308	0.15	99.6
OUI-SE-LVR611-110823	008	23	10/06/11 09:21:33	20.73	8.88	8.19	330	0.16	99.2
OUI-SE-LVR612-110823	009	23	10/06/11 09:21:44	20.76	8.87	8.18	314	0.15	99.1
OUI-SE-LVR602-110825	010	23	10/06/11 09:21:53	20.77	8.82	8.16	305	0.15	98.6
OUI-SE-LVR603-110825	011	23	10/06/11 09:22:00	20.76	8.86	8.15	302	0.14	99.0
Laboratory Control	000	24	10/07/11 07:55:22	21.61	7.77	7.68	295	0.14	88.3

Field ID	Sample Number	Day	DateTime M/D/Y	Temp C	DO Conc mg/L	pH SU	SpCond uS/cm	Salinity ppt	DO% %
OUI-SE-LVR609-110822	001	24	10/07/11 07:56:05	21.59	8.19	7.99	334	0.16	93.0
OUI-SE-LVR607-110822	002	24	10/07/11 07:56:22	21.62	8.44	8.08	314	0.15	95.9
OUI-SE-LVR608-110823	003	24	10/07/11 07:56:46	21.68	8.54	8.11	314	0.15	97.2
OUI-SE-LVR604-110824	004	24	10/07/11 07:56:56	21.67	8.56	8.09	313	0.15	97.3
OUI-SE-LVR605-110824	005	24	10/07/11 07:57:04	21.68	8.57	8.08	308	0.15	97.5
OUI-SE-LVR606-110824	006	24	10/07/11 07:57:14	21.72	8.63	8.10	309	0.15	98.2
OUI-SE-LVR610-110823	007	24	10/07/11 07:57:24	21.68	8.67	8.12	309	0.15	98.6
OUI-SE-LVR611-110823	008	24	10/07/11 07:57:29	21.65	8.68	8.11	333	0.16	98.7
OUI-SE-LVR612-110823	009	24	10/07/11 07:57:37	21.65	8.67	8.11	316	0.15	98.6
OUI-SE-LVR602-110825	010	24	10/07/11 07:57:48	21.64	8.60	8.05	306	0.15	97.8
OUI-SE-LVR603-110825	011	24	10/07/11 07:57:57	21.63	8.50	8.03	306	0.15	96.6
Laboratory Control	000	25	10/08/11 10:31:22	23.08	8.06	7.56	314	0.15	94.2
OUI-SE-LVR609-110822	001	25	10/08/11 10:31:44	23.11	7.67	7.71	356	0.17	89.7
OUI-SE-LVR607-110822	002	25	10/08/11 10:31:58	23.16	8.19	7.97	324	0.15	95.9
OUI-SE-LVR608-110823	003	25	10/08/11 10:32:11	23.17	8.35	8.06	319	0.15	97.7
OUI-SE-LVR604-110824	004	25	10/08/11 10:32:22	23.16	8.44	8.09	318	0.15	98.8
OUI-SE-LVR605-110824	005	25	10/08/11 10:32:30	23.16	8.45	8.11	311	0.15	98.8
OUI-SE-LVR606-110824	006	25	10/08/11 10:32:40	23.17	8.60	8.16	314	0.15	100.7
OUI-SE-LVR610-110823	007	25	10/08/11 10:32:47	23.15	8.59	8.16	318	0.15	100.6
OUI-SE-LVR611-110823	008	25	10/08/11 10:32:54	23.11	8.56	8.16	338	0.16	100.0
OUI-SE-LVR612-110823	009	25	10/08/11 10:33:00	23.09	8.54	8.17	335	0.16	99.8
OUI-SE-LVR602-110825	010	25	10/08/11 10:33:10	23.1	8.47	8.13	313	0.15	99.0
OUI-SE-LVR603-110825	011	25	10/08/11 10:33:18	23.1	8.50	8.12	313	0.15	99.4
Laboratory Control	000	26	10/09/11 09:13:28	24.06	7.11	7.77	290	0.14	84.6
OUI-SE-LVR609-110822	001	26	10/09/11 09:14:24	23.99	7.65	8.13	330	0.16	91.0
OUI-SE-LVR607-110822	002	26	10/09/11 09:14:45	24.06	7.77	8.20	299	0.14	92.5
OUI-SE-LVR608-110823	003	26	10/09/11 09:15:03	24.07	7.88	8.20	285	0.13	93.8
OUI-SE-LVR604-110824	004	26	10/09/11 09:15:24	24.07	7.87	8.18	285	0.13	93.7
OUI-SE-LVR605-110824	005	26	10/09/11 09:15:51	24.03	8.19	8.24	280	0.13	97.4
OUI-SE-LVR606-110824	006	26	10/09/11 09:16:14	24.09	8.09	8.24	283	0.13	96.4
OUI-SE-LVR610-110823	007	26	10/09/11 09:16:43	24.03	8.01	8.17	284	0.13	95.3
OUI-SE-LVR611-110823	008	26	10/09/11 09:17:15	23.93	7.89	8.28	316	0.15	93.7
OUI-SE-LVR612-110823	009	26	10/09/11 09:17:45	24.03	7.73	8.18	293	0.14	91.9
OUI-SE-LVR602-110825	010	26	10/09/11 09:18:28	23.98	6.89	7.86	281	0.13	81.9
OUI-SE-LVR603-110825	011	26	10/09/11 09:19:11	23.99	7.64	8.13	280	0.13	90.8
Laboratory Control	000	27	10/10/11 06:20:27	23.67	7.24	7.58	287	0.14	85.5
OUI-SE-LVR609-110822	001	27	10/10/11 06:20:48	23.7	7.07	7.65	326	0.15	83.5
OUI-SE-LVR607-110822	002	27	10/10/11 06:20:57	23.72	7.39	7.77	302	0.14	87.4
OUI-SE-LVR608-110823	003	27	10/10/11 06:21:05	23.74	7.70	7.84	292	0.14	91.1
OUI-SE-LVR604-110824	004	27	10/10/11 06:21:14	23.76	7.92	7.89	294	0.14	93.7
OUI-SE-LVR605-110824	005	27	10/10/11 06:21:24	23.76	7.92	7.85	285	0.13	93.7
OUI-SE-LVR606-110824	006	27	10/10/11 06:21:35	23.77	7.49	7.84	285	0.14	88.6
OUI-SE-LVR610-110823	007	27	10/10/11 06:21:48	23.76	7.88	7.87	284	0.13	93.3
OUI-SE-LVR611-110823	008	27	10/10/11 06:21:57	23.69	8.07	7.85	308	0.15	95.4
OUI-SE-LVR612-110823	009	27	10/10/11 06:22:07	23.7	8.09	7.92	296	0.14	95.7
OUI-SE-LVR602-110825	010	27	10/10/11 06:22:15	23.71	8.05	7.90	284	0.13	95.2
OUI-SE-LVR603-110825	011	27	10/10/11 06:22:23	23.72	7.94	7.87	289	0.14	93.9
Laboratory Control	000	28	10/11/11 06:34:55	23.22	7.29	7.52	282	0.13	85.4
OUI-SE-LVR609-110822	001	28	10/11/11 06:35:28	23.24	7.69	7.79	318	0.15	90.1
OUI-SE-LVR607-110822	002	28	10/11/11 06:35:52	23.29	8.01	7.96	298	0.14	94.0

Field ID	Sample Number	Day	DateTime M/D/Y	Temp C	DO Conc mg/L	pH SU	SpCond uS/cm	Salinity ppt	DO% %
OUI-SE-LVR608-110823	003	28	10/11/11 06:36:03	23.3	8.03	7.94	290	0.14	94.2
OUI-SE-LVR604-110824	004	28	10/11/11 06:36:10	23.29	8.09	7.94	291	0.14	94.9
OUI-SE-LVR605-110824	005	28	10/11/11 06:36:17	23.29	8.15	7.89	285	0.14	95.5
OUI-SE-LVR606-110824	006	28	10/11/11 06:36:29	23.31	7.60	7.86	283	0.13	89.2
OUI-SE-LVR610-110823	007	28	10/11/11 06:36:38	23.29	7.82	7.89	283	0.13	91.7
OUI-SE-LVR611-110823	008	28	10/11/11 06:36:44	23.22	8.02	7.87	302	0.14	94.0
OUI-SE-LVR612-110823	009	28	10/11/11 06:36:50	23.18	8.16	7.90	289	0.14	95.5
OUI-SE-LVR602-110825	010	28	10/11/11 06:37:13	23.17	7.88	7.83	282	0.13	92.3
OUI-SE-LVR603-110825	011	28	10/11/11 06:37:20	23.17	7.79	7.82	275	0.13	91.2

Note: “na” Indicates that the value is not available.

Hyalella azteca Day 28

STUDY: 21320 **PROJECT: FC 1640 LVR Toxicity Test**

DATE: 10/11/11 **CLIENT: Geosyntec Consultants**

Sample Code	Rep	Pos	Survived	Initials
21319-009	1	1	10	JTP
21319-005	1	2	7	↓
21319-011	1	3	9	↓
21319-003	1	4	10	↓
21319-002	1	5	10	↓
21319-010	1	6	10	↓
21319-000	1	7	~~8~~ 10	10 in pan AM
21319-008	1	8	10	JTP
21319-006	1	9	8	↓
21319-004	1	10	10	9 in pan
21319-007	1	11	9	JTP
21319-001	1	12	JTP 10/11/11 ~~10~~ 9	↓
21319-001	2	13	10	↓
21319-010	2	14	9	↓
21319-003	2	15	10	10 in pan AM
21319-009	2	16	10	10 in pan d
21319-002	2	17	10	JTP
21319-005	2	18	10	↓
21319-006	2	19	9	↓
21319-000	2	20	10	10 in pan AM
21319-011	2	21	10	JTP
21319-007	2	22	10	↓
21319-008	2	23	8	↓
21319-004	2	24	10	↓
21319-006	3	25	9	↓
21319-007	3	26	10	↓
21319-002	3	27	8	↓
21319-008	3	28	8	↓
21319-010	3	29	10	↓
21319-004	3	30	9	↓
21319-003	3	31	9	↓
21319-009	3	32	8	↓
21319-005	3	33	10	↓
21319-001	3	34	9	↓
21319-011	3	35	10	SJ
21319-000	3	36	10	AM
21319-000	4	37	9	AM
21319-002	4	38	9	SJ
21319-010	4	39	10	↓
21319-006	4	40	10	↓

Hyalella azteca Day 28

STUDY: 21320 **PROJECT: FC 1640 LVR Toxicity Test**

DATE: 10/11/11 **CLIENT: Geosyntec Consultants**

Sample Code	Rep	Pos	Survived	Initials
21319-001	4	41	11	SJ
21319-004	4	42	9	
21319-011	4	43	9	
21319-003	4	44	9	
21319-005	4	45	10	
21319-008	4	46	9	
21319-009	4	47	8	
21319-007	4	48	10	
21319-005	5	49	9	
21319-008	5	50	10	
21319-009	5	51	9	AM
21319-006	5	52	10	
21319-007	5	53	8	
21319-011	5	54	10	CS
21319-002	5	55	10	CS
21319-004	5	56	10	CS
21319-003	5	57	10	CS
21319-000	5	58	10	AM
21319-001	5	59	9	CS
21319-010	5	60	10	CS
21319-007	6	61	10	CS
21319-000	6	62	10	AM
21319-010	6	63	8	CS
21319-001	6	64	8	CS
21319-009	6	65	10	CS
21319-011	6	66	9	CS
21319-008	6	67	8	CS
21319-003	6	68	10	CS
21319-005	6	69	10	CS
21319-006	6	70	7	CS
21319-002	6	71	10	CS
21319-004	6	72	10	CS
21319-001	7	73	10	CS
21319-010	7	74	~~10~~ 8	CS 8.12.11
21319-006	7	75	10	CS
21319-004	7	76	9	CS
21319-000	7	77	10	AM
21319-007	7	78	10	AM
21319-005	7	79	10	
21319-003	7	80	10	

Hyalella azteca Day 28

STUDY: 21320 **PROJECT: FC 1640 LVR Toxicity Test**

DATE: 10/11/11 **CLIENT: Geosyntec Consultants**

Sample Code	Rep	Pos	Survived	Initials
21319-011	7	81	9	AM
21319-002	7	82	9	
21319-008	7	83	8	
21319-009	7	84	10	
21319-007	8	85	8	
21319-009	8	86	10	AM
21319-008	8	87	8	
21319-010	8	88	9	
21319-003	8	89	10	
21319-005	8	90	10	
21319-001	8	91	9	
21319-004	8	92	8	
21319-011	8	93	8	
21319-006	8	94	10	
21319-000	8	95	10	AM
21319-002	8	96	9	AM

Hyalella azteca Sediment Evaluation
Initial Weight

STUDY: 21320 **CLIENT:** Geosyntec Consultants

PROJECT: FC 1640 LVR Toxicity Test **START DATE:** 09/13/11

	REP	TARE WEIGHT (mg)	*H. azteca*+ FOIL (mg)	NET WEIGHT (mg)	# *H. azteca*	MEAN DRY WEIGHT PER Individual (mg)
START ORGANISMS	A	208.20	208.40	0.20	10	0.020
	B	206.44	206.72	0.28	10	0.028
	C	206.88	208.12	0.24	10	0.024
	D	207.26	207.51	0.24	10	0.024
RECORDED BY:		AM	LB	Overall Mean Dry Weight Per Individual:		
DATE:		09/13/11	09/14/11	0.0024		

NOTES:

STUDY: 21320
CLIENT: GeoSyntec
PROJECT: FC 1640 LVR
ASSAY: 28 Day Chronic Exposure Sediment Evaluation
SPECIES: H. azteca
TASK: Dry Weight Data - AccuSeries Balance Output File
BALANCE: AccuSeries Model 225D
Serial #: 17008376.00

			Duplicates	
Position #	Total Wt (mg)	Tare Wt (mg)	Total Wt (mg)	Tare Wt (mg)
-001	214.22	209.13		
-002	213.13	209.56		
-003	214.09	209.55		
-004	214.37	209.45		
-005	214.03	209.34		
-006	215.37	209.80		
-007	221.73	209.41		
-008	216.44	209.63		
-009	217.45	211.40		
-010	216.64	210.84		
-011	214.52	210.20		
-012	215.82	210.47		210.46
-013	214.46	210.06		
-014	214.57	209.51		
-015	212.75	209.41	212.75	
-016	217.32	210.09	217.31	
-017	214.07	209.33		
-018	214.36	209.24		
-019	214.11	210.02		
-020	221.75	209.94		
-021	215.76	209.69		
-022	215.26	209.49		
-023	214.68	209.15		
-024	215.72	209.59		
-025	214.69	209.52		
-026	215.14	209.32		
-027	213.51	210.62		
-028	214.46	210.96		
-029	214.33	209.24		
-030	213.00	209.16	213.00	
-031	213.05	209.35		
-032	213.23	209.80		
-033	216.51	211.36		211.35
-034	215.15	210.54		
-035	215.11	209.97		
-036	220.20	209.09		
-037	221.16	209.41		
-038	213.72	209.50		
-039	215.11	209.50		
-040	215.99	210.67		
-041	214.48	209.88		
-042	213.11	210.03		
-043	214.30	209.95		
-044	213.15	209.53		
-045	215.36	210.36		

Position #	Total Wt (mg)	Tare Wt (mg)	Duplicates Total Wt (mg)	Duplicates Tare Wt (mg)
-046	215.94	210.34		
-047	214.97	209.80		
-048	217.36	209.43		
-049	214.44	210.43		
-050	214.72	209.91	214.72	
-051	214.53	209.51		
-052	217.74	210.52		
-053	214.23	209.67		
-054	214.16	209.55		209.54
-055	215.27	209.68		
-056	215.76	209.87		
-057	213.69	210.07		
-058	220.14	209.20		
-059	213.35	209.47		
-060	215.62	209.34		
-061	215.36	210.74		
-062	224.28	210.64		
-063	215.71	210.33		
-064	216.98	210.12	216.99	
-065	214.94	210.69		
-066	215.28	210.74		
-067	213.52	210.29		
-068	213.62	209.33		
-069	215.23	211.14		
-070	214.41	210.26		
-071	209.86	205.23		
-072	214.84	210.19		
-073	215.00	209.67		
-074	215.58	211.06		211.03
-075	215.19	211.04		
-076	213.74	208.92		
-077	222.77	210.31		
-078	215.76	210.95		
-079	215.91	210.57		
-080	216.33	210.94	216.34	
-081	214.61	211.26		
-082	214.67	209.48		
-083	214.13	209.89		
-084	216.14	210.31		
-085	214.04	209.83		
-086	215.57	209.35		
-087	213.05	209.48		
-088	219.26	209.53		
-089	215.78	210.15		
-090	216.76	210.77		
-091	216.13	210.07		210.08
-092	214.76	210.43		
-093	215.05	209.72		
-094	216.97	210.21		
-095	223.33	209.32		
-096	217.88	209.95	217.88	209.95

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Batch ID:	11-2535-5337	**Test Type:**	Survival-Growth	**Analyst:**	
Start Date:	13 Sep-11 12:00	**Protocol:**	EPA/600/R-99/064 (2000)	**Diluent:**	Not Applicable
Ending Date:	11 Oct-11 12:00	**Species:**	Hyalella azteca	**Brine:**	Not Applicable
Duration:	28d 0h	**Source:**	ARO - Aquatic Research Organisms, NH	**Age:**	

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21319-000	10-7446-0895	31 Aug-11 12:00	31 Aug-11 12:00	13d 0h	GeoSyntec Consultants, Inc.	Ecological Risk Assessme
21319-007	16-8410-9119	23 Aug-11 16:50	25 Aug-11 11:15	20d 19h		
21319-008	01-9219-1691	23 Aug-11 17:15	25 Aug-11 11:15	20d 19h		
21319-009	17-0500-0998	23 Aug-11 15:40	25 Aug-11 11:15	20d 20h		
21319-001	00-9919-3989	22 Aug-11 17:15	24 Aug-11 09:50	21d 19h		
21319-002	16-5514-1099	22 Aug-11 16:49	24 Aug-11 09:50	21d 19h		
21319-003	09-2042-4692	23 Aug-11 09:00	24 Aug-11 09:50	21d 3h		
21319-004	05-3913-5768	24 Aug-11 11:15	25 Aug-11 11:15	20d 1h		
21319-005	01-8661-9712	24 Aug-11 10:00	25 Aug-11 11:15	20d 2h		
21319-006	00-7807-5720	24 Aug-11 10:30	25 Aug-11 11:15	20d 2h		
21319-010	17-4198-5099	25 Aug-11 09:00	26 Aug-11 09:30	19d 3h		
21319-011	07-7808-8037	25 Aug-11 08:20	26 Aug-11 09:30	19d 4h		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21319-000	Freshwater Sediment	FC1640 LVR Toxicity Test	Laboratory Control		
21319-007	Freshwater Sediment	FC1640 LVR Toxicity Test	OUI-SE-LVR610-110823		
21319-008	Freshwater Sediment	FC1640 LVR Toxicity Test	OUI-SE-LVR611-110823		
21319-009	Freshwater Sediment	FC1640 LVR Toxicity Test	OUI-SE-LVR612-110823		
21319-001	Freshwater Sediment	FC1640 LVR Toxicity Test	OUI-SE-LVR609-110822		
21319-002	Freshwater Sediment	FC1640 LVR Toxicity Test	OUI-SE-LVR607-110822		
21319-003	Freshwater Sediment	FC1640 LVR Toxicity Test	OUI-SE-LVR608-110823		
21319-004	Freshwater Sediment	FC1640 LVR Toxicity Test	OUI-SE-LVR604-110824		
21319-005	Freshwater Sediment	FC1640 LVR Toxicity Test	OUI-SE-LVR605-110824		
21319-006	Freshwater Sediment	FC1640 LVR Toxicity Test	OUI-SE-LVR606-110824		
21319-010	Freshwater Sediment	FC1640 LVR Toxicity Test	OUI-SE-LVR602-110825		
21319-011	Freshwater Sediment	FC1640 LVR Toxicity Test	OUI-SE-LVR603-110825		

Mean Dry Biomass-mg Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
21319-000	8	1.225	1.184	1.267	1.094	1.401	0.02016	0.1104	9.01%	0.0%
21319-007	8	0.5255	0.4791	0.5719	0.421	0.793	0.02267	0.1242	23.63%	57.12%
21319-008	8	0.4661	0.4192	0.513	0.323	0.681	0.02293	0.1256	26.94%	61.96%
21319-009	8	0.528	0.4843	0.5717	0.343	0.723	0.02137	0.117	22.17%	56.92%
21319-001	8	0.5084	0.4705	0.5463	0.388	0.686	0.01851	0.1014	19.94%	58.52%
21319-002	8	0.4985	0.4451	0.5519	0.289	0.793	0.02612	0.1431	28.7%	59.32%
21319-003	8	0.4314	0.3981	0.4646	0.334	0.563	0.01625	0.08901	20.63%	64.8%
21319-004	8	0.4818	0.4416	0.5219	0.308	0.613	0.01961	0.1074	22.3%	60.69%
21319-005	8	0.4784	0.4481	0.5087	0.357	0.599	0.01482	0.08117	16.97%	60.96%
21319-006	8	0.5364	0.4907	0.5821	0.409	0.722	0.02233	0.1223	22.81%	56.23%
21319-010	8	0.5905	0.5297	0.6513	0.452	0.973	0.02971	0.1628	27.56%	51.82%
21319-011	8	0.4741	0.4443	0.5039	0.335	0.607	0.01457	0.0798	16.83%	61.31%

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Mean Dry Weight-mg Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
21319-000	8	1.242	1.2	1.283	1.094	1.401	0.02037	0.1116	8.98%	0.0%
21319-007	8	0.5589	0.5194	0.5985	0.462	0.793	0.01934	0.1059	18.95%	54.99%
21319-008	8	0.5366	0.4941	0.5792	0.4038	0.6912	0.0208	0.1139	21.23%	56.79%
21319-009	8	0.5618	0.5228	0.6009	0.425	0.723	0.01908	0.1045	18.6%	54.76%
21319-001	8	0.5575	0.5016	0.6133	0.4182	0.8575	0.02731	0.1496	26.83%	55.11%
21319-002	8	0.5316	0.4735	0.5898	0.3612	0.8811	0.02844	0.1558	29.3%	57.19%
21319-003	8	0.4415	0.4108	0.4722	0.334	0.563	0.01501	0.08222	18.62%	64.44%
21319-004	8	0.5196	0.4815	0.5578	0.3422	0.6444	0.01864	0.1021	19.64%	58.15%
21319-005	8	0.5031	0.4819	0.5243	0.409	0.599	0.01037	0.05681	11.29%	59.49%
21319-006	8	0.5904	0.5446	0.6361	0.415	0.7563	0.02237	0.1225	20.75%	52.46%
21319-010	8	0.642	0.5732	0.7108	0.509	1.081	0.03364	0.1843	28.7%	48.3%
21319-011	8	0.5274	0.5008	0.554	0.461	0.6663	0.01302	0.0713	13.52%	57.53%

Proportion Survived Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
21319-000	8	0.9875	0.9743	1	0.9	1	0.006455	0.03536	3.58%	0.0%
21319-007	8	0.9375	0.9033	0.9717	0.8	1	0.01673	0.09161	9.77%	5.06%
21319-008	8	0.8625	0.8283	0.8967	0.8	1	0.01673	0.09161	10.62%	12.66%
21319-009	8	0.9375	0.9033	0.9717	0.8	1	0.01673	0.09161	9.77%	5.06%
21319-001	8	0.925	0.8986	0.9514	0.8	1	0.01291	0.07071	7.64%	6.33%
21319-002	8	0.9375	0.9097	0.9653	0.8	1	0.01358	0.0744	7.94%	5.06%
21319-003	8	0.975	0.9577	0.9923	0.9	1	0.008452	0.04629	4.75%	1.27%
21319-004	8	0.9375	0.9097	0.9653	0.8	1	0.01358	0.0744	7.94%	5.06%
21319-005	8	0.95	0.9101	0.9899	0.7	1	0.01952	0.1069	11.25%	3.8%
21319-006	8	0.9125	0.8705	0.9545	0.7	1	0.02056	0.1126	12.34%	7.6%
21319-010	8	0.925	0.8919	0.9581	0.8	1	0.01618	0.08864	9.58%	6.33%
21319-011	8	0.9	0.8601	0.9399	0.7	1	0.01952	0.1069	11.88%	8.86%

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Mean Dry Biomass-mg Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21319-000	1.232	1.181	1.111	1.175	1.094	1.364	1.246	1.401
21319-007	0.432	0.577	0.582	0.793	0.456	0.462	0.481	0.421
21319-008	0.681	0.553	0.35	0.56	0.481	0.323	0.424	0.357
21319-009	0.509	0.723	0.343	0.517	0.502	0.425	0.583	0.622
21319-001	0.535	0.44	0.461	0.4182	0.388	0.686	0.533	0.606
21319-002	0.469	0.474	0.289	0.422	0.559	0.463	0.519	0.793
21319-003	0.492	0.334	0.37	0.362	0.362	0.429	0.539	0.563
21319-004	0.58	0.613	0.384	0.308	0.589	0.465	0.482	0.433
21319-005	0.357	0.512	0.515	0.5	0.401	0.409	0.534	0.599
21319-006	0.605	0.409	0.517	0.532	0.722	0.415	0.415	0.676
21319-010	0.557	0.506	0.509	0.561	0.628	0.538	0.452	0.973
21319-011	0.454	0.607	0.514	0.435	0.461	0.454	0.335	0.533

Mean Dry Weight-mg Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21319-000	1.232	1.181	1.111	1.306	1.094	1.364	1.246	1.401
21319-007	0.48	0.577	0.582	0.793	0.57	0.462	0.481	0.5262
21319-008	0.681	0.6912	0.4375	0.6222	0.481	0.4038	0.53	0.4463
21319-009	0.509	0.723	0.4287	0.6462	0.5578	0.425	0.583	0.622
21319-001	0.5944	0.44	0.5122	0.4182	0.4311	0.8575	0.533	0.6733
21319-002	0.469	0.474	0.3612	0.4689	0.559	0.463	0.5767	0.8811
21319-003	0.492	0.334	0.4111	0.4022	0.362	0.429	0.539	0.563
21319-004	0.6444	0.613	0.4267	0.3422	0.589	0.465	0.5356	0.5413
21319-005	0.51	0.512	0.515	0.5	0.4456	0.409	0.534	0.599
21319-006	0.7563	0.4544	0.5744	0.532	0.722	0.5929	0.415	0.676
21319-010	0.557	0.5622	0.509	0.561	0.628	0.6725	0.565	1.081
21319-011	0.5044	0.607	0.514	0.4833	0.461	0.5044	0.4786	0.6663

Proportion Survived Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
21319-000	1	1	1	0.9	1	1	1	1
21319-007	0.9	1	1	1	0.8	1	1	0.8
21319-008	1	0.8	0.8	0.9	1	0.8	0.8	0.8
21319-009	1	1	0.8	0.8	0.9	1	1	1
21319-001	0.9	1	0.9	1	0.9	0.8	1	0.9
21319-002	1	1	0.8	0.9	1	1	0.9	0.9
21319-003	1	1	0.9	0.9	1	1	1	1
21319-004	1	1	0.9	0.9	1	1	0.9	0.8
21319-005	0.7	1	1	1	0.9	1	1	1
21319-006	0.8	0.9	0.9	1	1	0.7	1	1
21319-010	1	0.9	1	1	1	0.8	0.8	0.9
21319-011	0.9	1	1	0.9	1	0.9	0.7	0.8

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Batch ID:	11-2535-5337	**Test Type:**	Survival-Growth	**Analyst:**	
Start Date:	13 Sep-11 12:00	**Protocol:**	EPA/600/R-99/064 (2000)	**Diluent:**	Not Applicable
Ending Date:	11 Oct-11 12:00	**Species:**	Hyalella azteca	**Brine:**	Not Applicable
Duration:	28d 0h	**Source:**	ARO - Aquatic Research Organisms, NH	**Age:**	

Sample Code	Sample ID	Sample Date	Receive Date	Sample Age	Client Name	Project
21319-000	18-8566-3388	13 Sep-11 12:00	13 Sep-11 12:00	N/A	GeoSyntec Consultants, Inc.	Ecological Risk Asse
21319Reach 4	15-4421-3027	13 Sep-11 12:00	13 Sep-11 12:00	N/A		
21319Reach 3	15-4840-6035	13 Sep-11 12:00	13 Sep-11 12:00	N/A		
21319Reach 2	14-0239-1443	13 Sep-11 12:00	13 Sep-11 12:00	N/A		
21319Reach 1	02-8617-5543	13 Sep-11 12:00	13 Sep-11 12:00	N/A		

Sample Code	Material Type	Sample Source	Station Location	Latitude	Longitude
21319-000	Freshwater Sediment	FC1640 LVR Toxicity Test	Laboratory Control		
21319Reach 4	Freshwater Sediment	FC1640 LVR Toxicity Test	Reach 4		
21319Reach 3	Freshwater Sediment	FC1640 LVR Toxicity Test	Reach 3		
21319Reach 2	Freshwater Sediment	FC1640 LVR Toxicity Test	Reach 2		
21319Reach 1	Freshwater Sediment	FC1640 LVR Toxicity Test	Reach 1		

Sample Code	vs	Sample Code	P-Value	Alpha	Decision	Analysis ID	Method
21319Reach 4		21319Reach 3	0.2136	0.05	Non-Significant Effect	07-8280-6697	Equal Variance t Two-Sample Test
		21319Reach 3	0.0416	0.05	Significant Effect	17-9975-5834	Wilcoxon Rank Sum Two-Sample Test
		21319Reach 3	0.8685	0.05	Non-Significant Effect	18-8822-7188	Wilcoxon Rank Sum Two-Sample Test
		21319Reach 2	0.4067	0.05	Non-Significant Effect	05-7219-3282	Equal Variance t Two-Sample Test
		21319Reach 2	0.3102	0.05	Non-Significant Effect	19-8568-5069	Equal Variance t Two-Sample Test
		21319Reach 2	0.7934	0.05	Non-Significant Effect	10-0702-0184	Wilcoxon Rank Sum Two-Sample Test
		21319Reach 1	0.6952	0.05	Non-Significant Effect	00-7125-4325	Wilcoxon Rank Sum Two-Sample Test
		21319Reach 1	0.4589	0.05	Non-Significant Effect	02-5932-0792	Equal Variance t Two-Sample Test
		21319Reach 1	0.6756	0.05	Non-Significant Effect	11-2346-3144	Wilcoxon Rank Sum Two-Sample Test
		21319Reach 1	0.4885	0.05	Non-Significant Effect	12-1684-6841	Equal Variance t Two-Sample Test
		21319Reach 1	0.5000	0.05	Non-Significant Effect	16-2911-1547	Wilcoxon Rank Sum Two-Sample Test

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
10-0702-0184	Proportion Survived	Control Resp	0.9125	0.8 - NL	Yes	Passes Acceptibility Criteria
16-2911-1547	Proportion Survived	Control Resp	0.9125	0.8 - NL	Yes	Passes Acceptibility Criteria
18-8822-7188	Proportion Survived	Control Resp	0.9125	0.8 - NL	Yes	Passes Acceptibility Criteria

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Mean Dry Biomass-mg Summary

Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319-000	8	1.225	1.184	1.267	1.094	1.401	0.03905	0.1104	9.01%	0.0%
21319Reach 4	24	0.5065	0.4616	0.5515	0.323	0.793	0.02459	0.1205	23.78%	58.67%
21319Reach 3	24	0.4794	0.4369	0.522	0.289	0.793	0.02327	0.114	23.77%	60.88%
21319Reach 2	24	0.4988	0.46	0.5377	0.308	0.722	0.02122	0.104	20.84%	59.3%
21319Reach 1	16	0.5323	0.4809	0.5837	0.335	0.973	0.03441	0.1376	25.86%	56.56%

Mean Dry Weight-mg Summary

Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319-000	8	1.242	1.2	1.283	1.094	1.401	0.03944	0.1116	8.98%	0.0%
21319Reach 4	24	0.5525	0.5136	0.5913	0.4038	0.793	0.02123	0.104	18.83%	55.51%
21319Reach 3	24	0.5102	0.459	0.5614	0.334	0.8811	0.02801	0.1372	26.89%	58.91%
21319Reach 2	24	0.5377	0.5	0.5754	0.3422	0.7563	0.02063	0.1011	18.8%	56.7%
21319Reach 1	16	0.5847	0.5296	0.6397	0.461	1.081	0.03685	0.1474	25.21%	52.92%

Proportion Survived Summary

Conc-NA	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319-000	8	0.9875	0.9743	1	0.9	1	0.0125	0.03536	3.58%	0.0%
21319Reach 4	24	0.9125	0.8771	0.9479	0.8	1	0.01933	0.0947	10.38%	7.6%
21319Reach 3	24	0.9458	0.9213	0.9704	0.8	1	0.01343	0.0658	6.96%	4.22%
21319Reach 2	24	0.9333	0.8974	0.9693	0.7	1	0.01966	0.09631	10.32%	5.49%
21319Reach 1	16	0.9125	0.8767	0.9483	0.7	1	0.02394	0.09574	10.49%	7.6%

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Mean Dry Biomass-mg Detail

Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319-000	1.232	1.181	1.111	1.175	1.094	1.364	1.246	1.401		
21319Reach 4	0.432	0.577	0.582	0.793	0.456	0.462	0.481	0.421	0.681	0.553
	0.35	0.56	0.481	0.323	0.424	0.357	0.509	0.723	0.343	0.517
	0.502	0.425	0.583	0.622						
21319Reach 3	0.535	0.44	0.461	0.4182	0.388	0.686	0.533	0.606	0.469	0.474
	0.289	0.422	0.559	0.463	0.519	0.793	0.492	0.334	0.37	0.362
	0.362	0.429	0.539	0.563						
21319Reach 2	0.58	0.613	0.384	0.308	0.589	0.465	0.482	0.433	0.357	0.512
	0.515	0.5	0.401	0.409	0.534	0.599	0.605	0.409	0.517	0.532
	0.722	0.415	0.415	0.676						
21319Reach 1	0.557	0.506	0.509	0.561	0.628	0.538	0.452	0.973	0.454	0.607
	0.514	0.435	0.461	0.454	0.335	0.533				

Mean Dry Weight-mg Detail

Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319-000	1.232	1.181	1.111	1.306	1.094	1.364	1.246	1.401		
21319Reach 4	0.48	0.577	0.582	0.793	0.57	0.462	0.481	0.5262	0.681	0.6912
	0.4375	0.6222	0.481	0.4038	0.53	0.4463	0.509	0.723	0.4287	0.6462
	0.5578	0.425	0.583	0.622						
21319Reach 3	0.5944	0.44	0.5122	0.4182	0.4311	0.8575	0.533	0.6733	0.469	0.474
	0.3612	0.4689	0.559	0.463	0.5767	0.8811	0.492	0.334	0.4111	0.4022
	0.362	0.429	0.539	0.563						
21319Reach 2	0.6444	0.613	0.4267	0.3422	0.589	0.465	0.5356	0.5413	0.51	0.512
	0.515	0.5	0.4456	0.409	0.534	0.599	0.7563	0.4544	0.5744	0.532
	0.722	0.5929	0.415	0.676						
21319Reach 1	0.557	0.5622	0.509	0.561	0.628	0.6725	0.565	1.081	0.5044	0.607
	0.514	0.4833	0.461	0.5044	0.4786	0.6663				

Proportion Survived Detail

Conc-NA	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319-000	1	1	1	0.9	1	1	1	1		
21319Reach 4	0.9	1	1	1	0.8	1	1	0.8	1	0.8
	0.8	0.9	1	0.8	0.8	0.8	1	1	0.8	0.8
	0.9	1	1	1						
21319Reach 3	0.9	1	0.9	1	0.9	0.8	1	0.9	1	1
	0.8	0.9	1	1	0.9	0.9	1	1	0.9	0.9
	1	1	1	1						
21319Reach 2	1	1	0.9	0.9	1	1	0.9	0.8	0.7	1
	1	1	0.9	1	1	1	0.8	0.9	0.9	1
	1	0.7	1	1						
21319Reach 1	1	0.9	1	1	1	0.8	0.8	0.9	0.9	1
	1	0.9	1	0.9	0.7	0.8				

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Analysis ID: 18-8822-7188 **Endpoint:** Proportion Survived **CETIS Version:** CETISv1.8.0
Analyzed: 27 Oct-11 17:18 **Analysis:** Nonparametric-Two Sample **Official Results:** Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion survived endpoint	3.61%

Wilcoxon Rank Sum Two-Sample Test

Sample Code	vs	Sample Code	Test Stat	Critical	DF	Ties	P-Value	Decision(α:5%)
21319Reach 4		21319Reach 3	-1.119	1.645	46	3	0.8685	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		1.758	3.112	1.0000	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.02821232	0.02821232	1	1.784	0.1882	Non-Significant Effect
Error	0.7273484	0.01581192	46			
Total	0.7555607	0.04402424	47			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.949	3.042	0.1166	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8389	0.9345	<0.0001	Non-normal Distribution

Proportion Survived Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	0.9125	0.8765	0.9485	0.8	1	0.01933	0.0947	10.38%	0.0%
21319Reach 3	24	0.9458	0.9208	0.9709	0.8	1	0.01343	0.0658	6.96%	-3.65%

Angular (Corrected) Transformed Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	1.277	1.222	1.332	1.107	1.412	0.02951	0.1446	11.32%	0.0%
21319Reach 3	24	1.326	1.286	1.365	1.107	1.419	0.02114	0.1035	7.81%	-3.8%

Proportion Survived Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319Reach 4	0.9	1	1	1	0.8	1	1	0.8	1	0.8
	0.8	0.9	1	0.8	0.8	0.8	1	1	0.8	0.8
	0.9	1	1	1						
21319Reach 3	0.9	1	0.9	1	0.9	0.8	1	0.9	1	1
	0.8	0.9	1	1	0.9	0.9	1	1	0.9	0.9
	1	1	1	1						

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Analysis ID:	10-0702-0184	**Endpoint:**	Proportion Survived	**CETIS Version:**	CETISv1.8.0
Analyzed:	27 Oct-11 17:18	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion survived endpoint	4.19%

Wilcoxon Rank Sum Two-Sample Test

Sample Code	vs	Sample Code	Test Stat	Critical	DF	Ties	P-Value	Decision(α:5%)
21319Reach 4		21319Reach 2	-0.8184	1.645	46	3	0.7934	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		2.267	3.112	0.9727	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0134483	0.0134483	1	0.6621	0.4200	Non-Significant Effect
Error	0.934338	0.0203117	46			
Total	0.9477863	0.03376	47			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.06	3.042	0.8904	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8215	0.9345	<0.0001	Non-normal Distribution

Proportion Survived Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	0.9125	0.8765	0.9485	0.8	1	0.01933	0.0947	10.38%	0.0%
21319Reach 2	24	0.9333	0.8967	0.97	0.7	1	0.01966	0.09631	10.32%	-2.28%

Angular (Corrected) Transformed Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	1.277	1.222	1.332	1.107	1.412	0.02951	0.1446	11.32%	0.0%
21319Reach 2	24	1.311	1.257	1.364	0.9912	1.412	0.02867	0.1404	10.71%	-2.62%

Proportion Survived Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319Reach 4	0.9	1	1	1	0.8	1	1	0.8	1	0.8
	0.8	0.9	1	0.8	0.8	0.8	1	1	0.8	0.8
	0.9	1	1	1						
21319Reach 2	1	1	0.9	0.9	1	1	0.9	0.8	0.7	1
	1	1	0.9	1	1	1	0.8	0.9	0.9	1
	1	0.7	1	1						

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Analysis ID:	16-2911-1547	**Endpoint:**	Proportion Survived	**CETIS Version:**	CETISv1.8.0
Analyzed:	27 Oct-11 17:18	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Angular (Corrected)	0	C > T	Not Run	Sample passes proportion survived endpoint	4.85%

Wilcoxon Rank Sum Two-Sample Test

Sample Code	vs	Sample Code	Test Stat	Critical	DF	Ties	P-Value	Decision(α:5%)
21319Reach 4		21319Reach 1	0	1.645	38	3	0.5000	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		2.025	3.036	1.0000	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	8.754272E-07	8.754272E-07	1	4.262E-05	0.9948	Non-Significant Effect
Error	0.7805005	0.02053949	38			
Total	0.7805014	0.02054036	39			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.046	3.807	0.9513	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.7755	0.9236	<0.0001	Non-normal Distribution

Proportion Survived Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	0.9125	0.8765	0.9485	0.8	1	0.01933	0.0947	10.38%	0.0%
21319Reach 1	16	0.9125	0.8761	0.9489	0.7	1	0.02394	0.09574	10.49%	0.0%

Angular (Corrected) Transformed Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	1.277	1.222	1.332	1.107	1.412	0.02951	0.1446	11.32%	0.0%
21319Reach 1	16	1.278	1.224	1.331	0.9912	1.412	0.03534	0.1414	11.06%	-0.02%

Proportion Survived Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319Reach 4	0.9	1	1	1	0.8	1	1	0.8	1	0.8
	0.8	0.9	1	0.8	0.8	0.8	1	1	0.8	0.8
	0.9	1	1	1						
21319Reach 1	1	0.9	1	1	1	0.8	0.8	0.9	0.9	1
	1	0.9	1	0.9	0.7	0.8				

CETIS Analytical Report

Report Date: 20 Dec-11 17:10 (p 1 of 4)
Test Code: 21319Ha | 10-5917-7552

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Analysis ID:	17-9975-5834	**Endpoint:**	Mean Dry Weight-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	27 Oct-11 17:18	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	10.7%

Wilcoxon Rank Sum Two-Sample Test

Sample Code	vs	Sample Code	Test Stat	Critical	DF	Ties	P-Value	Decision(α:5%)
21319Reach 4		21319Reach 3	1.732	1.645	46	0	0.0416	Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		3.079	3.112	0.0573	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.02141886	0.02141886	1	1.445	0.2355	Non-Significant Effect
Error	0.6818943	0.01482379	46			
Total	0.7033132	0.03624265	47			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.74	3.042	0.1916	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9133	0.9345	0.0017	Non-normal Distribution

Mean Dry Weight-mg Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	0.5525	0.5129	0.592	0.4038	0.793	0.02123	0.104	18.83%	0.0%
21319Reach 3	24	0.5102	0.458	0.5624	0.334	0.8811	0.02801	0.1372	26.89%	7.65%

Mean Dry Weight-mg Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319Reach 4	0.48	0.577	0.582	0.793	0.57	0.462	0.481	0.5262	0.681	0.6912
	0.4375	0.6222	0.481	0.4038	0.53	0.4463	0.509	0.723	0.4287	0.6462
	0.5578	0.425	0.583	0.622						
21319Reach 3	0.5944	0.44	0.5122	0.4182	0.4311	0.8575	0.533	0.6733	0.469	0.474
	0.3612	0.4689	0.559	0.463	0.5767	0.8811	0.492	0.334	0.4111	0.4022
	0.362	0.429	0.539	0.563						

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Analysis ID:	19-8568-5069	**Endpoint:**	Mean Dry Weight-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	27 Oct-11 17:18	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	9.0%

Equal Variance t Two-Sample Test

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21319Reach 4		21319Reach 2	0.4986	1.679	46	0.0497	0.3102	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		2.371	3.112	0.7155	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.002615295	0.002615295	1	0.2486	0.6204	Non-Significant Effect
Error	0.4838574	0.01051864	46			
Total	0.4864727	0.01313393	47			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.059	3.042	0.8919	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9758	0.9345	0.4185	Normal Distribution

Mean Dry Weight-mg Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	0.5525	0.5129	0.592	0.4038	0.793	0.02123	0.104	18.83%	0.0%
21319Reach 2	24	0.5377	0.4992	0.5761	0.3422	0.7563	0.02063	0.1011	18.8%	2.67%

Mean Dry Weight-mg Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319Reach 4	0.48	0.577	0.582	0.793	0.57	0.462	0.481	0.5262	0.681	0.6912
	0.4375	0.6222	0.481	0.4038	0.53	0.4463	0.509	0.723	0.4287	0.6462
	0.5578	0.425	0.583	0.622						
21319Reach 2	0.6444	0.613	0.4267	0.3422	0.589	0.465	0.5356	0.5413	0.51	0.512
	0.515	0.5	0.4456	0.409	0.534	0.599	0.7563	0.4544	0.5744	0.532
	0.722	0.5929	0.415	0.676						

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Analysis ID:	11-2346-3144	**Endpoint:**	Mean Dry Weight-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	27 Oct-11 17:18	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	12.1%

Wilcoxon Rank Sum Two-Sample Test

Sample Code	vs	Sample Code	Test Stat	Critical	DF	Ties	P-Value	Decision(α:5%)
21319Reach 4		21319Reach 1	-0.4556	1.645	38	1	0.6756	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		4.09	3.036	0.0001	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.009966936	0.009966936	1	0.659	0.4220	Non-Significant Effect
Error	0.5746878	0.01512336	38			
Total	0.5846547	0.0250903	39			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.008	3.3	0.1285	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8421	0.9236	<0.0001	Non-normal Distribution

Mean Dry Weight-mg Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	0.5525	0.5129	0.592	0.4038	0.793	0.02123	0.104	18.83%	0.0%
21319Reach 1	16	0.5847	0.5286	0.6407	0.461	1.081	0.03685	0.1474	25.21%	-5.83%

Mean Dry Weight-mg Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319Reach 4	0.48	0.577	0.582	0.793	0.57	0.462	0.481	0.5262	0.681	0.6912
	0.4375	0.6222	0.481	0.4038	0.53	0.4463	0.509	0.723	0.4287	0.6462
	0.5578	0.425	0.583	0.622						
21319Reach 1	0.557	0.5622	0.509	0.561	0.628	0.6725	0.565	1.081	0.5044	0.607
	0.514	0.4833	0.461	0.5044	0.4786	0.6663				

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Analysis ID:	12-1684-6841	**Endpoint:**	Mean Dry Weight-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	27 Oct-11 17:18	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry weight-mg endpoint	9.23%

Equal Variance t Two-Sample Test

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21319Reach 4		21319Reach 1	0.02892	1.687	37	0.05098	0.4885	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	7.049925E-06	7.049925E-06	1	0.0008365	0.9771	Non-Significant Effect
Error	0.3118147	0.008427424	37			
Total	0.3118218	0.008434474	38			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.406	3.983	0.0924	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9673	0.9219	0.3081	Normal Distribution

Mean Dry Weight-mg Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	0.5525	0.5129	0.592	0.4038	0.793	0.02123	0.104	18.83%	0.0%
21319Reach 1	15	0.5516	0.5261	0.5771	0.461	0.6725	0.01731	0.06706	12.16%	0.16%

Mean Dry Weight-mg Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319Reach 4	0.48	0.577	0.582	0.793	0.57	0.462	0.481	0.5262	0.681	0.6912
	0.4375	0.6222	0.481	0.4038	0.53	0.4463	0.509	0.723	0.4287	0.6462
	0.5578	0.425	0.583	0.622						
21319Reach 1	0.557	0.5622	0.509	0.561	0.628	0.6725	0.565	Outlier	0.5044	0.607
	0.514	0.4833	0.461	0.5044	0.4786	0.6663				

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Analysis ID:	07-8280-6697	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	27 Oct-11 17:18	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	11.2%

Equal Variance t Two-Sample Test

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21319Reach 4		21319Reach 3	0.801	1.679	46	0.05683	0.2136	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		2.703	3.112	0.2417	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.008824205	0.008824205	1	0.6417	0.4272	Non-Significant Effect
Error	0.632603	0.01375224	46			
Total	0.6414273	0.02257644	47			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.117	3.042	0.7926	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9601	0.9345	0.1024	Normal Distribution

Mean Dry Biomass-mg Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	0.5065	0.4607	0.5524	0.323	0.793	0.02459	0.1205	23.78%	0.0%
21319Reach 3	24	0.4794	0.4361	0.5228	0.289	0.793	0.02327	0.114	23.77%	5.35%

Mean Dry Biomass-mg Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319Reach 4	0.432	0.577	0.582	0.793	0.456	0.462	0.481	0.421	0.681	0.553
	0.35	0.56	0.481	0.323	0.424	0.357	0.509	0.723	0.343	0.517
	0.502	0.425	0.583	0.622						
21319Reach 3	0.535	0.44	0.461	0.4182	0.388	0.686	0.533	0.606	0.469	0.474
	0.289	0.422	0.559	0.463	0.519	0.793	0.492	0.334	0.37	0.362
	0.362	0.429	0.539	0.563						

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Analysis ID:	05-7219-3282	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	27 Oct-11 17:18	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	10.8%

Equal Variance t Two-Sample Test

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21319Reach 4		21319Reach 2	0.2373	1.679	46	0.05453	0.4067	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		2.573	3.112	0.3762	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0007130144	0.0007130144	1	0.05631	0.8135	Non-Significant Effect
Error	0.582417	0.01266124	46			
Total	0.5831299	0.01337425	47			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.343	3.042	0.4852	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9749	0.9345	0.3886	Normal Distribution

Mean Dry Biomass-mg Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	0.5065	0.4607	0.5524	0.323	0.793	0.02459	0.1205	23.78%	0.0%
21319Reach 2	24	0.4988	0.4593	0.5384	0.308	0.722	0.02122	0.104	20.84%	1.52%

Mean Dry Biomass-mg Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319Reach 4	0.432	0.577	0.582	0.793	0.456	0.462	0.481	0.421	0.681	0.553
	0.35	0.56	0.481	0.323	0.424	0.357	0.509	0.723	0.343	0.517
	0.502	0.425	0.583	0.622						
21319Reach 2	0.58	0.613	0.384	0.308	0.589	0.465	0.482	0.433	0.357	0.512
	0.515	0.5	0.401	0.409	0.534	0.599	0.605	0.409	0.517	0.532
	0.722	0.415	0.415	0.676						

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Analysis ID:	00-7125-4325	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	27 Oct-11 17:18	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	13.7%

Wilcoxon Rank Sum Two-Sample Test

Sample Code	vs	Sample Code	Test Stat	Critical	DF	Ties	P-Value	Decision(α:5%)
21319Reach 4		21319Reach 1	-0.5108	1.645	38	1	0.6952	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value		3.501	3.036	0.0053	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.006375683	0.006375683	1	0.392	0.5350	Non-Significant Effect
Error	0.6179949	0.01626302	38			
Total	0.6243706	0.02263871	39			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.305	3.3	0.5500	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9103	0.9236	0.0039	Non-normal Distribution

Mean Dry Biomass-mg Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	0.5065	0.4607	0.5524	0.323	0.793	0.02459	0.1205	23.78%	0.0%
21319Reach 1	16	0.5323	0.48	0.5847	0.335	0.973	0.03441	0.1376	25.86%	-5.09%

Mean Dry Biomass-mg Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319Reach 4	0.432	0.577	0.582	0.793	0.456	0.462	0.481	0.421	0.681	0.553
	0.35	0.56	0.481	0.323	0.424	0.357	0.509	0.723	0.343	0.517
	0.502	0.425	0.583	0.622						
21319Reach 1	0.557	0.506	0.509	0.561	0.628	0.538	0.452	0.973	0.454	0.607
	0.514	0.435	0.461	0.454	0.335	0.533				

Hyalella 28-d Survival and Growth Sediment Test — **EnviroSystems, Inc.**

Analysis ID:	02-5932-0792	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.0
Analyzed:	27 Oct-11 17:18	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	MC Trials	Test Result	PMSD
Untransformed	0	C > T	Not Run	Sample passes mean dry biomass-mg endpoint	11.6%

Equal Variance t Two-Sample Test

Sample Code	vs	Sample Code	Test Stat	Critical	DF	MSD	P-Value	Decision(α:5%)
21319Reach 4		21319Reach 1	0.104	1.687	37	0.05851	0.4589	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0001201862	0.0001201862	1	0.01082	0.9177	Non-Significant Effect
Error	0.4108428	0.01110386	37			
Total	0.410963	0.01122405	38			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	2.638	3.983	0.0641	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9712	0.9219	0.4077	Normal Distribution

Mean Dry Biomass-mg Summary

Sample Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
21319Reach 4	24	0.5065	0.4607	0.5524	0.323	0.793	0.02459	0.1205	23.78%	0.0%
21319Reach 1	15	0.5029	0.4747	0.5311	0.335	0.628	0.01915	0.07417	14.75%	0.71%

Mean Dry Biomass-mg Detail

Sample Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
21319Reach 4	0.432	0.577	0.582	0.793	0.456	0.462	0.481	0.421	0.681	0.553
	0.35	0.56	0.481	0.323	0.424	0.357	0.509	0.723	0.343	0.517
	0.502	0.425	0.583	0.622						
21319Reach 1	0.557	0.506	0.509	0.561	0.628	0.538	0.452	Outlier	0.454	0.607
	0.514	0.435	0.461	0.454	0.335	0.533				

STUDY: 21320
CLIENT: Geosyntec Consultants
PROJECT: FC 1640 LVR Toxicity Test
ASSAY: Hyalella azteca Sediment Assay
TASK: Overlying Water Alkalinity Summary
METHOD: EPA 310.2

Field ID	Sample Number	Day	LAB ID	MATRIX	RESULT	QLIMIT	UNITS	SAMPLED	ANALYZED
Laboratory Control	000	0	21320-100	Water	64	2	mg/L	09/13/11 1100	09/16/11 1507
OUI-SE-LVR609-110822	001	0	21320-101	Water	91	2	mg/L	09/13/11 1100	09/16/11 1509
OUI-SE-LVR607-110822	002	0	21320-102	Water	67	2	mg/L	09/13/11 1100	09/16/11 1510
OUI-SE-LVR608-110823	003	0	21320-103	Water	61	2	mg/L	09/13/11 1100	09/16/11 1511
OUI-SE-LVR604-110824	004	0	21320-104	Water	60	2	mg/L	09/13/11 1100	09/16/11 1515
OUI-SE-LVR605-110824	005	0	21320-105	Water	60	2	mg/L	09/13/11 1100	09/16/11 1517
OUI-SE-LVR606-110824	006	0	21320-106	Water	59	2	mg/L	09/13/11 1100	09/16/11 1518
OUI-SE-LVR610-110823	007	0	21320-107	Water	63	2	mg/L	09/13/11 1100	09/16/11 1519
OUI-SE-LVR611-110823	008	0	21320-108	Water	85	2	mg/L	09/13/11 1100	09/16/11 1521
OUI-SE-LVR612-110823	009	0	21320-109	Water	60	2	mg/L	09/13/11 1100	09/16/11 1522
OUI-SE-LVR602-110825	010	0	21320-110	Water	59	2	mg/L	09/13/11 1100	09/16/11 1523
OUI-SE-LVR603-110825	011	0	21320-111	Water	59	2	mg/L	09/13/11 1100	09/16/11 1525
Laboratory Control	000	7	21320-200	Water	60	2	mg/L	09/20/11 0830	09/26/11 1432
OUI-SE-LVR609-110822	001	7	21320-201	Water	89	2	mg/L	09/20/11 0830	09/26/11 1433
OUI-SE-LVR607-110822	002	7	21320-202	Water	75	2	mg/L	09/20/11 0830	09/26/11 1434
OUI-SE-LVR608-110823	003	7	21320-203	Water	64	2	mg/L	09/20/11 0830	09/26/11 1436
OUI-SE-LVR604-110824	004	7	21320-204	Water	61	2	mg/L	09/20/11 0830	09/26/11 1437
OUI-SE-LVR605-110824	005	7	21320-205	Water	62	2	mg/L	09/20/11 0830	09/26/11 1438
OUI-SE-LVR606-110824	006	7	21320-206	Water	62	2	mg/L	09/20/11 0830	09/26/11 1447
OUI-SE-LVR610-110823	007	7	21320-207	Water	60	2	mg/L	09/20/11 0830	09/26/11 1451
OUI-SE-LVR611-110823	008	7	21320-208	Water	84	2	mg/L	09/20/11 0830	09/26/11 1452
OUI-SE-LVR612-110823	009	7	21320-209	Water	66	2	mg/L	09/20/11 0830	09/26/11 1453
OUI-SE-LVR602-110825	010	7	21320-210	Water	60	2	mg/L	09/20/11 0830	09/26/11 1455
OUI-SE-LVR603-110825	011	7	21320-211	Water	60	2	mg/L	09/20/11 0830	09/26/11 1456
Laboratory Control	000	14	21320-300	Water	56	2	mg/L	09/27/11 0900	10/05/11 1234
OUI-SE-LVR609-110822	001	14	21320-301	Water	83	2	mg/L	09/27/11 0900	10/05/11 1241
OUI-SE-LVR607-110822	002	14	21320-302	Water	67	2	mg/L	09/27/11 0900	10/05/11 1243
OUI-SE-LVR608-110823	003	14	21320-303	Water	64	2	mg/L	09/27/11 0900	10/05/11 1244

TASK: Overlying Water Alkalinity Summary
METHOD: EPA 310.2

Field ID	Sample Number	Day	LAB ID	MATRIX	RESULT	QLIMIT	UNITS	SAMPLED	ANALYZED
OUI-SE-LVR604-110824	004	14	21320-304	Water	62	2	mg/L	09/27/11 0900	10/05/11 1245
OUI-SE-LVR605-110824	005	14	21320-305	Water	63	2	mg/L	09/27/11 0900	10/05/11 1247
OUI-SE-LVR606-110824	006	14	21320-306	Water	63	2	mg/L	09/27/11 0900	10/05/11 1248
OUI-SE-LVR610-110823	007	14	21320-307	Water	61	2	mg/L	09/27/11 0900	10/05/11 1249
OUI-SE-LVR611-110823	008	14	21320-308	Water	79	2	mg/L	09/27/11 0900	10/05/11 1251
OUI-SE-LVR612-110823	009	14	21320-309	Water	66	2	mg/L	09/27/11 0900	10/05/11 1252
OUI-SE-LVR602-110825	010	14	21320-310	Water	61	2	mg/L	09/27/11 0900	10/05/11 1257
OUI-SE-LVR603-110825	011	14	21320-311	Water	61	2	mg/L	09/27/11 0900	10/05/11 1258
Laboratory Control	000	21	21320-400	Water	57	2	mg/L	10/04/11 1200	10/06/11 1022
OUI-SE-LVR609-110822	001	21	21320-401	Water	84	2	mg/L	10/04/11 1200	10/06/11 1026
OUI-SE-LVR607-110822	002	21	21320-402	Water	70	2	mg/L	10/04/11 1200	10/06/11 1027
OUI-SE-LVR608-110823	003	21	21320-403	Water	65	2	mg/L	10/04/11 1200	10/06/11 1032
OUI-SE-LVR604-110824	004	21	21320-404	Water	64	2	mg/L	10/04/11 1200	10/06/11 1033
OUI-SE-LVR605-110824	005	21	21320-405	Water	65	2	mg/L	10/04/11 1200	10/06/11 1034
OUI-SE-LVR606-110824	006	21	21320-406	Water	66	2	mg/L	10/04/11 1200	10/06/11 1036
OUI-SE-LVR610-110823	007	21	21320-407	Water	64	2	mg/L	10/04/11 1200	10/06/11 1037
OUI-SE-LVR611-110823	008	21	21320-408	Water	83	2	mg/L	10/04/11 1200	10/06/11 1038
OUI-SE-LVR612-110823	009	21	21320-409	Water	69	2	mg/L	10/04/11 1200	10/06/11 1040
OUI-SE-LVR602-110825	010	21	21320-410	Water	64	2	mg/L	10/04/11 1200	10/06/11 1041
OUI-SE-LVR603-110825	011	21	21320-411	Water	67	2	mg/L	10/04/11 1200	10/06/11 1042
Laboratory Control	000	28	21320-500	Water	53	4	mg/L	10/11/11 0800	10/17/11 1440
OUI-SE-LVR609-110822	001	28	21320-501	Water	72	4	mg/L	10/11/11 0800	10/17/11 1441
OUI-SE-LVR607-110822	002	28	21320-502	Water	62	4	mg/L	10/11/11 0800	10/17/11 1443
OUI-SE-LVR608-110823	003	28	21320-503	Water	58	4	mg/L	10/11/11 0800	10/17/11 1444
OUI-SE-LVR604-110824	004	28	21320-504	Water	59	4	mg/L	10/11/11 0800	10/17/11 1445
OUI-SE-LVR605-110824	005	28	21320-505	Water	58	4	mg/L	10/11/11 0800	10/17/11 1447
OUI-SE-LVR606-110824	006	28	21320-506	Water	52	4	mg/L	10/11/11 0800	10/17/11 1547
OUI-SE-LVR610-110823	007	28	21320-507	Water	52	4	mg/L	10/11/11 0800	10/17/11 1550
OUI-SE-LVR611-110823	008	28	21320-508	Water	64	4	mg/L	10/11/11 0800	10/17/11 1552
OUI-SE-LVR612-110823	009	28	21320-509	Water	54	4	mg/L	10/11/11 0800	10/17/11 1556
OUI-SE-LVR602-110825	010	28	21320-510	Water	52	4	mg/L	10/11/11 0800	10/17/11 1558
OUI-SE-LVR603-110825	011	28	21320-511	Water	53	4	mg/L	10/11/11 0800	10/17/11 1559

STUDY: 21320
CLIENT: Geosyntec Consultants
PROJECT: FC 1640 LVR Toxicity Test
ASSAY: Hyalella azteca Sediment Assay
TASK: Overlying Water Hardness Summary
METHOD: SW846 3rd Ed. 6020

Field ID	Sample Number	Day	LAB ID	MATRIX	RESULT	QLIMIT	UNITS	SAMPLED	ANALYZED
Laboratory Control	000	0	21320-112	Water	72	0.4	mg/L	09/13/11 1100	09/14/11
OUI-SE-LVR609-110822	001	0	21320-113	Water	100	0.4	mg/L	09/13/11 1100	09/14/11
OUI-SE-LVR607-110822	002	0	21320-114	Water	84	0.4	mg/L	09/13/11 1100	09/14/11
OUI-SE-LVR608-110823	003	0	21320-115	Water	79	0.4	mg/L	09/13/11 1100	09/14/11
OUI-SE-LVR604-110824	004	0	21320-116	Water	78	0.4	mg/L	09/13/11 1100	09/14/11
OUI-SE-LVR605-110824	005	0	21320-117	Water	78	0.4	mg/L	09/13/11 1100	09/14/11
OUI-SE-LVR606-110824	006	0	21320-118	Water	77	0.4	mg/L	09/13/11 1100	09/14/11
OUI-SE-LVR610-110823	007	0	21320-119	Water	81	0.4	mg/L	09/13/11 1100	09/14/11
OUI-SE-LVR611-110823	008	0	21320-120	Water	100	0.4	mg/L	09/13/11 1100	09/14/11
OUI-SE-LVR612-110823	009	0	21320-121	Water	78	0.4	mg/L	09/13/11 1100	09/14/11
OUI-SE-LVR602-110825	010	0	21320-122	Water	76	0.4	mg/L	09/13/11 1100	09/14/11
OUI-SE-LVR603-110825	011	0	21320-123	Water	77	0.4	mg/L	09/13/11 1100	09/14/11
Laboratory Control	000	7	21320-212	Water	73	0.4	mg/L	09/20/11 0830	09/23/11
OUI-SE-LVR609-110822	001	7	21320-213	Water	99	0.4	mg/L	09/20/11 0830	09/23/11
OUI-SE-LVR607-110822	002	7	21320-214	Water	79	0.4	mg/L	09/20/11 0830	09/23/11
OUI-SE-LVR608-110823	003	7	21320-215	Water	72	0.4	mg/L	09/20/11 0830	09/23/11
OUI-SE-LVR604-110824	004	7	21320-216	Water	71	0.4	mg/L	09/20/11 0830	09/23/11
OUI-SE-LVR605-110824	005	7	21320-217	Water	75	0.4	mg/L	09/20/11 0830	09/23/11
OUI-SE-LVR606-110824	006	7	21320-218	Water	74	0.4	mg/L	09/20/11 0830	09/23/11
OUI-SE-LVR610-110823	007	7	21320-219	Water	75	0.4	mg/L	09/20/11 0830	09/23/11
OUI-SE-LVR611-110823	008	7	21320-220	Water	97	0.4	mg/L	09/20/11 0830	09/23/11
OUI-SE-LVR612-110823	009	7	21320-221	Water	82	0.4	mg/L	09/20/11 0830	09/23/11
OUI-SE-LVR602-110825	010	7	21320-222	Water	75	0.4	mg/L	09/20/11 0830	09/23/11
OUI-SE-LVR603-110825	011	7	21320-223	Water	74	0.4	mg/L	09/20/11 0830	09/23/11
Laboratory Control	000	14	21320-312	Water	61	0.4	mg/L	09/27/11 0900	09/28/11
OUI-SE-LVR609-110822	001	14	21320-313	Water	90	0.4	mg/L	09/27/11 0900	09/28/11
OUI-SE-LVR607-110822	002	14	21320-314	Water	82	0.4	mg/L	09/27/11 0900	09/28/11
OUI-SE-LVR608-110823	003	14	21320-315	Water	76	0.4	mg/L	09/27/11 0900	09/28/11

TASK: Overlying Water Hardness Summary
METHOD: SW846 3rd Ed. 6020

Field ID	Sample Number	Day	LAB ID	MATRIX	RESULT	QLIMIT	UNITS	SAMPLED	ANALYZED
OUI-SE-LVR604-110824	004	14	21320-316	Water	73	0.4	mg/L	09/27/11 0900	09/29/11
OUI-SE-LVR605-110824	005	14	21320-317	Water	74	0.4	mg/L	09/27/11 0900	09/29/11
OUI-SE-LVR606-110824	006	14	21320-318	Water	79	0.4	mg/L	09/27/11 0900	10/03/11
OUI-SE-LVR610-110823	007	14	21320-319	Water	77	0.4	mg/L	09/27/11 0900	10/03/11
OUI-SE-LVR611-110823	008	14	21320-320	Water	95	0.4	mg/L	09/27/11 0900	10/03/11
OUI-SE-LVR612-110823	009	14	21320-321	Water	83	0.4	mg/L	09/27/11 0900	10/03/11
OUI-SE-LVR602-110825	010	14	21320-322	Water	77	0.4	mg/L	09/27/11 0900	10/03/11
OUI-SE-LVR603-110825	011	14	21320-323	Water	77	0.4	mg/L	09/27/11 0900	10/03/11
Laboratory Control	000	21	21320-412	Water	60	0.4	mg/L	10/04/11 1200	10/07/11
OUI-SE-LVR609-110822	001	21	21320-413	Water	91	0.4	mg/L	10/04/11 1200	10/06/11
OUI-SE-LVR607-110822	002	21	21320-414	Water	73	0.4	mg/L	10/04/11 1200	10/06/11
OUI-SE-LVR608-110823	003	21	21320-415	Water	71	0.4	mg/L	10/04/11 1200	10/06/11
OUI-SE-LVR604-110824	004	21	21320-416	Water	69	0.4	mg/L	10/04/11 1200	10/06/11
OUI-SE-LVR605-110824	005	21	21320-417	Water	70	0.4	mg/L	10/04/11 1200	10/06/11
OUI-SE-LVR606-110824	006	21	21320-418	Water	68	0.4	mg/L	10/04/11 1200	10/06/11
OUI-SE-LVR610-110823	007	21	21320-419	Water	68	0.4	mg/L	10/04/11 1200	10/06/11
OUI-SE-LVR611-110823	008	21	21320-420	Water	85	0.4	mg/L	10/04/11 1200	10/06/11
OUI-SE-LVR612-110823	009	21	21320-421	Water	70	0.4	mg/L	10/04/11 1200	10/06/11
OUI-SE-LVR602-110825	010	21	21320-422	Water	68	0.4	mg/L	10/04/11 1200	10/06/11
OUI-SE-LVR603-110825	011	21	21320-423	Water	72	0.4	mg/L	10/04/11 1200	10/06/11
Laboratory Control	000	28	21320-512	Water	70	0.4	mg/L	10/11/11 0800	10/19/11
OUI-SE-LVR609-110822	001	28	21320-513	Water	94	0.4	mg/L	10/11/11 0800	10/19/11
OUI-SE-LVR607-110822	002	28	21320-514	Water	79	0.4	mg/L	10/11/11 0800	10/19/11
OUI-SE-LVR608-110823	003	28	21320-515	Water	74	0.4	mg/L	10/11/11 0800	10/19/11
OUI-SE-LVR604-110824	004	28	21320-516	Water	74	0.4	mg/L	10/11/11 0800	10/19/11
OUI-SE-LVR605-110824	005	28	21320-517	Water	72	0.4	mg/L	10/11/11 0800	10/19/11
OUI-SE-LVR606-110824	006	28	21320-518	Water	72	0.4	mg/L	10/11/11 0800	10/19/11
OUI-SE-LVR610-110823	007	28	21320-519	Water	71	0.4	mg/L	10/11/11 0800	10/19/11
OUI-SE-LVR611-110823	008	28	21320-520	Water	83	0.4	mg/L	10/11/11 0800	10/19/11
OUI-SE-LVR612-110823	009	28	21320-521	Water	74	0.4	mg/L	10/11/11 0800	10/19/11
OUI-SE-LVR602-110825	010	28	21320-522	Water	71	0.4	mg/L	10/11/11 0800	10/19/11
OUI-SE-LVR603-110825	011	28	21320-523	Water	72	0.4	mg/L	10/11/11 0800	10/19/11

STUDY: 21320
CLIENT: Geosyntec Consultants
PROJECT: FC 1640 LVR Toxicity Test
ASSAY: Hyalella azteca Sediment Assay
TASK: Overlying Water Ammonia Summary
METHOD: SM 4500-NH3 G

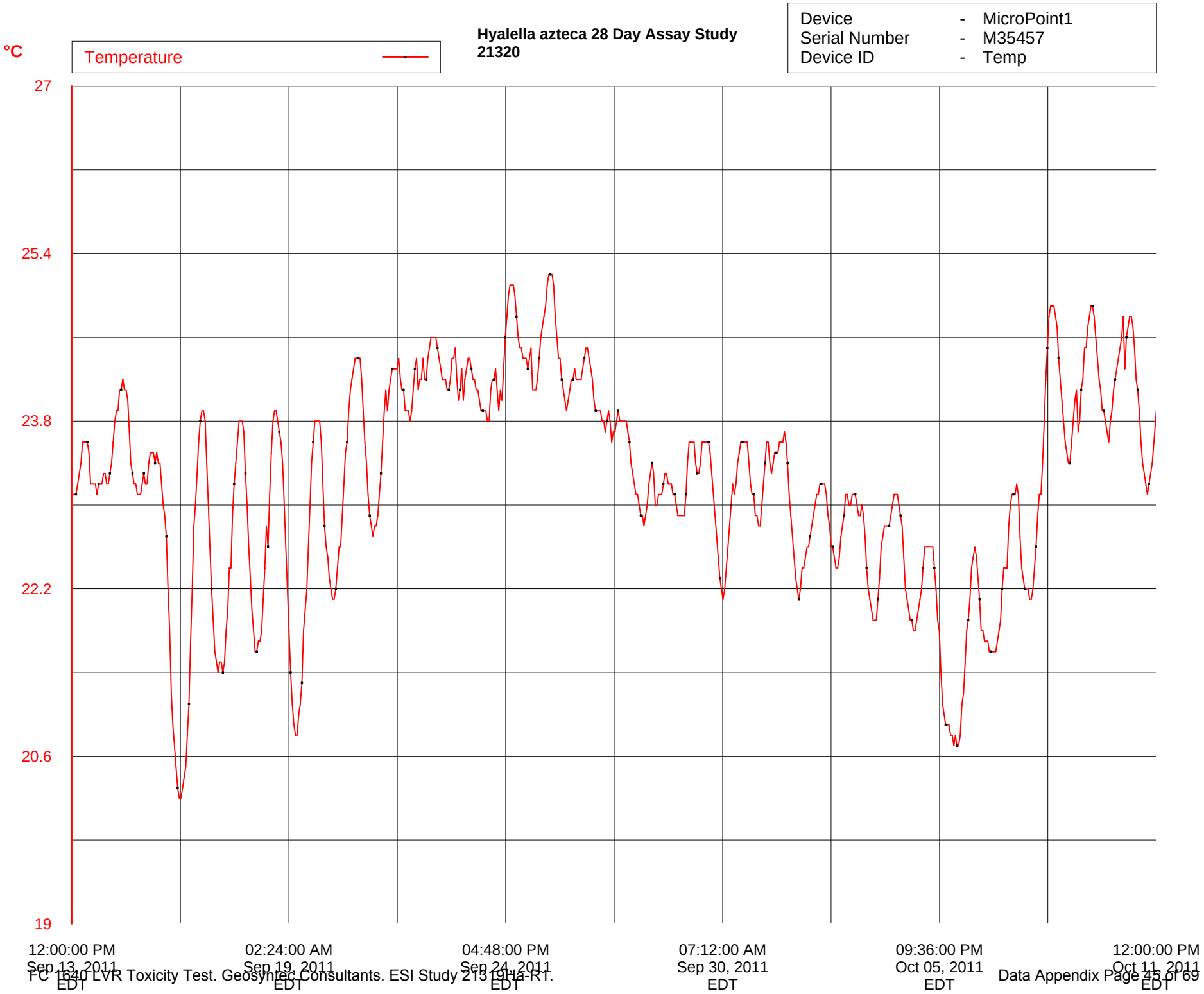
Field ID	Sample Number	Day	LAB ID	MATRIX	RESULT	QLIMIT	UNITS	SAMPLED	ANALYZED
Laboratory Control	000	0	21320-124	Water	ND	0.1	mg/L as N	09/13/11 1100	09/14/11 1316
OUI-SE-LVR609-110822	001	0	21320-125	Water	ND	0.1	mg/L as N	09/13/11 1100	09/14/11 1318
OUI-SE-LVR607-110822	002	0	21320-126	Water	ND	0.1	mg/L as N	09/13/11 1100	09/14/11 1319
OUI-SE-LVR608-110823	003	0	21320-127	Water	ND	0.1	mg/L as N	09/13/11 1100	09/14/11 1323
OUI-SE-LVR604-110824	004	0	21320-128	Water	ND	0.1	mg/L as N	09/13/11 1100	09/14/11 1324
OUI-SE-LVR605-110824	005	0	21320-129	Water	ND	0.1	mg/L as N	09/13/11 1100	09/14/11 1324
OUI-SE-LVR606-110824	006	0	21320-130	Water	ND	0.1	mg/L as N	09/13/11 1100	09/14/11 1325
OUI-SE-LVR610-110823	007	0	21320-131	Water	ND	0.1	mg/L as N	09/13/11 1100	09/14/11 1326
OUI-SE-LVR611-110823	008	0	21320-132	Water	ND	0.1	mg/L as N	09/13/11 1100	09/14/11 1327
OUI-SE-LVR612-110823	009	0	21320-133	Water	ND	0.1	mg/L as N	09/13/11 1100	09/14/11 1328
OUI-SE-LVR602-110825	010	0	21320-134	Water	ND	0.1	mg/L as N	09/13/11 1100	09/14/11 1328
OUI-SE-LVR603-110825	011	0	21320-135	Water	ND	0.1	mg/L as N	09/13/11 1100	09/14/11 1329
Laboratory Control	000	7	21320-224	Water	ND	0.1	mg/L as N	09/20/11 0830	09/28/11 1310
OUI-SE-LVR609-110822	001	7	21320-225	Water	ND	0.1	mg/L as N	09/20/11 0830	09/28/11 1311
OUI-SE-LVR607-110822	002	7	21320-226	Water	ND	0.1	mg/L as N	09/20/11 0830	09/28/11 1314
OUI-SE-LVR608-110823	003	7	21320-227	Water	ND	0.1	mg/L as N	09/20/11 0830	09/28/11 1315
OUI-SE-LVR604-110824	004	7	21320-228	Water	ND	0.1	mg/L as N	09/20/11 0830	09/28/11 1316
OUI-SE-LVR605-110824	005	7	21320-229	Water	ND	0.1	mg/L as N	09/20/11 0830	09/28/11 1317
OUI-SE-LVR606-110824	006	7	21320-230	Water	ND	0.1	mg/L as N	09/20/11 0830	09/28/11 1318
OUI-SE-LVR610-110823	007	7	21320-231	Water	ND	0.1	mg/L as N	09/20/11 0830	09/28/11 1319
OUI-SE-LVR611-110823	008	7	21320-232	Water	ND	0.1	mg/L as N	09/20/11 0830	09/28/11 1319
OUI-SE-LVR612-110823	009	7	21320-233	Water	ND	0.1	mg/L as N	09/20/11 0830	09/28/11 1320
OUI-SE-LVR602-110825	010	7	21320-234	Water	ND	0.1	mg/L as N	09/20/11 0830	09/28/11 1321
OUI-SE-LVR603-110825	011	7	21320-235	Water	ND	0.1	mg/L as N	09/20/11 0830	09/28/11 1322
Laboratory Control	000	14	21320-324	Water	ND	0.1	mg/L as N	09/27/11 0900	09/28/11 1417
OUI-SE-LVR609-110822	001	14	21320-325	Water	ND	0.1	mg/L as N	09/27/11 0900	09/28/11 1420
OUI-SE-LVR607-110822	002	14	21320-326	Water	ND	0.1	mg/L as N	09/27/11 0900	09/28/11 1421
OUI-SE-LVR608-110823	003	14	21320-327	Water	ND	0.1	mg/L as N	09/27/11 0900	09/28/11 1422

TASK: Overlying Water Ammonia Summary
METHOD: SM 4500-NH3 G

Field ID	Sample Number	Day	LAB ID	MATRIX	RESULT	QLIMIT	UNITS	SAMPLED	ANALYZED
OUI-SE-LVR604-110824	004	14	21320-328	Water	ND	0.1	mg/L as N	09/27/11 0900	09/28/11 1423
OUI-SE-LVR605-110824	005	14	21320-329	Water	ND	0.1	mg/L as N	09/27/11 0900	09/28/11 1424
OUI-SE-LVR606-110824	006	14	21320-330	Water	ND	0.1	mg/L as N	09/27/11 0900	09/28/11 1424
OUI-SE-LVR610-110823	007	14	21320-331	Water	ND	0.1	mg/L as N	09/27/11 0900	09/28/11 1425
OUI-SE-LVR611-110823	008	14	21320-332	Water	ND	0.1	mg/L as N	09/27/11 0900	09/28/11 1431
OUI-SE-LVR612-110823	009	14	21320-333	Water	ND	0.1	mg/L as N	09/27/11 0900	09/28/11 1433
OUI-SE-LVR602-110825	010	14	21320-334	Water	ND	0.1	mg/L as N	09/27/11 0900	09/28/11 1434
OUI-SE-LVR603-110825	011	14	21320-335	Water	ND	0.1	mg/L as N	09/27/11 0900	09/28/11 1435
Laboratory Control	000	21	21320-424	Water	ND	0.1	mg/L as N	10/04/11 1200	10/14/11 1126
OUI-SE-LVR609-110822	001	21	21320-425	Water	ND	0.1	mg/L as N	10/04/11 1200	10/14/11 1127
OUI-SE-LVR607-110822	002	21	21320-426	Water	ND	0.1	mg/L as N	10/04/11 1200	10/14/11 1128
OUI-SE-LVR608-110823	003	21	21320-427	Water	ND	0.1	mg/L as N	10/04/11 1200	10/14/11 1129
OUI-SE-LVR604-110824	004	21	21320-428	Water	ND	0.1	mg/L as N	10/04/11 1200	10/14/11 1129
OUI-SE-LVR605-110824	005	21	21320-429	Water	ND	0.1	mg/L as N	10/04/11 1200	10/14/11 1130
OUI-SE-LVR606-110824	006	21	21320-430	Water	ND	0.1	mg/L as N	10/04/11 1200	10/14/11 1136
OUI-SE-LVR610-110823	007	21	21320-431	Water	ND	0.1	mg/L as N	10/04/11 1200	10/14/11 1139
OUI-SE-LVR611-110823	008	21	21320-432	Water	ND	0.1	mg/L as N	10/04/11 1200	10/14/11 1140
OUI-SE-LVR612-110823	009	21	21320-433	Water	ND	0.1	mg/L as N	10/04/11 1200	10/14/11 1140
OUI-SE-LVR602-110825	010	21	21320-434	Water	ND	0.1	mg/L as N	10/04/11 1200	10/14/11 1141
OUI-SE-LVR603-110825	011	21	21320-435	Water	ND	0.1	mg/L as N	10/04/11 1200	10/14/11 1142
Laboratory Control	000	28	21320-524	Water	0.21	0.1	mg/L as N	10/11/11 0800	10/14/11 1335
OUI-SE-LVR609-110822	001	28	21320-525	Water	ND	0.1	mg/L as N	10/11/11 0800	10/14/11 1336
OUI-SE-LVR607-110822	002	28	21320-526	Water	ND	0.1	mg/L as N	10/11/11 0800	10/14/11 1337
OUI-SE-LVR608-110823	003	28	21320-527	Water	ND	0.1	mg/L as N	10/11/11 0800	10/14/11 1338
OUI-SE-LVR604-110824	004	28	21320-528	Water	ND	0.1	mg/L as N	10/11/11 0800	10/14/11 1339
OUI-SE-LVR605-110824	005	28	21320-529	Water	ND	0.1	mg/L as N	10/11/11 0800	10/14/11 1340
OUI-SE-LVR606-110824	006	28	21320-530	Water	ND	0.1	mg/L as N	10/11/11 0800	10/14/11 1340
OUI-SE-LVR610-110823	007	28	21320-531	Water	ND	0.1	mg/L as N	10/11/11 0800	10/14/11 1341
OUI-SE-LVR611-110823	008	28	21320-532	Water	ND	0.1	mg/L as N	10/11/11 0800	10/14/11 1342
OUI-SE-LVR612-110823	009	28	21320-533	Water	ND	0.1	mg/L as N	10/11/11 0800	10/14/11 1343
OUI-SE-LVR602-110825	010	28	21320-534	Water	ND	0.1	mg/L as N	10/11/11 0800	10/14/11 1346
OUI-SE-LVR603-110825	011	28	21320-535	Water	ND	0.1	mg/L as N	10/11/11 0800	10/14/11 1347

STUDY: 21320
CLIENT: Geosyntec Consultants
PROJECT: FC 1640 LVR Toxicity Test
ASSAY: Hyalella azteca Sediment Assay
TASK: Overlying Water Total Organic Carbon Summary
METHOD: SM 5310 C

Field ID	Sample Number	Day	LAB ID	MATRIX	RESULT	QLIMIT	UNITS	SAMPLED	ANALYZED
Laboratory Control	000	0	21320-136	Water	16	0.4	mg/L	09/13/11 1100	09/16/11
OUI-SE-LVR609-110822	001	0	21320-137	Water	6.5	0.4	mg/L	09/13/11 1100	09/16/11
OUI-SE-LVR607-110822	002	0	21320-138	Water	5.9	0.4	mg/L	09/13/11 1100	09/16/11
OUI-SE-LVR608-110823	003	0	21320-139	Water	6	0.4	mg/L	09/13/11 1100	09/16/11
OUI-SE-LVR604-110824	004	0	21320-140	Water	6.1	0.4	mg/L	09/13/11 1100	09/16/11
OUI-SE-LVR605-110824	005	0	21320-141	Water	5.9	0.4	mg/L	09/13/11 1100	09/16/11
OUI-SE-LVR606-110824	006	0	21320-142	Water	6	0.4	mg/L	09/13/11 1100	09/16/11
OUI-SE-LVR610-110823	007	0	21320-143	Water	7.7	0.4	mg/L	09/13/11 1100	09/16/11
OUI-SE-LVR611-110823	008	0	21320-144	Water	6.1	0.4	mg/L	09/13/11 1100	09/16/11
OUI-SE-LVR612-110823	009	0	21320-145	Water	5.9	0.4	mg/L	09/13/11 1100	09/19/11
OUI-SE-LVR602-110825	010	0	21320-146	Water	6.1	0.4	mg/L	09/13/11 1100	09/19/11
OUI-SE-LVR603-110825	011	0	21320-147	Water	6.2	0.4	mg/L	09/13/11 1100	09/19/11
Laboratory Control	000	28	21320-536	Water	8.6	0.4	mg/L	10/11/11 0800	10/13/11
OUI-SE-LVR609-110822	001	28	21320-537	Water	6.3	0.4	mg/L	10/11/11 0800	10/13/11
OUI-SE-LVR607-110822	002	28	21320-538	Water	7.1	0.4	mg/L	10/11/11 0800	10/14/11
OUI-SE-LVR608-110823	003	28	21320-539	Water	6.5	0.4	mg/L	10/11/11 0800	10/14/11
OUI-SE-LVR604-110824	004	28	21320-540	Water	6.3	0.4	mg/L	10/11/11 0800	10/14/11
OUI-SE-LVR605-110824	005	28	21320-541	Water	6.4	0.4	mg/L	10/11/11 0800	10/14/11
OUI-SE-LVR606-110824	006	28	21320-542	Water	6.5	0.4	mg/L	10/11/11 0800	10/14/11
OUI-SE-LVR610-110823	007	28	21320-543	Water	6.4	0.4	mg/L	10/11/11 0800	10/14/11
OUI-SE-LVR611-110823	008	28	21320-544	Water	6.1	0.4	mg/L	10/11/11 0800	10/14/11
OUI-SE-LVR612-110823	009	28	21320-545	Water	6.3	0.4	mg/L	10/11/11 0800	10/14/11
OUI-SE-LVR602-110825	010	28	21320-546	Water	6.5	0.4	mg/L	10/11/11 0800	10/14/11
OUI-SE-LVR603-110825	011	28	21320-547	Water	6.2	0.4	mg/L	10/11/11 0800	10/14/11


Hyalella azteca 28 Day Assay Study
21320
Device - MicroPoint1
Serial Number - M35457
Device ID - Temp
°C
Temperature
27
25.4
23.8
22.2
20.6
19
12:00:00 PM Sep 13, 2011 EDT
02:24:00 AM Sep 19, 2011 EDT
04:48:00 PM Sep 24, 2011 EDT
07:12:00 AM Sep 30, 2011 EDT
09:36:00 PM Oct 05, 2011 EDT
12:00:00 PM Oct 11, 2011 EDT

Aquatic Research Organisms

DATA SHEET

RCC 9/12/11 PMD

I. Organism History

Species Hyalella azteca

Source: Lab reared x Hatchery reared_____ Field collected_____

Hatch date 9/6/11 Receipt date_____

Lot number 09 06 11 HA Strain ARO

Brood origination OS fwS MO

II. Water Quality

Temperature 24 °C Salinity – ppt D.O. SAT ppm

pH 7.4 su Hardness ≈120 ppm Alkalinity ≈140 ppm

III. Culture Conditions

Freshwater x Saltwater_____ Other_____

Recirculating_____ Flow through_____ Static renewal x

DIET: Flake food x Phytoplankton_____ Trout chow x

Artemia_____ Rotifers_____ YCT_____ Other_____

Prophylactic treatments:_____

Comments:_____

IV. Shipping Information

Client: ESI # of Organisms 1500+

Carrier: Pick-up Date shipped 9/12/11

Biologist:_____

PO BOX 1271 HAMPTON NH 03843-1271 (603) 926-1650 AROFISH@AOL.COM

Pre-Assay Monitoring
Hyalella azteca
28 Day Sediment Evaluation

Study: 21320	Client: Geosyntec Consultants	Project: FC 1640 LVR Toxicity Test

Day	Date	Renewed		Renewed		Overlying Water Ammonia Checked
		am	Initial	pm	Initial	
0	08/31/11	–	–	–	–	–
1	09/01/11	–	–	✓	AM	–
2	09/02/11	✓	AM	✓	AM	✓
3	09/03/11	✓	CS ~~AM~~ CSM 9/8	✓	AM	–
4	09/04/11	~~CSM~~ D 9/8 ✓	DM	✓	DM	–
5	09/05/11	✓	AM	✓	AM	–
6	09/06/11	✓	AM	✓	AM	✓
7	09/07/11	✓	AM	✓	AM	–
8	09/08/11	✓	AM	✓	AM	–
9	09/09/11	✓		✓	RAM	–
10	09/10/11	✓	JTP	✓	CS	–
11	09/11/11	✓	JTP	✓	DM	
12	9.12	✓	DM	✓	AM	–
13	9/13/11	✓	AM			
14						

Two Volume Additions Twice a Day	Temperature: 23°C

Pre-Assay Monitoring Data

STUDY: 21320
CLIENT: Geosyntec Consultants
PROJECT: FC 1640 LVR Toxicity Test
ASSAY: Hyalella azteca Sediment Assay
TASK: Overlying Water Ammonia Summary
METHOD: SM 4500-NH3 G

Field ID	Sample Number	Date	LAB ID	MATRIX	RESULT	QLIMIT	UNITS	SAMPLED	ANALYZED
Laboratory Control	000	09/02/11	21319-050	Water	ND	0.1	mg/L as N	09/02/11 1500	09/07/11 1602
OUI-SE-LVR609-110822	001	09/02/11	21319-051	Water	0.29	0.1	mg/L as N	09/02/11 1500	09/07/11 1602
OUI-SE-LVR607-110822	002	09/02/11	21319-052	Water	ND	0.1	mg/L as N	09/02/11 1500	09/07/11 1603
OUI-SE-LVR608-110823	003	09/02/11	21319-053	Water	ND	0.1	mg/L as N	09/02/11 1500	09/07/11 1604
OUI-SE-LVR604-110824	004	09/02/11	21319-054	Water	ND	0.1	mg/L as N	09/02/11 1500	09/07/11 1605
OUI-SE-LVR605-110824	005	09/02/11	21319-055	Water	ND	0.1	mg/L as N	09/02/11 1500	09/07/11 1606
OUI-SE-LVR606-110824	006	09/02/11	21319-056	Water	ND	0.1	mg/L as N	09/02/11 1500	09/07/11 1607
OUI-SE-LVR610-110823	007	09/02/11	21319-057	Water	ND	0.1	mg/L as N	09/02/11 1500	09/07/11 1607
OUI-SE-LVR611-110823	008	09/02/11	21319-058	Water	0.21	0.1	mg/L as N	09/02/11 1500	09/07/11 1608
OUI-SE-LVR612-110823	009	09/02/11	21319-059	Water	ND	0.1	mg/L as N	09/02/11 1500	09/07/11 1612
OUI-SE-LVR602-110825	010	09/02/11	21319-060	Water	ND	0.1	mg/L as N	09/02/11 1500	09/07/11 1613
OUI-SE-LVR603-110825	011	09/02/11	21319-061	Water	ND	0.1	mg/L as N	09/02/11 1500	09/07/11 1613
Laboratory Control	000	09/06/11	21319-074	Water	ND	0.1	mg/L as N	09/06/11 1100	09/07/11 1524
OUI-SE-LVR609-110822	001	09/06/11	21319-075	Water	0.18	0.1	mg/L as N	09/06/11 1100	09/07/11 1530
OUI-SE-LVR607-110822	002	09/06/11	21319-076	Water	ND	0.1	mg/L as N	09/06/11 1100	09/07/11 1530
OUI-SE-LVR608-110823	003	09/06/11	21319-077	Water	ND	0.1	mg/L as N	09/06/11 1100	09/07/11 1531
OUI-SE-LVR604-110824	004	09/06/11	21319-078	Water	ND	0.1	mg/L as N	09/06/11 1100	09/07/11 1532
OUI-SE-LVR605-110824	005	09/06/11	21319-079	Water	ND	0.1	mg/L as N	09/06/11 1100	09/07/11 1533
OUI-SE-LVR606-110824	006	09/06/11	21319-080	Water	ND	0.1	mg/L as N	09/06/11 1100	09/07/11 1534
OUI-SE-LVR610-110823	007	09/06/11	21319-081	Water	ND	0.1	mg/L as N	09/06/11 1100	09/07/11 1535
OUI-SE-LVR611-110823	008	09/06/11	21319-082	Water	ND	0.1	mg/L as N	09/06/11 1100	09/07/11 1535
OUI-SE-LVR612-110823	009	09/06/11	21319-083	Water	ND	0.1	mg/L as N	09/06/11 1100	09/07/11 1539
OUI-SE-LVR602-110825	010	09/06/11	21319-084	Water	ND	0.1	mg/L as N	09/06/11 1100	09/07/11 1540
OUI-SE-LVR603-110825	011	09/06/11	21319-135	Water	ND	0.1	mg/L as N	09/06/11 1100	09/07/11 1541

SAMPLE RECEIPT AND CONDITION DOCUMENTATION

STUDY NO:	21319		
SDG No:			
Project:	M and H 2011		
Delivered via:	**FedEx**		
Date and Time Received:	08/24/11 0950	Date and TIme Logged into Lab:	08/25/11 1700
Recieved By:	KC/AM	Logged into Lab by:	AM
Air bill / Way bill:	Yes	Air bill included in folder if received?	NA
Cooler on ice/packs:	Yes	Custody Seals present?	NA
Cooler Blank Temp (C) at arrival:	2 C	Custody Seals intact?	NA
Number of COC Pages:	8		
COC Serial Number(s):			
COC Complete:		Does the info on the COC match the samples?	Yes
Sampled Date:	Yes	Were samples received within holding time?	Yes
Field ID complete:	Yes	Were all samples properly labeled?	Yes
Sampled Time:	Yes	Were proper sample containers used?	Yes
Analysis request:	Yes	Were samples received intact? (none broken or leaking)	Yes
COC Signed and dated:	Yes	Were sample volumes sufficient for requested analysis?	Yes
Were all samples received?	Yes	Were VOC vials free of headspace?	NA
Client notification/authorization:	Not required		

Field ID	Lab ID	Mx	Analysis Requested	Bottle	Req'd Pres'n	Verified Pres'n
OUI-SE-LVR609-110822	21319-001	S	Ha28D, Cd10D	3x1Gal P	4 C	Yes
OUI-SE-LVR607-110822	21319-002	S	Ha28D, Cd10D	2x1Gal P	4 C	Yes
OUI-SE-LVR608-110823	21319-003	S	Ha28D, Cd10D	2x1Gal P	4 C	Yes
OUI-SE-LVR604-110824	21319-004	S	Ha28D, Cd10D	2x1Gal P	4 C	Yes
OUI-SE-LVR605-110824	21319-005	S	Ha28D, Cd10D	2x1Gal P	4 C	Yes
OUI-SE-LVR606-110824	21319-006	S	Ha28D, Cd10D	2x1Gal P	4 C	Yes
OUI-SE-LVR610-110823	21319-007	S	Ha28D, Cd10D	2x1Gal P	4 C	Yes
OUI-SE-LVR611-110823	21319-008	S	Ha28D, Cd10D	3x1Gal P	4 C	Yes
OUI-SE-LVR612-110823	21319-009	S	Ha28D, Cd10D	2x1Gal P	4 C	Yes

Notes and qualifications:

SAMPLE RECEIPT AND CONDITION DOCUMENTATION

STUDY NO:	21319		
SDG No:			
Project:	M and H 2011		
Delivered via:	**FedEx**		
Date and Time Received:	08/26/11 0930	Date and TIme Logged into Lab:	08/26/11 1230
Recieved By:	AM	Logged into Lab by:	AM
Air bill / Way bill:	No	Air bill included in folder if received?	NA
Cooler on ice/packs:	Yes	Custody Seals present?	NA
Cooler Blank Temp (C) at arrival:	3 C	Custody Seals intact?	NA
Number of COC Pages:	2		
COC Serial Number(s):			
COC Complete:		Does the info on the COC match the samples?	Yes
Sampled Date:	Yes	Were samples received within holding time?	Yes
Field ID complete:	Yes	Were all samples properly labeled?	Yes
Sampled Time:	Yes	Were proper sample containers used?	Yes
Analysis request:	Yes	Were samples received intact? (none broken or leaking)	Yes
COC Signed and dated:	Yes	Were sample volumes sufficient for requested analysis?	Yes
Were all samples received?	Yes	Were VOC vials free of headspace?	NA
Client notification/authorization:	Not required		

Field ID	Lab ID	Mx	Analysis Requested	Bottle	Req'd Pres'n	Verified Pres'n
OUI-SE-LVR602-110825	21319-010	S	Ha28D, Cd10D	2x1Gal P	4 C	Yes
OUI-SE-LVR603-110825	21319-011	S	Ha28D, Cd10D	2x1Gal P	4 C	Yes

Notes and qualifications:

ESI
EnviroSystems, Inc.
1 Lafayette Road
P.O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: 21319

CHAIN OF CUSTODY DOCUMENTATION

Client: Geosyntec Consultants	Contact: Meghan Schuck	Project Name: M&H 2011	Page 1 of 1
Report to: Meghan Schuck	Address: 134 N. LaSalle St. 300	Project Number: FC 1640	
Invoice to: Meghan Schuck	Address: Chicago, IL 60602	Project Manager: Keith Tolson	
Voice: 312-416-3905	Fax: 312-658-0576	email: mschuck@geosyntec.com ktolson@geosyntec.com	P.O. No: Quote No:

Protocol: RCRA SDWA NPDES USCOE Other

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composit (G/C)	Container Size ~~(ml)~~ gal	Container Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested\ Special Instructions:
-001	OU1-SE-LVR609-110822	8/22/11	17:15	MS	C	1	P	ice	S	F	28-d Hyalella azteca
-001	OU1-SE-LVR609-110822	8/22/11	17:15	MS	C	1	P	ice	S	F	10-d Chironomus dilutus
-001	OU1-SE-LVR609-110822	8/22/11	17:15	MS	C	1	P	ice	S	F	extra sample material

Relinquished By: Meghan Schuck	Date: 8/23/11	Time: 1055	Received By: FEDEX Date: Time:
Relinquished By: FED EX	Date: 08/24/11	Time: 0950	Received at Lab By: [illegible] Date: 8/24/11 Time: 0950

Comments: cooler #1, 6°C upon receipt.

Sample Delivery Group No: Page of

Doc No: 4593

ESI
EnviroSystems, Inc.
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Hampton, N.H. 03843

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ESI Job No: 21319

CHAIN OF CUSTODY DOCUMENTATION

Client: Geosyntec Consultants	Contact: Meghan Schuck	Project Name: M&H 2011	Page 1 of 1
Report to: Meghan Schuck	Address: 134 N. LaSalle St, 300	Project Number: FC1640	
Invoice to: Meghan Schuck	Address: Chicago, IL 60602	Project Manager: Keith Tolson	
Voice: ~~813~~ 312-416-3905	Fax: 312-658-0576	email: mschuck@geosyntec.com	P.O. No: Quote No:

Protocol: RCRA SDWA NPDES USCOE Other

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composit (G/C)	Container Size ~~(mL)~~ gal	Container Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested\ Special Instructions:
-002	OU1-SE-LVR607-110822	8/22/11	16:49	MS	C	1	P	ice	S	F	28-d Hyalella azteca
-002	OU1-SE-LVR607-110822	8/22/11	16:49	MS	C	1	P	ice	S	F	10-d Chironomus dilutus

Relinquished By: Meghan Schuck	Date: 8/23/11 Time: 10:15	Received By: FEDEX	Date: Time:
Relinquished By: FED EX	Date: 8/24/11 Time: 0950	Received at Lab By:	Date: 8/24/11 Time: 0950

Comments: Cooler #2, 4°C upon receipt

Sample Delivery Group No: Page of

COC Doc No: 4592

ESI
EnviroSystems, Inc.
1 Lafayette Road
P.O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: 21319

CHAIN OF CUSTODY DOCUMENTATION

Client: Geosyntec Consultants	Contact: meghan Schuck	Project Name: M&H 2011	Page 1 of 1
Report to: Meghan schuck	Address: 134 N. LaSalle St, 300	Project Number: FC1640	
Invoice to: meghan schuck	Address: Chicago, IL 60602	Project Manager: Keith Tolson	
Voice: 312-416-3905	Fax: 312-658-0576	email: mschuck@geosyntec.com, ktolson@geosyntec.com	P.O. No: Quote No:

Protocol: RCRA SDWA NPDES USCOE Other

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composit (G/C)	Container Size ~~(mL)~~ gal	Container Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested\ Special Instructions:
-03	OU1-SE-LVR608-110823	8/23/11	09:00	MS	C	1	P	ice	S	F	28-d Hyalella azteca
-03	OU1-SE-LVR608-110823	8/23/11	09:00	MS	C	1	P	ice	S	F	10-d Chironomus dilutus
	~~OU1-SE-LVR60~~ MS										

Relinquished By: meghan Schuck	Date: 8/23/11	Time: 10:15	Received By: FedEX	Date:	Time:
Relinquished By: FED EX	Date: 8/24/11	Time: 0950	Received at Lab By: M. Adams	Date: 8/24/11	Time: 0950

Comments: Cooler #3 - 5°C upon receipt

Sample Delivery Group No: Page of

COC Doc No: 4594

CHAIN OF CUSTODY RECORD

ENVIROSYSTEMS, INCORPORATED

P.O. Box 778, Hampton, New Hampshire 03842

ESI Study Number: 21319

Customer Services: Phone # (603) 926-3345
Fax # (603) 926-3521

PAGE 1 OF 1

CLIENT:	CONTACT:	PROJECT NAME:	P.O. #
Geosyntec Consultants	Meghan Schuck	M&H 2011	
REPORT TO: Meghan Schuck	ADDRESS: 134 N. LaSalle St, Suite 300		PHONE: 813-335-5236
INVOICE TO: Meghan Schuck	ADDRESS: Chicago, IL 60602		SAMPLED BY: Meghan Schuck

Program Requirements: ☐ NPDES ☐ RCRA ☐ USACE ☐ EPA ☐ OTHER

SAMPLE #	YOUR FIELD IDENTIFICATION (MUST AGREE WITH CONTAINER)	DATE SAMPLED	TIME SAMPLED	COMPOSITE /GRAB	~~E EFFLUENT D DILUENT O OTHER~~ NOTE:	CONTAINER #/VOL/TYPE	matrix	FIELD PRESERVED	ANALYSIS REQUESTED (SPECIAL INSTRUCTIONS, CAUTIONS, ETC.)
009	OUI-SE-LVR612-110823	8/23/11	15:40	C	Filtered in Field	1 gallon HPDE	S	ice	28-d Hyalella azteca
004	OUI-SE-LVR604-110824	8/24/11	11:15	C	Filtered in Field	1 gallon HPDE	S	ice	10-d Chironomus dilutus
004	OUI-SE-LVR604-110824	8/24/11	11:15	C	Filtered in Field	1 gallon HPDE	S	ice	28-d Hyalella azteca

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
[signature]	~~8/24~~ 8/24/11	14:30	FedEX	Carlton Moore ~~8/24/11~~ 08/25/11	1115 ~~14:30~~

MA

ESI
oSystems, Inc.
afayette Road
O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: 21319

CHAIN OF CUSTODY DOCUMENTATION

Client: Geotec Consultants	Contact: Meghan Schuck	Project Name: M&H 2011	Page 1 of 1
Report to: Meghan Schuck	Address: 134 N. LaSalle St 300	Project Number: FC1640*15	
Invoice: Meghan Schuck	Address: Chicago, IL 60602	Project Manager: Keith Tolsch	
312-416-3905	Fax: 312-658-0572	email: mschuck@geosyntec.com ktolsch@geosyntec.com	P.O. No: Quote No:

Protocol: RCRA SDWA NPDES USCOE Other

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composit (G/C)	Container Size ~~(ml)~~ gal	Container Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested\ Special Instructions:
005	OU1-SE-LVR605-110824	8/24/11	10:00	MS	C	1	P	ice	S	F	10d Chironomus dilutus
005	OU1-SE-LVR605-110824	8/24/11	10:00	MS	C	1	P	ice	S	F	28d ~~Chironom~~ Hyalella azteca

Relinquished By: Meghan Schuck	Date: 8/24/11	Time: 14:30	Received By: FedEx Date: ~~8/2~~ 8/25/11 Time:
Relinquished By: Fed Ex	Date:	Time:	Received at Lab By: Date: 08/25/11 Time: 1115

Comments:

Sample Delivery Group No: Page of

COC Doc No: 4348

ESI
EnviroSystems, Inc.
1 Lafayette Road
P.O. Box 778
Hampton, N.H. 03843

Voice: 603-926-3345
FAX: 603-926-3521

ESI Job No: 21319

CHAIN OF CUSTODY DOCUMENTATION

Client: Geosyntec Consultants	Contact: Meghan Schuck	Project Name: M&H 2011	Page 1 of 1
Report to: Meghan Schuck	Address: 134 N. LaSalle, 300	Project Number: FC1640*15	
Invoice to: Meghan Schuck	Address: Chicago, IL 60602	Project Manager: Keith Tolson	
Voice: 312-416-3905	Fax: 312-658-0576	email: ktolson@geosyntec.com mschuck@geosyntec.com	P.O. No: Quote No:

Protocol: RCRA SDWA NPDES USCOE Other

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composit (G/C)	Container Size ~~(ml.)~~ gal	Container Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested\ Special Instructions:
CC6	OU1-SE-LVR606-110824	8/24/11	10:30	MS	C	1	P	ice	S	F	10-d Chironomus dilutus
CC6	OU1-SE-LVR606-110824	8/24/11	10:30	MS	C	1	P	ice	S	F	28-d Hyalella azteca

Relinquished By: Meghan Schuck	Date: 8/24/11	Time: 14:30	Received By: FedEX	Date:	Time:
Relinquished By: Fed Ex	Date:	Time:	Received at Lab By:	Date: 08/25/11	Time: 1115

Comments:

Sample Delivery Group No: Page of

COC Doc No: 4347

CHAIN OF CUSTODY RECORD

ENVIROSYSTEMS, INCORPORATED

P.O. Box 778, Hampton, New Hampshire 03842

ESI Study Number: 21319

Customer Services: Phone # (603) 926-3345
Fax # (603) 926-3521

PAGE 1 OF 1

CLIENT:	CONTACT:	PROJECT NAME:	P.O. #
Geosyntec Consultants	Meghan Schuck	M&H 2011	
REPORT TO: Meghan Schuck	ADDRESS: 134 N. LaSalle St. Suite 300		PHONE: 813-335-5236
INVOICE TO: Meghan Schuck	ADDRESS: Chicago, IL 60602		SAMPLED BY: Meghan Schuck

Program Requirements: ☐ NPDES ☐ RCRA ☐ USACE ☐ EPA ☐ OTHER

SAMPLE #	YOUR FIELD IDENTIFICATION (MUST AGREE WITH CONTAINER)	DATE SAMPLED	TIME SAMPLED	COMPOSITE /GRAB	~~E-EFFLUENT D-DILUENT~~ O-OTHER* NOTE	CONTAINER #/VOL/TYPE	matrix	FIELD PRESERVED	ANALYSIS REQUESTED (SPECIAL INSTRUCTIONS, CAUTIONS, ETC.)
007	001-SE-LVR610-110823	8/23/11	16:50	C	Filtered in Field	1 gallon HPDE	S	ice	10-d Chironomus dilutus
007	001-SE-LVR610-110823	8/23/11	16:50	C	Filtered in Field	1 gallon HPDE	S	ice	28-d Hyalella azteca
009	001-SE-LVR612-110823	8/23/11	15:40	C	Filtered in Field	1 gallon HPDE	S	ice	10-d Chironomus dilutus

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
Meghan Schuck	8/24/11	14:30	FedEx Caylor Moore	08/25/11	1115

CHAIN OF CUSTODY RECORD

ENVIROSYSTEMS, INCORPORATED

P.O. Box 778, Hampton, New Hampshire 03842

ESI Study Number: 21319

Customer Services: Phone # (603) 926-3345
Fax # (603) 926-3521

PAGE 1 OF 1

CLIENT: Geosyntec Consultants	CONTACT: Meghan Schuck	PROJECT NAME: M&H 2011	P.O. #
REPORT TO: Meghan Schuck	ADDRESS: 134 N. LaSalle St, 300		PHONE: 813-335-5236
INVOICE TO: Meghan Schuck	ADDRESS: Chicago, IL 60602		SAMPLED BY: Meghan Schuck

Program Requirements: ☐ NPDES ☐ RCRA ☐ USACE ☐ EPA ☐ OTHER

SAMPLE #	YOUR FIELD IDENTIFICATION (MUST AGREE WITH CONTAINER)	DATE SAMPLED	TIME SAMPLED	COMPOSITE /GRAB	~~E-EFFLUENT D-DILUENT O-OTHER~~ NOTE:	CONTAINER #/VOL/TYPE	matrix	FIELD PRESERVED	ANALYSIS REQUESTED (SPECIAL INSTRUCTIONS, CAUTIONS, ETC.)
008	OUI-SE-LVR011-110823	8/23/11	17:15	C	Filtered in Field	1 gallon HPDE	S	ice	10-d Chironomus dilutus
008	OUI-SE-LVR011-110823	8/23/11	17:15	C	Filtered in Field	1 gallon HPDE	S	ice	28-d Hyalella azteca
008	OUI-SE-LVR011-110823	8/23/11	17:15	C	Filtered in Field	1 gallon HPDE	S	ice	extra material

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
Meghan Schuck	8/24/11	14:30	FedEx [signature]	08/25/11	1115

CHAIN OF CUSTODY RECORD

ENVIROSYSTEMS, INCORPORATED

P.O. Box 778, Hampton, New Hampshire 03842

ESI Study Number: 21319

Customer Services: Phone # (603) 926-3345
Fax # (603) 926-3521

PAGE 1 OF 1

CLIENT: Geosyntec Consultants	CONTACT: Meghan Schuck	PROJECT NAME: M & H 2011	P.O. #
REPORT TO: Meghan Schuck	ADDRESS: 134 N. LaSalle St. Suite 300		PHONE: 312-416-3905
INVOICE TO: Meghan Schuck	ADDRESS: Chicago, IL 60602		SAMPLED BY: Meghan Schuck

Program Requirements: ☐ NPDES ☐ RCRA ☐ USACE ☐ EPA ☐ OTHER

SAMPLE #	YOUR FIELD IDENTIFICATION (MUST AGREE WITH CONTAINER)	DATE SAMPLED	TIME SAMPLED	COMPOSITE /GRAB	~~E-EFFLUENT~~ D-DILUENT O-OTHER	CONTAINER #/VOL/TYPE	Matrix	FIELD PRESERVED	ANALYSIS REQUESTED (SPECIAL INSTRUCTIONS, CAUTIONS, ETC.)
010	OUI-SE-LVR602-110825	8/25/11	09:00	C	Filtered in Field	1 gallon HDPE	S	ice	10-d Chironomus dilutus
010	OUI-SE-LVR602-110825	8/25/11	09:00	C	Filtered in Field	1 gallon HDPE	S	ice	28-d Hyalella azteca

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
Meghan Schuck	8/25/11	11:00	FedEx	08/26/11	0930

CHAIN OF CUSTODY RECORD

ENVIROSYSTEMS, INCORPORATED

P.O. Box 778, Hampton, New Hampshire 03842

ESI Study Number: 21319

Customer Services: Phone # (603) 926-3345
Fax # (603) 926-3521

PAGE 1 OF 1

CLIENT: Geosyntec Consultants	CONTACT: Meghan Schuck	PROJECT NAME: M&H 2011	P.O. #
REPORT TO: Meghan Schuck	ADDRESS: 134 N. LaSalle St, Suite 300		PHONE: 312-416-3905
INVOICE TO: Meghan Schuck	ADDRESS: Chicago, IL 60602		SAMPLED BY: Meghan Schuck

Program Requirements: ☐ NPDES ☐ RCRA ☐ USACE ☐ EPA ☐ OTHER

SAMPLE #	YOUR FIELD IDENTIFICATION (MUST AGREE WITH CONTAINER)	DATE SAMPLED	TIME SAMPLED	COMPOSITE /GRAB	~~E-EFFLUENT D-DILUENT O-OTHER~~ NOTE:	CONTAINER #/VOL/TYPE	MATRIX	FIELD PRESERVED	ANALYSIS REQUESTED (SPECIAL INSTRUCTIONS, CAUTIONS, ETC.)
011	OU1-SE-LVR1603-110825	8/25/11	08:20	C	Filtered in Field	1 gallon HDPE	S	ice	10-d Chironomus dilutus
011	OU1-SE-LVR1603-110825	8/25/11	08:20	C	Filtered in Field	1 gallon HDPE	S	ice	28-d Hyalella azteca

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
Meghan Schuck	8/25/11	11:00	FedEx	08/26/11	0930

FedEx Express **NEW Package US Airbill**

FedEx Tracking Number 8762 6073 6453

0200 Form ID No.

FedEx Retrieval Co

1 From

Date 8/23/11 Sender's FedEx Account Number 4403-70008

Sender's Name Meghan Schuck Phone 815 335 5236

Company Geosyntec Consultants

Address 134 N. LaSalle St, Suite 300 Dept./Floor/Suite/Room

City Chicago State IL ZIP 60602

2 Your Internal Billing Reference B/FC1640-15 Schuck

3 To

Recipient's Name Lab Recieving Phone 603 926-3345

Company Envirosystems, Inc

Address 1 Lafayette Rd Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Hampton State NH ZIP 03842

01 ☐ HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

31 ☐ HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

8762 6073 6453

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 l

For packages over 150 lbs., use the FedEx Express Freight US Air

Next Business Day

06 ☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

01 ☒ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

05 ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

49 ☐ NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

03 ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☒ Cu

6 Special Handling and Delivery Signature Options

03 ☐ SATURDAY DELIVERY

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

10 ☐ Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.

34 ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee app

Does this shipment contain dangerous goods?

One box must be checked.

☒ No 04 ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. 06 ☐ Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No.

1 ☒ Sender — Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Ch

[redacted]

Total Packages 3 Total Weight ____ lbs. [redacted] Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

612

Rev. Date 11/10 • Part #163136 • ©1994–2010 FedEx • PRINTED IN U.S.A. SRY

WED – 24 AUG A4
PRIORITY OVERNIGHT
03843
NH-US MHT
6453
3A

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8762 6073 6453

Form ID No. 0200

FedEx Copy

1 From

Date 8/23/11 Sender's FedEx Account Number 1203 70008

Sender's Name Meghan Schuck Phone 813 335-5236

Company Geosyntec Consultants

Address 134 N. LaSalle St, Suite 300 Dept./Floor/Suite/Room

City Chicago State IL ZIP 60602

2 Your Internal Billing Reference B/FC1640-15 Schuck

3 To

Recipient's Name Lab Recieving Phone 603 926-3345

Company Envirosystems, Inc

Address 1 Lafayette Rd Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Hampton State NH ZIP 03843

01 ☐ HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

31 ☐ HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

06 ☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

01 ☒ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

05 ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

Second Business Day

49 ☐ NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

03 ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☒ Other

6 Special Handling and Delivery Signature Options

03 ☐ SATURDAY DELIVERY

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

10 ☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

34 ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

One box must be checked.

☒ No 04 ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. 06 ☐ Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No. ☐

1 ☒ Sender — Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check

FedEx Acct. No. Credit Card No. Exp. Date

FedEx 2 of 3

MPS# 0681 7957 5846 9166

Mstr# 8762 6073 6453

0200

WED – 24 AUG A4

PRIORITY OVERNIGHT

XH IGGA

03843

NH-US MHT

#46061 08/23 50FG1/EEE7/F5F4

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8762 6073 6453

0200 Form ID No.

FedEx Co

1 From

Date 8/23/11 Sender's FedEx Account Number 1703-70008

Sender's Name B. Meghan Schuck Phone 813 335-5236

Company Geosyntec Consultants

Address 134 N. LaSalle St, Suite 300 Dept./Floor/Suite/Room

City Chicago State IL ZIP 60602

2 Your Internal Billing Reference B/FC1640-15 Schuck

3 To

Recipient's Name Lab Recieving Phone 603 926-3345

Company Envirosystems, Inc

Address 1 Lafayette Rd Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

01 ☐ HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

31 ☐ HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Hampton State NH ZIP 03842

4 Express Package Service • To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 l
For packages over 150 lbs., use the FedEx Express Freight US Air

Next Business Day

06 ☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

01 ☒ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

05 ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 Business Days

49 ☐ NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

03 ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging • Declared value limit $500.

06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☒ Ot

6 Special Handling and Delivery Signature Options

03 ☐ SATURDAY DELIVERY

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

10 ☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

34 ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighborin address may sign for delivery. For residential deliveries only. *Fee app*

Does this shipment contain dangerous goods?

One box must be checked.

☒ No 04 ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. 06 ☐ Dry Ice — Dry ice, 9, UN 1845 ____ x ____ k

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No.

1 ☒ Sender Acct. No. in Section 2 ☐ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Ch

RT 359 1 D
ST 2 9177
08.24

#46061 08/23 50FG1/EEE7/FSF4

FC 1640 LVR Toxicity Test. Geosyntec Consultants. ESI Study 21319Ha-R1.

Cooler #1

CUSTODY SEAL

EnviroSystems, Inc.

PO Box 778, One Lafayette Road
Hampton, NH 03843-0778
(603) 926-3345
FAX (603) 926-3521

NAME: Meghan Schulk
DATE/TIME: 8/23/11 10:15

Cooler #3

CUSTODY SEAL

EnviroSystems, Inc.

PO Box 778, One Lafayette Road
Hampton, NH 03843-0778
(603) 926-3345
FAX (603) 926-3521

NAME: Meghan Schulk
DATE/TIME: 8/23/11 10:15

Cooler #2

CUSTODY SEAL

EnviroSystems, Inc.

PO Box 778, One Lafayette Road
Hampton, NH 03843-0778
(603) 926-3345
FAX (603) 926-3521

NAME: Meghan Schulk
DATE/TIME: 8/23/11 10:15

CUSTODY SEAL

EnviroSystems, Inc.

PO Box 778, One Lafayette Road
Hampton, NH 03843-0778
(603) 926-3345
FAX (603) 926-3521

NAME: Meghan Schuck

DATE/TIME: 8/24/11 14:30

FedEx Express **NEW Package US Airbill**

FedEx Tracking Number: 8762 6047 1056

Form ID No.: 0200

FedEx Copy

From

Date: 08/24/2011 Sender's FedEx Account Number: 4203-7000-8

Sender's Name: Meghan Schuck Phone: 813 335-5236

Company: Geosyntec Consultants

Address: 134 N. LaSalle Street Suite 300 (Dept./Floor/Suite/Room)

City: Chicago State: IL ZIP: 60602

Your Internal Billing Reference B/FC 1640-15 Schuck

To

Recipient's Name: Lab Receiving Phone: 603 926-3345

Company: ~~Geosyntec Consultants~~ EnviroSystems, Inc

Address: 1 ~~Lay~~ Lafayette Road (Dept./Floor/Suite/Room)

We cannot deliver to P.O. boxes or P.O. ZIP codes.

01 ☐ HOLD Weekday — FedEx location address REQUIRED. NOT available for FedEx First Overnight.

31 ☐ HOLD Saturday — FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Address: Use this line for the HOLD location address or for continuation of your shipping address.

City: Hampton State: NH ZIP: 03843

4 Express Package Service • To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. *For packages over 150 lbs., use the new FedEx Express Freight US Airbill.*

Next Business Day

06 ☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

01 ☑ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

05 ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

49 ☐ NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

03 ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging • Declared value limit $500.

06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☑ Other

6 Special Handling and Delivery Signature Options

03 ☐ SATURDAY DELIVERY

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

10 ☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

34 ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

One box must be checked.

☑ No 04 ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. 06 ☐ Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip Acct. No. ☐

1 ☑ Sender — Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check

FedEx Acct. No. / Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value†	Credit Card Auth.
1	____ lbs.	$ ____ .00	

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

612

8762 6047 1056

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FedEx Express **NEW Package US Airbill**

FedEx Tracking Number: 8762 6047 1056

0200 Form ID No.

FedEx Copy

1 From

Date: 08/24/2011 Sender's FedEx Account Number: 4203-7000-8

Sender's Name: Meghan Schuck Phone: 813 335-5236

Company: Geosyntec Consultants

Address: 134 N. LaSalle Street Suite 300 Dept./Floor/Suite/Room

City: Chicago State: IL ZIP: 60602

2 Your Internal Billing Reference B/FC1640-15 Schuck

3 To

Recipient's Name: Lab Receiving Phone: 603 926-3345

Company: ~~Geosyntec Consultants~~ Envirosystems, Inc

Address: 1 ~~Lay~~ Lafayette Road Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address: Use this line for the HOLD location address or for continuation of your shipping address.

City: Hampton State: NH ZIP: 03843

01 ☐ HOLD Weekday — FedEx location address REQUIRED. NOT available for FedEx First Overnight.

31 ☐ HOLD Saturday — FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

4 Express Package Service • To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

06 ☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

01 ☒ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

05 ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

49 ☐ NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

03 ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging • Declared value limit $500.

06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☒ Other

6 Special Handling and Delivery Signature Options

03 ☐ SATURDAY DELIVERY

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10 ☐ Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.

34 ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods? One box must be checked.

☒ No 04 ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. 06 ☐ Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below. Obtain Recip. Acct. No. ☐

1 ☒ Sender — Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Ch

FedEx Acct. No. / Credit Card No. / Exp. Date

Total Packages: 1 Total Weight: ____ lbs. Total Declared Value†: $ ____ .00 Credit Card Auth.

FedEx Express **NEW Package US Airbill**

FedEx Tracking Number: 8762 6047 1056

0200 Form ID No.

FedEx Copy

1 From

Date: 08/24/2011 Sender's FedEx Account Number: 4203-7000-8

Sender's Name: Meghan Schuck Phone: 813 335-5236

Company: Geosyntec Consultants

Address: 134 N. LaSalle Street Suite 300 Dept./Floor/Suite/Room

City: Chicago State: IL ZIP: 60602

2 Your Internal Billing Reference B/FC1640-15 Schuck

3 To

Recipient's Name: Lab Receiving Phone: 603 926-3345

Company: ~~Geosyntec Consultants~~ Envirosystems, Inc

Address: 1 ~~Lay~~ Lafayette Road Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address: Use this line for the HOLD location address or for continuation of your shipping address.

City: Hampton State: NH ZIP: 03843

01 ☐ HOLD Weekday — FedEx location address REQUIRED. NOT available for FedEx First Overnight.

31 ☐ HOLD Saturday — FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

4 Express Package Service • To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

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01 ☒ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

05 ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

49 ☐ NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

03 ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging • Declared value limit $500.

06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☒ Other

6 Special Handling and Delivery Signature Options

03 ☐ SATURDAY DELIVERY

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

10 ☐ Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.

34 ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods? One box must be checked.

☒ No 04 ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. 06 ☐ Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below. Obtain Recip. Acct. No. ☐

1 ☒ Sender — Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Ch

FedEx Acct. No. / Credit Card No. / Exp. Date

Total Packages: 1 Total Weight: ____ lbs. Total Declared Value†: $ ____ .00 Credit Card Auth.

612

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

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8762 6047 1056

FedEx Express **NEW Package US Airbill**

FedEx Tracking Number 8762 6047 1056

0200 Form ID No.

FedEx Retrieval Copy

1 From

Date 08/24/2011 Sender's FedEx Account Number 4203-7000-8

Sender's Name Meghan Schuck Phone 813 335-5236

Company Geosyntec Consultants

Address 134 N. LaSalle Street Suite 300 Dept./Floor/Suite/Room

City Chicago State IL ZIP 60602

2 Your Internal Billing Reference B/FC 1640-15 Schuck

3 To

Recipient's Name Lab Receiving Phone 603 926-3345

Company ~~Geosyntec Consultants~~ Envirosystems, Inc

Address 1 ~~Lay~~ Lafayette Road Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Hampton State NH ZIP 03843

01 ☐ HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

31 ☐ HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

8762 6047 1056

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

06 ☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

01 ☒ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

05 ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

49 ☐ NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

03 ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☒ Other

6 Special Handling and Delivery Signature Options

03 ☐ **SATURDAY DELIVERY**

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

10 ☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

34 ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

One box must be checked.

☒ No 04 ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. 06 ☐ Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No. ☐

1 ☒ Sender — Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check

[redacted]

Total Packages 1 Total Weight ____ lbs. [redacted] Credit Card Auth.

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FedEx Express **NEW Package US Airbill**

FedEx Tracking Number 8762 6047 1056

0200 Form ID No.

FedEx Copy

1 From

Date 08/24/2011 Sender's FedEx Account Number 4203-7000-8

Sender's Name Meghan Schuck Phone 813 335-5236

Company Geosyntec Consultants

Address 134 N. LaSalle Street Suite 300 Dept./Floor/Suite/Room

City Chicago State IL ZIP 60602

2 Your Internal Billing Reference B/FC 1640-15 Schuck

3 To

Recipient's Name Lab Receiving Phone 603 926-3345

Company ~~Geosyntec Consultants~~ Envirosystems, Inc

Address 1 ~~Lay~~ Lafayette Road Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Hampton State NH ZIP 03843

01 ☐ HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

31 ☐ HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

8762 6047 1056

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

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Next Business Day

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01 ☒ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

05 ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

49 ☐ NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

03 ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☒ Other

6 Special Handling and Delivery Signature Options

03 ☐ **SATURDAY DELIVERY**

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One box must be checked.

☒ No 04 ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. 06 ☐ Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

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☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No. ☐

1 ☒ Sender — Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check

FedEx Acct. No. Credit Card No. Exp. Date

Total Packages 1 Total Weight ____ lbs. Total Declared Value† $ ____ .00 Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

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CUSTODY SEAL

EnviroSystems, Inc.

PO Box 778, One Lafayette Road
Hampton, NH 03843-0778
(603) 926-3345
FAX (603) 926-3521

NAME: Meghan Schuck

DATE/TIME: 8/25/11 11:00

FedEx Express **NEW Package US Airbill**

FedEx Tracking Number 8762 6047 1089 0200 Form ID No.

FedEx Retrieval Copy

1 From

Date 08/25/2011 Sender's FedEx Account Number 4203-7000-8

Sender's Name Meghan Schuck Phone 813 335-5236

Company Geosyntec Consultants

Address 134 N. LaSalle St. Suite 300 Dept./Floor/Suite/Room

City Chicago State IL ZIP 60602

2 Your Internal Billing Reference B/O FC1640-15 Schuck

3 To

Recipient's Name Lab Receiving Phone 603 926-3345

Company EnviroSystems INC

Address 1 Lafayette Road Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Hampton State NH ZIP 03843

01 ☐ HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

31 ☐ HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

06 ☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

01 ☒ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

05 ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

49 ☐ NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

03 ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☒ Other

6 Special Handling and Delivery Signature Options

03 ☐ SATURDAY DELIVERY

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

10 ☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

34 ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

One box must be checked.

☒ No 04 ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. 06 ☐ Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

1 ☒ Sender — Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check

Obtain recip. Acct. No. ☐

[redacted]

Total Packages 2 Total Weight ____ lbs. [redacted] Credit Card Auth.

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CUSTODY SEAL

EnviroSystems, Inc.

PO Box 778, One Lafayette Road
Hampton, NH 03843-0778
(603) 926-3345
FAX (603) 926-3521

NAME: Meghan Schuck

DATE/TIME: 9/25/11 11:00

FedEx Express **NEW Package US Airbill**

FedEx Tracking Number 8762 6047 1089

0200 Form ID No.

FedEx Retrieval Copy

1 From

Date 09/25/11 Sender's FedEx Account Number 4203-7000-8

Sender's Name Meghan Schuck Phone 813 335-5230

Company Geosyntec Consultants

Address 134 N. LaSalle St. Suite 300 Dept/Floor/Suite/Room

City Chicago State IL ZIP 60602

2 Your Internal Billing Reference B/C FC1140-15 Schuck

3 To

Recipient's Name Lab Receiving Phone 603 926-3345

Company EnviroSystems Inc

Address 1 Lafayette Road Dept/Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Hampton State NH ZIP 03843

HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight. 01 [ ]

HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations. 31 [ ]

4 Express Package Service * to most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs.
For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

06 [ ] FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

01 [X] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

05 [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

49 [ ] NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

03 [ ] FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

06 [ ] FedEx Envelope* 02 [ ] FedEx Pak* 03 [ ] FedEx Box 04 [ ] FedEx Tube 01 [X] Other

6 Special Handling and Delivery Signature Options

03 [ ] **SATURDAY DELIVERY**

[ ] No Signature Required — Package may be left without obtaining a signature for delivery.

10 [ ] Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

34 [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

One box must be checked.

[X] No 04 [ ] Yes As per attached Shipper's Declaration. [ ] Yes Shipper's Declaration not required. 06 [ ] Dry Ice Dry Ice: 9 UN 1845 x kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. [ ] Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No. [ ]

1 [X] Sender Acct. No. in Section 1 will be billed. 2 [ ] Recipient 3 [ ] Third Party 4 [ ] Credit Card 5 [ ] Cash/Check

[redacted]

Total Packages 02 Total Weight lbs.* Credit Card Auth.

*Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide.

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